00BREAK00

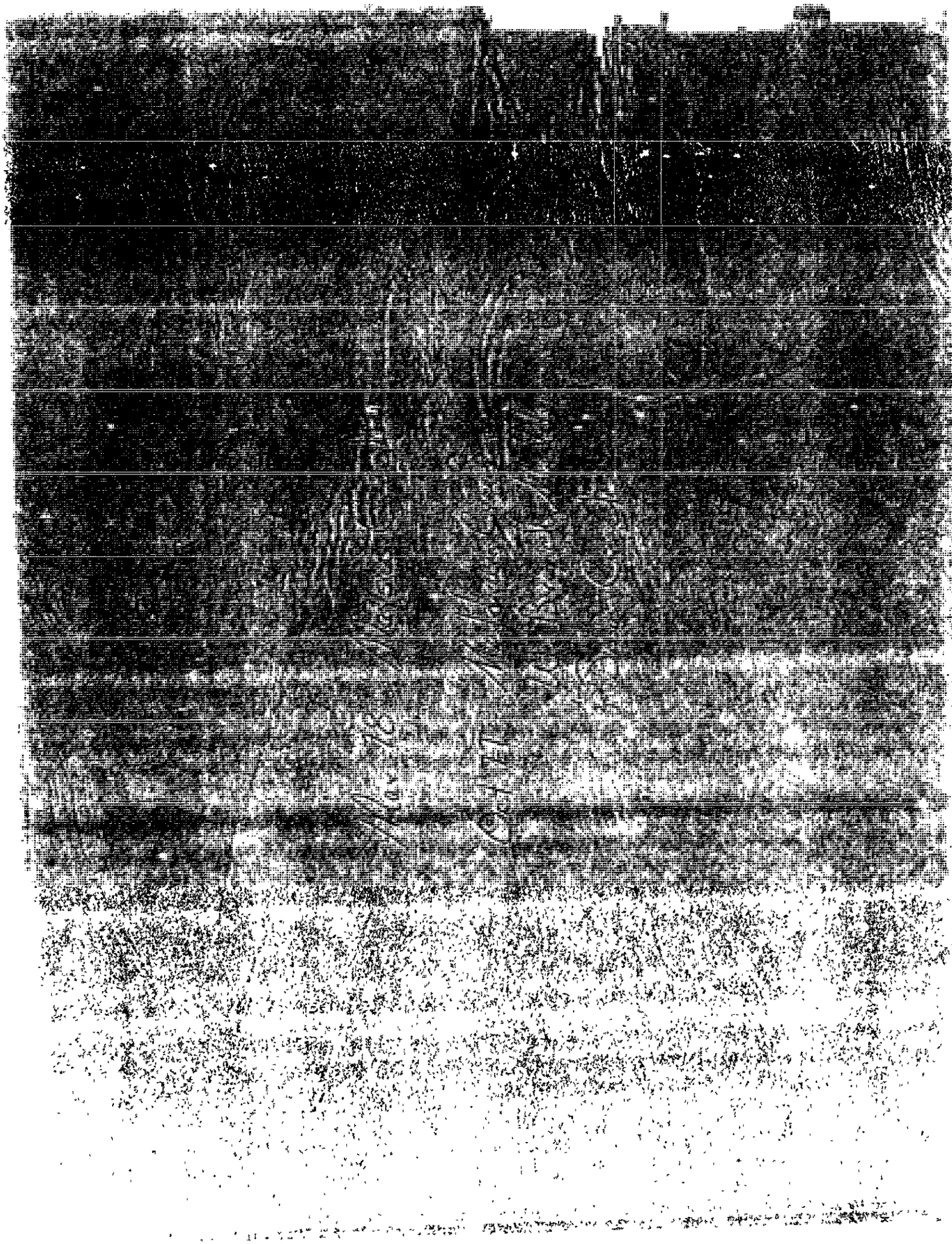
1) COUNTY: ST. CLAIR

2) STUDY NAME: IRA TWP.

3) WATERCOURSE: MARSAC CREEK
MELDRUM "
WEST BRANCH OF MELDRUM CRK.
SWAN CREEK

4) DOCUMENT TYPE: REPORT

00BREAK00



IRA TOWNSHIP
US Army COE

HEC 2 Runs & Hydraulic Analyses Summary

I. Hydraulic Analyses Summary

II. HEC 2 - Marsac Creek

a) Multiple Run - Mar 78 revision
b) Lk St. Clair to community boundary - Mar 78
c) Encroached Run - ~~Oct 77~~ APR 1 78

Meldrum Creek

a) Natural Run - 100 Yr - Oct 77
b) Encroached Run - 100 Yr - "
c) 10, 50, 500 Input & Summary Output - "

West Branch Meldrum Creek

a) Natural Run - 100 Yr - Oct 77
b) Encroached Run - 100 Yr - "
c) 10, 50, 500 Yr Input & Output - "

Swan Creek

a) Natural Run - 100 Yr - ~~Oct 77~~ APR 1 78
b) Encroached Run - "
c) 10, 50, 100, 500 Input & Summary Output - "

Refer to DHM's library for Draft Report w/ Maps & Profiles
Cross-sections with community file DHM

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JAMES W HUBBELL
FRANK M BARNES
GEORGE S ROTH
FRANKLIN A BURN
M DAVID WARING
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Associates

December 20, 1976

RECEIVED
DEC 27 1976
WATER MANAGEMENT

Department of Natural Resources
Bureau of Land & Water Management
Stevens T. Mason Building
Lansing, Michigan 48926

Re: Attention: Mr. Daniel H. Morgan, Acting Chief, Flood Insurance Unit

Dear Mr. Morgan:

As Contractor for the Corps of Engineers Detroit District, we have prepared a Flood Insurance Study for Ira Township, St. Clair County, Michigan. Please find enclosed our Ira F.I.S. Preliminary Draft with associated computations for your "Hydraulic Review." A brief discussion of Discharge, Methods of Starting Computations, "n" Values, Structures, Coefficients and Water Surface Profiles is included.

If you have any questions please don't hestiate to call.

Very truly yours,

HUBBELL, ROTH & CLARK, INC.

Richard F. Browski, P.E.

Richard F. Browski, P. E.

RFB/mm

encl.

WEST BRANCH MELDRUM

computer stationing

Station Letter	Station Feet
A	0
B	2 + 25
C	3 + 30
D	5 + 00
E	20 + 00
F	39 + 32
G	40 + 24
H	57 + 00
I	71 + 50

MELDRUM CREEK

A	0
B	7 + 00
C	27 + 00
D	45 + 00
E	60 + 85
F	61 + 15
G	72 + 50
H	90 + 50
I	107 + 00
J	128 + 85
K	129 + 15
L	145 + 00
M	164 + 00
N	183 + 00
O	203 + 00

MARSAC CREEK

Station Letter	Station Feet (computer stationing)
A	0
B	3 + 12
C	5 + 59
D	14 + 62
E	16 + 99
F	18 + 00
G	29 + 00
H	31 + 00
I	33 + 52
J	42 + 00
K	61 + 00
L	91 + 00
M	92 + 84
N	93 + 16
O	110 + 00
P	114 + 40
Q	115 + 11
R	134 + 00
S	138 + 39
T	139 + 11
U	160 + 00

SWAN CREEK

Station Letter	Station Feet
	computer stationing
A	0
B	3 + 15
C	5 + 00
D	6 + 45
E	16 + 00
F	30 + 00
G	43 + 00
H	64 + 00
I	74 + 00
J	86 + 34
K	86 + 66
L	99 + 00
M	116 + 00
N	131 + 50
O	155 + 84
P	156 + 16
Q	162 + 34
R	162 + 66
S	180 + 00
T	202 + 00
U	228 + 00
V	242 + 00
W	260 + 00

Discharge

The discharges used for the Ira Flood Insurance Study were taken from a Hydrology Report prepared by our office. The Hydrology Report was sent to the Department of Natural Resources dated August 17, 1976. A letter from the DNR's Steve A. Miller, Hydraulic Studies Unit, was sent to our office dated September 22, 1976, concurring with the flows as presented in the report. A copy of this letter is enclosed.

Method of Starting Computations

The slope-area method was used for establishing the starting water surfaces for the streams studied in Ira Township. The average downstream bottom slope was used as the starting slope in the stream backwater calculations. A number of backwater calculations were made for the study streams using different flows. Stage discharge relationships were established for each stream. When we received concurrence on the flows, the stages were input and the final backwater was calculated.

"n" Values

Roughness coefficients (Manning's n) for the study streams were estimated by field inspection at each cross section. These roughness coefficients were determined by using the SCS method (see enclosed copy entitled "Preface, Supplement B, Hydraulics," August 1, 1976). A table of "n" values for each stream is also enclosed.

Structures

A sketch of each structure is included. Necessary calculations for the SB cards are also presented. Each bridge loss that was calculated by the HEC II program was checked long hand by methods described in "Hydraulic Charts for the Selection of Highway Culverts," Hydraulic Engineering Circular No. 5. A table showing these results is included.

Coefficients

0.3 and 0.1 throughout considered low

Expansion and contraction coefficients were used for all streams studied. There are no abrupt changes in the channel. They are generally uniform. Values of 0.3 (expansion) and 0.1 (contraction) were used on all streams except at the culvert downstream of Bethuy Road on the Marsac Creek where values of 0.6 and 0.4 were used.

Water Surface Profiles

The water surface profiles for the study streams can be found in the F.I.S. preliminary Report, Exhibit I. These profiles show a composite of the flooding that will occur from Lake St. Clair and the watercourses. The backwater from the lake is plotted until it intersects the river profile.

st. w.s. from rating curve based on slope-area for tributary; fp of main system will be superposed

NATURAL RESOURCES COMMISSION
CARL T. JOHNSON
M. LAITALA
JEAN PRIDGEON
HILARY F SNELL
HARRY H WHITELEY
JOAN L WOLFE
CHARLES G YOUNGLOVE

STATE OF MICHIGAN

WILLIAM G. MILLIKEN, Governor

DEPARTMENT OF NATURAL RESOURCES

HOWARD A. TANNER, Director

September 22, 1976

RECEIVED
SEP 24 1976
H. R. & C., INC.

Mr. Richard F. Browski, Jr., P.E.
Hubbell, Roth & Clark, Inc.
P.O. Box 824
Bloomfield Hills, MI. 48013

Re: FIS, Ira Township
Hydrology

Dear Mr. Browski:

We concur with the flood frequency discharges for Swan Creek, Meldrum Creek, West Branch of Meldrum Creek and Marsac Creek as listed in report sent with your letter of September 16, 1976.

The discharges estimates provided for the streams listed above agree closely with estimates made by other methods. As indicated in the drainage area-discharge relationship, there is considerable scatter in the frequency discharges for the gaged watersheds. An attempt should be made to define characteristics of the watershed which cause this scatter.

Therefore, we must note that although we are accepting the discharges suggested for use in Ira Township, we are not concurring the drainage area-discharge relationship for use in other study areas.

If you have any questions, please contact us.

Very truly yours,

BUREAU OF LAND & WATER MANAGEMENT
Water Management Division

Steve A. Miller

Steve A. Miller, Engineer
Hydrologic Studies Unit

SAM:bw
cc: D. Morgan
P. Mills

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

PROJECT ROBERTS CLARK INC. JOB NO. 74132

SUBJECT F.I.S. Study

DETAIL 12 VALUES FOR MARSAC CREEK TOWNSHIP

DWG NO. 74132

SHT. 1 OF 15

ROW 1 SEC. 10/11

CHANNEL		1	2	3	4	5	n_s	6			7
LINE No. (SEE CROSS SECTIONS)		BASE CHANNEL	SURF. IRREG.	CHANGE & SIZE X-SEC.	OBSTR.	VEGET.	Σ 1 TO 5	MEANDER l_m / l_s / $l_m \div l_s$	MOD. VALUE	MIN x n5	$M_s + 6$ n
AVG. UP & D. ST.	CH.	0.02	0.01	0.005	0.010	0.025	0.070				
	LT. OB.	0.02	0.01	0.005	0.010	0.050	0.095				
	RT. OB.	0.02	0.01	0.005	0.010	0.050	0.095				
D. STR.	CH.	0.02	0.02	0.010	0.020	0.050	0.120				
	LT. OB.	0.02	0.02	0.010	0.020	0.100	0.170				
	RT. OB.	0.02	0.02	0.010	0.020	0.100	0.170				
1 UPSTR.	CH.	0.02	0.000	0.000	0.000	0.005	0.025	1350		0.004	0.029
	LT. OB.	0.02	"	"	"	0.005	0.025	1100	0.15	0.004	0.029
	RT. OB.	0.02	"	"	"	0.005	0.025	1.23		0.004	0.029
2&3	CH.	0.02	0.000	0.000	0.000	0.010	0.030	150		0.000	0.030
	LT. OB.	0.02	"	"	"	0.010	0.030	150	0.00	"	0.030
	RT. OB.	0.02	"	"	"	0.010	0.030	1.00		"	0.030
4	CH.	0.02	0.010	0.000	0.000	0.010	0.040	1100		0.000	0.040
	LT. OB.	0.02	0.000	"	"	0.010	0.030	1000	0.00	"	0.030
	RT. OB.	0.02	0.000	"	"	0.010	0.030	1.10		"	0.030
5	CH.	0.02	0.010	0.005	0.000	0.010	0.045	200		0.000	0.045
	LT. OB.	0.02	0.000	0.000	"	0.010	0.030	200	0.00	"	0.030
	RT. OB.	0.02	0.010	0.000	"	0.020	0.050	1.00		"	0.050
6&7	CH.	0.02	0.020	0.005	0.010	0.100	0.155	3000		0.000	0.155
	LT. OB.	0.02	0.020	0.000	0.010	0.100	0.150	2775	0.00	"	0.150
	RT. OB.	0.02	0.020	0.000	0.010	0.100	0.150	1.08		"	0.150
8&9	CH.	0.02	0.010	0.005	0.020	0.100	0.155	3000		0.023	0.178
	LT. OB.	0.02	0.010	0.000	0.020	0.050	0.100	2375	0.15	0.015	0.115
	RT. OB.	0.02	0.010	0.000	0.020	0.050	0.100	1.26		0.015	0.115

HUBBELL, ROTH & CLARK, INC. · CONSULTING ENGINEERS

SUBJECT

DETAIL

END MARSAC @ 12 BEGIN W. BRANCH OF MELDRUM @ 13

2

10/1 75

R.D.M./J.F.C.

JOB NO 74132

CHANNEL LINE NO.		1 BASE CHANNEL	2 SURF. IRREG.	3 SHAPE & SIZE X-SEC.	4 OBSTR.	5 VEGET.	6 MEANDER $\frac{l_m}{l_s}$ $l_m \div l_s$	6 MEANDER MOD. VALUE	6 MEANDER MV x Ms	7 Ms + 6 M
10	CH.	0.02	0.010	0.005	0.020	0.100	1900		0.000	0.155
	LT. OB.	0.02	0.000	0.000	0.000	0.050	1750	0.00	0.000	0.070
	RT. OB.	0.02	0.000	0.000	0.000	0.050	1.09		0.000	0.070
11	CH.	0.02	0.010	0.000	0.015	0.050	2400		0.014	0.109
	LT. OB.	0.02	0.000	"	0.000	0.025	1900	0.15	0.007	0.052
	RT. OB.	0.02	0.000	"	0.000	0.025	1.26		0.007	0.052
12	CH.	0.02	0.010	0.000	0.015	0.055	2600		0.000	0.100
	LT. OB.	0.02	0.000	"	0.000	0.050	2250	0.00	0.000	0.070
	RT. OB.	0.02	0.000	"	0.000	0.050	1.16		0.000	0.070
13	CH.	0.02	0.020	0.010	0.010	0.020	1650		0.000	0.080
	LT. OB.	0.02	0.000	0.000	0.000	0.020	1500	0.00	0.000	0.040
	RT. OB.	0.02	0.000	0.000	0.000	0.020	1.10		0.000	0.040
14	CH.	0.02	0.010	0.010	0.030	0.075	1700		0.022	0.167
	LT. OB.	0.02	0.000	0.000	0.000	0.080	1350	0.15	0.015	0.115
	RT. OB.	0.02	0.000	0.000	0.000	0.080	1.26		0.015	0.115
15	CH.	0.02	0.020	0.010	0.030	0.100	2000		0.027	0.207
	LT. OB.	0.02	0.000	0.000	0.000	0.100	1450	0.15	0.018	0.138
	RT. OB.	0.02	0.000	0.000	0.000	0.100	1.38		0.018	0.138
16	CH.	0.02	0.010	0.010	0.020	0.025	7500		0.000	0.085
	LT. OB.	0.02	0.000	0.000	0.000	0.100	1350	0.00	0.000	0.120
	RT. OB.	0.02	0.000	0.000	0.000	0.100	1.11		0.000	0.120
17 & 18	CH.	0.02	0.010	0.005	0.010	0.025	1500		0.000	0.070
	LT. OB.	0.02	0.000	0.000	0.000	0.075	500	0.00	0.000	0.095
	RT. OB.	0.02	0.000	0.000	0.000	0.075	1.00		0.000	0.095

Marsac Cr. ← → West Branch Meldrum ←

CHANNEL		1	2	3	4	5	M5	6			7
LINE NO.		BASE CHANNEL	SINU. IRREG.	SHAPE & SIZE X-SEC.	OBSTR.	VEGET.	Σ 1 TO 5	MEANDER $\frac{l_m}{l_s}$ $l_m \div l_s$	MOD. VALUE	M×M5	M5+6 M
19 & 20 Weldrum	CH.	0.02	0.01	0.005	0.005	0.030	0.070	1600		0.021	0.091
	LT. OB.	0.02	0.000	0.000	0.000	0.130	0.150	1000	0.30	0.045	0.195
	RT. OB.	0.02	0.000	0.000	0.000	0.130	0.150	1.60		0.045	0.195
Weldrum 21	CH.	0.02	0.01	0.005	0.005	0.030	0.070	1800		0.021	0.091
	LT. OB.	0.02	0.000	0.000	0.000	0.130	0.150	1050	0.30	0.045	0.195
	RT. OB.	0.02	0.000	0.000	0.000	0.130	0.150	1.71		0.045	0.195
22	CH.	0.02	0.000	0.000	0.020	0.020	0.060	2000		0.018	0.078
	LT. OB.	0.02	"	"	0.000	0.120	0.140	950	0.30	0.042	0.182
	RT. OB.	0.02	"	"	0.000	0.120	0.140	2.11		0.042	0.182
23	CH.	0.02	0.000	0.000	0.000	0.020	0.040	2000		0.012	0.052
	LT. OB.	0.02	"	"	"	0.080	0.100	1200	0.30	0.03	0.130
	RT. OB.	0.02	"	"	"	0.080	0.100	1.67		0.03	0.130
24	CH.	0.02	"	"	"	0.030	0.050	1400		0.000	0.050
	LT.	0.02	"	"	"	0.070	0.090	1300	0.00	0.000	0.090
	RT.	0.02	"	"	"	0.070	0.090	1.08		0.000	0.090
SWAMP 25	CH.	0.02	0.000	0.000	0.000	0.020	0.040	1300		0.000	0.040
	LT. OB.	0.02	"	"	"	0.010	0.030	1150	0.00	"	0.030
	RT. OB.	0.02	"	"	"	0.040	0.060	1.13		"	0.060
CT 26	CH.	0.02	0.020	0.005	0.01	0.025	0.080	2100		0.024	0.104
	LT. OB.	0.02	0.000	0.000	0.000	0.08	0.100	1250	0.30	0.03	0.130
	RT. OB.	0.02	0.000	0.000	0.000	0.10	0.120	1.68		0.036	0.156
27	CH.	0.02	0.020	0.015	0.000	0.025	0.080	1000		0.000	0.080
	LT. OB.	0.02	0.000	0.000	"	0.050	0.070	900	0.00	"	0.070
	RT. OB.	0.02	0.000	0.000	"	0.100	0.120	1.11		"	0.120

W. BRANCH OF WELDRUM DRAIN

DETAIL

HUBBELL, ROTH & CLARK, INC.

SHEET 3 OF 75

10/7 RDM/LEC.

74132

HUBBELL, ROTH & CLARK INC. • CONSULTING ENGINEERS

SUBJECT

DETAIL

DATE 10/7 75

R.D.M./J.F.C.

JOB NO 74132

CHANNEL		1	2	3	4	5	M_s	6			7
LINE NO.		BASE CHANNEL	SURF. IRREG.	SHAPE & SIZE X-SEC.	OBSTR.	VEGET.	Σ 1 TO 5	MEANDER l_m / l_s / $l_m \div l_s$	MOD. VALUE	MV × M_s	M_s + 6 M
28	CH.	0.02	0.020	0.015	0.020	0.025	0.100	1000		0.000	0.100
	LT. OB.	0.02	0.000	0.000	0.000	0.050	0.070	875	0.00	"	0.070
	RT. OB.	0.02	0.000	0.000	0.000	0.050	0.070	1.14		"	0.070
29 & 30	CH.	0.020	0.010	0.010	0.030	0.030	0.100	1400		0.000	0.100
	LT. OB.	0.020	0.000	0.000	0.000	0.120	0.140	1350	0.00	"	0.140
	RT. OB.	0.020	0.000	0.000	0.000	0.120	0.140	1.04		"	0.140
31 Swan Creek	CH.	0.020	0.020	0.020	0.030	0.030	0.120	1100		0.000	0.120
	LT. OB.	0.020	0.000	0.000	0.000	0.080	0.100	1050	0.00	"	0.100
	RT. OB.	0.020	0.000	0.000	0.000	0.100	0.120	1.05		"	0.120
32	CH.	0.020	0.020	0.020	0.030	0.040	0.130	1700		0.020	0.150
	LT. OB	0.020	0.000	0.000	0.000	0.110	0.130	1325	0.15	0.020	0.150
	RT. OB	0.020	0.000	0.000	0.000	0.110	0.130	1.28		0.020	0.150
33	CH.	0.020	0.020	0.020	0.030	0.040	0.130	1550		0.020	0.150
	LT. OB.	0.020	0.000	0.000	0.000	0.100	0.120	1250	0.15	0.018	0.138
	RT. OB	0.020	0.000	0.000	0.000	0.100	0.120	1.24		0.018	0.138
34 & 35	CH.	0.02	0.020	0.010	0.020	0.030	0.100	2700		0.030	0.130
	LT. OB.	0.02	0.000	0.000	0.000	0.080	0.100	1950	0.15	0.015	0.115
	RT. OB.	0.02	0.000	0.000	0.000	0.080	0.100	1.38		0.015	0.115

HUBBELL, ROTH & CLARK, INC. • CONSULTING ENGINEERS

SUBJECT

DETAIL

JOB NO. 24132

DATE RDM/J.F.C.

CHANNEL		1	2	3	4	5	n_s	6			7
LINE No.		BASE CHANNEL	SURF. IRREG.	SHAPE & SIZE X-SEC.	OBSTR.	VEGET.	Σ 1 TO 5	MEANDER l_m / l_s / $l_m \div l_s$	MOD. VALUE	$MV \times n_s$	$n_s + 6$ n
36 & 37	CH.	0.02	0.020	0.010	0.010	0.030	0.090	550		0.000	0.090
	LT. OB.	0.02	0.000	0.000	0.000	0.070	0.090	500	0.00	"	0.090
	RT. OB.	0.02	0.000	0.000	0.000	0.070	0.090	1.10		"	0.090
38	CH.	0.02	0.000	0.010	0.010	0.010	0.050	1600		0.015	0.065
	LT. OB.	0.02	"	0.000	0.000	0.080	0.100	900	0.30	0.030	0.130
	RT. OB.	0.02	"	0.000	0.000	0.080	0.100	1.78		0.030	0.130
39	CH.	0.02	0.010	0.010	0.030	0.040	0.110	2200		0.017	0.127
	LT. OB.	0.02	0.000	0.000	0.000	0.13	0.15	1600	0.15	0.005	0.155
	RT. OB.	0.02	0.000	0.000	0.000	0.13	0.15	1.38		0.005	0.155
40	CH.	0.02	0.000	0.010	0.010	0.030	0.070	2600		0.011	0.081
	LT. OB.	0.02	"	0.000	0.000	0.080	0.100	2000	0.15	0.015	0.115
	RT. OB.	0.02	"	0.000	0.000	0.080	0.100	1.30		0.015	0.115
41	CH.	0.02	0.010	0.020	0.020	0.020	0.090	1400		0.014	0.104
	LT. OB.	0.02	0.000	0.000	0.000	0.12	0.14	1150	0.15	0.002	0.142
	RT. OB.	0.02	0.000	0.000	0.000	0.12	0.14	1.22		0.002	0.142
42	CH.	0.02	0.000	0.000	0.010	0.010	0.040	1800		0.000	0.040
	LT. OB.	0.02	"	"		0.030	0.050	1575	0.00	"	0.050
	RT. OB.	0.02	"	"		0.080	0.100	1.14		"	0.10
43	CH.	0.02	0.020	0.010	0.020	0.030	0.100	2100		0.015	0.115
	LT. OB.	0.02	0.000	0.000	0.000	0.100	0.120	1500	0.15	0.023	0.143
	RT. OB.	0.02	0.000	0.000	0.000	0.100	0.120	1.40		0.023	0.143

Swan Creek

Meldrum Main

CHANNEL		1	2	3	4	5	n_s	6			7
LINE NO.		BASE CHANNEL	SURF. IRREG.	SHAPE & SIZE X-SEC.	OBSTR.	VEGET.	Σ 1 TO 5	MEANDER l_m / l_s / $l_m \div l_s$	MOD. VALUE	$MV \times n_s$	$n_s + 6$ / n
44	CH.	0.020	0.020	0.010	0.020	0.030	0.100	1900		0.000	0.100
	LT. OB.	"	0.00	0.000	0.000	0.100	0.120	1650	0.00	"	0.120
	RT. OB.	"	0.000	0.000	0.000	0.100	0.120	1.15		"	0.120
45	CH.	0.020	0.020	0.015	0.020	0.020	0.095	1900		0.000	0.095
	LT. OB.	"	0.000	0.000	0.000	0.100	0.120	1725	0.00	"	0.120
	RT. OB.	"	0.000	0.000	0.000	0.100	0.120	1.10		"	0.120
46	CH.	0.020	0.010	0.000	0.020	0.020	0.070	1400		0.000	0.070
	LT. OB.	"	0.000	"	0.000	0.060	0.080	1275	0.00	"	0.080
	RT. OB.	"	0.000	"	0.000	0.060	0.080	1.10		"	0.080
47 & 48	CH.	0.020	0.020	0.010	0.020	0.030	0.100	200		0.000	0.100
	LT. OB	"	0.000	0.000	0.000	0.100	0.120	200	0.00	"	0.120
	RT. OB	"	0.000	0.000	0.000	0.100	0.120	1.00		"	0.120
Meldrum Main											
49	CH.	0.020	0.020	0.010	0.030	0.030	0.110	2200		0.017	0.127
	LT. OB.	"	0.000	0.000	0.000	0.130	0.150	1700	0.15	0.023	0.173
	RT. OB.	"	0.000	0.000	0.000	0.130	0.150	1.29		0.023	0.173
50	CH.	0.020	0.020	0.010	0.030	0.030	0.110	1650		0.017	0.127
	LT. OB	"	0.000	0.000	0.000	0.130	0.150	1300	0.15	0.023	0.173
	RT. OB	"	0.000	0.000	0.000	0.130	0.150	1.27		0.023	0.173
51	CH.	0.020	0.010	0.005	0.030	0.080	0.145	1800		0.022	0.167
	LT. OB.	"	0.000	0.000	0.000	0.130	0.150	1475	0.15	0.023	0.173
	RT. OB.	"	0.000	0.000	0.000	0.130	0.150	1.22		0.023	0.173

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DETAIL

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SUBJECT

DETAIL

JOB NO

CHANNEL		1	2	3	4	5	M_s	6			7
LINE No.		BASE CHANNEL	SURF. IRREG.	SHAPE & SIZE X-SEC.	OBSTR.	VEGET.	Σ 1 TO 5	MEANDER l_m / l_s / $l_m \div l_s$	MOD. VALUE	$MV \times M_s$	$M_s + 6$ M
52											
53											
54											
55	CH.	0.02	0.000	0.000	0.000	0.020	0.040	1300		0.000	0.040
	LT. OB.	0.02	"	"	"	0.010	0.030	1200	0.00	"	0.030
	RT. OB.	0.02	"	"	"	0.010	0.030	1.08		"	0.030
56											
57											
58											

SWOM CT

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SHEET ____ OF ____
DATE ____ 19 ____
BY R.F.B.
CK. ____
JOB NO. ____
ACC. NO. ____

SUBJECT ____

DETAIL OUTPUT RECEIVED (Oct 12 1976)

BRIDGE STA	CONTROL	Q	YR	H.W. (CHARTS)	H.W. HEC II	DIFF
	WEST BRANCH MELDRUM					
3+30	OUTLET	345	100	0.35+5.07-0.5=4.92	4.92	0
		MELDRUM MAIN				
SHORT CUT RD. 61+15	OUTLET	955	100	0.41+9.52+0=9.91	9.82	0.09
ARNOLD RD 129+15	OUTLET	660	100	0.16+7.64+0=7.80	7.76	0.04
		SWAN CREEK				
M-29 5+00	OUTLET	2140	100	1.41+9.6+0=11.01 (1.41+D/2)	11.13	0.12
IRA RD 6+45	OUTLET	2140	100	0.74+9.8-1.6=8.94	8.71	0.23
SHORT CUT RD 86+66	OUTLET	1350	100	0.35+12.31+0=12.66	12.46	0.20
ARNOLD RD 156+16	OUTLET	1350	100	0.36+8.82+0=9.18	9.09	0.09
HESSEN RD 162+66	OUTLET	1350	100	0.87+7.56+0=8.43	8.23	0.20
	MARSAC CREEK OUTPUT Rec'd Nov 3 1976					
CULVERT S. OF BETHUY RD 5+59	OUTLET	610	100	1.36+6.25-0.2=7.41	7.32	0.09
BETHUY RD 16+99	OUTLET	610	100	0.90+6.78-1.05=6.83	6.45	0.38
ARNOLD RD. 93+31	OUTLET	610	100	0.62+7.51-0=8.13	7.80	0.33

PREFACE

SUPPLEMENT B

HYDRAULICS

This supplement expands and augments subsection 4.4 of the Hydraulics Section of the Engineering Handbook.

The objective of Supplement B is to present a systematic procedure for the estimation of n values for use in hydraulic computations associated with natural streams, floodways and drainage channels.

This method of estimating roughness coefficients was developed by Woody L. Cowan. Mrs. Vivian Edwards typed the manuscript.

August 1, 1956

This supplement describes a method for estimating the roughness coefficient n for use in hydraulic computations associated with natural streams, floodways and similar streams. The procedure proposed applies to the estimation of n in Manning's formula. This formula is now widely used, it is simpler to apply than other widely recognized formulas and has been shown to be reliable.

Manning's formula is empirical. The roughness coefficient n is used to quantitatively express the degree of retardation of flow. The value of n indicates not only the roughness of the sides and bottom of the channel, but also all other types of irregularities of the channel and profile. In short, n is used to indicate the net effect of all factors causing retardation of flow in a reach of channel under consideration.

There seems to have developed a tendency to regard the selection of n for natural channels as either an arbitrary or an intuitive process. This probably results from the rather cursory treatment of the roughness coefficient in most of the more widely used hydraulic textbooks and handbooks. The fact is that the estimation of n requires the exercise of critical judgment in the evaluation of the primary factors affecting n. These factors are: irregularity of the surfaces of the channel sides and bottom; variations in shape and size of cross sections; obstructions; vegetation; meandering of the channel.

The need for realistic estimates of n justifies the adoption of a systematic procedure for making the estimates.

Procedure for estimating n. The general procedure for estimating n involves; first, the selection of a basic value of n for a straight, uniform, smooth channel in the natural materials involved; then, through critical consideration of the factors listed above, the selection of a modifying value associated with each factor. The modifying values are added to the basic value to obtain n for the channel under consideration.

In the selection of the modifying values associated with the 5 primary factors it is important that each factor be examined and considered independently. In considering each factor, it should be kept in mind that n represents a quantitative expression of retardation of flow. Turbulence of flow can, in a sense, be visualized as a measure or indicator of retardance. Therefore, in each case, more critical judgment may be exercised if it is recognized that as conditions associated with any factor change so as to induce greater turbulence, there should be an increase in the modifying value. A discussion and tabulated guide to the selection of modifying values for each factor is given under the following procedural steps.

1st step. Selection of basic n value. This step requires the selection of a basic n value for a straight, uniform, smooth channel in the natural materials involved. The selection involves consideration of what may be regarded as a hypothetical channel. The conditions of straight alignment, uniform cross section, and smooth side and bottom surfaces without vegetation should be kept in mind. Thus the basic n will be visualized as varying only with the materials forming the sides and bottom of the channel. The minimum values of n shown by reported test results for the best channels in earth are in the range from 0.016 to 0.018. Practical limitations associated with maintaining smooth and uniform channels in earth for any appreciable period indicate that 0.02 is a realistic basic n. The basic n, as it is intended for use in this procedure, for natural or excavated channels, may be selected from the table below. Where the bottom and sides of a channel are of different materials this fact may be recognized in selecting the basic n.

Character of channel	Basic n
Channels in earth	0.02
Channels cut into rock	0.025
Channels in fine gravel	0.024
Channels in coarse gravel	0.028

2nd step. Selection of modifying value for surface irregularity. The selection is to be based on the degree of roughness or irregularity of the surfaces of channel sides and bottom. Consider the actual surface irregularity; first, in relation to the degree of surface smoothness obtainable with the natural materials involved, and second, in relation to the depths of flow under consideration. Actual surface irregularity comparable to the best surface to be expected of the natural materials involved calls for a modifying value of zero. Higher degrees of irregularity induce turbulence and call for increased modifying values. The table below may be used as a guide to the selection.

Degree of irregularity	Surfaces comparable to	Modifying value
Smooth	The best obtainable for the materials involved.	0.000
Minor	Good dredged channels; slightly eroded or scoured side slopes of canals or drainage channels.	0.005
Moderate	Fair to poor dredged channels; moderately sloughed or eroded side slopes of canals or drainage channels.	0.010
Severe	Badly sloughed banks of natural channels; badly eroded or sloughed sides of canals or drainage channels; unshaped, jagged and irregular surfaces of channels excavated in rock.	0.020

3rd step. Selection of modifying value for variations in shape and size of cross sections. In considering changes in size of cross sections judge the approximate magnitude of increase and decrease in successive cross sections as compared to the average. Changes of considerable magnitude, if they are gradual and uniform, do not cause significant turbulence. The greater turbulence is associated with alternating large and small sections where the changes are abrupt. The degree of effect of size changes may be best visualized by considering it as depending primarily on the frequency with which large and small sections alternate and secondarily on the magnitude of the changes.

In the case of shape variations, consider the degree to which the changes cause the greatest depth of flow to move from side to side of the channel. Shape changes causing the greatest turbulence are those for which shifts of the main flow from side to side occur in distances short enough to produce eddies and upstream currents in the shallower portions of those sections where the maximum depth of flow is near either side. Selection of modifying values may be based on the following guide:

Character of variations in size and shape of cross sections	Modifying value
Changes in size or shape occurring gradually	0.000
Large and small sections alternating occasionally or shape changes causing occasional shifting of main flow from side to side	0.005
Large and small sections alternating frequently or shape changes causing frequent shifting of main flow from side to side	0.010 to 0.015

4th step. Selection of modifying value for obstructions. The selection is to be based on the presence and characteristics of obstructions such as debris deposits, stumps, exposed roots, boulders, fallen and lodged logs. Care should be taken that conditions considered in other steps are not re-evaluated or double-counted by this step.

In judging the relative effect of obstructions, consider: the degree to which the obstructions occupy or reduce the average cross sectional area at various stages; the character of obstructions, (sharp-edged or angular objects induce greater turbulence than curved, smooth-surfaced objects); the position and spacing of obstructions transversely and longitudinally in the reach under consideration. The following table may be used as a guide to the selection.

Relative effect of obstructions	Modifying value
Negligible	0.000
Minor	0.010 to 0.015
Appreciable	0.020 to 0.030
Severe	0.040 to 0.060

5th step. Selection of modifying value for vegetation. The retarding effect of vegetation is probably due primarily to the turbulence induced as the water flows around and between the limbs, stems and foliage, and secondarily to reduction in cross section. As depth and velocity increase, the force of the flowing water tends to bend the vegetation. Therefore, the ability of vegetation to cause turbulence is partly related to its resistance to bending force. Furthermore, the amount and character of foliage; that is, the growing season condition versus dormant season condition is important. In judging the retarding effect of vegetation, critical consideration should be given to the following: the height in relation to depth of flow; the capacity to resist bending; the degree to which the cross section is occupied or blocked out; the transverse and longitudinal distribution of vegetation of different types, densities and heights in the reach under consideration. The following table may be used as a guide to the selection:

Vegetation and flow conditions comparable to:	Degree of effect on n	Range in modifying value
Dense growths of flexible turf grasses or weeds, of which Bermuda and blue grasses are examples, where the average depth of flow is 2 to 3 times the height of vegetation.	Low	0.005 to 0.010
Supple seedling tree switches such as willow, cottonwood or salt cedar where the average depth of flow is 3 to 4 times the height of the vegetation.		
Turf grasses where the average depth of flow is 1 to 2 times the height of vegetation.		
Stemmy grasses, weeds or tree seedlings with moderate cover where the average depth of flow is 2 to 3 times the height of vegetation.	Medium	0.010 to 0.025
Brushy growths, moderately dense, similar to willows 1 to 2 years old, dormant season, along side slopes of channel with no significant vegetation along the channel bottom, where the hydraulic radius is greater than 2 feet.		

Turf grasses where the average depth of flow is about equal to the height of vegetation.		
Dormant season, willow or cottonwood trees 8 to 10 years old, intergrown with some weeds and brush, none of the vegetation in foliage, where the hydraulic radius is greater than 2 feet.	High	0.025 to 0.050
Growing season, bushy willows about 1 year old intergrown with some weeds in full foliage along side slopes, no significant vegetation along channel bottom, where hydraulic radius is greater than 2 feet.		
Turf grasses where the average depth of flow is less than one half the height of vegetation.		
Growing season, bushy willows about 1 year old, intergrown with weeds in full foliage along side slopes; dense growth of cattails along channel bottom; any value of hydraulic radius up to 10 or 15 feet.	Very high	0.050 to 0.100
Growing season; trees intergrown with weeds and brush, all in full foliage; any value of hydraulic radius up to 10 or 15 feet.		

A further basis for judgment in the selection of the modifying value for vegetation may be found in Table 1 which contains descriptions and data for actual cases where n has been determined. In each of the cases listed in Table 1 the data were such that the increase in n due to vegetation could be determined within reasonably close limits.

6th step. Determination of the modifying value for meandering of channel. The modifying value for meandering may be estimated as follows: Add the basic n for Step 1 and the modifying values of Steps 2 through 5 to obtain the subtotal of n_s.

Let ℓ_s = the straight length of the reach under consideration.

ℓ_m = the meander length of the channel in the reach.

Compute modifying value for meandering in accordance with the following table

Ratio ℓ_m/ℓ_s	Degree of meandering	Modifying value
1.0 to 1.2	Minor	0.000
1.2 to 1.5	Appreciable	0.15 n_s
1.5 and greater	Severe	0.30 n_s

Where lengths for computing the approximate value of ℓ_m/ℓ_s are not readily obtainable the degree of meandering can usually be judged reasonably well.

7th step. Computation of n for the reach. The value of n for the reach is obtained by adding the values determined in Steps 1 through 6. An illustration of the estimation of n is given in Example 1.

Dealing with cases where both channel and flood plain flow occurs.

Work with natural streams and floodways often requires consideration of a wide range of discharges. At the higher stages both channel and overbank or flood plain flow are involved. Usually the conditions are such that the channel and flood plain will have different degrees of retardance and, therefore, different n values. In such cases the hydraulic computations will be improved by dividing the cross sections into parts or subdivisions having different n values.

The reason for and effect of subdividing cross sections is to permit the composite n for the reach to vary with stage above the bankfull stage. This effect is illustrated by Example 2. The usual practice is to divide the cross section into two parts; one subdivision being the channel portion and the other the flood plain. More than two subdivisions may be made if conditions indicate wide variations of n. However, in view of the practical aspects of the problem, more than three subdivisions would not normally be justified.

In estimating n for the channel subdivision, all of the factors discussed above and all of the procedural steps would be considered. Although conditions might indicate some variation of n with stage in the channel, it is recommended that an average value of n be selected for use in the hydraulic computations for all stages.

In the case of flood plain subdivisions, the estimate of n would consider all factors except meandering. That is, the estimate would employ all of the procedural steps except Step 6. Flood plain n values will normally be somewhat greater than the channel values. Agricultural flood plain conditions are not likely to indicate an n less than 0.05 to 0.06. Many cases will justify values in the 0.07 to 0.09 range and cases calling for values as high as 0.15 to 0.20 may be encountered. These higher values apply primarily because of the relatively shallow depths of flow. The two

factors requiring most careful consideration are obstructions and vegetation. Many agricultural flood plains have fairly dense networks of fences to be evaluated as obstructions in Step 4. Vegetation probably would be judged on the basis of growing season conditions.

Field and office work.

It is suggested that field parties record adequate notes on field conditions pertinent to the five factors affecting n at the time cross section surveys are being made. The actual estimates of n may then be made in the office. This will require training of both field and office personnel. The conditions to be covered by field notes and considered in the estimate of n apply to a reach of channel and flood plain. It is not adequate to consider only those conditions in the immediate vicinity of a cross section. Note the sketch on Figure B.1. With cross sections located as shown, field notes should describe the channel and flood plain conditions through the reach indicated as a basis for estimating the n values (assuming subdivided sections) to be incorporated in the hydraulic computations at Section 2.

Figure B.2 shows a sample set of notes that illustrate the type of field information to be recorded as a basis for estimating n. Field men should be trained to recognize and record in brief statements those conditions that are necessary for realistic evaluation of the five factors discussed under procedural Steps 1 to 6.

Example 1. Estimation of n for a reach.

This example is based on a case where n has been determined so that comparison between the estimated and actual n can be shown.

Channel: Camp Creek dredged channel near Seymour, Illinois; see USDA Technical Bulletin No. 129, Plate 29-C for photograph and Table 9, page 86, for data.

Description: Course straight; 661 feet long. Cross section, very little variation in shape; variation in size moderate, but changes not abrupt. Side slopes fairly regular, bottom uneven and irregular. Soil, lower part yellowish gray clay; upper part, light gray silty clay loam. Condition, side slopes covered with heavy growth of poplar trees 2 to 3 inches in diameter, large willows and climbing vines; thick growth of water weed on bottom; summer condition with vegetation in full foliage.

Average cross section approximates a trapezoid with side slopes about 1.5 to 1 and bottom width about 10 feet. At bankfull stage, average depth and surface width are about 8.5 and 40 feet respectively.

Step	Remarks	Modifying values
1	Soil materials indicate minimum basic n.	0.02
2	Description indicates moderate irregularity.	0.01
3.	Changes in size and shape judged insignificant.	0.00
4.	No obstructions indicated.	0.00
5.	Description indicates very high effect of vegetation.	0.08
6.	Reach described as straight.	0.00
	Total estimated n	0.11

USDA Technical Bulletin No. 129, Table 9, page 96, gives the following determined values for n for this channel: for average depth of 4.6 feet n = 0.095; for average depth of 7.3 feet n = 0.104.

Example 2. Effect of subdividing cross sections.

The sole purpose of this example is to illustrate the effect of subdividing sections on the value of n for the complete section. It is not an illustration of hydraulic computations for determining water surface profiles or stage-discharge relationships.

This illustration is based on the following:

1. An actual stream cross section for which curves showing depth versus area and depth versus hydraulic radius for the channel and flood plain subdivisions and for the complete section are plotted on Figure B.3. Values of n are: for the channel subdivision 0.04; for the flood plain subdivision 0.08.

2. The conditions of uniform, steady flow are assumed.

   Manning's formula is handled in accordance with Leach's method. See Handbook of Hydraulics, McGraw-Hill Book Company, 3rd edition, page 534; 4th edition, page 8-65.

Notation:

Q = discharge - cfs

a = cross section area - $ft.^2$

r = hydraulic radius, ft.

p = wetted perimeter, ft.

s_o = channel slope, ft. per ft.

n = roughness coefficient

$$Q = \frac{1.486}{n} \; a \; r^{2/3} \; s_o^{1/2} \qquad (B.1)$$

Let $K_d = \frac{1.486}{n} \; a \; r^{2/3}$, then

$$Q = K_d \; s_o^{1/2} \qquad (B.2)$$

Assume the conditions are such that it is desirable to recognize more than one subdivision, each having a different n. Let subscripts 1, 2, and 3 refer to the section subdivisions and subscript t to the total section.

From equation B.2

$$Q = \left(K_{d1} + K_{d2} + K_{d3} - - - - + K_{dn}\right) s_o^{1/2} = \Sigma K_d \; s_o^{1/2} \qquad (B.3)$$

Also: $\frac{Q}{s_o^{1/2}} = \Sigma K_d = \frac{1.486}{n_t} \; a_t \; r_t^{2/3}$; therefore

$$n_t = \frac{1.486 \; a_t \; r_t^{2/3}}{\Sigma K_d} \qquad (B.4)$$

Table B.2 shows the computations for Example 2 and Figure B.3 shows a plot of roughness coefficient for the complete section versus depth.

In natural streams n normally shows a minor decrease as stage increases up to, or somewhat above, the bankfull stage, then appreciably increases as overbank stage increases. When n is significantly different for different parts of the cross section, subdivision of the cross section, as a basis for making the computations, automatically causes n_t to vary with stage above the bankfull stage. This is true although n_t is not computed in methods for determining water surface profiles. Note on Figure B.3 that n_t, which has been computed in Example 2 for illustrative purposes, shows considerable increase with stage above the 10-foot depth and that this increase is automatically recognized by subdivision of the cross section.

The plot of hydraulic radius on Figure B.3 illustrates a typical characteristic of natural streams. Note that the hydraulic radius for the complete section increases up to bankfull depth, then decreases through a limited range of depth, and again increases as depth of overbank flow increases.

This example also illustrates that recognition of high retardance for flood plain subdivisions by the use of relatively high n values does not cause n for the complete section, n_t, to be unreasonably high. In this case, the channel and flood plain are assigned n values of 0.04 and 0.08. The value of n_t ranges up to 0.072 as shown by Table B.2 and Figure B.3.

Table B.1 Examples of effect of vegetation on n. (Sheet 1 of 3)

Example No.	Names and Descriptions of Channels. Names, Plates and Tables Refer to USDA Technical Bulletin No. 129, November 1929	Range in mean velocity	Range in hydraulic radius	Average value n	Modifying value
1.	Fountain Head dredged channel near Champaign, Illinois; Plate 31-B and C, Table 9. Average cross section of channel resembles a parabola. At bankfull stage depth about 8 ft., top width about 30 feet.	2.09 to 2.59	1.73 to 2.42		
	a. Dormant season. Dry weeds on side slopes, no vegetation on bottom. Retarding effect of vegetation negligible.			0.031	
	b. Growing season, otherwise vegetation same as above. Heavy growth of weeds and grass in full foliage on side slopes.			0.037	0.006
2.	Cummins Lake dredged channel near Gould, Arkansas; Plate 18-B and C, Table 7. Average cross section of channel resembles a parabola. At bankfull stage depth about 13 ft., top width about 75 feet.	0.53 to 1.82	2.41 to 6.23		
	a. Side slopes moderately irregular from erosion and sloughing; estimated n for channel without vegetation 0.035.				
	b. Dormant season. Willows about one year old and 6 to 10 feet high continuous along side slopes except for about the upper third of sides. No growth in a strip about 20 feet wide along bottom. No foliage.			0.056	0.021
	c. Growing season, otherwise vegetation same as above. Willows and some weeds in full foliage. No vegetation along bottom.			0.072	0.037

Table B.1 Examples of effect of vegetation on n. (Sheet 2 of 3)

Example No.	Names and Descriptions of Channels. Names, Plates and Tables Refer to USDA Technical Bulletin No. 129, November 1929	Range in mean velocity	Range in hydraulic radius	Average value n	Modifying value
3.	Lateral Ditch No. 15 near Bement, Illinois; Plate 30-A, B and C, Table 9. Average cross section is practically a trapezoid with wide slopes about 1.1 and bottom width and depth each about 10 feet.	0.28 to 1.71	1.16 to 5.61		
	a. Dormant season. Dead weeds practically flat on side slopes; no dead growth in bottom.			0.033	
	b. Dormant season. Bushy willows about 1 year old and dead weeds on side slopes. No vegetation along bottom of channel. No foliage.			0.055	0.022
	c. Growing season. Vegetation same as b, above, except willows and weeds in full foliage. No vegetation on bottom.			0.072	0.039
	d. Growing season. Bushy willows and weeds in full foliage along side slopes. Dense growth of cattails along bottom.			0.119	0.086
	Ditch No. 18 of Cypress Creek drainage district near Arkansas City, Arkansas; Plate 17-B and C, Table 7. Average cross section is approximately triangular; at bankfull stage depth about 13 ft., top width about 70 feet.	0.47 to 1.08	1.91 to 6.23		
	a. Dredged channel about 8 years old. Side slopes moderately irregular. Estimated n for the channel without vegetation 0.035.				
	b. Dormant season. Practically the entire reach covered with trees, mostly willows and cottonwoods. Some dry weeds and brush. No foliage.			0.061	0.026

Table B.1 Examples of effect of vegetation on n. (Sheet 3 of 3)

Example No.	Names and Descriptions of Channels. Names, Plates and Tables Refer to USDA Technical Bulletin No. 129, November 1929.	Range in mean velocity	Range in hydraulic radius	Average value n	Modifying value
	c. Growing season. Vegetation described under b; in full foliage.			0.103	0.068
5.	Lake Fork special dredged channel near Bement, Illinois; Plate 25-A, B, and C, Table 9. Average cross section is approximately parabolic; at bankfull stage depth about 13 ft., top width about 65 to 70 feet.	0.79 to 1.65	3.55 to 7.33		
	a. Dormant season. Channel cleared; practically no vegetation of any type in channel.			0.031	
	b. Dormant season. Densely growing, bushy willows continuous along side slopes; some poplar saplings scattered among willows. No growth in a strip 20 to 30 feet wide along bottom. No foliage.			0.071	0.040
	c. Growing season. Vegetation described under b; in full foliage.			0.092	0.061
6.	Ditch No. 1 of Little River drainage district near Chafee, Missouri; Plate 21-B and C, Table 8. Average cross section trapezoidal, side slopes about 1.1, bottom width about 10 ft., depth about 8 feet.	0.68 to 1.51	2.00 to 4.26		
	a. Channel newly cleared, practically no vegetation			0.031	
	b. Dormant season. Dense, bushy willows continuous along side slopes; no foliage. No vegetation along bottom of channel.			0.071	0.040

Table B.2 Computations for Example 2.

Depth	a_1	r_1	$r_1^{2/3}$	K_{d1}	a_2	r_2	$r_2^{2/3}$	K_{d2}	ΣK_d	a_t	r_t	$r_t^{2/3}$	K	n_t
0.0	0	0.00	0.000	0	0	0.00	0.000	0	0	0	0.00	0.000	0	0.000
4.7	90	3.33	2.230	7450	0	0.00	0.000	0	7450	90	3.33	2.230	298	0.040
7.8	180	5.29	3.036	20250	0	0.00	0.000	0	20250	180	5.29	3.036	810	0.040
9.7	240	7.06	3.680	31900	750	1.06	1.040	14500	46400	990	1.31	1.197	1760	0.038
11.7	300	8.82	4.269	47500	2238	2.88	2.024	84000	131500	2538	3.14	2.144	8090	0.062
13.7	360	10.59	4.822	64400	3853	4.58	2.758	197000	261400	4213	4.82	2.854	17850	0.069
16.7	450	13.22	5.591	93400	6488	7.08	3.687	444000	537400	6938	7.30	3.763	38750	0.072

$$K_{d1} = \frac{1.486}{0.040} a_1 r_1^{2/3} = 37.15\, a_1 r_1^{2/3}$$

$$K_{d2} = \frac{1.486}{0.080} a_2 r_2^{2/3} = 18.58\, a_2 r_2^{2/3}$$

$$K = 1.486\, a_t r_t^{2/3}$$

$$n_t = \frac{K}{K_d}$$

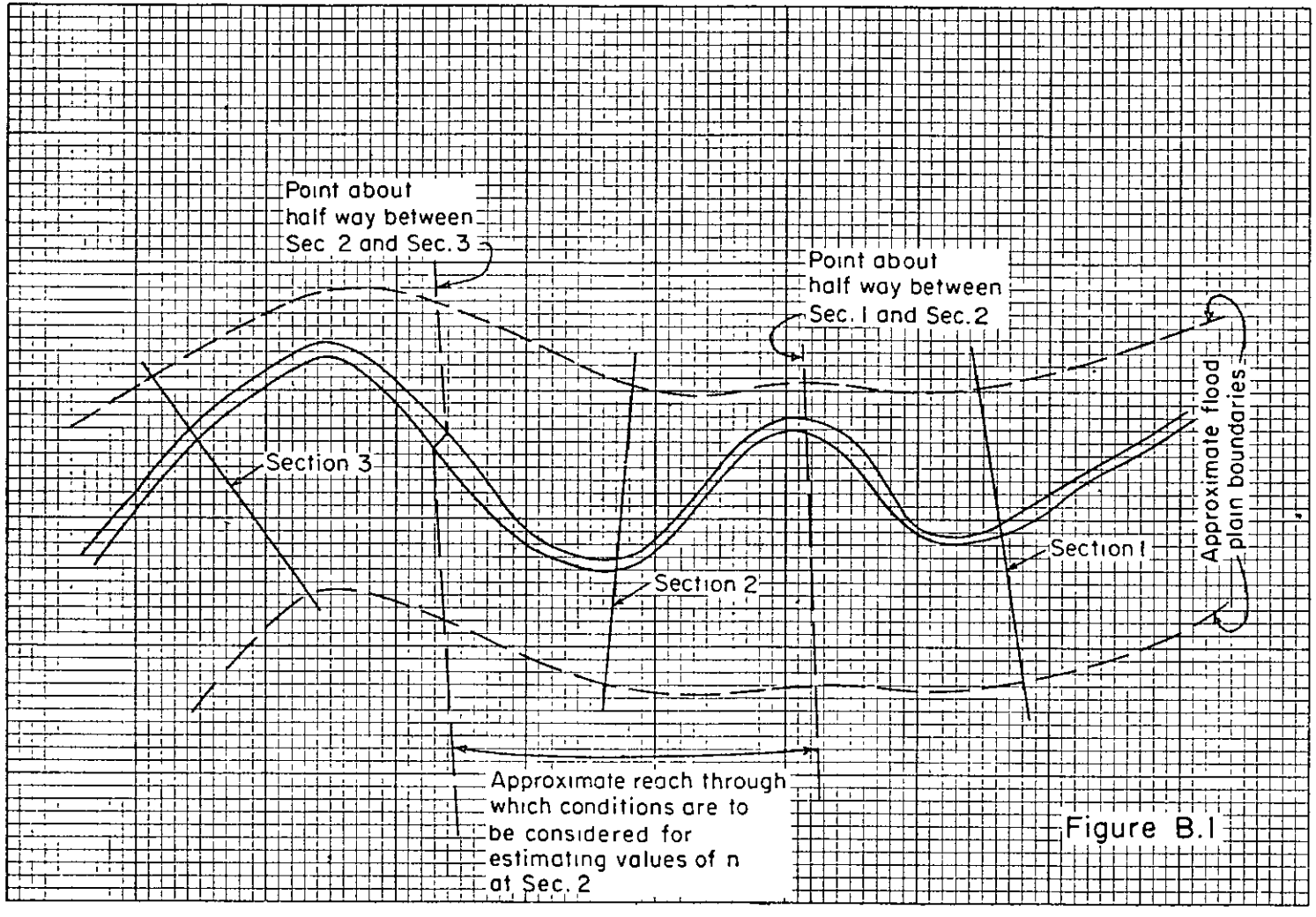
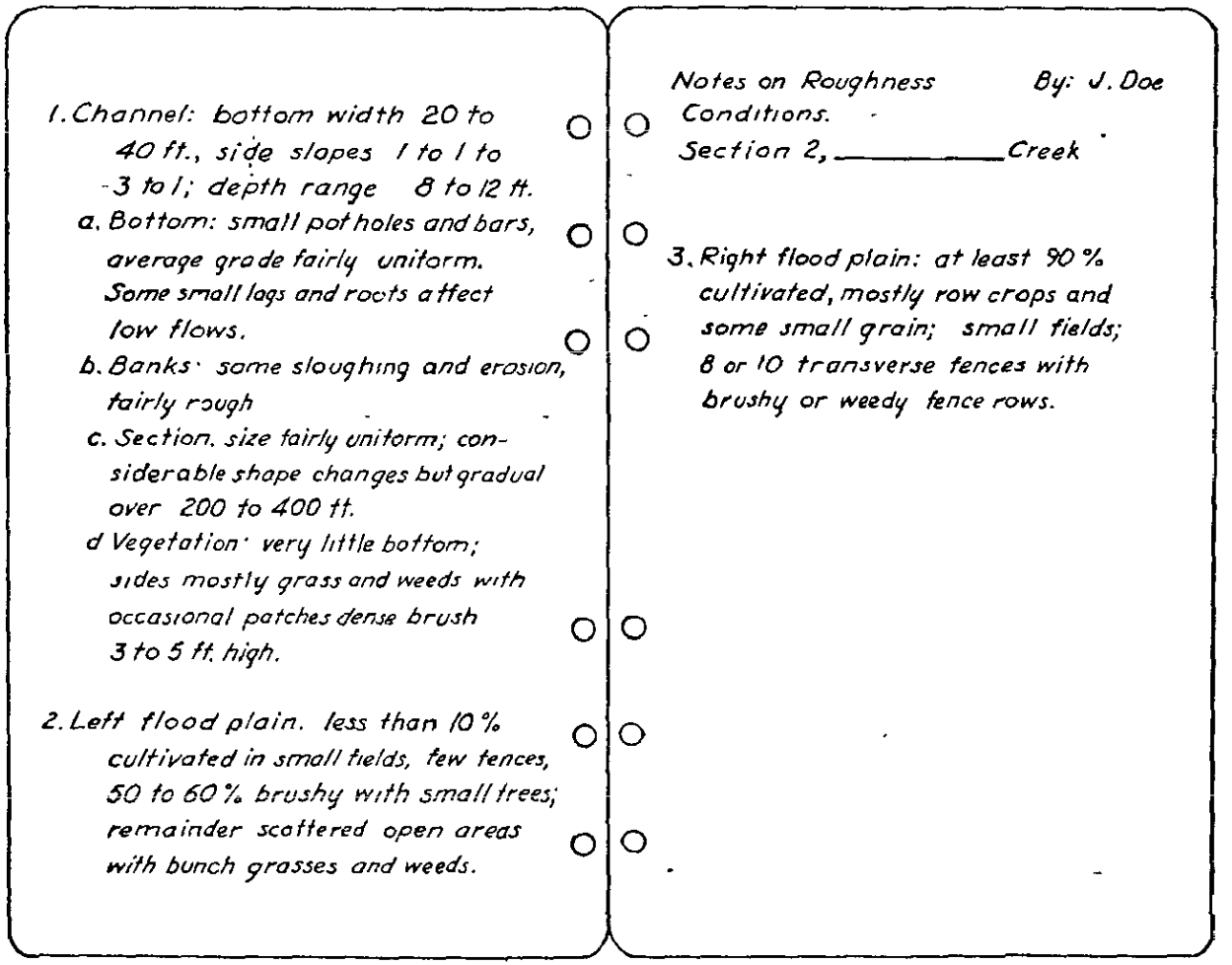

Point about
half way between
Sec. 2 and Sec. 3
Point about
half way between
Sec. 1 and Sec. 2
Section 3
Section 2
Section 1
Approximate flood
plain boundaries
Approximate reach through
which conditions are to
be considered for
estimating values of n
at Sec. 2

Figure B.1

Figure B.2 Sample notes on roughness conditions.



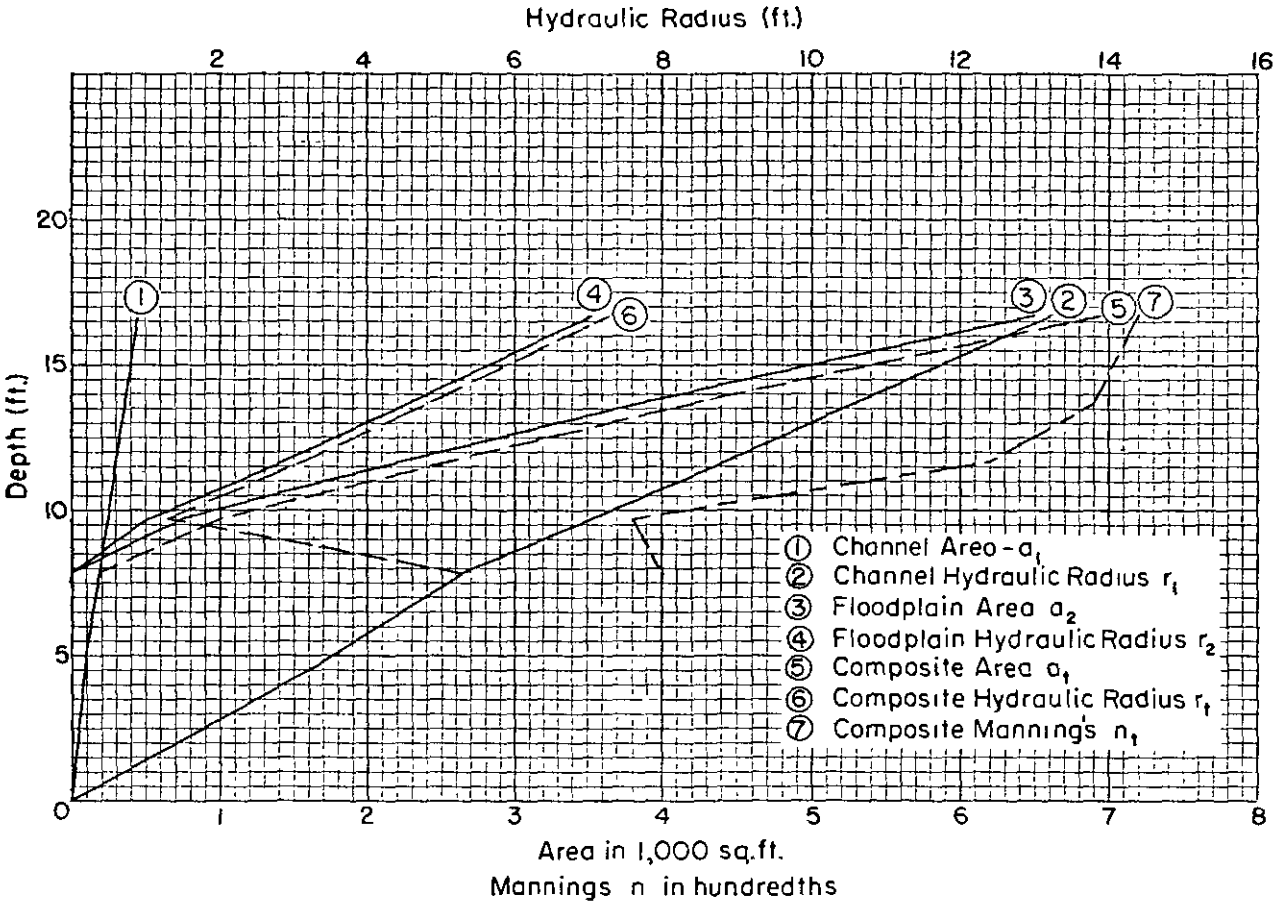


Figure B.3

USDA SCS HYATTSVILLE MD 1967

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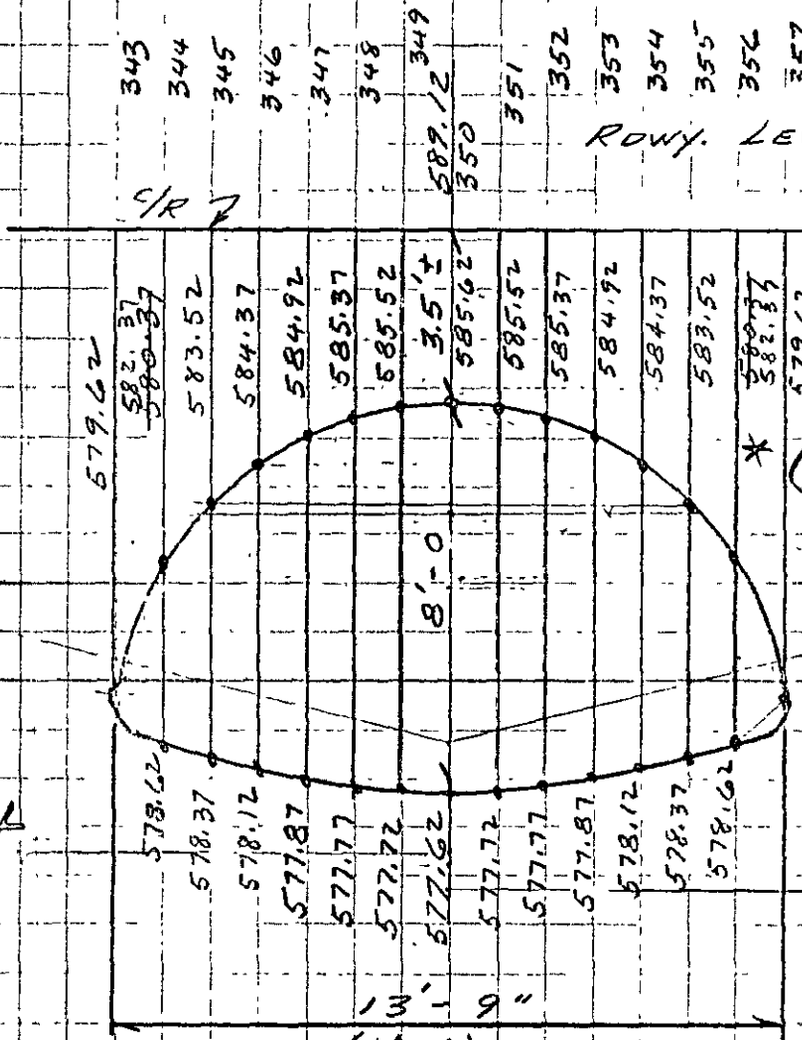
SHEET 1 OF
DATE 3-31 19 76
BY J.F.C./A.B.D.
CK
JOB NO.
ACC NO.

SUBJECT F. I. S.
IRA TWP.
DETAIL MARSAC CREEK
Trailer Park culvert

~200' UPSTREAM FROM SECTION 1 (3+12)
(172 FT)

1" = 4'-0"



MULTI-PL ARCH
* (13'-9" x 8'-0")

1976 silt
~576.4

1976 CMP invert
~575.2

assumed scale
1" = 4'

15 pts BOTTOM & TOP CMP / 1/2 LOW STEEL

* cross-sections in file no. 2443-3.1, Windjammer Sub, show 14' x 8.0' CMP @ this location see Lehner Assoc. sections

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SHEET ____ OF ____
DATE Nov 3 19 76
BY R.F.B
CK.
JOB NO.
ACC. NO.

SUBJECT equivalent area approximation

DETAIL Marsac (13'-9" x 8'-0 CMP) Trailer Park Culvert

Total Loss Coefficient "K"

LOW

Intake 0.1
Friction Kf
Exit 1.0
"K" = 1.1 + Kf ?

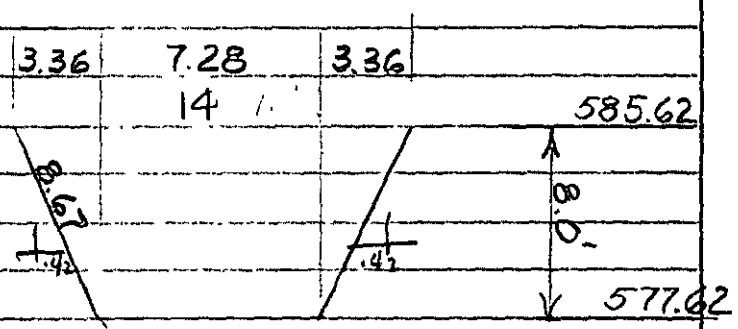
(previous page 13'-9" x 8'-0" which is dimension correct?)

A= 85 sf ? (12'-10" x 8'-4"); A = 85 sf; R = 2.44
R= 2.52 (13'-5" x 8'-5"); 88 sf; 2.48
$R^{4/3}$ = 3.43 (13'-11" x 8'-7"); 91 sf; 2.52

n = 0.029

$$Kf = \frac{29.1 (n^2)(L)}{R^{4/3}} = \frac{29.1 (0.029)^2 (32)}{3.43} = 0.23$$

"K" = 1.33



1 XK = 0
2 XKOR = 1.33
3 CofQ = 2.5
4 RDLEN = 0
5 BWC = 7.28
6 BWP = 0 85.12
7 BAREA = 85
8 SS = 0.42 58.24 26.88
9 ELCNU = 0
10 ELCND 0

7.28

A = 7.28(8) + 3.36(8) = 85.12 sf

WP = 2(8.67) + 7.28 + 14 = 38.62 ft

R = A/WP = 85.12/38.62 = 2.204

2.2 < 2.52

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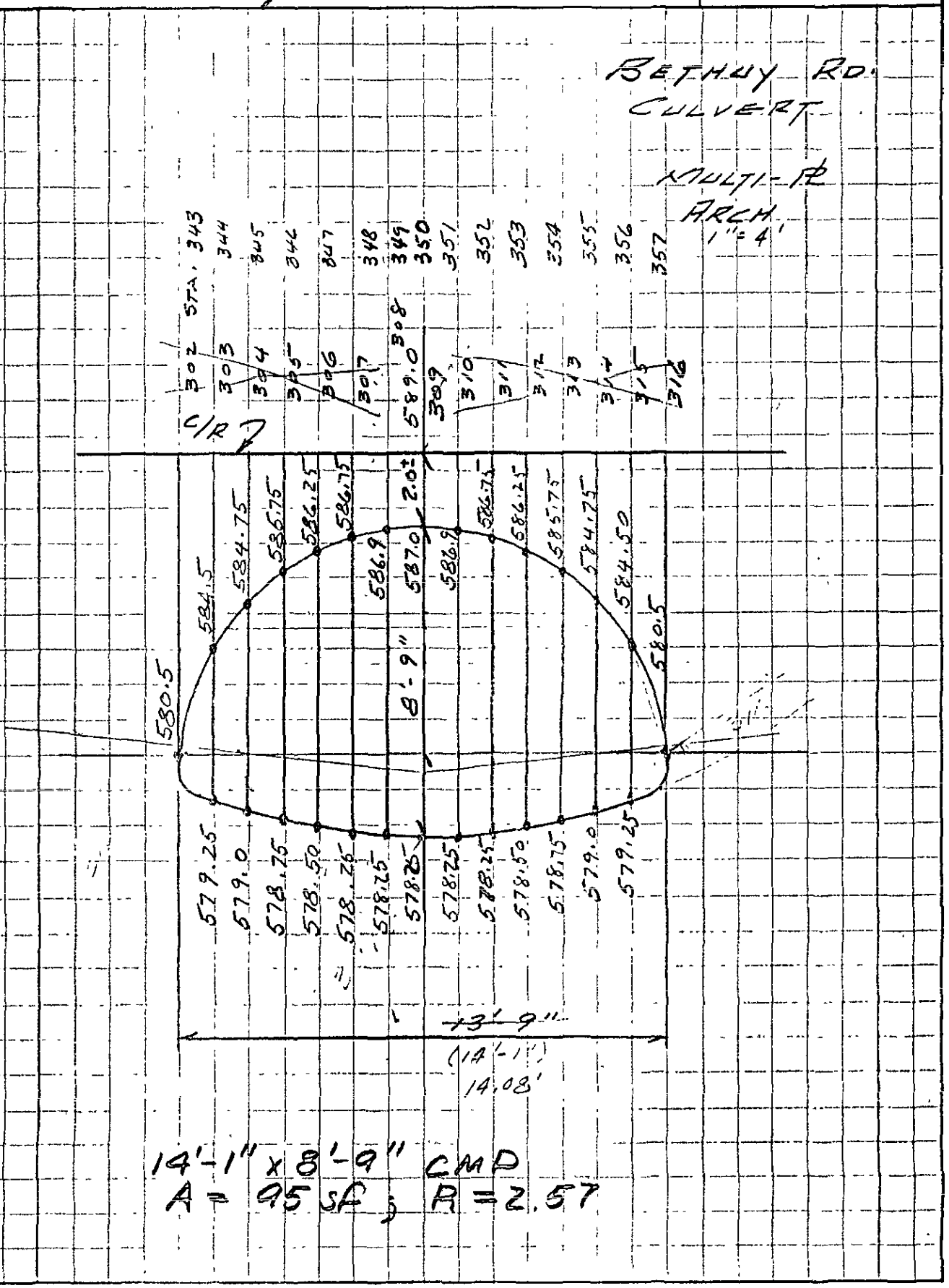
SHEET ____ OF ____
DATE ____ 19 ____
BY ____
CK. ____
JOB NO. ____
ACC NO. ____

SUBJECT F. I. S.
IRA TWP.
DETAIL MARSAC CREEK
Bethuy Rd



14'-1" x 8'-9" CMP
A = 95 SF ; R = 2.57

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ACC. NO. ____

SUBJECT IRA

DETAIL MARSAC CREEK
Bethuy Rd

Total loss coefficient "K"

low

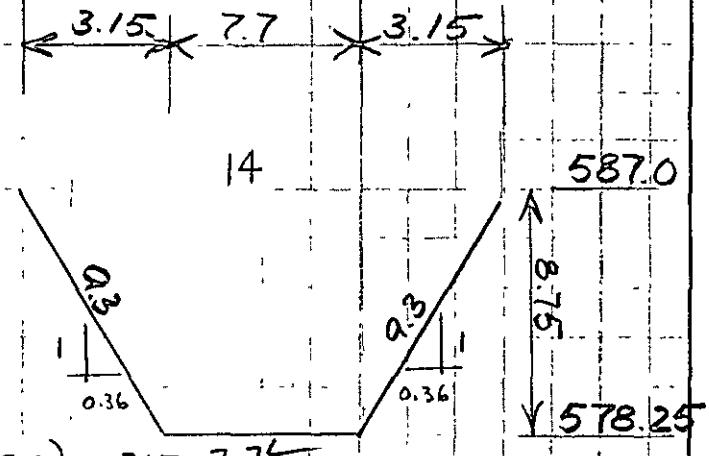
Intake 0.1
Friction kf
Exit 1.0
"K" = 1.1 + kf

DNR spot check on equivalent area and hydraulic radius

A = 95 sf
R = 2.57
$R^{4/3}$ = 3.52
n = 0.029 *

$$Kf = \frac{29.1\,(n^2)\,(L)}{3.52} = \frac{29.1\,(0.029)^2\,(32)}{3.52} = 0.22$$

"K" = 1.32



low

1 XK = 0
2 XKOR = 1.32
3 COFQ = 2.5
4 RDLEN = 0
5 BWC = 7.7
6 BWP = 0
7 BAREA = 95
8 SS = 0.36
9 ELCHU = 0
10 ELCHD = 0

94.9375

(8.75 x .36) = 3.15 7.7

$$A = 8.75(7.7) + 8.75(3.15) = 94.9375$$ (67.375 + 27.5625)

94.9375 ~ 95

$$WP = 2(9.3) + 7.7 + 14 = 40.3$$

$$R = \frac{A}{WP} = \frac{94.9375}{40.3} = 2.355$$

$$2.35 < 2.57 \;;\; \frac{2.57}{2.35} = 1.093$$

Considerable reasonable

* see p. 169 & Table 4-11, p 158, Handbook of Steel Drainage & HIGHWAY Const. Products, American Iron & Steel Institute 1971

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SHEET 2 OF

DATE 4-1 19 76

BY JFC/ABD

CK.

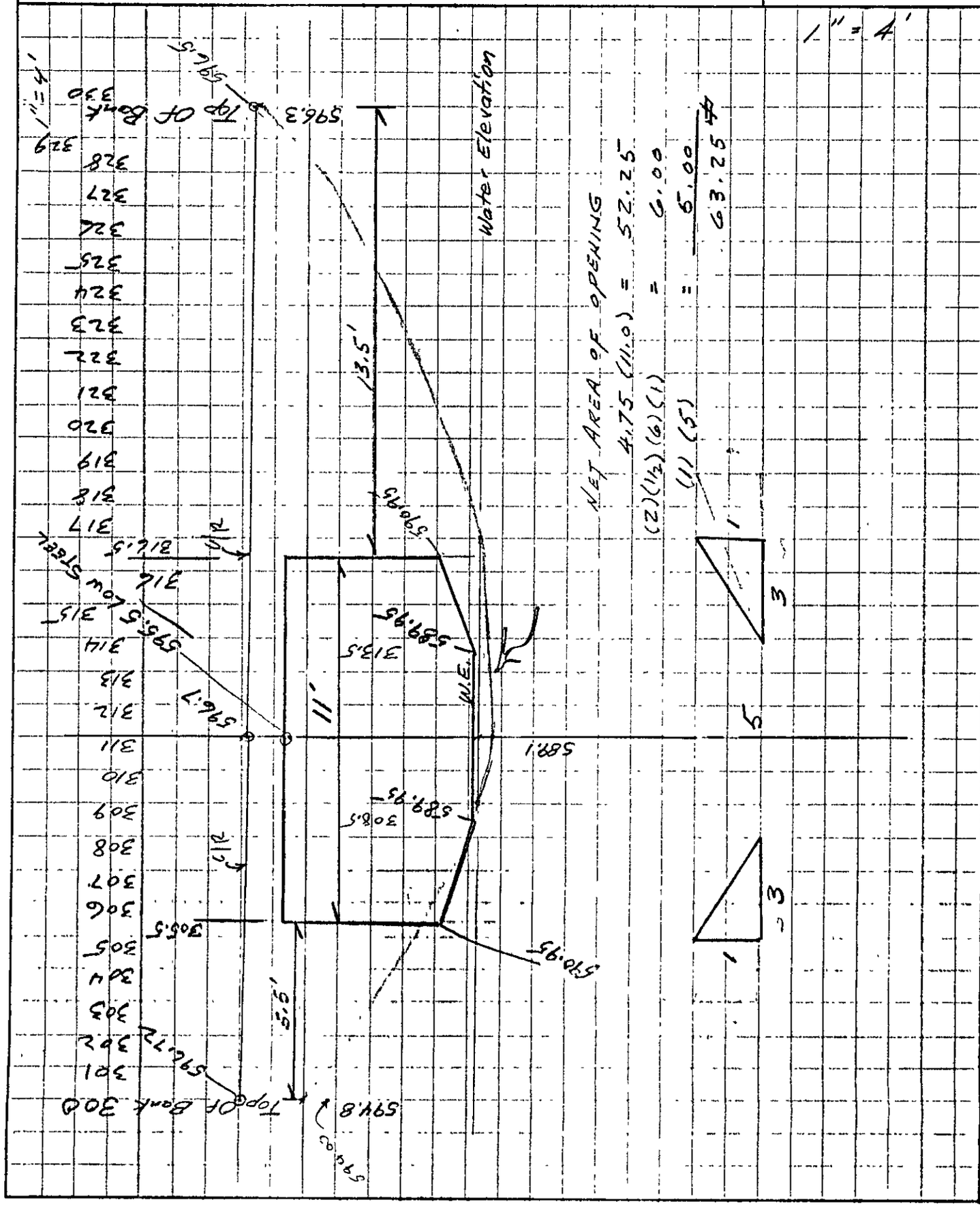
JOB NO.

ACC. NO.

SUBJECT F. I. S.

MARSAC CREEK

DETAIL ARNOLD RD



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SHEET 1 OF

DATE 4-1 19 76

BY JFC/ABD

CK.

JOB NO.

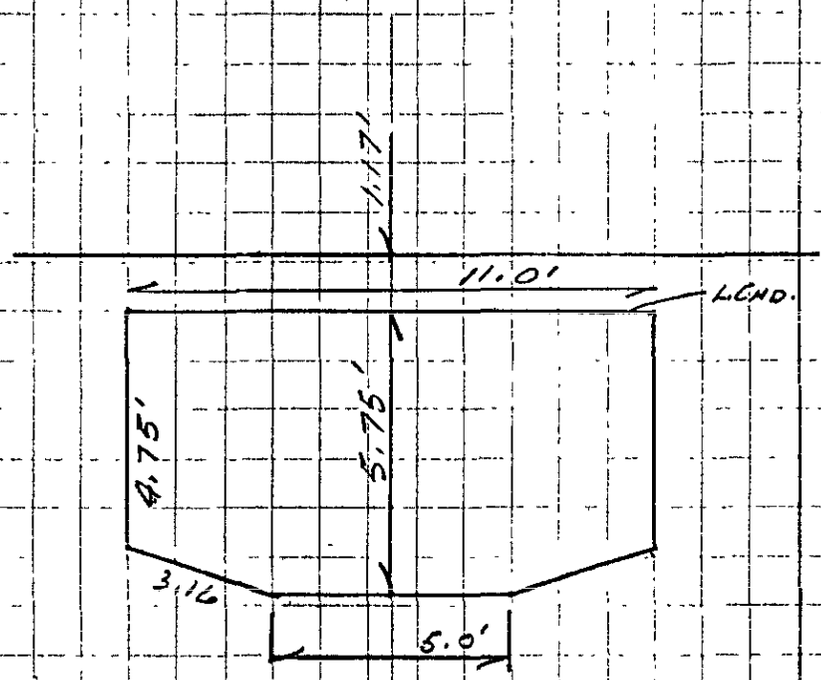
ACC. NO.

SUBJECT F. I. S.

MARSAC CREEK

DETAIL ARNOLD RD.

1" = 4'



ARNOLD RD.
BRIDGE
SECTION B

XK = 0

TOTAL LOSS COEF = "K"

INTAKE = (0.1) LOW

FRICT = Kf

EXIT = $\frac{1.0}{1.1 + Kf}$

$P_w = 2(4.75) + 11.0$

$2(10)^{1/2} + 5.0$

$P_w = 31.82$

$A = 63.25^{\#}$

$R = \frac{63.25}{31.82} = 1.99$

$R^{4/3} = 2.50$

$n = 0.015$ CONC.

$K_f = 29.1 (0.015)^2 \cdot 30 / 2.50$

$K_f = 0.079$

TOTAL = 1.10 + 0.08 = 1.18

XK = 0

XKOR = 1.18

CQFQ = 2.50

RDLEN = 0

BWC = 11.0

BWP = 0

BAREA = 63.25

SS = 0

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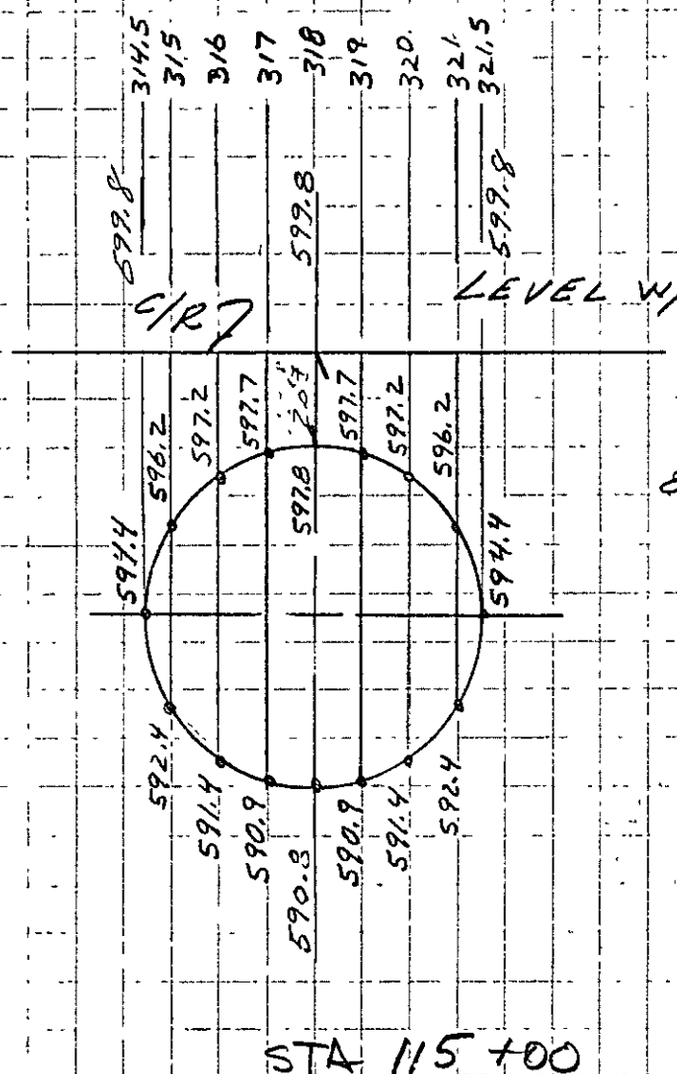
SHEET ____ OF ____
DATE ____ 19 ____
BY ____
CK. ____
JOB NO ____
ACC NO. ____

SUBJECT F. I. S.
IRA TWP.
DETAIL MARSAC CREEK

500'± N of SEC. 10

1" = 4'-0"

STA. 115+00



84" ϕ C.M.P.

STA 115+00

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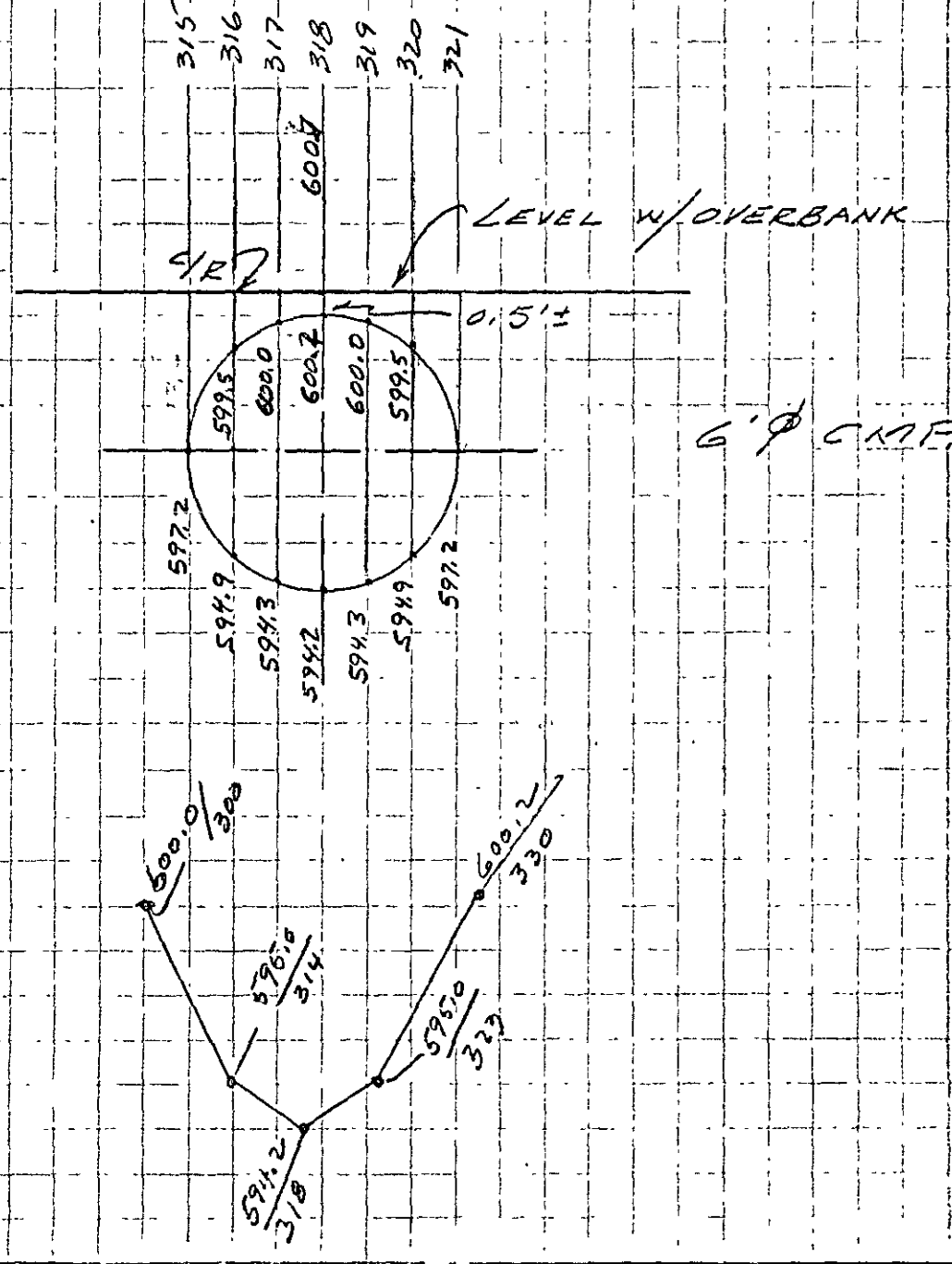
SHEET ____ OF ____
DATE ____ 19 ____
BY ____
CK ____
JOB NO ____
ACC. NO ____

SUBJECT F. I. S.
I RA TWP.
DETAIL MARSAC CREEK

1" = 4'-0"

STA 139+00

500'± N OF SEC. 11



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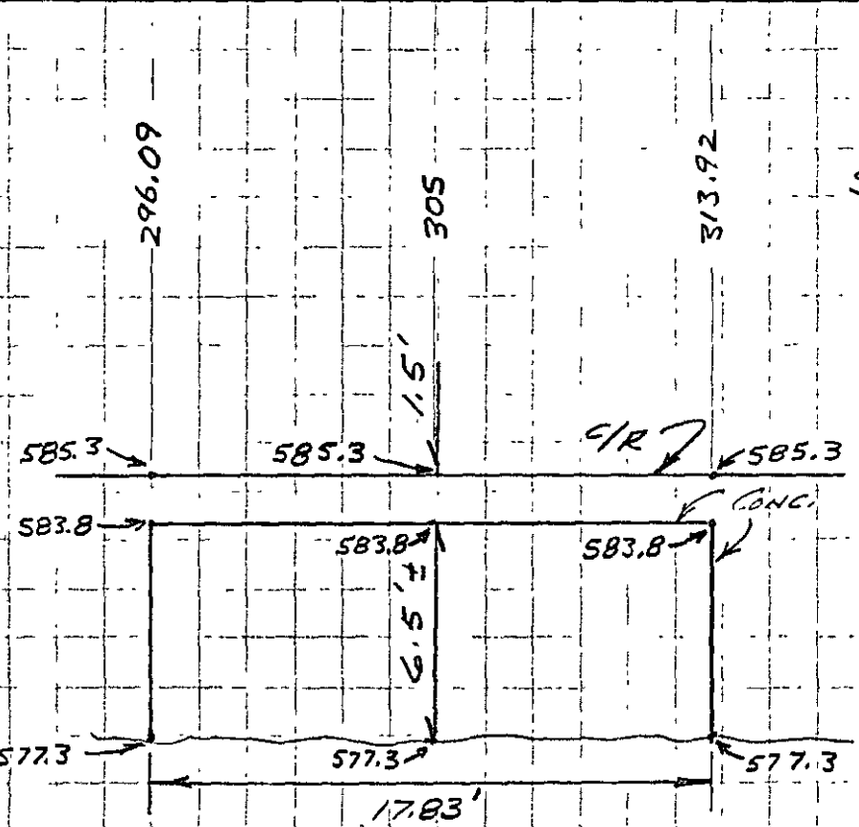
SHEET ____ OF ____
DATE ____ 19 ____
BY ____
CK ____
JOB NO ____
ACC NO ____

SUBJECT F.I.S.
IRA TWP.
DETAIL W. BRANCH MELDRUM
MELDRUM RD

1" = 6'-0"

SEC. 18



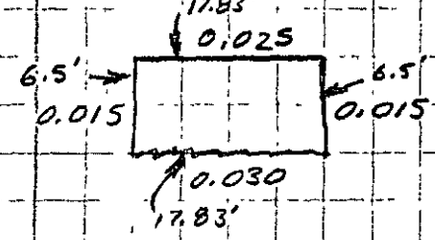
8"x4" ST. BEAMS W/ CMP. BETWEEN BEAMS

Total Loss Coefficient "k"

Intake	0.10	TOW
Friction	k_f	
Exit	1.0	

$1.1 + k_f = 1.1 + 0.16 = 1.26$

$k_f = 29.1\ n^2 L / R^{4/3} = (29.1)(.024)^2(30) / 2.38^{1.33} = 0.16$



$(17.83)(0.025) = 0.44575$
$(13)(0.015) = 0.195$
$(17.83)(0.030) = 0.5349$
$T_1 = 48.66$ $T = 1.17565$

$R = A/C$ $A = 115.9$ Sq. Ft.
$P_W = 48.66$
$\therefore R = 115.9 / 48.66 = 2.38$

Composite $n = T/T_1 = 1.17565/48.66$
$= 0.0241605$

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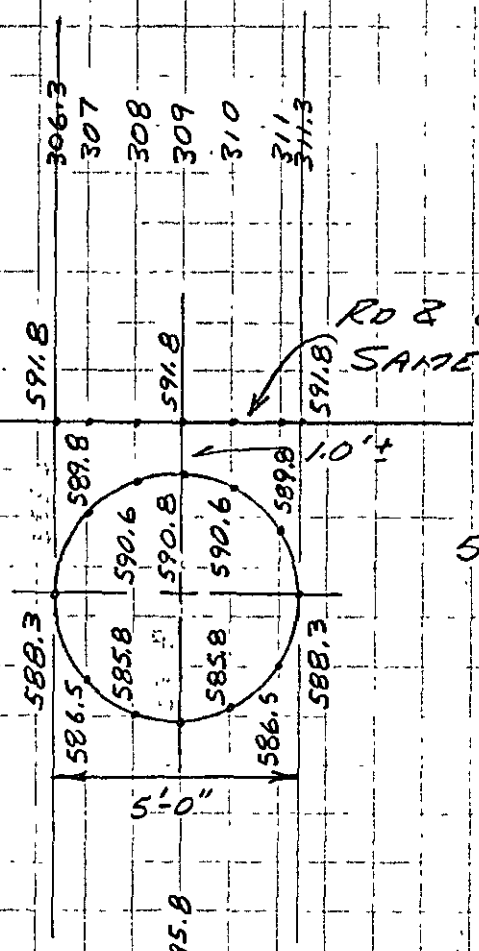
SHEET ____ OF ____
DATE ____ 19 ____
BY ____
CK ____
JOB NO ____
ACC NO ____

SUBJECT F. I. S.
IRA TWP.
DETAIL W. BRANCH MELDRUM

SEC. 15

1" = 4'-0"



5'Ø METAL - SMOOTH

0.024

STA 40+00

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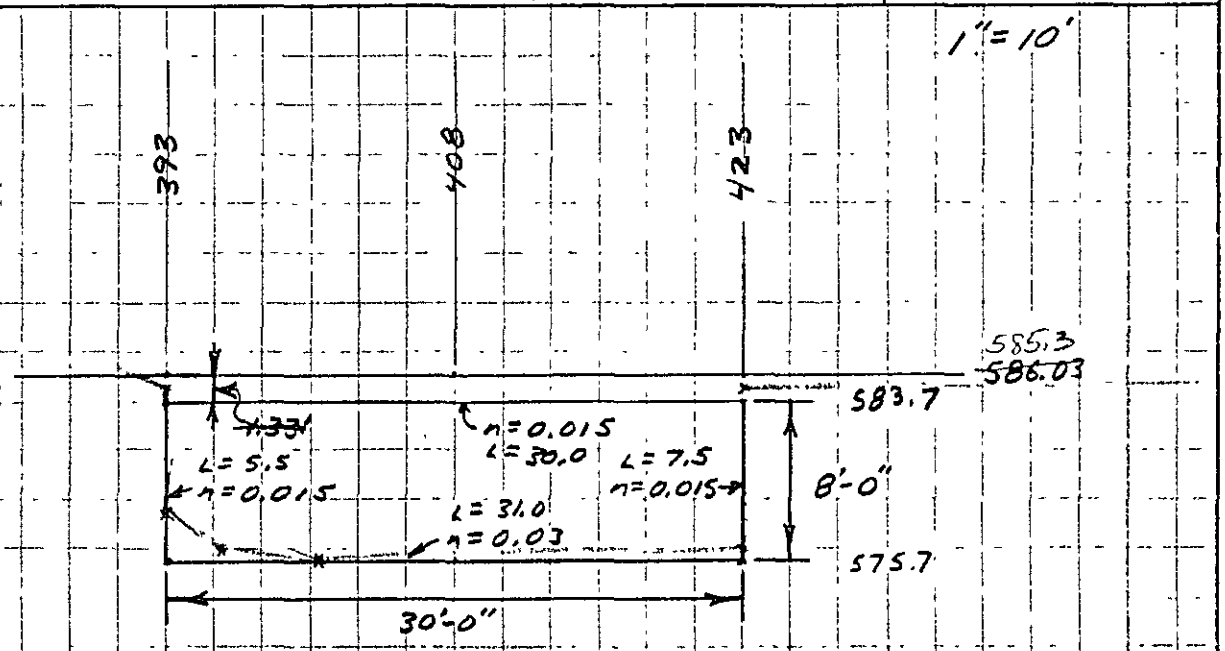
SHEET ____ OF ____
DATE ____ 19 ____
BY ____
CK. ____
JOB NO. ____
ACC. NO. ____

SUBJECT Short Cut Rd

DETAIL Meldrum (Main)



Total Loss Coefficient "K"

Intake 0.10 low
Friction K_f
Exit 1.0

$1.1 + K_f = 1.1 + 0.09 = 1.19$

$K_f = 29.1\, n^2 L / R^{4/3} = (29.1)(0.0213)^2(30) / 3^{1.33} = 0.0918577$

$(31)(0.03) = 0.93$
$(43)(0.015) = 0.645$
$T_1 = 74$ $\quad T = 1.575$

Composite $n = T/T_1 = 1.575/74 = 0.0212837$

$R = A/C$ $\quad A = (30)(8) - (.5)(27) - (.5)(2.5)(3.5) = 222.1$ Sq. Ft.
(27 = 12.5 + 4.4)

$P_W = 74$

$\therefore R = 222.1/74 = 3.0013513$

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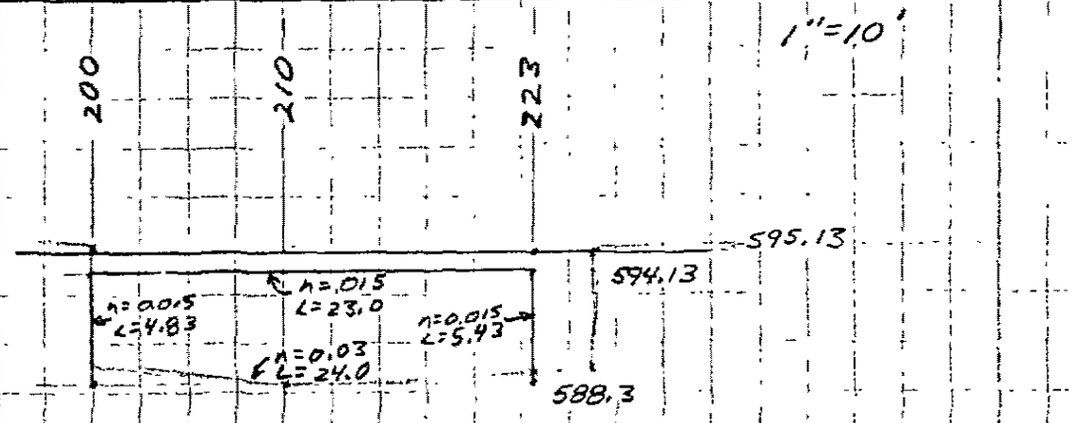
SHEET ____ OF ____
DATE ____ 19 ____
BY ____
CK ____
JOB NO ____
ACC NO ____

SUBJECT ____

DETAIL ARNOLD Rd
Meldrum (Main)



Total Loss Coefficient "K"

Intake	0.10
Friction	K_f
Exit	1.0

$1.1 + K_f = 1.1 + 0.14 = 1.24$

$K_f = 29.1 n^2 L / R^{4/3} = (29.1)(0.0213)^2(30)/2.21^{1.33} = 0.1379254$

$(33.26)(0.015) = 0.4989$

$(24.0)(0.03) = 0.72$

$T_1 = 57.26$ $\quad T = 1.2189$

Composite $n = T/T_1 = 1.2189/57.26 = 0.0212871$

$R = A/P$ $\quad A = (23)(5.83) - (.5)(10)(1) - (.5)(13)(.4) = 126.49$

$P_w = 57.26$

$\therefore R = 126.49/57.26 = 2.2090464$

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SHEET ____ OF ____
DATE ____ 19 ____
BY ____
CK. ____
JOB NO. ____
ACC. NO. ____

SUBJECT F.I.S IRA.

DETAIL SWAN CREEK

M-29 BRIDGE

TOTAL LOSS COEFFICIENT, "K"

INTAKE	0.1 "low
FRICTION	K_f
EXIT	1.0

"K" = $1.1 + K_f$

SKEW FACTOR

$A = 475 sf (\cos 30°) = 411.36$ $R = \frac{475}{113.27} = 4.19$

$P_w = 2 + 50 + 8 + 10 + 23.5$

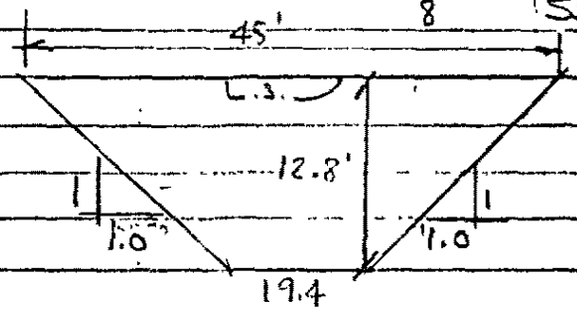
$10 + 10.77 = 113.27$ $R^{4/3} = 6.75$

$n_{avg} = \frac{60(0.015) + 53.27(0.03) + 1.5981}{113.27} = \frac{2.4981}{113.27} = 0.022 = n_{avg}$

$K_f = \frac{29.1(n^2)L}{R^{4/3}} = \frac{29.1(0.022^2)(50)}{6.75} = 0.10$

"K" = $1.1 + 0.10 = 1.20$

1	XK	= 0
2	XKOR	= 1.20
3	C of Q	= 2.50
4	ROLEN	= 0
5	BWC	= 19.4
6	BWP	= 0
7	BAREA	= 412
8	SS	= 1.00



A = 412 sf which is equivalent to BAREA T = 45'

Simulated trapezoid section

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DATE ____ 19 ____
BY ____
CK. ____
JOB NO. ____
ACC. NO. ____

SUBJECT F.I.S. IRA.

DETAIL SWAN CREEK

IRA ROAD BRIDGE

Total Loss Coefficient "K"

INTAKE 0.1

FRICTION K_f

EXIT 1.0

"K" = $1.1 + K_f$

A = 500 sf

P_w = 3 + 13.5 + 10 + 10 + 10.2 + 10.5 + 45 = 102.2

$R = \frac{500}{102.2} = 4.89$

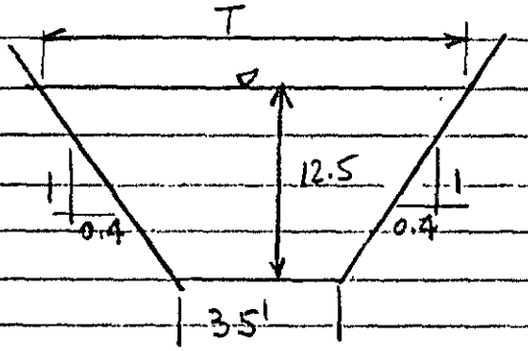
$R^{4/3} = 8.305$

n_{avg} (53) (0.015) = 0.795

$\frac{(49.2)}{102.2}$ (0.03) = 1.476

2.271

$\frac{2.271}{102.2} = 0.022 = n_{avg}$



A = 500 sf EQUIVALENT to BAREA

T = 45'

$K_f = \frac{(29.1)(n^2)(L)}{R^{4/3}} = \frac{(29.1)(0.022)^2(30)}{8.305} = 0.05$

K" = 1.15

1 XK = 0
2 XKOR = 1.15
3 CofQ = 2.5
4 ROLEN = 0
5 BWC = 35'
6 BWP = 0
7 BAREA = 500
8 SS = 0.4
9 ELCHU = 0
10 ELCHD = 0

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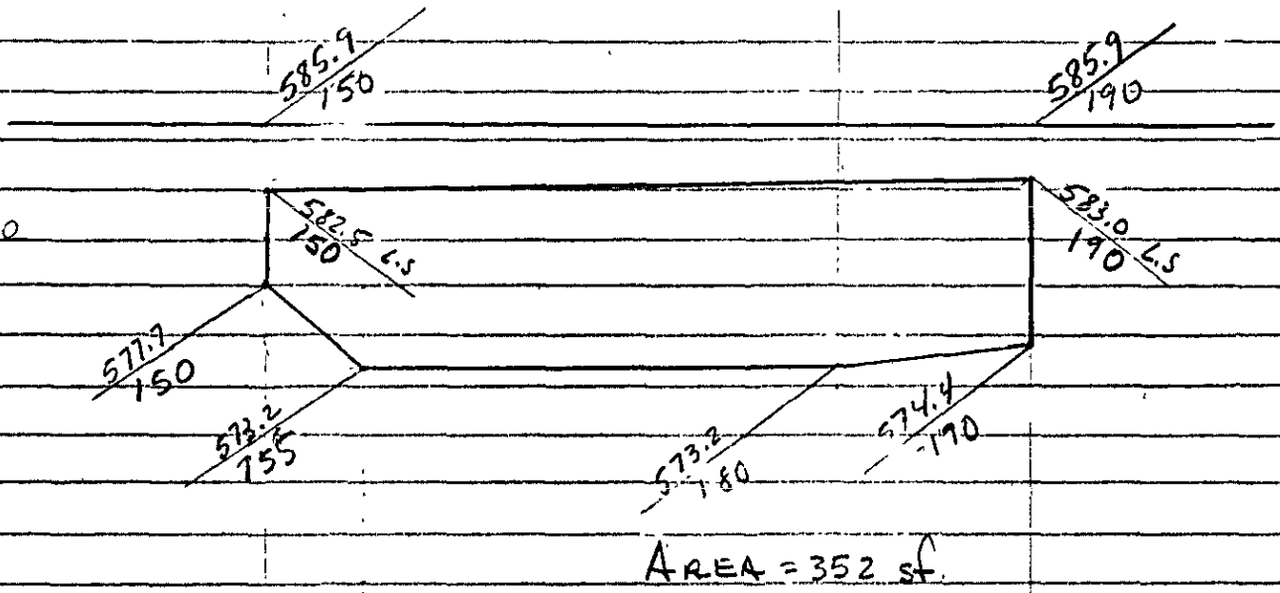
SHEET ____ OF ____
DATE 4-12-1976
BY R. Browski
CK. ____
JOB NO. ____
ACC. NO. ____

SUBJECT IRA F.I.S.
SWAN CREEK
DETAIL SHORT CUT RD

Scale 1"=10'



AREA = 352 sf.

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SHEET ____ OF ____
DATE 4-12 19 76
BY R. BROWSKI
CK. ____
JOB NO. ____
ACC. NO. ____

SUBJECT IRA F.I.S.

DETAIL SWAN CREEK

SHORT CUT RD

TOTAL LOSS COEFFICIENT "K"

INTAKE	0.1 (LOW)
FRICTION	Kf
EXIT	1.0

"K" = 1.10 + Kf

A = 352 sf

P_w = 40 + 5 + 6.5 + 25 + 10 + 8.5 = 95.0

$R = \frac{352}{95} = 3.70$

$R^{4/3} = 5.73$

Manning's

$\frac{(53.5)(0.015)}{95.0} = 0.8025$

$\frac{(41.5)(0.03)}{95.0} = 1.245$

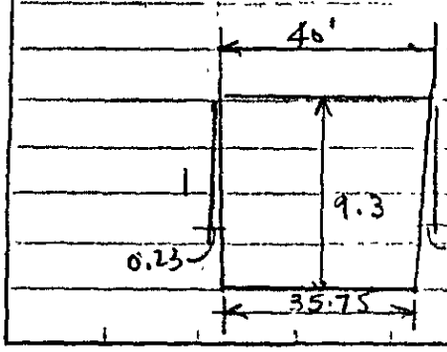
$0.8025 + 1.245 = 2.0475$

$\frac{2.0475}{95} = 0.022$

$Kf = \frac{29.1\ (n^2)\ (L)}{R^{4/3}} = \frac{(29.1)(0.022^2)(30)}{5.73} = 0.07$

"K" = 1.1 + 0.7 = 1.17

1 XK = 0
2 XKOR = 1.17
3 CofQ = 2.50
4 ROLEN = 0
5 BWC = 35.75
6 BWP = 0
7 BAREA = 352
8 SS = 0.23
9 ELCHU = 0
10 ELCHD = 0



A = 352 sf which is equivalent to BAREA
T = 40 ft

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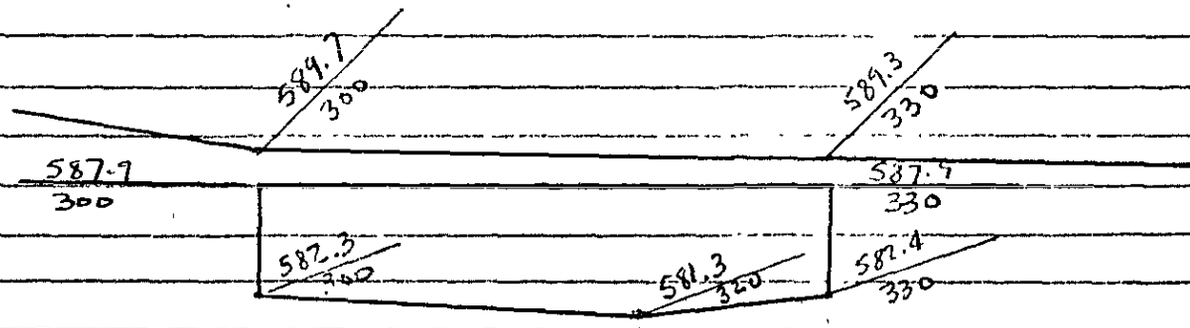
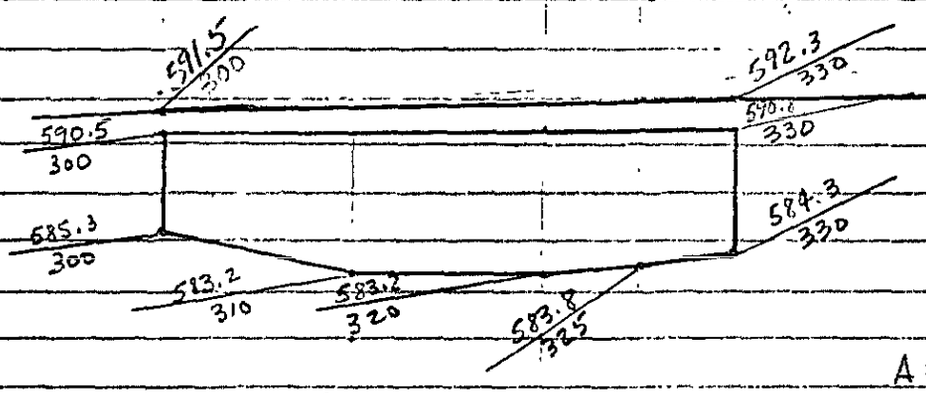
SHEET ____ OF ____
DATE 4-12 19 76
BY R. BROWSKI
CK.
JOB NO.
ACC. NO.

SUBJECT IRA F.I.S

DETAIL SWAN CREEK



ARNOLD RD BRIDGE A=183.0 sf



A= 200 sf

HESSEN RD BRIDGE

HUBBELL, ROTH & CLARK, INC. • CONSULTING ENGINEERS

SHEET ____ OF ____
DATE 4 - 12 19 76
BY R. BROWSKI
CK. ____
JOB NO. ____
ACC. NO. ____

SUBJECT IRA F.I.S

DETAIL SWAN CREEK

ARNOLD RD. BRIDGE

TOTAL LOSS COEFFICIENT "K"

INTAKE 0.1 LOW

FRICTION Kf

EXIT 1.0

"K" = 1.10 + Kf

A = 183.0 sf

P_W = 30 + 5.7 + 20 + 10 + 5.5 = 71.2

$R = \frac{183}{71.2} = 2.57$

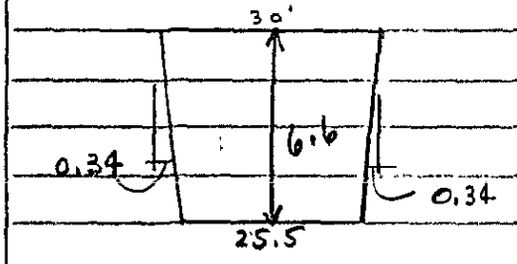
$R^{4/3} = 3.52$

M_{avg} (41.2)(0.015) = 0.618
(30)(0.030) = 0.90
71.2 1.518

$M_{avg} = \frac{1.518}{71.2} = 0.021$

$K_f = \frac{29.1 (n^2)(L)}{R^{4/3}} = \frac{29.1 (0.021^2)(30)}{3.52} = 0.11$

"K" = 1.1 + 11 = 1.21



A = 183 sf
T = 30 ft.

1. XK = 0
2. XKOR = 1.21
3. CofQ = 2.50
4. RDLEN = 0
5. BWC = 26.3
6. BWP = 0
7. BAREA = 183.0
8. SS = 0.3f
9. ELCHU = 0
10. ELCHD = 0

HUBBELL, ROTH & CLARK, INC. • CONSULTING ENGINEERS

SHEET ____ OF ____
DATE ____ 19 ____
BY ____
CK. ____
JOB NO. ____
ACC. NO. ____

SUBJECT IBA F.I.S.

DETAIL SWAN CREEK

HESSON RD. BRIDGE

TOTAL LOSS COEFFICIENT "K"

INTAKE 0.1 (LOW)

FRICTION Kf

EXIT 1.0

"K" = 1.10 + Kf

A: 200 sf

P_W = 30 + 5.1 + 10 + 10 + 5 + 5 + 6.5 = 71.6

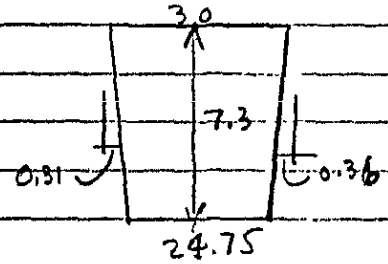
$R = \frac{200}{71.6} = 2.79$

$R^{4/3} = 3.93$

n avg $\frac{(41.6)(0.015) + (30)(0.03)}{71.6} = \frac{0.624 + 0.9}{71.6} = \frac{1.524}{71.6} = 0.021$

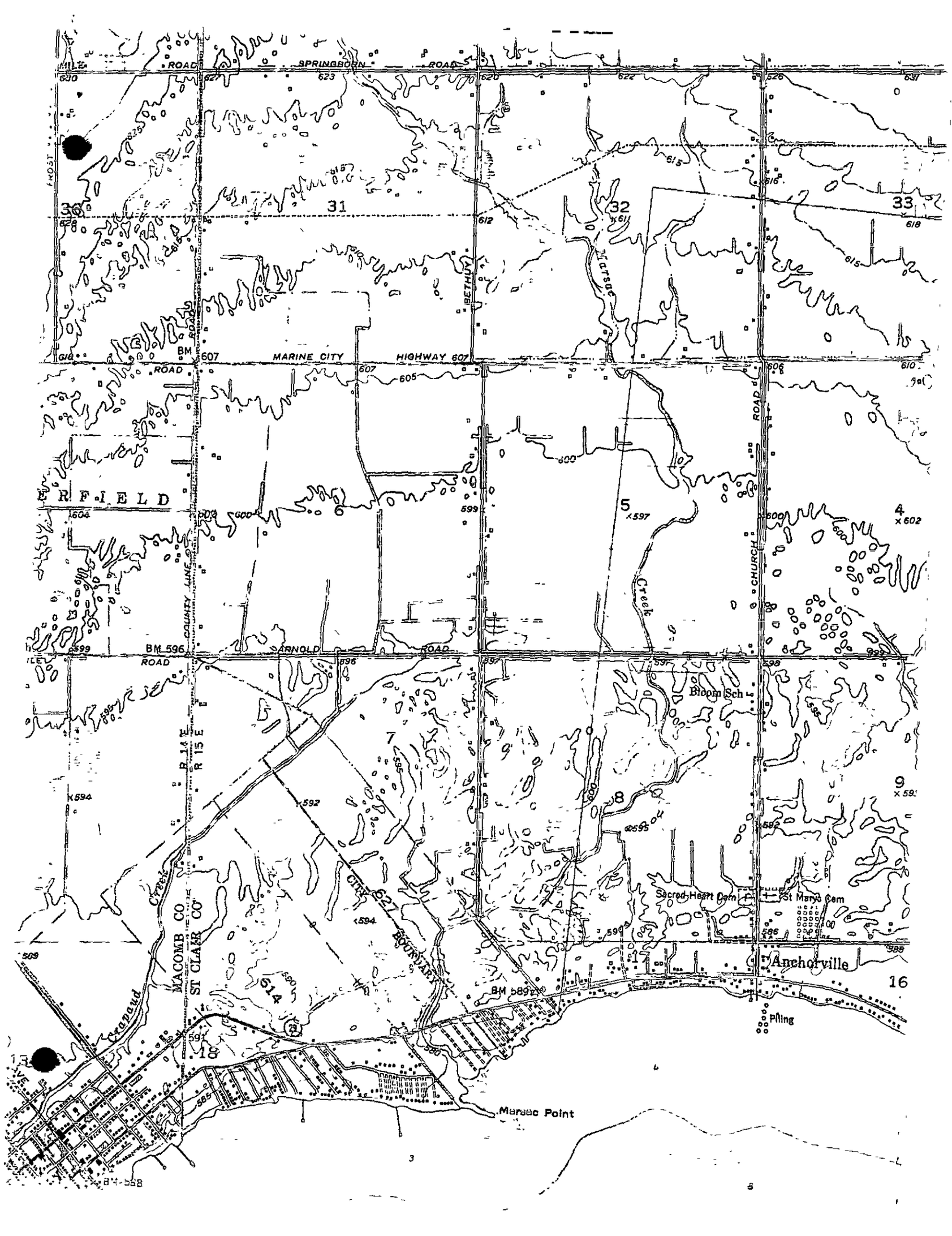
$K_f = \frac{29.1 (n^2) L}{R^{4/3}} = \frac{29.1 (0.021)^2 30}{3.93} = 0.10$

"K" = 1.1 + 0.10 = 1.20

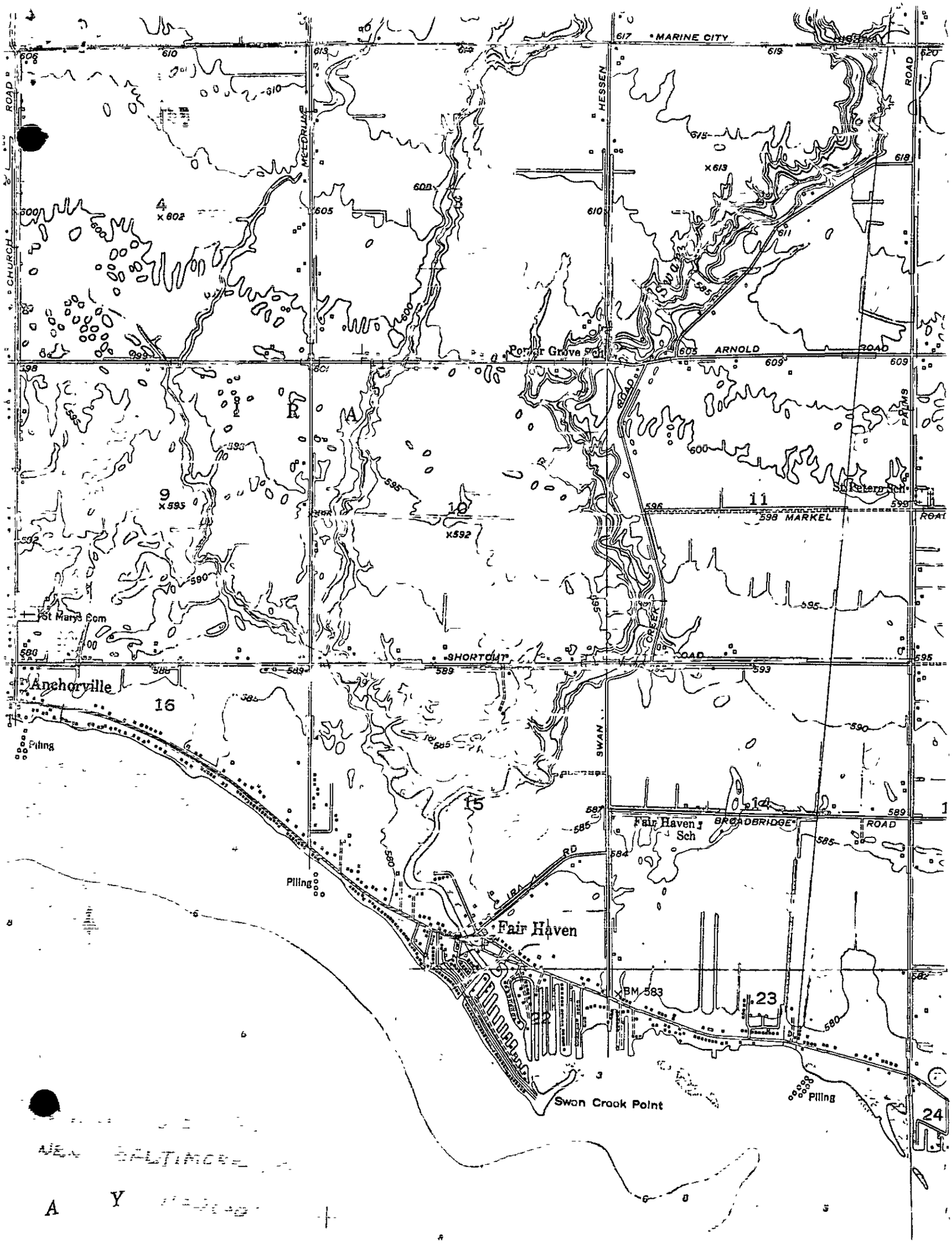


A: 200 sf
T: 30 ft

1. XK = 0
2. XKOR = 1.20
3. CofQ = 2.5
4. ROLEN = 0
5. BWC = 24.75
6. BWP = 0
7. BAREA = 200
8. SS = 0.36
9. ELCHU = 0
10. ELCAO = 0



SPRINGBORN ROAD
MARINE CITY HIGHWAY 607
ARNOLD ROAD
BM 596
BM 607
BM 589
BETHUY
CHURCH ROAD
COUNTY LINE ROAD
Marsac Creek
Bloom Sch
Sacred Heart Cem
St Marys Cem
Anchorville
Piling
Marsac Point
MACOMB CO
ST CLAIR CO
CITY BOUNDARY
Crapaud Creek
R 14 E
R 15 E
31
32
33
36
5
4
6
7
8
9
16
17
18
614
627


MARINE CITY
HIGHWAY
ROAD
CHURCH
MELDRUM
HESSEN
ARNOLD
ROAD
Porter Grove Sch
PALMS
St Peters Sch
MARKEL
ROAD
SHORTCUT
ROAD
CREEK
SWAN
St Marys Com
Anchorville
Piling
Fair Haven Sch
BROADBRIDGE
ROAD
IRA
RD
Fair Haven
BM 583
Swan Creek Point
Piling
Piling
4
9
10
11
14
15
16
22
23
24
A
Y

C

T1 FLOOD INSURANCE STUDY — 21 March 1978

T2 IOWA TOWNSHIP 10 YR. FLOOD

T3 MAS[illegible] CREEK — Sec A to u/s corporate limits

J1	ICHECK	INO	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FG	
	0.	2.	0.	0.	0.000000	0.00	0.0	0.	579.570	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	.160	.160	.030	.100	.300	0.000	0.000	0.000	0.000	0.000	
QT	4.000	345.000	525.000	610.000	820.000	0.000	0.000	0.000	0.000	0.000	
X1	0.000	4.000	107.000	130.000	0.000	0.000	0.000	0.000	1.200	0.000	
GR	582.200	100.000	575.950	107.000	572.400	108.000	572.400	129.000	575.950	130.000	
GR	587.200	145.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
NC	.030	.030	.030	.100	.300	0.000	0.000	0.000	0.000	0.000	
X1	150.000	4.000	120.000	135.000	150.000	150.000	150.000	0.000	1.200	0.000	
GR	585.550	100.000	577.200	120.000	576.200	122.000	576.200	133.000	577.200	135.000	
GR	584.500	155.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	160.000	0.000	0.000	0.000	10.000	10.000	10.000	0.000	0.000	0.000	
X1	170.000	0.000	0.000	0.000	10.000	10.000	10.000	0.000	0.000	0.000	
X1	180.000	0.000	0.000	0.000	10.000	10.000	10.000	0.000	0.000	0.000	
NC	0.000	0.000	0.000	.600	.800	0.000	0.000	0.000	0.000	0.000	

DOWNSTREAM SECTION FOR CULV, SOUTH OF BETHUY RD.

X1	312.000	0.000	0.000	0.000	132.000	132.000	132.000	0.000	.100	0.000	

SECTION AT SOUTH END OF CULV.

X1	484.000	25.000	343.000	357.000	172.000	172.000	172.000	0.000	0.000	0.000	
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	585.620	585.620	0.000	
GR	587.800	0.000	587.200	200.000	585.800	250.000	586.000	300.000	579.620	343.000	
GR	578.620	344.000	578.370	345.000	578.120	346.000	577.870	347.000	577.770	348.000	
GR	577.720	349.000	577.820	350.000	577.720	351.000	577.770	352.000	577.870	353.000	
GR	578.120	354.000	578.370	355.000	578.620	356.000	579.620	357.000	581.300	378.000	
GR	587.400	400.000	589.100	450.000	588.500	500.000	590.400	550.000	590.900	600.000	
SB	0.000	1.330	2.500	0.000	7.250	0.000	85.000	.420	0.000	0.000	

SECTION AT NORTH END OF CULV.

X1	516.000	0.000	0.000	0.000	32.000	32.000	32.000	0.000	0.000	0.000	
X2	0.000	0.000	1.000	585.620	589.000	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	589.000	589.000	0.000	
BT	17.000	0.000	589.300	587.800	343.000	589.000	579.620	344.000	589.000	582.370	
BT	345.000	589.000	583.520	346.000	589.000	584.370	347.000	589.000	584.920	348.000	
BT	349.000	585.370	349.000	589.000	585.520	350.000	589.000	585.620	351.000	589.000	
BT	585.520	352.000	589.000	585.370	353.000	589.000	584.920	354.000	589.000	584.370	
BT	355.000	589.000	583.520	356.000	589.000	582.370	357.000	589.000	579.620	600.000	
BT	590.000	590.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

				0.100	0.000	0.000	0.000	0.000	0.000	

UPSTREAM SECTION FOR CULV.SOUTH OF BETHUY RD.

X1	559.000	12.000	300.000	400.000	43.000	43.000	43.000	0.000	.200	0.000
GR	587.800	0.000	587.200	200.000	585.800	250.000	586.000	300.000	577.500	350.000
GR	578.500	360.000	581.300	378.000	587.400	400.000	589.100	450.000	588.500	500.000
GR	590.400	550.000	590.900	600.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.030	.030	.030	.100	.300	0.000	0.000	0.000	0.000	0.000

DOWNSTREAM SECTION AT BETHUY RD. CULVERT

X1	1462.000	0.000	0.000	0.000	903.000	903.000	903.000	0.000	.550	0.000

SECTION AT SOUTH END OF BETHUY RD.CULVERT

X1	1634.000	24.000	343.000	357.000	172.000	172.000	172.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	587.000	587.000	0.000
GR	588.600	0.000	589.300	200.000	589.300	250.000	587.700	300.000	580.500	343.000
GR	579.250	344.000	579.000	345.000	578.750	346.000	578.500	347.000	578.250	348.000
GR	578.250	349.000	578.250	350.000	578.250	351.000	578.250	352.000	578.500	353.000
GR	576.750	354.000	579.000	355.000	579.250	356.000	580.500	357.000	586.300	360.000
GR	589.100	430.000	591.000	480.000	590.300	530.000	590.300	680.000	0.000	0.000
NC	.030	.030	.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SR	0.000	1.320	2.500	0.000	7.700	0.000	95.000	.360	0.000	0.000

SECTION AT NORTH END OF BETHUY RD.CULVERT

X1	1666.000	0.000	0.000	0.000	32.000	32.000	32.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	587.000	589.000	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	589.000	589.000	0.000
BT	17.000	0.000	589.300	588.600	343.000	589.000	580.500	344.000	589.000	584.500
BT	345.000	589.000	584.750	346.000	589.000	585.750	347.000	589.000	586.250	348.000
BT	589.000	586.750	349.000	589.000	586.900	350.000	589.000	587.000	351.000	589.000
BT	586.900	352.000	589.000	586.750	353.000	589.000	586.250	354.000	589.000	585.750
BT	355.000	589.000	584.750	356.000	589.000	584.500	357.000	589.000	580.500	680.300
BT	590.300	590.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	4.000	300.000	460.000	530.000	710.000	0.000	0.000	0.000	0.000	0.000

UPSTREAM SECTION AT BETHUY RD. CULVERT

X1	1499.000	15.000	300.000	380.000	33.000	33.000	33.000	0.000	0.000	0.000
GR	588.600	0.000	588.300	50.000	588.500	100.000	588.000	150.000	589.300	200.000
GR	589.300	250.000	587.700	300.000	579.800	330.000	579.300	340.000	579.000	345.000
GR	588.300	380.000	589.100	430.000	591.000	480.000	590.300	531.000	590.300	680.000
NC	0.000	0.000	0.000	.100	.300	0.000	0.000	0.000	0.000	0.000

X1	1800.000	15.000	300.000	380.000	101.000	101.000	101.000	0.000	0.000	0.000
GR	588.600	0.000	588.300	50.000	588.500	100.000	588.000	150.000	589.300	200.000
GR	589.300	250.000	587.700	300.000	579.800	330.000	579.300	340.000	579.000	345.000
GR	588.300	380.000	589.100	430.000	591.000	480.000	590.300	531.000	590.300	680.000
NC	0.000	0.000	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	2900.000	14.000	300.000	372.000	1100.000	1100.000	1100.000	0.000	0.000	0.000
GR	588.800	0.000	588.400	50.000	587.300	100.000	587.500	300.000	550.000	320.000
GR	579.900	336.000	587.700	372.000	589.200	410.000	589.200	463.000	588.000	510.000
GR	588.300	560.000	587.900	610.000	587.900	660.000	588.200	710.000	0.000	0.000
NC	0.000	.050	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	3100.000	19.000	323.000	396.000	200.000	200.000	200.000	0.000	0.000	0.000
GR	589.300	0.000	589.200	100.000	589.100	200.000	588.700	250.000	589.300	300.000
GR	588.000	313.000	587.900	323.000	581.300	302.000	580.300	352.000	581.000	367.000
GR	589.800	396.000	589.700	406.000	593.600	426.000	593.100	439.000	590.100	447.000
GR	589.700	500.000	589.000	547.000	589.000	602.000	588.600	697.000	0.000	0.000
X1	3352.000	17.000	300.000	372.000	252.000	252.000	252.000	0.000	0.000	0.000
GR	589.500	0.000	589.400	50.000	589.500	100.000	589.400	150.000	590.300	250.000
GR	589.000	300.000	584.300	320.000	581.300	321.000	581.200	336.000	581.300	341.000
GR	589.500	372.000	590.000	400.000	590.000	430.000	589.900	557.000	589.500	600.000
GR	590.100	650.000	589.600	673.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.150	.150	.155	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	4200.000	18.000	300.000	374.000	848.000	848.000	848.000	0.000	0.000	0.000
GR	589.900	0.000	590.200	50.000	590.200	100.000	589.000	150.000	591.500	200.000
GR	591.300	250.000	590.600	300.000	585.300	320.000	581.400	322.000	580.900	327.000
GR	580.900	338.000	581.400	340.000	584.500	348.000	587.300	360.000	591.300	374.000
GR	596.300	400.000	597.300	410.000	596.700	420.000	0.000	0.000	0.000	0.000
X1	6100.000	18.000	290.000	334.000	1900.000	1900.000	1900.000	0.000	0.000	0.000
GR	590.300	0.000	590.500	50.000	591.300	100.000	591.300	160.000	590.400	200.000
GR	590.300	250.000	588.900	290.000	586.800	300.000	581.800	307.000	580.100	310.000
GR	581.800	317.000	591.200	334.000	590.000	378.000	592.300	410.000	592.500	460.000
GR	591.500	510.000	591.800	560.000	591.600	626.000	0.000	0.000	0.000	0.000
NC	.115	.115	.178	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	9100.000	17.000	300.000	330.000	3000.000	3000.000	3000.000	0.000	0.000	0.000
GR	594.800	0.000	594.800	50.000	595.100	100.000	595.100	150.000	594.800	200.000
GR	595.000	250.000	594.800	300.000	589.500	309.000	589.100	311.000	589.500	317.000
GR	595.300	328.000	596.300	330.000	594.300	410.000	597.100	460.000	597.200	510.000
GR	596.300	560.000	596.000	600.000	0.000	0.000	0.000	0.000	0.000	0.000

DOWNSTREAM SECTION FOR ARNOLD RD.BRIDGE

X1	9224.000	0.000	0.000	0.000	124.000	124.000	124.000	0.000	0.000	0.000

DOWNSTREAM SECTION AT SOUTH SIDE OF ARNOLD RD. BRIDGE

X1	9284.000	18.000	305.500	316.500	60.000	60.000	60.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	595.500	595.500	0.000
GR	594.800	0.000	594.800	50.000	595.100	100.000	595.100	150.000	594.800	200.000
GR	595.000	250.000	594.800	300.000	590.950	305.500	589.950	308.500	589.950	313.500
GR	590.950	316.500	595.300	328.000	596.300	330.000	594.300	410.000	597.100	460.000
GR	597.200	510.000	596.300	560.000	596.000	600.000	0.000	0.000	0.000	0.000
SB	0.000	1.560	2.500	0.000	11.000	0.000	63.250	0.000	0.000	0.000

UPSTREAM SECTION AT NORTH SIDE OF ARNOLD RD. BRIDGE

X1	9316.000	0.000	0.000	0.000	32.000	32.000	32.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	595.500	595.800	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	595.800	595.800	0.000
BT	4.000	0.000	596.900	594.800	305.500	596.700	595.500	316.500	596.700	595.500
BT	600.000	596.000	596.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.115	.115	.178	0.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	4.000	270.000	410.000	480.000	645.000	0.000	0.000	0.000	0.000	0.000

UPSTREAM SECTION FOR ARNOLD RD. BRIDGE

X1	9376.000	17.000	300.000	330.000	60.000	60.000	60.000	0.000	0.000	[illegible].000
GR	594.800	0.000	594.800	50.000	595.100	100.000	595.100	150.000	594.800	2[illegible].000
GR	595.000	250.000	594.800	300.000	589.500	309.000	589.100	311.000	589.500	317.000
GR	595.300	328.000	596.300	330.000	594.300	410.000	597.100	460.000	597.200	510.000
GR	596.300	560.000	596.000	600.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.070	.070	.155	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	11000.000	13.000	300.000	330.000	1624.000	1624.000	1624.000	0.000	0.000	0.000
GR	597.300	0.000	597.300	170.000	597.200	200.000	596.200	250.000	596.300	300.000
GR	591.400	311.000	590.200	318.000	591.400	323.000	597.000	330.000	597.500	342.000
GR	597.100	351.000	597.300	400.000	597.600	630.000	0.000	0.000	0.000	0.000

DOWNSTREAM SECTION FOR CULV. NORTH OF ARNOLD RD.

X1	11440.000	0.000	0.000	0.000	440.000	440.000	440.000	0.000	0.000	0.000

SECTION AT SOUTH END OF CULVERT

X1	11499.000	21.000	314.500	321.500	49.000	49.000	49.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	597.800	597.800	0.000
GR	597.300	0.000	597.300	170.000	597.200	200.000	596.200	250.000	596.300	300.000
GR	591.400	311.000	594.400	314.500	592.400	315.000	591.400	316.000	590.900	317.000
GR	590.800	318.000	590.900	319.000	591.400	320.000	592.400	321.000	594.400	321.500
GR	591.400	323.000	597.000	330.000	597.500	342.000	597.100	351.000	597.300	400.000
GR	597.600	630.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	.024	.100	.300	0.000	0.000	0.000	0.000	0.000
X1	11490.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
BT	19.000	0.000	597.300	597.300	170.000	597.300	597.300	200.000	597.200	597.200
BT	250.000	596.200	596.200	300.000	596.300	596.300	314.500	599.800	594.400	315.000
BT	599.800	596.200	316.000	599.800	597.200	317.000	599.800	597.700	318.000	599.800
BT	597.600	319.000	599.800	597.700	320.000	599.800	597.200	321.000	599.800	596.200
BT	321.500	599.800	594.400	330.000	597.000	597.000	342.000	597.500	597.500	351.000
BT	597.100	597.100	400.000	597.300	597.300	630.000	597.600	597.600	0.000	0.000

SECTION AT NORTH END OF CULVERT

X1	11510.000	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	0.000	0.000	0.000	1.000	0.000	0.000	0.000
NC	0.000	0.000	.155	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	11511.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	597.800	597.800	0.000

UPSTREAM SECTION FOR CULV. NORTH OF ARNOLD RD.

X1	11525.000	13.000	300.000	330.000	14.000	14.000	14.000	0.000	0.000	0.000
GR	597.300	0.000	597.300	170.000	597.200	200.000	596.200	250.000	596.300	300.000
GR	591.400	311.000	590.200	318.000	591.400	323.000	597.000	330.000	597.500	342.000
GR	597.100	351.000	597.300	400.000	597.200	630.000	0.000	0.000	0.000	0.000
NC	.052	.052	.109	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	13400.000	14.000	300.000	330.000	1875.000	1875.000	1875.000	0.000	0.000	0.000
GR	599.200	0.000	599.800	50.000	600.000	150.000	599.300	200.000	599.100	250.000
GR	599.100	300.000	594.100	314.000	593.400	318.000	594.100	323.000	599.400	330.000
GR	600.100	369.000	599.400	500.000	599.300	600.000	599.100	630.000	0.000	0.000

GR	595.300	328.000	596.300	330.000	594.300	410.000	597.100	460.000	597.200	510.000
GR	596.300	560.000	596.000	400.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	.070	.155	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	11000.000	13.000	300.000	330.000	1624.000	1624.000	1624.000	0.000	0.000	0.000
GR	597.300	0.000	597.300	170.000	597.200	200.000	596.200	250.000	596.300	300.000
GR	591.400	311.000	590.200	318.000	591.400	323.000	597.000	330.000	597.500	342.000
GR	597.100	351.000	597.300	400.000	597.600	630.000	0.000	0.000	0.000	0.000

DOWNSTREAM SECTION FOR CULV. NORTH OF ARNOLD RD.

X1	11440.000	0.000	0.000	0.000	440.000	440.000	440.000	0.000	0.000	0.000

SECTION AT SOUTH END OF CULVERT

X1	11489.000	21.000	314.500	321.500	49.000	49.000	49.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	597.800	597.800	0.000
GR	597.300	0.000	597.300	170.000	597.200	200.000	596.200	250.000	596.300	300.000
GR	591.400	311.000	590.400	314.500	592.400	315.000	591.400	316.000	590.900	317.000
GR	590.800	318.000	590.900	319.000	591.400	320.000	592.400	321.000	594.400	321.500
GR	591.400	323.000	597.000	330.000	597.500	342.000	597.100	351.000	597.300	400.000
GR	597.600	630.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	.024	.100	.300	0.000	0.000	0.000	0.000	0.000
X1	11490.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
BT	19.000	0.000	597.300	597.300	170.000	597.300	597.300	200.000	597.200	597.200
BT	250.000	596.200	596.200	300.000	596.300	596.300	314.500	599.800	594.400	315.000
BT	599.800	596.200	316.000	599.800	597.200	317.000	599.800	597.700	318.000	599.800
BT	597.600	319.000	599.800	597.700	320.000	599.800	597.200	321.000	599.800	596.200
BT	321.500	599.800	594.400	330.000	597.000	597.000	342.000	597.500	597.500	351.000
BT	597.100	597.100	400.000	597.300	597.300	630.000	597.600	597.600	0.000	0.000

SECTION AT NORTH END OF CULVERT

X1	11510.000	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	0.000	0.000	0.000	1.000	0.000	0.000	0.000
NC	0.000	0.000	.155	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	11511.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	597.800	597.800	0.000

UPSTREAM SECTION FOR CULV. NORTH OF ARNOLD RD.

X1	11525.000	13.000	300.000	330.000	14.000	14.000	14.000	0.000	0.000	0.000
GR	597.300	0.000	597.300	170.000	597.200	200.000	596.200	250.000	596.300	300.000
GR	591.400	311.000	590.200	318.000	591.400	323.000	597.000	330.000	597.500	342.000
GR	597.100	351.000	597.300	400.000	597.200	630.000	0.000	0.000	0.000	0.000
NC	.052	.052	.109	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	13400.000	14.000	300.000	330.000	1875.000	1875.000	1875.000	0.000	0.000	0.000
GR	599.200	0.000	599.800	50.000	600.000	150.000	599.300	200.000	599.100	250.000
GR	599.100	300.000	594.100	314.000	593.400	318.000	594.100	323.000	599.400	330.000
GR	600.100	369.000	599.400	500.000	599.300	600.000	599.100	630.000	0.000	0.000
X1	13839.000	0.000	0.000	0.000	439.000	439.000	439.000	0.000	.500	0.000

X1	13999.000	18.000	300.000	330.000	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	600.200	600.200	0.000
GR	599.000	0.000	599.800	50.000	600.000	150.000	599.300	200.000	599.100	250.000
GR	599.100	300.000	597.200	315.000	594.900	316.000	594.300	317.000	594.200	316.000
GR	594.300	319.000	594.900	320.000	597.200	321.000	599.400	330.000	600.100	369.000
GR	599.400	500.000	599.300	600.000	599.100	630.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	13890.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
BT	18.000	0.000	599.200	599.200	50.000	599.800	599.800	150.000	600.000	600.000
BT	200.000	599.300	599.300	250.000	599.100	599.100	300.000	599.100	599.100	315.000
BT	600.700	597.200	316.000	600.700	599.500	317.000	600.700	600.000	318.000	600.700
BT	600.200	319.000	600.700	600.000	320.000	600.700	599.500	321.000	600.700	597.200
BT	330.000	599.400	599.400	369.000	600.100	600.100	500.000	599.400	599.400	600.000
BT	599.300	599.300	630.000	599.100	599.100	0.000	0.000	0.000	0.000	0.000
X1	13910.000	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	0.000	0.000	0.000	1.000	0.000	0.000	0.000
NC	0.000	0.000	.109	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	13911.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	600.200	600.200	0.000
NC	.052	.052	.109	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	13925.000	0.000	0.000	0.000	14.000	14.000	14.000	0.000	0.000	0.000
NC	.070	.070	.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	14925.000	16.000	300.000	330.000	1000.000	1000.000	1000.000	0.000	-1.600	0.000
GR	603.500	0.000	603.600	100.000	604.700	150.000	604.300	200.000	604.200	250.000
GR	602.600	300.000	598.600	311.000	597.200	313.000	598.200	318.000	603.200	330.000
GR	604.100	360.000	603.500	400.000	603.500	440.000	604.400	530.000	604.000	580.000
GR	604.000	630.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	16000.000	0.000	0.000	0.000	1075.000	1075.000	1075.000	0.000	1.600	0.000
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CCHV= .100 CFHV= .300

MODIFICATIONS 52,53,54,55,56,57,58,59
****

T1 FLOOD INSURANCE STUDY
T2 IMA TOWNSHIP 100 YR. FLOOD
T3 MASSAC CREEK

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	0.	0.	0.	0.000000	0.00	0.0	0.	581.150	0.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	3.000	-1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CCHV= .100 CEHV= .300

Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
(A)									
0.00	7.59	581.19	0.00	581.19	581.39	.20	0.00	0.00	578.15
610.	1.	607.	2.	6.	170.	7.	0.	0.	578.15
0.00	.24	3.57	.25	.160	.030	.160	0.000	573.60	102.95
.000521	0.	0.	0.	0	0	1	0.00	31.50	134.45

CCHV= .100 CEHV= .300
3685 20 TRIALS USED WSEL,CWSEL

7185 MIN SPECIFIC ENERGY

3720 ASSUMED CRITICAL DEPTH

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
150.00	3.40	581.09	581.09	0.00	582.39	1.30	.20	0.00	578.40
610.	43.	518.	49.	0.	53.	10.	0.	0.	578.40
.00	4.92	8.72	4.98	.030	.030	.030	.030	577.40	113.56
.007395	150.	150.	150.	30	11	1	0.00	28.80	142.36
160.00	4.17	581.57	0.00	0.00	582.49	.92	.06	.04	578.40
610.	51.	499.	60.	12.	61.	14.	0.	0.	578.40
.00	4.28	8.25	4.33	.030	.030	.030	.030	577.40	112.41
.004495	10.	10.	10.	6	0	1	0.00	31.27	143.68
170.00	4.30	581.70	0.00	0.00	582.54	.83	.04	.01	578.40
610.	54.	494.	62.	13.	63.	15.	0.	0.	578.40
.01	4.12	7.89	4.17	.030	.030	.030	.029	577.40	112.08
.003939	10.	10.	10.	2	0	1	0.00	31.97	144.05
180.00	4.40	581.80	0.00	0.00	582.58	.78	.04	.01	578.40
610.	55.	490.	64.	14.	64.	16.	0.	0.	578.40
.01	4.02	7.67	4.06	.030	.030	.030	.029	577.40	111.86
.003610	10.	10.	10.	2	0	1	0.00	32.44	144.31

CCHV= .600 CEHV= .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
(B) DOWNSTREAM SECTION FOR CULV.SOUTH OF BETHUY RD.									
312.00	5.08	582.58	0.00	0.00	583.09	.51	.34	.17	578.50
610.	67.	465.	78.	20.	74.	23.	1.	0.	578.50
.01	3.36	6.27	3.40	.030	.030	.030	.030	577.50	110.22
.001979	132.	132.	132.	3	0	1	0.00	35.96	146.18

3301 HV CHANGED MORE THAN HVINS

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 585.62 ELREA= 585.62

SECTION AT SOUTH END OF CULV.

484.00	5.35	582.97	0.00	0.00	584.24	1.27	.54	.61	579.62
610.	0.	610.	0.	0.	67.	0.	1.	0.	579.62
.02	0.00	9.05	0.00	.030	.030	.030	.030	577.62	343.00
.005772	172.	172.	172.	2	0	1	0.00	14.00	357.00

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB XK	XKOR	COEQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
0.00	1.33	2.50	0.00	7.28	0.00	85.00	.42	577.62	577.62

6070,LOW FLOW BY NORMAL BRIDGE

EGPRS= 0.000 EGLWC= 584.243 ELLC= 585.620 PCWSE= 582.971 ELTRD= 589.000

NORMAL BRIDGE,NRD=17 MIN ELTRD= 589.00 MAX ELLC= 585.62

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

SECTION AT NORTH END OF CULV.

516.00	5.55	583.17	0.00	0.00	584.46	1.29	.20	.02	579.62
610.	0.	610.	0.	0.	67.	0.	1.	0.	579.62
.02	0.00	9.13	0.00	.030	.030	.030	.030	577.62	343.00
.006929	32.	32.	32.	2	0	1	-60.26	14.00	357.00

3301 HV CHANGED MORE THAN HVINS

(C) UPSTREAM SECTION FOR CULV.SOUTH OF BETHUY RD.

559.00	7.49	585.19	0.00	0.00	585.24	.05	.02	.75	586.20
610.	0.	610.	0.	0.	351.	0.	1.	0.	587.60
.03	0.00	1.74	0.00	.030	.030	.030	.030	577.70	305.95
.000191	43.	43.	43.	3	0	1	0.00	85.35	391.30

CCHV= .100 CFHV= .300

DOWNSTREAM SECTION AT BETHUY RD. CULVERT (D)

1462.00	7.13	585.38	0.00	0.00	585.43	.06	.19	.00	586.75
610.	0.	610.	0.	0.	320.	0.	8.	2.	588.15
.16	0.00	1.91	0.00	.030	.030	.030	.030	578.25	308.13
.000246	903.	903.	903.	2	0	1	0.00	81.54	359.97

3301 HV CHANGED MORE THAN HVINS

SECNO	DEPTH	CLSEL	CRIWS	WSELR	EQ	HV	HL	OLDWS	BANK ELEV

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

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 587.00 ELREA= 587.00

SECTION AT SOUTH END OF BETHUY RD,CULVERT

1634.00	6.73	584.98	0.00	0.00	585.75	.76	.10	.21	580.50
610.	0.	610.	0.	0.	87.	0.	9.	2.	580.50
.16	0.00	7.01	0.00	.030	.030	.030	.030	578.25	343.00
.002753	172.	172.	172.	2	0	1	0.00	14.00	357.00

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SR XK	XKOR	CORD	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
0.00	1.32	2.50	0.00	7.70	0.00	95.00	.36	578.25	578.25

6070,LOW FLOW BY NORMAL BRIDGE

EGPRS= 0.000 EGLWC= 585.744 ELLC= 587.000 PCWSF= 584.983 ELTRD= 589.000

NORMAL BRIDGE,NPO=17 MIN ELTRD= 589.00 MAX ELLC= 587.00

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

SECTION AT NORTH END OF BETHUY RD,CULVERT

1665.00	6.80	585.05	0.00	0.00	585.87	.82	.11	.02	580.50
610.	0.	610.	0.	0.	84.	0.	9.	2.	580.50
.17	0.00	7.27	0.00	.030	.030	.030	.030	578.25	343.00
.003091	32.	32.	32.	2	0	1	-34.46	14.00	357.00

3301 HV CHANGED MORE THAN HVINS

UPSTREAM SECTION AT BETHUY RD. CULVERT (E)

1699.00	6.60	585.90	0.00	0.00	585.97	.07	.03	.01	587.70
530.	0.	530.	0.	0.	243.	0.	9.	2.	588.30
.17	0.00	2.19	0.00	.030	.030	.030	.030	579.30	306.43
.000335	33.	33.	33.	2	0	1	0.00	63.29	370.12

CCHV= .100 CEHV= .300 (F)

1800.00	6.63	585.93	0.00	0.00	586.00	.07	.03	.00	587.70
530.	0.	530.	0.	0.	245.	0.	10.	2.	588.30
.18	0.00	2.17	0.00	.030	.030	.030	.030	579.30	306.71
.000329	101.	101.	101.	2	0	1	0.00	63.53	370.25

(G)

2900.00	6.55	586.45	0.00	0.00	586.54	.09	.55	.00	587.50
530.	0.	530.	0.	0.	222.	0.	16.	4.	587.70
.31	0.00	2.39	0.00	.030	.040	.030	.034	579.90	304.07
.000740	1100.	1100.	1100.	2	0	1	0.00	62.17	366.24

[illegible]	[illegible]	[illegible]	[illegible]	2	0	1	0.00	62.17	366.24

(H)

3100.00	6.31	586.61	0.00	0.00	586.69	.08	.15	.00	587.90
530.	0.	530.	0.	0.	240.	0.	17.	4.	589.80
.34	0.00	2.21	0.00	.030	.045	.050	.034	580.30	326.70
.000711	200.	200.	200.	2	0	1	0.00	58.80	385.50

SECNO	DEPTH	CKSEL	CRIWS	KSELK	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

(I)

3352.00	5.63	586.83	0.00	0.00	586.95	.12	.25	.01	589.00
530.	0.	530.	0.	0.	187.	0.	18.	5.	589.50
.36	0.00	2.83	0.00	.030	.045	.050	.035	581.20	309.24
.001469	252.	252.	252.	2	0	1	0.00	52.67	361.91

3265 DIVIDED FLOW (J)

4200.00	8.20	589.10	0.00	0.00	589.15	.06	2.19	.01	590.60
530.	0.	530.	0.	0.	278.	0.	23.	6.	591.30
.48	.07	1.91	0.00	.150	.155	.150	.059	580.90	196.07
.005694	848.	848.	848.	2	0	1	0.00	66.42	366.28

3265 DIVIDED FLOW

3280 CROSS SECTION 6100.00 EXTENDED 1.97 FEET

(K)

6100.00	12.17	592.27	0.00	0.00	592.27	.01	3.12	.00	588.90
530.	193.	283.	54.	479.	311.	192.	50.	20.	591.20
1.28	.40	.91	.28	.150	.155	.150	.089	580.10	0.00
.000766	1900.	1900.	1900.	5	0	1	0.00	563.80	626.00

3265 DIVIDED FLOW

3280 CROSS SECTION 9100.00 EXTENDED 1.41 FEET

(L)

9100.00	7.12	596.22	0.00	0.00	596.23	.01	3.96	.00	594.80
530.	308.	152.	70.	384.	135.	109.	106.	55.	596.30
2.23	.80	1.13	.65	.115	.178	.115	.118	589.10	0.00
.002787	3000.	3000.	3000.	4	0	1	0.00	468.71	600.00

3265 DIVIDED FLOW

3280 CROSS SECTION 9224.00 EXTENDED 1.68 FEET

DOWNSTREAM SECTION FOR ARNOLD RD.BRIDGE

9224.00	7.38	596.48	0.00	0.00	596.49	.01	.26	.00	594.80
530.	322.	127.	82.	464.	143.	151.	107.	57.	596.30
2.28	.69	.89	.54	.115	.178	.115	.119	589.10	0.00
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

3265 DIVIDED FLOW

3280 CROSS SECTION 9284.00 EXTENDED 1.77 FEET

SECNO	DEPTH	CWSEL	CRITWS	WSELK	EG	HV	HL	QLOSS	BANK ELEV
Q	QLOB	QCH	QROR	ALOB	ACH	AROB	VCL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROR	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
(M) DOWNSTREAM SECTION AT SOUTH SIDE OF ARNOLD RD. BRIDGE									
9284.00	6.62	596.57	0.00	0.00	596.58	.01	.09	.00	590.95
530.	336.	71.	124.	511.	70.	207.	109.	57.	590.95
2.31	.60	1.01	.60	.115	.178	.115	.119	589.95	0.00
.001296	60.	60.	60.	2	0	1	0.00	505.43	600.00

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COPC	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.56	2.50	0.00	11.00	0.00	63.25	0.00	589.95	589.95

3265 DIVIDED FLOW

3280 CROSS SECTION 9316.00 EXTENDED 2.09 FEET

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	HS	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
593.27	596.58	0.00	300.	231.	63.	61.	595.50	595.80

(N) UPSTREAM SECTION AT NORTH SIDE OF ARNOLD RD. BRIDGE

9316.00	6.98	596.89	0.00	0.00	596.89	.01	.31	0.00	590.95
530.	340.	58.	132.	609.	73.	272.	109.	58.	590.95
2.32	.56	.70	.40	.115	.178	.115	.120	589.95	0.00
.000740	32.	32.	32.	0	0	5	0.00	529.08	600.00

3265 DIVIDED FLOW

3260 CROSS SECTION 9376.00 EXTENDED 2.13 FEET

UPSTREAM SECTION FOR ARNOLD RD. BRIDGE

9376.00	7.83	596.93	0.00	0.00	596.93	.00	.04	.00	594.80
480.	300.	90.	90.	598.	156.	234.	111.	58.	596.30
2.36	.50	.58	.39	.115	.178	.115	.120	589.10	0.00
.000600	30.	30.	30.	2	0	1	0.00	511.57	600.00

3280 CROSS SECTION 11000.00 EXTENDED .81 FEET

(O)

11000.00	7.91	598.11	0.00	0.00	598.12	.01	1.18	.00	596.30
480.	237.	134.	110.	327.	162.	214.	142.	80.	597.00
3.00	.72	.83	.51	.070	.155	.070	.125	590.20	0.00
.000838	1624.	1624.	1624.	2	0	1	0.00	630.00	630.00

3280 CROSS SECTION 11440.00 EXTENDED 1.09 FEET

(P) --DOWNSTREAM SECTION FOR CULV. NORTH OF ARNOLD RD.

11440.00	8.19	598.39	0.00	0.00	598.39	.00	.28	.00	596.30
480.	241.	104.	135.	410.	170.	297.	150.	86.	597.00
3.22	.59	.61	.45	.070	.155	.070	.126	590.20	0.00
.000461	440.	440.	440.	2	0	1	0.00	630.00	630.00

3280 CROSS SECTION 11489.00 EXTENDED 1.11 FEET

SECNO	DEPTH	CHSEL	CRIWS	WSELK	EG	HV	HI	QLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XAL	XNCH	XNR	ATN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBP	ITRIAL	IOC	ICONT	COPAR	TOPWID	ENDST

SECTION AT SOUTH END OF CULVERT

11489.00	7.61	598.41	0.00	0.00	598.41	.00	.02	.00	594.40
480.	297.	23.	160.	488.	48.	343.	151.	87.	594.40
3.24	.61	.49	.47	.070	.155	.070	.126	590.80	0.00
.000572	49.	49.	49.	1	0	1	0.00	630.00	630.00

CCHV= .100 CEHV= .300
3280 CROSS SECTION 11490.00 EXTENDED 1.11 FEET

NORMAL BRIDGE,NRD=19 MIN ELTRD= 596.20 MAX ELLC= 597.80

11490.00	7.60	598.40	0.00	0.00	598.42	.02	.00	.00	594.40
480.	255.	80.	145.	453.	38.	323.	151.	87.	594.40
3.24	.56	2.11	.45	.070	.024	.070	.126	590.80	0.00
.000420	1.	1.	1.	1	0	1	-60.59	630.00	630.00

3280 CROSS SECTION 11510.00 EXTENDED 1.12 FEET

NORMAL BRIDGE,NRD=19 MIN ELTRD= 596.20 MAX ELLC= 597.80

SECTION AT NORTH END OF CULVERT

11511.00	7.61	598.41	0.00	0.00	598.42	.01	.01	.00	594.40
480.	255.	79.	146.	455.	38.	325.	151.	87.	594.40
3.24	.56	2.09	.45	.070	.024	.070	.126	590.80	0.00

.000413	20.	20.	20.	0	0	1	-60.75	630.00	630.00	

3280 CROSS SECTION 11511.00 EXTENDED 1.12 FEET

(Q)

11511.00	7.62	598.42	0.00	0.00	598.43	.00	.00	.00	594.40	
480.	297.	23.	160.	488.	48.	344.	151.	87.	594.40	
3.25	.61	.49	.47	.070	.155	.070	.120	590.80	0.00	
.000371	1.	1.	1.	0	0	1	0.00	630.00	630.00	

3280 CROSS SECTION 11525.00 EXTENDED 1.22 FEET

UPSTREAM SECTION FOR CULV. NORTH OF ARNOLD RD.

11525.00	8.23	598.43	0.00	0.00	598.43	.00	.01	.00	594.30	
480.	225.	94.	161.	420.	171.	353.	152.	88.	597.00	
3.26	.53	.55	.46	.070	.155	.070	.120	590.20	0.00	
.000371	14.	14.	14.	0	0	1	0.00	630.00	630.00	

3265 DIVIDED FLOW

3280 CROSS SECTION 13400.00 EXTENDED .83 FEET

SECNO	DEPTH	CWSEL	CRITS	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	CONVR	TOPWID	ENDST

(R)

13400.00	6.54	599.94	0.00	0.00	599.97	.03	1.53	.01	599.10
480.	136.	229.	114.	118.	125.	114.	180.	113.	599.40
3.62	1.15	1.94	1.00	.052	.109	.052	.124	593.40	0.00
.003076	1875.	1875.	1875.	3	0	1	0.00	549.87	630.00

3280 CROSS SECTION 13839.00 EXTENDED 1.13 FEET

(S)

13839.00	6.83	600.73	0.00	0.00	600.74	.01	.77	.00	599.60
480.	171.	155.	154.	206.	133.	200.	184.	119.	599.90
3.75	.83	1.16	.77	.052	.109	.052	.125	593.90	0.00
.001122	439.	439.	439.	2	0	1	0.00	630.00	630.00

3250 CROSS SECTION 13889.00 EXTENDED 1.66 FEET

13889.00	6.56	600.76	0.00	0.00	600.77	.01	.03	.00	599.10
480.	221.	47.	211.	367.	96.	361.	105.	120.	599.40
3.77	.60	.40	.59	.052	.109	.052	.123	594.20	0.00
.000321	50.	50.	50.	2	0	1	0.00	630.00	630.00

3280 CROSS SECTION 13890.00 EXTENDED 1.66 FEET

NORMAL BRIDGE,NPD=18 MIN ELTRD= 599.10 MAX ELLC= 600.20

13890.00	6.56	600.76	0.00	0.00	600.77	.01	.00	.00	599.10
480.	219.	53.	209.	367.	46.	361.	185.	120.	599.40
3.77	.60	1.14	.58	.052	.024	.052	.123	594.20	0.00
.000312	1.	1.	1.	0	0	1	-49.80	630.00	630.00

3280 CROSS SECTION 13910.00 EXTENDED 1.67 FEET

NORMAL BRIDGE,NSD=18 MIN ELTRD= 599.10 MAX ELLC= 600.20

13910.00	6.57	600.77	0.00	0.00	600.78	.01	.01	.00	599.10
480.	219.	53.	209.	369.	47.	363.	185.	120.	599.40
3.78	.59	1.13	.58	.052	.024	.052	.123	594.20	0.00
.000307	20.	20.	20.	0	0	1	-49.80	630.00	630.00

3280 CROSS SECTION 13911.00 EXTENDED 1.67 FEET

(T)

13911.00	6.57	600.77	0.00	0.00	600.78	.01	.00	.00	599.10
480.	222.	47.	212.	369.	96.	363.	185.	120.	599.40
3.78	.60	.99	.58	.052	.109	.052	.125	594.20	0.00
.000315	1.	1.	1.	0	0	1	0.00	630.00	630.00

3280 CROSS SECTION 13925.00 EXTENDED 1.68 FEET

SECNO	DEPTH	CWSEL	CRITWS	WSELK	EG	EV	HL	OLOSS	BANK ELEV
Q	LOB	CH	ROB	LOB	CH	ROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
13925.00	6.58	600.78	0.00	0.00	600.78	.01	.00	.00	599.10
480.	222.	47.	212.	370.	97.	364.	186.	120.	599.40
3.79	.60	.98	.58	.052	.109	.052	.125	594.20	0.00
.000312	14.	14.	14.	0	0	1	0.00	630.00	630.00
14925.00	5.93	601.53	0.00	0.00	601.91	.38	1.02	.11	601.00
480.	6.	474.	0.	4.	95.	0.	196.	128.	601.60
3.25	1.44	5.00	0.00	.070	.100	.070	.121	595.60	283.28
.026679	1000.	1000.	1000.	2	0	1	0.00	46.57	329.84

3280 CROSS SECTION 16000.00 EXTENDED 1.23 FEET

(U)

16000.00	7.53	604.73	0.00	0.00	604.74	.01	2.79	.04	602.60
480.	140.	172.	148.	248.	143.	251.	206.	136.	603.20
4.21	.64	1.21	.59	.070	.100	.070	.120	597.20	0.00
.000911	1075.	1075.	1075.	12	0	1	0.00	630.00	630.00

SUMMARY PRINTOUT FOR MULTIPLE PROFILES

SUMMARY PRINTOUT FOR MULTIPLE PROFILES

MARSAC CREEK

	SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	CRIWS	EG	TOPWID	10K*S	TIME	VOL
A	0.00	0.00	0.00	0.00	573.60	345.00	579.57	0.00	579.67	26.97	3.83	0.00	0.00
	0.00	0.00	0.00	0.00	573.60	525.00	580.70	0.00	580.87	30.13	4.87	0.00	0.00
	0.00	0.00	0.00	0.00	573.60	610.00	581.19	0.00	581.39	31.50	5.21	0.00	0.00
	0.00	0.00	0.00	0.00	573.60	820.00	582.28	0.00	582.55	34.55	5.90	0.00	0.00
	150.00	150.00	0.00	0.00	577.40	345.00	580.06	580.06	581.08	23.54	86.21	.01	.31
	150.00	150.00	0.00	0.00	577.40	525.00	580.80	580.80	582.01	27.31	76.23	.00	.40
	150.00	150.00	0.00	0.00	577.40	610.00	581.09	581.09	582.39	28.80	73.95	.00	.44
	150.00	150.00	0.00	0.00	577.40	820.00	581.72	581.72	583.21	32.04	70.23	.00	.53
	160.00	10.00	0.00	0.00	577.40	345.00	580.51	0.00	581.18	25.85	46.68	.01	.32
	160.00	10.00	0.00	0.00	577.40	525.00	581.26	0.00	582.11	29.68	45.56	.01	.41
	160.00	10.00	0.00	0.00	577.40	610.00	581.57	0.00	582.49	31.27	44.95	.00	.46
	160.00	10.00	0.00	0.00	577.40	820.00	582.25	581.72	583.31	34.75	43.62	.00	.56
	170.00	10.00	0.00	0.00	577.40	345.00	580.62	0.00	581.23	26.39	40.89	.01	.34
	170.00	10.00	0.00	0.00	577.40	525.00	581.39	0.00	582.16	30.35	39.84	.01	.43
	170.00	10.00	0.00	0.00	577.40	610.00	581.70	0.00	582.54	31.97	39.39	.01	.48
	170.00	10.00	0.00	0.00	577.40	820.00	582.39	0.00	583.36	35.50	38.53	.01	.58
	180.00	10.00	0.00	0.00	577.40	345.00	580.70	0.00	581.27	26.83	36.80	.01	.35
	180.00	10.00	0.00	0.00	577.40	525.00	581.48	0.00	582.20	30.82	36.34	.01	.45
	180.00	10.00	0.00	0.00	577.40	610.00	581.80	0.00	582.58	32.40	36.10	.01	.50
	180.00	10.00	0.00	0.00	577.40	820.00	582.49	0.00	583.40	35.99	35.60	.01	.61
B	312.00	132.00	0.00	0.00	577.50	345.00	581.38	0.00	581.74	29.79	19.26	.01	.56
	312.00	132.00	0.00	0.00	577.50	525.00	582.24	0.00	582.70	34.24	19.49	.01	.74
	312.00	132.00	0.00	0.00	577.50	610.00	582.58	0.00	583.09	35.96	19.79	.01	.82
	312.00	132.00	0.00	0.00	577.50	820.00	583.34	0.00	583.93	39.82	19.97	.01	1.01
	484.00	172.00	0.00	0.00	577.62	345.00	581.78	0.00	582.50	14.00	43.48	.02	.81
	484.00	172.00	0.00	0.00	577.62	525.00	582.63	0.00	583.72	14.00	53.17	.02	1.07
	484.00	172.00	0.00	0.00	577.62	610.00	582.97	0.00	584.24	14.00	57.72	.02	1.18
	484.00	172.00	0.00	0.00	577.62	820.00	583.69	0.00	585.43	14.00	69.08	.02	1.45
	516.00	32.00	589.00	585.62	577.62	345.00	581.99	0.00	582.66	14.00	39.79	.02	.85
	516.00	32.00	589.00	585.62	577.62	525.00	582.82	0.00	583.91	14.00	61.78	.02	1.12
	516.00	32.00	589.00	585.62	577.62	610.00	583.17	0.00	584.46	14.00	69.29	.02	1.23
	516.00	32.00	589.00	585.62	577.62	820.00	583.93	0.00	585.80	14.00	102.07	.02	1.50
C	559.00	43.00	0.00	0.00	577.70	345.00	583.01	0.00	583.07	64.72	3.39	.03	.97
	559.00	43.00	0.00	0.00	577.70	525.00	584.51	0.00	584.56	78.89	2.27	.03	1.29
	559.00	43.00	0.00	0.00	577.70	610.00	585.19	0.00	585.24	85.35	1.91	.03	1.44
	559.00	43.00	0.00	0.00	577.70	820.00	586.88	0.00	586.91	178.65	1.15	.02	1.82
D	1462.00	903.00	0.00	0.00	578.25	345.00	583.35	0.00	583.41	62.66	4.18	.16	4.72
	1462.00	903.00	0.00	0.00	578.25	525.00	584.73	0.00	584.79	75.80	2.90	.16	7.15
	1462.00	903.00	0.00	0.00	578.25	610.00	585.38	0.00	585.43	81.84	2.46	.16	8.39
	1462.00	903.00	0.00	0.00	578.25	820.00	586.99	0.00	587.04	161.48	1.56	.17	12.65

1634.00	172.00	0.00	0.00	578.25	525.00	584.41	0.00	585.09	14.00	27.14	.16	7.84
1634.00	172.00	0.00	0.00	578.25	610.00	584.68	0.00	585.75	14.00	27.53	.16	9.19
1634.00	172.00	0.00	0.00	578.25	820.00	586.46	0.00	587.36	14.00	26.94	.17	13.82
1666.00	32.00	589.00	587.00	578.25	345.00	583.27	0.00	583.76	14.00	24.69	.17	5.23
1666.00	32.00	589.00	587.00	578.25	525.00	584.48	0.00	585.19	14.00	28.41	.16	7.89
1666.00	32.00	589.00	587.00	578.25	610.00	585.05	0.00	585.87	14.00	30.91	.17	9.26
1666.00	32.00	589.00	587.00	578.25	820.00	587.25	0.00	587.99	14.00	20.36	.16	13.90
1699.00	33.00	0.00	0.00	579.30	300.00	583.75	0.00	583.84	46.26	6.47	.17	5.30
1699.00	33.00	0.00	0.00	579.30	460.00	585.20	0.00	585.28	57.75	4.23	.17	8.00
1699.00	33.00	0.00	0.00	579.30	530.00	585.90	0.00	585.97	63.29	3.35	.17	9.34
1699.00	33.00	0.00	0.00	579.30	710.00	588.02	0.00	588.07	88.93	1.60	.18	14.09
1800.00	101.00	0.00	0.00	579.30	300.00	583.81	0.00	583.90	46.77	6.07	.18	5.59
1800.00	101.00	0.00	0.00	579.30	460.00	585.24	0.00	585.32	58.07	4.10	.18	8.07
1800.00	101.00	0.00	0.00	579.30	530.00	585.93	0.00	586.00	63.53	3.28	.18	9.95
1800.00	101.00	0.00	0.00	579.30	710.00	588.04	0.00	588.09	89.45	1.58	.20	15.01
2900.00	1100.00	0.00	0.00	579.90	300.00	584.70	0.00	584.79	47.31	11.56	.31	8.40
2900.00	1100.00	0.00	0.00	579.90	460.00	585.88	0.00	585.97	57.32	9.19	.30	13.40
2900.00	1100.00	0.00	0.00	579.90	530.00	586.45	0.00	586.54	62.17	7.80	.31	15.84
2900.00	1100.00	0.00	0.00	579.90	710.00	588.27	0.00	588.30	531.42	2.42	.41	27.49
3100.00	200.00	0.00	0.00	580.30	300.00	584.93	0.00	584.99	48.38	8.45	.34	9.44
3100.00	200.00	0.00	0.00	580.30	460.00	586.07	0.00	586.15	55.44	7.85	.33	12.31
3100.00	200.00	0.00	0.00	580.30	530.00	586.61	0.00	586.69	58.80	7.11	.34	14.90
3100.00	200.00	0.00	0.00	580.30	710.00	588.31	0.00	588.37	81.16	4.49	.44	29.66
3352.00	252.00	0.00	0.00	581.20	300.00	585.19	0.00	585.31	39.45	18.32	.36	17.19
3352.00	252.00	0.00	0.00	581.20	460.00	586.31	0.00	586.44	48.50	16.47	.35	15.38
3352.00	252.00	0.00	0.00	581.20	530.00	586.83	0.00	586.95	52.67	14.69	.36	16.13
3352.00	252.00	0.00	0.00	581.20	710.00	588.44	0.00	588.54	65.62	8.89	.47	31.50
4200.00	848.00	0.00	0.00	580.90	300.00	587.61	0.00	587.64	49.76	45.66	.52	13.17
4200.00	848.00	0.00	0.00	580.90	460.00	588.71	0.00	588.76	57.77	53.92	.48	19.92
4200.00	848.00	0.00	0.00	580.90	530.00	589.10	0.00	589.15	66.42	56.94	.48	22.66
4200.00	848.00	0.00	0.00	580.90	710.00	590.04	0.00	590.10	154.34	58.15	.58	37.87
6100.00	1900.00	0.00	0.00	580.10	300.00	591.15	0.00	591.16	315.63	9.95	1.17	27.46
6100.00	1900.00	0.00	0.00	580.10	460.00	591.99	0.00	592.00	546.12	8.22	1.25	43.02
6100.00	1900.00	0.00	0.00	580.10	530.00	592.27	0.00	592.27	563.80	7.66	1.28	50.12
6100.00	1900.00	0.00	0.00	580.10	710.00	592.88	0.00	592.89	626.00	6.51	1.45	75.59
9100.00	3000.00	0.00	0.00	580.10	300.00	595.74	0.00	595.75	412.42	24.57	2.25	57.91
9100.00	3000.00	0.00	0.00	580.10	460.00	596.09	0.00	596.10	445.30	27.19	2.20	91.22
9100.00	3000.00	0.00	0.00	580.10	530.00	596.22	0.00	596.23	468.71	27.87	2.23	105.50
9100.00	3000.00	0.00	0.00	580.10	710.00	596.48	0.00	596.49	498.76	29.17	2.31	148.35

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	CRIWS	EG	TOPWID	10K*S	TIME	VOL

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	CRIWS	EG	TOP WID	10K*S	TIME	VOL
9224.00	124.00	0.00	0.00	589.10	300.00	596.07	0.00	596.07	440.67	11.48	2.34	59.99
9224.00	124.00	0.00	0.00	589.10	460.00	596.43	0.00	596.44	495.52	12.61	2.32	93.99
9224.00	124.00	0.00	0.00	589.10	530.00	596.57	0.00	596.58	505.43	12.96	2.31	108.54
9224.00	124.00	0.00	0.00	589.10	710.00	596.85	0.00	596.86	526.31	14.19	2.38	151.97
9284.00	60.00	0.00	0.00	589.95	300.00	596.07	0.00	596.07	440.67	11.48	2.34	59.99
9284.00	60.00	0.00	0.00	589.95	460.00	596.43	0.00	596.44	495.52	12.61	2.32	93.99
9284.00	60.00	0.00	0.00	589.95	530.00	596.57	0.00	596.58	505.43	12.96	2.31	108.54
9284.00	60.00	0.00	0.00	589.95	710.00	596.85	0.00	596.86	526.31	14.19	2.38	151.97
9316.00	32.00	595.80	595.50	589.95	300.00	596.45	0.00	596.45	496.75	5.19	2.36	60.46
9316.00	32.00	595.80	595.50	589.95	460.00	596.79	0.00	596.80	522.15	6.54	2.33	94.59
9316.00	32.00	595.80	595.50	589.95	530.00	596.89	0.00	596.89	529.08	7.03	2.32	109.18
9316.00	32.00	595.80	595.50	589.95	710.00	597.07	0.00	597.07	542.49	10.04	2.39	152.70
9376.00	60.00	0.00	0.00	589.10	270.00	596.48	0.00	596.48	498.67	4.23	2.40	61.48
9376.00	60.00	0.00	0.00	589.10	410.00	596.83	0.00	596.83	524.50	5.18	2.37	95.86
9376.00	60.00	0.00	0.00	589.10	480.00	596.93	0.00	596.93	531.77	6.04	2.36	110.52
9376.00	60.00	0.00	0.00	589.10	645.00	597.12	0.00	597.13	556.70	8.06	2.42	154.18
11000.00	1624.00	0.00	0.00	590.20	270.00	597.59	0.00	597.60	621.87	13.31	2.98	62.56
11000.00	1624.00	0.00	0.00	590.20	410.00	597.96	0.00	597.96	630.00	9.87	3.01	124.68
11000.00	1624.00	0.00	0.00	590.20	480.00	598.11	0.00	598.12	630.00	8.98	3.00	142.04
11000.00	1624.00	0.00	0.00	590.20	645.00	598.41	0.00	598.42	630.00	7.84	3.04	191.24
11440.00	440.00	0.00	0.00	590.20	270.00	597.93	0.00	597.93	630.00	4.70	3.23	87.43
11440.00	440.00	0.00	0.00	590.20	410.00	598.25	0.00	598.25	630.00	4.64	3.20	131.70
11440.00	440.00	0.00	0.00	590.20	480.00	598.39	0.00	598.39	630.00	4.61	3.22	150.02
11440.00	440.00	0.00	0.00	590.20	645.00	598.67	0.00	598.68	630.00	4.62	3.23	201.10
11489.00	49.00	0.00	0.00	590.80	270.00	597.95	0.00	597.95	630.00	3.57	3.26	88.08
11489.00	49.00	0.00	0.00	590.80	410.00	598.27	0.00	598.27	630.00	3.67	3.27	132.59
11489.00	49.00	0.00	0.00	590.80	480.00	598.41	0.00	598.41	630.00	3.72	3.24	151.01
11489.00	49.00	0.00	0.00	590.80	645.00	598.69	0.00	598.70	630.00	3.82	3.26	202.29
11490.00	1.00	596.20	597.80	590.80	270.00	597.94	0.00	597.96	630.00	3.87	3.26	86.10
11490.00	1.00	596.20	597.80	590.80	410.00	598.26	0.00	598.28	630.00	4.12	3.27	132.60
11490.00	1.00	596.20	597.80	590.80	480.00	598.40	0.00	598.42	630.00	4.20	3.24	151.03
11490.00	1.00	596.20	597.80	590.80	645.00	598.69	0.00	598.70	630.00	4.35	3.26	202.31
11510.00	20.00	596.20	597.80	590.80	270.00	597.94	0.00	597.96	630.00	3.79	3.27	88.34
11510.00	20.00	596.20	597.80	590.80	410.00	598.27	0.00	598.28	630.00	4.05	3.27	132.94
11510.00	20.00	596.20	597.80	590.80	480.00	598.41	0.00	598.42	630.00	4.13	3.25	151.40
11510.00	20.00	596.20	597.80	590.80	645.00	598.70	0.00	598.71	630.00	4.28	3.26	202.77
11511.00	1.00	0.00	0.00	590.80	270.00	597.96	0.00	597.97	630.00	3.49	3.27	88.35
11511.00	1.00	0.00	0.00	590.80	410.00	598.28	0.00	598.29	630.00	3.66	3.27	132.96
11511.00	1.00	0.00	0.00	590.80	480.00	598.42	0.00	598.43	630.00	3.71	3.25	151.42
11511.00	1.00	0.00	0.00	590.80	645.00	598.71	0.00	598.71	630.00	3.81	3.26	202.79

11525.00	14.00	0.00	0.00	590.20	270.00	597.47	0.00	597.47	630.00	3.59	3.28	88.56
11525.00	14.00	0.00	0.00	590.20	410.00	598.29	0.00	598.29	630.00	3.69	3.28	133.22
11525.00	14.00	0.00	0.00	590.20	480.00	598.43	0.00	598.43	630.00	3.71	3.26	151.72
11525.00	14.00	0.00	0.00	590.20	645.00	598.71	0.00	598.72	630.00	3.80	3.27	203.14
13400.00	1875.00	0.00	0.00	593.40	270.00	599.52	0.00	599.57	330.49	38.71	3.58	106.59
13400.00	1875.00	0.00	0.00	593.40	410.00	599.82	0.00	599.86	456.99	33.12	3.63	155.12
13400.00	1875.00	0.00	0.00	593.40	480.00	599.94	0.00	599.97	549.87	30.76	3.62	179.75
13400.00	1875.00	0.00	0.00	593.40	645.00	600.17	0.00	600.20	630.00	24.78	3.66	238.20
13839.00	439.00	0.00	0.00	593.90	270.00	600.39	0.00	600.40	516.58	11.19	3.72	109.20
13839.00	439.00	0.00	0.00	593.90	410.00	600.63	0.00	600.64	630.00	11.14	3.77	162.05
13839.00	439.00	0.00	0.00	593.90	480.00	600.73	0.00	600.74	630.00	11.22	3.75	184.26
13839.00	439.00	0.00	0.00	593.90	645.00	600.90	0.00	600.92	630.00	11.73	3.78	244.01
13889.00	50.00	0.00	0.00	594.20	270.00	600.42	0.00	600.43	630.00	2.68	3.75	109.74
13889.00	50.00	0.00	0.00	594.20	410.00	600.66	0.00	600.67	630.00	3.03	3.79	162.77
13889.00	50.00	0.00	0.00	594.20	480.00	600.76	0.00	600.77	630.00	3.21	3.77	185.05
13889.00	50.00	0.00	0.00	594.20	645.00	600.94	0.00	600.95	630.00	3.79	3.80	244.92
13890.00	1.00	599.10	600.20	594.20	270.00	600.42	0.00	600.43	630.00	2.53	3.76	109.75
13890.00	1.00	599.10	600.20	594.20	410.00	600.66	0.00	600.67	630.00	2.91	3.79	162.78
13890.00	1.00	599.10	600.20	594.20	480.00	600.76	0.00	600.77	630.00	3.12	3.77	185.06
13890.00	1.00	599.10	600.20	594.20	645.00	600.94	0.00	600.95	630.00	3.62	3.80	244.94
13910.00	20.00	599.10	600.20	594.20	270.00	600.43	0.00	600.43	630.00	2.49	3.77	110.01
13910.00	20.00	599.10	600.20	594.20	410.00	600.67	0.00	600.68	630.00	2.86	3.80	163.11
13910.00	20.00	599.10	600.20	594.20	480.00	600.77	0.00	600.78	630.00	3.07	3.78	185.42
13910.00	20.00	599.10	600.20	594.20	645.00	600.95	0.00	600.96	630.00	3.56	3.81	245.35
13911.00	1.00	0.00	0.00	594.20	270.00	600.43	0.00	600.43	630.00	2.63	3.77	110.03
13911.00	1.00	0.00	0.00	594.20	410.00	600.67	0.00	600.68	630.00	2.98	3.80	163.13
13911.00	1.00	0.00	0.00	594.20	480.00	600.77	0.00	600.78	630.00	3.15	3.78	185.44
13911.00	1.00	0.00	0.00	594.20	645.00	600.95	0.00	600.96	630.00	3.71	3.81	245.37
13925.00	14.00	0.00	0.00	594.20	270.00	600.43	0.00	600.44	630.00	2.60	3.76	110.22
13925.00	14.00	0.00	0.00	594.20	410.00	600.68	0.00	600.68	630.00	2.94	3.81	163.37
13925.00	14.00	0.00	0.00	594.20	480.00	600.78	0.00	600.78	630.00	3.12	3.79	185.71
13925.00	14.00	0.00	0.00	594.20	645.00	600.96	0.00	600.97	630.00	3.67	3.82	245.67
14925.00	1000.00	0.00	0.00	595.60	270.00	601.12	0.00	601.28	32.73	130.45	3.86	118.28
14925.00	1000.00	0.00	0.00	595.60	410.00	601.41	0.00	601.72	42.62	220.40	3.87	173.26
14925.00	1000.00	0.00	0.00	595.60	480.00	601.53	0.00	601.91	46.57	266.79	3.85	196.36
14925.00	1000.00	0.00	0.00	595.60	645.00	601.78	0.00	602.35	60.52	362.85	3.86	257.82
16000.00	1075.00	0.00	0.00	597.20	270.00	604.22	0.00	604.23	477.31	11.48	4.17	123.54
16000.00	1075.00	0.00	0.00	597.20	410.00	604.58	0.00	604.60	609.98	9.70	4.23	181.23
16000.00	1075.00	0.00	0.00	597.20	480.00	604.73	0.00	604.74	630.00	9.11	4.21	205.53
16000.00	1075.00	0.00	0.00	597.20	645.00	605.03	0.00	605.04	630.00	8.11	4.22	269.45

SECTION NUMBER	DISCHARGE CFS	CWSEL	CWSEL DIFF EACH Q	CWSEL DIFF EACH SECTION	CWSEL-WSELK	TOPWID	T.W. DIFF	LENGTH
0.000	345.000	579.570	0.000	0.000	0.000	26.971	0.000	0.000
0.000	525.000	580.700	1.130	0.000	0.000	30.132	-3.160	0.000
0.000	610.000	581.190	.490	0.000	0.000	31.502	-4.531	0.000
0.000	820.000	582.280	1.090	0.000	0.000	34.551	-7.579	0.000
150.000	345.000	580.063	0.000	.493	0.000	23.541	0.000	150.000
150.000	525.000	580.797	.734	.097	0.000	27.308	-3.768	150.000
150.000	610.000	581.088	.291	-.102	0.000	28.803	-5.262	150.000
150.000	820.000	581.719	.631	-.561	0.000	32.042	-8.501	150.000
160.000	345.000	580.509	0.000	.446	0.000	25.846	0.000	10.000
160.000	525.000	581.261	.752	.464	0.000	29.685	-3.839	10.000
160.000	610.000	581.571	.310	.483	0.000	31.269	-5.424	10.000
160.000	820.000	582.249	.679	.531	0.000	34.749	-8.903	10.000

170.000	345.000	580.617	0.000	.108	0.000	26.387	0.000	10.000	
170.000	525.000	581.388	.771	.127	0.000	30.349	-3.962	10.000	
170.000	610.000	581.703	.315	.133	0.000	31.949	-5.562	10.000	
170.000	820.000	582.391	.687	.141	0.000	35.500	-9.113	10.000	
180.000	345.000	580.703	0.000	.086	0.000	26.829	0.000	10.000	
180.000	525.000	581.480	.776	.092	0.000	30.817	-3.987	10.000	
180.000	610.000	581.797	.317	.093	0.000	32.444	-5.614	10.000	
180.000	820.000	582.487	.690	.096	0.000	35.989	-9.159	10.000	
312.000	345.000	581.377	0.000	.674	0.000	29.788	0.000	132.000	
312.000	525.000	582.239	.861	.759	0.000	34.239	-4.451	132.000	
312.000	610.000	582.582	.344	.786	0.000	35.960	-6.172	132.000	
312.000	820.000	583.336	.753	.849	0.000	39.824	-10.037	132.000	
484.000	345.000	581.784	0.000	.407	0.000	14.000	0.000	172.000	
484.000	525.000	582.633	.850	.395	0.000	14.000	0.000	172.000	
484.000	610.000	582.971	.338	.389	0.000	14.000	0.000	172.000	
484.000	820.000	583.689	.717	.353	0.000	14.000	0.000	172.000	
516.000	345.000	581.986	0.000	.202	0.000	14.000	0.000	32.000	
516.000	525.000	582.821	.835	.168	0.000	14.000	0.000	32.000	
516.000	610.000	583.169	.348	.197	0.000	14.000	0.000	32.000	
516.000	820.000	583.929	.760	.240	0.000	14.000	0.000	32.000	
559.000	345.000	583.014	0.000	1.028	0.000	64.719	0.000	43.000	
559.000	525.000	584.508	1.494	1.687	0.000	78.893	-14.174	43.000	
559.000	610.000	585.189	.681	2.020	0.000	85.352	-20.633	43.000	
559.000	820.000	586.876	1.687	2.947	0.000	178.652	-113.933	43.000	
1462.000	345.000	583.347	0.000	.333	0.000	62.665	0.000	903.000	
1462.000	525.000	584.732	1.385	.224	0.000	75.803	-13.138	903.000	
1462.000	610.000	585.377	.645	.198	0.000	81.835	-19.170	903.000	
1462.000	820.000	586.989	1.612	.113	0.000	161.481	-98.817	903.000	
1634.000	345.000	583.197	0.000	-.150	0.000	14.000	0.000	172.000	
1634.000	525.000	584.406	1.209	-.326	0.000	14.000	0.000	172.000	
1634.000	610.000	584.983	.577	-.390	0.000	14.000	0.000	172.000	
1634.000	820.000	586.461	1.478	-.528	0.000	14.000	0.000	172.000	
1666.000	345.000	583.271	0.000	.074	0.000	14.000	0.000	32.000	
1666.000	525.000	584.483	1.212	.077	0.000	14.000	0.000	32.000	
1666.000	610.000	585.048	.565	.065	0.000	14.000	0.000	32.000	
1666.000	820.000	587.249	2.201	.788	0.000	14.000	0.000	32.000	
1699.000	300.000	583.746	0.000	.475	0.000	46.255	0.000	33.000	
1699.000	460.000	585.197	1.451	.714	0.000	57.750	-11.495	33.000	
1699.000	530.000	585.897	.700	.849	0.000	63.288	-17.033	33.000	
1699.000	710.000	588.021	2.124	.772	0.000	88.929	-42.674	33.000	
1800.000	300.000	583.814	0.000	.068	0.000	46.770	0.000	101.000	
1800.000	460.000	585.241	1.427	.044	0.000	58.068	-11.298	101.000	
1800.000	530.000	585.932	.690	.035	0.000	63.534	-16.764	101.000	
1800.000	710.000	588.037	2.106	.016	0.000	89.454	-42.684	101.000	
2900.000	300.000	584.703	0.000	.890	0.000	47.313	0.000	1100.000	
2900.000	460.000	585.881	1.177	.639	0.000	57.318	-10.005	1100.000	
2900.000	530.000	586.452	.571	.520	0.000	62.170	-14.857	1100.000	
2900.000	710.000	588.268	1.816	.230	0.000	531.417	-484.103	1100.000	
3100.000	300.000	584.926	0.000	.223	0.000	48.377	0.000	200.000	
3100.000	460.000	586.070	1.144	.189	0.000	55.440	-7.063	200.000	
3100.000	530.000	586.615	.545	.163	0.000	58.803	-10.426	200.000	
3100.000	710.000	588.311	1.696	.043	0.000	81.158	-32.782	200.000	

3352.000	300.000	585.193	0.000	.267	0.000	39.498	0.000	252.000
3352.000	460.000	586.311	1.118	.241	0.000	48.498	-9.050	252.000
3352.000	530.000	586.830	.519	.215	0.000	52.670	-13.222	252.000
3352.000	710.000	588.441	1.612	.131	0.000	65.621	-26.173	252.000
4200.000	300.000	587.605	0.000	2.413	0.000	49.757	0.000	846.000
4200.000	460.000	588.710	1.105	2.400	0.000	57.769	-8.012	846.000
4200.000	530.000	589.096	.386	2.247	0.000	66.420	-16.664	846.000
4200.000	710.000	590.038	.941	1.596	0.000	154.339	-104.583	846.000
6100.000	300.000	591.147	0.000	3.542	0.000	315.635	0.000	1900.000
6100.000	460.000	591.986	.839	3.276	0.000	546.122	-230.487	1900.000
6100.000	530.000	592.266	.279	3.170	0.000	563.800	-248.166	1900.000
6100.000	710.000	592.879	.613	2.841	0.000	626.000	-310.366	1900.000
9100.000	300.000	595.743	0.000	4.596	0.000	412.415	0.000	3000.000
9100.000	460.000	596.091	.348	4.105	0.000	445.344	-32.928	3000.000
9100.000	530.000	596.219	.127	3.953	0.000	468.708	-56.293	3000.000
9100.000	710.000	596.477	.259	3.598	0.000	498.760	-86.344	3000.000
9224.000	300.000	595.989	0.000	.245	0.000	426.619	0.000	124.000
9224.000	460.000	596.348	.360	.257	0.000	489.267	-62.648	124.000
9224.000	530.000	596.482	.133	.263	0.000	499.029	-72.411	124.000
9224.000	710.000	596.758	.277	.281	0.000	519.328	-92.710	124.000
9284.000	300.000	596.067	0.000	.078	0.000	440.674	0.000	60.000
9284.000	460.000	596.434	.367	.085	0.000	495.516	-54.842	60.000
9284.000	530.000	596.569	.135	.087	0.000	505.428	-64.755	60.000
9284.000	710.000	596.853	.285	.095	0.000	526.315	-85.641	60.000
9316.000	300.000	596.407	0.000	.381	0.000	496.751	0.000	32.000
9316.000	460.000	596.792	.385	.358	0.000	522.145	-25.395	32.000
9316.000	530.000	596.886	.094	.317	0.000	529.085	-32.334	32.000
9316.000	710.000	597.066	.180	.213	0.000	542.492	-45.741	32.000
9376.000	270.000	596.476	0.000	.029	0.000	498.670	0.000	60.000
9376.000	410.000	596.828	.352	.036	0.000	524.496	-25.827	60.000
9376.000	480.000	596.927	.099	.042	0.000	531.771	-33.101	60.000
9376.000	645.000	597.122	.195	.056	0.000	556.695	-58.025	60.000
11000.000	270.000	597.594	0.000	1.118	0.000	621.867	0.000	1624.000
11000.000	410.000	597.956	.362	1.128	0.000	630.000	-8.133	1624.000
11000.000	480.000	598.109	.153	1.181	0.000	630.000	-8.133	1624.000
11000.000	645.000	598.411	.302	1.299	0.000	630.000	-8.133	1624.000
11440.000	270.000	597.927	0.000	.333	0.000	630.000	0.000	440.000
11440.000	410.000	598.248	.320	.291	0.000	630.000	-.000	440.000
11440.000	480.000	598.387	.140	.279	0.000	630.000	-.000	440.000
11440.000	645.000	598.674	.286	.263	0.000	630.000	-.000	440.000
11489.000	270.000	597.947	0.000	.020	0.000	630.000	0.000	49.000
11489.000	410.000	598.268	.321	.020	0.000	630.000	-.000	49.000
11489.000	480.000	598.408	.140	.020	0.000	630.000	-.000	49.000
11489.000	645.000	598.694	.287	.021	0.000	630.000	-.000	49.000
11490.000	270.000	597.936	0.000	-.011	0.000	630.000	0.000	1.000
11490.000	410.000	598.260	.324	-.008	0.000	630.000	-.000	1.000
11490.000	480.000	598.401	.141	-.007	0.000	630.000	-.000	1.000
11490.000	645.000	598.689	.288	-.005	0.000	630.000	-.000	1.000
11510.000	270.000	597.944	0.000	.006	0.000	630.000	0.000	20.000
11510.000	410.000	598.269	.324	.009	0.000	630.000	-.000	20.000
11510.000	480.000	598.410	.141	.009	0.000	630.000	-.000	20.000
11510.000	645.000	598.698	.288	.009	0.000	630.000	-.000	20.000
11511.000	270.000	597.962	0.000	.018	0.000	630.000	0.000	1.000

11511.000	410.000	598.281	.319	.013	0.000	630.000	-.000	1.000	
11511.000	480.000	598.421	.139	.011	0.000	630.000	-.000	1.000	
11511.000	645.000	598.707	.286	.009	0.000	630.000	-.000	1.000	
11525.000	270.000	597.968	0.000	.006	0.000	630.000	0.000	14.000	
11525.000	410.000	598.287	.319	.006	0.000	630.000	-.000	14.000	
11525.000	480.000	598.427	.140	.006	0.000	630.000	-.000	14.000	
11525.000	645.000	598.713	.286	.006	0.000	630.000	-.000	14.000	
13400.000	270.000	599.519	0.000	1.551	0.000	330.487	0.000	1875.000	
13400.000	410.000	599.818	.299	1.530	0.000	456.987	-126.500	1875.000	
13400.000	480.000	599.939	.121	1.512	0.000	549.871	-219.383	1875.000	
13400.000	645.000	600.168	.229	1.455	0.000	630.000	-299.513	1875.000	
13839.000	270.000	600.389	0.000	.870	0.000	516.581	0.000	439.000	
13839.000	410.000	600.629	.240	.811	0.000	630.000	-113.419	439.000	
13839.000	480.000	600.728	.099	.749	0.000	630.000	-113.419	439.000	
13839.000	645.000	600.905	.177	.737	0.000	630.000	-113.419	439.000	
13889.000	270.000	600.424	0.000	.035	0.000	630.000	0.000	50.000	
13889.000	410.000	600.664	.240	.035	0.000	630.000	-.000	50.000	
13889.000	480.000	600.764	.100	.036	0.000	630.000	-.000	50.000	
13889.000	645.000	600.945	.181	.040	0.000	630.000	-.000	50.000	
13890.000	270.000	600.423	0.000	-.001	0.000	630.000	0.000	1.000	
13890.000	410.000	600.663	.240	-.001	0.000	630.000	-.000	1.000	
13890.000	480.000	600.763	.100	-.001	0.000	630.000	-.000	1.000	
13890.000	645.000	600.944	.181	-.001	0.000	630.000	-.000	1.000	
13910.000	270.000	600.428	0.000	.005	0.000	630.000	0.000	20.000	
13910.000	410.000	600.669	.241	.006	0.000	630.000	-.000	20.000	
13910.000	480.000	600.769	.100	.006	0.000	630.000	-.000	20.000	
13910.000	645.000	600.951	.182	.007	0.000	630.000	-.000	20.000	
13911.000	270.000	600.430	0.000	.002	0.000	630.000	0.000	1.000	
13911.000	410.000	600.671	.241	.002	0.000	630.000	-.000	1.000	
13911.000	480.000	600.771	.100	.002	0.000	630.000	-.000	1.000	
13911.000	645.000	600.953	.182	.003	0.000	630.000	-.000	1.000	
13925.000	270.000	600.434	0.000	.004	0.000	630.000	0.000	14.000	
13925.000	410.000	600.675	.242	.004	0.000	630.000	-.000	14.000	
13925.000	480.000	600.776	.100	.004	0.000	630.000	-.000	14.000	
13925.000	645.000	600.959	.183	.005	0.000	630.000	-.000	14.000	
14925.000	270.000	601.118	0.000	.684	0.000	32.732	0.000	1000.000	
14925.000	410.000	601.410	.292	.735	0.000	42.625	-9.892	1000.000	
14925.000	480.000	601.526	.116	.751	0.000	46.569	-13.836	1000.000	
14925.000	645.000	601.783	.257	.824	0.000	60.517	-27.784	1000.000	
16000.000	270.000	604.217	0.000	3.100	0.000	477.309	0.000	1075.000	
16000.000	410.000	604.583	.366	3.173	0.000	609.975	-132.667	1075.000	
16000.000	480.000	604.725	.142	3.199	0.000	630.000	-152.691	1075.000	
16000.000	645.000	605.030	.305	3.247	0.000	630.000	-152.691	1075.000	

DATA FOR LAST CROSS SECTION

PROFILE	TYPE ENC	TARGET	TOP WIDTH AREA-ACRES	TOP WIDTH AREA-DIFF
1	0.000	0.000	108.789	0.000
2	0.000	0.000	130.790	22.001
3	0.000	0.000	136.267	27.479
4	0.000	0.000	156.344	47.556

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HEC2 VERSION UPDATED AUG 1976

Mar 78 Revision Natural Channel

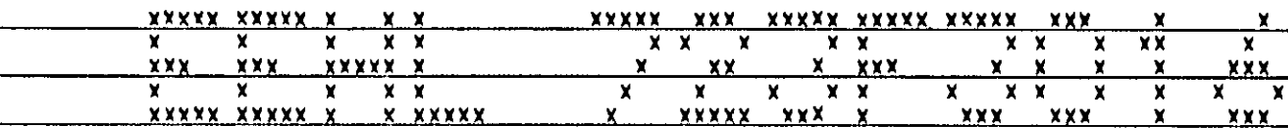
MARSAC

DNR check, sections

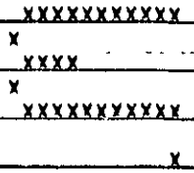
Ira twp FIS

Marsac Cr. sections

computer station	station letter	comment
0+00	A	invert dropped 2' dupe of B
3+12	B, line # 1	
4+84	dupes,	d/s, u/s side
5+16	trailer	pk culvert
5+59	C	
14+62	D	dupe invert +.55'
16+34	dupes,	d/s, u/s Bethuy Rd
16+66	line # 2,	sta 16+50
16+99	E	& Bethuy Rd line # 3
18+00	F	dupe
29+00	G	line # 4
31+00	H	line # 5
33+52	I	line # 5A
42+00	J	line # 6
61+00	K	line # 7
91+00	L	line # 8
92+24	dupe	
92+84	M	d/s side Arnold Rd 93+00' & line # 9
93+16	N	u/s side dupe
93+31	dupe of 91+00	
110+00	O	line # 10
114+40	P	dupe
114+89	Arnold Rd	
114+90	dupe	
115+11	Q	dupe
115+25	dupe of 110+00	
134+00	R	line # 11
138+39	S	dupe invert +.55
138+89		culvert north
138+90	dupe of Arnold Rd	
139+10		
139+11	T	dupe
139+25	dupe of U, invert dropped 3.0 ft	
160+00	U	139+25, invert raised 3.0 ft
	U is line # 12	

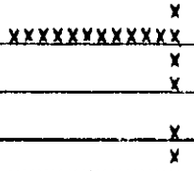


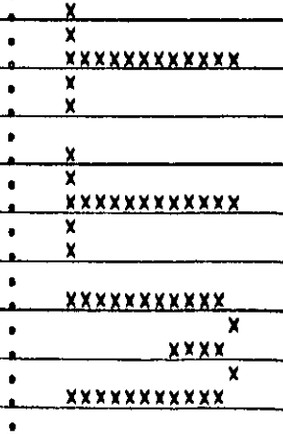
B040 45 OUTPUT 30 JAN 78 08.53 B040 45



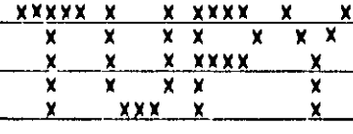
Mar 78 Revised

Lower Portion - From Lake St. Clair to to section B





B040 45 COKE 30 JAN 78 08.54 B040 45



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08.14.32. WTTES00.  30 JAN 78   7600Z  RKY24B V2   WTT      NORM          804045 EEHL 723F3
08.14.32. WTTES00.  WTT,P3,804045,EEHL 723F3016.
08.14.32. WTTES00.  *INPUT 66008 02.39.04. 30 JAN 78  VIA COKE
08.14.32. WTTES00.  COPY(INPUT,1R,CONTROL/BP)
08.14.38. WTTES00.    CONTROL DISK 1
08.14.38. WTTES00.  (TUPY
08.14.38. WTTES00.  *NOSTAGE
08.14.38. WTTES00.  FETCHMT,HEC2,180B2,1FS,1F.
08.14.42. WTTES00.    CACHE22 RETURNED       2 BLD, BS= 0040B,FS=1667618
08.47.21. WTTES00.  CHECKSUM ERROR - RESTAGE      HEC2
08.47.21. WTTES00.    CACHE22 RETURNED       6 BLD, BS= 0040B,FS=1374218
08.47.21. WTTES00.    TAPEPAC DISK 2
08.47.22. WTTES00.    TAPEPAC UNLOADED       1 BLD, BS= 0002B,FS=0000018
08.52.07. WTTES00.  *STAGING COMPLETE   08.52.07.        12 CUS.
08.52.07. WTTES00.    TAPEPAC RETURNED       1 BLD, BS= 0002B,FS=0000018
08.52.07. WTTES00.  TPSTAGE MT 50 A 18082
08.52.07. WTTES00.
08.52.07. WTTES00.
08.52.07. WTTES00.  STAGE IN  REEL 1. HEC2
08.52.07. WTTES00.  END REEL 1
08.52.07. WTTES00.        FROM 6000.      1R       1F.
08.52.07. WTTES00.          TO 7000.      1R       1F     20004W
08.52.07. WTTES00.  MT50,8A  000130R 0000RP  000000W 0000WP
08.52.07. WTTES00.
08.52.07. WTTES00.
08.52.07. WTTES00.  TOTAL STAGED TO 7000 - FILE HEC2
08.52.07. WTTES00.     20004 WORDS,      1 RECORDS,      1 FILES.
08.52.07. WTTES00.
08.52.07. WTTES00.    STATION RETURNED       1 BLD, BS= 0002B,FS=0000018
08.52.09. WTTES00.  FLS=170K  FLL=0000K  LCM BUFFERS=0050K  TOTAL LCM=0240K
08.52.11. WTTES00.  HEC2           20007 WORDS STORED IN CACHE.
08.52.12. WTTES00.    CACHE22 RETURNED      10 BLD, BS= 0040B,FS=1407138
08.52.12. WTTES00.  FLS=060K  FLL=0000K  LCM BUFFERS=0014K  TOTAL LCM=0074K
08.52.12. WTTES00.  SFL,170000.
08.52.12. WTTES00.  FLS=170K  FLL=0000K  LCM BUFFERS=0014K  TOTAL LCM=0204K
08.52.12. WTTES00.  HEC2,LC=20000.
08.52.12. WTTES00.    BEGIN=  HEC2       USING -
08.52.12. WTTES00.            MNF4 LIBRARY VERSION 1.4
08.52.12. WTTES00.            FTN4 LIBRARY 7600-L439/77040.10.37
08.52.12. WTTES00.    TAPE92  DISK 1
08.52.12. WTTES00.    TAPE93  DISK 2
08.52.12. WTTES00.  --8A;
08.52.12. WTTES00.    OUTPUT  DISK 1
08.52.12. WTTES00.    TAPE94  DISK 2
08.52.12. WTTES00.    TAPE91  DISK 1
08.52.13. WTTES00.  --8A; I5 A
08.52.13. WTTES00.  --8A; I5 A A
08.52.13. WTTES00.       STOP
08.52.13. WTTES00.           .250 CP SECONDS EXECUTION TIME
08.52.14. WTTES00.    OUTPUT  QUEUED PR      1 BLD, BS= 0020B,FS=0000108
08.52.14. WTTES00.  *J A30239N   804045N 30JAN78RZ N 000017BA; I5 A AEEHL 723F3
08.52.14. WTTES00.  ****************************
08.52.14. WTTES00.  SECTORS TRANSFERRED          113
08.52.14. WTTES00.  MAX DISK SECTORS             410
08.52.14. WTTES00.  CP SECONDS                 0.250
08.52.14. WTTES00.  SYSTEM SECONDS             0.043
08.52.14. WTTES00.  OLD BLD'S                      4
08.52.14. WTTES00.  LCM BUFFER LOADS               6
08.52.14. WTTES00.  ITC CUS                        0
08.52.14. WTTES00.  K-WORDS XFERRED               30
08.52.14. WTTES00.  CIO CALLS                     69
08.52.14. WTTES00.  STAGING PUR                   12
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08.52.14. WTTES00. ..............................
08.52.14. WTTES00. TOTAL JOB CUS                17
08.52.14. WTTES00. COST + OVERHEAD  $          1.70
08.52.14. WTTES00. ..............................

08.53.32. WTTES00. OUTPUT QUEUED PR 64
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HEC2 VERSION UPDATED AUG 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09,10
MODIFICATIONS 52,53,54,55,56,57,58,59
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* * * NEW HEC2 VERSION * * *

AS OF 28 MARCH 1977, A NEW VERSION OF HEC2 (DATED NOVEMBER 1976) WILL BE AVAILABLE IN HECLIB UNDER THE FILE NAME HEC2N. THE NEW VERSION HAS AN EXPANDED SUMMARY OUTPUT CAPABILITY ALLOWING THE USER TO SELECT VARIABLES FOR DISPLAY FROM A LIST OF 63 AVAILABLE.
ALSO, FIXED FORMAT TABLES CAN BE REQUESTED WHICH DISPLAY BRIDGE DATA, ENCROACHMENT DATA, CHANNEL IMPROVEMENT DATA, FLOODWAY DATA AND FLOOD INSURANCE RATE ZONE DATA. CONTROL CARDS FOR ACCESSING THE NEW VERSION ARE AS FOLLOWS:

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(JOB CARD)
*NOSTAGE
FETCHPS,HECLIB,HEC2N,HEC2N.
SEL,101000.
HEC2N.
(RECORD SEPARATOR CARD)
(  DATA DECK  )
(JOB DECK TERMINATOR)
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THE PROGRAM HAS BEEN TESTED ON A NUMBER OF DATA SETS. IF ANY PROBLEMS ARE DETECTED, PLEASE CONTACT ALLAN OTO OF HEC AT (FTS) 448-2105.
MULTIPLE COPIES OF AN HEC2 USERS MANUAL SUPPLEMENT FOR THE NEW VERSION WILL BE AVAILABLE FROM ADP CENTERS IN ALL DISTRICT AND DIVISION OFFICES BY 28 MARCH 1977.
A PROGRAMMERS MANUAL FOR THE NEW VERSION WILL BE AVAILABLE BY ABOUT MID-APRIL.
THE EXISTING VERSIONS OF THE PROGRAM AT LRL (HEC2 AND HEC2Z) WILL REMAIN IN HECLIB UNDER THE FILE NAMES HEC2 AND HEC2Z UNTIL THE END OF JULY.

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C
T1      WINDJAMMER SUB  FILE NO. 2443 3.1 , EXISTING CONDITIONS  WITH   AUZINS
T2      EXISTING CULVERT ,CENTERLINE STATION 8+50                              10-12-76
T3      MARSAC CREEK,0100 610 CFS ST W.S. 575.8 USGS MEAN LK ST CLAIR LEVEL

J1  ICHECK     INQ       NINV      IOPR      STRT      METRIC    HVINS     Q         WSEL      FQ

          0.        0.        0.        0.  0.000000      0.00       0.0       610.   575.800     0.000

NC      .160      .160      .030      .100      .800     0.000     0.000     0.000     0.000     0.000

          LEHNER SECTION 1, 500 FT D.S. CENTERLINE M=29

X1      0.000    10.000   103.000   147.000     0.000     0.000     0.000     0.000     1.200     0.000
GR    580.100     0.000   580.100   100.000   576.900   103.000   576.100   105.000   574.700   115.000
GR    571.400   125.000   574.600   140.000   576.900   147.000   582.500   165.000   583.600   265.000

          LEHNER SECTION 2 ,ADJUSTED

X1      4.000     7.000   110.000   168.000   450.000   450.000   450.000     0.000     1.070     0.000
GR    583.000     0.000   582.500   100.000   576.900   110.000   572.600   144.000   576.900   168.000
GR    582.700   187.000   582.800   287.000     0.000     0.000     0.000     0.000     0.000     0.000
NC      .160      .160      .030      .300      .500     0.000     0.000     0.000     0.000     0.000

          LEHNER SECTION 2 ,D.S. SIDE M=29,105 L.F., 25 FT BRIDGE WIDTH

X1      4.500     5.000   126.000   151.000    50.000    50.000    50.000     0.000     1.200     0.000
GR    583.900   126.000   575.500   126.000   572.600   144.000   573.250   151.000   583.900   151.000

          LEHNER SECTION 3, CENTERLINE  M=29

X1      5.000     7.000   100.000   125.000    50.000    50.000    50.000     0.000     1.200     0.000
GR    583.900   100.000   575.900   100.000   575.800   106.000   573.800   112.000   573.100   118.000
GR    575.800   125.000   583.900   125.000     0.000     0.000     0.000     0.000     0.000     0.000

          U.S. SIDE,M=29 ,DUPED SECTION

X1      5.550     0.000     0.000     0.000    55.000    55.000    55.000     0.000     0.000     0.000

          LEHNER SECTION 4,  MOVED  DOWNSTREAM 120 FT, ADJUSTED

X1      5.800     6.000   110.000   135.000    25.000    25.000    25.000     1.000      .900     0.000
GR    581.200   100.000   576.900   110.000   573.400   110.500   573.400   134.500   576.900   135.000
GR    581.900   145.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
NC      .160      .160      .030      .100      .300     0.000     0.000     0.000     0.000     0.000

          LEHNER SECTION 4, ADJUSTED

X1      7.000     0.000     0.000     0.000   120.000   120.000   120.000     1.000     -.700     0.000

X1      8.050     4.000     0.000    18.580   105.000   105.000   105.000     0.000     1.200     0.000
GR    584.400     0.000   572.400     0.000   572.400    18.580   584.400    18.580     0.000     0.000
NC      .160      .160      .031      .600      .800     0.000     0.000     0.000     0.000     0.000
```

D.S. SIDE, 18FT-7 INCH CMP, EXISTING CONDITIONS

X1	8.960	13.000	0.000	18.580	1.000	1.000	1.000	0.000	1.200	0.000
X2	0.000	0.000	0.000	584.500	585.000	0.000	0.000	0.000	0.000	0.000
GR	576.130	0.000	575.000	.290	573.800	1.290	573.200	3.290	572.800	5.290
GR	572.500	7.290	572.400	9.290	572.500	11.290	572.800	13.290	573.200	15.290
GR	573.800	17.290	575.000	18.290	576.130	18.580	0.000	0.000	0.000	0.000
BT	13.000	0.000	585.000	576.130	.290	585.000	577.400	1.290	585.000	580.000
BT	3.290	585.000	582.200	5.290	585.000	583.400	7.290	585.000	584.200	9.290
BT	585.000	584.400	11.290	585.000	584.200	13.290	585.000	583.400	15.290	585.000
BT	582.200	17.290	585.000	580.000	18.290	585.000	577.400	18.580	585.000	576.130

U.S. SIDE, 18FT-7 INCH CMP, EXISTING CONDITIONS

X1	8.940	0.000	0.000	0.000	88.000	88.000	88.000	1.000	.100	0.000
X2	0.000	0.000	0.000	584.500	585.000	0.000	1.000	0.000	0.000	0.000
NC	.160	.160	.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	8.950	4.000	0.000	18.580	1.000	1.000	1.000	0.000	1.200	0.000
GR	584.500	0.000	572.500	0.000	572.500	18.580	584.500	18.580	0.000	0.000

X1	9.150	6.000	110.000	135.000	20.000	20.000	20.000	1.000	.300	0.000
GR	581.200	100.000	576.900	110.000	573.400	110.500	573.400	134.500	576.900	135.000
GR	581.900	145.000	0.000	0.000	0.000	0.000	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

LEHNER SECTION 5

X1	10.500	6.000	110.000	135.000	135.000	135.000	135.000	0.000	1.200	0.000
GR	581.900	100.000	576.900	110.000	572.400	110.500	572.400	134.500	576.900	135.000
GR	582.500	145.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

LEHNER SECTION 6

X1	15.000	6.000	107.000	130.000	450.000	450.000	450.000	0.000	1.200	0.000
GR	582.200	100.000	576.950	107.000	572.400	108.000	572.400	129.000	576.950	130.000
GR	587.200	145.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

EAST PROPERTY LINE, LEHNER SECTION 7

X1	16.500	6.000	120.000	135.000	150.000	150.000	150.000	0.000	1.200	0.000
GR	585.550	100.000	577.200	120.000	576.200	122.000	576.200	133.000	577.200	135.000
GR	584.500	155.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	16.600	0.000	0.000	0.000	10.000	10.000	10.000	0.000	0.000	0.000

X1	16.700	0.000	0.000	0.000	10.000	10.000	10.000	0.000	0.000	0.000

X1	16.800	0.000	0.000	0.000	10.000	10.000	10.000	0.000	0.000	0.000

LEHNER SECTION 8,ADJUSTED,D.S. SIDE,MOBILE HOME PARK CULVERT

X1	20.000	4.000	120.000	134.000	320.000	320.000	320.000	0.000	1.200	0.000
X3	0.000	0.000	0.000	120.000	0.000	134.000	0.000	0.000	0.000	0.000
GR	585.000	100.000	57 .400	120.000	576 400	134 000	585 000	150 000	0 000	0 000

CCHV= .600 CEHV= .800

3720 ASSUMED CRITICAL DEPTH

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
	LEHNER SECTION 1, 500 FT D.S. CENTERLINE M=29								
0.00	4.36	576.96	576.96	575.80	578.00	1.04	0.00	0.00	578.10
610.	0.	610.	0.	0.	74.	0.	0.	0.	578.10
0.00	0.00	8.19	0.00	.160	.030	.160	0.000	572.60	107.45
.010845	0.	0.	0.	0	10	1	0.00	36.07	143.52
3301 HV CHANGED MORE THAN HVINS									
	LEHNER SECTION 2 ,ADJUSTED								
4.00	5.30	578.97	0.00	0.00	579.14	.17	1.05	.09	577.97
610.	0.	610.	0.	1.	183.	2.	1.	1.	577.97
.04	.17	3.33	.18	.160	.030	.160	.030	573.67	108.21
.000993	450.	450.	450.	4	0	1	0.00	63.08	171.29
CCHV= .300 CEHV= .500									
	LEHNER SECTION 2 ,D.S. SIDE M=29,105 L.F., 25 FT BRIDGE WIDTH								
4.50	5.04	578.84	0.00	0.00	579.44	.61	.09	.22	585.10
610.	0.	610.	0.	0.	98.	0.	2.	1.	585.10
.04	0.00	6.25	0.00	.160	.030	.160	.030	573.80	126.00
.003565	50.	50.	50.	2	0	1	0.00	25.00	151.00
	LEHNER SECTION 3, CENTERLINE M=29								
5.00	4.59	578.89	0.00	0.00	579.88	.99	.25	.19	585.10
610.	0.	610.	0.	0.	77.	0.	2.	1.	585.10
.04	0.00	7.97	0.00	.160	.030	.160	.030	574.30	100.00
.007270	50.	50.	50.	2	0	1	0.00	25.00	125.00

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
	U.S. SIDE,M=29 ,DUPED SECTION								
5.55	5.32	579.62	0.00	0.00	580.26	.65	.28	.10	585.10
610.	0.	610.	0.	0.	95.	0.	2.	1.	585.10
.04	0.00	6.45	0.00	.160	.030	.160	.030	574.30	100.00
.003823	55.	55.	55.	3	0	1	0.00	25.00	125.00

HNER SECTION 4, MOVED DOWNSTREAM 120 FT, ADJUSTED

5.80	5.84	580.14	0.00	0.00	580.42	.27	.04	.11	577.80
610.	2.	606.	2.	6.	144.	6.	2.	1.	577.80
.05	.30	4.20	.29	.160	.030	.160	.030	574.30	104.54
.000927	25.	25.	25.	2	0	1	0.00	35.15	139.69

CCHV= .100 CEHV= .300

LEHNER SECTION 4, ADJUSTED

7.00	6.71	580.31	0.00	0.00	580.51	.20	.09	.01	577.10
610.	3.	604.	3.	12.	166.	10.	2.	1.	577.10
.05	.29	3.64	.28	.160	.030	.160	.030	573.60	102.54
.000578	120.	120.	120.	2	0	1	0.00	38.87	141.41

8.05	6.68	580.28	0.00	0.00	580.66	.37	.09	.05	585.60
610.	0.	610.	0.	0.	124.	0.	3.	1.	585.60
.06	0.00	4.91	0.00	.160	.030	.160	.030	573.60	0.00
.001611	105.	105.	105.	2	0	1	0.00	18.58	18.58

CCHV= .600 CEHV= .800
3280 CROSS SECTION 8.06 EXTENDED 2.93 FEET

NORMAL BRIDGE,NRD= 0 MIN ELTRD= 585.00 MAX ELLC= 584.50

D.S. SIDE, 18FT-7 INCH CMP, EXISTING CONDITIONS

8.06	6.66	580.26	0.00	0.00	580.74	.48	.00	.08	577.33
610.	0.	610.	0.	0.	110.	0.	3.	1.	577.33
.06	0.00	5.55	.00	.160	.031	.160	.030	573.60	0.00
.001770	1.	1.	1.	2	0	1	0.00	18.58	18.58

3280 CROSS SECTION 8.94 EXTENDED 3.00 FEET

NORMAL BRIDGE,NRD= 0 MIN ELTRD= 585.00 MAX ELLC= 584.50

U.S. SIDE, 18FT-7 INCH CMP, EXISTING CONDITIONS

8.94	6.73	580.43	0.00	0.00	580.90	.47	.15	.01	577.43
610.	0.	610.	0.	0.	111.	0.	3.	1.	577.43
.07	0.00	5.48	.00	.160	.031	.160	.030	573.70	0.00
.001708	88.	88.	88.	2	0	1	0.00	18.58	18.58

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

8.95	6.92	580.62	0.00	0.00	580.97	.35	.00	.07	585.70
610.	0.	610.	0.	0.	129.	0.	3.	1.	585.70
.07	0.00	4.74	0.00	.160	.030	160	030	571.70	0.00

8.95	6.92	580.62	0.00	0.00	580.97	.35	.00	.07	585.70
610.	0.	610.	0.	0.	129.	0.	3.	1.	585.70
.0	0.00	4.74	0.00	.160	.030	.160	.030	573.70	0.00
.001459	1.	1.	1.	2	0	1	0.00	18.58	18.58
9.15	7.22	580.92	0.00	0.00	581.09	.17	.01	.11	577.20
610.	5.	602.	4.	16.	179.	10.	3.	1.	577.20
.07	.28	3.37	.28	.160	.030	.160	.030	573.70	101.35
.000448	20.	20.	20.	2	0	1	0.00	41.09	142.44

CCHV= .100 CEHV= .300

LEHNER SECTION 5

10.50	7.38	580.98	0.00	0.00	581.15	.17	.06	.00	578.10
610.	2.	606.	2.	8.	182.	7.	4.	1.	578.10
.08	.24	3.33	.23	.160	.030	.160	.030	573.60	104.23
.000462	135.	135.	135.	2	0	1	0.00	35.92	140.15

LEHNER SECTION 6

15.00	7.59	581.19	0.00	0.00	581.38	.20	.22	.01	578.15
610.	1.	607.	2.	6.	170.	7.	6.	1.	578.15
.11	.24	3.57	.25	.160	.030	.160	.030	573.60	102.95
.000522	450.	450.	450.	0	0	1	0.00	31.50	134.45

3685 20 TRIALS USED WSEL,CWSEL

7185 MIN SPECIFIC ENERGY

3720 ASSUMED CRITICAL DEPTH

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

EAST PROPERTY LINE, LEHNER SECTION 7

16.50	3.83	581.23	581.23	0.00	582.92	1.70	.20	0.00	578.40
610.	10.	589.	11.	10.	55.	11.	6.	1.	578.40
.12	1.02	10.64	1.03	.160	.030	.160	.030	577.40	113.23
.008419	150.	150.	150.	30	8	1	0.00	29.51	142.74
16.60	4.39	581.79	0.00	0.00	583.03	1.24	.06	.05	578.40
610.	12.	583.	14.	14.	64.	16.	6.	1.	578.40
.12	.00	9.13	.91	.160	.030	.160	.030	577.40	111.88
.005136	10.	10.	10.	6	0	1	0.00	32.41	144.29

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

16.70	4.95	581.95	0.00	0.00	583.09	1.14	.05	.01	578.40

[illegible]	13.	58..	13.	15.	66.	17.	6.	1.	578.40
.12	.87	8.78	.88	.160	.030	.160	.030	577.40	111.50
.00452[illegible]	10.	10.	10.	2	0	1	0.00	33.22	144.72

16.80	4.66	582.06	0.00	0.00	583.14	1.08	.04	.01	578.40
610.	14.	581.	16.	16.	68.	18.	6.	1.	578.40
.12	.85	8.56	.86	.160	.030	.160	.030	577.40	111.24
.004155	10.	10.	10.	2	0	1	0.00	33.78	145.02

3470 ENCROACHMENT STATIONS= 120.0 134.0 TYPE= 1 TARGET= 14.000

LEHNER SECTION A,ADJUSTED,D.S. SIDE,MOBILE HOME PARK CULVERT

20.00	6.13	583.73	0.00	0.00	584.51	.78	1.34	.03	577.60
610.	0.	610.	0.	0.	86.	0.	7.	2.	100001.20
.13	0.00	7.11	0.00	.160	.030	.160	.030	577.60	120.00
.004246	320.	320.	320.	2	0	1	0.00	14.00	134.00

B I L L B O A R D WRITEUPS SUBSET BKYNEWS WAS LAST CHANGED JAN 24
HANDBOOK SUBSET CHANGES WAS LAST CHANGED DEC 21

JAN 25 TEST76 TOMORROW
THERE WILL BE A TEST76 RUN TOMORROW (FRI. JAN 26) FROM 0700 TO 0800.
THE NEW FTNQLIB WILL BE AVAILABLE FOR TESTING.

JAN 24 6250 TAPES
THERE ARE OVER TWO THOUSAND 6250 DENSITY TAPES AVAILABLE THROUGH
THE LIBTAPE CONTROL CARD. ATTEMPTING TO USE NON-6250 BPI TAPES AT
6250 WILL NOT BE SANCTIONED BY OPERATIONS. USERS ATTEMPTING TO
WRITE /READ AT 6250 BPI ON TAPES NOT IN EASYLOAD SEALS WILL HAVE
THEIR JOBS DROPPED.

JAN 16 GSS (STOTAPE/GETTAPE) ROUTINES ON SYSTEM
ALL THE GETTAPE/STOTAPE ROUTINES ARE NOW SYSTEM RESIDENT. STOTAPE, GETTAPE
AND CPYTAPE ARE ON ALL SYSTEMS. LSTTAPE, PSSTAPE AND FIXTAPE ARE ON BOTH 6000S
AND MSSTAPE IS ON THE 6600B ONLY. A NEW WRITEUP, GSS, DESCRIBES ALL OF THESE
ROUTINES IN DETAIL. THE OLD STOTAPE WRITEUP WAS LAID TO REST.

JAN 03 LBL NEWSLETTER
THE LBL COMPUTER CENTER NEWSLETTER (NOT BKY NEWS) IS PUBLISHED
MONTHLY AND PROVIDES MUCH USEFUL CURRENT INFORMATION TO OUR USERS.
IT IS MAILED, FREE, UPON REQUEST. IF YOU ARE NOT RECEIVING IT,
AND WOULD LIKE TO HAVE IT SENT TO YOU, CONTACT MAGGIE MORLEY
AT THE COMPUTER CENTER LIBRARY, BLDG. 50A, RM. 1245A, (843-2740
X5529, AND YOUR NAME WILL BE ADDED TO OUR MAILING LIST.

JAN 03 PSS SUBSETS DESTROYED
THE FOLLOWING PSS SUBSETS WERE DESTROYED DUE TO HARDWARE ERRORS.

	LIBRARY	SUBSET(S)
12-30	WRLIB	MSPLGO
12-29	WRITEUPSPL	BARB
12-29	SUFXAM	SPRINT
12-29	LBLWEEK	SEP75
12-23	CHOT	REACTV
12-19	DWTLNER	GLOBAL

OCT 2 MFE BLOCK TIME TO CHANGE AGAIN
AS OF OCT 2 THE NEW MFE BLOCK TIMES WILL BE

2100	SUNDAY	TO	0500 MONDAY
2200	TUESDAY	TO	0600 WEDNESDAY
2200	THURSDAY	TO	0600 FRIDAY

TO CALL A CONSULTANT 415-843-1009 DIRECT DIAL
451-5981 FTS ONLY

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08.14.32. WTTES00. 30 JAN 78   7600Z  BKY24B V2   WTT      NORM          804045 EEHL 723F3
08.14.32. WTTES00. WTT,P3,804045,EEHL 723F3016
08.14.32. WTTES00. *INPUT 66008 02.39.04. 30 JAN 78  VIA COKE
08.14.32. WTTES00.  COPY(INPUT,1R,CONTROL/BR)
08.14.38. WTTES00.   CONTROL DISK 1
08.14.38. WTTES00. (TUPY
08.14.39. WTTES00. *NOSTAGE
08.14.39. WTTES00. FETCHMT,HEC2,1A0A2,1FS,1F.
08.14.42. WTTES00.   CACHE22 RETURNED       2 BLD, BS= 0040B,FS=166761B
08.47.21. WTTES00.  CHECKSUM ERROR - RESTAGE     HEC2
08.47.21. WTTES00.   CACHE22 RETURNED       6 BLD, BS= 0040B,FS=137421B
08.47.21. WTTES00.   TAPEPAC DISK 2
08.47.22. WTTES00.   TAPEPAC UNLOADED       1 BLD, BS= 0002B,FS=000001B
08.52.07. WTTES00.  *STAGING COMPLETE   08.52.07.       12 CUS.
08.52.07. WTTES00.  TAPEPAC RETURNED-----1 BLD, BS=-0002B,FS=000001B
08.52.07. WTTES00.  TPSTAGE MT 50 A 1A0A2
08.52.07. WTTES00.
08.52.07. WTTES00.
08.52.07. WTTES00.  STAGE IN  REEL 1, HEC2
08.52.07. WTTES00.  END REEL 1
08.52.07. WTTES00.       FROM 6000,     1R      1F.
08.52.07. WTTES00.         TO 7000,     1R      1F    20004W
08.52.07. WTTES00.  MT50,BA  000130R 0000RP  000000W 0000WP
08.52.07. WTTES00.
08.52.07. WTTES00.
08.52.07. WTTES00.  TOTAL STAGED TO 7000 - FILE HEC2
08.52.07. WTTES00.     20004 WORDS,     1 RECORDS,     1 FILES.
08.52.07. WTTES00.
08.52.07. WTTES00.   STATION RETURNED       1 BLD, BS= 0002B,FS=000001B
08.52.09. WTTES00.  FLS=170K  FLL=0000K  LCM BUFFERS=0054K  TOTAL LCM=0244K
08.52.11. WTTES00.  HEC2          20007 WORDS STORED IN CACHE.
08.52.12. WTTES00.   CACHE22 RETURNED      10 BLD, BS= 0040B,FS=140713B
08.52.12. WTTES00.  FLS=060K  FLL=0000K  LCM BUFFERS=0014K  TOTAL LCM=0074K
08.52.12. WTTES00. SFL,170000.
08.52.12. WTTES00.  FLS=170K  FLL=0000K  LCM BUFFERS=0014K  TOTAL LCM=0204K
08.52.12. WTTES00. HEC2,LC=20000.
08.52.12. WTTES00.   BEGIN=  HEC2      USING -
08.52.12. WTTES00.           MNF4 LIBRARY VERSION 1.4
08.52.12. WTTES00.           FTN4 LIBRARY 7600-L439/77040.10.37
08.52.12. WTTES00.   TAPE92  DISK 1
08.52.12. WTTES00.   TAPE93  DISK 2
08.52.12. WTTES00.  ...BA;
08.52.12. WTTES00.   OUTPUT  DISK 1
08.52.12. WTTES00.   TAPE94  DISK 2
08.52.12. WTTES00.   TAPE91  DISK 1
08.52.13. WTTES00.  ...BA; IS A
08.52.13. WTTES00.  ...BA; IS A A
08.52.13. WTTES00.      STOP
08.52.13. WTTES00.         .250 CP SECONDS EXECUTION TIME
08.52.14. WTTES00.   OUTPUT  QUEUED PR       1 BLD, BS= 0020B,FS=000010B
08.52.14. WTTES00. *J A30239N   804045N 30JAN78RZ N 000017BA; IS A AEEHL 723F3
08.52.14. WTTES00. ..........................
08.52.14. WTTES00. SECTORS TRANSFERRED          113
08.52.14. WTTES00. MAX DISK SECTORS             410
08.52.14. WTTES00. CP SECONDS                 0.250
08.52.14. WTTES00. SYSTEM SECONDS             0.043
08.52.14. WTTES00. OLD BLD"S                      4
08.52.14. WTTES00. LCM BUFFER LOADS               6
08.52.14. WTTES00. ITO CUS                        0
08.52.14. WTTES00. KWORDS XFERRED                30
08.52.14. WTTES00. CIO CALLS                     69
08.52.14. WTTES00. STAGING CUS                   12
08.52.14. WTTES00. ..........................
08.52.14. WTTES00. TOTAL JOB CUS                 17
08.52.14. WTTES00. COST + OVERHEAD   $         1.70
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08.52.14. WTTES00. ********************************
08.52.14. WTTES00. TOTAL JOB CUS                  17
08.52.14. WTTES00. COST + OVERHEAD   $          1.70
08.52.14. WTTES00. ********************************

08.53.32. WTTES00. OUTPUT QUEUED PR 64
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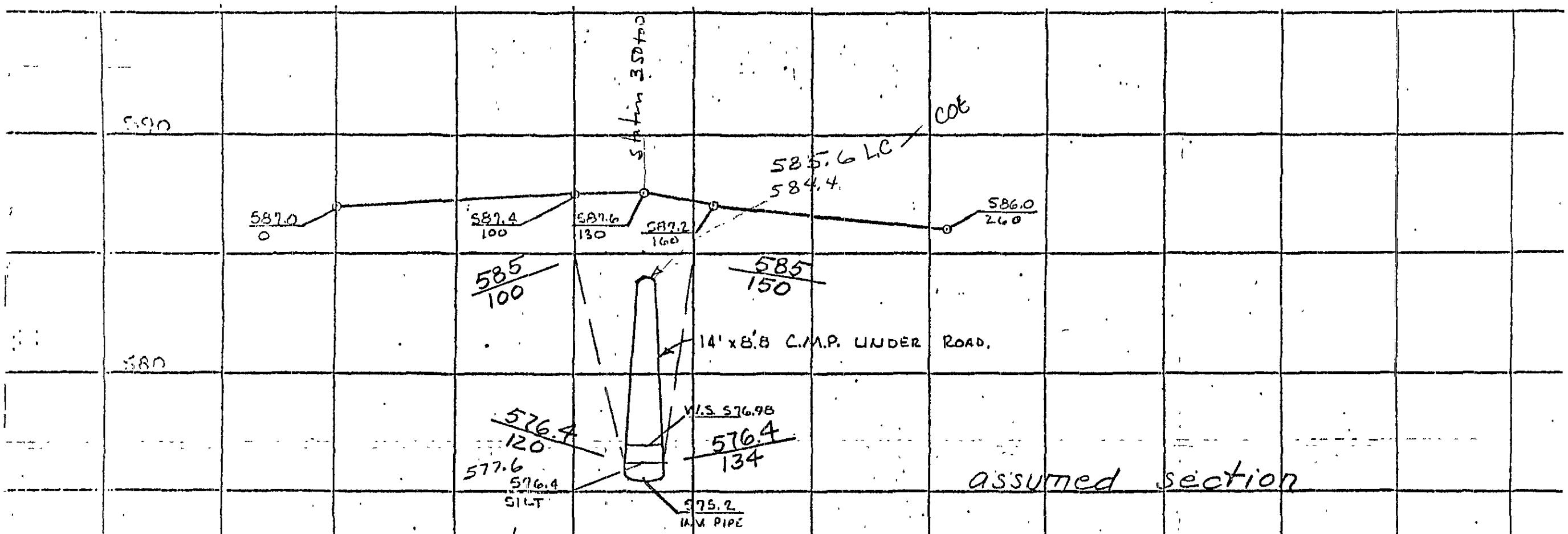
JOB MARSAL RIVER

SECTION 8

DESCRIPTION CULVERT IN MOBILE HOME PARK
LOOKING DOWNSTREAM

STA 20+00

1.2' difference



THIS RUN EXECUTED 13 APR 78 05.21.43

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
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T1 FLOOD INSURANCE STUDY
T2 IRA TOWNSHIP 100 YR. WITH ENCROACHMENT
T3 MARSAC CREEK

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	3.	0.	0.	0.000000	0.00	0.0	0.	581.290	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

MARSAC CR 100 yr
[illegible]

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 *PROF 2

 CCHV=    .100 CEHV=    .300
 *SECNO .000
  2800 NAT Q1=     267.23  WSEL=     581.19  ENC Q1=     271.87  WSEL=     581.29  RATIO=  .0174
  NAT Q1=     273.  RATIOS LOB,CH,ROB=    .0026    .9945    .0029  WSEL=     581.29
    SECNO     DEPTH     CWSEL     CRIWS     WSELR     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=     107.0     130.0  TYPE=     4  TARGET=        .006
       0.00      7.69    581.29      0.00    581.19    581.48       .19      0.00      0.00    578.15
        610.        0.      610.        0.        0.       172.        0.        0.        0.    578.15
       0.00      0.00      3.54      0.00      .160      .030      .160     0.000    573.60    107.00
    .000652         0.        0.        0.         0         0         0      0.00     23.00    130.00

 CCHV=    .100 CEHV=    .300
 *SECNO 150.000
  2800 NAT Q1=      70.93  WSEL=     581.09  ENC Q1=      70.93  WSEL=     581.19  RATIO=  0.0000
  NAT Q1=      75.  RATIOS LOB,CH,ROB=    .0728    .8429    .0843  WSEL=     581.19

 3301 HV CHANGED MORE THAN HVINS

    SECNO     DEPTH     CWSEL     CRIWS     WSELR     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=     117.5     138.0  TYPE=     4  TARGET=        .053
      150.00      3.58    580.98    580.98    581.09    582.60      1.61       .24       .43    578.40
        610.       27.       548.       35.        5.       52.        6.        0.        0.    578.40
         .00      5.36     10.59      5.65      .030      .030      .030      .030    577.40    117.54
    .009125       150.      150.      150.        20        14         0      0.00     20.47    138.01

 *SECNO 160.000
  2800 NAT Q1=      90.98  WSEL=     581.57  ENC Q1=      90.98  WSEL=     581.67  RATIO=  0.0000
  NAT Q1=      96.  RATIOS LOB,CH,ROB=    .0873    .8116    .1011  WSEL=     581.67

 3301 HV CHANGED MORE THAN HVINS


 3470 ENCROACHMENT STATIONS=     116.6     139.1  TYPE=     4  TARGET=        .048
      160.00      4.41    581.81      0.00    581.57    582.72       .92       .06       .07    578.40
        610.       40.       521.       49.        9.       64.       11.        0.        0.    578.40
         .00      4.34      8.11      4.54      .030      .030      .030      .030    577.40    116.58
    .004021        10.       10.       10.         5         0         0      0.00     22.49    139.08

 *SECNO 170.000
  2800 NAT Q1=      97.18  WSEL=     581.70  ENC Q1=      97.18  WSEL=     581.80  RATIO=  0.0000
  NAT Q1=     102.  RATIOS LOB,CH,ROB=    .0912    .8033    .1055  WSEL=     581.80

 3470 ENCROACHMENT STATIONS=     116.2     139.5  TYPE=     4  TARGET=        .046
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3470 ENCROACHMENT STATIONS=      116.2      139.5  TYPE=      4  TARGET=          .030
   170.00      4.52     581.34      0.00     581.70     582.77      .83        .31        .11     578.40
      81.        44.       513.       55.       10.        66.       12.        0.         0.      578.40
      .01       4.22      7.76       4.40      .030       .030      .030       .029    577.40     116.28
  .003543         10.       10.        10.         2          0         0       0.00     23.21     139.45


*SECNO 180.000
 2800 NAT Q1=     101.53  WSEL=     581.80  ENC Q1=     101.53  WSEL=     581.90  RATIO=  0.0000
 NAT Q1=     106.  RATIOS LOB,CH,ROB=    .0938    .7976    .1086  WSEL=     581.90
   SECNO      DEPTH      CWSEL      CRIWS      WSELR      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=      116.1      139.6  TYPE=      4  TARGET=          .045
   180.00      4.62     582.02      0.00     581.80     582.81      .78        .03        .00     578.40
      610.       46.       509.       56.       11.        67.       13.        0.         0.      578.40
      .01       4.14      7.55       4.31      .030       .030      .030       .029    577.40     116.06
  .003268         10.       10.        10.         2          0         0       0.00     23.59     139.65


CCHV=    .600 CEHV=    .800
*SECNO 312.000
 2800 NAT Q1=     137.11  WSEL=     582.58  ENC Q1=     137.11  WSEL=     582.68  RATIO=  0.0000
 NAT Q1=     143.  RATIOS LOB,CH,ROB=    .1126    .7571    .1303  WSEL=     582.68

3470 ENCROACHMENT STATIONS=      114.7      141.2  TYPE=      4  TARGET=          .040

        DOWNSTREAM SECTION FOR CULV.SOUTH OF BETHUY RD.

   312.00      5.28     582.78      0.00     582.58     583.29      .51        .32        .16     578.50
      610.       60.       479.       71.       17.        77.       19.        1.         0.      578.50
      .01       3.55      6.21       3.67      .030       .030      .030       .030    577.50     114.67
  .001844         132.      132.       132.        3          0         0       0.00     26.52     141.19


*SECNO 484.000
 2800 NAT Q1=      80.29  WSEL=     582.97  ENC Q1=      82.79  WSEL=     583.07  RATIO=  -.0311
 NAT Q1=      83.  RATIOS LOB,CH,ROB=  0.0000   1.0000   0.0000  WSEL=     583.07

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=      343.0      357.0  TYPE=      4  TARGET=          0.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=      585.62 ELREA=      585.62


        SECTION AT SOUTH END OF CULV.

   383.00      5.57     583.19      0.00     582.97     583.35     1.14        .54        .52     579.62
      610.       0.        610.       0.         0.        70.       0.         1.         0.      579.62
      .01       7.77      8.64       7.88       .030      .030      .030       .030    577.62     343.00
  .006578         172.      172.       172.        2          1         1       0.00     14.10     357.00


SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED
   SB         XK         XKCR       COFG       ROLEN      BWC        BWP        BAREA      SS         ELCHU      ELCHD
    0.00       1.33       2.50       0.00       7.28       0.00      85.00       .42      577.62     577.62

*SECNO 516.000
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6070,LOW FLOW BY NORMAL BRIDGE

EGPRS=    0.000  EGLWC=   584.396  ELLC=   585.620  PCWSE=   583.188  ELTRD=   589.000
 2800 NAT Q1=    73.28  WSEL=   583.17  ENC Q1=    75.15  WSEL=   583.27  RATIO=  -.0255
 NAT Q1=     75.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=   583.27
 WATER ELEVATION FROM NATURAL PROFILES BRIDGE

3470 ENCROACHMENT STATIONS=     343.0     357.0  TYPE=     4  TARGET=     0.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLES=    589.00 ELREA=    589.00


          SECTION AT NORTH END OF CULV.

    916.00     5.77   583.39     0.00   583.17   584.46     1.08      .20      .05   579.62
      610.       0.     610.       0.       0.      73.       0.       1.       0.   579.62
       .02      0.00     8.33     0.00     .030     .030     .030     .030   577.62   343.00
   .005923       32.      32.      32.        0        0        0     0.00    14.00   357.00

*SECNO 559.000
 2800 NAT Q1=    441.36  WSEL=   585.19  ENC Q1=    456.13  WSEL=   585.29  RATIO=  -.0335
 NAT Q1=    456.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=   585.29

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=     300.0     400.0  TYPE=     4  TARGET=     0.000

          UPSTREAM SECTION FOR CULV.SOUTH OF BETHUY RD.

    559.00     7.36   585.06     0.00   585.19   585.11      .05      .03      .62   586.20
      610.       0.     610.       0.       0.      340.      0.       1.       0.   587.60
       .03      0.00     1.80     0.00     .030     .030     .030     .030   577.70   306.74
   .000209       43.      43.      43.        3        0        0     0.00    84.09   390.82


CCHV=    .100  CEHV=    .300
*SECNO 1462.000
 2800 NAT Q1=    389.18  WSEL=   585.38  ENC Q1=    404.13  WSEL=   585.48  RATIO=  -.0384
 NAT Q1=    404.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=   585.48
   SECNO     DEPTH     CWSEL     CRIWS     WSELR      EG        HV        HL        OLOSS     BANK ELEV
   Q         QLOB      QCH       QROB      ALOB       ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL        XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL     IDC       ICONT     CORAR     TOPWID     ENDST


3470 ENCROACHMENT STATIONS=     300.0     400.0  TYPE=     4  TARGET=     0.000

          DOWNSTREAM SECTION AT BETHUY RD. CULVERT

   1462.00     7.01   585.26     0.00   585.38   585.32      .06      .21      .00   586.75
      610.       0.     610.       0.       0.      311.      0.       8.       2.   588.15
       .15      0.00     1.96     0.00     .030     .030     .030     .030   578.25   308.81
   .000266       903.      903.      903.        0        0        0     0.00    80.74   389.55


*SECNO 1634.000
 2800 NAT Q1=    116.26  WSEL=   584.98  ENC Q1=    118.90  WSEL=   585.08  RATIO=  -.0227
 NAT Q1=    119.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=   585.08

3301 HV CHANGED MORE THAN HVINS
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3470 ENCROACHMENT STATIONS=      343.0      357.0  TYPE=      4  TARGET=        0.000
3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=       587.00 ELREA=       587.00

          SECTION AT SOUTH END OF BETHUY RD.CULVERT

    1634.00      6.61    584.86      0.00    584.98    585.65       .79       .12       .22    580.50
     610.         0.      610.        0.        0.       85.         0.        9.        2.     580.50
       .16       0.00      7.14      0.00      .030      .030      .030      .030    578.25    343.00
   .003880       172.      172.      172.         2         0         0      0.00     14.00    357.00


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        1.32        2.50        0.00        7.70        0.00       95.00        .36      578.25      578.25
*SECNO 1666.000

6070,LOW FLOW BY NORMAL BRIDGE

EGPRS=      0.000  EGLWC=    585.872  ELLC=    587.000  PCWSE=    584.864  ELTRD=    589.000
 2800 NAT Q1=       96.56  WSEL=      585.05  ENC Q1=       98.11  WSEL=      585.15  RATIO=  -.0161
 NAT Q1=       98.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=      585.15
 WATER EL=CHANGE FROM NATURAL PROFILES BRIDGE

3470 ENCROACHMENT STATIONS=      343.0      357.0  TYPE=      4  TARGET=        0.000

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

          SECTION AT NORTH END OF BETHUY RD.CULVERT

    1666.00      6.68    584.93      0.00    585.05    585.71       .78       .12       .00    580.50
     610.         0.      610.        0.        0.       86.         0.        9.        2.     580.50
       .16       0.00      7.07      0.00      .030      .030      .030      .030    578.25    343.00
   .003786        32.       32.       32.         0         0         0      0.00     14.00    357.00


*SECNO 1699.000
 2800 NAT Q1=      289.53  WSEL=      585.90  ENC Q1=      299.39  WSEL=      586.00  RATIO=  -.0341
 NAT Q1=      299.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=      586.00

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=      300.0      380.0  TYPE=      4  TARGET=        0.000

          UPSTREAM SECTION AT BETHUY RD. CULVERT

    1699.00      6.42    585.72      0.00    585.90    585.81       .08       .03       .07    587.70
     530.         0.      530.        0.        0.       232.        0.        9.        2.     588.30
       .16       0.00      2.29      0.00      .030      .030      .030      .030    579.30    307.48
   .000378        33.       33.       33.         2         0         0      0.00     61.93    369.41


CCHV=      .100 CEHV=      .300
*SECNO 1800.000
 2800 NAT Q1=      292.69  WSEL=      585.93  ENC Q1=      303.01  WSEL=      586.03  RATIO=  -.0352
 NAT Q1=      303.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=      586.03

3470 ENCROACHMENT STATIONS=      300.0      380.0  TYPE=      4  TARGET=        0.000
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 1800.00      6.46    585.76      0.00    585.03    585.84      .08       .04       .00    587.70
   530.          0.      530.         0.        0.      234.        0.       10.        2.     588.30
    .18         0.00     2.27        0.00      .030      .030      .030      .030    579.30    307.37
 .000370       101.     101.        101.         0         0         0      0.00     62.17    369.54


*SECNO 2900.000
 2800 NAT Q1=     189.79  WSEL=     586.45  ENC Q1=     197.00  WSEL=     586.55  RATIO=  -.0380
 NAT Q1=     197.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=     586.55
   SECNO      DEPTH      CWSEL      CRIWS      WSELK       EG         HV         HI        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      IOC        ICONT      CORAR     TOPWID     ENDST


3470 ENCROACHMENT STATIONS=      300.0      372.0  TYPE=     4  TARGET=        0.000
 2900.00      6.44    586.34      0.00    586.45    586.44      .09       .59       .00    587.50
   530.          0.      530.         0.        0.      215.        0.       15.        4.     587.70
    .30         0.00     2.46        0.00      .030      .040      .030      .034    579.90    304.48
 .000846      1100.    1100.       1100.         2         0         0      0.00     61.26    365.74


*SECNO 3100.000
 2800 NAT Q1=     198.70  WSEL=     586.61  ENC Q1=     205.45  WSEL=     586.71  RATIO=  -.0340
 NAT Q1=     205.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=     586.71

3470 ENCROACHMENT STATIONS=      323.0      396.0  TYPE=     4  TARGET=        0.000
 3100.00      6.22    586.52      0.00    586.61    586.60      .08       .16       .00    587.90
   530.          0.      530.         0.        0.      235.        0.       16.        4.     589.80
    .33         0.00     2.26        0.00      .030      .045      .050      .034    580.30    326.97
 .000758       200.     200.        200.         2         0         0      0.00     58.22    385.19


*SECNO 3352.000
 2800 NAT Q1=     138.27  WSEL=     586.83  ENC Q1=     143.45  WSEL=     586.93  RATIO=  -.0375
 NAT Q1=     143.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=     586.93

3470 ENCROACHMENT STATIONS=      300.0      372.0  TYPE=     4  TARGET=        0.000
 3352.00      5.55    586.75      0.00    586.83    586.88      .13       .27       .02    589.00
   530.          0.      530.         0.        0.      183.        0.       18.        5.     589.50
    .35         0.00     2.90        0.00      .030      .045      .050      .035    581.20    309.57
 .001559       252.     252.        252.         2         0         0      0.00     52.03    361.60


*SECNO 4200.000
 2800 NAT Q1=      70.24  WSEL=     589.10  ENC Q1=      72.30  WSEL=     589.20  RATIO=  -.0294
 NAT Q1=      72.  RATIOS LOB,CH,ROB=   .0003   .9997  0.0000  WSEL=     589.20

3470 ENCROACHMENT STATIONS=      300.0      374.0  TYPE=     4  TARGET=        .000
 4200.00      8.21    589.11      0.00    589.10    589.16      .06      2.27       .01    590.60
   530.          0.      530.         0.        0.      278.        0.       22.        6.     591.30
    .47         0.00     1.91        0.00      .150      .155      .150      .059    580.90    305.64
 .005662       848.     848.        848.         2         0         0      0.00     60.67    366.32


*SECNO 6100.000
 2800 NAT Q1=     191.51  WSEL=     592.27  ENC Q1=     191.51  WSEL=     592.37  RATIO=  0.0000
 NAT Q1=     204.  RATIOS LOB,CH,ROB=   .3741   .5140   .1119  WSEL=     592.37

3265 DIVIDED FLOW

3280 CROSS SECTION    6100.00 EXTENDED       2.04 FEET
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3470 ENCROACHMENT STATIONS=       19.4      508.6  TYPE=      4  TARGET=          .061
  6100.00     12.24    592.34      0.00    592.27    592.35       .01      3.10       .00    588.90
     530.      192.      293.       45.      461.      314.      131.       48.       17.    591.20
     1.23       .42       .93       .34      .150      .155      .150      .089    580.10     19.41
  .000789     1900.     1900.     1900.         3         0         0      0.00    440.88    508.56

*SECNO 9100.000
 2800 NAT Q1=     100.39  WSEL=     596.22  ENC Q1=     100.39  WSEL=     596.32  RATIO=  0.0000
 NAT Q1=     112.  RATIOS LOB,CH,ROB=    .5949    .2654    .1397  WSEL=     596.32
3280 CROSS SECTION    9100.00 EXTENDED       1.53 FEET

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

3470 ENCROACHMENT STATIONS=       22.4      407.8  TYPE=      4  TARGET=          .104
  9100.00      7.23    596.33      0.00    596.22    596.34       .01      3.99       .00    594.80
     530.      322.      156.       52.      386.      138.       78.      100.       45.    596.30
     2.16       .84      1.13       .66      .115      .178      .115      .118    589.10     22.43
  .002708     3000.     3000.     3000.         3         0         0      0.00    385.41    407.84

*SECNO 9224.000
 2800 NAT Q1=     131.93  WSEL=     596.48  ENC Q1=     131.93  WSEL=     596.58  RATIO=  0.0000
 NAT Q1=     145.  RATIOS LOB,CH,ROB=    .6130    .2249    .1621  WSEL=     596.58
3280 CROSS SECTION    9224.00 EXTENDED       1.78 FEET

3470 ENCROACHMENT STATIONS=       19.3      413.1  TYPE=      4  TARGET=          .090

        DOWNSTREAM SECTION FOR ARNOLD RD.BRIDGE

  9224.00      7.49    596.59      0.00    596.48    596.60       .01       .26       .00    594.80
     530.      332.      131.       67.      460.      146.      109.      102.       46.    596.30
     2.20       .72       .90       .61      .115      .178      .115      .119    589.10     19.31
  .001623      124.      124.      124.         0         0         0      0.00    393.81    413.12

*SECNO 9284.000
 2800 NAT Q1=     147.23  WSEL=     596.57  ENC Q1=     147.23  WSEL=     596.67  RATIO=  0.0000
 NAT Q1=     161.  RATIOS LOB,CH,ROB=    .6366    .1248    .2386  WSEL=     596.67
3280 CROSS SECTION    9284.00 EXTENDED       1.87 FEET

3470 ENCROACHMENT STATIONS=       18.9      414.9  TYPE=      4  TARGET=          .086

        DOWNSTREAM SECTION AT SOUTH SIDE OF ARNOLD RD. BRIDGE

  9284.00      6.73    596.68      0.00    596.57    596.69       .01       .09       .00    590.95
     530.      345.       72.      113.      507.       71.      163.      103.       47.    590.95
     2.22       .68      1.02       .69      .115      .178      .115      .119    589.95     18.89
  .001294       60.       60.       60.         0         0         0      0.00    395.99    414.88

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED
SB  XK.        XKOR       COFQ       RDLEN      BWC        BWP        BAREA      SS         ELCHU      ELCHD
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     0.00       1.56       2.50       0.00      11.00       0.00      63.25       0.00     589.95     589.95

*SECNO 9[illegible]000
 2800 NAT Q1=     194.35  WSEL=     596.89  ENC Q1=     194.35  WSEL=     596.99  RATIO=  0.0000
 NAT Q1=     210.  RATIOS LOB,CH,ROB=    .6420    .1040    .2540  WSEL=     596.99
 WATER EL=CHANGE FROM NATURAL PROFILES BRIDGE
3280 CROSS SECTION   9316.00 EXTENDED       2.19 FEET


3470 ENCROACHMENT STATIONS=       15.8      425.2  TYPE=      4  TARGET=         .072

        UPSTREAM SECTION AT NORTH SIDE OF ARNOLD RD. BRIDGE

  9316.00      7.04    596.99      0.00    596.89    597.00       .01       .03       .00    590.95
     530.      347.       59.      124.      606.       74.      217.      103.       47.    590.95
     2.24       .57       .79       .57      .115      .178      .115      .120    589.95     15.83
  .000734       32.       32.       32.         0         0         5      0.00    409.37    425.19

*SECNO 9376.000
 2800 NAT Q1=     196.87  WSEL=     596.93  ENC Q1=     196.87  WSEL=     597.03  RATIO=  0.0000
 NAT Q1=     211.  RATIOS LOB,CH,ROB=    .6259    .1787    .1954  WSEL=     597.03
3280 CROSS SECTION   9376.00 EXTENDED       2.23 FEET


3470 ENCROACHMENT STATIONS=       14.6      428.2  TYPE=      4  TARGET=         .068
  9376.00      7.94    597.04      0.00    596.93    597.04       .00       .04       .00    594.80
     480.      305.       92.       83.      597.      159.      179.      105.       48.    596.30
     2.27       .51       .58       .46      .115      .178      .115      .120    589.10     14.60
  .000590       60.       60.       60.         0         0         0      0.00    413.62    428.21

*SECNO 11000.000
 2800 NAT Q1=     159.25  WSEL=     598.10  ENC Q1=     159.25  WSEL=     598.20  RATIO=  -.0000
 NAT Q1=     181.  RATIOS LOB,CH,ROB=    .4968    .2544    .2488  WSEL=     598.20
3280 CROSS SECTION  11000.00 EXTENDED        .91 FEET

    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=       59.2      530.7  TYPE=      4  TARGET=         .118
 11000.00      8.01    598.21      0.00    598.10    598.21       .01      1.17       .00    596.30
     480.      238.      138.      103.      302.      165.      176.      134.       64.    597.00
     2.87       .79       .84       .59      .070      .155      .070      .125    590.20     59.22
  .000905     1624.     1624.     1624.         2         0         0      0.00    471.47    530.69

*SECNO 11440.000
 2800 NAT Q1=     223.08  WSEL=     598.39  ENC Q1=     223.08  WSEL=     598.49  RATIO=  0.0000
 NAT Q1=     249.  RATIOS LOB,CH,ROB=    .5035    .2007    .2958  WSEL=     598.49
3280 CROSS SECTION  11440.00 EXTENDED       1.19 FEET


3470 ENCROACHMENT STATIONS=       45.2      561.5  TYPE=      4  TARGET=         .103
 11440.00      8.29    598.49      0.00    598.39    598.49       .01       .28       .00    596.30
     480.      242.      107.      131.      386.      173.      263.      141.       69.    597.00
     3.07       .63       .62       .50      .070      .155      .070      .126    590.20     45.23
  .000462      440.      440.      440.         0         0         0      0.00    516.31    561.54
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*SECNO 11[illegible].000
 2800 NAT Q1=    248.29  WSEL=    598.41  ENC Q1=    248.29  WSEL=    598.51  RATIO=  0.0000
 NAT Q1=    273.  RATIOS LOB,CH,ROB=    .6128    .0450    .3422  WSEL=    598.51
3280 CROSS SECTION  11489.00 EXTENDED      1.20 FEET


3470 ENCROACHMENT STATIONS=      42.9      565.4  TYPE=      4  TARGET=         .091
 11489.00      7.71    598.51      0.00    598.41    598.51       .01       .02       .00    594.40
      480.      300.       24.      157.      465.       48.      310.      142.       70.    594.40
     3.10       .64       .49       .51       .070      .155      .070      .126    590.80     42.85
  .000374       49.       49.       49.         0         0         0      0.00    522.50    565.36

CCHV=    .100 CEHV=    .300
*SECNO 11490.000
 2800 NAT Q1=    233.83  WSEL=    598.40  ENC Q1=    233.83  WSEL=    598.50  RATIO=  0.0000
 NAT Q1=    257.  RATIOS LOB,CH,ROB=    .5321    .1518    .3161  WSEL=    598.50
3280 CROSS SECTION  11490.00 EXTENDED      1.21 FEET


3370 NORMAL BRIDGE,NRD= 19 MIN ELTRD=  596.20 MAX ELLC=  597.80


3470 ENCROACHMENT STATIONS=      39.8      569.4  TYPE=      4  TARGET=         .089
 11490.00      7.70    598.50      0.00    598.40    598.52       .02       .00       .00    594.40
      480.      257.       79.      143.      435.       38.      296.      142.       70.    594.40
     3.10       .59      2.10       .49       .070      .024      .070      .126    590.80     39.85
  .000415        1.        1.        1.         0         0         0   -62.66    529.57    569.41

*SECNO 11510.000
 2800 NAT Q1=    234.01  WSEL=    598.41  ENC Q1=    234.01  WSEL=    598.51  RATIO=  0.0000
 NAT Q1=    259.  RATIOS LOB,CH,ROB=    .5322    .1506    .3172  WSEL=    598.51
3280 CROSS SECTION  11510.00 EXTENDED      1.21 FEET


3370 NORMAL BRIDGE,NRD= 19 MIN ELTRD=  596.20 MAX ELLC=  597.80


3470 ENCROACHMENT STATIONS=      42.8      565.5  TYPE=      4  TARGET=         .096
 11510.00      7.71    598.51      0.00    598.41    598.52       .02       .01       .00    594.40
      480.      257.       80.      143.      432.       38.      292.      143.       70.    594.40
     3.10       .60      2.11       .49       .070      .024      .070      .126    590.80     42.76
  .000421       20.       20.       20.         0         0         0   -62.68    522.78    565.53


*SECNO 11511.000
 2800 NAT Q1=    248.57  WSEL=    598.42  ENC Q1=    248.57  WSEL=    598.52  RATIO=  0.0000
 NAT Q1=    277.  RATIOS LOB,CH,ROB=    .6120    .0445    .3435  WSEL=    598.52
3280 CROSS SECTION  11511.00 EXTENDED      1.21 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       ICONT     CORAR     TOPWID     ENDST


3470 ENCROACHMENT STATIONS=      47.8      558.9  TYPE=      4  TARGET=         .102
 11511.00      7.72    598.52      0.00    598.42    598.52       .01       .00       .00    594.40
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      480.      300.       24.      156.      461.       48.      305.      143.       70.    594.40
     3.10       .65       .49       .51       .07       .15       .07       .12    590.80     47.76
  .000376        1.        1.        1.         1         0         0      0.00    511.14    558.90


*SECNO 11525.000
 2800 NAT Q1=     249.91  WSEL=     598.42  ENC Q1=     249.91  WSEL=     598.52  RATIO=  0.0000
 NAT Q1=     277.  RATIOS LOB,CH,ROB=    .4713    .1822    .3465  WSEL=     598.52
3280 CROSS SECTION  11525.00 EXTENDED       1.32 FEET


3470 ENCROACHMENT STATIONS=       45.6      589.5  TYPE=      4  TARGET=        .098
 11525.00      8.33    598.53      0.00    598.42    598.53       .00       .01       .00    596.30
      480.      225.       97.      158.      395.      174.      331.      143.       70.    597.00
     3.11       .57       .56       .48       .07       .15       .07       .12    590.20     45.57
  .000369        14.       14.       14.         0         0         0      0.00    543.94    589.51


*SECNO 13400.000
 2800 NAT Q1=      85.96  WSEL=     599.93  ENC Q1=      85.96  WSEL=     600.03  RATIO=  0.0000
 NAT Q1=     103.  RATIOS LOB,CH,ROB=    .3123    .4173    .2704  WSEL=     600.03

3265 DIVIDED FLOW

3280 CROSS SECTION  13400.00 EXTENDED        .93 FEET


3470 ENCROACHMENT STATIONS=      198.4      585.9  TYPE=      4  TARGET=        .168
 13400.00      6.64    600.04      0.00    599.93    600.08       .04      1.54       .01    599.10
      480.      131.      241.      107.       89.      128.      107.      169.       90.    599.40
     3.44      1.47      1.89      1.01      .052      .109      .052      .124    593.40    198.39
  .003139      1875.     1875.     1875.         2         0         0      0.00    371.21    585.93


*SECNO 13839.000
 2800 NAT Q1=     143.36  WSEL=     600.73  ENC Q1=     143.36  WSEL=     600.83  RATIO=  0.0000
 NAT Q1=     168.  RATIOS LOB,CH,ROB=    .3715    .2872    .3413  WSEL=     600.83
3280 CROSS SECTION  13839.00 EXTENDED       1.23 FEET


3470 ENCROACHMENT STATIONS=       70.6      594.1  TYPE=      4  TARGET=        .145
 13839.00      6.93    600.83      0.00    600.73    600.85       .01       .77       .00    599.60
      480.      168.      161.      151.      185.      137.      191.      174.       94.    599.90
     3.57       .91      1.18       .79      .052      .109      .052      .123    593.90     70.56
  .001109      439.      439.      439.         2         0         0      0.00    523.54    594.09


*SECNO 13889.000
 2800 NAT Q1=     268.15  WSEL=     600.76  ENC Q1=     268.15  WSEL=     600.86  RATIO=  0.0000
 NAT Q1=     303.  RATIOS LOB,CH,ROB=    .4637    .0917    .4446  WSEL=     600.86
3280 CROSS SECTION  13889.00 EXTENDED       1.76 FEET


3470 ENCROACHMENT STATIONS=       32.4      603.8  TYPE=      4  TARGET=        .114
 13889.00      6.67    600.87      0.00    600.76    600.87       .01       .03       .00    599.10
      480.      221.       50.      210.      349.       99.      347.      174.       95.    599.40
     3.59       .63       .50       .60      .052      .109      .052      .123    594.20     32.41
  .000321        50.       50.       50.         0         0         0      0.00    571.34    603.75


*SECNO 13890.000
 2800 NAT Q1=     271.92  WSEL=     600.76  ENC Q1=     271.92  WSEL=     600.86  RATIO=  0.0000
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 NAT Q1=    308.  RATIOS LOB,CH,ROB=   .4556   .1076   .4368  WSEL=    600.96
3280 CROSS SECTION  13890.00 EXTENDED      1.77 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


3370 NORMAL BRIDGE,NRD= 18 MIN ELTRD=  599.10 MAX ELLC=  600.20


3470 ENCROACHMENT STATIONS=      34.0      602.6  TYPE=     4  TARGET=        .116
 13890.00      6.67    600.87      0.00    600.76    600.87       .01       .00       .00    599.10
      480.       216.      59.       205.      348.       49.       346.      174.       95.    599.40
     3.59       .62      1.18       .59      .052      .024      .052      .123    594.20     34.05
  .000309        1.        1.        1.         0         0         0    -49.80    568.51    602.56

*SECNO 13910.000
 2800 NAT Q1=    273.61  WSEL=    600.77  ENC Q1=    273.61  WSEL=    600.87  RATIO=  0.0000
 NAT Q1=    310.  RATIOS LOB,CH,ROB=   .4556   .1075   .4369  WSEL=    600.87
3280 CROSS SECTION  13910.00 EXTENDED      1.77 FEET


3370 NORMAL BRIDGE,NRD= 18 MIN ELTRD=  599.10 MAX ELLC=  600.20


3470 ENCROACHMENT STATIONS=      34.5      602.2  TYPE=     4  TARGET=        .117
 13910.00      6.67    600.87      0.00    600.77    600.88       .01       .01       .00    599.10
      480.       216.      59.       205.      349.       50.       346.      175.       95.    599.40
     3.60       .62      1.18       .59      .052      .024      .052      .123    594.20     34.52
  .000307       20.       20.       20.         0         0         0    -49.80    567.65    602.18

*SECNO 13911.000
 2800 NAT Q1=    270.09  WSEL=    600.77  ENC Q1=    270.09  WSEL=    600.87  RATIO=  0.0000
 NAT Q1=    305.  RATIOS LOB,CH,ROB=   .4639   .0912   .4449  WSEL=    600.87
3280 CROSS SECTION  13911.00 EXTENDED      1.77 FEET


3470 ENCROACHMENT STATIONS=      32.9      603.3  TYPE=     4  TARGET=        .115
 13911.00      6.68    600.88      0.00    600.77    600.88       .01       .00       .00    599.10
      480.       221.      49.       210.      351.       99.       349.      175.       95.    599.40
     3.60       .63       .50       .60      .052      .109      .052      .123    594.20     32.91
  .000315        1.        1.        1.         0         0         0      0.00    570.44    603.35

*SECNO 13925.000
 2800 NAT Q1=    272.17  WSEL=    600.78  ENC Q1=    272.17  WSEL=    600.88  RATIO=  0.0000
 NAT Q1=    307.  RATIOS LOB,CH,ROB=   .4639   .0910   .4451  WSEL=    600.88
3280 CROSS SECTION  13925.00 EXTENDED      1.78 FEET


3470 ENCROACHMENT STATIONS=      32.1      603.9  TYPE=     4  TARGET=        .113
 13925.00      6.68    600.88      0.00    600.78    600.89       .01       .00       .00    599.10
      480.       221.      49.       210.      354.      100.       351.      175.       95.    599.40
     3.61       .62       .49       .60      .052      .109      .052      .123    594.20     32.11
  .000309       14.       14.       14.         0         0         0      0.00    571.81    603.92
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*SECNO 14925.000
 2800 NAT Q1=      29.37  WSEL=     601.53  ENC Q1=      30.27  WSEL=     601.63  RATIO=  -.0309
 NAT Q1=      31.  RATIOS LOB,CH,ROB=    .0193    .9807    .0000  WSEL=     601.63

3470 ENCROACHMENT STATIONS=      300.0      330.0  TYPE=      4  TARGET=        .019
 14925.00      6.03   601.63     0.00   601.53   602.00      .38     1.01      .11   601.00
      480.        0.      480.       0.       0.       98.        0.      185.      102.   601.60
     3.66      0.00     4.92     0.00      .070     .100     .070     .121   595.60   300.00
  .026066     1000.    1000.    1000.        2        0        0     0.00    30.00   330.00


*SECNO 16000.000
 2800 NAT Q1=     159.04  WSEL=     604.72  ENC Q1=     159.04  WSEL=     604.82  RATIO=  0.0000
 NAT Q1=     180.  RATIOS LOB,CH,ROB=    .3456    .3286    .3258  WSEL=     604.82
3280 CROSS SECTION  16000.00 EXTENDED      1.32 FEET


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


3470 ENCROACHMENT STATIONS=       30.8      559.3  TYPE=      4  TARGET=        .114
 16000.00      7.63   604.83     0.00   604.72   604.84      .01     2.80      .04   602.60
      480.       156.      179.      145.      236.      145.      223.      194.      109.   603.20
     4.01       .66      1.23      .65      .070     .100     .070     .120   597.20    30.80
  .000918     1075.    1075.    1075.       11        0        0     0.00   528.45   559.25
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THIS RUN EXECUTED 13 APR 78 05.21.42

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
*****************************************************

C
T1      FLOOD INSURANCE STUDY
T2      IRA TOWNSHIP     100 YR. NATURAL CHANNEL
T3      MARSAC CREEK

J1  ICHECK    INQ      NINV     IDIR     STPT     METRIC   HVINS    Q        WSEL     FQ

      0.       2.       0.       0.  0.000000     0.00     0.0      0.   581.190   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   39.000   40.000   41.000   42.000   43.000    1.000    4.000   27.000   28.000

   200.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000

NC      .160     .160     .030     .100     .300    0.000    0.000    0.000    0.000    0.000
QT     2.000  610.000  610.000    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

X1     0.000    6.000  107.000  130.000    0.000    0.000    0.000    0.000    1.200    0.000
GR   582.200  100.000  576.950  107.000  572.400  108.000  572.400  129.000  576.950  130.000
GR   587.200  145.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000
NC      .030     .030     .030     .100     .300    0.000    0.000    0.000    0.000    0.000

X1   150.000    6.000  120.000  135.000  150.000  150.000  150.000    0.000    1.200    0.000
GR   585.550  100.000  577.200  120.000  576.200  122.000  576.200  133.000  577.200  135.000
GR   584.500  155.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000

X1   160.000    0.000    0.000    0.000   10.000   10.000   10.000    0.000    0.000    0.000

X1   170.000    0.000    0.000    0.000   10.000   10.000   10.000    0.000    0.000    0.000

X1   180.000    0.000    0.000    0.000   10.000   10.000   10.000    0.000    0.000    0.000
NC     0.000    0.000    0.000     .600     .800    0.000    0.000    0.000    0.000    0.000

        DOWNSTREAM SECTION FOR CULV.SOUTH OF BETHUY RD.

X1   312.000    0.000    0.000    0.000  132.000  132.000  132.000    0.000     .100    0.000

        SECTION AT SOUTH END OF CULV.

X1   484.000   25.000  343.000  357.000  172.000
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					172.000	172.000	172.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	585.620	585.620	0.000
GR	587.800	0.000	587.200	200.000	585.800	250.000	586.000	300.000	579.620	343.000
GR	579.620	344.000	578.370	345.000	578.120	346.000	577.870	347.000	577.770	348.000
GR	577.720	349.000	577.620	350.000	577.720	351.000	577.770	352.000	577.870	353.000
GR	578.120	354.000	578.370	355.000	578.620	356.000	579.620	357.000	581.300	378.000
GR	587.400	400.000	589.100	450.000	588.500	500.000	590.400	550.000	590.900	600.000
SB	0.000	1.330	2.500	0.000	7.280	0.000	85.000	.420	0.000	0.000

SECTION AT NORTH END OF CULV.

X1	516.000	0.000	0.000	0.000	32.000	32.000	32.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	585.620	589.000	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	589.000	589.000	0.000
BT	17.000	0.000	589.300	587.800	343.000	589.000	579.620	344.000	589.000	582.370
BT	345.000	589.000	583.520	346.000	589.000	584.370	347.000	589.000	584.920	348.000
BT	589.000	585.370	349.000	589.000	585.520	350.000	589.000	585.620	351.000	589.000
BT	585.520	352.000	589.000	585.370	353.000	589.000	584.920	354.000	589.000	584.370
BT	355.000	589.000	583.520	356.000	589.000	582.370	357.000	589.000	579.620	600.000
BT	590.900	590.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

UPSTREAM SECTION FOR CULV.SOUTH OF BETHUY RD.

X1	559.000	12.000	300.000	400.000	43.000	43.000	43.000	0.000	.200	0.000
GR	587.800	0.000	587.200	200.000	585.800	250.000	586.000	300.000	577.500	350.000
GR	578.500	360.000	581.300	378.000	587.400	400.000	589.100	450.000	588.500	500.000
GR	590.400	550.000	590.900	600.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.030	.030	.030	.100	.300	0.000	0.000	0.000	0.000	0.000

DOWNSTREAM SECTION AT BETHUY RD. CULVERT

X1	1462.000	0.000	0.000	0.000	903.000	903.000	903.000	0.000	.550	0.000

SECTION AT SOUTH END OF BETHUY RD.CULVERT

X1	1634.000	24.000	343.000	357.000	172.000	172.000	172.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	587.000	587.000	0.000
GR	588.600	0.000	589.300	200.000	589.300	250.000	587.700	300.000	580.500	343.000
GR	579.250	344.000	579.000	345.000	578.750	346.000	578.500	347.000	578.250	348.000
GR	578.250	349.000	578.250	350.000	578.250	351.000	578.250	352.000	578.500	353.000
GR	578.750	354.000	579.000	355.000	579.250	356.000	580.500	357.000	588.300	380.000
GR	589.100	430.000	591.000	480.000	590.300	530.000	590.300	680.000	0.000	0.000
NC	.030	.030	.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SB	0.000	1.320	2.500	0.000	7.700	0.000	95.000	.360	0.000	0.000

SECTION AT NORTH END OF BETHUY RD.CULVERT

X1	1666.000	0.000	0.000	0.000	32.000	32.000	32.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	587.000	589.000	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	589.000	589.000	0.000
BT	17.000	0.000	589.300	588.600	343.000	589.000	580.500	344.000	589.000	584.500
BT	345.000	589.000	584.750	346.000	589.000	585.750	347.000	589.000	586.250	348.000
BT	589.000	586.750	349.000	589.000	586.900	350.000	589.000	587.000	351.000	589.000
BT	586.900	352.000	589.000	586.750	353.000	589.000	586.250	354.000	589.000	585.750
BT	355.000	589.000	584.750	356.000	589.000	584.500	357.000	589.000	580.500	680.000
BT	590.300	590.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	2.000	530.000	530.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

UPSTREAM SECTION AT BETHUY RD. CULVERT

X1	1699.000	15.000	300.000	380.000	33.000	33.000	33.000			

THIS RUN EXECUTED 13 APR 78 05.21.42

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  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
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C
T1      FLOOD INSURANCE STUDY
T2      IRA TOWNSHIP     100 YR. NATURAL CHANNEL
T3      MARSAC CREEK

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
          0.        2.        0.        0.  0.000000      0.00      0.0        0.    581.190     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    39.000    40.000    41.000    42.000    43.000     1.000     4.000    27.000    28.000

    200.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

NC      .160      .160      .030      .100      .300     0.000     0.000     0.000     0.000     0.000
QT     2.000   610.000   610.000     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

X1     0.000     6.000   107.000   130.000     0.000     0.000     0.000     0.000     1.200     0.000
GR   582.200   100.000   576.950   107.000   572.400   108.000   572.400   129.000   576.950   130.000
GR   587.200   145.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
NC      .030      .030      .030      .100      .300     0.000     0.000     0.000     0.000     0.000

X1   150.000     6.000   120.000   135.000   150.000   150.000   150.000     0.000     1.200     0.000
GR   585.550   100.000   577.200   120.000   576.200   122.000   576.200   133.000   577.200   135.000
GR   584.500   155.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

X1   160.000     0.000     0.000     0.000    10.000    10.000    10.000     0.000     0.000     0.000

X1   170.000     0.000     0.000     0.000    10.000    10.000    10.000     0.000     0.000     0.000

X1   180.000     0.000     0.000     0.000    10.000    10.000    10.000     0.000     0.000     0.000
NC     0.000     0.000     0.000      .600      .800     0.000     0.000     0.000     0.000     0.000

          DOWNSTREAM SECTION FOR CULV.SOUTH OF BETHUY RD.

X1   312.000     0.000     0.000     0.000   132.000   132.000   132.000     0.000      .100     0.000

          SECTION AT SOUTH END OF CULV.
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X1	484.000	25.000	343.000	357.000	172.000	172.000	172.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	585.620	585.620	0.000
GR	587.800	0.000	587.200	200.000	585.800	250.000	586.000	300.000	579.620	343.000
GR	578.620	344.000	578.370	345.000	578.120	346.000	577.870	347.000	577.770	348.000
GR	577.720	349.000	577.620	350.000	577.720	351.000	577.770	352.000	577.870	353.000
GR	578.120	354.000	578.370	355.000	578.620	356.000	579.620	357.000	581.300	378.000
GR	587.400	400.000	589.100	450.000	588.500	500.000	590.400	550.000	590.900	600.000
SB	0.000	1.330	2.500	0.000	7.280	0.000	85.000	.420	0.000	0.000

SECTION AT NORTH END OF CULV.

X1	516.000	0.000	0.000	0.000	32.000	32.000	32.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	585.620	589.000	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	589.000	589.000	0.000
BT	17.000	0.000	589.300	587.800	343.000	589.000	579.620	344.000	589.000	582.370
BT	345.000	589.000	583.520	346.000	589.000	584.370	347.000	589.000	584.920	348.000
BT	589.000	585.370	349.000	589.000	585.520	350.000	589.000	585.620	351.000	589.000
BT	585.520	352.000	589.000	585.370	353.000	589.000	584.920	354.000	589.000	584.370
BT	355.000	589.000	583.520	356.000	589.000	582.370	357.000	589.000	579.620	600.000
BT	590.900	590.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

UPSTREAM SECTION FOR CULV.SOUTH OF BETHUY RD.

X1	559.000	12.000	300.000	400.000	43.000	43.000	43.000	0.000	.200	0.000
GR	587.800	0.000	587.200	200.000	585.800	250.000	586.000	300.000	577.500	350.000
GR	578.500	360.000	581.300	378.000	587.400	400.000	589.100	450.000	588.500	500.000
GR	590.400	550.000	590.900	600.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.030	.030	.030	.100	.300	0.000	0.000	0.000	0.000	0.000

DOWNSTREAM SECTION AT BETHUY RD. CULVERT

X1	1462.000	0.000	0.000	0.000	903.000	903.000	903.000	0.000	.550	0.000

SECTION AT SOUTH END OF BETHUY RD.CULVERT

X1	1634.000	24.000	343.000	357.000	172.000	172.000	172.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	587.000	587.000	0.000
GR	588.600	0.000	589.300	200.000	589.300	250.000	587.700	300.000	580.500	343.000
GR	579.250	344.000	579.000	345.000	578.750	346.000	578.500	347.000	578.250	348.000
GR	578.250	349.000	578.250	350.000	578.250	351.000	578.250	352.000	578.500	353.000
GR	578.750	354.000	579.000	355.000	579.250	356.000	580.500	357.000	588.300	380.000
GR	589.100	430.000	591.000	480.000	590.300	530.000	590.300	680.000	0.000	0.000
NC	.030	.030	.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SB	0.000	1.320	2.500	0.000	7.700	0.000	95.000	.360	0.000	0.000

SECTION AT NORTH END OF BETHUY RD.CULVERT

X1	1666.000	0.000	0.000	0.000	32.000	32.000	32.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	587.000	589.000	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	589.000	589.000	0.000
BT	17.000	0.000	589.300	588.600	343.000	589.000	580.500	344.000	589.000	584.500
BT	345.000	589.000	584.750	346.000	589.000	585.750	347.000	589.000	586.250	348.000
BT	589.000	586.750	349.000	589.000	586.900	350.000	589.000	587.000	351.000	589.000
BT	586.900	352.000	589.000	586.750	353.000	589.000	586.250	354.000	589.000	585.750
BT	355.000	589.000	584.750	356.000	589.000	584.500	357.000	589.000	580.500	680.000
BT	590.300	590.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	2.000	530.000	530.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

UPSTREAM SECTION AT BETHUY RD. CULVERT

X1	1600.000	15.000	300.000	380.000	33.000	33.000	33.000	0.000	0.000	0.000
GR	588.000	0.000	588.300	50.000	588.500	100.000	588.400	150.000	589.300	200.000
GR	589.300	250.000	587.700	300.000	579.800	330.000	579.300	340.000	579.800	345.000
GR	588.300	380.000	589.100	430.000	591.000	480.000	590.300	530.000	590.300	680.000
NC	0.000	0.000	0.000	.100	.300	0.000	0.000	0.000	0.000	0.000
X1	1800.000	15.000	300.000	380.000	101.000	101.000	101.000	0.000	0.000	0.000
GR	588.600	0.000	588.300	50.000	588.500	100.000	588.400	150.000	589.300	200.000
GR	589.300	250.000	587.700	300.000	579.800	330.000	579.300	340.000	579.800	345.000
GR	588.300	380.000	589.100	430.000	591.000	480.000	590.300	530.000	590.300	680.000
NC	0.000	0.000	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	2900.000	14.000	300.000	372.000	1100.000	1100.000	1100.000	0.000	0.000	0.000
GR	588.800	0.000	588.400	50.000	587.300	100.000	587.500	300.000	580.800	326.000
GR	579.900	336.000	587.700	372.000	589.200	410.000	589.200	463.000	588.000	510.000
GR	588.300	560.000	587.900	610.000	587.900	660.000	588.200	710.000	0.000	0.000
NC	0.000	.050	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	3100.000	19.000	323.000	396.000	200.000	200.000	200.000	0.000	0.000	0.000
GR	589.300	0.000	589.200	100.000	589.100	200.000	588.700	250.000	589.300	300.000
GR	588.000	313.000	587.900	323.000	581.300	342.000	580.300	352.000	581.000	367.000
GR	589.800	396.000	589.700	406.000	593.600	426.000	593.100	439.000	590.100	447.000
GR	589.700	500.000	589.000	547.000	589.000	602.000	588.600	697.000	0.000	0.000
X1	3352.000	17.000	300.000	372.000	252.000	252.000	252.000	0.000	0.000	0.000
GR	589.500	0.000	589.400	50.000	589.500	100.000	589.400	150.000	590.300	250.000
GR	589.000	300.000	584.300	320.000	581.300	321.000	581.200	336.000	581.300	341.000
GR	589.500	372.000	590.000	400.000	590.000	430.000	589.900	557.000	589.500	600.000
GR	590.100	650.000	589.600	673.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.150	.150	.155	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	4200.000	18.000	300.000	374.000	848.000	848.000	848.000	0.000	0.000	0.000
GR	589.900	0.000	590.200	50.000	590.200	100.000	589.000	150.000	591.500	200.000
GR	591.300	250.000	590.600	300.000	585.300	320.000	581.400	322.000	580.900	327.000
GR	580.900	338.000	581.400	340.000	584.500	348.000	587.300	360.000	591.300	374.000
GR	596.300	400.000	597.300	410.000	596.700	420.000	0.000	0.000	0.000	0.000
X1	6100.000	18.000	290.000	334.000	1900.000	1900.000	1900.000	0.000	0.000	0.000
GR	590.300	0.000	590.500	50.000	591.300	100.000	591.300	160.000	590.400	200.000
GR	590.300	250.000	588.900	290.000	586.800	300.000	581.800	307.000	580.100	310.000
GR	581.800	317.000	591.200	334.000	590.000	378.000	592.300	410.000	592.500	460.000
GR	591.500	510.000	591.800	560.000	591.600	626.000	0.000	0.000	0.000	0.000
NC	.115	.115	.178	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	9100.000	17.000	300.000	330.000	3000.000	3000.000	3000.000	0.000	0.000	0.000
GR	594.800	0.000	594.800	50.000	595.100	100.000	595.100	150.000	594.800	200.000
GR	595.000	250.000	594.800	300.000	589.500	309.000	589.100	311.000	589.500	317.000
GR	595.300	328.000	596.300	330.000	594.300	410.000	597.100	460.000	597.200	510.000
GR	596.300	560.000	596.000	600.000	0.000	0.000	0.000	0.000	0.000	0.000

DOWNSTREAM SECTION FOR ARNOLD RD.BRIDGE

X1	9224.000	0.000	0.000	0.000	124.000	124.000	124.000	0.000	0.000	0.000

DOWNSTREAM SECTION AT SOUTH SIDE OF ARNOLD RD. BRIDGE

X1	9284.000	18.000	305.500	316.500	60.000	60.000	60.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	595.500	595.500	0.000
GR	594.800	0.000	594.800	50.000	595.100	0.000	595.100	150.000	594.800	200.000
GR	595.000	250.000	594.800	300.000	590.950	305.500	589.950	308.500	589.950	313.500
GR	590.950	316.500	595.300	328.000	596.300	330.000	594.300	410.000	597.100	460.000
GR	597.200	510.000	596.300	560.000	596.000	600.000	0.000	0.000	0.000	0.000
SB	0.000	1.560	2.500	0.000	11.000	0.000	63.250	0.000	0.000	0.000

UPSTREAM SECTION AT NORTH SIDE OF ARNOLD RD. BRIDGE

X1	9316.000	0.000	0.000	0.000	32.000	32.000	32.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	595.500	595.800	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	595.800	595.800	0.000
BT	4.000	0.000	596.900	594.800	305.500	596.700	595.500	316.500	596.700	595.500
BT	600.000	596.000	596.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.115	.115	.178	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BT	2.000	480.000	480.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	9376.000	17.000	300.000	330.000	60.000	60.000	60.000	0.000	0.000	0.000
GR	594.800	0.000	594.800	50.000	595.100	100.000	595.100	150.000	594.800	200.000
GR	595.000	250.000	594.800	300.000	589.500	309.000	589.100	311.000	589.500	317.000
GR	595.300	328.000	596.300	330.000	594.300	410.000	597.100	460.000	597.200	510.000
GR	596.300	560.000	596.000	600.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.070	.070	.155	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	11000.000	13.000	300.000	330.000	1624.000	1624.000	1624.000	0.000	0.000	0.000
GR	597.300	0.000	597.300	170.000	597.200	200.000	596.200	250.000	596.300	300.000
GR	591.400	311.000	590.200	318.000	591.400	323.000	597.000	330.000	597.500	342.000
GR	597.100	351.000	597.300	400.000	597.600	630.000	0.000	0.000	0.000	0.000

UPSTREAM SECTION FOR ARNOLD RD. BRIDGE

X1	11440.000	0.000	0.000	0.000	440.000	440.000	440.000	0.000	0.000	0.000

DOWNSTREAM SECTION FOR CULV. NORTH OF ARNOLD RD.

X1	11489.000	21.000	314.500	321.500	49.000	49.000	49.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	597.800	597.800	0.000
GR	597.300	0.000	597.300	170.000	597.200	200.000	596.200	250.000	596.300	300.000
GR	591.400	311.000	594.400	314.500	592.400	315.000	591.400	316.000	590.900	317.000
GR	590.800	318.000	590.900	319.000	591.400	320.000	592.400	321.000	594.400	321.500
GR	591.400	323.000	597.000	330.000	597.500	342.000	597.100	351.000	597.300	400.000
GR	597.600	630.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	.024	.100	.300	0.000	0.000	0.000	0.000	0.000

X1	11490.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
BT	19.000	0.000	597.300	597.300	170.000	597.300	597.300	200.000	597.200	597.200
BT	250.000	596.200	596.200	300.000	596.300	596.300	314.500	599.800	594.400	315.000
BT	599.800	596.200	316.000	599.800	597.200	317.000	599.800	597.700	318.000	599.800
BT	597.800	319.000	599.800	597.700	320.000	599.800	597.200	321.000	599.800	596.200
BT	321.500	599.800	594.400	330.000	597.000	597.000	342.000	597.500	597.500	351.000
BT	597.100	597.100	400.000	597.300	597.300	630.000	597.600	597.600	0.000	0.000

SECTION AT SOUTH END OF CULVERT

X1	11510.000	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	0.000	0.000	0.000	1.000	0.000	0.000	0.000
NC	0.000	0.000	.155	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	11514.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	597.800	597.800	0.000

SECTION AT NORTH END OF CULVERT

X1	11525.000	13.000	300.000	330.000	14.000	14.000	14.000	0.000	0.000	0.000
GR	597.300	0.000	597.300	170.000	597.200	200.000	596.200	250.000	596.300	300.000
GR	591.400	311.000	590.200	318.000	591.400	323.000	597.000	330.000	597.500	342.000
GR	597.100	351.000	597.300	400.000	597.200	630.000	0.000	0.000	0.000	0.000
NC	.052	.052	.109	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	13400.000	14.000	300.000	330.000	1875.000	1875.000	1875.000	0.000	0.000	0.000
GR	599.200	0.000	599.800	50.000	600.000	150.000	599.300	200.000	599.100	250.000
GR	599.100	300.000	594.100	314.000	593.400	318.000	594.100	323.000	599.400	330.000
GR	600.100	369.000	599.400	500.000	599.300	600.000	599.100	630.000	0.000	0.000
X1	13839.000	0.000	0.000	0.000	439.000	439.000	439.000	0.000	.500	0.000
X1	13869.000	18.000	300.000	330.000	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	600.200	600.200	0.000
GR	599.200	0.000	599.800	50.000	600.000	150.000	599.300	200.000	599.100	250.000
GR	599.100	300.000	597.200	315.000	594.900	316.000	594.300	317.000	594.200	318.000
GR	594.300	319.000	594.900	320.000	597.200	321.000	599.400	330.000	600.100	369.000
GR	599.400	500.000	599.300	600.000	599.100	630.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	13890.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
BT	18.000	0.000	599.200	599.200	50.000	599.800	599.800	150.000	600.000	600.000
BT	200.000	599.300	599.300	250.000	599.100	599.100	300.000	599.100	599.100	315.000
BT	600.700	597.200	316.000	600.700	599.500	317.000	600.700	600.000	318.000	600.700
BT	600.200	319.000	600.700	600.000	320.000	600.700	599.500	321.000	600.700	597.200
BT	330.000	599.400	599.400	369.000	600.100	600.100	500.000	599.400	599.400	600.000
BT	599.300	599.300	630.000	599.100	599.100	0.000	0.000	0.000	0.000	0.000
X1	13910.000	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	0.000	0.000	0.000	1.000	0.000	0.000	0.000
NC	0.000	0.000	.109	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	13911.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	600.200	600.200	0.000
NC	.052	.052	.109	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	13925.000	0.000	0.000	0.000	14.000	14.000	14.000	0.000	0.000	0.000
NC	.070	.070	.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	14925.000	16.000	300.000	330.000	1000.000	1000.000	1000.000	0.000	-1.600	0.000
GR	603.500	0.000	603.600	100.000	604.700	150.000	604.300	200.000	604.200	250.000
GR	602.600	300.000	598.600	311.000	597.200	313.000	598.200	318.000	603.200	330.000
GR	604.100	360.000	603.500	400.000	603.500	440.000	604.400	530.000	604.000	580.000
GR	604.000	630.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	16000.000	0.000	0.000	0.000	1075.000	1075.000	1075.000	0.000	1.600	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 .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
0.00	7.59	581.19	0.00	581.19	581.39	.20	0.00	0.00	578.15
610.	1.	607.	2.	6.	170.	7.	0.	0.	578.15
0.00	.24	3.57	.25	.160	.030	.160	0.000	573.60	102.95
.000521	0.	0.	0.	0	0	0	0.00	31.50	134.45

CCHV= .100 CEHV= .300
*SECNO 150.000

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

150.00	3.69	581.09	581.09	0.00	582.39	1.30	.20	.33	578.40
610.	43.	518.	49.	9.	53.	10.	0.	0.	578.40
.00	4.92	9.72	4.98	.030	.030	.030	.030	577.40	113.56
.007395	150.	150.	150.	20	11	0	0.00	28.80	142.36

*SECNO 160.000

160.00	4.17	581.57	0.00	0.00	582.49	.92	.06	.04	578.40
610.	51.	499.	60.	12.	61.	14.	0.	0.	578.40
.00	4.28	8.25	4.33	.030	.030	.030	.030	577.40	112.41
.004495	10.	10.	10.	6	0	0	0.00	31.27	143.68

*SECNO 170.000

170.00	4.30	581.70	0.00	0.00	582.54	.83	.04	.01	578.40
610.	54.	494.	62.	13.	63.	15.	0.	0.	578.40
.01	4.12	7.89	4.17	.030	.030	.030	.029	577.40	112.09
.003940	10.	10.	10.	2	0	0	0.00	31.97	144.05

*SECNO 180.000

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
180.00	4.40	581.80	0.00	0.00	582.58	.78	.04	.01	578.40
610.	56.	490.	64.	14.	64.	16.	0.	0.	578.40
.01	4.02	7.67	4.06	.030	.030	.030	.029	577.40	111.86
.003609	10.	10.	10.	2	0	0	0.00	32.44	144.31

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CCHV=     [illegible]00 CEHV=     .800
*SECNO 3[illegible]000

        DOWNSTREAM SECTION FOR CULV.SOUTH OF BETHUY RD.

   312.00      5.08   582.58      0.00      0.00   583.09       .51       .34       .17   578.50
     610.       67.     465.       78.       20.      74.       23.        1.        0.   578.50
      .01      3.36     6.27      3.40      .030     .030      .030      .030    577.50   110.22
  .001979      132.     132.      132.         3        0         0      0.00     35.96   146.18

*SECNO 484.000

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=      585.62 ELREA=      585.62

        SECTION AT SOUTH END OF CULV.

   484.00      5.35   582.97      0.00      0.00   584.24      1.27       .54       .61   579.62
     610.        0.     610.        0.        0.      67.        0.        1.        0.   579.62
      .02      0.00     9.05      0.00      .030     .030      .030      .030    577.62   343.00
  .005772      172.     172.      172.         2        0         0      0.00     14.00   357.00

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      1.33      2.50      0.00      7.28      0.00      85.00      .42     577.62    577.62

*SECNO 516.000

6070,LOW FLOW BY NORMAL BRIDGE

EGPRS=     0.000  EGLWC=   584.242  ELLC=   585.620  PCWSE=   582.971  ELTRD=   589.000

3370 NORMAL BRIDGE,NRD= 17 MIN ELTRD=  589.00 MAX ELLC=  585.62

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

        SECTION AT NORTH END OF CULV.

   516.00      5.55   583.17      0.00      0.00   584.46      1.29       .20       .02   579.62
     610.        0.     610.        0.        0.      67.        0.        1.        0.   579.62
      .02      0.00     9.13      0.00      .030     .030      .030      .030    577.62   343.00
  .006929       32.      32.       32.         2        0         0    -60.26     14.00   357.00

*SECNO 559.000

3301 HV CHANGED MORE THAN HVINS

        UPSTREAM SECTION FOR CULV.SOUTH OF BETHUY RD.

   559.00      7.49   585.19      0.00      0.00   585.24       .05       .02       .75   586.20
     610.        0.     610.        0.        0.     351.        0.        1.        0.   587.60
      .03      0.00     1.74      0.00      .030     .030      .030      .030    577.70   305.95
  .000191       43.      43        43         3        0         0      0.00     85.35   391.30
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CCHV= .00 CEHV= .300

*SECNO 1462.000

SECNO	DEPTH	CWSEL	CPIWS	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
				DOWNSTREAM SECTION AT BETHUY RD. CULVERT					
1462.00	7.13	585.38	0.00	0.00	585.43	.06	.19	.00	586.75
610.	0.	610.	0.	0.	320.	0.	8.	2.	588.15
.16	0.00	1.91	0.00	.030	.030	.030	.030	578.25	308.13
.000246	903.	903.	903.	2	.0	0	0.00	81.84	389.97

*SECNO 1634.000

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 587.00 ELREA= 587.00

				SECTION AT SOUTH END OF BETHUY RD.CULVERT					
1634.00	6.73	584.98	0.00	0.00	585.75	.76	.10	.21	580.50
610.	0.	610.	0.	0.	87.	0.	9.	2.	580.50
.16	0.00	7.01	0.00	.030	.030	.030	.030	578.25	343.00
.002753	172.	172.	172.	2	0	0	0.00	14.00	357.00

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	1.32	2.50	0.00	7.70	0.00	95.00	.36	578.25	578.25

*SECNO 1666.000

6070,LOW FLOW BY NORMAL BRIDGE

EGPRS= 0.000 EGLWC= 585.746 ELLC= 587.000 PCWSE= 584.983 ELTRD= 589.000

3370 NORMAL BRIDGE,NRD= 17 MIN ELTRD= 589.00 MAX ELLC= 587.00

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

				SECTION AT NORTH END OF BETHUY RD.CULVERT					
1664.00	6.80	585.05	0.00	0.00	585.87	.82	.11	.02	580.50
610.	0.	610.	0.	0.	84.	0.	9.	2.	580.50
.17	0.00	7.27	0.00	.030	.030	.030	.030	578.25	343.00
.003991	32.	32.	32.	2	0	0	-34.46	14.00	357.00

*SECNO 1699.000

3301 HV CHANGED MORE THAN HVINS

1699.00	6.60	585.90	0.00	0.00	585.97	.07	.03	.07	587.70
530.	0.	530.	0.	0.	243.	0.	9.	2.	588.30
.17	0.00	2.19	0.00	.030	.030	.030	.030	579.30	306.83
.000335	33.	33.	33.	2	0	0	0.00	63.29	370.12

CCHV= .100 CEHV= .300

*SECNO 1800.000

1800.00	6.63	585.93	0.00	0.00	586.00	.07	.03	.00	587.70
530.	0.	530.	0.	0.	245.	0.	10.	2.	588.30
.18	0.00	2.17	0.00	.030	.030	.030	.030	579.30	306.71
.000328	101.	101.	101.	2	0	0	0.00	63.53	370.25

*SECNO 2900.000

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
2900.00	6.55	586.45	0.00	0.00	586.54	.09	.53	.00	587.50
530.	0.	530.	0.	0.	222.	0.	16.	4.	587.70
.31	0.00	2.39	0.00	.030	.040	.030	.034	579.90	304.07
.000780	1100.	1100.	1100.	2	0	0	0.00	62.17	366.24

*SECNO 3100.000

3100.00	6.31	586.61	0.00	0.00	586.69	.08	.15	.00	587.90
530.	0.	530.	0.	0.	240.	0.	17.	4.	589.80
.34	0.00	2.21	0.00	.030	.045	.050	.034	580.30	326.70
.000711	200.	200.	200.	2	0	0	0.00	58.80	385.50

*SECNO 3352.000

3352.00	5.63	586.83	0.00	0.00	586.95	.12	.25	.01	589.00
530.	0.	530.	0.	0.	187.	0.	18.	5.	589.50
.36	0.00	2.83	0.00	.030	.045	.050	.035	581.20	309.24
.001469	252.	252.	252.	2	0	0	0.00	52.67	361.91

*SECNO 4200.000

3265 DIVIDED FLOW

4200.00	8.20	589.10	0.00	0.00	589.15	.06	2.19	.01	590.60
530.	0.	530.	0.	0.	278.	0.	23.	6.	591.30
.48	.07	1.91	0.00	.150	.155	.150	.059	580.90	146.07
.005694	848.	848.	848.	2	0	0	0.00	66.42	346.28

*SECNO 6100.000

3265 DIVIDED FLOW

3280 CROSS SECTION 6100.00 EXTENDED 1.97 FEET

6100.00	12.17	592.27	0.00	0.00	592.27	.01	3.12	.00	588.90
530.	193.	283.	54.	479.	311.	192.	50.	20.	591.20
1.28	.40	.91	.28	.150	.155	.150	.089	580.10	0.00
.000766	1900.	1900.	1900.	5	0	0	0.00	563.80	626.00

*SECNO 9100.000

3265 DIVIDED FLOW

3280 CROSS SECTION 9100.00 EXTENDED 1.41 FEET

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	RANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
9100.00	7.12	596.22	0.00	0.00	596.23	.01	3.96	.00	594.80
530.	308.	152.	70.	384.	135.	109.	106.	55.	596.30
2.23	.80	1.13	.65	.115	.178	.115	.118	589.10	0.00
.002787	3000.	3000.	3000.	4	0	0	0.00	468.71	600.00

*SECNO 9224.000

3265 DIVIDED FLOW

3280 CROSS SECTION 9224.00 EXTENDED 1.68 FEET

DOWNSTREAM SECTION FOR ARNOLD RD.BRIDGE

9224.00	7.38	596.48	0.00	0.00	596.49	.01	.26	.00	594.80
530.	322.	127.	82.	464.	143.	151.	107.	57.	596.30
2.28	.69	.89	.54	.115	.178	.115	.119	589.10	0.00
.001614	124.	124.	124.	2	0	0	0.00	499.03	600.00

*SECNO 9284.000

3265 DIVIDED FLOW

3280 CROSS SECTION 9284.00 EXTENDED 1.77 FEET

DOWNSTREAM SECTION AT SOUTH SIDE OF ARNOLD RD. BRIDGE

9284.00	6.62	596.57	0.00	0.00	596.58	.01	.09	.00	590.95
530.	336.	71.	124.	511.	70.	207.	109.	57.	590.95
2.31	.66	1.01	.60	.115	.178	.115	.119	589.95	0.00
.001296	60.	60.	60.	2	0	0	0.00	505.43	600.00

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	1.56	2.50	0.00	11.00	0.00	63.25	0.00	589.95	589.95

*SECNO 9316.000

3265 DIVIDED FLOW

3280 CROSS SECTION 9316.00 EXTENDED 2.09 FEET

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
598.27	596.58	0.00	300.	231.	63.	61.	595.50	595.80

UPSTREAM SECTION AT NORTH SIDE OF ARNOLD RD. BRIDGE

9316.00	6.94	596.89	0.00	0.00	596.89	.01	.31	0.00	590.95
530.	340.	58.	132.	609.	73.	272.	109.	58.	590.95
2.32	.56	.79	.49	.115	.178	.115	.120	589.95	0.00
.000744	32.	32.	32.	0	0	5	0.00	529.08	600.00

*SECNO 9376.000

3265 DIVIDED FLOW

3280 CROSS SECTION 9376.00 EXTENDED 2.14 FEET

9376.00	7.83	596.93	0.00	0.00	596.93	.00	.04	.00	594.80
480.	300.	80.	91.	601.	156.	236.	111.	58.	596.30
2.36	.50	.57	.38	.115	.178	.115	.120	589.10	0.00
.000594	60.	60.	60.	1	0	0	0.00	532.47	600.00

*SECNO 11000.000

3280 CROSS SECTION 11000.00 EXTENDED .81 FEET

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	RANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
11000.00	7.90	598.10	0.00	0.00	598.11	.01	1.18	.00	596.30
480.	236.	134.	109.	326.	162.	213.	142.	80.	597.00
2.99	.73	.83	.51	.070	.155	.070	.125	590.20	0.00
.000909	1624.	1624.	1624.	2	0	0	0.00	630.00	630.00

*SECNO 11440.000

3280 CROSS SECTION 11440.00 EXTENDED 1.08 FEET

11440.00	8.19	598.39	0.00	0.00	598.39	.00	.28	.00	596.30
480.	241.	104.	135.	409.	170.	296.	150.	86.	597.00
3.21	.59	.61	.45	.070	.155	.070	.126	590.20	0.00
.000463	440.	440.	440.	2	0	0	0.00	630.00	630.00

*SECND 11489.000

3280 CROSS SECTION 11489.00 EXTENDED 1.11 FEET

11489.00	7.61	598.41	0.00	0.00	598.41	.00	.02	.00	594.40
480.	297.	23.	160.	487.	48.	342.	151.	87.	594.40
3.24	.61	.49	.47	.070	.155	.070	.126	590.80	0.00
.000374	49.	49.	49.	1	0	0	0.00	630.00	630.00

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CCHV=    .100 CEHV=    .300
*SECNO 114[illegible].000
3280 CROSS [illegible]CTION  11490.00 EXTENDED      1.11 FEET


3370 NORMAL BRIDGE,NRD= 19 MIN ELTRD=  596.20 MAX ELLC=  597.80

 11490.00     7.60   598.40     0.00     0.00   598.41      .02      .00      .00   594.40
      480.      255.      80.      145.      452.      38.      322.      151.      87.      594.40
     3.24      .56     2.11      .45      .070      .024      .070      .126   590.80     0.00
  .000421       1.       1.       1.         0         0         0   -60.55   630.00   630.00


*SECNO 11510.000
3280 CROSS SECTION  11510.00 EXTENDED      1.11 FEET


3370 NORMAL BRIDGE,NRD= 19 MIN ELTRD=  596.20 MAX ELLC=  597.80

 11510.00     7.61   598.41     0.00     0.00   598.42      .02      .01      .00   594.40
      480.      255.      80.      145.      453.      38.      323.      151.      87.      594.40
     3.25      .56     2.11      .45      .070      .024      .070      .126   590.80     0.00
  .000421       20.      20.      20.         0         0         0   -60.57   630.00   630.00


*SECNO 11511.000
3280 CROSS SECTION  11511.00 EXTENDED      1.11 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       WIN       ELMIN      SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 11511.00     7.62   598.42     0.00     0.00   598.42      .00      .00      .00   594.40
      480.      297.      23.      160.      487.      48.      343.      151.      87.      594.40
     3.25      .61      .49      .47      .070      .155      .070      .126   590.80     0.00
  .000373       1.       1.       1.         1         0         0      0.00   630.00   630.00


*SECNO 11525.000
3280 CROSS SECTION  11525.00 EXTENDED      1.22 FEET


 11525.00     8.22   598.42     0.00     0.00   598.43      .00      .01      .00   596.30
      480.      225.      94.      161.      421.      171.      354.      152.      88.      597.00
     3.25      .53      .55      .45      .070      .155      .070      .126   590.20     0.00
  .000369       14.      14.      14.         0         0         0      0.00   630.00   630.00


*SECNO 13400.000

3265 DIVIDED FLOW

3280 CROSS SECTION  13400.00 EXTENDED      .83 FEET


 13400.00     6.53   599.93     0.00     0.00   599.97      .04     1.53      .01   599.10
      480.      136.      231.      114.      117.      124.      113.      180.      113.      599.40
     3.61     1.16     1.85     1.00      .052      .109      .052      .124   593.40     0.00
  .003118     1875.    1875.    1875.         3         0         0      0.00   546.64   630.00
```

*SECNO 13839.000
3280 CROSS SECTION 13839.00 EXTENDED 1.13 FEET

13839.00	6.83	600.73	0.00	0.00	600.74	.01	.77	.00	599.60
480.	171.	155.	154.	206.	153.	200.	184.	119.	599.30
3.74	.83	1.16	.77	.052	.109	.052	.123	593.90	0.00
.000121	439.	439.	439.	2	0	0	0.00	630.00	630.00

*SECNO 13889.000
3280 CROSS SECTION 13889.00 EXTENDED 1.76 FEET

13889.00	6.56	600.76	0.00	0.00	600.77	.01	.03	.00	599.10
480.	291.	47.	291.	367.	96.	361.	185.	120.	599.40
3.77	.60	.49	.59	.052	.109	.052	.123	594.20	0.00
.000320	50.	50.	50.	2	0	0	0.00	630.00	630.00

*SECNO 13890.000
3280 CROSS SECTION 13890.00 EXTENDED 1.66 FEET

SECNO	DEPTH	CWSEL	CPINS	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,NRNS IA MIN ELTRDS= 599.10 MAX ELLCS= 600.20

13890.00	6.56	600.76	0.00	0.00	600.77	.01	.00	.00	599.10
480.	219.	53.	209.	367.	46.	361.	185.	120.	599.40
3.77	.60	1.14	.58	.052	.024	.052	.123	594.20	0.00
.000312	1.	1.	1.	0	0	0	-49.80	630.00	630.00

*SECNO 13910.000
3280 CROSS SECTION 13910.00 EXTENDED 1.67 FEET

3370 NORMAL BRIDGE,NRNS IA MIN ELTRDS= 599.10 MAX ELLCS= 600.20

13910.00	6.57	600.77	0.00	0.00	600.78	.01	.00	.00	599.10
480.	219.	53.	209.	367.	46.	361.	185.	120.	599.40
3.74	.59	1.13	.58	.052	.024	.052	.123	594.20	0.00
.000318	28.	27.	27.	2	0	0	-48.80	630.00	630.00

*SECNO 13911.000
3280 CROSS SECTION 13911.00 EXTENDED 1.67 FEET

13911.00	6.57	600.77	0.00	0.00	600.78	.01	.00	.00	599.10
480.	222.	57.	211.	367.	66.	361.	185.	120.	599.40
3.78	.60	.48	.58	.052	.109	.052	.123	594.20	0.00
.000314	1.	1.	1.	2	0	0	0.00	630.00	630.00

*SECNO 13925.000
3280 CROSS SECTION 13925.00 EXTENDED 1.68 FEET

13925.00	6.58	600.78	0.00	0.00	600.79	.01	.00	.00	599.10

13925.00	6.58	600.78	0.00	0.00	600.78	.01	.00	.00	599.10
480.	222.	47.	212.	370.	97.	364.	186.	120.	599.40
3.78	.60	.48	.58	.052	.100	.052	.123	594.20	0.00
.000311	14.	14.	14.	0	0	0	0.00	630.00	630.00

*SECNO 14925.000

14925.00	5.93	601.53	0.00	0.00	601.91	.38	1.01	.11	601.00
480.	6.	474.	0.	4.	95.	0.	196.	129.	601.60
3.80	1.00	5.00	0.00	.070	.100	.070	.121	595.60	283.32
.026718	1000.	1000.	1000.	2	0	0	0.00	46.52	329.80

*SECNO 16000.000

3280 CROSS SECTION 16000.00 EXTENDED 1.23 FEET

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	TTRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
16000.00	7.52	604.72	0.00	0.00	604.74	.01	2.79	.04	602.60
480.	160.	172.	148.	248.	143.	251.	206.	136.	603.20
4.20	.64	1.21	.59	.070	.100	.070	.120	597.20	0.00
.000911	1075.	1075.	1075.	12	0	0	0.00	630.00	630.00

THIS RUN EXECUTED 13 APR 78 05.21.44

****
HEC2 RELEASE DATED NOV 76 UPDATED AUG1977
ERROR CORR - 01,02
MODIFICATION - 50,51,52,53
****

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

MARSAC CREEK

SUMMARY PRINTOUT

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	TOPWID	STENCL	STENCR
"A"	0.000	0.00	0.00	0.00	573.60	610.00	581.19	31.50	0.00	0.00
	0.000	0.00	0.00	0.00	573.60	610.00	581.29	23.00	107.00	130.00
*	150.000	150.00	0.00	0.00	577.40	610.00	581.09	28.80	0.00	0.00
*	150.000	150.00	0.00	0.00	577.40	610.00	580.98	20.47	117.54	138.01
	160.000	10.00	0.00	0.00	577.40	610.00	581.57	31.27	0.00	0.00
	160.000	10.00	0.00	0.00	577.40	610.00	581.81	22.49	116.58	139.08
	170.000	10.00	0.00	0.00	577.40	610.00	581.70	31.97	0.00	0.00
	170.000	10.00	0.00	0.00	577.40	610.00	581.94	23.21	116.24	139.45
	180.000	10.00	0.00	0.00	577.40	610.00	581.80	32.44	0.00	0.00
	180.000	10.00	0.00	0.00	577.40	610.00	582.02	23.59	116.06	139.65
B	312.000	132.00	0.00	0.00	577.50	610.00	582.58	35.96	0.00	0.00
	312.000	132.00	0.00	0.00	577.50	610.00	582.78	26.52	114.67	141.19
	484.000	172.00	0.00	0.00	577.62	610.00	582.97	14.00	0.00	0.00
	484.000	172.00	0.00	0.00	577.62	610.00	583.19	14.00	343.00	357.00
	516.000	32.00	589.00	585.62	577.62	610.00	583.17	14.00	0.00	0.00
	516.000	32.00	999999.00	0.00	577.62	610.00	583.39	14.00	343.00	357.00
C	559.000	43.00	0.00	0.00	577.70	610.00	585.19	85.35	0.00	0.00
	559.000	43.00	0.00	0.00	577.70	610.00	585.06	84.09	300.00	400.00
D	1462.000	903.00	0.00	0.00	578.25	610.00	585.38	81.84	0.00	0.00
	1462.000	903.00	0.00	0.00	578.25	610.00	585.26	80.74	300.00	400.00
	1634.000	172.00	0.00	0.00	578.25	610.00	584.98	14.00	0.00	0.00
	1634.000	172.00	0.00	0.00	578.25	610.00	584.86	14.00	343.00	357.00
	1666.000	32.00	589.00	587.00	578.25	610.00	585.05	14.00	0.00	0.00
	1666.000	32.00	999999.00	0.00	578.25	610.00	584.93	14.00	343.00	357.00
E	1699.000	33.00	0.00	0.00	579.30	530.00	585.90	63.29	0.00	0.00
	1699.000	33.00	0.00	0.00	579.30	530.00	585.72	61.93	300.00	340.00

	SECNO	XLOC	ELTRD	ELLC	ELMIN	Q	CHSEL	TOPWID	STENCL	STENCR
F	1800.000	101.00	0.00	0.00	579.30	530.00	585.93	63.53	0.00	0.00
	1800.000	101.00	0.00	0.00	579.30	530.00	585.76	62.17	300.00	360.00
G	2900.000	1100.00	0.00	0.00	579.90	530.00	586.45	62.17	0.00	0.00
	2900.000	1100.00	0.00	0.00	579.90	530.00	586.34	61.26	300.00	372.00
H	3100.000	200.00	0.00	0.00	580.30	530.00	586.61	58.80	0.00	0.00
	3100.000	200.00	0.00	0.00	580.30	530.00	586.52	58.22	323.00	396.00
I	3352.000	252.00	0.00	0.00	581.20	530.00	586.83	52.67	0.00	0.00
	3352.000	252.00	0.00	0.00	581.20	530.00	586.75	52.03	300.00	372.00
J	4200.000	848.00	0.00	0.00	580.90	530.00	589.10	66.42	0.00	0.00
	4200.000	848.00	0.00	0.00	580.90	530.00	589.11	60.67	300.00	374.00
K	6100.000	1900.00	0.00	0.00	580.10	530.00	592.27	563.80	0.00	0.00
	6100.000	1900.00	0.00	0.00	580.10	530.00	592.34	440.88	19.41	508.56
L	9100.000	3000.00	0.00	0.00	589.10	530.00	596.22	468.71	0.00	0.00
	9100.000	3000.00	0.00	0.00	589.10	530.00	596.33	385.41	22.43	407.84
	9224.000	124.00	0.00	0.00	589.10	530.00	596.48	499.03	0.00	0.00
	9224.000	124.00	0.00	0.00	589.10	530.00	596.59	393.81	19.31	413.12
M	9284.000	60.00	0.00	0.00	589.95	530.00	596.57	505.43	0.00	0.00
	9284.000	60.00	0.00	0.00	589.95	530.00	596.68	395.99	18.89	414.88
N	9316.000	32.00	595.80	595.50	589.95	530.00	596.89	529.08	0.00	0.00
	9316.000	32.00	999999.00	0.00	589.95	530.00	596.99	409.37	15.83	425.19
	9376.000	60.00	0.00	0.00	589.10	480.00	596.93	532.47	0.00	0.00
	9376.000	60.00	0.00	0.00	589.10	480.00	597.04	413.62	14.60	428.21
O	11000.000	1624.00	0.00	0.00	590.20	480.00	598.10	630.00	0.00	0.00
	11000.000	1624.00	0.00	0.00	590.20	480.00	598.21	471.47	59.22	530.69
P	11440.000	440.00	0.00	0.00	590.20	480.00	598.39	630.00	0.00	0.00
	11440.000	440.00	0.00	0.00	590.20	480.00	598.49	516.31	45.23	561.54
	11489.000	49.00	0.00	0.00	590.80	480.00	598.41	630.00	0.00	0.00
	11489.000	49.00	0.00	0.00	590.80	480.00	598.51	522.50	42.85	565.36
	11490.000	1.00	596.20	597.80	590.80	480.00	598.40	630.00	0.00	0.00
	11490.000	1.00	596.20	597.80	590.80	480.00	598.50	529.57	39.85	569.41
	11510.000	20.00	596.20	597.80	590.80	480.00	598.41	630.00	0.00	0.00
	11510.000	20.00	596.20	597.80	590.80	480.00	598.51	522.78	42.76	565.53
Q	11511.000	1.00	0.00	0.00	590.80	480.00	598.42	630.00	0.00	0.00
	11511.000	1.00	0.00	0.00	590.80	480.00	598.52	511.14	47.76	558.90
	11525.000	14.00	0.00	0.00	590.20	480.00	598.42	630.00	0.00	0.00
	11525.000	14.00	0.00	0.00	590.20	480.00	598.53	543.94	45.57	589.51
R	13400.000	1875.00	0.00	0.00	593.40	480.00	599.93	546.64	0.00	0.00
	13400.000	1875.00	0.00	0.00	593.40	480.00	600.04	371.21	198.39	585.93

	SECNO	XLCH	ELTRD	ELLC	FLMIN	Q	CWSEL	TOPWID	STENCL	STENCR
S	13839.000	439.00	0.00	0.00	593.90	480.00	600.73	630.00	0.00	0.00
	13839.000	439.00	0.00	0.00	593.90	480.00	600.83	523.54	70.56	594.09
	13889.000	50.00	0.00	0.00	594.20	480.00	600.76	630.00	0.00	0.00
	13889.000	50.00	0.00	0.00	594.20	480.00	600.87	571.34	32.41	603.75
	13890.000	1.00	599.10	600.20	594.20	480.00	600.76	630.00	0.00	0.00
	13890.000	1.00	599.10	600.20	594.20	480.00	600.87	568.51	34.05	602.56
	13910.000	20.00	599.10	600.20	594.20	480.00	600.77	630.00	0.00	0.00
	13910.000	20.00	599.10	600.20	594.20	480.00	600.87	567.65	34.52	602.18
T	13911.000	1.00	0.00	0.00	594.20	480.00	600.77	630.00	0.00	0.00
	13911.000	1.00	0.00	0.00	594.20	480.00	600.86	570.44	32.91	603.35
	13925.000	14.00	0.00	0.00	594.20	480.00	600.78	630.00	0.00	0.00
	13925.000	14.00	0.00	0.00	594.20	480.00	600.88	571.81	32.11	603.92
	14925.000	1000.00	0.00	0.00	595.60	480.00	601.53	46.52	0.00	0.00
	14925.000	1000.00	0.00	0.00	595.60	480.00	601.63	30.00	300.00	330.00
U	16000.000	1075.00	0.00	0.00	597.20	480.00	604.72	630.00	0.00	0.00
	16000.000	1075.00	0.00	0.00	597.20	480.00	604.83	528.45	30.80	559.25

SUMMARY OF ERRORS

CAUTION SECNO= 150.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 150.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 150.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 150.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 150.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 150.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

FLOODWAY DATA, MARSAC CREEK
PROFILE NO. 2

	STATION	FLOODWAY WIDTH (FT)	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE	
A	0.000	32 ~~23.~~	183 ~~172.~~	3.5	581.2 ~~581.5~~	581.2	0.0 ~~-.1~~	NO ENCROACHMENT
	150.000	20.	63.	9.7	581.1	581.1	0.0	
	160.000	22.	84.	7.2	581.8	581.6	.2	
	170.000	23.	89.	6.9	581.9	581.7	.2	
	180.000	24.	91.	6.7	582.0	581.8	.2	
B	312.000	36 ~~27.~~	117 ~~113.~~	5.4	582.6 ~~582.8~~	582.6	0.0 ~~-.2~~	
	484.000	14.	70.	8.7	583.2	583.0	.2	
	516.000	14.	73.	8.3	583.4	583.2	.2	
C	550.000	85 ~~88.~~	351 340.	1.8	585.2	585.2	0.0	
D	1462.000	82 ~~81.~~	320 311.	2.0	585.4	585.4	0.0	
	1634.000	14.	85.	7.1	585.0	585.0	0.0	
	1666.000	14.	86.	7.1	585.0	585.0	0.0	
E	1699.000	63 ~~62.~~	243 ~~232.~~	2.3	585.9 ~~585.8~~	585.9	0.0 ~~-.1~~	
F	1800.000	64 ~~62.~~	245 ~~234.~~	2.3	585.9 585.8	585.9	0.0 ~~-.1~~	
G	2900.000	62 ~~61.~~	222 ~~215.~~	2.5	586.5	586.5	0.0	
H	3100.000	59 ~~58.~~	240 ~~235.~~	2.3	586.6	586.6	0.0	
I	3352.000	53 ~~52.~~	187 ~~183.~~	2.9	586.8	586.8	0.0	
J	4200.000	66 ~~61.~~	278.	1.9	589.1	589.1	0.0	
K	6100.000	499.	907.	.6	592.4	592.3	.1	
L	9100.000	385.	602.	.9	596.3	596.2	.1	ENCROACHED FLOODWAY
	9224.000	394.	715.	.7	596.6	596.5	.1	
M	9284.000	396.	741.	.7	596.7	596.6	.1	
N	9316.000	409.	898.	.6	597.0	596.9	.1	
	9376.000	414.	935.	.5	597.0	596.9	.1	
O	11000.000	471.	643.	.7	598.2	598.1	.1	
P	11440.000	516.	823.	.6	598.5	598.4	.1	
	11480.000	523.	823.	.6	598.5	598.4	.1	
	11490.000	530.	769.	.6	598.5	598.4	.1	
	11510.000	523.	762.	.6	598.5	598.4	.1	
Q	11511.000	511.	815.	.6	598.5	598.4	.1	
	11525.000	548.	901.	.5	598.5	598.4	.1	
R	13400.000	388.	324.	1.5	600.0	599.9	.1	
S	13839.000	524.	512.	.9	600.8	600.7	.1	
	13889.000	571.	795.	.6	600.9	600.8	.1	
	13890.000	569.	743.	.6	600.9	600.8	.1	
	13910.000	568.	745.	.6	600.9	600.8	.1	
T	13911.000	570.	799.	.6	600.9	600.8	.1	
	13925.000	572.	804.	.6	600.9	600.8	.1	
	14025.000	30.	98.	4.9	601.6	601.5	.1	
U	16000.000	528.	605.	.8	604.8	604.7	.1	

RECEIVED

OCT 12 1976

H.R.&C., INC.

MELDRUM CREEK

10, 50 500

GPS UYG001,,EG51 AT: 09/30/76 14:50:52 JOB: 35209 LL [4-19-001 5171010496 1

MELDRUM

2/

DNR check, sections

Ira twp FIS

~~W. Branch Meldrum sections~~ Meldrum Cr.

computer station	station letter	comment
0+00	A	line # 17, invert dropped 1.25 ft
2+25	B	line # 17, invert dropped 0.56 ft
2+85		d/s side ℄ Meldrum 3+00, line # 18
3+15		u/s side dupe
3+30	C	dupe of 5+00
5+00	D	line # 17
20+00	E	line # 16
39+32	F	dupe of line # 15
39+91		dupe
39+92		5' dia culvert
40+08		dupe
40+09		dupe
40+24	G	line # 15
57+00	H	line # 14
71+50	I	line # 13A
~~73+50~~		
73+50		line # 13 (not used)
℄ Arnold Rd		

(I not located properly on map)

computer station	station letter	comment
0+00	A	line # 23, invert dropped 0.5'
7+00	B	line # 23
27+00	C	line # 22
45+00	D	line # 21
54+85		dupe of 62+65
60+85	E	℄ Shortcut Rd - 61+00, line # 20
61+15	F	
62+65		line # 19
72+50	G	line # 51
90+50	H	line # 50
107+00	I	line # 49
124+85		dupe of 130+15
128+85	J	d/s side ℄ Arnold Rd 12900, line # 4. u/s side, dupe
129+15	K	
130+15		line # 47
145+00	L	line # 46
164+00	M	line # 45
183+00	N	line # 44
203+00	O	line # 43

8040 45 . . . . . .OUTPUT . 07 OCT 77 . 08.11 . . . . . 8040 45

MELDRUM CREEK ENCROACHMENT
& Natural

RECEIVED
OCT 6- 1977
H.R.&C., INC.

8040 45 . . . . . .COKE . 07 OCT 77 . 08.29 . . . . . 8040 45

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08.10.25. WTTES05.  07 OCT 77   7600Z  BKY24  V0   WTT     NORM          804045 EEDD 723F3
08.10.25. WTTES05. WTT,P3.804045,EEDD 723F3016
08.10.25. WTTES05. *INPUT 6600B 07.41.27. 07 OCT 77  VIA COKE
08.10.25. WTTES05.  COPY(INPUT,1R,CONTROL/8R)
08.10.28. WTTES05.  CONTROL DISK 2
08.10.28. WTTES05. (TUPY
08.10.28. WTTES05. *NOSTAGE
08.10.28. WTTES05. FETCHPS,HECLIB,HEC2,HEC2.
08.10.31. WTTES05.  FLS=170K  FLL=0000K  LCM BUFFERS=0054K  TOTAL LCM=0244K
08.10.32. WTTES05.   HEC2     DISK 1
08.10.33. WTTES05.  HEC2          20006 WORDS COPIED FROM CACHE.
08.10.34. WTTES05. -CACHE22 RETURNED -    11 BLD, BS= 0040B,FS=1360048
08.10.34. WTTES05.   TAPEPAC RETURNED      0 BLD, BS= 0002B,FS=0000008
08.10.34. WTTES05.  FLS=060K  FLL=0000K  LCM BUFFERS=0014K  TOTAL LCM=0074K
08.10.34. WTTES05. SFL,170000.
08.10.58. WTTES05.  FLS=170K  FLL=0000K  LCM BUFFERS=0014K  TOTAL LCM=0204K
08.10.58. WTTES05. HEC2.
08.10.58. WTTES05.   BEGIN=  HEC2      USING -
08.10.58. WTTES05.          MNF4 LIBRARY VERSION 1.4
08.10.58. WTTES05.          FTN4 LIBRARY 7600-L439/77040.10.37
08.10.58. WTTES05.   TAPE92  DISK 2
08.10.58. WTTES05.   TAPE93  DISK 1
08.10.58. WTTES05. .BA;
08.11.09. WTTES05.   OUTPUT  DISK 2
08.11.09. WTTES05.   TAPE94  DISK 1
08.11.09. WTTES05.   TAPE91  DISK 2
08.11.11. WTTES05. .BA;DI86 L
08.11.12. WTTES05. .BA;HI86 LP
08.11.12. WTTES05. .BA;HI86 LQ
08.11.12. WTTES05.     STOP
08.11.12. WTTES05.       .554 CP SECONDS EXECUTION TIME
08.11.12. WTTES05.   OUTPUT  QUEUED PR      1 BLD, BS= 00208,FS=0000148
08.11.12. WTTES05. *J JG0741D   804045N 07OCT77RZ N 000006BA;HI86 LQEEDO 723F3
08.11.12. WTTES05.  ..............................
08.11.12. WTTES05. SECTORS TRANSFERRED        118
08.11.12. WTTES05. MAX DISK SECTORS           360
08.11.12. WTTES05. CP SECONDS               0.554
08.11.12. WTTES05. SYSTEM SECONDS           0.060
08.11.12. WTTES05. OLD BLD"S                    5
08.11.12. WTTES05. LCM BUFFER LOADS             6
08.11.12. WTTES05. ITO CUS                      0
08.11.12. WTTES05. KWORDS XFERRED              35
08.11.12. WTTES05. CIO CALLS                  102
08.11.12. WTTES05. STAGING CUS                  0
08.11.12. WTTES05.  ..............................
08.11.12. WTTES05. TOTAL JOB CUS                6
08.11.12. WTTES05. COST + OVERHEAD   $       1.01
08.11.12. WTTES05.  ..............................

08.11.23. WTTES05.  OUTPUT  QUEUED PR 92
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HEC2 VERSION UPDATED AUG 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09,10
MODIFICATIONS 52,53,54,55,56,57,58,59
****

* * * NEW HEC2 VERSION * * *

AS OF 28 MARCH 1977, A NEW VERSION OF HEC2 (DATED NOVEMBER 1976) WILL BE AVAILABLE IN HECLIB UNDER THE FILE NAME HEC2N. THE NEW VERSION HAS AN EXPANDED SUMMARY OUTPUT CAPABILITY ALLOWING THE USER TO SELECT VARIABLES FOR DISPLAY FROM A LIST OF 63 AVAILABLE.
ALSO, FIXED FORMAT TABLES CAN BE REQUESTED WHICH DISPLAY BRIDGE DATA, ENCROACHMENT DATA, CHANNEL IMPROVEMENT DATA, FLOODWAY DATA AND FLOOD INSURANCE RATE ZONE DATA. CONTROL CARDS FOR ACCESSING THE NEW VERSION ARE AS FOLLOWS:

```
(JOB CARD)
*NOSTAGE
FETCHPS,HECLIB,HEC2N,HEC2N.
SFL,101000.
HEC2N.
(RECORD SEPARATOR CARD)
(  DATA DECK  )
(JOB DECK TERMINATOR)
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THE PROGRAM HAS BEEN TESTED ON A NUMBER OF DATA SETS. IF ANY PROBLEMS ARE DETECTED, PLEASE CONTACT ALLAN OTO OF HEC AT (FTS) 448-2105.
MULTIPLE COPIES OF AN HEC2 USERS MANUAL SUPPLEMENT FOR THE NEW VERSION WILL BE AVAILABLE FROM ADP CENTERS IN ALL DISTRICT AND DIVISION OFFICES BY 28 MARCH 1977.
A PROGRAMMERS MANUAL FOR THE NEW VERSION WILL BE AVAILABLE BY ABOUT MID-APRIL.
THE EXISTING VERSIONS OF THE PROGRAM AT LBL (HEC2 AND HEC2Z) WILL REMAIN IN HECLIB UNDER THE FILE NAMES HEC2 AND HEC2Z UNTIL THE END OF JULY.

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C
T1       FLOOD INSURANCE STUDY
T2       IRA TOWNSHIP    100 YR. NATURAL CHANNEL
T3       MELDRUM CREEK   MAIN BR.

J1  ICHECK      INQ         NINV        IDIR        STRT        METRIC      HVINS       Q           WSEL        FQ
            0.          2.          0.          0.  0.000000        0.00         0.0        955.     576.700       0.000

J2  NPROF       IPLOT       PRFVS       XSECV       XSECH       FN          ALLDC       IBW         CHNIM       ITRACE
        1.000       0.000      -1.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000

J3      1.000      34.000      36.000       4.000      27.000      28.000       9.000       0.000       0.000       0.000
NC       .130        .130        .052        .100        .300       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

X1      0.000      21.000     300.000     640.000       0.000       0.000       0.000       0.000       0.000       0.000
GR    577.200       0.000     578.200      50.000     578.900     100.000     578.800     150.000     579.500     200.000
GR    579.200     250.000     577.800     300.000     575.800     303.000     572.400     310.000     572.000     320.000
GR    573.900     350.000     574.900     380.000     574.800     400.000     574.800     420.000     574.400     460.000
GR    574.800     490.000     574.800     590.000     575.800     630.000     575.900     640.000     575.900     746.000
GR    578.200     816.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000

X1    700.000      21.000     300.000     640.000     700.000     700.000     700.000       0.000       0.000       0.000
GR    577.700       0.000     578.700      50.000     579.400     100.000     579.300     150.000     580.000     200.000
GR    579.700     250.000     578.300     300.000     576.300     305.000     572.900     310.000     572.500     320.000
GR    574.400     350.000     575.400     380.000     575.300     400.000     575.300     420.000     574.900     460.000
GR    575.300     490.000     575.300     590.000     576.300     630.000     576.400     640.000     576.400     746.000
GR    578.700     816.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000
NC       .182        .182        .078       0.000       0.000       0.000       0.000       0.000       0.000       0.000

X1   2700.000      18.000     300.000     339.000    2000.000    2000.000    2000.000       0.000       0.000       0.000
GR    587.300       0.000     587.100      40.000     586.400     100.000     580.300     170.000     579.400     250.000
GR    580.100     300.000     576.400     310.000     574.200     320.000     574.300     330.000     576.400     336.000
GR    580.400     339.000     579.900     350.000     579.300     400.000     584.300     437.000     588.100     485.000
GR    588.200     538.000     589.300     585.000     589.200     635.000       0.000       0.000       0.000       0.000
NC       .195        .195        .091       0.000       0.000       0.000       0.000       0.000       0.000       0.000

X1   4500.000      16.000     300.000     330.000    1800.000    1800.000    1800.000       0.000       0.000       0.000
GR    587.300       0.000     585.500      50.000     586.300     100.000     586.300     150.000     581.100     250.000
GR    581.600     300.000     578.300     301.000     576.300     306.000     575.000     316.000     578.300     327.000
GR    580.700     330.000     581.300     410.000     581.300     450.000     580.300     530.000     581.800     580.000
GR    582.400     630.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000

X1   5485.000      18.000     390.000     423.000     985.000     985.000     985.000       0.000       0.000       0.000
GR    587.300       0.000     580.700      30.000     581.200      40.000     581.300     140.000     581.100     220.000
GR    581.300     290.000     580.300     340.000     580.200     370.000     580.100     390.000     576.300     399.000
GR    575.400     408.000     576.300     416.000     577.300     423.000     582.200     430.000     585.400     450.000
GR    587.300     470.000     589.800     511.000     589.900     553.000       0.000       0.000       0.000       0.000

        DOWNSTREAM SECTION FOR SHORTCUT RD. BRIDGE

X1   6085.000      16.000     393.000     423.000     600.000     600.000     600.000       0.000       0.000       0.000
X3      0.000       0.000       0.000     350.000       0.000     470.000       0.000       0.000       0.000       0.000
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GR	575.700	423.000	582.200	430.000	585.400	450.000	587.300	470.000	585.300	511.000
GR	589.800	553.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SB	[illegible]00	1.190	2.500	0.000	30.000	0.000	222.100	0.000	0.000	0.000

UPSTREAM SECTION FOR SHORTCUT RD. BRIDGE

X1	6115.000	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	583.700	585.300	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	350.000	0.000	470.000	0.000	0.000	0.000	0.000
BT	6.000	0.000	587.300	587.300	290.000	587.200	581.300	393.000	585.300	583.700
BT	423.000	585.300	583.700	511.000	585.300	585.300	553.000	589.900	589.900	0.000
QT	2.000	660.000	660.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	6265.000	18.000	390.000	423.000	150.000	150.000	150.000	0.000	0.000	0.000
GR	587.300	0.000	580.700	30.000	581.200	40.000	581.300	140.000	581.100	220.000
GR	581.300	290.000	580.300	340.000	580.200	370.000	580.100	390.000	576.300	399.000
GR	575.400	408.000	576.300	416.000	577.300	423.000	582.200	430.000	585.400	450.000
GR	587.300	470.000	589.800	511.000	589.900	553.000	0.000	0.000	0.000	0.000
NC	.173	.173	.167	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	7250.000	14.000	180.000	198.000	985.000	985.000	985.000	0.000	0.000	0.000
GR	590.400	0.000	586.100	30.000	582.500	80.000	583.300	130.000	583.200	180.000
GR	579.700	185.000	579.100	190.000	579.700	195.000	583.300	198.000	583.100	270.000
GR	582.400	280.000	582.200	330.000	583.100	380.000	588.800	430.000	0.000	0.000
NC	0.000	0.000	.127	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	9050.000	15.000	280.000	314.000	1800.000	1800.000	1800.000	0.000	0.000	0.000
GR	598.200	0.000	587.300	46.000	586.600	80.000	586.300	120.000	585.400	180.000
GR	586.300	280.000	583.300	290.000	582.400	295.000	583.300	306.000	586.400	314.000
GR	586.900	330.000	589.300	380.000	592.900	430.000	594.700	480.000	596.200	530.000

X1	10700.000	13.000	130.000	160.000	1650.000	1650.000	1650.000	0.000	0.000	0.000
GR	595.900	0.000	595.000	30.000	590.200	50.000	589.000	80.000	588.500	130.000
GR	584.300	138.000	584.300	149.000	584.700	150.000	589.600	160.000	589.300	180.000
GR	590.100	230.000	590.300	280.000	596.700	353.000	0.000	0.000	0.000	0.000
NC	.120	.120	.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	12485.000	15.000	190.000	220.000	1785.000	1785.000	1785.000	0.000	0.000	0.000
GR	599.900	0.000	598.100	40.000	593.100	85.000	593.300	90.000	594.100	140.000
GR	593.400	190.000	589.300	200.000	588.200	204.000	587.800	210.000	589.300	214.000
GR	593.200	220.000	593.100	240.000	593.800	306.000	597.200	340.000	599.400	390.000

DOWNSTREAM SECTION FOR ARNOLD RD. BRIDGE

X1	12885.000	12.000	200.000	223.000	400.000	400.000	400.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	100.000	0.000	360.000	0.000	0.000	0.000	0.000
GR	599.900	0.000	598.100	40.000	593.100	85.000	593.300	90.000	594.100	140.000
GR	593.400	190.000	588.300	200.000	588.300	223.000	593.100	240.000	593.800	306.000
GR	595.000	340.000	599.400	390.000	0.000	0.000	0.000	0.000	0.000	0.000
SB	0.000	1.240	2.500	0.000	23.000	0.000	126.490	0.000	0.000	0.000

UPSTREAM SECTION FOR ARNOLD RD. BRIDGE

X1	12915.000	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	593.900	595.000	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	100.000	0.000	360.000	0.000	0.000	0.000	0.000

BT	223.000	595.000	593.900	340.000	595.000	595.000	390.000	599.400	599.400	0.000
X1	13015.000	15.000	190.000	220.000	100.000	100.000	100.000	0.000	0.000	0.000
GR	599.900	0.000	598.100	40.000	593.100	85.000	593.300	90.000	594.100	140.000
GP	593.400	190.000	589.300	200.000	588.200	204.000	587.800	210.000	589.300	214.000
GR	593.200	220.000	593.100	240.000	593.800	306.000	597.200	340.000	599.400	390.000
NC	.080	.080	.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	14500.000	12.000	200.000	220.000	1485.000	1485.000	1485.000	0.000	0.000	0.000
GR	601.400	0.000	600.400	50.000	597.400	100.000	596.400	150.000	596.300	200.000
GR	592.300	207.000	591.300	210.000	596.900	220.000	596.800	300.000	598.300	350.000
GR	599.300	400.000	601.200	450.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.120	.120	.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	16400.000	17.000	300.000	320.000	1900.000	1900.000	1900.000	0.000	0.000	0.000
GR	607.700	0.000	606.400	60.000	605.300	100.000	603.700	150.000	600.900	200.000
GR	600.300	250.000	598.500	300.000	596.300	311.000	595.700	314.000	599.400	320.000
GR	598.300	350.000	599.800	400.000	600.300	450.000	601.200	480.000	602.300	500.000
GR	606.200	600.000	606.700	641.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	18300.000	14.000	180.000	210.000	1900.000	1900.000	1900.000	0.000	0.000	0.000
GR	612.200	0.000	609.300	30.000	605.300	60.000	604.300	80.000	604.500	180.000
GR	600.100	193.000	600.500	195.000	600.900	202.000	604.600	210.000	604.300	230.000
GR	604.300	280.000	606.300	367.000	610.600	380.000	612.400	430.000	0.000	0.000
NC	.143	.143	.115	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	20300.000	15.000	300.000	356.000	2000.000	2000.000	2000.000	0.000	0.000	0.000
GR	614.100	0.000	614.200	50.000	612.800	100.000	613.100	150.000	608.900	200.000
GR	608.200	250.000	607.700	300.000	604.100	305.000	604.100	313.000	602.600	319.000
GR	602.300	330.000	602.600	343.000	606.200	356.000	607.600	375.000	609.300	427.000
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CCHV= .100 CEHV= .300

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
			same						
0.00	4.70	576.70	ST. 0.00	576.70	576.73	.03	0.00	0.00	577.80
955.	0.	931.	24.	0.	722.	95.	0.	0.	575.90
0.00	0.00	1.29	.26	.130	.052	.130	0.000	572.00	301.65
.000744	0.	0.	0.	0.	0	1	0.00	468.70	770.35
700.00	4.71	577.21	0.00	0.00	577.24	.02	.51	.00	578.30
955.	0.	930.	25.	0.	729.	97.	13.	8.	576.40
.16	0.00	1.28	.26	.130	.052	.130	.052	572.50	301.62
.000719	700.	700.	700.	0	0	1	0.00	469.37	770.99
2700.00	6.35	580.55	0.00	0.00	580.87	.32	3.55	.09	580.10
955.	63.	850.	42.	96.	176.	58.	40.	24.	580.40
.28	.65	4.83	.73	.182	.078	.182	.071	574.20	167.14
.009579	2000.	2000.	2000.	4	0	1	0.00	242.10	409.24

3280 CROSS SECTION 4500.00 EXTENDED 2.03 FEET

4500.00	9.44	584.44	0.00	0.00	584.46	.02	3.55	.03	581.60
955.	104.	379.	472.	260.	228.	975.	77.	38.	580.70
.81	.40	1.66	.48	.195	.091	.195	.079	575.00	186.02
.000826	1800.	1800.	1800.	5	0	1	0.00	443.98	630.00
5485.00	9.60	585.00	0.00	0.00	585.01	.01	.56	.00	580.10
955.	570.	365.	20.	1477.	274.	61.	114.	48.	577.30
1.18	.39	1.33	.32	.195	.091	.195	.081	575.40	10.45
.000410	985.	985.	985.	4	0	1	0.00	437.05	447.51

3470 ENCROACHMENT STATIONS= 350.0 470.0 TYPE= 1 TARGET= 120.000

DOWNSTREAM SECTION FOR SHORTCUT RD. BRIDGE Δ = .12' higher than initial submittal

* 6085.00	9.64	585.34	SB 5.22 old 0.00	0.00	585.43	.08	.39	.02	575.70
955.	167.	744.	44.	228.	289.	76.	150.	52.	575.70
1.26	.73	2.57	.58	.195	.091	.195	.082	575.70	350.00
.001207	600.	600.	600.	2	0	1	0.00	99.66	449.66

* encroachments used

439.4 Ft old

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB XK	XKOR	COFQ	ROLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
0.00	1.19 low	2.50	0.00	30.00	0.00	222.10	0.00	575.70	575.70

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT

TIME SLOPE	VLOB XLOBL	VCH XLCH	VRUB XLOBR	XNL ITRIAL	XNCH IOC	XNR ICONT	CORAR	TOPWID	ENDST

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
585.69	585.43	0.00	63.	892.	222.	240.	583.70	585.30

3470 ENCROACHMENT STATIONS= 350.0 470.0 TYPE= 1 TARGET= 120.000

UPSTREAM SECTION FOR SHORTCUT RD. BRIDGE Δ = .05' lower

585.52 old

6115.00	9.87	585.57	0.00	0.00	585.64	.08	.22	0.00	575.70
* 955.	170.	738.	47.	238.	296.	82.	131.	52.	575.70
1.26	.72	2.49	.57	.195	.091	.195	.082	575.70	350.00
.001102	30.	30.	30.	2	0	4	0.00	101.76	451.76

* encroachment used

450.17 old

585.56

6265.00	10.30	585.70	0.00	0.00	585.70	.00	.05	.01	580.10
660.	414.	231.	15.	1743.	297.	80.	136.	53.	577.30
1.36	.24	.78	.19	.195	.091	.195	.082	575.40	7.28
.000126	150.	150.	150.	2	0	1	0.00	445.85	453.13

585.86

7250.00	6.87	585.97	0.00	0.00	585.98	.01	.28	.00	583.20
660.	201.	86.	373.	373.	102.	618.	172.	62.	583.30
1.80	.54	.84	.60	.173	.167	.173	.094	579.10	31.78
.001087	985.	985.	985.	2	0	1	0.00	373.41	405.19

588.59

9050.00	6.16	588.56	0.00	0.00	588.57	.02	2.59	.00	586.30
660.	406.	226.	28.	575.	159.	59.	211.	76.	586.40
2.33	.71	1.43	.47	.173	.127	.173	.100	582.40	40.69
.001997	1800.	1800.	1800.	4	0	1	0.00	323.83	364.53

591.91

10700.00	7.63	591.93	0.00	0.00	591.95	.03	3.38	.00	588.50
660.	185.	312.	163.	234.	183.	261.	239.	87.	589.60
2.72	.79	1.70	.63	.173	.127	.173	.105	584.30	42.84
.002096	1650.	1650.	1650.	3	0	1	0.00	255.63	298.47

595.50

12485.00	7.69	595.49	0.00	0.00	595.53	.03	3.57	.00	593.40
660.	167.	323.	170.	214.	167.	196.	264.	98.	593.20
3.08	.78	1.94	.86	.120	.100	.120	.104	587.80	63.43
.001915	1785.	1785.	1785.	2	0	1	0.00	259.53	322.97

* 3470 ENCROACHMENT STATIONS= 100.0 360.0 TYPE= 1 TARGET= 260.000 * new

DOWNSTREAM SECTION FOR ARNOLD RD. BRIDGE Δ = .03 lower

594.94

12885.00	7.67	595.97	0.00	0.00	595.99	.02	.46	.00	588.30
660.	160.	280.	220.	249.	176.	314.	270.	100.	588.30
3.19	.64	1.59	.70	.120	.100	.120	.104	588.30	100.00
.000757	400.	400.	400.	2	0	1	0.00	250.94	350.94

291.22 old

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	1.24	2.50	0.00	23.00	0.00	126.49	0.00	588.30	588.30

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

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
596.49	595.99	0.00	333.	327.	126.	129.	593.90	595.00

3470 ENCROACHMENT STATIONS= 100.0 360.0 TYPE= 1 TARGET= 260.000

UPSTREAM SECTION FOR ARNOLD RD. BRIDGE

12915.00	7.78	596.08	0.00	0.00	596.09	.02	.11	0.00	588.30
660.	164.	273.	224.	261.	179.	329.	271.	100.	588.30
3.20	.63	1.52	.68	.120	.100	.120	.104	588.30	100.00
.000682	30.	30.	30.	1	0	5	0.00	252.33	352.33
13015.00	8.36	596.16	0.00	0.00	596.17	.02	.08	.00	593.40
660.	199.	271.	190.	300.	186.	267.	273.	-101.	593.20
3.22	.66	1.46	.71	.120	.100	.120	.104	587.80	57.49
.000930	100.	100.	100.	0	0	1	0.00	272.08	329.57
14500.00	7.01	598.31	0.00	0.00	598.37	.06	2.19	.01	596.30
660.	238.	247.	176.	176.	90.	155.	293.	110.	596.90
3.45	1.35	2.75	1.13	.080	.070	.080	.100	591.30	84.75
.002672	1485.	1485.	1485.	2	0	1	0.00	265.99	350.74
16400.00	6.33	602.03	0.00	0.00	602.05	.02	3.67	.00	598.50
660.	165.	156.	339.	214.	96.	387.	317.	123.	599.40
3.97	.77	1.63	.88	.120	.095	.120	.100	595.70	179.93
.001463	1900.	1900.	1900.	3	0	1	0.00	315.05	494.98
18300.00	6.01	606.11	0.00	0.00	606.15	.04	4.09	.01	604.50
660.	202.	277.	181.	199.	126.	195.	344.	136.	604.60
4.32	1.01	2.20	.93	.120	.100	.120	.100	600.10	53.94
.003482	1900.	1900.	1900.	3	0	1	0.00	304.71	358.65

3280 CROSS SECTION 20300.00 EXTENDED .52 FEET

20300.00	7.52	609.82	0.00	0.00	609.84	.03	3.69	.00	607.70
660.	77.	512.	71.	163.	352.	127.	370.	149.	606.20
4.77	.48	1.45	.56	.143	.115	.143	.101	602.30	189.00
.001142	2000.	2000.	2000.	3	0	1	0.00	238.00	427.00

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HEC2 VERSION UPDATED AUG 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09,10
MODIFICATIONS 52,53,54,55,56,57,58,59
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T1      FLOOD INSURANCE STUDY
T2      IRA TOWNSHIP    100 YR. WITH ENCROACHMENT
T3      MELORUM CREEK-- MAIN BR.

J1  ICHECK      INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.        3.        0.        0.  0.000000      0.00      0.0     955.   576.800     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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 CCHV=    .100 CEHV=    .300
 2800 NAT Q1=    350.02  WSEL=    576.70  ENC Q1=    368.00  WSEL=    576.80  RATIO=   -.0514
 NAT Q1=    379.  RATIOS LOB,CH,ROB=  0.0000   .9710   .0290  WSEL=    576.80
   SECNO     DEPTH     CWSEL     CRIWS     WSELK      EG        HV        HL       OLOSS     BANK ELEV
     Q       QLOB      QCH       QROB      ALOB       ACH       AROB      VOL       TWA     LEFT/RIGHT
    TIME     VLOB      VCH       VROB      XNL        XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL     IDC       ICONT     CORAR     TOPWID      ENDST

 3470 ENCROACHMENT STATIONS=    300.0     640.0  TYPE=     4  TARGET=      .029
      0.00      4.80    576.80      0.00    576.70    576.82       .02      0.00      0.00      577.80
       955.        0.      955.        0.        0.       756.        0.        0.        0.    575.90
      0.00      0.00      1.26      0.00      .130      .052      .130     0.000    572.00    301.50
   .000678        0.        0.        0.         0         0         1      0.00    338.50    640.00

 2800 NAT Q1=    356.03  WSEL=    577.21  ENC Q1=    371.52  WSEL=    577.31  RATIO=   -.0435
 NAT Q1=    383.  RATIOS LOB,CH,ROB=  0.0000   .9706   .0294  WSEL=    577.31

 3470 ENCROACHMENT STATIONS=    300.0     640.0  TYPE=     4  TARGET=      .029
      700.00      4.78    577.28      0.00    577.21    577.31       .03       .48       .00      578.30
       955.        0.      955.        0.        0.       749.        0.       12.        5.    576.40
       .15      0.00      1.27      0.00      .130      .052      .130      .052    572.50    301.53
   .000697       700.      700.      700.         3         0         1      0.00    338.47    640.00

 2800 NAT Q1=     97.58  WSEL=    580.55  ENC Q1=     97.58  WSEL=    580.65  RATIO=  0.0000
 NAT Q1=    103.  RATIOS LOB,CH,ROB=   .0769   .8734   .0497  WSEL=    580.65

 3470 ENCROACHMENT STATIONS=    233.0     379.0  TYPE=     4  TARGET=      .035
     2700.00      6.36    580.56      0.00    580.55    580.93       .37      3.52       .10      580.10
       955.       45.       891.       20.       59.       177.       29.       35.       17.    580.40
       .27       .76      5.04       .68      .182      .078      .182      .071    574.20    233.01
   .010418      2000.     2000.     2000.         5         0         1      0.00    145.99    379.00

 2800 NAT Q1=    332.36  WSEL=    584.44  ENC Q1=    332.36  WSEL=    584.54  RATIO=  0.0000
 NAT Q1=    347.  RATIOS LOB,CH,ROB=   .1114   .3892   .4993  WSEL=    584.54
 3280 CROSS SECTION    4500.00 EXTENDED        2.15 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=    239.5     605.5  TYPE=     4  TARGET=      .043
     4500.00      9.54    584.54      0.00    584.44    584.56       .02      3.60       .03      581.60
       955.       89.       388.       478.       193.       232.       955.       69.       27.    580.70
       .78       .46      1.67       .50       .195      .091      .195      .079    575.00    239.51
   .000820      1800.     1800.     1800.         7         0         1      0.00    366.00    605.51

 2800 NAT Q1=    471.48  WSEL=    585.00  ENC Q1=    471.48  WSEL=    585.10  RATIO=  0.0000
 NAT Q1=    487.  RATIOS LOB,CH,ROB=   .6018   .3773   .0209  WSEL=    585.10

 3470 ENCROACHMENT STATIONS=     30.8     425.4  TYPE=     4  TARGET=      .033
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1.14	.39	1.34	.23	.195	.091	.195	.081	575.40	30.75
.000410	985.	985.	985.	2	0	1	0.00	394.69	425.45

3470 ENCROACHMENT STATIONS= 350.0 470.0 TYPE= 1 TARGET= 120.000

DOWNSTREAM SECTION FOR SHORTCUT RD. BRIDGE

6085.00	9.75	585.45	0.00	585.34	585.53	.08	.39	.02	575.70
955.	169.	741.	45.	233.	292.	78.	121.	39.	575.70
1.22	.72	2.53	.58	.195	.091	.195	.082	575.70	350.00
.001157	600.	600.	600.	2	0	1	0.00	100.50	450.50

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	1.19	2.50	0.00	30.00	0.00	222.10	0.00	575.70	575.70

6070,LOW FLOW BY NORMAL BRIDGE

EGPRS= 585.789 EGLWC= 585.974 ELLC= 583.700 PCWSE= 585.448 ELTRD= 585.300

NORMAL BRIDGE,NRD= 6 MIN ELTRD= 585.30 MAX ELLC= 583.70

3470 ENCROACHMENT STATIONS= 350.0 470.0 TYPE= 1 TARGET= 120.000

UPSTREAM SECTION FOR SHORTCUT RD. BRIDGE

6115.00	9.79	585.49	0.00	585.57	585.62	.13	.08	.02	575.70
955.	119.	787.	49.	138.	246.	54.	122.	39.	575.70
1.22	.86	3.20	.90	.195	.091	.195	.082	575.70	350.00
.010092	30.	30.	30.	2	0	1	-170.11	100.93	450.93

2800 NAT Q1= 588.35 WSEL= 585.70 ENC Q1= 588.35 WSEL= 585.80 RATIO= 0.0000
NAT Q1= 606. RATIOS LOB,CH,ROB= .6301 .3465 .0234 WSEL= 585.80

3470 ENCROACHMENT STATIONS= 28.4 428.1 TYPE= 4 TARGET= .029

6265.00	10.32	585.72	0.00	585.70	585.72	.00	.09	.01	580.10
660.	417.	237.	6.	1699.	298.	34.	126.	40.	577.30
1.32	.25	.80	.18	.195	.091	.195	.082	575.40	28.38
.000131	150.	150.	150.	2	0	1	0.00	399.73	428.11

2800 NAT Q1= 200.16 WSEL= 585.97 ENC Q1= 200.16 WSEL= 586.07 RATIO= 0.0000
NAT Q1= 211. RATIOS LOB,CH,ROB= .3074 .1272 .5654 WSEL= 586.07

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= 69.0 380.5 TYPE= 4 TARGET= .050

7250.00	6.90	586.00	0.00	585.97	586.01	.01	.29	.00	583.20
660.	194.	89.	377.	327.	102.	588.	160.	48.	583.30
1.73	.59	.87	.64	.173	.167	.173	.094	579.10	68.97
.001155	985.	985.	985.	2	0	1	0.00	311.50	380.47

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 2800 NAT Q1=    147.68  WSEL=    588.56  ENC Q1=    147.68  WSEL=    588.66  RATIO=  .0000
 NAT Q1=    156.  RATIOS LOB,CH,ROB=   .6202   .3355   .0442  WSEL=    588.66

 3470 ENCROACHMENT STATIONS=     67.4     323.8  TYPE=     4  TARGET=        .056
 9050.00     6.27   588.67     0.00   588.56   588.68      .02     2.67      .00   586.30
     660.     414.     234.     12.     564.     162.     21.     197.     60.   586.40
    2.24      .73     1.44      .56     .173     .127     .173     .100   582.40    67.36
 .001976     1800.    1800.    1800.       4        0        1     0.00   256.47   323.83


 2800 NAT Q1=    144.15  WSEL=    591.93  ENC Q1=    144.15  WSEL=    592.03  RATIO=  0.0000
 NAT Q1=    152.  RATIOS LOB,CH,ROB=   .2822   .4619   .2560  WSEL=    592.03

 3470 ENCROACHMENT STATIONS=     59.9     269.6  TYPE=     4  TARGET=        .051
 10700.00    7.72   592.02     0.00   591.93   592.05      .03     3.36      .00   588.50
     660.     179.     321.     160.     216.     186.     240.     223.     69.   589.60
    2.62      .83     1.73      .67     .173     .127     .173     .105   584.30    59.94
 .002101     1650.    1650.    1650.       4        0        1     0.00   209.62   269.57


 2800 NAT Q1=    150.84  WSEL=    595.49  ENC Q1=    150.84  WSEL=    595.59  RATIO=  0.0000
 NAT Q1=    160.  RATIOS LOB,CH,ROB=   .2615   .4757   .2627  WSEL=    595.59

 3470 ENCROACHMENT STATIONS=     84.7     299.9  TYPE=     4  TARGET=        .056
 12485.00    7.79   595.59     0.00   595.49   595.63      .04     3.57      .00   593.40
     660.     165.     332.     164.     199.     169.     179.     247.     77.   593.20
    2.97      .83     1.96      .91     .120     .100     .120     .104   587.80    84.73
 .001910     1785.    1785.    1785.       4        0        1     0.00   215.17   299.89


 3470 ENCROACHMENT STATIONS=     100.0     360.0  TYPE=     1  TARGET=     260.000

          DOWNSTREAM SECTION FOR ARNOLD RD. BRIDGE

 12885.00    7.74   596.04     0.00   595.97   596.06      .02      .44      .00   588.30
     660.     162.     275.     222.     257.     178.     324.     253.     80.   588.30
    3.07      .63     1.55      .69     .120     .100     .120     .104   588.30   100.00
 .000706     400.     400.     400.       3        0        1     0.00   251.87   351.87


 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      1.24      2.50      0.00     23.00      0.00     126.49     0.00     588.30    588.30


 6070,LOW FLOW BY NORMAL BRIDGE

 EGPRS=   596.568  EGLWC=   596.655  ELLC=   593.900  PCWSE=   596.044  ELTRD=   595.000

 NORMAL BRIDGE,NRD= 6 MIN ELTRD=  595.00 MAX ELLC=  593.90


 3470 ENCROACHMENT STATIONS=     100.0     360.0  TYPE=     1  TARGET=     260.000

          UPSTREAM SECTION FOR ARNOLD RD. BRIDGE

 12915.00    7.78   596.08     0.00   596.08   596.12      .04      .05      .01   588.30
     660.     63.     323.     275.     74.     154.     264.     254.     80.   588.30
    3.08      .85     2.10     1.04     .120     .100     .120     .104   588.30   100.00
 .006878     30.      30.      30.       2        0        1  -276.67   252.26   352.26
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 2800 NAT Q1=    216.42  WSEL=    596.16  ENC Q1=    216.42  WSEL=    596.26  RATIO=  0.0000
 NAT Q1=    227.  RATIOS LOB,CH,ROB=   .3065   .4021   .2915  WSEL=    596.26
   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=     81.9     305.9  TYPE=     4  TARGET=      .048
 13015.00     8.50   596.30     0.00   596.16   596.32      .02      .19      .00   593.40
      660.     196.     277.     187.     282.     191.     250.     255.      80.   593.20
     3.11      .70     1.45      .75      .120     .100     .120     .104   587.80    81.87
   .000901    100.     100.     100.        2        0        1     0.00   224.00   305.87

 2800 NAT Q1=    127.68  WSEL=    598.31  ENC Q1=    127.68  WSEL=    598.41  RATIO=  0.0000
 NAT Q1=    138.  RATIOS LOB,CH,ROB=   .3649   .3570   .2781  WSEL=    598.41

3470 ENCROACHMENT STATIONS=    117.1     305.4  TYPE=     4  TARGET=      .078
 14500.00     7.11   598.41     0.00   598.31   598.48      .07     2.15      .01   596.30
      660.     234.     256.     170.     158.      92.     133.     274.      87.   596.90
     3.32     1.48     2.79     1.28      .080     .070     .080     .100   591.30   117.14
   .002684   1485.    1485.    1485.        4        0        1     0.00   188.23   305.37

 2800 NAT Q1=    172.54  WSEL=    602.03  ENC Q1=    172.54  WSEL=    602.13  RATIO=  0.0000
 NAT Q1=    184.  RATIOS LOB,CH,ROB=   .2539   .2296   .5165  WSEL=    602.13

3470 ENCROACHMENT STATIONS=    221.5     453.6  TYPE=     4  TARGET=      .064
 16400.00     6.43   602.13     0.00   602.03   602.15      .02     3.67      .00   598.50
      660.     157.     162.     341.     184.      98.     364.     297.      96.   599.40
     3.80      .85     1.65      .94      .120     .095     .120     .100   595.70   221.49
   .001457   1900.    1900.    1900.        4        0        1     0.00   232.13   453.62

 2800 NAT Q1=    111.85  WSEL=    606.11  ENC Q1=    111.85  WSEL=    606.21  RATIO=  0.0000
 NAT Q1=    121.  RATIOS LOB,CH,ROB=   .3134   .4048   .2818  WSEL=    606.21

3470 ENCROACHMENT STATIONS=     79.5     297.9  TYPE=     4  TARGET=      .074
 18300.00     6.10   606.20     0.00   606.11   606.25      .04     4.09      .01   604.50
      660.     196.     289.     175.     182.     129.     161.     321.     106.   604.60
     4.13     1.08     2.24     1.09      .120     .100     .120     .100   600.10    79.50
   .003495   1900.    1900.    1900.        4        0        1     0.00   218.39   297.89

 2800 NAT Q1=    195.31  WSEL=    609.82  ENC Q1=    195.31  WSEL=    609.92  RATIO=  0.0000
 NAT Q1=    203.  RATIOS LOB,CH,ROB=   .1241   .7644   .1115  WSEL=    609.92
3280 CROSS SECTION  20300.00 EXTENDED       .62 FEET

3470 ENCROACHMENT STATIONS=    224.2     395.6  TYPE=     4  TARGET=      .038
 20300.00     7.61   609.91     0.00   609.82   609.94      .03     3.69      .00   607.70
      660.      72.     524.      63.     138.     357.      98.     345.     115.   606.20
     4.57      .52     1.47      .65      .143     .115     .143     .101   602.30   224.20
   .001138   2000.    2000.    2000.        4        0        1     0.00   171.38   395.59
```

*SUMMARY PRINTOUT FOR MULTIPLE PROFILES

MELDRUM CREEK MAIN BR.

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	TQ	PERENC	TOPWID	STENCL	STENCR	WSELK
0.00	0.00	0.00	0.00	572.00	955.00	576.70	350.02	0.00	468.70	0.00	0.00	576.70
0.00	0.00	0.00	0.00	572.00	955.00	576.80	366.70	.03	338.50	300.00	640.00	576.70
700.00	700.00	0.00	0.00	572.50	955.00	577.21	356.03	0.00	469.37	0.00	0.00	0.00
700.00	700.00	0.00	0.00	572.50	955.00	577.28	361.65	.03	338.47	300.00	640.00	577.21
2700.00	2000.00	0.00	0.00	574.20	955.00	580.55	97.58	0.00	242.10	0.00	0.00	0.00
2700.00	2000.00	0.00	0.00	574.20	955.00	580.56	93.57	.05	145.99	233.01	379.00	580.55
4500.00	1800.00	0.00	0.00	575.00	955.00	584.44	332.36	0.00	443.98	0.00	0.00	0.00
4500.00	1800.00	0.00	0.00	575.00	955.00	584.54	333.57	.04	366.00	239.51	605.51	584.44
5485.00	985.00	0.00	0.00	575.40	955.00	585.00	471.48	0.00	437.05	0.00	0.00	0.00
5485.00	985.00	0.00	0.00	575.40	955.00	585.11	471.48	.03	394.69	30.75	425.45	585.00
6085.00	600.00	0.00	0.00	575.70	955.00	585.34	274.88	120.00	99.66	350.00	470.00	0.00
6085.00	600.00	0.00	0.00	575.70	955.00	585.45	280.75	120.00	100.50	350.00	470.00	585.34
6115.00	30.00	585.30	583.70	575.70	955.00	585.57	287.72	120.00	101.76	350.00	470.00	0.00
6115.00	30.00	585.30	583.70	575.70	955.00	585.49	95.07	120.00	100.93	350.00	470.00	585.57
6265.00	150.00	0.00	0.00	575.40	660.00	585.70	588.35	0.00	445.85	0.00	0.00	0.00
6265.00	150.00	0.00	0.00	575.40	660.00	585.72	575.67	.03	399.73	28.38	428.11	585.70
7250.00	985.00	0.00	0.00	579.10	660.00	585.97	200.16	0.00	373.41	0.00	0.00	0.00
7250.00	985.00	0.00	0.00	579.10	660.00	586.00	194.22	.05	311.50	68.97	380.47	585.97
9050.00	1800.00	0.00	0.00	582.40	660.00	588.56	147.68	0.00	323.83	0.00	0.00	0.00
9050.00	1800.00	0.00	0.00	582.40	660.00	588.67	148.48	.06	256.47	67.36	323.83	588.56
10700.00	1650.00	0.00	0.00	584.30	660.00	591.93	144.15	0.00	255.63	0.00	0.00	0.00
10700.00	1650.00	0.00	0.00	584.30	660.00	592.02	143.98	.05	209.62	59.94	269.57	591.93
12485.00	1785.00	0.00	0.00	587.80	660.00	595.49	150.84	0.00	259.53	0.00	0.00	0.00
12485.00	1785.00	0.00	0.00	587.80	660.00	595.59	151.01	.06	215.17	84.73	299.89	595.49
12885.00	400.00	0.00	0.00	588.30	660.00	595.97	239.86	260.00	250.94	100.00	360.00	0.00
12885.00	400.00	0.00	0.00	588.30	660.00	596.04	248.47	260.00	251.87	100.00	360.00	595.97
12915.00	30.00	595.00	593.90	588.30	660.00	596.08	252.75	260.00	252.33	100.00	360.00	0.00
12915.00	30.00	595.00	593.90	588.30	660.00	596.08	79.58	260.00	252.26	100.00	360.00	596.08
13015.00	100.00	0.00	0.00	587.80	660.00	596.16	216.42	0.00	272.08	0.00	0.00	0.00
13015.00	100.00	0.00	0.00	587.80	660.00	596.30	219.87	.05	224.00	81.87	305.87	596.16
14500.00	1485.00	0.00	0.00	591.30	660.00	598.31	127.68	0.00	265.99	0.00	0.00	0.00
14500.00	1485.00	0.00	0.00	591.30	660.00	598.41	127.38	.08	188.23	117.14	305.37	598.31
16400.00	1900.00	0.00	0.00	595.70	660.00	602.03	172.54	0.00	315.05	0.00	0.00	0.00
16400.00	1900.00	0.00	0.00	595.70	660.00	602.13	172.88	.06	232.13	221.49	453.62	602.03
18300.00	1900.00	0.00	0.00	600.10	660.00	606.11	111.85	0.00	304.71	0.00	0.00	0.00
18300.00	1900.00	0.00	0.00	600.10	660.00	606.20	111.63	.07	218.39	79.50	297.89	606.11

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	TW	PERENC	TOPWID	STENCL	STENCR	WSELK
20300.00	2000.00	0.00	0.00	602.30	660.00	609.82	195.31	0.00	238.00	0.00	0.00	0.00
20300.00	2000.00	0.00	0.00	602.30	660.00	609.91	195.67	.04	171.38	224.20	395.59	609.82

SECTION NUMBER	DISCHARGE CFS	CWSEL	CWSEL DIFF EACH Q	CWSEL DIFF EACH SECTION	CWSEL-WSELK	TOPWID	T.W. DIFF	LENGTH
0.000	955.001	576.700	0.000	0.000	0.000	468.698	0.000	0.000
0.000	955.001	576.800	.100	0.000	0.000	338.501	130.197	0.000
700.000	955.001	577.213	0.000	.513	0.000	469.370	0.000	700.000
700.000	955.001	577.281	.068	.481	.068	338.473	130.897	700.000
2700.000	955.001	580.550	0.000	3.337	0.000	242.099	0.000	2000.000
2700.000	955.001	580.561	.011	3.280	.011	145.991	96.108	2000.000
4500.000	955.001	584.437	0.000	3.887	0.000	443.982	0.000	1800.000
4500.000	955.001	584.545	.108	3.983	.108	365.996	77.986	1800.000
5485.000	955.001	585.001	0.000	.564	0.000	437.055	0.000	985.000
5485.000	955.001	585.107	.107	.563	.107	394.694	42.361	985.000
6085.000	955.001	585.345	0.000	.344	0.000	99.656	0.000	600.000
6085.000	955.001	585.448	.103	.340	.103	100.499	-.843	600.000
6115.000	955.001	585.567	0.000	.222	0.000	101.755	0.000	30.000
6115.000	955.001	585.487	-.080	.039	-.080	100.929	.826	30.000
6265.000	660.000	585.697	0.000	.131	0.000	445.846	0.000	150.000
6265.000	660.000	585.716	.019	.229	.019	399.733	46.113	150.000
7250.000	660.000	585.972	0.000	.275	0.000	373.412	0.000	985.000
7250.000	660.000	586.004	.032	.288	.032	311.499	61.913	985.000
9050.000	660.000	588.557	0.000	2.585	0.000	323.834	0.000	1800.000
9050.000	660.000	588.667	.110	2.664	.110	256.470	67.364	1800.000
10700.000	660.000	591.926	0.000	3.369	0.000	255.633	0.000	1650.000
10700.000	660.000	592.021	.095	3.354	.095	209.623	46.009	1650.000
12485.000	660.000	595.494	0.000	3.568	0.000	259.534	0.000	1785.000
12485.000	660.000	595.589	.095	3.568	.095	215.165	44.369	1785.000
12885.000	660.000	595.966	0.000	.471	0.000	250.944	0.000	400.000
12885.000	660.000	596.044	.078	.455	.078	251.872	-.928	400.000
12915.000	660.000	596.075	0.000	.110	0.000	252.325	0.000	30.000
12915.000	660.000	596.077	.002	.033	.002	252.259	.066	30.000
13015.000	660.000	596.155	0.000	.080	0.000	272.076	0.000	100.000
13015.000	660.000	596.297	.141	.220	.141	224.003	48.073	100.000
14500.000	660.000	598.312	0.000	2.156	0.000	265.991	0.000	1485.000
14500.000	660.000	598.410	.098	2.113	.098	188.232	77.759	1485.000
16400.000	660.000	602.030	0.000	3.718	0.000	315.054	0.000	1900.000
16400.000	660.000	602.131	.101	3.722	.101	232.127	82.927	1900.000
18300.000	660.000	606.108	0.000	4.078	0.000	304.708	0.000	1900.000
18300.000	660.000	606.204	.096	4.073	.096	218.392	86.316	1900.000

20000.000 600.000 609.913 .090 3.708 .090 171.383 66.622 2000.000

DATA FOR T CROSS SECTION

PROFILE	TYPE ENC	TARGET	TOP WIDTH AREA-ACRES	TOP WIDTH AREA-DIFF
1	0.000	0.000	148.852	0.000
2	4.000	.038	115.221	-33.631

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08.10.25. WTTES05.  07 OCT 77   7600Z  BKY24  V0   WTT     NORM          804045 EEDO 723F3
08.10.25. WTTES05. WTT,P3.804045,EEDO 723F3016
08.10.25. WTTES05. *INPUT 6600B 07.41.27. 07 OCT 77  VIA COKE
08.10.25. WTTES05.  COPY(INPUT,1P,CONTROL/BR)
08.10.28. WTTES05.   CONTROL DISK 2
08.10.28. WTTES05. (TUPY
08.10.28. WTTES05. *NOSTAGE
08.10.28. WTTES05. FETCHPS,HECLIB,HEC2,HEC2.
08.10.31. WTTES05.  FLS=170K  FLL=0000K  LCM BUFFERS=0054K  TOTAL LCM=0244K.
08.10.32. WTTES05.   HEC2    DISK 1
08.10.33. WTTES05.  HEC2          20006 WORDS COPIED FROM CACHE.
08.10.34. WTTES05.   CACHE22 RETURNED      11 BLD, BS= 0040B,FS=136004B
08.10.34. WTTES05.   TAPEPAC RETURNED       0 BLD, BS= 0002B,FS=000000B
08.10.34. WTTES05.  FLS=060K  FLL=0000K  LCM BUFFERS=0014K  TOTAL LCM=0074K
08.10.34. WTTES05. SFL,170000.
08.10.58. WTTES05.  FLS=170K  FLL=0000K  LCM BUFFERS=0014K  TOTAL LCM=0204K
08.10.58. WTTES05. HEC2.
08.10.58. WTTES05.   BEGIN=  HEC2       USING
08.10.58. WTTES05.           MNF4 LIBRARY VERSION 1.4
08.10.58. WTTES05.           FTN4 LIBRARY 7600-L439/77040.10.37
08.10.58. WTTES05.   TAPE92  DISK 2
08.10.58. WTTES05.   TAPE93  DISK 1
08.10.58. WTTES05. BA;
08.11.09. WTTES05.   OUTPUT  DISK 2
08.11.09. WTTES05.   TAPE94  DISK 1
08.11.09. WTTES05.   TAPE91  DISK 2
08.11.11. WTTES05. BA;DI86 L
08.11.12. WTTES05. BA;HI86 LP
08.11.12. WTTES05. BA;HI86 LQ
08.11.12. WTTES05.     STOP
08.11.12. WTTES05.        .554 CP SECONDS EXECUTION TIME
08.11.12. WTTES05.   OUTPUT  QUEUED PR     1 BLD, BS= 0020B,FS=000014B
08.11.12. WTTES05. *J JG0741D   804045N 07OCT77RZ N 000006BA;HI86 LQEEDO 723F3
08.11.12. WTTES05.  ..............................
08.11.12. WTTES05. SECTORS TRANSFERRED        118
08.11.12. WTTES05. MAX DISK SECTORS           360
08.11.12. WTTES05. CP SECONDS               0.554
08.11.12. WTTES05. SYSTEM SECONDS           0.060
08.11.12. WTTES05. OLD BLD"S                    5
08.11.12. WTTES05. LCM BUFFER LOADS             6
08.11.12. WTTES05. ITO CUS                      0
08.11.12. WTTES05. KWORDS XFERRED              35
08.11.12. WTTES05. CIO CALLS                  102
08.11.12. WTTES05. STAGING CUS                  0
08.11.12. WTTES05.  ..............................
08.11.12. WTTES05. TOTAL JOB CUS                6
08.11.12. WTTES05. COST + OVERHEAD   $       1.01
08.11.12. WTTES05.  ..............................

08.11.23. WTTES05.  OUTPUT  QUEUED PR 92
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B I L L B O A R D WRITEUPS SUBSET BKYNEWS WAS LAST CHANGED SEP 12
HANDBOOK SUBSET CHANGES WAS LAST CHANGED SEP 19

OCT 2 MFE BLOCK TIME TO CHANGE AGAIN
AS OF OCT 2 THE NEW MFE BLOCK TIMES WILL BE

2100	SUNDAY	TO	0500 MONDAY
2200	TUESDAY	TO	0600 WEDNESDAY
2200	THURSDAY	TO	0600 FRIDAY

SEP 13 PLEASE RETURN TAPES.
I/O AND TAPE SERVICE WOULD APPRECIATE THE RETURN OF ALL OVERDUE TAPES CHECKED OUT AT THE I/O COUNTER. TAPES WHICH HAVE BEEN CHECKED OUT SHOULD NOT BE RELEASED BY USERS. THIS MUST BE DONE BY CALLING PAT BEAN AT THE I/O COUNTER (6211) OR TAPE SERVICES (6219).

SEPT 09 LBL NEWSLETTER
THE LBL COMPUTER CENTER NEWSLETTER (NOT BKY NEWS) IS PUBLISHED MONTHLY AND PROVIDES MUCH USEFUL CURRENT INFORMATION TO OUR USERS. IT IS MAILED, FREE, UPON REQUEST. IF YOU ARE NOT RECEIVING IT, AND WOULD LIKE TO HAVE IT SENT TO YOU, CONTACT MAGGIE MORLEY AT THE COMPUTER CENTER LIBRARY, BLDG. 50A, RM. 1245A, (843-2740 X5529, AND YOUR NAME WILL BE ADDED TO OUR MAILING LIST.

AUG 23 UNUSED TAPES ON THE MOVE
ONCE AGAIN, TAPES THAT HAVE NOT BEEN ACCESSED FOR 12 MONTHS WILL BE MOVED INTO THE INACTIVE STORAGE STARTING THE WEEK OF SEPTEMBER 5, 1977. SEND A SIGNED TLIST OUTPUT INDICATING THOSE TAPES THAT YOU WISH MADE INACTIVE TO THE TAPE LIBRARIAN. OTHERWISE, THESE TAPES WILL BE FORCE-MOVED AND WILL DECREMENT TAPE SPACE ALLOCATION OF YOUR GROUP BY A LIKE NUMBER. (SEE DEC NEWSLETTER) PLEASE PURGE UNWANTED TAPES AT THIS TIME.

TO CALL A CONSULTANT 415-843-1009 DIRECT DIAL
451-5981 FTS ONLY

Nov 16, 77

8040 45 . . . . . .OUTPUT . 11 OCT 77 . 06.55 . . . . . 8040 45

MELDRUM Creek 10, 50, 500

RECEIVED
OCT 12 1977
H. R. & G., INC.

8040 45 . . . . . .COKE . 11 OCT 77 . 06,56 . . . . . 8040 45

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06.55.11. WTTES00.  11 OCT 77   7600Z  BKY24  V0   WTT      NORM          804045 EEDO 723F3
06.55.11. WTTES00.  WTT,P3.804045,EEDO 723F3016
06.55.11. WTTES00.  *INPUT 6200C 06.54.29. 11 OCT 77  VIA COKE
06.55.11. WTTES00.    COPY(INPUT,IR,CONTROL/BR)
06.55.12. WTTES00.    CONTROL DISK 2
06.55.12. WTTES00.  (TUPY
06.55.12. WTTES00.  *NOSTAGE
06.55.12. WTTES00.  FETCHPS,HECLIB,HEC2,HEC2.
06.55.13. WTTES00.    CACHE22 RETURNED       3 BLD, BS= 00408,FS=022306B
06.55.13. WTTES00.    TAPEPAC DISK 1
06.55.13. WTTES00.    TAPEPAC UNLOADED       1 BLD, BS= 0002B,FS=0000018
06.55.30. WTTES00.  *STAGING COMPLETE  06.55.30.      2 CUS.
06.55.30. WTTES00.    TAPEPAC RETURNED       1 BLD, BS= 0002B,FS=0000018
06.55.30. WTTES00.  REWIND,   HEC2
06.55.30. WTTES00.    STATION RETURNED       1 BLD, BS= 0002B,FS=0000018
06.55.33. WTTES00.  HEC2          20006 WORDS STORED IN CACHE.
06.55.34. WTTES00.    CACHE22 RETURNED       8 BLD, BS= 0040B,FS=022356B
06.55.34. WTTES00.  SFL,170000.
06.55.34. WTTES00.    FLS=170K  FLL=0000K  LCM BUFFERS=0014K  TOTAL LCM=0204K
06.55.34. WTTES00.  HEC2.
06.55.34. WTTES00.    BEGIN=  HEC2      USING -
06.55.34. WTTES00.            MNF4 LIBRARY VERSION 1.4
06.55.34. WTTES00.            FIN4 LIBRARY 7600-L439/77040.10.37
06.55.34. WTTES00.    TAPE92  DISK 2
06.55.34. WTTES00.    TAPE93  DISK 2
06.55.34. WTTES00.  BA;
06.55.34. WTTES00.    OUTPUT  DISK 2
06.55.34. WTTES00.    TAPE94  DISK 1
06.55.35. WTTES00.    TAPE91  DISK 2
06.55.36. WTTES00.  BA;DI86 L
06.55.37. WTTES00.  BA;HI86 L
06.55.37. WTTES00.  BA;LI86 L
06.55.37. WTTES00.  BA;LI86 LA
06.55.37. WTTES00.      STOP
06.55.37. WTTES00.          .664 CP SECONDS EXECUTION TIME
06.55.37. WTTES00.    OUTPUT  QUEUED PR      1 BLD, BS= 0020B,FS=0000168
06.55.37. WTTES00.  *J JK0654L    804045N 11OCT77RZ N 000008BA;LI86 LAEEDO 723F3
06.55.37. WTTES00.  ............................
06.55.37. WTTES00.  SECTORS TRANSFERRED        120
06.55.37. WTTES00.  MAX DISK SECTORS           410
06.55.37. WTTES00.  CP SECONDS               0.665
06.55.37. WTTES00.  SYSTEM SECONDS           0.066
06.55.37. WTTES00.  OLD BLD"S                    5
06.55.37. WTTES00.  LCM BUFFER LOADS             6
06.55.37. WTTES00.  ITO CUS                      0
06.55.37. WTTES00.  KWORDS XFERRED              38
06.55.37. WTTES00.  CIO CALLS                  125
06.55.37. WTTES00.  STAGING CUS                  2
06.55.37. WTTES00.  ............................
06.55.37. WTTES00.  TOTAL JOB CUS                8
06.55.37. WTTES00.  COST + OVERHEAD   $       1.15
06.55.37. WTTES00.  ............................

06.55.57. WTTES00.  OUTPUT  QUEUED PR 111
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HEC2 VERSION UPDATED AUG 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09,10
MODIFICATIONS 52,53,54,55,56,57,58,59
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* * * NEW HEC2 VERSION * * *

AS OF 28 MARCH 1977, A NEW VERSION OF HEC2 (DATED NOVEMBER 1976) WILL BE AVAILABLE IN HECLIB UNDER THE FILE NAME HEC2N. THE NEW VERSION HAS AN EXPANDED SUMMARY OUTPUT CAPABILITY ALLOWING THE USER TO SELECT VARIABLES FOR DISPLAY FROM A LIST OF 63 AVAILABLE.
ALSO, FIXED FORMAT TABLES CAN BE REQUESTED WHICH DISPLAY BRIDGE DATA, ENCROACHMENT DATA, CHANNEL IMPROVEMENT DATA, FLOODWAY DATA AND FLOOD INSURANCE RATE ZONE DATA. CONTROL CARDS FOR ACCESSING THE NEW VERSION ARE AS FOLLOWS:

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(JOB CARD)
*NOSTAGE
FETCHPS,HECLIB,HEC2N,HEC2N.
SFL,101000.
HEC2N.
(RECORD SEPARATOR CARD)
(  DATA DECK  )
(JOB DECK TERMINATOR)
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THE PROGRAM HAS BEEN TESTED ON A NUMBER OF DATA SETS. IF ANY PROBLEMS ARE DETECTED, PLEASE CONTACT ALLAN DTO OF HEC AT (FTS) 448-2105.
MULTIPLE COPIES OF AN HEC2 USERS MANUAL SUPPLEMENT FOR THE NEW VERSION WILL BE AVAILABLE FROM ADP CENTERS IN ALL DISTRICT AND DIVISION OFFICES BY 28 MARCH 1977.
A PROGRAMMERS MANUAL FOR THE NEW VERSION WILL BE AVAILABLE BY ABOUT MID-APRIL.
THE EXISTING VERSIONS OF THE PROGRAM AT LBL (HEC2 AND HEC2Z) WILL REMAIN IN HECLIB UNDER THE FILE NAMES HEC2 AND HEC2Z UNTIL THE END OF JULY.

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C
T1       FLOOD INSURANCE STUDY
T2       IRA TOWNSHIP     10 YR. FLOOD
T3       MELORUM CREEK    MAIN BR.

J1  ICHECK      INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

          0.        2.        0.        0.  0.000000      0.00      0.0     530.   576.100     0.000

J2  NPROF       IPLOT     PRFVS     XSECV     XSECH     FN        ALLOC     IBW       CHNIM     ITRACE

        1.000     0.000    -1.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

NC       .130      .130      .052      .100      .300     0.000     0.000     0.000     0.000     0.000

X1      0.000    21.000   300.000   640.000     0.000     0.000     0.000     0.000     0.000     0.000
GR    577.200     0.000   576.200    50.000   578.900   100.000   578.800   150.000   579.500   200.000
GR    579.200   250.000   577.800   300.000   575.800   303.000   572.400   310.000   572.000   320.000
GR    573.900   350.000   574.900   380.000   574.800   400.000   574.800   420.000   574.400   460.000
GR    574.800   490.000   574.800   590.000   575.800   630.000   575.900   640.000   575.900   746.000
GR    578.200   816.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

X1    700.000    21.000   300.000   640.000   700.000   700.000   700.000     0.000     0.000     0.000
GR    577.700     0.000   576.700    50.000   579.400   100.000   579.300   150.000   580.000   200.000
GR    579.700   250.000   578.300   300.000   576.300   303.000   572.900   310.000   572.500   320.000
GR    574.400   350.000   575.400   380.000   575.300   400.000   575.300   420.000   574.900   460.000
GR    575.300   490.000   575.300   590.000   576.300   630.000   576.400   640.000   576.400   746.000
GR    578.700   816.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
NC       .182      .182      .078     0.000     0.000     0.000     0.000     0.000     0.000     0.000

X1   2700.000    18.000   300.000   339.000  2000.000  2000.000  2000.000     0.000     0.000     0.000
GR    587.300     0.000   587.100    40.000   586.400   100.000   580.300   170.000   579.400   250.000
GR    580.100   300.000   576.400   310.000   574.200   320.000   574.300   330.000   576.400   336.000
GR    580.400   339.000   579.900   350.000   579.300   400.000   584.300   437.000   588.100   485.000
GR    588.200   538.000   589.300   585.000   589.200   635.000     0.000     0.000     0.000     0.000
NC       .195      .195      .091     0.000     0.000     0.000     0.000     0.000     0.000     0.000

X1   4500.000    16.000   300.000   330.000  1800.000  1800.000  1800.000     0.000     0.000     0.000
GR    587.300     0.000   585.500    50.000   586.300   100.000   586.300   150.000   581.100   250.000
GR    581.600   300.000   578.300   301.000   576.300   306.000   575.000   316.000   578.300   327.000
GR    580.700   330.000   581.300   410.000   581.300   450.000   580.300   530.000   581.800   580.000
GR    582.400   630.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

X1   5485.000    18.000   390.000   423.000   985.000   985.000   985.000     0.000     0.000     0.000
GR    587.300     0.000   580.700    30.000   581.200    40.000   581.300   140.000   581.100   220.000
GR    581.300   290.000   580.300   340.000   580.200   370.000   580.100   390.000   576.300   394.000
GR    575.400   408.000   576.300   416.000   577.300   423.000   582.200   430.000   585.400   450.000
GR    587.300   470.000   589.800   511.000   589.900   553.000     0.000     0.000     0.000     0.000

          DOWNSTREAM SECTION FOR SHORTCUT RD. BRIDGE

X1   6085.000    16.000   393.000   423.000   600.000   600.000   600.000     0.000     0.000     0.000
X3      0.000     0.000     0.000   350.000     0.000   470.000     0.000     0.000     0.000     0.000
GR    587.300     0.000   580.700    30.000   581.200    40.000   581.300   140.000   581.100   220.000
GR    581.300   290.000   580.300   340.000   580.200   370.000   580.100   390.000   575.700   393.000
GR    575.700   423.000   582.200   430.000   585.400   450.000   587.300   470.000   585.300   511.000
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SB	0.000	1.190	2.500	0.000	30.000	0.000	222.100	0.000	0.000	0.000

UPSTREAM SECTION FOR SHORTCUT RD. BRIDGE

X1	6115.000	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	583.700	585.300	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	350.000	0.000	470.000	0.000	0.000	0.000	0.000
BT	6.000	0.000	587.300	587.300	290.000	587.200	581.300	393.000	585.300	583.700
BT	423.000	585.300	583.700	511.000	585.300	585.300	553.000	589.900	589.900	0.000
QT	3.000	375.000	570.000	895.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	6265.000	18.000	390.000	423.000	150.000	150.000	150.000	0.000	0.000	0.000
GR	587.300	0.000	560.700	30.000	581.200	40.000	581.300	140.000	581.100	220.000
GR	581.300	290.000	580.300	340.000	580.200	370.000	580.100	390.000	576.300	399.000
GR	575.400	408.000	576.300	416.000	577.300	423.000	582.200	430.000	585.400	450.000
GR	587.300	470.000	589.800	511.000	589.900	553.000	0.000	0.000	0.000	0.000
NC	.173	.173	.167	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	7250.000	14.000	180.000	198.000	985.000	985.000	985.000	0.000	0.000	0.000
GR	590.400	0.000	556.100	30.000	582.500	80.000	583.300	130.000	583.200	180.000
GR	579.700	185.000	579.100	190.000	579.700	195.000	583.300	198.000	583.100	270.000
GR	582.400	280.000	582.200	330.000	583.100	380.000	588.800	430.000	0.000	0.000
NC	0.000	0.000	.127	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	9050.000	15.000	280.000	314.000	1800.000	1800.000	1800.000	0.000	0.000	0.000
GR	598.200	0.000	587.300	46.000	586.600	80.000	586.300	120.000	585.400	180.000
GR	586.300	280.000	583.300	290.000	582.400	295.000	583.300	306.000	586.400	314.000
GR	586.900	330.000	589.300	380.000	592.900	430.000	594.700	480.000	596.200	530.000

X1	10700.000	13.000	130.000	160.000	1650.000	1650.000	1650.000	0.000	0.000	0.000
GR	595.900	0.000	595.000	30.000	590.200	50.000	589.000	80.000	586.500	130.000
GR	584.300	138.000	584.300	149.000	584.700	150.000	589.600	160.000	589.300	180.000
GR	590.100	230.000	590.300	280.000	596.700	353.000	0.000	0.000	0.000	0.000
NC	.120	.120	.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	12485.000	15.000	190.000	220.000	1785.000	1785.000	1785.000	0.000	0.000	0.000
GR	599.900	0.000	598.100	40.000	593.100	85.000	593.300	90.000	594.100	140.000
GR	593.400	190.000	589.300	200.000	588.200	204.000	587.800	210.000	589.300	214.000
GR	593.200	220.000	593.100	240.000	593.800	306.000	597.200	340.000	599.400	390.000

DOWNSTREAM SECTION FOR ARNOLD RD. BRIDGE

X1	12885.000	12.000	200.000	223.000	400.000	400.000	400.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	100.000	0.000	360.000	0.000	0.000	0.000	0.000
GR	599.900	0.000	598.100	40.000	593.100	85.000	593.300	90.000	594.100	140.000
GR	593.400	190.000	588.300	200.000	588.300	223.000	593.100	240.000	593.800	306.000
GR	595.000	340.000	599.400	390.000	0.000	0.000	0.000	0.000	0.000	0.000
SB	0.000	1.240	2.500	0.000	23.000	0.000	126.490	0.000	0.000	0.000

UPSTREAM SECTION FOR ARNOLD RD. BRIDGE

X1	12915.000	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	593.900	595.000	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	100.000	0.000	360.000	0.000	0.000	0.000	0.000
BT	6.000	0.000	599.900	599.900	90.000	597.000	593.300	200.000	595.000	593.900
BT	223.000	595.000	593.900	340.000	595.000	595.000	390.000	599.400	599.400	0.000

X1	13015.000	15.000	190.000	220.000	100.000	100.000	100.000	0.000	0.000	0.000
GR	599.[illegible]	0.000	598.100	40.000	593.100	85.000	593.300	90.000	594.100	140.000
GR	593.[illegible]	190.000	589.300	200.000	588.200	204.000	587.800	210.000	589.300	214.000
GR	593.200	220.000	593.100	240.000	593.800	306.000	597.200	340.000	599.400	390.000
NC	.080	.080	.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	14500.000	12.000	200.000	220.000	1485.000	1485.000	1485.000	0.000	0.000	0.000
GR	601.400	0.000	600.400	50.000	597.400	100.000	596.400	150.000	596.300	200.000
GR	592.300	207.000	591.300	210.000	596.900	220.000	596.800	300.000	598.300	350.000
GR	599.300	400.000	601.200	450.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.120	.120	.095	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	16400.000	17.000	300.000	320.000	1900.000	1900.000	1900.000	0.000	0.000	0.000
GR	607.700	0.000	606.400	60.000	605.300	100.000	603.700	150.000	600.900	200.000
GR	600.300	250.000	598.500	300.000	596.300	311.000	595.700	314.000	599.400	320.000
GR	598.300	350.000	599.800	400.000	600.300	450.000	601.200	480.000	602.300	500.000
GR	606.200	600.000	606.700	641.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	18300.000	14.000	180.000	210.000	1900.000	1900.000	1900.000	0.000	0.000	0.000
GR	612.200	0.000	609.300	30.000	605.300	60.000	604.300	80.000	604.500	180.000
GR	600.100	193.000	600.500	195.000	600.900	202.000	604.600	210.000	604.300	250.000
GR	604.300	280.000	606.300	367.000	610.600	380.000	612.400	430.000	0.000	0.000
NC	.143	.143	.115	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	20300.000	15.000	300.000	356.000	2000.000	2000.000	2000.000	0.000	0.000	0.000
GR	614.100	0.000	614.200	50.000	612.800	100.000	613.100	150.000	608.900	200.000
GR	608.200	250.000	607.700	300.000	604.100	305.000	604.100	313.000	602.600	319.000
GR	602.300	330.000	602.600	343.000	606.200	356.000	607.600	375.000	609.300	427.000
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

SUMMARY PRINTOUT FOR MULTIPLE PROFILES

MELBRUN CREEK MAIN BR.

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	CRITWS	EG	TOPWID	10KWS	TIME	VOL
0.00	0.00	0.00	0.00	572.00	530.00	576.10	0.00	576.12	449.54	7.16	0.00	0.00
0.00	0.00	0.00	0.00	572.00	815.00	576.50	0.00	576.52	462.31	7.63	0.00	0.00
0.00	0.00	0.00	0.00	572.00	1295.00	577.20	0.00	577.23	484.67	6.58	0.00	0.00
700.00	700.00	0.00	0.00	572.50	530.00	576.60	0.00	576.62	449.56	7.14	.19	8.69
700.00	700.00	0.00	0.00	572.50	815.00	577.02	0.00	577.04	463.15	7.28	.16	11.72
700.00	700.00	0.00	0.00	572.50	1295.00	577.67	0.00	577.70	483.60	6.88	.14	16.82
2700.00	2000.00	0.00	0.00	574.20	530.00	579.72	0.00	579.92	126.22	67.36	.35	24.79
2700.00	2000.00	0.00	0.00	574.20	815.00	580.34	0.00	580.63	236.95	87.76	.30	35.05
2700.00	2000.00	0.00	0.00	574.20	1295.00	580.96	0.00	581.36	249.70	113.45	.26	50.51
4500.00	1800.00	0.00	0.00	575.00	530.00	583.17	0.00	583.19	419.79	8.19	.88	47.11
4500.00	1800.00	0.00	0.00	575.00	815.00	584.08	0.00	584.09	437.14	8.11	.84	67.84
4500.00	1800.00	0.00	0.00	575.00	1295.00	585.18	0.00	585.20	458.51	8.61	.77	96.64
5485.00	985.00	0.00	0.00	575.40	530.00	583.68	0.00	583.69	422.79	3.48	1.29	71.58
5485.00	985.00	0.00	0.00	575.40	815.00	584.62	0.00	584.63	432.94	3.90	1.22	101.23
5485.00	985.00	0.00	0.00	575.40	1295.00	585.79	0.00	585.81	447.28	4.58	1.10	141.49
6085.00	600.00	0.00	0.00	575.70	530.00	583.94	0.00	583.98	90.90	6.94	1.40	83.32
6085.00	600.00	0.00	0.00	575.70	815.00	584.94	0.00	585.01	97.13	10.43	1.30	116.38
6085.00	600.00	0.00	0.00	575.70	1295.00	586.19	0.00	586.30	108.29	15.84	1.17	161.07
6115.00	30.00	585.30	583.70	575.70	530.00	584.01	0.00	584.05	91.32	6.72	1.41	83.64
6115.00	30.00	585.30	583.70	575.70	815.00	585.13	0.00	585.19	96.28	9.63	1.31	116.77
6115.00	30.00	585.30	583.70	575.70	1295.00	586.36	0.00	586.47	110.08	14.84	1.17	161.55
6265.00	150.00	0.00	0.00	575.40	375.00	584.09	0.00	584.10	427.24	1.23	1.51	86.89
6265.00	150.00	0.00	0.00	575.40	570.00	585.24	0.00	585.24	439.63	1.25	1.41	121.06
6265.00	150.00	0.00	0.00	575.40	895.00	586.54	0.00	586.54	458.49	1.44	1.26	167.05
7250.00	985.00	0.00	0.00	579.10	375.00	584.42	0.00	584.43	338.31	29.49	1.88	109.07
7250.00	985.00	0.00	0.00	579.10	570.00	585.53	0.00	585.53	363.31	13.35	1.84	153.23
7250.00	985.00	0.00	0.00	579.10	895.00	586.82	0.00	586.83	387.71	8.90	1.69	211.33
9050.00	1800.00	0.00	0.00	582.40	375.00	587.95	0.00	587.96	308.74	13.98	2.57	132.71
9050.00	1800.00	0.00	0.00	582.40	570.00	588.36	0.00	588.37	316.88	18.90	2.40	187.49
9050.00	1800.00	0.00	0.00	582.40	895.00	589.12	0.00	589.14	337.96	20.00	2.18	260.86
10700.00	1650.00	0.00	0.00	584.30	375.00	590.85	0.00	590.87	238.93	22.85	2.95	151.95
10700.00	1650.00	0.00	0.00	584.30	570.00	591.64	0.00	591.66	251.17	21.00	2.79	212.79
10700.00	1650.00	0.00	0.00	584.30	895.00	592.55	0.00	592.57	265.30	21.64	2.54	295.32
12485.00	1785.00	0.00	0.00	587.80	375.00	594.63	0.00	594.67	243.12	19.79	3.32	167.80
12485.00	1785.00	0.00	0.00	587.80	570.00	595.24	0.00	595.28	254.73	19.52	3.16	235.71
12485.00	1785.00	0.00	0.00	587.80	895.00	596.09	0.00	596.12	270.83	18.28	2.90	327.60
12885.00	400.00	0.00	0.00	588.30	375.00	595.05	0.00	595.06	240.46	5.88	3.44	171.81
12885.00	400.00	0.00	0.00	588.30	570.00	595.70	0.00	595.72	247.95	7.15	3.27	241.15
12885.00	400.00	0.00	0.00	588.30	895.00	596.58	0.00	596.60	257.88	8.43	2.99	335.08

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	CRIWS	EG	TOPWID	10K*S	TIME	VOL
12915.00	30.00	595.00	593.90	588.30	375.00	595.18	0.00	595.19	242.08	5.08	3.45	172.17
12915.00	30.00	595.00	593.90	588.30	570.00	595.82	0.00	595.84	249.41	6.36	3.28	241.63
12915.00	30.00	595.00	593.90	588.30	895.00	596.68	0.00	596.70	259.07	7.77	3.00	335.71
13015.00	100.00	0.00	0.00	587.80	375.00	595.24	0.00	595.25	254.62	8.51	3.48	173.39
13015.00	100.00	0.00	0.00	587.80	570.00	595.90	0.00	595.91	267.11	9.10	3.30	243.22
13015.00	100.00	0.00	0.00	587.80	895.00	596.77	0.00	596.79	283.53	9.73	3.03	337.82
14500.00	1485.00	0.00	0.00	591.30	375.00	597.54	0.00	597.62	226.79	38.78	3.67	186.01
14500.00	1485.00	0.00	0.00	591.30	570.00	598.09	0.00	598.16	254.60	29.33	3.53	261.04
14500.00	1485.00	0.00	0.00	591.30	895.00	598.83	0.00	598.88	300.34	22.04	3.26	363.18
16400.00	1900.00	0.00	0.00	595.70	375.00	601.37	0.00	601.38	291.17	11.96	4.30	201.82
16400.00	1900.00	0.00	0.00	595.70	570.00	601.84	0.00	601.86	308.44	13.85	4.07	282.91
16400.00	1900.00	0.00	0.00	595.70	895.00	602.45	0.00	602.47	331.34	16.50	3.72	395.70
18300.00	1900.00	0.00	0.00	600.10	375.00	605.32	0.00	605.37	264.91	45.78	4.62	219.12
18300.00	1900.00	0.00	0.00	600.10	570.00	605.88	0.00	605.93	293.54	37.23	4.42	306.73
18300.00	1900.00	0.00	0.00	600.10	895.00	606.61	0.00	606.65	317.66	31.22	4.07	426.57
20300.00	2000.00	0.00	0.00	602.30	375.00	608.81	0.00	608.83	205.83	8.97	5.14	235.37
20300.00	2000.00	0.00	0.00	602.30	570.00	609.55	0.00	609.57	234.73	10.79	4.88	330.37
20300.00	2000.00	0.00	0.00	602.30	895.00	610.43	0.00	610.46	245.27	12.85	4.49	460.15

SECTION NUMBER	DISCHARGE CFS	CWSEL	CWSEL DIFF EACH Q	CWSEL DIFF EACH SECTION	CWSEL-WSELK	TOPWID	T.W. DIFF	LENGTH
0.000	530.001	576.100	0.000	0.000	0.000	449.537	0.000	0.000
0.000	815.001	576.500	.400	0.000	0.000	462.311	-12.774	0.000
0.000	1295.001	577.200	.700	0.000	0.000	484.665	-35.128	0.000
700.000	530.001	576.600	0.000	.500	0.000	449.565	0.000	700.000
700.000	815.001	577.022	.422	.522	0.000	463.151	-13.587	700.000
700.000	1295.001	577.671	.648	.471	0.000	483.595	-34.031	700.000
2700.000	530.001	579.719	0.000	3.118	0.000	126.225	0.000	2000.000
2700.000	815.001	580.344	.626	3.322	0.000	236.951	-110.726	2000.000
2700.000	1295.001	580.957	.613	3.287	0.000	249.698	-123.474	2000.000
4500.000	530.001	583.167	0.000	3.448	0.000	419.794	0.000	1800.000
4500.000	815.001	584.076	.909	3.731	0.000	437.136	-17.342	1800.000
4500.000	1295.001	585.182	1.106	4.224	0.000	458.511	-38.717	1800.000
5485.000	530.001	583.679	0.000	.513	0.000	422.790	0.000	985.000
5485.000	815.001	584.619	.940	.544	0.000	432.938	-10.148	985.000
5485.000	1295.001	585.792	1.173	.610	0.000	447.277	-24.486	985.000
6085.000	530.001	583.945	0.000	.265	0.000	90.904	0.000	600.000
6085.000	815.001	584.940	.996	.321	0.000	97.127	-6.223	600.000
6085.000	1295.001	586.185	1.245	.393	0.000	108.292	-17.388	600.000
6115.000	530.001	584.011	0.000	.066	0.000	91.318	0.000	30.000
6115.000	815.001	585.126	1.115	.185	0.000	98.285	-6.966	30.000
6115.000	1295.001	586.358	1.232	.173	0.000	110.080	-18.762	30.000
6265.000	375.000	584.092	0.000	.081	0.000	427.241	0.000	150.000
6265.000	570.000	585.240	1.148	.114	0.000	439.633	-12.392	150.000
6265.000	895.000	586.536	1.297	.179	0.000	458.491	-31.249	150.000
7250.000	375.000	584.423	0.000	.341	0.000	338.311	0.000	985.000

7250.000	895.000	588.624	1.240	.200	0.000	317.737	-41.356	400.000
9050.000	375.000	587.953	0.000	3.530	0.000	308.740	0.000	1800.000
9050.000	570.000	588.359	.406	2.832	0.000	318.879	-10.139	1800.000
9050.000	895.000	589.121	.763	2.297	0.000	337.959	-29.219	1800.000
10700.000	375.000	590.846	0.000	2.894	0.000	238.934	0.000	1650.000
10700.000	570.000	591.636	.789	3.277	0.000	251.174	-12.240	1650.000
10700.000	895.000	592.546	.910	3.424	0.000	265.300	-26.366	1650.000
12485.000	375.000	594.632	0.000	3.786	0.000	243.122	0.000	1785.000
12485.000	570.000	595.242	.610	3.607	0.000	254.727	-11.606	1785.000
12485.000	895.000	596.085	.843	3.540	0.000	270.826	-27.704	1785.000
12885.000	375.000	595.046	0.000	.414	0.000	240.460	0.000	400.000
12885.000	570.000	595.702	.656	.460	0.000	247.946	-7.486	400.000
12885.000	895.000	596.575	.873	.490	0.000	257.880	-17.421	400.000
12915.000	375.000	595.176	0.000	.130	0.000	242.079	0.000	30.000
12915.000	570.000	595.819	.643	.117	0.000	249.407	-7.328	30.000
12915.000	895.000	596.678	.859	.105	0.000	259.071	-16.992	30.000
13015.000	375.000	595.240	0.000	.064	0.000	254.617	0.000	100.000
13015.000	570.000	595.895	.655	.076	0.000	267.112	-12.495	100.000
13015.000	895.000	596.767	.872	.089	0.000	283.527	-28.910	100.000
14500.000	375.000	597.536	0.000	2.296	0.000	226.792	0.000	1485.000
14500.000	570.000	598.092	.556	2.197	0.000	254.600	-27.808	1485.000
14500.000	895.000	598.830	.738	2.063	0.000	300.335	-73.543	1485.000
16400.000	375.000	601.370	0.000	3.834	0.000	291.167	0.000	1900.000
16400.000	570.000	601.841	.471	3.749	0.000	308.438	-17.271	1900.000
16400.000	895.000	602.445	.605	3.615	0.000	331.337	-40.170	1900.000
18300.000	375.000	605.324	0.000	3.954	0.000	264.914	0.000	1900.000
18300.000	570.000	605.884	.559	4.043	0.000	293.343	-28.429	1900.000
18300.000	895.000	606.609	.725	4.163	0.000	317.659	-52.745	1900.000
20300.000	375.000	608.806	0.000	3.482	0.000	205.829	0.000	2000.000
20300.000	570.000	609.549	.743	3.666	0.000	234.730	-28.901	2000.000
20300.000	895.000	610.432	.883	3.824	0.000	245.268	-39.439	2000.000

DATA FOR LAST CROSS SECTION

PROFILE	TYPE ENC	TARGET	TOP WIDTH AREA-ACRES	TOP WIDTH AREA-DIFF
1	0.000	0.000	133.410	0.000
2	0.000	0.000	145.743	12.333
3	0.000	0.000	155.372	21.961

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06.55.11. WTTES00.  11 OCT 77   7600Z  8KY24  V0   WTT     NORM          804045 EEDO 723F3
06.55.11. WTTES00.  WTT,P3.804045,EEDO 723F3016
06.55.11. WTTES00.  *INPUT 6200C 06.54.29, 11 OCT 77  VIA COKE
06.55.11. WTTES00.   COPY(INPUT,1R,CONTROL/BR)
06.55.12. WTTES00.    CONTROL DISK 2
06.55.12. WTTES00.  (TOPY
06.55.12. WTTES00.  *NOSTAGE
06.55.12. WTTES00.  FETCHPS,HECLIB,HEC2,HEC2.
06.55.13. WTTES00.    CACHE22 RETURNED       3 BLD, BS= 0040B,FS=022306B
06.55.13. WTTES00.    TAPEPAC DISK 1
06.55.13. WTTES00.    TAPEPAC UNLOADED       1 BLD, BS= 0002B,FS=000001B
06.55.30. WTTES00.  *STAGING COMPLETE - 06.55.30.    - - - - 2 CUS.
06.55.30. WTTES00.    TAPEPAC RETURNED       1 BLD, BS= 0002B,FS=000001B
06.55.30. WTTES00.  REWIND,   HEC2
06.55.30. WTTES00.    STATION RETURNED       1 BLD, BS= 0002B,FS=000001B
06.55.33. WTTES00.  HEC2          20006 WORDS STORED IN CACHE.
06.55.34. WTTES00.    CACHE22 RETURNED       8 BLD, BS= 0040B,FS=0223568
06.55.34. WTTES00.  SFL,170000.
06.55.34. WTTES00.  FLS=170K  FLL=0000K  LCM BUFFERS=0014K  TOTAL LCM=0204K
06.55.34. WTTES00.  HEC2.
06.55.34. WTTES00.    BEGIN=  HEC2      USING -
06.55.34. WTTES00.            MNF4 LIBRARY VERSION 1.4
06.55.34. WTTES00.            FTN4 LIBRARY 7600-L439/77040.10.37
06.55.34. WTTES00.    TAPE92  DISK 2
06.55.34. WTTES00.    TAPE93  DISK 2
06.55.34. WTTES00.  BA;
06.55.34. WTTES00.    OUTPUT  DISK 2
06.55.34. WTTES00.    TAPE94  DISK 1
06.55.35. WTTES00.    TAPE91  DISK 2
06.55.36. WTTES00.  BA;DIB6 L
06.55.37. WTTES00.  BA;HIB6 L
06.55.37. WTTES00.  BA;LIB6 L
06.55.37. WTTES00.  BA;LIB6 LA
06.55.37. WTTES00.      STOP
06.55.37. WTTES00.         .664 CP SECONDS EXECUTION TIME
06.55.37. WTTES00.    OUTPUT  QUEUED PR      1 BLD, BS= 0020B,FS=000016B
06.55.37. WTTES00.  *J JK0654L   804045N 11OCT77RZ N 0000088A;LIB6 LABEDO 723F3
06.55.37. WTTES00.  ..............................
06.55.37. WTTES00.  SECTORS TRANSFERRED        120
06.55.37. WTTES00.  MAX DISK SECTORS           410
06.55.37. WTTES00.  CP SECONDS               0.665
06.55.37. WTTES00.  SYSTEM SECONDS           0.066
06.55.37. WTTES00.  OLD BLD"S                    5
06.55.37. WTTES00.  LCM BUFFER LOADS             6
06.55.37. WTTES00.  ITO CUS                      0
06.55.37. WTTES00.  KWORDS XFERRED              38
06.55.37. WTTES00.  CIO CALLS                  125
06.55.37. WTTES00.  STAGING CUS                  2
06.55.37. WTTES00.  ..............................
06.55.37. WTTES00.  TOTAL JOB CUS                8
06.55.37. WTTES00.  COST + OVERHEAD   $       1.13
06.55.37. WTTES00.  ..............................

06.55.57. WTTES00.  OUTPUT  QUEUED PR 111
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B I L L B O A R D

WRITEUPS SUBSET BKYNEWS WAS LAST CHANGED SEP 12
HANDBOOK SUBSET CHANGES WAS LAST CHANGED SEP 19

OCT 2 MFE BLOCK TIME TO CHANGE AGAIN

AS OF OCT 2 THE NEW MFE BLOCK TIMES WILL BE

2100	SUNDAY	TO	0500 MONDAY
2200	TUESDAY	TO	0600 WEDNESDAY
2200	THURSDAY	TO	0600 FRIDAY

SEP 13 PLEASE RETURN TAPES

I/O AND TAPE SERVICE WOULD APPRECIATE THE RETURN OF ALL OVERDUE TAPES CHECKED OUT AT THE I/O COUNTER. TAPES WHICH HAVE BEEN CHECKED OUT SHOULD NOT BE RELEASED BY USERS. THIS MUST BE DONE BY CALLING PAT BEAN AT THE I/O COUNTER (6211) OR TAPE SERVICES (6219).

SEPT 09 LBL NEWSLETTER

THE LBL COMPUTER CENTER NEWSLETTER (NOT BKY NEWS) IS PUBLISHED MONTHLY AND PROVIDES MUCH USEFUL CURRENT INFORMATION TO OUR USERS. IT IS MAILED, FREE, UPON REQUEST. IF YOU ARE NOT RECEIVING IT, AND WOULD LIKE TO HAVE IT SENT TO YOU, CONTACT MAGGIE MORLEY AT THE COMPUTER CENTER LIBRARY, BLDG. 50A, RM. 1245A, (843-2740 X5529, AND YOUR NAME WILL BE ADDED TO OUR MAILING LIST.

AUG 23 UNUSED TAPES ON THE MOVE

ONCE AGAIN, TAPES THAT HAVE NOT BEEN ACCESSED FOR 12 MONTHS WILL BE MOVED INTO THE INACTIVE STORAGE STARTING THE WEEK OF SEPTEMBER 5, 1977. SEND A SIGNED TLIST OUTPUT INDICATING THOSE TAPES THAT YOU WISH MADE INACTIVE TO THE TAPE LIBRARIAN. OTHERWISE, THESE TAPES WILL BE FORCE-MOVED AND WILL DECREMENT TAPE SPACE ALLOCATION OF YOUR GROUP BY A LIKE NUMBER. (SEE DEC NEWSLETTER) PLEASE PURGE UNWANTED TAPES AT THIS TIME.

TO CALL A CONSULTANT 415-843-1009 DIRECT DIAL
451-5981 FTS ONLY

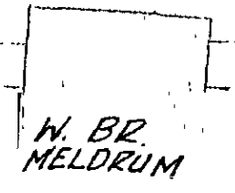
RECEIVED
~~OCT 18 1976~~

H. R. & C., INC.

MELDRUM CREEK W. BR.

GPS UYG001,,EGS1 AT: ~~09/30/76~~ 17:20:33 JOB: 35545 LL 14-19-019 5171010496 1 10,50,500

Oct 77 Run



2/

DNR check, sections

Ira twp FIS

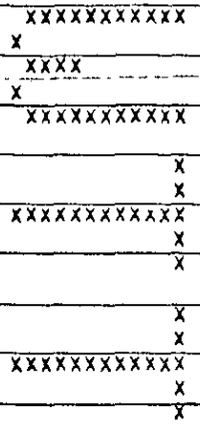
W. Branch Meldrum sections — Meldrum Cr.

computer station	station letter	comment
0+00	A	line # 17, invert dropped 1.25 ft
2+25	B	line # 17, invert dropped 0.56 ft
2+85		d/s side ℄ Meldrum 3+00, line # 18
3+15		u/s side dupe
3+30	C	dupe of 5+00
5+00	D	line # 17
20+00	E	line # 16
39+32	F	dupe of line # 15
39+91		dupe 5' dia culvert
39+92		dupe
40+08		
40+09		dupe
40+24	G	line # 15
57+00	H	line # 14
71+50	I	line # 13A
~~73+50~~		
73+50		line # 13 (not used)
℄ Arnold Rd		

(I not located properly on map)

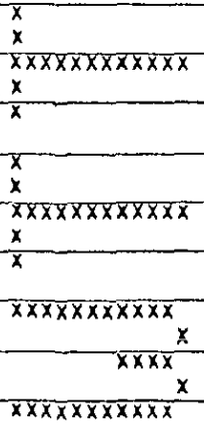
computer station	station letter	comment
0+00	A	line # 23, invert dropped 0.5'
7+00	B	line # 23
27+00	C	line # 22
45+00	D	line # 21
54+85		dupe of 62+65
60+85	E	℄ Shortcut Rd 61+00, line # 20
61+15	F	
62+65		line # 19
72+50	G	line # 51
90+50	H	line # 50
107+00	I	line # 49
124+85		dupe of 130+15
128+85	J	d/s side ℄ Arnold Rd 12900, line # 46
129+15	K	u/s side, dupe
130+15		line # 47
145+00	L	line # 46
164+00	M	line # 45
183+00	N	line # 44
203+000	O	line # 43

8040 45 . . . . . OUTPUT . 07 OCT 77 . 08.11 . . . . . 8040 45



Meldrum Cr. West Branch

100 Year Natural & Encroached Run



8040 45 . . . . . COKE . 07 OCT 77 . 08.43 . . . . . 8040 45

****
HEC2 VERSION UPDATED AUG 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09,10
MODIFICATIONS 52,53,54,55,56,57,58,59
****

* * * NEW HEC2 VERSION * * *

AS OF 28 MARCH 1977, A NEW VERSION OF HEC2 (DATED NOVEMBER 1976) WILL BE AVAILABLE IN HECLIB UNDER THE FILE NAME HEC2N. THE NEW VERSION HAS AN EXPANDED SUMMARY OUTPUT CAPABILITY ALLOWING THE USER TO SELECT VARIABLES FOR DISPLAY FROM A LIST OF 63 AVAILABLE.
ALSO, FIXED FORMAT TABLES CAN BE REQUESTED WHICH DISPLAY BRIDGE DATA, ENCROACHMENT DATA, CHANNEL IMPROVEMENT DATA, FLOODWAY DATA AND FLOOD INSURANCE RATE ZONE DATA. CONTROL CARDS FOR ACCESSING THE NEW VERSION ARE AS FOLLOWS:

```
(JOB CARD)
*NOSTAGE
FETCHPS,HECLIB,HEC2N,HEC2N.
SFL,101000.
HEC2N.
(RECORD SEPARATOR CARD)
(  DATA DECK  )
(JOB DECK TERMINATOR)
```

THE PROGRAM HAS BEEN TESTED ON A NUMBER OF DATA SETS. IF ANY PROBLEMS ARE DETECTED, PLEASE CONTACT ALLAN OTO OF HEC AT (FTS) 448-2105.
MULTIPLE COPIES OF AN HEC2 USERS MANUAL SUPPLEMENT FOR THE NEW VERSION WILL BE AVAILABLE FROM ADP CENTERS IN ALL DISTRICT AND DIVISION OFFICES BY 28 MARCH 1977.
A PROGRAMMERS MANUAL FOR THE NEW VERSION WILL BE AVAILABLE BY ABOUT MID-APRIL.
THE EXISTING VERSIONS OF THE PROGRAM AT LBL (HEC2 AND HEC2Z) WILL REMAIN IN HECLIB UNDER THE FILE NAMES HEC2 AND HEC2Z UNTIL THE END OF JULY.

```
C
T1      FLOOD INSURANCE STUDY
T2      IRA TOWNSHIP    100 YR. NATURAL CHANNEL
T3      MELDRUM CREEK   WEST BR.

J1  ICHECK      INQ         NINV        IDIR        STRT        METRIC      HVINS       Q           WSEL        FQ
        0.          0.          0.          0.  0.000000        0.00        0.0         345.    581.700     0.000

J2  NPROF       IPLOT       PRFVS       XSECV       XSECH       FN          ALLDC       IBA         CHNIM       ITRACE
    -1.000      0.000       -1.000      0.000       0.000       0.000       0.000       0.000       0.000       0.000

J3      1.000      34.000      36.000       4.000      27.000      28.000       9.000       0.000       0.000       0.000
NC       .095       .095       .070        .100       .300       0.000       0.000       0.000       0.000       0.000
ET      0.000       1.400      0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000

X1      0.000      21.000     300.000     319.000       0.000       0.000       0.000       0.000       0.000       0.000
X3      0.000       0.000       0.000     230.000       0.000     390.000       0.000       0.000       0.000       0.000
GR    590.850       0.000     590.450      50.000     587.350     100.000     588.050     150.000     586.050     170.000
GR    586.050     180.000     582.050     220.000     580.850     240.000     580.150     280.000     579.150     300.000
GR    577.050     303.000     576.550     305.000     577.050     310.000     580.550     319.000     580.950     350.000
GR    580.450     400.000     582.350     450.000     584.250     470.000     585.950     500.000     587.050     570.000
GR    587.550     620.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000

X1      140.000     21.000     300.000     319.000     140.000     140.000     140.000       0.000       -.300       0.000
X3        0.000      0.000       0.000     265.000       0.000     355.000       0.000       0.000       0.000       0.000
GR      591.540      0.000     591.140      50.000     588.040     100.000     588.740     150.000     586.740     170.000
GR      586.740    180.000     582.740     220.000     581.540     240.000     580.840     280.000     579.840     300.000
GR      577.740    303.000     577.240     305.000     577.740     310.000     581.240     319.000     581.640     350.000
GR      581.140    400.000     583.040     450.000     584.940     470.000     586.640     500.000     587.740     570.000
GR      588.240    620.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000

        DOWNSTREAM SECTION FOR MELDRUM RD. BRIDGE

X1      285.000     19.000     296.090     313.920     145.000     145.000     145.000       0.000       0.000       0.000
X3       10.000      0.000       0.000       0.000       0.000       0.000       0.000     583.800     583.800       0.000
GR      591.540      0.000     591.140      50.000     588.040     100.000     588.740     150.000     586.740     170.000
GR      586.740    180.000     582.740     220.000     581.540     240.000     580.840     280.000     577.300     296.090
GR      577.300    313.920     581.240     319.000     581.640     350.000     581.140     400.000     583.040     450.000
GR      584.940    470.000     586.640     500.000     587.740     570.000     588.240     620.000       0.000       0.000
SB        0.000      1.260       2.500       0.000      17.830       0.000     115.900       0.000       0.000       0.000

        UPSTREAM SECTION FOR MELDRUM RD. BRIDGE

X1      315.000      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     583.800     584.500       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     584.500     584.500       0.000
BT        6.000      0.000     591.540     591.540     220.000     584.700     582.740     296.090     584.500     583.800
BT      313.920    584.500     583.800     400.000     584.800     581.140     620.000     586.240     588.240       0.000

X1      405.000     21.000     300.000     319.000      90.000      90.000      90.000       0.000       0.000       0.000
GR      592.100      0.000     591.700      50.000     588.600     100.000     589.300     150.000     587.300     170.000
GR      587.300    180.000     583.300     220.000     582.100     240.000     581.400     280.000     580.400     300.000
GR      578.300    303.000     577.800     305.000     576.300     310.000     581.800     319.000     582.200     350.000
GR      581.700    400.000     583.600     450.000     585.500     470.000     587.200     500.000     588.300     570.000
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X1	500.0	0.000	0.000	0.000	95.000	95.000	95.000	0.000	0.000	0.000
NC	.1	.120	.085	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	2000.000	14.000	300.000	326.000	1500.000	1500.000	1500.000	0.000	0.000	0.000
GR	592.300	0.000	592.300	50.000	594.100	150.000	589.300	250.000	587.300	300.000
GR	584.500	313.000	583.700	316.000	584.500	320.000	587.200	326.000	591.200	360.000
GR	591.500	470.000	592.400	520.000	592.500	570.000	591.500	620.000	0.000	0.000
NC	.138	.138	.207	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	3932.000	18.000	300.000	320.000	1932.000	1932.000	1932.000	0.000	0.000	0.000
GR	593.500	0.000	594.300	100.000	594.300	150.000	595.200	200.000	593.800	250.000
GR	589.700	300.000	587.500	303.000	585.800	309.000	587.500	314.000	590.300	320.000
GR	590.200	350.000	589.600	400.000	591.600	430.000	592.300	450.000	594.200	470.000
GR	594.300	500.000	595.600	536.000	595.700	616.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000

DOWNSTREAM SECTION FOR CULVERT

X1	3991.000	22.000	305.300	311.300	59.000	59.000	59.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	590.800	590.800	0.000
GR	593.500	0.000	594.300	100.000	594.300	150.000	595.200	200.000	593.800	250.000
GR	589.700	300.000	588.300	306.300	586.500	307.000	585.800	308.000	585.800	309.000
GR	585.800	310.000	586.500	311.000	588.300	311.300	590.300	320.000	590.200	350.000
GR	589.600	400.000	591.600	430.000	592.300	450.000	594.200	470.000	594.300	500.000
GR	595.600	536.000	595.700	616.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	3992.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
BT	11.000	0.000	593.500	593.500	200.000	595.200	595.200	306.300	591.800	588.300
BT	307.000	591.800	589.800	308.000	591.800	590.600	309.000	591.800	590.800	310.000
BT	591.800	590.600	311.000	591.800	589.800	311.300	591.800	588.300	400.000	589.600
BT	589.600	616.000	595.700	595.700	0.000	0.000	0.000	0.000	0.000	0.000
X1	4008.000	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

UPSTREAM SECTION FOR CULVERT

X1	4009.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	591.800	591.800	0.000
NC	.138	.138	.207	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	4024.000	18.000	300.000	320.000	15.000	15.000	15.000	0.000	0.000	0.000
GR	593.500	0.000	594.300	100.000	594.300	150.000	595.200	200.000	593.800	250.000
GR	589.700	300.000	587.500	303.000	585.800	309.000	587.500	314.000	590.300	320.000
GR	590.200	350.000	589.600	400.000	591.600	430.000	592.300	450.000	594.200	470.000
GR	594.300	500.000	595.600	536.000	595.700	616.000	0.000	0.000	0.000	0.000
NC	.115	.115	.167	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	5700.000	14.000	300.000	315.000	1676.000	1676.000	1676.000	0.000	0.000	0.000
GR	595.400	0.000	595.300	150.000	592.500	252.000	590.300	276.000	591.300	300.000
GR	588.800	307.000	588.800	312.000	591.400	315.000	592.400	335.000	593.200	440.000
GR	594.200	487.000	596.300	520.000	597.300	550.000	598.000	586.000	0.000	0.000
NC	.040	.040	.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000

GR	595.300	0.000	595.500	50.000	595.500	100.000	594.400	150.000	594.700	200.000
GR	593.400	350.000	591.500	377.000	590.400	361.000	591.500	387.000	593.600	388.000
GR	595.[illegible]	410.000	598.000	460.000	599.300	500.000	599.300	580.000	599.200	688.000
EJ	0.00[illegible]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

```
CCHV=     .100 CEHV=     .300
   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

                                  same W.S
3470 ENCROACHMENT STATIONS=  ST.230.0      390.0  TYPE=      1  TARGET=      160.000
     0.00      5.15    581.70      0.00    581.70    581.77       .07      0.00      0.00    579.15
     345.      104.     187.       54.       95.       71.       67.        0.        0.     580.55
     0.00      1.10      2.62       .80      .095      .070      .095     0.000    576.55    230.00
  .002884        0.        0.        0.         0         0         1      0.00    160.00    390.00

3470 ENCROACHMENT STATIONS=      265.0      355.0  TYPE=      1  TARGET=       90.000
*  140.00      5.20    582.14      0.00      0.00    582.24       .10       .46       .01    579.54      * new section
     345.       92.      220.       33.       64.       72.       35.        1.        0.     580.94
      .02      1.44      3.05       .94      .095      .070      .095      .070    576.94    265.00
  .003827      140.      140.      140.         2         0         1      0.00     90.00    355.00

                  ⇐ sta 225 omitted
OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=       583.80 ELREA=       583.80

          DOWNSTREAM SECTION FOR MELDRUM RD. BRIDGE  Δ = .2
                  589.39
   285.00      5.29    582.59      0.00      0.00    582.79       .21       .52       .03    577.30
     345.        0.      345.        0.        0.       94.        0.        1.        1.     577.30
      .03      0.00      3.66      0.00      .095      .070      .095      .070    577.30    296.09
  .003414      145.      145.      145.         2         0         1      0.00     17.83    313.92

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      1.26      2.50      0.00     17.83      0.00    115.90      0.00    577.30    577.30

6070,LOW FLOW,BY NORMAL BRIDGE

EGPRS=     0.000  EGLWC=   582.794  ELLC=   583.800  PCWSE=   582.586  ELTRD=   584.500

NORMAL BRIDGE,NRD= 6 MIN ELTRD=  584.50 MAX ELLC=  583.80

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=       584.50 ELREA=       584.50

          UPSTREAM SECTION FOR MELDRUM RD. BRIDGE  Δ = .17
                  582.52
U/S 315.00      5.39    582.69      0.00      0.00    582.89       .20       .10       .00    577.30
     345.        0.      345.        0.        0.       96.        0.        1.        1.     577.30
      .03      0.00      3.59      0.00      .095      .070      .095      .069    577.30    296.09
  .003198       30.       30.       30.         2         0         1      0.00     17.83    313.92
```

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

← sec 330 : omitted

405.00	5.29	583.09	0.00	0.00	583.13	.04	.22	.02	580.40
345.	100.	164.	82.	106.	74.	116.	2.	1.	581.80
.05	.94	2.22	.70	.095	.070	.095	.069	577.80	223.50
.001959	90.	90.	90.	2	0	1	0.00	213.08	436.58

* 405 new section

583.18 old Δ = .08

500.00	5.46	583.26	0.00	0.00	583.29	.03	.16	.00	580.40
345.	102.	152.	91.	119.	77.	137.	2.	1.	581.80
.07	.86	1.97	.66	.095	.070	.095	.069	577.80	220.64
.001464	95.	95.	95.	2	0	1	0.00	220.44	441.09

588.46 Δ = .18

2000.00	4.58	588.28	587.12	0.00	588.57	.28	5.20	.08	587.30
345.	12.	328.	5.	12.	75.	5.	10.	6.	567.20
.17	.98	4.39	1.04	.120	.085	.120	.081	583.70	275.50
.016239	1500.	1500.	1500.	11	14	1	0.00	59.68	335.18

593.19 Δ = .02

3932.00	7.41	593.21	0.00	0.00	593.21	.01	4.62	.03	589.70
345.	35.	72.	238.	75.	112.	362.	24.	12.	590.30
1.01	.47	.64	.66	.138	.207	.138	.143	585.80	257.24
.000915	1932.	1932.	1932.	8	0	1	0.00	202.29	459.54

DOWNSTREAM SECTION FOR CULVERT 593.18

Δ = .02

3991.00	7.40	593.20	0.00	0.00	593.27	.07	.04	.02	588.30
345.	40.	119.	185.	101.	35.	395.	24.	12.	588.30
1.02	.40	3.44	.47	.138	.024	.138	.141	585.80	257.28
.000450	59.	59.	59.	2	0	1	0.00	202.23	459.51

ELTRD = 589.60 < 593.23 ⇒ TW over road

NORMAL BRIDGE,NRD=11 MIN ELTRD= 589.60 MAX ELLC= 595.70

3992.00	7.43	593.23	0.00	0.00	593.27	.04	.00	.00	588.30
345.	12.	83.	250.	35.	27.	333.	24.	12.	588.30
1.02	.34	3.11	.75	.138	.024	.138	.141	585.80	256.98
.001449	1.	1.	1.	2	0	1	-141.61	202.79	459.77

NORMAL BRIDGE,NRD=11 MIN ELTRD= 589.60 MAX ELLC= 595.70

4008.00	7.45	593.25	0.00	0.00	593.29	.04	.02	.00	588.30
345.	12.	83.	250.	35.	27.	335.	25.	12.	588.30
1.02	.34	3.09	.75	.138	.024	.138	.140	585.80	256.79
.001422	16.	16.	16.	0	0	1	-141.85	203.14	459.93

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	RV	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

UPSTREAM SECTION FOR CULVERT

345.	41.	116.	186.	103.	35.	401.	25.	12.	568.30
1.02	.39	3.39	.46	.138	.024	.138	.140	585.80	256.77
.000434	1.	1.	1.	0	0	1	0.00	203.17	459.94

593.29 Δ = .02

4024.00	7.51	593.31	0.00	0.00	593.32	.01	.01	.01	589.70
345.	36.	70.	239.	79.	114.	376.	25.	12.	590.30
1.03	.46	.62	.63	.138	.207	.138	.141	585.80	255.98
.000819	15.	15.	15.	2	0	1	0.00	204.64	460.62

5700.00	5.65	594.45	0.00	0.00	594.46	.00	1.14	.00	591.30
345.	189.	41.	115.	368.	72.	261.	49.	24.	591.40
1.97	.51	.57	.44	.115	.167	.115	.148	588.80	67.26
.000576	1676.	1676.	1676.	1	0	1	0.00	423.80	491.06

7150.00	4.87	595.27	0.00	0.00	595.28	.01	.82	.00	593.40
345.	218.	113.	14.	239.	122.	18.	67.	37.	593.60
2.41	.91	.93	.77	.040	.080	.040	.134	590.40	101.82
.000556	1450.	1450.	1450.	2	0	1	0.00	307.75	409.58

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HEC2 VERSION UPDATED AUG 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09,10
MODIFICATIONS 52,53,54,55,56,57,58,59
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T1      FLOOD INSURANCE STUDY
T2      IRA TOWNSHIP    100 YR. WITH ENCROACHMENT
T3      MELDRUM CREEK   WEST BR.

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        2.        0.        0.  0.000000      0.00       0.0      345.   581.800     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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CCHV= .100 CEHV= .300

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

3470 ENCROACHMENT STATIONS= 230.0 390.0 TYPE= 1 TARGET= 160.000

0.00	5.25	581.80	0.00	581.70	581.86	.06	0.00	0.00	579.15
345.	107.	179.	59.	102.	73.	75.	0.	0.	580.55
0.00	1.05	2.45	.79	.095	.070	.095	0.000	576.55	230.00
.002438	0.	0.	0.	0	0	1	0.00	160.00	390.00

3470 ENCROACHMENT STATIONS= 265.0 355.0 TYPE= 1 TARGET= 90.000

140.00	5.24	582.18	0.00	582.14	582.28	.10	.41	.01	579.54
345.	93.	217.	34.	65.	73.	37.	1.	0.	560.94
.02	1.42	2.98	.94	.095	.070	.095	.070	576.94	265.00
.003608	140.	140.	140.	2	0	1	0.00	90.00	355.00

2800 NAT Q1= 59.04 WSEL= 582.59 ENC Q1= 60.85 WSEL= 582.69 RATIO= -.0307
NAT Q1= 61. RATIOS LOB,CH,ROB= 0.0000 1.0000 0.0000 WSEL= 582.69

3470 ENCROACHMENT STATIONS= 296.1 313.9 TYPE= 4 TARGET= 0.000

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 583.80 ELREA= 583.80

DOWNSTREAM SECTION FOR MELDRUM RD. BRIDGE

285.00	5.51	582.81	0.00	582.59	583.01	.19	.70	.03	577.30
345.	0.	345.	0.	0.	98.	0.	1.	1.	577.30
.03	0.00	3.51	0.00	.095	.070	.095	.070	577.30	296.09
.006730	145.	145.	145.	2	0	1	0.00	17.83	313.92

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	1.26	2.50	0.00	17.83	0.00	115.90	0.00	577.30	577.30

6070,LOW FLOW BY NORMAL BRIDGE

EGPRS= 0.000 EGLWC= 582.987 ELLC= 583.800 PCWSE= 582.814 ELTRD= 584.500
2800 NAT Q1= 61.00 WSEL= 582.69 ENC Q1= 62.83 WSEL= 582.79 RATIO= -.0300
NAT Q1= 63. RATIOS LOB,CH,ROB= 0.0000 1.0000 0.0000 WSEL= 582.79
WATER EL=CHANGE FROM NATURAL PROFILES BRIDGE

3470 ENCROACHMENT STATIONS= 296.1 313.9 TYPE= 4 TARGET= 0.000

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 584.50 ELREA= 584.50

UPSTREAM SECTION FOR MELDRUM RD. BRIDGE

345.	0.	345.	0.	0.	100.	0.	1.	1.	577.30
.03	0.00	3.44	0.00	.095	.070	.095	.069	577.30	296.09
.005386	30.	30.	30.	0	0	1	0.00	17.83	313.92

2800 NAT Q1= 77.95 WSEL= 583.09 ENC Q1= 77.95 WSEL= 583.19 RATIO= 0.0000
NAT Q1= 85. RATIOS LOB,CH,ROB= .2938 .4540 .2522 WSEL= 583.19

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

3470 ENCROACHMENT STATIONS= 250.8 400.9 TYPE= 4 TARGET= .082

405.00	5.54	583.34	0.00	583.09	583.37	.04	.25	.01	580.40
345.	97.	163.	85.	98.	79.	112.	2.	1.	561.80
.05	.99	2.07	.76	.095	.070	.095	.069	577.80	250.82
.001584	90.	90.	90.	2	0	1	0.00	150.11	400.94

2800 NAT Q1= 90.16 WSEL= 583.26 ENC Q1= 90.16 WSEL= 583.36 RATIO= 0.0000
NAT Q1= 98. RATIOS LOB,CH,ROB= .3010 .4228 .2761 WSEL= 583.36

3470 ENCROACHMENT STATIONS= 247.7 403.9 TYPE= 4 TARGET= .078

500.00	5.68	583.48	0.00	583.26	583.51	.03	.15	.00	580.40
345.	99.	152.	93.	110.	81.	130.	2.	1.	561.80
.07	.90	1.87	.72	.095	.070	.095	.069	577.80	247.72
.001231	95.	95.	95.	1	0	1	0.00	156.14	403.86

2800 NAT Q1= 27.07 WSEL= 588.28 ENC Q1= 27.26 WSEL= 588.38 RATIO= -.0067
NAT Q1= 29. RATIOS LOB,CH,ROB= .0413 .9410 .0177 WSEL= 588.38

3470 ENCROACHMENT STATIONS= 300.0 326.0 TYPE= 4 TARGET= .059

2000.00	4.45	588.15	0.00	588.28	588.51	.36	4.90	.10	587.30
345.	0.	345.	0.	0.	71.	0.	9.	4.	587.20
.15	0.00	4.83	0.00	.120	.085	.120	.081	583.70	300.00
.023866	1500.	1500.	1500.	4	0	1	0.00	26.00	326.00

2800 NAT Q1= 114.03 WSEL= 593.21 ENC Q1= 114.03 WSEL= 593.31 RATIO= 0.0000
NAT Q1= 120. RATIOS LOB,CH,ROB= .1049 .2038 .6913 WSEL= 593.31

3470 ENCROACHMENT STATIONS= 284.5 433.5 TYPE= 4 TARGET= .053

3932.00	7.54	593.34	0.00	593.21	593.35	.01	4.80	.04	589.70
345.	28.	74.	243.	47.	115.	354.	22.	8.	590.30
.95	.61	.64	.69	.138	.207	.138	.145	585.80	284.46
.000884	1932.	1932.	1932.	8	0	1	0.00	149.03	433.49

2800 NAT Q1= 162.57 WSEL= 593.20 ENC Q1= 162.57 WSEL= 593.30 RATIO= 0.0000
NAT Q1= 170. RATIOS LOB,CH,ROB= .1186 .3387 .5426 WSEL= 593.30

3470 ENCROACHMENT STATIONS= 285.8 430.8 TYPE= 4 TARGET= .044

DOWNSTREAM SECTION FOR CULVERT

3991.00	7.54	593.34	0.00	593.20	593.41	.07	.04	.02	588.30
345.	35.	122.	189.	71.	35.	383.	23.	8.	588.30
.96	.49	3.44	.49	.138	.024	.138	.141	585.80	285.79
.000438	59.	59.	59.	0	0	1	0.00	144.96	430.75

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NAT Q1=      96.  RATIOS LOB,CH,ROB=    .0374    .2336    .7290  WSEL=     593.33
 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
 Q         [illegible]B      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
 TIME      [illegible]B      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
 SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST


NORMAL BRIDGE,NRD=11 MIN ELTRD=  589.60 MAX ELLC=  595.70


3470 ENCROACHMENT STATIONS=      301.7      435.5  TYPE=      4  TARGET=          .059
  3992.00      7.56    593.36      0.00    593.23    593.41       .04       .00       .00    588.30
     345.        2.       85.      258.        7.       27.      328.       23.        8.    588.30
      .97       .34      3.11       .78      .138      .024      .138      .141    585.80    301.71
  .001401        1.        1.        1.         2         0         1    -87.88    133.79    435.51


2800 NAT Q1=      91.48  WSEL=     593.25  ENC Q1=      91.48  WSEL=     593.35  RATIO=  0.0000
NAT Q1=      98.  RATIOS LOB,CH,ROB=    .0381    .2319    .7299  WSEL=     593.35

NORMAL BRIDGE,NRD=11 MIN ELTRD=  589.60 MAX ELLC=  595.70


3470 ENCROACHMENT STATIONS=      302.6      434.7  TYPE=      4  TARGET=          .064
  4008.00      7.59    593.39      0.00    593.25    593.43       .04       .02       .00    588.30
     345.        2.       85.      258.        6.       27.      329.       23.        8.    588.30
      .97       .32      3.10       .78      .138      .024      .138      .140    585.80    302.61
  .001387       16.       16.       16.         1         0         1    -85.44    132.12    434.73


2800 NAT Q1=     165.68  WSEL=     593.24  ENC Q1=     165.68  WSEL=     593.34  RATIO=  0.0000
NAT Q1=     173.  RATIOS LOB,CH,ROB=    .1193    .3361    .5446  WSEL=     593.34

3470 ENCROACHMENT STATIONS=      285.1      432.3  TYPE=      4  TARGET=          .041

          UPSTREAM SECTION FOR CULVERT

  4009.00      7.57    593.37      0.00    593.24    593.44       .06       .00       .01    588.30
     345.       35.      120.      189.       73.       36.      390.       23.        8.    588.30
      .97       .48      3.39       .49      .138      .024      .138      .140    585.80    285.06
  .000423        1.        1.        1.         2         0         1      0.00    147.27    432.33


2800 NAT Q1=     120.55  WSEL=     593.31  ENC Q1=     120.55  WSEL=     593.41  RATIO=  0.0000
NAT Q1=     127.  RATIOS LOB,CH,ROB=    .1071    .1990    .6939  WSEL=     593.41

3470 ENCROACHMENT STATIONS=      283.6      435.4  TYPE=      4  TARGET=          .051
  4024.00      7.65    593.45      0.00    593.31    593.45       .01       .01       .01    589.70
     345.       29.       72.      244.       50.      117.      368.       23.        8.    590.30
      .98       .58       .62       .66      .138      .207      .138      .141    585.80    283.63
  .000795       15.       15.       15.         2         0         1      0.00    151.73    435.36


2800 NAT Q1=     143.76  WSEL=     594.45  ENC Q1=     143.76  WSEL=     594.55  RATIO=  -.0000
NAT Q1=     155.  RATIOS LOB,CH,ROB=    .5470    .1150    .3380  WSEL=     594.55

3470 ENCROACHMENT STATIONS=      150.7      436.7  TYPE=      4  TARGET=          .073
  5700.00      5.76    594.56      0.00    594.45    594.57       .00      1.12       .00    591.30
     345.      190.       43.      112.      335.       74.      234.       46.       17.    591.40
     1.84       .57       .58       .48      .115      .167      .115      .148    588.80    150.73
  .000566     1676.     1676.     1676.         3         0         1      0.00    286.01    436.73


2800 NAT Q1=     146.27  WSEL=     595.27  ENC Q1=     146.27  WSEL=     595.37  RATIO=  0.0000
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NAT Q1=      96.  RATIOS LOB,CH,ROB=   .0374   .2336   .7290  WSEL=    593.33
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
  Q        [illegible]OB     QCH      QROB     ALOB     ACH      ARDB     VOL      TWA   LEFT/RIGHT
  TIME     [illegible]OB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


NORMAL BRIDGE,NRD=11 MIN ELTRD=  589.60 MAX ELLC=  595.70

3470 ENCROACHMENT STATIONS=      301.7      435.5  TYPE=      4  TARGET=          .059
  3992.00     7.56   593.36     0.00   593.23   593.41      .04      .00      .00   588.30
     345.       2.      85.     258.       7.      27.     328.      23.       8.   588.30
      .97      .34     3.11      .78     .138     .024     .138     .141   585.80   301.71
  .001401       1.       1.       1.        2        0        1   -87.86   133.79   435.51

2800 NAT Q1=      91.48  WSEL=     593.25  ENC Q1=      91.48  WSEL=     593.35  RATIO=  0.0000
NAT Q1=      98.  RATIOS LOB,CH,ROB=   .0381   .2319   .7299  WSEL=     593.35

NORMAL BRIDGE,NRD=11 MIN ELTRD=  589.60 MAX ELLC=  595.70

3470 ENCROACHMENT STATIONS=      302.6      434.7  TYPE=      4  TARGET=          .064
  4008.00     7.59   593.39     0.00   593.25   593.43      .04      .02      .00   588.30
     345.       2.      85.     258.       6.      27.     329.      23.       8.   588.30
      .97      .32     3.10      .78     .138     .024     .138     .140   585.80   302.61
  .001387      16.      16.      16.        1        0        1   -85.44   132.12   434.73

2800 NAT Q1=     165.68  WSEL=     593.24  ENC Q1=     165.68  WSEL=     593.34  RATIO=  0.0000
NAT Q1=     173.  RATIOS LOB,CH,ROB=   .1193   .3361   .5446  WSEL=     593.34

3470 ENCROACHMENT STATIONS=      285.1      432.3  TYPE=      4  TARGET=          .041

          UPSTREAM SECTION FOR CULVERT

  4009.00     7.57   593.37     0.00   593.24   593.44      .06      .00      .01   588.30
     345.      35.     120.     189.      73.      36.     390.      23.       8.   588.30
      .97      .48     3.39      .49     .138     .024     .138     .140   585.80   285.06
  .000423       1.       1.       1.        2        0        1     0.00   147.27   432.33

2800 NAT Q1=     120.55  WSEL=     593.31  ENC Q1=     120.55  WSEL=     593.41  RATIO=  0.0000
NAT Q1=     127.  RATIOS LOB,CH,ROB=   .1071   .1990   .6939  WSEL=     593.41

3470 ENCROACHMENT STATIONS=      283.6      435.4  TYPE=      4  TARGET=          .051
  4024.00     7.65   593.45     0.00   593.31   593.45      .01      .01      .01   589.70
     345.      29.      72.     244.      50.     117.     368.      23.       8.   590.30
      .98      .58      .62      .66     .138     .207     .138     .141   585.80   283.63
  .000795      15.      15.      15.        2        0        1     0.00   151.73   435.36

2800 NAT Q1=     143.76  WSEL=     594.45  ENC Q1=     143.76  WSEL=     594.55  RATIO=  -.0000
NAT Q1=     155.  RATIOS LOB,CH,ROB=   .5470   .1150   .3380  WSEL=     594.55

3470 ENCROACHMENT STATIONS=      150.7      436.7  TYPE=      4  TARGET=          .073
  5700.00     5.76   594.56     0.00   594.45   594.57      .00     1.12      .00   591.30
     345.     190.      43.     112.     335.      74.     234.      46.      17.   591.40
     1.84      .57      .58      .48     .115     .167     .115     .148   588.80   150.73
  .000566    1676.    1676.    1676.        3        0        1     0.00   286.01   436.73

2800 NAT Q1=     146.27  WSEL=     595.27  ENC Q1=     146.27  WSEL=     595.37  RATIO=  0.0000
```

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

3470 ENCROACHMENT STATIONS=		167.8	388.0	TYPE=	4	TARGET=		.115	
7150.00	4.97	595.37	0.00	595.27	595.39	.02	.82	.00	593.40
345.	229.	116.	0.	223.	126.	0.	02.	25.	593.60
2.24	1.02	.92	0.00	.040	.080	.040	.134	590.40	157.78
.000561	1450.	1450.	1450.	3	0	1	0.00	220.22	388.00

SUMMARY PRINTOUT FOR MULTIPLE PROFILES

MELDRUM CREEK WEST BR.

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	TW	PERENC	TOPWID	STENCL	STENCR	WSELK
0.00	0.00	0.00	0.00	576.55	345.00	581.70	64.25	160.00	160.00	230.00	390.00	581.70
0.00	0.00	0.00	0.00	576.55	345.00	581.80	69.87	160.00	160.00	230.00	390.00	581.70
140.00	140.00	0.00	0.00	576.94	345.00	582.14	55.77	90.00	90.00	265.00	355.00	0.00
140.00	140.00	0.00	0.00	576.94	345.00	582.18	57.44	90.00	90.00	265.00	355.00	582.14
285.00	145.00	0.00	0.00	577.30	345.00	582.59	59.04	0.00	17.83	0.00	0.00	0.00
285.00	145.00	0.00	0.00	577.30	345.00	582.61	42.05	0.00	17.83	296.09	313.92	582.59
315.00	30.00	0.00	0.00	577.30	345.00	582.69	61.00	0.00	17.83	0.00	0.00	0.00
315.00	30.00	0.00	0.00	577.30	345.00	582.92	43.17	0.00	17.83	296.09	313.92	582.69
405.00	90.00	0.00	0.00	577.60	345.00	583.09	77.95	0.00	213.08	0.00	0.00	0.00
405.00	90.00	0.00	0.00	577.80	345.00	583.34	66.67	.08	150.11	250.82	400.94	583.09
500.00	95.00	0.00	0.00	577.80	345.00	583.26	90.16	0.00	220.44	0.00	0.00	0.00
500.00	95.00	0.00	0.00	577.80	345.00	583.48	98.34	.08	156.14	247.72	403.86	583.26
2000.00	1500.00	0.00	0.00	583.70	345.00	588.28	27.07	0.00	59.68	0.00	0.00	0.00
2000.00	1500.00	0.00	0.00	583.70	345.00	588.15	22.33	.06	26.00	300.00	326.00	588.28
3932.00	1932.00	0.00	0.00	585.80	345.00	593.21	114.03	0.00	202.29	0.00	0.00	0.00
3932.00	1932.00	0.00	0.00	585.80	345.00	593.34	116.04	.05	149.03	284.46	433.50	593.21
3991.00	59.00	0.00	0.00	585.80	345.00	593.20	162.57	0.00	202.23	0.00	0.00	0.00
3991.00	59.00	0.00	0.00	585.80	345.00	593.34	164.69	.04	144.96	285.79	430.75	593.20
3992.00	1.00	589.60	595.70	585.80	345.00	593.23	90.62	0.00	202.79	0.00	0.00	0.00
3992.00	1.00	589.60	595.70	585.80	345.00	593.36	92.19	.06	133.79	301.71	435.51	593.23
4008.00	16.00	589.60	595.70	585.80	345.00	593.25	91.48	0.00	203.14	0.00	0.00	0.00
4008.00	16.00	589.60	595.70	585.80	345.00	593.39	92.62	.06	132.12	302.61	434.73	593.25
4009.00	1.00	0.00	0.00	585.80	345.00	593.24	165.68	0.00	203.17	0.00	0.00	0.00
4009.00	1.00	0.00	0.00	585.80	345.00	593.37	167.63	.04	147.27	285.06	432.33	593.24
4024.00	15.00	0.00	0.00	585.80	345.00	593.31	120.55	0.00	204.64	0.00	0.00	0.00
4024.00	15.00	0.00	0.00	585.80	345.00	593.45	122.39	.05	151.73	283.63	435.36	593.31
5700.00	1676.00	0.00	0.00	588.80	345.00	594.45	143.76	0.00	423.80	0.00	0.00	0.00
5700.00	1676.00	0.00	0.00	588.80	345.00	594.56	145.03	.07	286.01	150.73	436.73	594.45
7150.00	1450.00	0.00	0.00	590.40	345.00	595.27	146.27	0.00	307.75	0.00	0.00	0.00
7150.00	1450.00	0.00	0.00	590.40	345.00	595.37	145.71	.12	220.22	167.78	388.00	595.27

SECTION NUMBER	DISCHARGE CFS	CWSEL	CWSEL DIFF EACH Q	CWSEL DIFF EACH SECTION	CWSEL-WSELK	TOPWID	T.W. DIFF	LENGTH
0.000	345.001	581.700	0.000	0.000	0.000	159.999	0.000	0.000
0.000	345.001	581.800	.100	0.000	0.000	159.999	-.000	0.000
140.000	345.001	582.137	0.000	.437	0.000	89.999	0.000	140.000
140.000	345.001	582.182	.045	.382	.045	89.999	-.000	140.000

315.000	345.001	582.695	0.000	.108	0.000	17.830	0.000	30.000
315.000	345.001	582.922	.227	.108	.227	17.831	-.001	30.000
405.000	345.001	583.090	0.000	.396	0.000	213.081	0.000	90.000
405.000	345.001	583.337	.246	.415	.246	150.113	62.968	90.000
500.000	345.001	583.261	0.000	.171	0.000	220.444	0.000	95.000
500.000	345.001	583.478	.216	.141	.216	156.140	64.304	95.000
2000.000	345.001	586.280	0.000	5.019	0.000	59.660	0.000	1500.000
2000.000	345.001	586.149	-.131	4.671	-.131	26.001	33.679	1500.000
3932.000	345.001	593.207	0.000	4.926	0.000	202.291	0.000	1932.000
3932.000	345.001	593.345	.138	5.195	.138	149.032	53.259	1932.000
3991.000	345.001	593.202	0.000	-.005	0.000	202.234	0.000	59.000
3991.000	345.001	593.338	.136	-.006	.136	144.964	57.269	59.000
3992.000	345.001	593.228	0.000	.026	0.000	202.790	0.000	1.000
3992.000	345.001	593.364	.136	.026	.136	133.792	68.998	1.000
4008.000	345.001	593.252	0.000	.024	0.000	203.135	0.000	16.000
4008.000	345.001	593.386	.135	.023	.135	132.115	71.020	16.000
4009.000	345.001	593.237	0.000	-.014	0.000	203.168	0.000	1.000
4009.000	345.001	593.373	.135	-.014	.135	147.265	55.903	1.000
4024.000	345.001	593.309	0.000	.072	0.000	204.639	0.000	15.000
4024.000	345.001	593.445	.136	.072	.136	151.730	52.909	15.000
5700.000	345.001	594.454	0.000	1.144	0.000	423.805	0.000	1676.000
5700.000	345.001	594.563	.109	1.118	.109	286.005	137.799	1676.000
7150.000	345.001	595.258	0.000	.814	0.000	307.753	0.000	1450.000
7150.000	345.001	595.372	.104	.809	.104	220.215	87.538	1450.000

DATA FOR LAST CROSS SECTION

PROFILE	TYPE ENC	TARGET	TOP WIDTH AREA-ACRES	TOP WIDTH AREA-DIFF
1	0.000	0.000	36.631	0.000
2	4.000	.115	25.271	-11.360

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08.10.29. WTTES07.  07 OCT 77   7600Z  BKY24  V0   WTT      NORM          804045 EEDO 723F3
08.10.29. WTTES07. WTT,P3.804045,EEDO 723F3016
08.10.29. WTTES07. *INPUT 6600B 07.43.28. 07 OCT 77  VIA COKE
08.10.29. WTTES07.  COPY(INPUT,1R,CONTROL/BR)
08.10.30. WTTES07.   CONTROL DISK 2
08.10.30. WTTES07. COPY
08.10.30. WTTES07. *NOSTAGE
08.10.30. WTTES07. FETCHPS,HECLIB,HEC2,HEC2.
08.11.00. WTTES07.  FLS=170K  FLL=0000K  LCM BUFFERS=0054K  TOTAL LCM=0244K
08.11.01. WTTES07.   HEC2     DISK 2
08.11.02. WTTES07.  HEC2          20006 WORDS COPIED FROM CACHE.
08.11.04. WTTES07.   CACHE22 RETURNED      11 BLD, BS= 0040B,FS=136004B
08.11.04. WTTES07.   TAPEPAC RETURNED       0 BLD, BS= 0002B,FS=000000B
08.11.04. WTTES07.  FLS=060K  FLL=0000K  LCM BUFFERS=0014K  TOTAL LCM=0074K
08.11.04. WTTES07. SFL,170000.
08.11.04. WTTES07.  FLS=170K  FLL=0000K  LCM BUFFERS=0014K  TOTAL LCM=0204K
08.11.04. WTTES07. HEC2.
08.11.04. WTTES07.   BEGIN=  HEC2      USING -
08.11.04. WTTES07.           MNF4 LIBRARY VERSION 1.4
08.11.04. WTTES07.           FTN4 LIBRARY 7600-L439/77040.10.37
08.11.04. WTTES07.   TAPE92  DISK 2
08.11.04. WTTES07.   TAPE93  DISK 1
08.11.04. WTTES07.  BA;
08.11.04. WTTES07.   OUTPUT  DISK 2
08.11.04. WTTES07.   TAPE94  DISK 1
08.11.04. WTTES07.   TAPE91  DISK 2
08.11.05. WTTES07.  BA;OG955H
08.11.05. WTTES07.  BA;HG955HP
08.11.05. WTTES07.  BA;HG955HQ
08.11.05. WTTES07.       STOP
08.11.05. WTTES07.          .411 CP SECONDS EXECUTION TIME
08.11.05. WTTES07.   OUTPUT  QUEUED PR      1 BLD, BS= 0020B,FS=0000128
08.11.05. WTTES07.  *J J60743V   804045N 07OCT77RZ N 00000SBA;HG955HQEEDO 723F3
08.11.05. WTTES07.  ..............................
08.11.05. WTTES07.  SECTORS TRANSFERRED        116
08.11.05. WTTES07.  MAX DISK SECTORS           360
08.11.05. WTTES07.  CP SECONDS               0.411
08.11.05. WTTES07.  SYSTEM SECONDS           0.054
08.11.05. WTTES07.  DLD BLD"S                    5
08.11.05. WTTES07.  LCM BUFFER LOADS             6
08.11.05. WTTES07.  IIO CUS                      0
08.11.05. WTTES07.  KWORDS XFERRED              33
08.11.05. WTTES07.  CIO CALLS                   90
08.11.05. WTTES07.  STAGING CUS                  0
08.11.05. WTTES07.  ..............................
08.11.05. WTTES07.  TOTAL JOB CUS                5
08.11.05. WTTES07.  COST + OVERHEAD   $       0.94
08.11.05. WTTES07.  ..............................

08.11.19. WTTES07.  OUTPUT  QUEUED PR 74
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B I L L B O A R D WRITEUPS SUBSET BKYNEWS WAS LAST CHANGED SEP 12
HANDBOOK SUBSET CHANGES WAS LAST CHANGED SEP 19

OCT 2 MFE BLOCK TIME TO CHANGE AGAIN
AS OF OCT 2 THE NEW MFE BLOCK TIMES WILL BE

2100	SUNDAY	TO	0500 MONDAY
2200	TUESDAY	TO	0600 WEDNESDAY
2200	THURSDAY	TO	0600 FRIDAY

SEP 13 PLEASE RETURN TAPES
I/O AND TAPE SERVICE WOULD APPRECIATE THE RETURN OF ALL OVERDUE TAPES CHECKED OUT AT THE I/O COUNTER. TAPES WHICH HAVE BEEN CHECKED OUT SHOULD NOT BE RELEASED BY USERS. THIS MUST BE DONE BY CALLING PAT BEAN AT THE I/O COUNTER (6211) OR TAPE SERVICES (6219).

SEPT 09 LBL NEWSLETTER
THE LBL COMPUTER CENTER NEWSLETTER (NOT BKY NEWS) IS PUBLISHED MONTHLY AND PROVIDES MUCH USEFUL CURRENT INFORMATION TO OUR USERS. IT IS MAILED, FREE, UPON REQUEST. IF YOU ARE NOT RECEIVING IT, AND WOULD LIKE TO HAVE IT SENT TO YOU, CONTACT MAGGIE MORLEY AT THE COMPUTER CENTER LIBRARY, BLDG. 50A, RM. 1245A, (843-2740 X5529, AND YOUR NAME WILL BE ADDED TO OUR MAILING LIST.

AUG 23 UNUSED TAPES ON THE MOVE
ONCE AGAIN, TAPES THAT HAVE NOT BEEN ACCESSED FOR 12 MONTHS WILL BE MOVED INTO THE INACTIVE STORAGE STARTING THE WEEK OF SEPTEMBER 5, 1977. SEND A SIGNED TLIST OUTPUT INDICATING THOSE TAPES THAT YOU WISH MADE INACTIVE TO THE TAPE LIBRARIAN. OTHERWISE, THESE TAPES WILL BE FORCE-MOVED AND WILL DECREMENT TAPE SPACE ALLOCATION OF YOUR GROUP BY A LIKE NUMBER. (SEE DEC NEWSLETTER) PLEASE PURGE UNWANTED TAPES AT THIS TIME.

TO CALL A CONSULTANT 415-843-1009 DIRECT DIAL
451-5981 FTS ONLY

WTTES06 00130 SECTORS 5 WTTES06

Nov 16, 77

8040 45 . . . . . .OUTPUT . 07 OCT 77 . 08.11 . . . . . 8040 45

MELDRUM CREEK 10, 50, 500

W. BRANCH

8040 45 . . . . . .COKE . 07 OCT 77 . 08.37 . . . . . 8040 45

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08.09.50. WTTES06.  07 OCT 77   7600Z  BKY24  V0   WTT     NORM          804045 EEDO 723F3
08.09.50. WTTES06. WTT,P3.804045,EEDO 723F3016
08.09.50. WTTES06. *INPUT 6600B 07,42,33, 07 OCT 77  VIA CDKE
08.09.50. WTTES06.  COPY(INPUT,1R,CONTROL/BR)
08.09.51. WTTES06.   CONTROL DISK 2
08.09.51. WTTES06. (TUPY
08.09.51. WTTES06. *NOSTAGE
08.09.51. WTTES06. FETCHPS,HECLIB,HEC2,HEC2.
08.09.53. WTTES06.  FLS=170K  FLL=0000K  LCM BUFFERS=0054K  TOTAL LCM=0244K
08.09.53. WTTES06.   HEC2     DISK 1
08.09.54. WTTES06.  HEC2          20006 WORDS COPIED FROM CACHE.
08.09.55. WTTES06. --CACHE-22-RETURNED-  -11-BLD, BS= 0040B,FS=136004B
08.09.55. WTTES06.   TAPEPAC RETURNED      0 BLD, BS= 0002B,FS=000000B
08.09.55. WTTES06.  FLS=060K  FLL=0000K  LCM BUFFERS=0014K  TOTAL LCM=0074K
08.09.55. WTTES06. SFL,170000.
08.09.57. WTTES06.  FLS=170K  FLL=0000K  LCM BUFFERS=0014K  TOTAL LCM=0204K
08.09.57. WTTES06. HEC2.
08.09.58. WTTES06.   BEGIN=  HEC2      USING -
08.09.58. WTTES06.           MNF4 LIBRARY VERSION 1.4
08.09.58. WTTES06.           FTN4 LIBRARY 7600-L439/77040.10.37
08.09.58. WTTES06.   TAPE92  DISK 1
08.09.58. WTTES06.   TAPE93  DISK 2
08.09.58. WTTES06.  BA;
08.09.59. WTTES06.   OUTPUT  DISK 2
08.09.59. WTTES06.   TAPE94  DISK 1
08.10.58. WTTES06.   TAPE91  DISK 2
08.10.58. WTTES06.  BA;DG955H
08.10.59. WTTES06.  BA;HG955H
08.10.59. WTTES06.  BA;LG955H
08.10.59. WTTES06.  BA;LG955HA
08.10.59. WTTES06.     STOP
08.10.59. WTTES06.        .507 CP SECONDS EXECUTION TIME
08.11.00. WTTES06.   OUTPUT  QUEUED PR      1 BLD, BS= 0020B,FS=000014B
08.11.00. WTTES06. *J JG07428   804045N 07OCT77RZ N 000006BA;LG955HAEEDO 723F3
08.11.00. WTTES06.  ..............................
08.11.00. WTTES06.  SECTORS TRANSFERRED        118
08.11.00. WTTES06.  MAX DISK SECTORS           360
08.11.00. WTTES06.  CP SECONDS               0.507
08.11.00. WTTES06.  SYSTEM SECONDS           0.060
08.11.00. WTTES06.  OLD BLOCKS                   5
08.11.00. WTTES06.  LCM BUFFER LOADS             6
08.11.00. WTTES06.  ITO CUS                      0
08.11.00. WTTES06.  KWORDS XFERRED              35
08.11.00. WTTES06.  CIO CALLS                  110
08.11.00. WTTES06.  STAGING CUS                  0
08.11.00. WTTES06.  ..............................
08.11.00. WTTES06.  TOTAL JOB CUS                6
08.11.00. WTTES06.  COST + OVERHEAD   $       1.01
08.11.00. WTTES06.  ..............................

08.11.09. WTTES06.  OUTPUT  QUEUED PR 91
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****
HEC2 VERSION UPDATED AUG 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09,10
MODIFICATIONS 52,53,54,55,56,57,58,59
****

* * * NEW HEC2 VERSION * * *

AS OF 28 MARCH 1977, A NEW VERSION OF HEC2 (DATED NOVEMBER 1976) WILL BE AVAILABLE IN HECLIB UNDER THE FILE NAME HEC2N. THE NEW VERSION HAS AN EXPANDED SUMMARY OUTPUT CAPABILITY ALLOWING THE USER TO SELECT VARIABLES FOR DISPLAY FROM A LIST OF 63 AVAILABLE.
ALSO, FIXED FORMAT TABLES CAN BE REQUESTED WHICH DISPLAY BRIDGE DATA, ENCROACHMENT DATA, CHANNEL IMPROVEMENT DATA, FLOODWAY DATA AND FLOOD INSURANCE RATE ZONE DATA. CONTROL CARDS FOR ACCESSING THE NEW VERSION ARE AS FOLLOWS:

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(JOB CARD)
*NOSTAGE
FETCHPS,HECLIB,HEC2N,HEC2N.
SFL,101000.
HEC2N.
(RECORD SEPARATOR CARD)
( DATA DECK )
(JOB DECK TERMINATOR)
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THE PROGRAM HAS BEEN TESTED ON A NUMBER OF DATA SETS. IF ANY PROBLEMS ARE DETECTED, PLEASE CONTACT ALLAN OTO OF HEC AT (FTS) 448-2105.
MULTIPLE COPIES OF AN HEC2 USERS MANUAL SUPPLEMENT FOR THE NEW VERSION WILL BE AVAILABLE FROM ADP CENTERS IN ALL DISTRICT AND DIVISION OFFICES BY 28 MARCH 1977.
A PROGRAMMERS MANUAL FOR THE NEW VERSION WILL BE AVAILABLE BY ABOUT MID-APRIL.
THE EXISTING VERSIONS OF THE PROGRAM AT LBL (HEC2 AND HEC2Z) WILL REMAIN IN HECLIB UNDER THE FILE NAMES HEC2 AND HEC2Z UNTIL THE END OF JULY.

C

T1 FLOOD INSURANCE STUDY
T2 IRA TOWNSHIP 10 YR. FLOOD
T3 MELDRUM CREEK WEST BR.

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	0.	0.	0.	0.000000	0.00	0.0	200.	581.100	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	.095	.095	.070	.100	.300	0.000	0.000	0.000	0.000	0.000
X1	0.000	21.000	300.000	319.000	0.000	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	230.000	0.000	390.000	0.000	0.000	0.000	0.000
GR	590.850	0.000	590.450	50.000	587.350	100.000	588.050	150.000	586.050	170.000
GR	586.050	180.000	582.050	220.000	580.850	240.000	580.150	280.000	579.150	300.000
GR	577.050	303.000	576.550	305.000	577.050	310.000	580.550	319.000	580.950	350.000
GR	580.450	400.000	582.350	450.000	584.250	470.000	585.950	500.000	587.050	570.000
GR	587.550	620.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	140.000	21.000	300.000	319.000	90.000	140.000	140.000	0.000	0.300	0.000
X3	0.000	0.000	0.000	265.000	0.000	355.000	0.000	0.000	0.000	0.000
GR	591.540	0.000	591.140	50.000	588.040	100.000	588.740	150.000	586.740	170.000
GR	586.740	180.000	582.740	220.000	581.540	240.000	580.840	280.000	579.840	300.000
GR	577.740	303.000	577.240	305.000	577.740	310.000	581.240	319.000	581.640	350.000
GR	581.140	400.000	583.040	450.000	584.940	470.000	586.640	500.000	587.740	570.000
GR	588.240	620.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

DOWNSTREAM SECTION FOR MELDRUM RD. BRIDGE

X1	285.000	19.000	296.090	313.920	145.000	145.000	145.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	583.800	583.800	0.000
GR	591.540	0.000	591.140	50.000	588.040	100.000	588.740	150.000	586.740	170.000
GR	586.740	180.000	582.740	220.000	581.540	240.000	580.840	280.000	577.300	296.090
GR	577.300	313.920	581.240	319.000	581.640	350.000	581.140	400.000	583.040	450.000
GR	584.940	470.000	586.640	500.000	587.740	570.000	588.240	620.000	0.000	0.000
SB	0.000	1.260	2.500	0.000	17.830	0.000	115.900	0.000	0.000	0.000

UPSTREAM SECTION FOR MELDRUM RD. BRIDGE

X1	315.000	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	583.800	584.500	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	584.500	584.500	0.000
BT	6.000	0.000	591.540	591.540	220.000	584.700	582.740	296.090	584.500	583.800
BT	313.920	584.500	583.800	400.000	584.800	581.140	620.000	588.240	588.240	0.000
X1	405.000	21.000	300.000	319.000	90.000	90.000	90.000	0.000	0.000	0.000
GR	592.100	0.000	591.700	50.000	588.600	100.000	589.300	150.000	587.300	170.000
GR	587.300	180.000	583.300	220.000	582.100	240.000	581.400	280.000	580.400	300.000
GR	578.300	303.000	577.800	305.000	578.300	310.000	581.800	319.000	582.200	350.000
GR	581.700	400.000	583.600	450.000	585.500	470.000	587.200	500.000	588.300	570.000
GR	588.800	620.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	500.000	0.000	0.000	0.000	95.000	95.000	95.000	0.000	0.000	0.000
NC	.120	.120	.085	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	2000.000	14.000	300.000	326.000	1500.000	1500.000	1500.000	0.000	0.000	0.000
GR	592.300	0.000	592.300	50.000	594.100	150.000	589.300	250.000	587.300	300.000
GR	584.500	313.000	583.700	316.000	584.500	320.000	587.200	326.000	591.200	360.000
GR	591.500	470.000	592.400	520.000	592.500	570.000	591.500	620.000	0.000	0.000
NC	.138	.138	.207	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	3932.000	18.000	300.000	320.000	1932.000	1932.000	1932.000	0.000	0.000	0.000
GR	593.500	0.000	594.300	100.000	594.300	150.000	595.200	200.000	593.800	250.000
GR	589.700	300.000	587.500	303.000	585.800	309.000	587.500	314.000	590.300	320.000
GR	590.200	350.000	589.600	400.000	591.600	430.000	592.300	450.000	594.200	470.000
GR	594.300	500.000	595.600	536.000	595.700	616.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000

DOWNSTREAM SECTION FOR CULVERT

X1	3991.000	22.000	306.300	311.300	59.000	59.000	59.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	590.800	590.800	0.000
GR	593.500	0.000	594.300	100.000	594.300	150.000	595.200	200.000	593.800	250.000
GR	589.700	300.000	588.300	306.300	586.500	307.000	585.800	308.000	585.800	309.000
GR	585.800	310.000	586.500	311.000	588.300	311.300	590.300	320.000	590.200	350.000
GR	589.600	400.000	591.600	430.000	592.300	450.000	594.200	470.000	594.300	500.000
GR	595.600	536.000	595.700	616.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	3992.000	0.000	0.000	0.000	1.000	1.000	-1.000	0.000	0.000	0.000
BT	11.000	0.000	593.500	593.500	200.000	595.200	595.200	306.300	591.800	588.300
BT	307.000	591.800	589.800	308.000	591.800	590.600	309.000	591.800	590.800	310.000
BT	591.800	590.600	311.000	591.800	589.800	311.300	591.800	588.300	400.000	589.600
BT	589.600	616.000	595.700	595.700	0.000	0.000	0.000	0.000	0.000	0.000
X1	4008.000	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

UPSTREAM SECTION FOR CULVERT

X1	4009.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	591.800	591.800	0.000
NC	.138	.138	.207	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	4024.000	18.000	300.000	320.000	15.000	15.000	15.000	0.000	0.000	0.000
GR	593.500	0.000	594.300	100.000	594.300	150.000	595.200	200.000	593.800	250.000
GR	589.700	300.000	587.500	303.000	585.800	309.000	587.500	314.000	590.300	320.000
GR	590.200	350.000	589.600	400.000	591.600	430.000	592.300	450.000	594.200	470.000
GR	594.300	500.000	595.600	536.000	595.700	616.000	0.000	0.000	0.000	0.000
NC	.115	.115	.167	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	5700.000	14.000	300.000	315.000	1676.000	1676.000	1676.000	0.000	0.000	0.000
GR	595.400	0.000	593.300	150.000	592.500	252.000	590.300	276.000	591.300	300.000
GR	586.800	307.000	588.800	312.000	591.400	315.000	592.400	335.000	593.200	440.000
GR	594.200	487.000	596.300	520.000	597.300	550.000	598.000	586.000	0.000	0.000
NC	.040	.040	.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	7150.000	15.000	350.000	388.000	1450.000	1450.000	1450.000	0.000	0.000	0.000
GR	596.300	0.000	595.600	50.000	595.300	100.000	594.400	150.000	594.700	200.000

SUMMARY PRINTOUT FOR MULTIPLE PROFILES

MELDRUM CREEK WEST BR.

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	CRIWS	EG	TOPWID	10K*S	TIME	VOL
0.00	0.00	0.00	0.00	576.55	200.00	581.10	0.00	581.17	154.17	30.16	0.00	0.00
0.00	0.00	0.00	0.00	576.55	300.00	581.60	0.00	581.66	160.00	25.96	0.00	0.00
0.00	0.00	0.00	0.00	576.55	465.00	581.90	0.00	581.99	160.00	37.69	0.00	0.00
140.00	140.00	0.00	0.00	576.94	200.00	581.53	0.00	581.61	90.00	32.22	.02	.41
140.00	140.00	0.00	0.00	576.94	300.00	582.00	0.00	582.09	90.00	35.12	.02	.60
140.00	140.00	0.00	0.00	576.94	465.00	582.45	0.00	582.58	90.00	46.33	.01	.75
285.00	145.00	0.00	0.00	577.30	200.00	581.86	0.00	581.96	17.83	18.47	.03	.74
285.00	145.00	0.00	0.00	577.30	300.00	582.40	0.00	582.57	17.83	28.92	.03	1.02
285.00	145.00	0.00	0.00	577.30	465.00	583.00	0.00	583.33	17.83	48.54	.02	1.25
315.00	30.00	584.50	583.80	577.30	200.00	581.92	0.00	582.01	17.83	17.74	.04	.79
315.00	30.00	584.50	583.80	577.30	300.00	582.49	0.00	582.66	17.83	27.32	.03	1.08
315.00	30.00	584.50	583.80	577.30	465.00	583.16	0.00	583.47	17.83	44.45	.02	1.32
405.00	90.00	0.00	0.00	577.80	200.00	582.16	0.00	582.25	165.47	43.27	.05	1.00
405.00	90.00	0.00	0.00	577.80	300.00	582.85	0.00	582.69	202.59	23.14	.05	1.43
405.00	90.00	0.00	0.00	577.80	465.00	583.67	0.00	583.70	234.49	14.00	.04	1.87
500.00	95.00	0.00	0.00	577.80	200.00	582.49	0.00	582.53	187.22	21.17	.07	1.31
500.00	95.00	0.00	0.00	577.80	300.00	583.04	0.00	583.08	211.08	16.08	.07	2.01
500.00	95.00	0.00	0.00	577.80	465.00	583.80	0.00	583.83	237.09	11.64	.07	2.83
2000.00	1500.00	0.00	0.00	583.70	200.00	588.00	0.00	588.13	50.13	81.31	.21	5.64
2000.00	1500.00	0.00	0.00	583.70	300.00	588.22	0.00	588.45	57.70	133.15	.18	8.45
2000.00	1500.00	0.00	0.00	583.70	465.00	588.30	587.60	588.81	60.38	286.69	.14	12.29
3932.00	1932.00	0.00	0.00	585.80	200.00	592.28	0.00	592.28	180.92	9.71	1.20	15.55
3932.00	1932.00	0.00	0.00	585.80	300.00	592.95	0.00	592.95	196.44	9.26	1.06	21.43
3932.00	1932.00	0.00	0.00	585.80	465.00	593.82	0.00	593.83	256.91	8.89	.92	29.51
3991.00	59.00	0.00	0.00	585.80	200.00	592.28	0.00	592.34	180.79	3.90	1.21	16.04
3991.00	59.00	0.00	0.00	585.80	300.00	592.94	0.00	593.01	196.31	4.36	1.07	22.09
3991.00	59.00	0.00	0.00	585.80	465.00	593.81	0.00	593.88	256.16	4.78	.93	30.42
3992.00	1.00	589.60	595.70	585.80	200.00	592.28	0.00	592.34	180.82	19.00	1.21	16.05
3992.00	1.00	589.60	595.70	585.80	300.00	592.96	0.00	593.01	196.53	15.64	1.07	22.10
3992.00	1.00	589.60	595.70	585.80	465.00	593.85	0.00	593.89	261.44	12.91	.93	30.44
4008.00	16.00	589.60	595.70	585.80	200.00	592.31	0.00	592.37	181.80	18.21	1.21	16.13
4008.00	16.00	589.60	595.70	585.80	300.00	592.99	0.00	593.03	197.36	14.89	1.07	22.23
4008.00	16.00	589.60	595.70	585.80	465.00	593.87	0.00	593.91	263.87	12.70	.93	30.63
4009.00	1.00	0.00	0.00	585.80	200.00	592.31	0.00	592.37	181.84	3.78	1.21	16.14
4009.00	1.00	0.00	0.00	585.80	300.00	592.98	0.00	593.04	197.25	4.19	1.07	22.24
4009.00	1.00	0.00	0.00	585.80	465.00	593.85	0.00	593.92	262.94	4.62	.93	30.64
4024.00	15.00	0.00	0.00	585.80	200.00	592.38	0.00	592.38	183.46	8.49	1.22	16.27
4024.00	15.00	0.00	0.00	585.80	300.00	593.05	0.00	593.05	198.69	8.26	1.08	22.41
4024.00	15.00	0.00	0.00	585.80	465.00	593.92	0.00	593.93	274.62	8.03	.94	30.88

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	CRIWS	EG	TOPWID	10K*S	TIME	VOL
5700.00	1676.00	0.00	0.00	588.80	200.00	593.72	0.00	593.72	344.08	7.54	2.16	31.73
5700.00	1676.00	0.00	0.00	588.80	300.00	594.25	0.00	594.25	405.30	6.23	2.02	44.15
5700.00	1676.00	0.00	0.00	588.80	465.00	594.96	0.00	594.97	468.01	4.89	1.86	62.41
7150.00	1450.00	0.00	0.00	590.40	200.00	594.78	0.00	594.79	274.73	7.22	2.64	42.61
7150.00	1450.00	0.00	0.00	590.40	300.00	595.13	0.00	595.14	297.83	6.08	2.47	59.95
7150.00	1450.00	0.00	0.00	590.40	465.00	595.63	0.00	595.64	367.80	4.43	2.30	86.18

SECTION NUMBER	DISCHARGE CFS	CWSEL	CWSEL DIFF EACH Q	CWSEL DIFF EACH SECTION	CWSEL-WSELK	TOPWID	T.W. DIFF	LENGTH
0.000	200.001	581.100	0.000	0.000	0.000	154.166	0.000	0.000
0.000	300.001	581.600	.500	0.000	0.000	159.999	-5.833	0.000
0.000	465.001	581.900	.300	0.000	0.000	159.999	-5.833	0.000
140.000	200.001	581.530	0.000	.430	0.000	89.999	0.000	140.000
140.000	300.001	581.997	.468	.397	0.000	89.999	-.000	140.000
140.000	465.001	582.452	.455	.552	0.000	89.999	-.000	140.000
285.000	200.001	581.864	0.000	.334	0.000	17.830	0.000	145.000
285.000	300.001	582.404	.540	.406	0.000	17.830	0.000	145.000
285.000	465.001	583.005	.601	.553	0.000	17.830	0.000	145.000
315.000	200.001	581.921	0.000	.057	0.000	17.830	0.000	30.000
315.000	300.001	582.495	.574	.091	0.000	17.830	0.000	30.000
315.000	465.001	583.163	.669	.158	0.000	17.830	0.000	30.000
405.000	200.001	582.157	0.000	.237	0.000	165.465	0.000	90.000
405.000	300.001	582.846	.688	.351	0.000	202.585	-37.120	90.000
405.000	465.001	583.673	.827	.510	0.000	234.491	-69.026	90.000
500.000	200.001	582.488	0.000	.331	0.000	187.216	0.000	95.000
500.000	300.001	583.044	.555	.198	0.000	211.084	-23.867	95.000
500.000	465.001	583.799	.756	.126	0.000	237.088	-49.871	95.000
2000.000	200.001	588.000	0.000	5.511	0.000	50.126	0.000	1500.000
2000.000	300.001	588.221	.221	5.177	0.000	57.697	-7.572	1500.000
2000.000	465.001	588.302	.082	4.503	0.000	60.384	-10.259	1500.000
3932.000	200.001	592.280	0.000	4.281	0.000	180.921	0.000	1932.000
3932.000	300.001	592.946	.666	4.725	0.000	196.436	-15.515	1932.000
3932.000	465.001	593.819	.873	5.517	0.000	256.911	-75.990	1932.000
3991.000	200.001	592.277	0.000	-.003	0.000	180.794	0.000	59.000
3991.000	300.001	592.941	.664	-.005	0.000	196.308	-15.513	59.000
3991.000	465.001	593.813	.872	-.006	0.000	256.159	-75.365	59.000
3992.000	200.001	592.280	0.000	.003	0.000	180.822	0.000	1.000
3992.000	300.001	592.962	.682	.021	0.000	196.530	-15.708	1.000
3992.000	465.001	593.848	.886	.034	0.000	261.444	-80.622	1.000
4008.000	200.001	592.312	0.000	.032	0.000	181.802	0.000	16.000
4008.000	300.001	592.989	.677	.027	0.000	197.359	-15.557	16.000
4008.000	465.001	593.869	.880	.021	0.000	263.867	-82.065	16.000
4009.000	200.001	592.311	0.000	-.001	0.000	181.845	0.000	1.000
4009.000	300.001	592.977	.666	-.012	0.000	197.245	-15.401	1.000
4009.000	465.001	593.849	.872	-.019	0.000	262.940	-81.096	1.000
4024.000	200.001	592.377	0.000	.066	0.000	183.459	0.000	15.000

5700.000	200.001	593.717	0.000	1.340	0.000	344.085	0.000	1676.000
5700.000	300.001	594.245	.528	1.198	0.000	405.299	-61.214	1676.000
5700.000	465.001	594.962	.717	1.037	0.000	468.014	-123.929	1676.000
7150.000	200.001	594.782	0.000	1.065	0.000	274.730	0.000	1450.000
7150.000	300.001	595.131	.349	.886	0.000	297.831	-23.101	1450.000
7150.000	465.001	595.630	.499	.668	0.000	367.801	-93.071	1450.000

DATA FOR LAST CROSS SECTION

PROFILE	TYPE ENC	TARGET	TOP WIDTH AREA-ACRES	TOP WIDTH AREA-DIFF
1	0.000	0.000	31.199	0.000
2	0.000	0.000	35.273	4.074
3	0.000	0.000	42.273	11.073

?*?*?*

3/ Ira twp FIS

DNR check, sections

Swan Cr. sections

computer station	station letter	comment
0+00	A	(same invert)
3+15	B	dupe of A
3+74	d/s side ℄ M-29, sta 4+00, line #58	
4+26	U/s side	dupe of 374
5+00	C	line #57
5+84	d/s side ℄ Ira Rd, sta 6+00, line #56	
6+16	U/s side	dupe of 584
6+45	D	line #55
16+00	E	line #24
30+00	F	line #25
43+00	G	line #26
64+00	H	line #27
74+00	I	line #28
82+35		dupe of 87+65
86+34	J	℄ Shortcut, sta 86+50 line #29
86+66	K	
87+65		dupe line #30
99+00	L	line #31 2 channels
116+00	M	line #32
131+50	N	line #33
149+84		dupe of 157+66
155+84	O	℄ Arnold sta 15600, line #34
156+16	P	
157+66		line #35

computer station	station letter	comment
		℄ Hessen Rd sta 162+50, line #35
162+66	R	check flow continuity
164+16		line #37
180+00	S	line #38
202+00	T	line #39
228+00	U	line #40
242+00	V	line #41
260+00	W	line #42

THIS RUN EXECUTED 10 APR 78 04.13.42

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**********************************************
  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
**********************************************

C
T1     FLOOD INSURANCE STUDY
T2     IRA TOWNSHIP   10 YR. FLOOD
T3     SWAN CREEK

J1  ICHECK     INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ
          0.       2.       0.       0.  0.000000     0.00     0.0   1150.  575.800    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  201.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000

NC      .030     .030     .040     .100     .300    0.000    0.000    0.000    0.000    0.000

X1      0.000   19.000  300.000  360.000    0.000    0.000    0.000    0.000    0.000    0.000
GR    580.700    0.000  581.200   50.000  581.500  150.000  581.300  200.000  582.300  250.000
GR    583.300  300.000  582.300  308.000  567.500  318.000  566.100  328.000  566.200  339.000
GR    565.700  348.000  576.800  353.000  583.300  360.000  583.000  400.000  582.300  450.000
GR    581.700  500.000  581.100  560.000  581.100  614.000  580.700  660.000    0.000    0.000

X1    315.000    0.000    0.000    0.000  315.000  315.000  315.000    0.000    0.000    0.000

          DOWNSTREAM SECTION AT M-29

X1    374.000   21.000  300.000  345.000   59.000   59.000   59.000    0.000    0.000    0.000
X3     10.000    0.000    0.000    0.000    0.000    0.000    0.000  579.300  579.300    0.000
GR    580.700    0.000  581.200   50.000  581.500  150.000  581.300  200.000  582.300  250.000
GR    582.300  299.900  577.300  300.000  576.400  310.000  560.300  320.000  566.500  330.000
GR    566.700  340.000  570.800  345.000  576.500  345.100  576.800  353.000  582.300  360.000
GR    583.000  400.000  582.300  450.000  581.700  500.000  581.100  560.000  581.100  614.000
GR    580.700  660.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000
SA      0.000    1.200    2.500    0.000   19.400    0.000  412.000    1.000    0.000    0.000

          UPSTREAM SECTION AT M-29

X1    426.000    0.000    0.000    0.000   52.000   52.000   52.000    0.000    0.000    0.000
X2      0.000    0.000    1.000  579.300  582.300    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  582.300  582.300    0.000
BT      4.000    0.000  582.500  580.700  300.000  582.800  579.300  345.000  582.800  579.300
BT    660.000  582.300  580.700    0.000    0.000    0.000    0.000    0.000    0.000    0.000

X1    500.000   19.000  300.000  360.000   74.000   74.000   74.000    0.000    0.000    0.000
GR    580.700    0.000  581.200   50.000  581.500  150.000  581.300  200.000  582.300  250.000
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GR	[illegible]	300.000	[illegible]	345.000	567.500	319.000	564.100	328.000	566.200	330.000
GR	565.700	348.000	576.800	353.000	583.300	360.000	583.000	400.000	582.300	450.000
GR	[illegible]	560.000	581.100	614.000	580.700	660.000	0.000	0.000	0.000	0.000

DOWNSTREAM SECTION AT IRA ROAD

X1	584.000	17.000	300.000	345.000	84.000	84.000	84.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	779.500	779.500	0.000
GR	580.700	0.000	581.200	50.000	581.500	150.000	580.300	200.000	581.300	250.000
GR	581.300	299.900	576.500	300.000	568.000	312.000	567.000	320.000	567.200	340.000
GR	574.800	345.000	582.300	346.000	582.300	450.000	581.700	500.000	581.100	560.000
GR	581.100	614.000	580.700	660.000	0.000	0.000	0.000	0.000	0.000	0.000
SB	0.000	1.150	2.500	0.000	35.000	0.000	500.000	.400	0.000	0.000

UPSTREAM SECTION AT IRA ROAD

X1	616.000	0.000	0.000	0.000	32.000	32.000	32.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	579.500	580.400	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	580.400	580.400	0.000
BT	6.000	0.000	580.700	580.700	200.000	580.400	580.300	300.000	581.300	579.500
BT	345.000	581.700	579.500	450.000	582.400	582.300	660.000	582.300	580.700	0.000

X1	645.000	17.000	300.000	410.000	29.000	29.000	29.000	0.000	0.000	0.000
GR	580.500	0.000	580.700	50.000	579.800	100.000	580.400	150.000	580.000	250.000
GR	579.300	300.000	574.700	310.000	571.300	336.000	568.600	370.000	570.100	390.000
GR	579.300	410.000	580.800	460.000	579.000	510.000	579.200	560.000	579.100	610.000
GR	579.900	660.000	579.300	709.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.090	.090	.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	1600.000	26.000	300.000	645.000	955.000	955.000	955.000	0.000	0.000	0.000
GR	576.500	0.000	576.300	100.000	576.000	150.000	576.100	200.000	576.100	250.000
GR	576.900	300.000	576.100	306.000	574.600	314.000	574.400	320.000	573.300	325.000
GR	574.200	330.000	574.300	370.000	574.300	400.000	574.300	450.000	573.100	500.000
GR	573.000	528.000	572.000	550.000	569.700	600.000	570.300	620.000	573.300	640.000
GR	576.100	642.000	577.600	645.000	579.000	694.000	576.800	745.000	579.300	795.000
GR	579.300	825.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.030	.060	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OT	0.000	740.000	1150.000	1350.000	1845.000	0.000	0.000	0.000	0.000	0.000

X1	3000.000	20.000	337.000	514.000	1400.000	1400.000	1400.000	0.000	0.000	0.000
GR	581.500	0.000	581.300	60.000	580.300	200.000	579.600	250.000	578.200	300.000
GR	576.500	337.000	576.200	340.000	575.100	380.000	575.200	392.000	574.300	440.000
GR	572.300	480.000	573.300	500.000	574.300	511.000	576.500	514.000	576.900	528.000
GR	576.500	552.000	577.000	576.000	577.200	654.000	578.300	700.000	580.300	750.000
NC	.130	.156	.104	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	4300.000	30.000	300.000	574.000	1300.000	1300.000	1300.000	0.000	0.000	0.000
GR	584.100	0.000	583.300	100.000	582.500	150.000	582.300	200.000	580.300	250.000
GR	577.000	300.000	576.700	310.000	572.400	340.000	572.300	370.000	573.900	395.000
GR	574.300	400.000	575.300	410.000	576.100	420.000	576.400	450.000	576.200	460.000
GR	576.400	470.000	576.100	480.000	576.400	490.000	576.300	530.000	576.100	540.000
GR	576.400	550.000	576.400	570.000	576.900	574.000	573.300	610.000	580.000	630.000
GR	581.600	680.000	580.330	705.000	581.300	730.000	581.900	830.000	582.600	840.000
NC	.070	.120	.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	6400.000	21.000	300.000	370.000	2100.000	2100.000	2100.000	0.000	0.000	0.000
GR	588.400	0.000	589.000	100.000	588.400	150.000	587.100	200.000	587.100	250.000
GR	586.800	300.000	575.600	328.000	573.300	330.000	571.600	335.000	571.600	341.000
GR	572.300	387.000	574.000	392.000	575.500	395.000	576.300	[illegible]	578.200	[illegible]

GR	577.300	670.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.070	.070	.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	7400.000	18.000	302.000	351.000	1000.000	1000.000	1000.000	0.000	0.000	0.000
GR	588.200	0.000	588.200	60.000	588.300	100.000	588.100	150.000	587.400	200.000
GR	578.900	239.000	580.000	300.000	577.300	302.000	574.200	310.000	572.800	320.000
GR	572.600	330.000	574.000	340.000	577.300	350.000	578.300	351.000	578.300	400.000
GR	578.000	450.000	578.100	500.000	591.300	590.000	0.000	0.000	0.000	0.000
NC	.140	.140	.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	9235.000	13.000	150.000	184.000	835.000	835.000	835.000	0.000	0.000	0.000
GR	595.400	0.000	584.300	50.000	583.900	100.000	584.800	150.000	577.800	154.000
GR	576.500	160.000	576.300	170.000	577.800	180.000	584.000	184.000	582.400	234.000
GR	584.900	283.000	585.300	310.000	593.500	311.000	0.000	0.000	0.000	0.000

DOWNSTREAM SECTION AT SHORT CUT ROAD

X1	8434.000	13.000	150.000	190.000	399.000	399.000	399.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	582.500	582.500	0.000
GR	594.400	0.000	584.300	50.000	583.900	100.000	584.800	150.000	577.700	150.100
GR	573.200	155.000	573.200	180.000	574.400	189.900	584.000	190.000	582.400	234.000
GR	584.900	283.000	585.300	310.000	593.500	311.000	0.000	0.000	0.000	0.000
SS	0.000	1.170	2.500	0.000	35.750	0.000	352.000	.230	0.000	0.000

UPSTREAM SECTION AT SHORT CUT ROAD

X1	8666.000	0.000	0.000	0.000	32.000	32.000	32.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	582.500	585.900	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	585.900	585.900	0.000
BT	6.000	0.000	594.400	594.400	50.000	586.300	584.300	150.000	585.900	582.500
BT	190.000	585.900	583.000	283.000	585.900	584.900	311.000	593.500	593.500	0.000
X1	8765.000	13.000	150.000	184.000	99.000	99.000	99.000	0.000	0.000	0.000
GR	595.400	0.000	584.300	50.000	583.900	100.000	584.800	150.000	577.800	154.000
GR	576.500	160.000	576.300	170.000	577.800	180.000	584.000	184.000	582.400	234.000
GR	584.900	283.000	585.300	310.000	593.500	311.000	0.000	0.000	0.000	0.000
NC	.100	.120	.120	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	9900.000	16.000	100.000	286.000	1135.000	1135.000	1135.000	0.000	0.000	0.000
GR	588.900	0.000	582.300	25.000	580.900	50.000	581.800	100.000	578.300	106.000
GR	577.800	116.000	578.100	121.000	580.000	126.000	579.900	180.000	581.300	256.000
GR	578.100	263.000	577.300	269.000	578.100	280.000	582.300	286.000	591.300	305.000
GR	585.400	342.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.150	.150	.150	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	11600.000	24.000	100.000	288.000	1700.000	1700.000	1700.000	0.000	0.000	0.000
GR	596.500	0.000	581.400	60.000	581.700	100.000	579.700	105.000	578.800	109.000
GR	577.900	112.000	578.800	120.000	581.500	123.000	582.200	164.000	578.900	170.000
GR	578.300	173.000	578.900	190.000	578.400	202.000	578.900	223.000	581.300	250.000
GR	581.000	263.000	579.800	268.000	579.900	273.000	578.900	278.000	579.300	283.000
GR	582.800	288.000	582.300	295.000	582.300	350.000	581.600	400.000	0.000	0.000
NC	.138	.138	.150	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	13150.000	19.000	300.000	340.000	1550.000	1550.000	1550.000	0.000	0.000	0.000
GR	583.900	0.000	583.900	50.000	583.400	100.000	583.400	150.000	584.200	200.000
GR	584.100	250.000	583.300	300.000	582.000	304.000	581.300	310.000	580.700	310.000
GR	580.300	320.000	579.600	327.000	579.700	331.000	582.300	340.000	583.100	390.000

GR	583.100	440.000	584.000	490.000	583.700	540.000	591.600	600.000	0.000	0.000
NC	.115	.115	.130	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	14984.000	17.000	300.000	338.000	1834.000	1834.000	1834.000	0.000	0.000	0.000
GR	594.000	0.000	587.300	10.000	587.300	60.000	588.000	100.000	587.400	200.000
GR	587.800	250.000	586.200	300.000	583.900	307.000	583.000	311.000	583.900	332.000
GR	587.700	338.000	587.100	390.000	587.500	440.000	587.300	490.000	588.000	540.000
GR	587.700	588.000	590.200	600.000	0.000	0.000	0.000	0.000	0.000	0.000

DOWNSTREAM SECTION AT ARNOLD ROAD

X1	15584.000	17.000	300.000	330.000	600.000	600.000	600.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	260.000	0.000	600.000	0.000	0.000	0.000	0.000
GR	594.000	0.000	587.300	10.000	587.300	60.000	588.000	100.000	587.400	200.000
GR	587.800	250.000	586.200	300.000	582.300	300.100	581.300	320.000	582.400	330.000
GR	587.700	338.000	587.100	390.000	587.500	440.000	587.300	490.000	588.000	540.000
GR	587.700	588.000	590.200	600.000	0.000	0.000	0.000	0.000	0.000	0.000
SB	0.000	1.210	2.500	0.000	25.500	0.000	183.000	.340	0.000	0.000

UPSTREAM SECTION AT ARNOLD ROAD

X1	15616.000	0.000	0.000	0.000	32.000	32.000	32.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	587.900	589.100	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	260.000	0.000	600.000	0.000	0.000	0.000	0.000
BT	6.000	0.000	594.000	594.000	200.000	593.300	587.400	300.000	589.700	587.900
BT	330.000	589.300	587.900	440.000	589.100	587.500	600.000	590.200	590.200	0.000
X1	15766.000	17.000	300.000	338.000	150.000	150.000	150.000	0.000	0.000	0.000
GR	594.000	0.000	587.300	10.000	587.300	60.000	588.000	100.000	587.400	200.000
GR	587.800	250.000	586.200	300.000	583.900	307.000	583.000	311.000	583.900	332.000
GR	587.700	338.000	587.100	390.000	587.500	440.000	587.300	490.000	588.000	540.000
GR	587.700	588.000	590.200	600.000	0.000	0.000	0.000	0.000	0.000	0.000

DOWNSTREAM SECTION AT HESSEN ROAD

X1	16234.000	19.000	300.000	338.000	468.000	468.000	468.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	110.000	0.000	340.000	0.000	0.000	0.000	0.000
GR	594.000	0.000	587.300	10.000	587.300	60.000	588.000	100.000	587.400	200.000
GR	587.800	250.000	586.200	300.000	585.300	300.100	583.200	310.000	583.200	320.000
GR	583.800	325.000	584.300	330.000	587.700	338.000	587.100	390.000	587.500	440.000
GR	587.300	490.000	588.000	540.000	587.700	588.000	590.200	600.000	0.000	0.000
SB	0.000	1.200	2.500	0.000	24.750	0.000	200.000	.360	0.000	0.000

UPSTREAM SECTION AT HESSEN ROAD

X1	16266.000	0.000	0.000	0.000	32.000	32.000	32.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	590.500	590.600	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	110.000	0.000	340.000	0.000	0.000	0.000	0.000
BT	6.000	0.000	594.000	594.000	200.000	590.600	587.400	300.000	591.500	590.500
BT	330.000	592.300	590.800	390.000	596.300	587.100	600.000	590.200	590.200	0.000
NC	.090	.090	.090	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	16416.000	13.000	70.000	80.000	150.000	150.000	150.000	0.000	0.000	0.000
GR	596.000	0.000	595.300	20.000	591.800	46.000	586.300	50.000	586.100	70.000
GR	583.400	73.000	586.000	80.000	587.700	120.000	588.000	170.000	587.200	220.000
GR	587.300	270.000	588.200	320.000	587.200	370.000	0.000	0.000	0.000	0.000
NC	.130	.130	.065	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	[illegible]	[illegible]	[illegible]	[illegible]	1584.000	[illegible]	1584.000	0.000	0.000	0.000
GR	599.300	0.000	593.500	64.000	589.200	78.000	588.200	99.000	589.200	103.000
GR	[illegible]	110.000	590.800	160.000	591.100	[illegible]	589.400	304.000	590.300	370.0[illegible]
NC	[illegible]	.155	.127	0.000	0.000	0.000	0.000	0.000	0.000	0.0[illegible]
X1	20200.000	14.000	260.000	280.000	2200.000	2200.000	2200.000	0.000	0.000	0.000
GR	606.300	0.000	595.200	35.000	593.400	60.000	592.900	160.000	593.300	260.000
GR	590.300	245.000	588.600	273.000	589.500	283.000	592.500	289.000	593.200	330.000
GR	593.400	437.000	594.300	400.000	595.000	510.000	598.300	530.000	0.000	0.000
NC	.115	.115	.081	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	22800.000	14.000	200.000	250.000	2600.000	2600.000	2600.000	0.000	0.000	0.000
GR	612.100	0.000	609.600	50.000	605.300	100.000	598.900	150.000	595.500	200.000
GR	592.900	205.000	591.200	236.000	592.900	246.000	596.100	250.000	596.300	300.000
GR	601.300	400.000	606.200	450.000	599.600	500.000	602.300	550.000	0.000	0.000
NC	.142	.142	.104	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	24200.000	11.000	170.000	210.000	1400.000	1400.000	1400.000	0.000	0.000	0.000
GR	611.100	0.000	597.400	43.000	596.700	70.000	597.500	120.000	597.300	170.000
GR	590.100	180.000	592.400	200.000	598.300	210.000	597.800	270.000	599.300	320.000
GR	607.300	370.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.050	.100	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	26000.000	12.000	300.000	334.000	1800.000	1800.000	1800.000	0.000	0.000	0.000
GR	610.300	0.000	609.300	50.000	609.200	100.000	609.100	200.000	599.300	250.000
GR	600.300	300.000	595.300	315.000	594.300	322.000	594.700	330.000	599.600	334.000
GR	600.000	342.000	614.800	360.000	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

THIS RUN EXECUTED 10 APR 78 04.13.43

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**********************************************
  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
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T1      FLOOD INSURANCE STUDY
T2      IRA TOWNSHIP    100 YR. FLOOD
T3      SAAN CREEK
```

J1	ICHECK	INQ	NINV	IDTR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	4.	0.	0.	0.000000	0.00	0.0	2140.	575.800	0.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLOC	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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*PROF 3

CCHV=    .100 CEHV=    .300
*SECNO .000
   SECNO     DEPTH     CWSEL     CRITWS    WSELK     EG        HV        HL        OLOSS     BANK ELEV
     0       OLOB      OCH       OROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
    TIME     VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     TTRIAL    IOC       ICONT     CORAR     TOPWID      ENDST

     0.00     10.10    575.80      0.00    575.80    576.24       .44      0.00      0.00    583.30
     2140.        0.     2140.        0.        0.       402.        0.        0.        0.    583.30
     0.00      0.00      5.33      0.00      .030      .040      .030     0.000    565.70    304.00
   .001618        0.        0.        0.         0         0         0      0.00     48.55    352.55

*SECNO 315.000
   315.00     10.62    576.32      0.00      0.00    576.71       .39       .47       .01    583.30
     2140.        0.     2140.        0.        0.       427.        0.        3.        0.    583.30
      .02      0.00      5.01      0.00      .030      .040      .030      .040    565.70    303.73
   .001356      315.      315.      315.         1         0         0      0.00     49.06    352.78

*SECNO 374.000

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=      579.30 ELREA=      579.30

          DOWNSTREAM SECTION AT M=29

   374.00      9.35    575.85      0.00      0.00    577.11      1.27       .14       .26    577.30
     2140.        0.     2140.        0.        0.       237.        0.        3.        0.    570.80
      .02      0.00      9.03      0.00      .030      .040      .030      .040    566.50    311.02
   .005134        59.       59.       59.         2         0         0      0.00     33.98    345.00

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SR NOT SPECIFIED
   SR     XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
         0.00      1.20      2.50      0.00      19.40     0.00      412.00    1.00      506.50    506.50

*SECNO 426.000

6070,LOW FLOW BY NORMAL BRIDGE

EGPRS=      0.000  EGLWC=   577.116  ELLC=   579.300  PCWSE=   575.848  ELTRD=   582.300

3370 NORMAL BRIDGE,NPD=  4 MIN ELTRD=  582.30 MAX ELLC=  579.30

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=      582.30 ELREA=      582.30

          UPSTREAM SECTION AT M=29

   426.00      9.70    576.28      0.00      0.00    577.37      1.13       .25       .01    577.30
     2140.        0.     2140.        0.        0.       250.        0.        4.        0.    570.80
      .02      0.00      8.55      0.00      .030      .040      .030      .040    566.50    312.02
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.004582 52. 52. 52. 2 0 0 0.00 34.51 345.00

*SECNO 0.000

3301 HV CHANGED MORE THAN HVINS

SECNO	DEPTH	C*SEL	CHWS	*SELK	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	COPAR	TOPWID	ENDST
500.00	11.57	577.27	0.00	0.00	577.59	.32	.14	.08	583.30
2140.	0.	2140.	0.	0.	475.	0.	4.	1.	583.30
.03	0.00	4.51	0.00	.030	.040	.030	.040	565.70	303.21
.001001	74.	74.	74.	2	0	0	0.00	50.30	353.51

*SECNO 584.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 779.50 ELREA= 779.50

DOWNSTREAM SECTION AT IRA ROAD

584.00	10.25	577.25	0.00	0.00	577.76	.51	.11	.06	576.50
2140.	0.	2140.	0.	0.	372.	0.	5.	1.	574.80
.03	0.00	5.75	0.00	.030	.040	.030	.040	567.00	300.00
.001752	84.	84.	84.	2	0	0	0.00	45.00	345.00

SPECIAL BRIDGE

6070,VARIABLE ELCHU OR ELCHD ON CARD SR NOT SPECIFIED

SE	XK	XKOR	COEQ	PDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.15	2.50	0.00	35.00	0.00	500.00	.40	567.00	567.00

*SECNO 616.000

6070,LOW FLOW BY NORMAL BRIDGE

EGPRS= 0.000 EGLWC= 577.750 ELLC= 579.500 PCWSE= 577.245 ELTRD= 580.400

3370 NORMAL BRIDGE,NRD= 6 MIN ELTRD= 580.40 MAX ELLC= 579.50

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 580.40 ELREA= 580.40

UPSTREAM SECTION AT IRA ROAD

616.00	10.31	577.31	0.00	0.00	577.81	.51	.06	.00	576.50
2140.	0.	2140.	0.	0.	375.	0.	5.	1.	574.80
.03	0.00	5.71	0.00	.030	.040	.030	.040	567.00	300.00
.001710	32.	32.	32.	2	0	0	0.00	45.00	345.00

*SECNO 645.000

645.00	9.10	577.70	0.00	0.00	577.88	.18	.03	.03	579.30
2140.	0.	2140.	0.	0.	625.	0.	6.	1.	579.30
.03	0.00	3.42	0.00	.030	.040	.030	.040	568.60	303.48
.000704	29.	29.	29.	2	0	0	0.00	103.04	406.52

*SECNO 1600.000

3265 DIVIDED FLOW

3280 CROSS SECTION 1600.00 EXTENDED 1.67 FEET

1600.00	8.48	578.18	0.00	0.00	578.20	.02	.30	.02	576.90
2140.	189.	1943.	7.	572.	1725.	46.	38.	10.	577.60
.29	.33	1.13	.16	.090	.050	.090	.046	569.70	0.00
.000170	955.	955.	955.	2	0	0	0.00	724.36	772.46

*SECNO 3000.000

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
3000.00	6.16	578.46	0.00	0.00	578.50	.04	.29	.01	576.50
1350.	38.	1177.	135.	42.	717.	247.	92.	28.	576.50
.54	.91	1.64	.55	.030	.040	.060	.043	572.30	290.72
.000305	1400.	1400.	1400.	2	0	0	0.00	413.28	704.00

*SECNO 4300.000

4300.00	6.85	579.15	0.00	0.00	579.17	.02	.67	.00	577.00
1350.	13.	1193.	144.	35.	1056.	197.	126.	40.	576.90
.88	.39	1.13	.73	.130	.104	.156	.061	572.30	267.49
.001037	1300.	1300.	1300.	2	0	0	0.00	359.96	627.45

*SECNO 6400.000

3280 CROSS SECTION 6400.00 EXTENDED 3.64 FEET

6400.00	9.35	580.95	0.00	0.00	580.97	.02	1.80	.00	586.80
1350.	0.	545.	805.	0.	343.	1051.	191.	57.	578.20
1.41	0.00	1.59	.77	.070	.080	.120	.068	571.60	314.64
.000722	2100.	2100.	2100.	2	0	0	0.00	355.36	670.00

*SECNO 7400.000

7400.00	9.00	581.64	0.00	0.00	581.66	.03	.69	.00	577.30
1350.	141.	523.	686.	158.	365.	560.	219.	64.	578.30
1.63	.89	1.43	1.22	.070	.100	.070	.072	572.60	225.76
.000669	1000.	1000.	1000.	2	0	0	0.00	298.36	524.12

*SECNO 8235.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

8235.00	6.41	582.71	0.00	0.00	583.71	1.00	1.75	.29	584.80
1350.	0.	1349.	1.	0.	168.	2.	231.	68.	584.00
1.66	0.00	8.35	.61	.140	.100	.140	.075	576.30	151.20
.000167	835.	835.	835.	3	0	0	0.00	47.53	240.00

*SECNO 8634.000

3301 HV CHANGED MORE THAN HVINS

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	WV	HL	OLOSS	BANK ELEV
O	QLOB	QCH	QROB	ALOB	ACH	APOB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	VTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ESDST

DOWNSTREAM SECTION AT SHORT CUT ROAD

8634.00	12.31	585.51	0.00	0.00	585.59	.08	1.79	.09	584.80
1350.	67.	1145.	138.	133.	474.	205.	236.	69.	584.00
1.71	.50	2.41	.67	.140	.100	.140	.076	573.20	43.97
.001613	300.	300.	300.	8	0	0	0.00	266.06	310.03

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COEP	PDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.17	2.50	0.00	35.75	0.00	352.00	.23	573.20	573.20

*SECNO 8666.000
PRESSURE FLOW

EGPRS	EGLWC	HX	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
585.78	585.60	0.00	0.	1350.	352.	352.	582.50	585.90

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 585.90 ELREA= 585.90

UPSTREAM SECTION AT SHORT CUT ROAD

8666.00	12.46	585.46	0.00	0.00	585.78	.12	.19	0.00	584.80
1350.	0.	1350.	0.	0.	480.	0.	236.	69.	584.00
1.71	0.00	2.81	0.00	.140	.100	.140	.076	573.20	150.00
.002200	32.	32.	32.	2	0	0	0.00	40.00	190.00

*SECNO 8765.000

8765.00	9.65	585.95	0.00	0.00	586.06	.11	.28	.00	584.80
1350.	163.	875.	312.	179.	276.	273.	238.	70.	584.00
1.72	.91	3.17	1.14	.140	.100	.140	.076	576.30	42.57
.003655	99.	99.	99.	2	0	0	0.00	267.51	310.08

*SECNO 9900.000
3280 CROSS SECTION 9900.00 EXTENDED 1.40 FEET

9900.00	9.49	586.79	0.00	0.00	586.80	.01	.73	.01	581.80
1350.	309.	929.	113.	441.	1296.	222.	273.	77.	582.30
2.18	.70	.72	.51	.100	.120	.120	.081	577.30	7.97
.000258	1135.	1135.	1135.	3	0	0	0.00	334.03	342.00

*SECNO 11600.000
3280 CROSS SECTION 11600.00 EXTENDED 5.68 FEET

11600.00	9.39	587.24	0.00	0.00	587.28	.01	.49	.00	581.70

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   1550.     155.     893.     303.     298.    1363.     573.     355.      91.    582.80
    2.95      .52      .66      .53     .150     .150     .150     .091   577.90     36.64
  .0003[illegible]   1700.    1700.    1700.       3        0        [illegible]     0.00   363.36    400.00

*SECNO 13150.000
3280 CROSS SECTION  13150.00 EXTENDED       3.91 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       WIN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 13150.00     8.21    587.81      0.00      0.00    587.82       .00       .53       .00    583.30
    1350.     630.     190.      531.     1213.     280.      966.      438.      108.    582.30
     3.73      .52      .68       .55      .138      .150      .138      .098    579.60      0.00
  .000365    1550.    1550.     1550.         2         0         0      0.00    571.22    571.22

*SECNO 14984.000
 14984.00     6.26    589.26      0.00      0.00    589.29       .03      1.47       .01    586.20
    1350.     542.     354.      454.      519.      196.      444.      514.      132.    587.70
     4.14     1.04     1.81      1.02      .115      .130      .115      .102    583.00      7.06
  .002966    1834.    1834.     1834.         2         0         0      0.00    588.46    595.52

*SECNO 15584.000
3280 CROSS SECTION  15584.00 EXTENDED        .23 FEET

3470 ENCROACHMENT STATIONS=      260.0      600.0  TYPE=      1  TARGET=      340.000

        DOWNSTREAM SECTION AT ARNOLD ROAD

 15584.00     9.13    590.43      0.00      0.00    590.45       .02      1.16       .00    586.20
    1350.     153.     421.      776.      143.      258.      788.      530.      138.    582.40
     4.28     1.07     1.63       .98      .115      .130      .115      .103    581.30    260.00
  .001362     600.     600.      600.         2         0         0      0.00    340.00    600.00

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED
SB   XK        XKOR      COEQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.00      1.21      2.50      0.00      25.50     0.00      183.00      .34     581.30    581.30

*SECNO 15616.000
3280 CROSS SECTION  15616.00 EXTENDED        .41 FEET

PRESSURE AND WEIR FLOW

  EGPRS      EGLWC      H3        QWEIR     QPR       BAREA     TRAPEZOID     ELLC      ELTRD
                                                                 AREA
   591.45    590.45     0.00      754.      598.      183.      183.      587.90    589.10

3470 ENCROACHMENT STATIONS=      260.0      600.0  TYPE=      1  TARGET=      340.000

        UPSTREAM SECTION AT ARNOLD ROAD
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15616.00	9.31	590.61	0.00	0.00	590.63	.02	.18	0.00	586.20
135	153.	404.	793.	151.	263.	837	531.	139.	582.40
4	1.02	1.53	.95	.115	.130	.11	.103	581.30	260.00
.001159	32.	32.	32.	2	0	4	0.00	340.00	600.00

*SECNO 15766.000
3280 CROSS SECTION 15766.00 EXTENDED .53 FEET

15766.00	7.73	590.73	0.00	0.00	590.74	.01	.11	.00	586.20
1350.	607.	222.	521.	950.	251.	826.	537.	140.	587.70
4.35	.64	.88	.63	.115	.130	.115	.103	583.00	4.88
.000509	150.	150.	150.	2	0	0	0.00	595.12	600.00

*SECNO 16234.000
3280 CROSS SECTION 16234.00 EXTENDED .93 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	XLOBP	ITRIAL	IDC	ICONT	COBAR	IOPWID	ENDST

3470 ENCROACHMENT STATIONS= 110.0 340.0 TYPE= 1 TARGET= 230.000

DOWNSTREAM SECTION AT HESSEN ROAD

16234.00	7.92	591.12	0.00	0.00	591.15	.03	.41	.01	586.20
1350.	897.	448.	4.	694.	262.	7.	553.	145.	587.70
4.48	1.29	1.71	.64	.115	.130	.115	.104	583.20	110.00
.001807	468.	468.	468.	0	0	0	0.00	230.00	340.00

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COEF	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.20	2.50	0.00	24.75	0.00	200.00	.36	583.20	583.20

*SECNO 16266.000
3280 CROSS SECTION 16266.00 EXTENDED 1.04 FEET

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
591.97	591.15	0.00	263.	1084.	200.	200.	590.50	590.60

3470 ENCROACHMENT STATIONS= 110.0 340.0 TYPE= 1 TARGET= 230.000

UPSTREAM SECTION AT HESSEN ROAD

16266.00	8.44	591.64	0.00	0.00	591.67	.03	.51	0.00	586.20
1350.	926.	420.	4.	792.	282.	8.	554.	145.	587.70
4.44	1.17	1.49	.55	.115	.130	.115	.104	583.20	110.00
.001243	32.	32.	32.	2	0	2	0.00	230.00	340.00

*SECNO [illegible]16.000
3280 CROSS SECTION 16416.00 EXTENDED 4.56 FEET

16416.00	8.36	591.76	0.00	0.00	591.78	.01	.11	.00	586.10
1350.	128.	83.	1130.	122.	70.	1230.	558.	146.	586.00
0.00	1.05	1.18	.93	.090	.090	.090	.104	583.40	46.03
.000455	150.	150.	150.	2	0	0	0.00	323.97	370.00

*SECNO 18000.000
3280 CROSS SECTION 18000.00 EXTENDED 2.95 FEET

18000.00	5.05	593.25	0.00	0.00	593.31	.06	1.52	.01	593.50
1350.	0.	474.	876.	0.	160.	690.	599.	157.	591.70
4.72	0.00	2.96	1.27	.130	.065	.130	.101	588.20	64.81
.003212	1584.	1584.	1584.	2	0	0	0.00	305.19	370.00

*SECNO 20200.000

20200.00	9.28	596.88	0.00	0.00	596.89	.01	3.57	.01	593.30
1350.	580.	251.	519.	819.	198.	763.	666.	177.	592.50
5.49	.71	1.27	.68	.155	.127	.155	.104	588.60	29.71
.000975	2200.	2200.	2200.	3	0	0	0.00	491.66	521.37

*SECNO 22800.000

3245 DIVIDED FLOW

SECNO	DEPTH	CWSEL	CRTWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNP	WTN	ELMTN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
22800.00	8.64	599.84	0.00	0.00	599.91	.07	3.00	.02	595.50
1350.	122.	932.	296.	135.	369.	308.	743.	109.	596.10
5.84	.90	2.53	.96	.115	.081	.115	.101	591.20	142.67
.001391	2600.	2600.	2600.	3	0	0	0.00	234.30	504.41

*SECNO 24200.000

24200.00	11.40	601.50	0.00	0.00	601.53	.03	1.62	.00	597.30
1350.	485.	606.	259.	572.	345.	370.	777.	208.	598.30
6.16	.85	1.76	.70	.142	.104	.142	.101	590.10	30.13
.000977	1400.	1400.	1400.	1	0	0	0.00	303.63	333.75

*SECNO 26000.000

26000.00	8.86	603.16	0.00	0.00	603.34	.18	1.76	.05	600.30
1350.	404.	915.	31.	206.	232.	33.	813.	216.	599.60
6.31	1.96	3.98	.95	.050	.040	.100	.097	594.30	230.33
.000982	1900.	1900.	1900.	2	0	0	0.00	115.50	345.84

THIS RUN EXECUTED 10 APR 78 04.13.44

****
HEC2 RELEASE DATED NOV 76 UPDATED AUG1977
ERROR CODE = 01,02
MODIFICATION = 50,51,52,53
****

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

SWAN CREEK

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
0.000	0.00	0.00	0.00	565.70	1150.00	575.80	0.00	575.93	4.67	2.86	401.78	531.95
0.000	0.00	0.00	0.00	565.70	1820.00	575.80	0.00	576.12	11.71	4.53	401.78	531.95
0.000	0.00	0.00	0.00	565.70	2140.00	575.80	0.00	576.24	16.18	5.33	401.76	531.95
0.000	0.00	0.00	0.00	565.70	2955.00	575.80	0.00	576.64	30.86	7.35	401.78	531.95
315.000	315.00	0.00	0.00	565.70	1150.00	575.95	0.00	576.07	4.88	2.81	405.93	545.80
315.000	315.00	0.00	0.00	565.70	1820.00	576.17	0.00	576.47	10.30	4.34	419.77	567.00
315.000	315.00	0.00	0.00	565.70	2140.00	576.32	0.00	576.71	13.56	5.01	424.93	581.17
315.000	315.00	0.00	0.00	565.70	2955.00	576.81	0.00	577.47	22.07	6.55	451.14	626.99
374.000	59.00	0.00	0.00	566.50	1150.00	575.92	0.00	576.19	15.05	4.88	235.87	296.43
374.000	59.00	0.00	0.00	566.50	1820.00	575.84	0.00	576.76	37.32	7.49	234.68	297.92
374.000	59.00	0.00	0.00	566.50	2140.00	575.85	0.00	577.11	51.34	9.03	237.00	298.67
374.000	59.00	0.00	0.00	566.50	2955.00	575.80	0.00	578.25	100.09	12.56	235.29	295.36
426.000	52.00	582.30	579.30	566.50	1150.00	575.91	0.00	576.27	14.51	4.83	238.82	301.85
426.000	52.00	582.30	579.30	566.50	1820.00	576.09	0.00	576.95	33.63	7.42	245.30	313.86
426.000	52.00	582.30	579.30	566.50	2140.00	576.24	0.00	577.37	43.82	8.55	250.32	323.24
426.000	52.00	582.30	579.30	566.50	2955.00	577.00	0.00	578.76	72.22	10.63	277.93	34[illegible]
500.000	74.00	0.00	0.00	565.70	1150.00	576.23	0.00	576.34	4.03	2.72	422.62	572.57
500.000	74.00	0.00	0.00	565.70	1820.00	576.87	0.00	577.12	8.19	4.01	450.32	635.87
500.000	74.00	0.00	0.00	565.70	2140.00	577.27	0.00	577.59	10.01	4.51	474.60	676.24
500.000	74.00	0.00	0.00	565.70	2955.00	578.62	0.00	579.08	13.03	5.43	543.91	818.66
584.000	84.00	0.00	0.00	567.00	1150.00	576.22	0.00	576.41	7.68	3.53	325.87	414.84
584.000	84.00	0.00	0.00	567.00	1820.00	576.85	0.00	577.26	14.85	5.14	354.16	472.35
584.000	84.00	0.00	0.00	567.00	2140.00	577.25	0.00	577.76	17.52	5.75	372.05	511.21
584.000	84.00	0.00	0.00	567.00	2955.00	578.57	0.00	579.30	20.81	6.85	431.59	647.79
616.000	32.00	580.40	579.50	567.00	1150.00	576.24	0.00	576.44	7.60	3.52	327.03	417.06
616.000	32.00	580.40	579.50	567.00	1820.00	576.90	0.00	577.31	14.53	5.10	356.53	477.45
616.000	32.00	580.40	579.50	567.00	2140.00	577.31	0.00	577.81	17.10	5.71	374.91	517.52
616.000	32.00	580.40	579.50	567.00	2955.00	578.65	0.00	579.36	20.29	6.79	435.07	654.00
645.000	29.00	0.00	0.00	568.60	1150.00	576.38	0.00	576.46	4.66	2.33	492.98	532.55
645.000	29.00	0.00	0.00	568.60	1820.00	577.20	0.00	577.36	7.38	3.17	574.71	670.07
645.000	29.00	0.00	0.00	568.60	2140.00	577.70	0.00	577.88	7.94	3.42	625.15	759.38
645.000	29.00	0.00	0.00	568.60	2955.00	579.23	0.00	579.45	7.64	3.75	799.70	1069.41

SECND	XLCH	ELTWO	FLLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	A	.01K
1600.000	955.00	0.00	0.00	569.70	1150.00	576.72	0.00	576.73	1.78	.92	1359.79	861.62
1600.000	955.00	0.00	0.00	569.70	1820.00	577.67	0.00	577.69	1.86	1.10	1884.61	1335.90
1600.000	955.00	0.00	0.00	569.70	2140.00	578.18	0.00	578.20	1.70	1.13	2303.53	1643.09
1600.000	955.00	0.00	0.00	569.70	2955.00	579.68	0.00	579.70	1.16	1.11	3513.87	2744.70
3000.000	1400.00	0.00	0.00	572.30	740.00	577.05	0.00	577.09	4.92	1.57	491.47	333.47
3000.000	1400.00	0.00	0.00	572.30	1150.00	577.98	0.00	578.02	3.71	1.67	814.88	567.37
3000.000	1400.00	0.00	0.00	572.30	1350.00	578.46	0.00	578.50	3.05	1.64	1005.76	773.26
3000.000	1400.00	0.00	0.00	572.30	1845.00	579.85	0.00	579.88	1.59	1.44	1642.16	1464.79
4300.000	1300.00	0.00	0.00	572.30	740.00	577.98	0.00	577.99	10.51	.89	878.55	228.26
4300.000	1300.00	0.00	0.00	572.30	1150.00	578.77	0.00	578.79	10.64	1.07	1153.46	352.55
4300.000	1300.00	0.00	0.00	572.30	1350.00	579.15	0.00	579.17	10.37	1.13	1287.42	419.26
4300.000	1300.00	0.00	0.00	572.30	1845.00	580.26	0.00	580.28	8.15	1.10	1603.98	946.20
6400.000	2100.00	0.00	0.00	571.60	740.00	579.69	0.00	579.70	6.49	1.35	948.08	20[illegible]
6400.000	2100.00	0.00	0.00	571.60	1150.00	580.57	0.00	580.59	7.04	1.52	1259.66	433.40
6400.000	2100.00	0.00	0.00	571.60	1350.00	580.95	0.00	580.97	7.22	1.59	1393.56	502.51
6400.000	2100.00	0.00	0.00	571.60	1845.00	581.86	0.00	581.89	7.19	1.70	1718.21	685.39
7400.000	1000.00	0.00	0.00	572.60	740.00	580.36	0.00	580.38	6.93	1.29	710.08	281.15
7400.000	1000.00	0.00	0.00	572.60	1150.00	581.26	0.00	581.28	6.77	1.39	970.18	441.96
7400.000	1000.00	0.00	0.00	572.60	1350.00	581.64	0.00	581.66	6.69	1.43	1083.36	521.96
7400.000	1000.00	0.00	0.00	572.60	1845.00	582.53	0.00	582.56	6.31	1.50	1354.06	734.71
8235.000	835.00	0.00	0.00	576.30	740.00	591.72	0.00	582.18	219.56	5.42	136.65	40.98
8235.000	835.00	0.00	0.00	576.30	1150.00	592.44	0.00	583.25	330.23	7.22	159.23	62.48
8235.000	835.00	0.00	0.00	576.30	1350.00	582.71	0.00	583.71	401.67	8.05	169.98	67.36
8235.000	835.00	0.00	0.00	576.30	1845.00	583.22	582.12	584.72	556.09	9.88	201.66	78.28
8634.000	399.00	0.00	0.00	573.20	740.00	583.43	0.00	583.48	12.10	1.88	415.62	212.78
8634.000	399.00	0.00	0.00	573.20	1150.00	584.96	0.00	585.03	15.79	2.31	667.23	289.36
8634.000	399.00	0.00	0.00	573.20	1350.00	585.51	0.00	585.59	16.13	2.41	812.37	336.14
8634.000	399.00	0.00	0.00	573.20	1845.00	586.67	0.00	586.75	14.24	2.58	1122.80	457.87
8665.000	32.00	585.90	582.50	573.20	740.00	583.45	0.00	583.51	12.20	1.89	391.73	211.[illegible]
8666.000	32.00	585.90	582.50	573.20	1150.00	585.05	0.00	585.15	18.71	2.52	455.65	26[illegible]
8666.000	32.00	585.90	582.50	573.20	1350.00	585.60	0.00	585.78	22.00	2.81	479.89	287.[illegible]
8666.000	32.00	585.90	582.50	573.20	1845.00	586.87	0.00	586.94	14.65	2.47	1177.03	482.00
8765.000	00.00	0.00	0.00	576.30	740.00	583.59	0.00	583.79	71.84	3.65	232.60	87.31
8765.000	00.00	0.00	0.00	576.30	1150.00	585.30	0.00	585.44	46.47	3.38	555.47	168.69
8765.000	00.00	0.00	0.00	576.30	1350.00	585.95	0.00	586.06	36.55	3.17	727.87	223.30
8765.000	00.00	0.00	0.00	576.30	1845.00	587.06	0.00	587.15	29.31	3.09	1027.15	340.80
9900.000	1135.00	0.00	0.00	577.30	740.00	584.74	0.00	584.74	2.96	.81	1281.81	430.08
9900.000	1135.00	0.00	0.00	577.30	1150.00	586.22	0.00	586.22	2.60	.88	1765.69	712.54
9900.000	1135.00	0.00	0.00	577.30	1350.00	586.79	0.00	586.80	2.58	.72	1959.59	841.00
9900.000	1135.00	0.00	0.00	577.30	1845.00	587.88	0.00	587.89	2.78	.92	2323.97	1104.50
11600.000	1700.00	0.00	0.00	577.90	740.00	585.27	0.00	585.28	3.35	.56	1512.77	402.07
11600.000	1700.00	0.00	0.00	577.90	1150.00	586.71	0.00	586.71	3.18	.62	2027.21	544.96
11600.000	1700.00	0.00	0.00	577.90	1350.00	587.28	0.00	587.28	3.21	.66	2233.80	753.58
11600.000	1700.00	0.00	0.00	577.90	1845.00	588.41	0.00	588.42	3.47	.75	2647.82	990.33

STA NO	XLOB	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	A	.01K
13150.000	1550.00	0.00	0.00	579.60	740.00	585.97	0.00	585.97	6.31	.73	1010.01	204.48
13150.000	1550.00	0.00	0.00	579.60	1150.00	587.26	0.00	587.27	8.10	.88	2148.23	568.60
13150.000	1550.00	0.00	0.00	579.60	1350.00	587.81	0.00	587.82	3.65	.68	2458.89	706.44
13150.000	1550.00	0.00	0.00	579.60	1845.00	588.93	0.00	588.94	3.22	.70	3104.60	1027.94
14984.000	1834.00	0.00	0.00	583.00	740.00	588.41	0.00	588.44	45.36	1.98	654.49	109.67
14984.000	1834.00	0.00	0.00	583.00	1150.00	588.94	0.00	588.97	37.19	1.94	965.93	189.57
14984.000	1834.00	0.00	0.00	583.00	1350.00	589.26	0.00	589.29	29.66	1.81	1155.70	247.87
14984.000	1834.00	0.00	0.00	583.00	1845.00	590.10	0.00	590.12	18.47	1.57	1607.56	429.32
15584.000	600.00	0.00	0.00	581.30	740.00	589.53	0.00	589.54	9.86	1.20	881.41	235.71
15584.000	600.00	0.00	0.00	581.30	1150.00	590.15	0.00	590.17	12.55	1.54	1095.85	324.58
15584.000	600.00	0.00	0.00	581.30	1350.00	590.45	0.00	590.45	13.62	1.63	1182.83	365.75
15584.000	600.00	0.00	0.00	581.30	1845.00	591.09	0.00	591.12	14.00	1.50	1413.48	475.40
15616.000	32.00	589.10	587.90	581.30	740.00	589.71	0.00	589.72	7.98	1.18	949.15	24[illegible]
15616.000	32.00	589.10	587.90	581.30	1150.00	590.34	0.00	590.36	10.60	1.43	1162.93	353.[illegible]
15616.000	32.00	589.10	587.90	581.30	1350.00	590.61	0.00	590.63	11.60	1.53	1251.31	394.[illegible]
15616.000	32.00	589.10	587.90	581.30	1845.00	591.25	0.00	591.28	13.23	1.71	1471.31	507.22
15766.000	150.00	0.00	0.00	583.00	740.00	589.80	0.00	589.81	4.21	.73	1075.75	360.74
15766.000	150.00	0.00	0.00	583.00	1150.00	590.45	0.00	590.46	4.86	.84	1861.81	521.87
15766.000	150.00	0.00	0.00	583.00	1350.00	590.73	0.00	590.74	5.09	.88	2027.57	508.64
15766.000	150.00	0.00	0.00	583.00	1845.00	591.39	0.00	591.40	5.35	.97	2420.90	797.00
16234.000	468.00	0.00	0.00	583.20	740.00	590.11	0.00	590.13	12.98	1.30	730.32	205.43
16234.000	468.00	0.00	0.00	583.20	1150.00	590.82	0.00	590.85	16.74	1.60	891.67	281.06
16234.000	468.00	0.00	0.00	583.20	1350.00	591.12	0.00	591.15	18.07	1.71	962.86	317.62
16234.000	468.00	0.00	0.00	583.20	1845.00	591.81	0.00	591.85	20.64	1.95	1122.19	406.08
16266.000	32.00	590.60	590.50	583.20	740.00	590.16	0.00	590.20	33.10	2.09	486.54	125.63
16266.000	32.00	590.60	590.50	583.20	1150.00	591.31	0.00	591.33	11.42	1.38	1005.20	340.24
16266.000	32.00	590.60	590.50	583.20	1350.00	591.64	0.00	591.67	12.43	1.49	1092.06	392.95
16266.000	32.00	590.60	590.50	583.20	1845.00	592.31	0.00	592.34	15.16	1.74	1234.74	473.58
16416.000	150.00	0.00	0.00	583.40	740.00	590.35	0.00	590.36	4.84	1.05	965.60	336.21
16416.000	150.00	0.00	0.00	583.40	1150.00	591.42	0.00	591.43	4.31	1.11	1311.07	553.[illegible]
16416.000	150.00	0.00	0.00	583.40	1350.00	591.76	0.00	591.78	4.55	1.18	1422.11	63[illegible]
16416.000	150.00	0.00	0.00	583.40	1845.00	592.45	0.00	592.47	5.26	1.35	1646.73	804.23
18000.000	1584.00	0.00	0.00	588.20	740.00	592.07	0.00	592.14	47.18	2.05	462.16	107.73
18000.000	1584.00	0.00	0.00	588.20	1150.00	592.89	0.00	592.95	35.50	2.05	730.03	193.00
18000.000	1584.00	0.00	0.00	588.20	1350.00	593.25	0.00	593.31	32.12	2.06	850.00	238.19
18000.000	1584.00	0.00	0.00	588.20	1845.00	594.03	0.00	594.10	27.59	3.10	1090.53	351.26
20200.000	2200.00	0.00	0.00	588.60	740.00	595.81	0.00	595.82	8.45	1.05	1261.75	254.55
20200.000	2200.00	0.00	0.00	588.60	1150.00	596.55	0.00	596.56	9.39	1.20	1625.70	375.23
20200.000	2200.00	0.00	0.00	588.60	1350.00	596.88	0.00	596.89	9.75	1.27	1781.01	432.37
20200.000	2200.00	0.00	0.00	588.60	1845.00	597.59	0.00	597.60	10.33	1.39	2134.72	574.08
22800.000	2600.00	0.00	0.00	591.20	740.00	598.38	0.00	598.48	12.07	2.03	509.96	212.90
22800.000	2600.00	0.00	0.00	591.20	1150.00	599.41	0.00	599.48	13.47	2.39	717.89	313.30
22800.000	2600.00	0.00	0.00	591.20	1350.00	599.84	0.00	599.91	13.91	2.53	812.02	362.03
22800.000	2600.00	0.00	0.00	591.20	1845.00	600.72	0.00	600.81	14.74	2.81	1040.94	480.60

SERVO	XLCH	FLTRD	ELLC	ELMIN	Q	CHSEL	CRIWS	EG	10K*S	VCH	A	.01K
24200.000	1400.00	0.00	0.00	590.10	740.00	599.03	0.00	599.95	9.73	1.53	819.96	237.29
24200.000	1400.00	0.00	0.00	590.10	1150.00	601.05	0.00	601.07	9.69	1.69	1146.72	369.50
24200.000	1400.00	0.00	0.00	590.10	1350.00	601.50	0.00	601.53	9.77	1.76	1295.87	431.99
24200.000	1400.00	0.00	0.00	590.10	1845.00	602.47	0.00	602.50	10.03	1.92	1587.26	582.53
26000.000	1800.00	0.00	0.00	594.30	740.00	601.60	0.00	601.74	9.76	3.31	298.41	236.85
26000.000	1800.00	0.00	0.00	594.30	1150.00	602.70	0.00	602.87	9.80	3.76	415.18	367.36
26000.000	1800.00	0.00	0.00	594.30	1350.00	603.16	0.00	603.34	9.82	3.94	470.55	430.91
26000.000	1800.00	0.00	0.00	594.30	1845.00	604.14	0.00	604.35	9.97	4.35	587.08	584.17

SAAN C[illegible]K

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CHSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
0.000	1150.00	575.80	0.00	0.00	0.00	48.55	0.00
0.000	1820.00	575.80	0.00	0.00	0.00	48.55	0.00
0.000	2140.00	575.80	0.00	0.00	0.00	48.55	0.00
0.000	2955.00	575.80	0.00	0.00	0.00	48.55	0.00
315.000	1150.00	575.95	0.00	.15	0.00	48.69	315.00
315.000	1820.00	576.17	.23	.37	0.00	48.91	315.00
315.000	2140.00	576.32	.15	.52	0.00	49.06	315.00
315.000	2955.00	576.81	.49	1.01	0.00	49.54	315.00
374.000	1150.00	575.82	0.00	-.13	0.00	33.93	59.00
374.000	1820.00	575.84	.02	-.33	0.00	33.96	59.00
374.000	2140.00	575.85	.01	-.47	0.00	33.98	59.00
374.000	2955.00	575.80	-.05	-1.01	0.00	33.91	59.00
426.000	1150.00	575.91	0.00	.09	0.00	34.05	52.00
426.000	1820.00	576.09	.19	.25	0.00	34.31	52.00
426.000	2140.00	576.24	.14	.39	0.00	34.51	52.00
426.000	2955.00	577.00	.77	1.20	0.00	40.73	52.00
500.000	1150.00	576.23	0.00	.32	0.00	48.97	74.00
500.000	1820.00	576.87	.64	.77	0.00	49.65	74.00
500.000	2140.00	577.27	.40	1.04	0.00	50.30	74.00
500.000	2955.00	578.62	1.35	1.62	0.00	52.47	74.00
584.000	1150.00	576.22	0.00	-.01	0.00	44.60	84.00
584.000	1820.00	576.85	.63	-.02	0.00	45.00	84.00
584.000	2140.00	577.25	.40	-.03	0.00	45.00	84.00
584.000	2955.00	578.57	1.32	-.05	0.00	45.00	84.00
616.000	1150.00	576.24	0.00	.03	0.00	44.64	32.00
616.000	1820.00	576.90	.66	.05	0.00	45.00	32.00
616.000	2140.00	577.31	.41	.06	0.00	45.00	32.00
616.000	2955.00	578.65	1.34	.08	0.00	45.00	32.00
645.000	1150.00	576.38	0.00	.14	0.00	97.30	29.00
645.000	1820.00	577.20	.82	.30	0.00	100.89	29.00
645.000	2140.00	577.70	.49	.39	0.00	103.04	29.00
645.000	2955.00	579.23	1.53	.58	0.00	224.18	29.00
1600.000	1150.00	576.72	0.00	.34	0.00	630.43	955.00
1600.000	1820.00	577.67	.95	.47	0.00	684.53	955.00
1600.000	2140.00	578.18	.51	.48	0.00	724.36	955.00
1600.000	2955.00	579.68	1.50	.45	0.00	825.00	955.00
3000.000	740.00	577.05	0.00	.33	0.00	270.76	1400.00
3000.000	1150.00	577.98	.93	.31	0.00	382.15	1400.00
3000.000	1350.00	578.46	.48	.28	0.00	413.28	1400.00
3000.000	1845.00	579.85	1.39	.18	0.00	507.01	1400.00
4300.000	740.00	577.98	0.00	.93	0.00	338.74	1300.00
4300.000	1150.00	578.77	.79	.79	0.00	353.15	1300.00
4300.000	1350.00	579.15	.37	.69	0.00	359.96	1300.00
4300.000	1845.00	580.26	1.11	.40	0.00	367.44	1300.00

SEC'D	Q	CWSEL	DIFWSP	DIFWSX	DIFKVS	TOPWID	XLCH
6400.000	740.00	579.69	0.00	1.71	0.00	352.22	2100.00
6400.000	1150.00	580.57	.88	1.80	0.00	360.42	2100.00
6400.000	1350.00	580.95	.38	1.80	0.00	355.36	2100.00
6400.000	1845.00	581.86	.91	1.60	0.00	357.64	2100.00
7400.000	740.00	580.36	0.00	.67	0.00	283.89	1000.00
7400.000	1150.00	581.26	.90	.69	0.00	294.05	1000.00
7400.000	1350.00	581.64	.39	.69	0.00	298.36	1000.00
7400.000	1845.00	582.53	.89	.67	0.00	308.43	1000.00
8235.000	740.00	581.72	0.00	1.36	0.00	30.77	835.00
8235.000	1150.00	582.44	.72	1.19	0.00	33.76	835.00
8235.000	1350.00	582.71	.26	1.07	0.00	47.53	835.00
8235.000	1845.00	583.22	.52	.69	0.00	74.56	835.00
8634.000	740.00	583.43	0.00	1.71	0.00	88.38	399.00
8634.000	1150.00	584.96	1.53	2.51	0.00	239.98	399.00
8634.000	1350.00	585.51	.56	2.81	0.00	266.06	399.00
8634.000	1845.00	586.67	1.16	3.45	0.00	271.91	399.00
8666.000	740.00	583.45	0.00	.02	0.00	39.98	32.00
8666.000	1150.00	585.05	1.60	.10	0.00	40.00	32.00
8666.000	1350.00	585.66	.61	.14	0.00	40.00	32.00
8666.000	1845.00	586.87	1.22	.20	0.00	272.92	32.00
8765.000	740.00	583.59	0.00	.10	0.00	93.70	99.00
8765.000	1150.00	585.30	1.71	.25	0.00	264.51	99.00
8765.000	1350.00	585.95	.65	.29	0.00	267.51	99.00
8765.000	1845.00	587.06	1.11	.19	0.00	272.64	99.00
9900.000	740.00	584.74	0.00	1.14	0.00	320.30	1135.00
9900.000	1150.00	586.22	1.48	.92	0.00	331.84	1135.00
9900.000	1350.00	586.79	.57	.84	0.00	334.03	1135.00
9900.000	1845.00	587.88	1.09	.82	0.00	338.15	1135.00
11600.000	740.00	585.27	0.00	.59	0.00	355.39	1700.00
11600.000	1150.00	586.71	1.43	.49	0.00	361.10	1700.00
11600.000	1350.00	587.28	.57	.49	0.00	363.36	1700.00
11600.000	1845.00	588.41	1.13	.53	0.00	367.86	1700.00
13150.000	740.00	585.97	0.00	.70	0.00	557.22	1550.00
13150.000	1150.00	587.26	1.30	.56	0.00	567.07	1550.00
13150.000	1350.00	587.81	.55	.53	0.00	571.22	1550.00
13150.000	1845.00	588.93	1.12	.52	0.00	579.74	1550.00
14984.000	740.00	588.41	0.00	2.40	0.00	583.06	1834.00
14984.000	1150.00	588.94	.53	1.67	0.00	586.39	1834.00
14984.000	1350.00	589.26	.33	1.45	0.00	588.46	1834.00
14984.000	1845.00	590.10	.83	1.17	0.00	593.60	1834.00
15584.000	740.00	589.53	0.00	1.12	0.00	336.72	600.00
15584.000	1150.00	590.15	.63	1.21	0.00	339.80	600.00
15584.000	1350.00	590.43	.27	1.16	0.00	340.00	600.00
15584.000	1845.00	591.09	.66	.99	0.00	340.00	600.00

SECNO	Q	CHSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
15616.000	740.00	589.71	0.00	.19	0.00	337.68	32.00
15616.000	1150.00	590.34	.63	.18	0.00	340.00	32.00
15616.000	1350.00	590.61	.27	.18	0.00	340.00	32.00
15616.000	1845.00	591.25	.65	.17	0.00	340.00	32.00
15766.000	740.00	589.80	0.00	.09	0.00	591.84	150.00
15766.000	1150.00	590.45	.65	.12	0.00	594.71	150.00
15766.000	1350.00	590.73	.28	.13	0.00	595.12	150.00
15766.000	1845.00	591.39	.66	.14	0.00	596.11	150.00
16234.000	740.00	590.11	0.00	.31	0.00	230.00	468.00
16234.000	1150.00	590.82	.71	.37	0.00	230.00	468.00
16234.000	1350.00	591.12	.30	.39	0.00	230.00	468.00
16234.000	1845.00	591.81	.69	.42	0.00	230.00	468.00
16266.000	740.00	590.16	0.00	.04	0.00	230.00	32.00
16266.000	1150.00	591.31	1.15	.49	0.00	230.00	32.00
16266.000	1350.00	591.64	.33	.52	0.00	230.00	32.00
16266.000	1845.00	592.31	.66	.50	0.00	230.00	32.00
16416.000	740.00	590.35	0.00	.20	0.00	322.05	150.00
16416.000	1150.00	591.42	1.07	.11	0.00	323.72	150.00
16416.000	1350.00	591.76	.34	.12	0.00	323.97	150.00
16416.000	1845.00	592.45	.69	.14	0.00	328.83	150.00
18000.000	740.00	592.07	0.00	1.72	0.00	301.35	1584.00
18000.000	1150.00	592.89	.82	1.47	0.00	304.00	1584.00
18000.000	1350.00	593.25	.36	1.49	0.00	305.19	1584.00
18000.000	1845.00	594.03	.78	1.58	0.00	311.86	1584.00
20200.000	740.00	595.81	0.00	3.78	0.00	481.83	2200.00
20200.000	1150.00	596.55	.74	3.66	0.00	488.74	2200.00
20200.000	1350.00	596.88	.33	3.63	0.00	491.66	2200.00
20200.000	1845.00	597.59	.72	3.56	0.00	498.25	2200.00
22800.000	740.00	598.38	0.00	2.57	0.00	184.10	2600.00
22800.000	1150.00	599.41	1.03	2.86	0.00	216.40	2600.00
22800.000	1350.00	599.84	.42	2.96	0.00	234.30	2600.00
22800.000	1845.00	600.72	.89	3.13	0.00	282.10	2600.00
24200.000	740.00	599.93	0.00	1.55	0.00	288.86	1400.00
24200.000	1150.00	601.05	1.12	1.63	0.00	299.35	1400.00
24200.000	1350.00	601.50	.46	1.67	0.00	303.63	1400.00
24200.000	1845.00	602.47	.96	1.74	0.00	312.81	1400.00
26000.000	740.00	601.60	0.00	1.67	0.00	105.67	1800.00
26000.000	1150.00	602.70	1.10	1.65	0.00	112.60	1800.00
26000.000	1350.00	603.16	.46	1.65	0.00	115.50	1800.00
26000.000	1845.00	604.14	.98	1.67	0.00	121.71	1800.00

SUMMARY OF ERRORS

FLOOD INSURANCE ZONE DATA FOR SWAN CREEK

FLOOD HAZARD FACTOR FOR ENTIRE REACH USING SECTIONS

SECTION NUMBER	CUMULATIVE DISTANCE	ELEVATION DIFFERENCE BETWEEN BASE FLOOD AND 10.	2.	0.2.
0.000	0.	0.00	0.00	0.00
315.000	315.	-.37	-.15	.49
374.000	374.	-.03	-.01	-.05
426.000	426.	-.33	-.14	.77
500.000	500.	-1.05	-.40	1.35
584.000	584.	-1.03	-.40	1.32
616.000	616.	-1.06	-.41	1.38
645.000	645.	-1.32	-.49	1.53
1600.000	1600.	-1.06	-.51	1.50
3000.000	3000.	-1.01	-.48	1.39
4300.000	4300.	-1.17	-.37	1.11
6400.000	6400.	-1.26	-.38	.91
7400.000	7400.	-1.28	-.38	.89
8235.000	8235.	-.99	-.26	.52
8634.000	8634.	-2.08	-.56	1.16
8666.000	8666.	-2.20	-.61	1.22
8765.000	8765.	-2.36	-.65	1.11
9900.000	9900.	-2.05	-.57	1.00
11600.000	11600.	-2.01	-.57	1.13
13150.000	13150.	-1.84	-.55	1.12
14984.000	14984.	-.86	-.33	.83
15584.000	15584.	-.90	-.27	.66
15616.000	15616.	-.90	-.27	.65
15766.000	15766.	-.93	-.28	.66
16234.000	16234.	-1.01	-.30	.69
16266.000	16266.	-1.49	-.33	.66
16416.000	16416.	-1.41	-.38	.69
18000.000	18000.	-1.18	-.36	.78
20200.000	20200.	-1.07	-.33	.72
22800.000	22800.	-1.45	-.42	.89
24200.000	24200.	-1.58	-.46	.96
26000.000	26000.	-1.56	-.46	.98
WEIGHTED AVG FOR REACH		-1.40	-.42	.97

FHF FOR THE REACH = 015 WITH 78.8. OF THE REACH WITHIN .5 FEET
ZONE FOR THE REACH = A 3

CONTINUOUS FLOOD HAZARD FACTORS BY EVEN INCREMENTS

INC NO.	TOTAL LENGTH	AVG ELEVATION DATA 10.	1.	DIFF.	WTD. AVG.	FHF	PERCENT WITHIN
	0.				SEC.		0.000
1	162.	575.84	575.93	-.09	-.09	005	100.
	315.				SEC.		315.000
2	321.	575.90	576.16	-.26	-.18	005	100.

	426.				SEC.	426.000	
3	486.	576.05	576.66	-.61	-.32	005	0.
	500.				SEC.	500.000	
	584.				SEC.	584.000	
	616.				SEC.	616.000	
	645.				SEC.	645.000	
4	648.	576.27	577.39	-1.12	-.52	005	75.
5	810.	576.41	577.74	-1.33	-.68	005	60.
6	972.	576.47	577.82	-1.35	-.79	010	33.
7	1134.	576.52	577.90	-1.38	-.88	010	71.
8	1296.	576.58	577.99	-1.41	-.94	010	75.
9	1455.	576.64	578.07	-1.43	-1.00	010	78.
	1600.				SEC.	1600.000	
10	1620.	576.70	578.15	-1.45	-1.04	010	80.
11	1782.	576.74	578.20	-1.46	-1.08	010	82.
12	1944.	576.78	578.23	-1.45	-1.11	010	83.
13	2106.	576.82	578.27	-1.45	-1.14	010	77.
14	2268.	576.86	578.30	-1.44	-1.16	010	79.
15	2430.	576.90	578.33	-1.43	-1.18	010	80.
16	2592.	576.93	578.36	-1.43	-1.19	010	81.
17	2754.	576.97	578.39	-1.42	-1.21	010	82.
18	2916.	577.01	578.43	-1.42	-1.22	010	83.
	3000.				SEC.	3000.000	
19	3078.	577.07	578.47	-1.40	-1.23	010	84.
20	3240.	577.16	578.54	-1.38	-1.24	010	85.
21	3402.	577.28	578.63	-1.35	-1.24	010	86.
22	3564.	577.40	578.72	-1.32	-1.24	010	86.
23	3726.	577.51	578.80	-1.29	-1.25	015	87.
24	3884.	577.63	578.89	-1.26	-1.25	015	88.
25	4050.	577.74	578.97	-1.23	-1.25	015	88.
26	4212.	577.86	579.06	-1.20	-1.24	010	89.
	4300.				SEC.	4300.000	
27	4374.	577.98	579.16	-1.18	-1.24	010	89.
28	4536.	578.11	579.28	-1.17	-1.24	010	89.
29	4698.	578.24	579.42	-1.18	-1.24	010	90.
30	4860.	578.37	579.56	-1.19	-1.24	010	90.
31	5022.	578.50	579.70	-1.20	-1.23	010	90.
32	5184.	578.63	579.84	-1.21	-1.23	010	91.
33	5346.	578.77	579.97	-1.20	-1.23	010	91.
34	5508.	578.90	580.11	-1.21	-1.23	010	91.
35	5670.	579.03	580.25	-1.22	-1.23	010	91.
36	5832.	579.16	580.39	-1.23	-1.23	010	92.
37	5994.	579.29	580.53	-1.24	-1.23	010	92.
38	6156.	579.42	580.67	-1.25	-1.23	010	92.
39	6318.	579.56	580.81	-1.25	-1.23	010	92.
	6400.				SEC.	6400.000	
40	6480.	579.68	580.94	-1.26	-1.23	010	93.
41	6642.	579.80	581.06	-1.26	-1.23	010	93.
42	6804.	579.90	581.17	-1.27	-1.24	010	93.
43	6966.	580.01	581.28	-1.27	-1.24	010	93.
44	7128.	580.12	581.39	-1.27	-1.24	010	93.
45	7290.	580.23	581.51	-1.28	-1.24	010	93.
	7400.				SEC.	7400.000	
46	7452.	580.36	581.63	-1.27	-1.24	010	93.
47	7614.	580.57	581.81	-1.24	-1.24	010	94.
48	7776.	580.84	582.02	-1.18	-1.24	010	94.
49	7938.	581.10	582.22	-1.12	-1.23	010	94.
50	8100.	581.37	582.43	-1.06	-1.23	010	94.
	8235.				SEC.	8235.000	
51	8262.	581.67	582.71	-1.04	-1.23	010	94.
52	8424.	582.18	583.47	-1.29	-1.23	010	94.
53	8586.	582.88	584.60	-1.72	-1.24	010	94.
	8634.				SEC.	8634.000	
	8666.				SEC.	8666.000	
54	8748.	583.40	585.54	-2.14	-1.25	015	93.

	8765.				SEC. 8765.000		
55	8910.	583.65	585.98	-2.33	-1.27	015	81.
56	9072.	583.82	586.12	-2.30	-1.29	015	82.
57	9234.	583.98	586.28	-2.29	-1.31	015	84.
58	9396.	584.15	586.36	-2.21	-1.33	015	86.
59	9558.	584.31	586.48	-2.17	-1.34	015	85.
60	9720.	584.47	586.60	-2.13	-1.35	015	83.
61	9882.	584.64	586.72	-2.08	-1.36	015	82.
	9900.				SEC. 9900.000		
62	10044.	584.75	586.80	-2.05	-1.38	015	81.
63	10206.	584.91	586.85	-2.04	-1.39	015	79.
64	10368.	584.86	586.90	-2.04	-1.40	015	78.
65	10530.	584.91	586.95	-2.04	-1.41	015	77.
66	10692.	584.96	586.99	-2.03	-1.42	015	76.
67	10854.	585.01	587.04	-2.03	-1.42	015	75.
68	11016.	585.06	587.09	-2.03	-1.43	015	74.
69	11178.	585.11	587.13	-2.02	-1.44	015	72.
70	11340.	585.17	587.18	-2.01	-1.45	015	71.
71	11502.	585.22	587.23	-2.01	-1.46	015	70.
	11600.				SEC. 11600.000		
72	11664.	585.27	587.28	-2.01	-1.47	015	69.
73	11826.	585.34	587.33	-1.99	-1.47	015	68.
74	11988.	585.41	587.38	-1.97	-1.48	015	69.
75	12150.	585.48	587.44	-1.96	-1.49	015	71.
76	12312.	585.56	587.50	-1.94	-1.49	015	71.
77	12474.	585.63	587.55	-1.92	-1.50	015	71.
78	12636.	585.70	587.61	-1.91	-1.50	015	72.
79	12798.	585.77	587.66	-1.89	-1.51	015	76.
80	12960.	585.85	587.72	-1.87	-1.51	015	76.
81	13122.	585.92	587.77	-1.85	-1.52	015	78.
	13150.				SEC. 13150.000		
82	13284.	586.05	587.86	-1.81	-1.52	015	78.
83	13446.	586.25	587.98	-1.73	-1.52	015	78.
84	13608.	586.47	588.11	-1.64	-1.52	015	79.
85	13770.	586.68	588.24	-1.56	-1.52	015	79.
86	13932.	586.90	588.37	-1.47	-1.52	015	79.
87	14094.	587.12	588.49	-1.37	-1.52	015	79.
88	14256.	587.33	588.62	-1.29	-1.52	015	80.
89	14418.	587.55	588.75	-1.20	-1.52	015	80.
90	14580.	587.76	588.88	-1.12	-1.51	015	79.
91	14742.	587.98	589.01	-1.03	-1.51	015	79.
92	14904.	588.19	589.14	-.95	-1.50	015	75.
	14984.				SEC. 14984.000		
93	15066.	588.43	589.31	-.88	-1.49	015	74.
94	15228.	588.71	589.58	-.87	-1.49	015	73.
95	15390.	589.01	589.89	-.88	-1.48	015	72.
96	15552.	589.31	590.21	-.90	-1.47	015	71.
	15584.				SEC. 15584.000		
	15616.				SEC. 15616.000		
97	15714.	589.62	590.53	-.91	-1.47	015	70.
	15766.				SEC. 15766.000		
98	15874.	589.82	590.76	-.94	-1.46	015	68.
99	16034.	590.03	590.99	-.96	-1.46	015	69.
100	16200.	590.04	591.03	-.99	-1.45	015	69.
	16234.				SEC. 16234.000		
	16266.				SEC. 16266.000		
101	16362.	590.19	591.41	-1.22	-1.45	015	69.
	16416.				SEC. 16416.000		
102	16520.	591.37	591.79	-1.42	-1.45	015	70.
103	16682.	590.54	591.94	-1.39	-1.45	015	70.
104	16848.	590.73	592.09	-1.36	-1.45	015	70.
105	17011.	590.91	592.24	-1.33	-1.45	015	70.
106	17172.	591.08	592.40	-1.32	-1.45	015	71.
107	17334.	591.26	592.55	-1.29	-1.45	015	71.
108	17496.	591.44	592.70	-1.26	-1.44	015	72.
109	17658.	591.61	592.85	-1.24	-1.44	015	72.

111	17982.	601.06	593.16	-1.20	-1.44	015	73.
	18000.				SEC.	18000.000	
112	18046.	602.18	593.36	-1.18	-1.44	015	73.
113	18306.	602.45	593.62	-1.17	-1.43	015	73.
114	18466.	602.73	593.90	-1.16	-1.43	015	73.
115	18631.	603.00	594.15	-1.15	-1.43	015	73.
116	18792.	603.28	594.42	-1.14	-1.43	015	73.
117	18956.	603.55	594.69	-1.13	-1.42	015	74.
118	19116.	603.83	594.96	-1.13	-1.42	015	74.
119	19278.	604.10	595.22	-1.12	-1.42	015	74.
120	19440.	604.38	595.49	-1.11	-1.42	015	74.
121	19602.	604.66	595.76	-1.12	-1.41	015	74.
122	19764.	604.93	596.03	-1.09	-1.41	015	75.
123	19924.	605.21	596.29	-1.08	-1.41	015	75.
124	20088.	605.48	596.56	-1.08	-1.41	015	75.
	20200.				SEC.	20200.000	
125	20250.	605.74	596.81	-1.07	-1.40	015	75.
126	20412.	605.99	597.02	-1.08	-1.40	015	75.
127	20571.	606.10	597.21	-1.11	-1.40	015	76.
128	20736.	606.26	597.39	-1.13	-1.40	015	76.
129	20898.	606.42	597.58	-1.16	-1.39	015	76.
130	21060.	606.58	597.76	-1.18	-1.39	015	76.
131	21222.	606.74	597.95	-1.21	-1.39	015	76.
132	21384.	606.90	598.13	-1.23	-1.39	015	77.
133	21546.	607.06	598.32	-1.26	-1.39	015	77.
134	21708.	607.22	598.50	-1.28	-1.39	015	77.
135	21870.	607.38	598.68	-1.30	-1.39	015	77.
136	22032.	607.54	598.87	-1.33	-1.39	015	77.
137	22194.	607.70	599.05	-1.35	-1.39	015	77.
138	22356.	607.86	599.24	-1.38	-1.39	015	78.
139	22518.	608.02	599.42	-1.40	-1.39	015	78.
140	22680.	608.18	599.61	-1.43	-1.39	015	78.
	22800.				SEC.	22800.000	
141	22842.	608.35	599.79	-1.44	-1.39	015	78.
142	23004.	608.52	599.98	-1.46	-1.39	015	78.
143	23166.	608.70	600.18	-1.48	-1.39	015	78.
144	23328.	608.88	600.37	-1.49	-1.39	015	78.
145	23490.	609.06	600.56	-1.50	-1.39	015	79.
146	23652.	609.23	600.75	-1.52	-1.39	015	79.
147	23814.	609.41	600.95	-1.54	-1.39	015	79.
148	23976.	609.59	601.14	-1.55	-1.39	015	79.
149	24138.	609.77	601.33	-1.56	-1.39	015	79.
	24200.				SEC.	24200.000	
150	24300.	609.94	601.51	-1.57	-1.40	015	79.
151	24462.	610.10	601.67	-1.57	-1.40	015	79.
152	24624.	610.25	601.82	-1.57	-1.40	015	80.
153	24786.	610.40	601.97	-1.57	-1.40	015	80.
154	24948.	610.55	602.12	-1.57	-1.40	015	80.
155	25110.	610.70	602.27	-1.57	-1.40	015	80.
156	25272.	610.85	602.42	-1.57	-1.40	015	80.
157	25434.	611.00	602.56	-1.56	-1.40	015	80.
158	25596.	611.15	602.71	-1.56	-1.40	015	80.
159	25758.	611.30	602.86	-1.56	-1.40	015	81.
160	25920.	611.45	603.01	-1.56	-1.41	015	81.
	26000.				SEC.	26000.000	

THIS REACH CAN BE SUBDIVIDED BY INC NO. TO MEET FIA REQUIREMENTS
INPUT 20N WHERE N IS THE NUMBER OF REACHES AND THEN INPUT THE END
OF EACH REACH BY INC NO. FOR EXAMPLE: 202 160 160
A NEGATIVE INC NO. WILL SUPPRESS INTERMEDIATE INC OUTPUT.

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04.13.33. WTTES02.. 10 APR 78   7600Z  BKY25  V0   WTT     NOR          804045 EEKA 723F3
04.13.33. WTTES02..WTT,7.804045,EEKA 723F3016
04.13.33. WTTES02. *INPUT 6600H 04.11.53. 10 APR 78  VIA COKE
04.13.33. WTTES02.  COPY(INPUT,1R,CONTROL/BR)
04.13.33. WTTES02.   CONTROL DISK 2
04.13.33. WTTES02. (SWAN CREEK
04.13.33. WTTES02. *NOSTAGE
04.13.33. WTTES02. FETCHPS,HECLIB,HEC2,HEC2.
04.13.34. WTTES02.   HEC2     DISK 2
04.13.35. WTTES02.  HEC2          24784 WORDS COPIED FROM CACHE.
04.13.35. WTTES02.   CACHE22 RETURNED       7 BLD, BS= 0040B,FS=144300B
04.13.35. WTTES02.   TAPEPAC RETURNED       0 BLD, BS= 0002B,FS=000000B
04.13.35. WTTES02. SFL,170000.
04.13.36. WTTES02.  FLS=170K  FLL=0000K  LCM BUFFERS=0014K  TOTAL LCM=0204K
04.13.36. WTTES02. HEC2.
04.13.36. WTTES02.   ZZZZZLS DISK 2
04.13.36. WTTES02.   ZZZZZLS RETURNED       0 BLD, BS= 0040B,FS=000000B
04.13.40. WTTES02.   DBGMAP  DISK 2
04.13.42. WTTES02.   OUTPUT  DISK 1
04.13.42. WTTES02.   DBGMAP  UNLOADED       1 BLD, BS= 0040B,FS=000002B
04.13.42. WTTES02.   HEC2    UNLOADED       4 BLD, BS= 0040B,FS=000061B
04.13.42. WTTES02.   MNF4LIB UNLOADED       1 BLD, BS= 0010B,FS=000007B
04.13.42. WTTES02.   FTN4LIB UNLOADED       1 BLD, BS= 0120B,FS=000117B
04.13.42. WTTES02.  LOAD COMPLETE, LINK 8.4.
04.13.42. WTTES02.    TIME---        120 MSEC.
04.13.42. WTTES02.    MEMORY-      LOAD    105600,  EXECUTE     77000.
04.13.42. WTTES02.  FLS=077K  FLL=0000K  LCM BUFFERS=0046K  TOTAL LCM=0145K
04.13.42. WTTES02.   BEGIN=  HEC2      USING -
04.13.42. WTTES02.          MNF4 LIBRARY VERSION 3.2
04.13.42. WTTES02.          FTN4 LIBRARY 7600-L439/77117.12.31
04.13.42. WTTES02.  FIELD LENGTH RESET =          0000000000032832
04.13.42. WTTES02.  BN;
04.13.42. WTTES02.   TAPE92  DISK 1
04.13.42. WTTES02.   TAPE93  DISK 2
04.13.42. WTTES02.   TAPE94  DISK 1
04.13.42. WTTES02.   TAPE91  DISK 2
04.13.42. WTTES02.   TAPE95  DISK 1
04.13.44. WTTES02.   TAPE96  DISK 2
04.13.44. WTTES02.  FLS=101K  FLL=0000K  LCM BUFFERS=0346K  TOTAL LCM=0447K
04.13.44. WTTES02.     STOP
04.13.44. WTTES02.      1.656 CP SECONDS EXECUTION TIME
04.13.44. WTTES02.   LINK    RETURNED       1 BLD, BS= 0012B,FS=000012B
04.13.44. WTTES02.   MNF4LIB RETURNED       1 BLD, BS= 0010B,FS=000007B
04.13.44. WTTES02.   FTN4LIB RETURNED       1 BLD, BS= 0120B,FS=000117B
04.13.44. WTTES02.   OUTPUT  QUEUED PR      3 BLD, BS= 0020B,FS=000043B
04.13.44. WTTES02.  *J DJ0411A   804045N 10APR78DZ N 000015BN;        EEKA 723F3
04.13.44. WTTES02.  ..............................
04.13.44. WTTES02.  SECTORS TRANSFERRED          249
04.13.44. WTTES02.  MAX DISK SECTORS             520
04.13.44. WTTES02.  CP SECONDS                 1.784
04.13.44. WTTES02.  SYSTEM SECONDS             0.315
04.13.44. WTTES02.  OLD BLD"S                     10
04.13.44. WTTES02.  LCM BUFFER LOADS              12
04.13.44. WTTES02.  TTO CUS                        1
04.13.44. WTTES02.  KWORDS XFERRED               107
04.13.44. WTTES02.  CIO CALLS                    830
04.13.44. WTTES02.  STAGING CUS                    0
04.13.44. WTTES02.  ..............................
04.13.44. WTTES02.  TOTAL JOB CUS                 15
04.13.44. WTTES02.  COST + OVERHEAD   $         0.69
04.13.44. WTTES02.  ..............................

04.14.14. WTTES02.  OUTPUT  QUEUED PR 280
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B I L L B O A R D WRITEUPS SUBSET BKYNEWS WAS LAST CHANGED APR 04
HANDBOOK SUBSET CHANGES WAS LAST CHANGED MAR 23

APR 04 PSS HARDWARE FAILURE
THE FOLLOWING PSS SUBSETS WERE DESTROYED.

LIBRARY	SUBSET
CARTE	OVLTR,OVMOD,MODCCX,CARTLGX
SHEIK	TARNEW
PPDS2	DOCMPSZ
POD	TREATBC

MAR 31 LINK REPLACEMENT DELAYED
THE CYBER LOADER WILL NOT REPLACE THE LINK LOADER NEXT WEEK ON THE 7600
AS WAS PREVIOUSLY ANNOUNCED. HOWEVER, THE CYBER LOADER WILL BE AVAILABLE ON THE
THE 7600 AS A DISTINCT LOADER WHEN BKY25 GOES ON THE SYSTEM (PROBABLY APRIL 4)
TO INVOKE THE CYBER LOADER USE THE NEW CONTROL CARD VERB - LINKX - INSTEAD
OF LINK.

MAR 31 MORE TTY NUMBERS
SOME NEW TELEPHONE NUMBERS ARE AVAILABLE THROUGH INTER-CAMPUS TIE-LINE
FOR DIAL-UP TTY USERS.
FOR 300 BPS ACOUSTIC COUPLERS -
642-9850 AND 642-9851
FOR 1200 BPS VADIC MODEMS -
642-9899
THE LOCAL EXTENSION 6357 FOR 1200 BPS VADICS WILL BE DISCONTINUED.

MAR 28 READ PROBLEMS WITH STC TAPE DRIVES
THE STC TAPE DRIVES WERE PICKING A BIT ON READS (TO THE BEST OF OUR KNOWLEDGE
WRITES WERE NOT AFFECTED). THIS SHOULD BE FIXED SHORTLY.

MAR 27 NEW TTY NUMBERS
EXTENSIONS 6046 THROUGH 6050 FOR DIAL-UP ACCESS TO THE BKY SYSTEM
THROUGH SESAME HAVE BEEN CHANGED TO 6661 THROUGH 6665, EFFECTIVE IMMEDIATELY.

MAR 14 COMPUTING CHARGE REDUCTION
THE BASE COST (EXCLUDING OVERHEAD) PER AU FOR COMPUTING AT LBL
WILL BE REDUCED AS OF APRIL 1 FROM 4.5 CENTS TO 4.0 CENTS PER AU.
THIS PRICE SHOULD PERSIST FOR THE NEXT 6 MONTHS.

TO CALL A CONSULTANT 415-843-1009 DIRECT DIAL
451-5981 FTS ONLY

XXXXX XXXXX X X XXX XXXXX XXX XXXXX XXXXX XXXXX XXX X X
X X X

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04.11.1[illegible] WTTES01.. 10 APR 78   7600Z  BKY25  V0   *TT      NORM[illegible]        804045 EEKA 723F3
04.11.16. WTTES01..*TT,7.804045,EEKA 723F3016
04.11.16. WTTES01. *INPUT 6600B 04.10.17. 10 APR 78  VIA COKE
04.11.16. WTTES01.  COPY(INPUT,1R,CONTROL/BR)
04.11.16. WTTES01.   CONTROL DISK 1
04.11.16. WTTES01. (SWAN CREEK
04.11.16. WTTES01. *NOSTAGE
04.11.16. WTTES01. FETCHPS,HECLIB,HEC2,HEC2.
04.11.17. WTTES01.   HEC2    DISK 2
04.11.18. WTTES01.  HEC2          24784 WORDS COPIED FROM CACHE.
04.11.19. WTTES01.   CACHE22 RETURNED       7 BLD, BS= 0040B,FS=144300B
04.11.19. WTTES01.   TAPEPAC RETURNED       0 BLD, BS= 0002B,FS=000000B
04.11.19. WTTES01. SFL,170000.
04.11.21. WTTES01.  FLS=170K  FLL=0000K  LCM BUFFERS=0014K  TOTAL LCM=0204K
04.11.21. WTTES01. HEC2.
04.11.24. WTTES01.   ZZZZZLS DISK 1
04.11.24. WTTES01.   ZZZZZLS RETURNED       0 BLD, BS= 0040B,FS=000000B
04.11.26. WTTES01.   DBGMAP  DISK 1
04.11.27. WTTES01.   OUTPUT  DISK 1
04.11.27. WTTES01.   DBGMAP  UNLOADED       1 BLD, BS= 0040B,FS=000002B
04.11.27. WTTES01.   HEC2    UNLOADED       4 BLD, BS= 0040B,FS=000061B
04.11.27. WTTES01.   MNF4LIB UNLOADED       1 BLD, BS= 0010B,FS=000007B
04.11.27. WTTES01.   FTN4LIB UNLOADED       1 BLD, BS= 0120B,FS=000117B
04.11.28. WTTES01.  LOAD COMPLETE, LINK 8.4.
04.11.28. WTTES01.    TIME---        123 MSEC.
04.11.28. WTTES01.    MEMORY-      LOAD    105600,  EXECUTE     77000.
04.11.28. WTTES01.  FLS=077K  FLL=0000K  LCM BUFFERS=0046K  TOTAL LCM=0145K
04.11.28. WTTES01.   BEGIN=  HEC2      USING -
04.11.28. WTTES01.          MNF4 LIBRARY VERSION 3.2
04.11.28. WTTES01.          FTN4 LIBRARY 7600-L439/77117.12.31
04.11.28. WTTES01.  FIELD LENGTH RESET =          0000000000032832
04.11.28. WTTES01..BN;
04.11.28. WTTES01.   TAPE92  DISK 2
04.11.28. WTTES01.   TAPE93  DISK 1
04.11.28. WTTES01.   TAPE94  DISK 2
04.11.28. WTTES01.   TAPE91  DISK 1
04.11.28. WTTES01.   TAPE95  DISK 2
04.11.29. WTTES01.   TAPE96  DISK 2
04.11.30. WTTES01.  FLS=101K  FLL=0000K  LCM BUFFERS=0346K  TOTAL LCM=0447K
04.11.30. WTTES01.     STOP
04.11.30. WTTES01.       .912 CP SECONDS EXECUTION TIME
04.11.30. WTTES01.   LINK    RETURNED       1 BLD, BS= 0012B,FS=000012B
04.11.30. WTTES01.   MNF4LIB RETURNED       1 BLD, BS= 0010B,FS=000007B
04.11.30. WTTES01.   FTN4LIB RETURNED       1 BLD, BS= 0120B,FS=000117B
04.11.30. WTTES01.   OUTPUT  QUEUED PR      2 BLD, BS= 0020B,FS=000024B
04.11.30. WTTES01.. *J DJ0410F   804045N 10APR78DZ N 000011BN;        EEKA 723F3
04.11.30. WTTES01.. ..............................
04.11.30. WTTES01.. SECTORS TRANSFERRED          234
04.11.30. WTTES01.. MAX DISK SECTORS             530
04.11.30. WTTES01.. CP SECONDS                 1.040
04.11.30. WTTES01.. SYSTEM SECONDS             0.219
04.11.30. WTTES01.. OLD BLD"S                      9
04.11.30. WTTES01.. LCM BUFFER LOADS              11
04.11.30. WTTES01.. TTO CUS                        1
04.11.30. WTTES01.. KWORDS XFERRED                81
04.11.30. WTTES01.. CIO CALLS                    544
04.11.30. WTTES01.. STAGING CUS                    0
04.11.30. WTTES01.. ..............................
04.11.30. WTTES01.. TOTAL JOB CUS                 11
04.11.30. WTTES01.. COST + OVERHEAD   $         0.58
04.11.30. WTTES01.  ..............................

04.11.48. WTTES01.  OUTPUT  QUEUED PR 159
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FL REQUIRED TO LOAD 105600
FL REQUIRED TO RUN 76200
INITIAL TRANSFER TO HEC2 = 5225

BLOCK ASSIGNMENTS.

BLOCK	ADDRESS	LENGTH	FILE
/CONTRL/	100	17	
/OJOBSEL/	117	2	
/SIZE/	121	1	
HEC2	122	5152	HEC2
/DOUBLE/	5274	10	
/NAMES/	5304	202	
H2MAIN	5506	15442	HEC2
ADDPTS	23150	400	HEC2
BLFLO	23550	1075	HEC2
BLOCK	24645	323	HEC2
BWEIR	25170	1466	HEC2
CARD	26656	2463	HEC2
CHIMP	31341	1757	HEC2
DC	33320	741	HEC2
DONE	34261	104	HEC2
FLDHAZ	34365	2262	HEC2
FLOPTS	36647	505	HEC2
PK.	37354	0	HEC2
NEAR	37354	35	HEC2
PRTAH	37411	261	HEC2
PROF	37672	1226	HEC2
SCALE	41120	316	HEC2
SLARA	41434	272	HEC2
SUMPQ	41730	2776	HEC2
XSEC	44724	1403	HEC2
YCPIT	46331	220	HEC2
MAPIT	46551	76	HEC2
QVAR	46647	45	HEC2
SAVEIT	46714	54	HEC2
/ICCOM./	46770	27	
INITAI.	47017	40	MNF4LIB
INITBO.	47057	33	MNF4LIB
INPUA=	47112	51	MNF4LIB
INPUTS	47163	122	MNF4LIB
IOFLAG.	47305	3	MNF4LIB
OUTPUA=	47310	14	MNF4LIB
OUTPUTS	47324	65	MNF4LIB
/.OCOMP./	47411	1	
QANTR=	47412	54	MNF4LIB
RTOR=	47466	147	MNF4LIB
CIO=	47635	13	FTN4LIB
CLOCK=	47650	44	FTN4LIB
/IC.BUF./	47714	227	
DISPLA	50143	171	FTN4LIB

BLOCK ASSIGNMENTS.

BLOCK	ADDRESS	LENGTH	FILE
ENDFIL=	50334	70	FTN4LIB
ERR$$	50424	1511	FTN4LIB
/DA.IO./	52135	246	
/FCL.C./	52403	21	
/QLINLMT/	52424	1	
/DAS&FLG/	52425	1	
/STP.END/	52426	1	
FORSYS=	52427	763	FTN4LIB
/DOVERL:/	53412	1	
FORUTL=	53413	16	FTN4LIB
GETFIT=	53431	43	FTN4LIB
HOUR$	53474	14	FTN4LIB
RDL=	53510	37	FTN4LIB
RDO=	53547	23	FTN4LIB
RDW=	53572	107	FTN4LIB
REMARK	53701	3	FTN4LIB
REWIND=	53704	53	FTN4LIB
/REILEAD/	53757	1	
SETFLS	53760	31	FTN4LIB
SQRT	54011	46	FTN4LIB
SYSAID=	54057	1	FTN4LIB
SYS=	54060	34	FTN4LIB
SYS=1ST	54114	62	FTN4LIB
WTH=	54176	30	FTN4LIB
WTL=	54226	27	FTN4LIB
WTX=	54255	66	FTN4LIB
QFORSY=	54343	32	MNF4LIB
FTN4LIB	54375	0	FTN4LIB
COMTO=	54375	61	FTN4LIB
ECF	54456	52	FTN4LIB
FECMSK=	54530	41	FTN4LIB
FLTIN=	54571	156	FTN4LIB
FLTOUT=	54747	315	FTN4LIB
FMTAP=	55264	372	FTN4LIB
INCOM=	55656	262	FTN4LIB
INPH=	56140	363	FTN4LIB
INPC=	56523	246	FTN4LIB
KODER=	56771	467	FTN4LIB
KRAKER=	57460	435	FTN4LIB
OUTR=	60115	277	FTN4LIB
OUTCOM=	60414	204	FTN4LIB
OUTC=	60620	235	FTN4LIB
UZERO..	61055	2	FTN4LIB
//	61057	15045	

THIS RUN EXECUTED 10 APR 78 04.11.28

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
  ERROR CORR =  01,02
  MODIFICATION =  50,51,52,53
**************************************************

C
T1      FLOOD INSURANCE STUDY
T2      IRA TOWNSHIP  - 100 YR. NATURAL CHANNEL
T3      SWAN CREEK

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

        0.      2.        0.        0.   0.000000      0.00      0.0    2140.   575.800     0.000

J2  NPROF      IPLOT     PRFVS     XSECV     XSECH     FN        ALLOC     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    39.000    40.000    41.000    42.000    43.000     1.000     4.000    27.000    28.000

      200.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

NC      .030      .030      .040      .100      .300     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

X1     0.000    19.000   300.000   360.000     0.000     0.000     0.000     0.000     0.000     0.000
GR   580.700     0.000   581.200    50.000   581.500   150.000   581.300   200.000   582.300   250.000
GR   583.300   300.000   568.300   308.000   567.500   318.000   566.100   328.000   566.200   339.000
GR   565.700   348.000   576.800   353.000   583.300   360.000   583.000   400.000   582.300   450.000
GR   581.700   500.000   581.100   560.000   581.100   614.000   580.700   660.000     0.000     0.000

X1   315.000     0.000     0.000     0.000   315.000   315.000   315.000     0.000     0.000     0.000

          DOWNSTREAM SECTION AT M=29

X1   374.000    21.000   300.000   345.000    59.000    59.000    59.000     0.000     0.000     0.000
X3    10.000     0.000     0.000     0.000     0.000     0.000     0.000   579.300   579.300     0.000
GR   580.700     0.000   581.200    50.000   581.500   150.000   581.300   200.000   582.300   250.000
GR   582.300   299.900   577.300   300.000   576.600   310.000   569.300   320.000   566.500   330.000
GR   566.700   340.000   570.800   345.000   576.500   345.100   576.800   353.000   582.300   360.000
GR   583.000   400.000   582.300   450.000   581.700   500.000   581.100   560.000   581.100   614.000
GR   580.700   660.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
SB     0.000     1.200     2.500     0.000    19.400     0.000   412.000     1.000     0.000     0.000

          UPSTREAM SECTION AT M=29

X1   426.000     0.000     0.000     0.000    52.000    52.000    52.000     0.000     0.000     0.000
X2     0.000     0.000     1.000   579.300   582.300     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   582.300   582.300     0.000
BT     4.000     0.000   582.500   580.700   300.000   582.800   579.300   345.000   582.800   579.300
BT   660.000   582.300   580.700     0.000     0.000     0.000     0.000     0.000     0.000     0.000
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X1	.000	18.000	300.000	360.000	74.000	74.000	74.000	0.000	0.000	0.000
GR	580.700	0.000	581.200	50.000	581.500	150.000	581.300	200.000	582.300	250.000
GR	583.300	300.000	548.300	308.000	567.500	318.000	566.100	328.000	566.200	339.000
GR	565.700	348.000	576.800	353.000	583.300	360.000	583.000	400.000	582.300	450.000
GR	581.100	560.000	581.100	614.000	580.700	660.000	0.000	0.000	0.000	0.000

DOWNSTREAM SECTION AT IRA ROAD

X1	594.000	17.000	300.000	345.000	84.000	84.000	84.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	779.500	779.500	0.000
GR	580.700	0.000	581.200	50.000	581.500	150.000	580.300	200.000	581.300	250.000
GR	581.300	299.900	576.500	300.000	568.000	312.000	567.000	320.000	567.200	340.000
GR	574.800	345.000	582.300	346.000	582.300	450.000	581.700	500.000	581.100	560.000
GR	581.100	614.000	580.700	660.000	0.000	0.000	0.000	0.000	0.000	0.000
SB	0.000	1.150	2.500	0.000	35.000	0.000	500.000	.400	0.000	0.000

UPSTREAM SECTION AT IRA ROAD

X1	616.000	0.000	0.000	0.000	32.000	32.000	32.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	579.500	580.400	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	580.400	580.400	0.000
RT	6.000	0.000	580.700	580.700	200.000	580.400	580.300	300.000	581.300	579.500
BT	345.000	581.700	579.500	450.000	582.400	582.300	660.000	582.300	580.700	0.000

X1	645.000	17.000	300.000	410.000	29.000	29.000	29.000	0.000	0.000	0.000
GR	580.500	0.000	580.700	50.000	579.800	100.000	580.400	150.000	580.000	250.000
GR	579.300	300.000	574.700	310.000	571.300	336.000	568.600	370.000	570.100	390.000
GR	579.300	410.000	580.800	460.000	579.000	510.000	579.200	560.000	579.100	610.000
GR	579.900	660.000	579.300	709.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.090	.090	.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	1600.000	26.000	300.000	645.000	955.000	955.000	955.000	0.000	0.000	0.000
GR	576.500	0.000	576.300	100.000	576.000	150.000	576.100	200.000	576.100	250.000
GR	576.900	300.000	576.100	306.000	574.600	314.000	574.400	320.000	573.300	325.000
GR	574.200	330.000	574.300	370.000	574.300	400.000	574.300	450.000	573.100	530.000
GR	573.000	528.000	572.000	550.000	569.700	600.000	570.300	620.000	573.300	640.000
GR	576.100	642.000	577.600	645.000	579.000	694.000	576.900	745.000	579.300	795.000
GR	579.300	825.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.030	.060	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	2.000	1350.000	1350.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	3000.000	20.000	337.000	514.000	1400.000	1400.000	1400.000	0.000	0.000	0.000
GR	581.500	0.000	581.300	50.000	580.300	200.000	579.600	250.000	578.200	300.000
GR	576.500	337.000	574.200	340.000	575.100	384.000	575.200	392.000	576.300	440.000
GR	572.500	480.000	573.300	500.000	574.300	511.000	576.500	514.000	576.000	524.000
GR	576.500	552.000	577.000	576.000	577.200	654.000	576.300	700.000	580.300	740.000
NC	.150	.150	.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	4000.000	31.000	300.000	594.000	1300.000	1300.000	1300.000	0.000	0.000	0.000
GR	584.100	0.000	583.300	100.000	582.500	150.000	582.300	200.000	581.300	250.000
GR	577.000	301.000	574.700	311.000	572.000	345.000	573.300	374.000	573.000	385.000
GR	574.300	401.000	575.300	410.000	574.100	420.000	574.400	454.000	574.200	490.000
GR	576.000	471.000	574.100	480.000	576.100	494.000	574.300	531.000	574.100	540.000
GR	574.400	550.000	576.300	570.000	576.900	574.000	573.300	610.000	580.000	630.000
GR	581.600	680.000	580.300	705.000	581.300	730.000	581.900	830.000	582.600	850.000
NC	.070	.120	.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	5000.000	21.000	300.000	370.000	2130.000	2130.000	2130.000	0.000	0.000	0.000

GR	588.400	0.000	589.000	100.000	588.400	150.000	587.100	200.000	587.100	250.000
GR	586.800	300.000	575.600	328.000	573.300	330.000	571.600	335.000	571.600	341.000
GR	582.300	347.000	574.000	350.000	575.500	365.000	576.300	370.000	578.200	370.000
GR	578.000	420.000	576.300	470.000	577.600	520.000	577.300	570.000	577.700	620.000
GR	577.300	670.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.070	.070	.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	7400.000	18.000	302.000	351.000	1000.000	1000.000	1000.000	0.000	0.000	0.000
GR	588.200	0.000	588.200	60.000	588.300	100.000	588.100	150.000	587.400	200.000
GR	578.900	238.000	580.000	300.000	577.300	302.000	574.200	310.000	572.800	320.000
GR	572.600	330.000	574.000	340.000	577.300	350.000	578.300	351.000	578.300	400.000
GR	578.000	450.000	578.100	500.000	591.300	590.000	0.000	0.000	0.000	0.000
NC	.140	.140	.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	8235.000	13.000	150.000	184.000	835.000	835.000	835.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	151.190	0.000	240.060	0.000	0.000	0.000	0.000
GR	595.400	0.000	584.300	50.000	583.900	100.000	584.800	150.000	577.800	154.000
GR	576.500	160.000	576.300	170.000	577.800	180.000	584.000	184.000	582.400	234.000
GR	594.900	283.000	585.300	310.000	593.500	311.000	0.000	0.000	0.000	0.000

DOWNSTREAM SECTION AT SHORT CUT ROAD

X1	8634.000	13.000	150.000	190.000	399.000	399.000	399.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	150.000	0.000	190.000	0.000	0.000	0.000	0.000
GR	594.400	0.000	584.300	50.000	583.900	100.000	584.800	150.000	577.700	150.100
GR	573.200	155.000	573.200	180.000	574.400	189.900	584.000	190.000	582.400	234.000
GR	594.900	283.000	585.300	310.000	593.500	311.000	0.000	0.000	0.000	0.000
SB	0.000	1.170	2.500	0.000	35.750	0.000	352.000	.230	0.000	0.000

UPSTREAM SECTION AT SHORT CUT ROAD

X1	8666.000	0.000	0.000	0.000	32.000	32.000	32.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	582.500	585.900	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	150.000	0.000	190.000	0.000	0.000	0.000	0.000
BT	6.000	0.000	594.400	594.400	50.000	586.300	584.300	150.000	585.900	582.500
BT	190.000	585.900	583.000	283.000	585.900	584.900	311.000	593.500	593.500	0.000

X1	8765.000	13.000	150.000	184.000	99.000	99.000	99.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	42.560	0.000	310.080	0.000	0.000	0.000	0.000
GR	595.400	0.000	584.300	50.000	583.900	100.000	584.800	150.000	577.800	154.000
GR	576.500	160.000	576.300	170.000	577.800	180.000	584.000	184.000	582.400	234.000
GR	594.900	283.000	585.300	310.000	593.500	311.000	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
NC	.100	.120	.120	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	9900.000	16.000	100.000	286.000	1135.000	1135.000	1135.000	0.000	0.000	0.000
GR	588.900	0.000	582.300	25.000	580.900	50.000	581.800	100.000	578.300	106.000
GR	577.800	116.000	578.100	121.000	580.000	126.000	579.000	180.000	581.300	256.000
GR	578.100	263.000	577.300	269.000	578.100	280.000	582.300	286.000	581.300	305.000
GR	585.400	342.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.150	.150	.150	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	11600.000	24.000	100.000	288.000	1700.000	1700.000	1700.000	0.000	0.000	0.000
GR	596.500	0.000	581.400	60.000	581.700	100.000	579.700	105.000	578.800	109.000
GR	577.900	112.000	578.800	120.000	581.500	123.000	582.200	164.000	578.900	170.000
GR	578.300	173.000	578.900	190.000	578.400	202.000	578.900	223.000	581.300	250.000
GR	581.000	263.000	579.800	268.000	579.900	273.000	578.900	278.000	579.300	283.000
GR	582.800	288.000	582.300	295.000	582.300	350.000	581.600	400.000	0.000	0.000
XT	.130	.130	.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	[illegible]	19.000	300.000	340.000	1550.000	1550.000	1550.000	0.000	0.000	0.000
GR	583.900	0.000	583.900	50.000	583.400	100.000	583.400	150.000	584.200	200.000
GR	588.100	250.000	583.300	300.000	582.000	304.000	581.300	310.000	590.700	310.000
GR	590.300	320.000	579.600	327.000	579.700	331.000	592.300	340.000	583.100	390.000
GR	583.100	440.000	584.000	490.000	583.700	540.000	591.600	600.000	0.000	0.000
NC	.115	.115	.130	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	14984.000	17.000	300.000	338.000	1834.000	1834.000	1834.000	0.000	0.000	0.000
GR	594.000	0.000	587.300	10.000	587.300	60.000	588.000	100.000	587.400	200.000
GR	587.800	250.000	586.200	300.000	583.900	307.000	583.000	311.000	583.900	332.000
GR	587.700	338.000	587.100	390.000	587.500	440.000	587.300	490.000	588.000	540.000
GR	587.700	588.000	590.200	600.000	0.000	0.000	0.000	0.000	0.000	0.000

DOWNSTREAM SECTION AT ARNOLD ROAD

X1	15584.000	17.000	300.000	330.000	600.000	600.000	600.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	260.000	0.000	600.000	0.000	0.000	0.000	0.000
GR	594.000	0.000	587.300	10.000	587.300	60.000	588.000	100.000	587.400	200.000
GR	587.800	250.000	586.200	300.000	582.300	300.100	581.300	320.000	582.400	330.000
GR	587.700	338.000	587.100	390.000	587.500	440.000	587.300	490.000	588.000	540.000
GR	587.700	588.000	590.200	600.000	0.000	0.000	0.000	0.000	0.000	0.000
SB	0.000	1.210	2.500	0.000	25.500	0.000	183.000	.340	0.000	0.000

UPSTREAM SECTION AT ARNOLD ROAD

X1	15616.000	0.000	0.000	0.000	32.000	32.000	32.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	587.900	589.100	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	260.000	0.000	600.000	0.000	0.000	0.000	0.000
BT	6.000	0.000	594.000	594.000	200.000	593.300	587.400	300.000	589.700	587.900
BT	330.000	589.300	587.900	440.000	589.100	587.500	600.000	590.200	590.200	0.000

X1	15766.000	17.000	300.000	338.000	150.000	150.000	150.000	0.000	0.000	0.000
GR	594.000	0.000	587.300	10.000	587.300	60.000	588.000	100.000	587.400	200.000
GR	587.800	250.000	586.200	300.000	583.900	307.000	583.000	311.000	583.900	332.000
GR	587.700	338.000	587.100	390.000	587.500	440.000	587.300	490.000	588.000	540.000
GR	587.700	588.000	590.200	600.000	0.000	0.000	0.000	0.000	0.000	0.000

DOWNSTREAM SECTION AT HESSEN ROAD

X1	16234.000	19.000	300.000	338.000	468.000	468.000	468.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	110.000	0.000	340.000	0.000	0.000	0.000	0.000
GR	594.000	0.000	587.300	10.000	587.300	60.000	588.000	100.000	587.400	200.000
GR	587.800	250.000	586.200	300.000	585.300	300.100	583.200	310.000	583.200	320.000
GR	583.800	325.000	584.300	330.000	587.700	338.000	587.100	390.000	587.500	440.000
GR	587.300	490.000	588.000	540.000	587.700	588.000	590.200	600.000	0.000	0.000
SB	0.000	1.200	2.500	0.000	24.750	0.000	200.000	.360	0.000	0.000

UPSTREAM SECTION AT HESSEN ROAD

X1	16266.000	0.000	0.000	0.000	32.000	32.000	32.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	590.500	590.600	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	110.000	0.000	340.000	0.000	0.000	0.000	0.000
BT	6.000	0.000	594.000	594.000	200.000	590.600	587.400	300.000	591.500	590.500
BT	330.000	592.300	590.800	390.000	596.300	587.100	600.000	590.200	590.200	0.000
NC	.090	.090	.090	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	16416.000	13.000	70.000	80.000	150.000	150.000	150.000	0.000	0.000	0.000

GR	[illegible]	0.000	595.300	20.000	591.800	46.000	586.300	50.000	586.100	70.000
GR	[illegible]	73.000	586.000	80.000	587.700	120.000	588.000	170.000	587.200	220.000
GR	[illegible]	270.000	588.200	320.000	587.200	370.000	0.000	0.000	0.000	0.000
NC	.130	.130	.065	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	18000.000	10.000	64.000	110.000	1584.000	1584.000	1584.000	0.000	0.000	0.000
GR	599.300	0.000	593.500	64.000	589.200	78.000	588.200	99.000	589.200	103.000
GR	591.700	110.000	590.800	160.000	591.100	255.000	589.400	304.000	590.300	370.000
NC	.155	.155	.127	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	20200.000	14.000	260.000	289.000	2200.000	2200.000	2200.000	0.000	0.000	0.000
GR	606.300	0.000	595.200	35.000	593.400	60.000	592.900	160.000	593.300	260.000
GR	590.300	265.000	588.600	273.000	589.500	283.000	592.500	289.000	593.200	330.000
GR	593.400	437.000	594.300	490.000	595.000	510.000	598.300	530.000	0.000	0.000
NC	.115	.115	.081	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	22800.000	14.000	200.000	250.000	2600.000	2600.000	2600.000	0.000	0.000	0.000
GR	612.100	0.000	609.600	50.000	605.300	100.000	598.900	150.000	595.500	200.000
GR	592.900	205.000	591.200	236.000	592.900	246.000	596.100	250.000	596.300	300.000
GR	601.300	400.000	606.200	450.000	599.600	500.000	602.300	550.000	0.000	0.000
NC	.142	.142	.104	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	24200.000	11.000	170.000	210.000	1400.000	1400.000	1400.000	0.000	0.000	0.000
GR	611.100	0.000	597.400	43.000	596.700	70.000	597.500	120.000	597.300	170.000
GR	590.100	180.000	592.400	200.000	598.300	210.000	597.800	270.000	599.300	320.000
GR	607.300	370.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.050	.100	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	26000.000	12.000	300.000	334.000	1800.000	1800.000	1800.000	0.000	0.000	0.000
GR	610.300	0.000	609.300	50.000	609.200	100.000	609.100	200.000	599.300	250.000
GR	600.300	300.000	595.300	315.000	594.300	322.000	594.700	330.000	599.600	334.000
GR	600.000	342.000	614.800	360.000	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

CCHV= .100 CEHV= .300

*SECNO .000

SECNO	DEPTH	CWSEL	CRTWS	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
0.00	10.10	575.80	0.00	575.80	576.24	.44	0.00	0.00	583.30
2140.	0.	2140.	0.	0.	402.	0.	0.	0.	583.30
0.00	0.00	5.33	0.00	.030	.040	.030	0.000	565.70	304.00
.001618	0.	0.	0.	0	0	0	0.00	48.55	352.55

*SECNO 315.000

315.00	10.62	576.32	0.00	0.00	576.71	.39	.47	.01	583.30
2140.	0.	2140.	0.	0.	427.	0.	3.	0.	583.30
.02	0.00	5.01	0.00	.030	.040	.030	.040	565.70	303.73
.001356	315.	315.	315.	1	0	0	0.00	49.06	352.78

*SECNO 374.000

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 579.30 ELREA= 579.30

DOWNSTREAM SECTION AT M=29

374.00	9.35	575.85	0.00	0.00	577.11	1.27	.14	.26	577.30
2140.	0.	2140.	0.	0.	237.	0.	3.	0.	570.80
.02	0.00	9.03	0.00	.030	.040	.030	.040	566.50	311.02
.005134	59.	59.	59.	2	0	0	0.00	33.98	345.00

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COEP	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
0.00	1.20	2.50	0.00	19.40	0.00	412.00	1.00	566.50	566.50	

*SECNO 426.000

6070,LOW FLOW BY NORMAL BRIDGE

EGPRS= 0.000 EGLWC= 577.116 ELLC= 579.300 PCWSE= 575.848 ELTRD= 582.300

3370 NORMAL BRIDGE,NPD= 4 MIN ELTRD= 582.30 MAX ELLC= 579.30

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 582.30 ELREA= 582.30

UPSTREAM SECTION AT M=29

426.00	9.74	576.24	0.00	0.00	577.37	1.13	.25	.01	577.30
2140.	0.	2140.	0.	0.	250.	0.	4.	0.	570.80
.02	0.00	8.55	0.00	.030	.040	.030	.040	566.50	310.49
.004342	52.	52.	52.	2	0	0	0.00	38.51	345.00

*SEC 500.000

3301 HV CHANGED MORE THAN HVINS

SECNO	DEPTH	CWSEL	CRI*S	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TNA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	FLMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
500.00	11.57	577.27	0.00	0.00	577.59	.32	.14	.08	583.30
2140.	0.	2140.	0.	0.	475.	0.	4.	1.	583.30
.03	0.00	4.51	0.00	.030	.040	.030	.040	565.70	303.21
.001001	74.	74.	74.	2	0	0	0.00	50.30	353.51

*SECNO 584.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 779.50 ELREA= 779.50

DOWNSTREAM SECTION AT TRA ROAD

584.00	10.25	577.25	0.00	0.00	577.76	.51	.11	.06	576.50
2140.	0.	2140.	0.	0.	372.	0.	5.	1.	574.80
.03	0.00	5.75	0.00	.030	.040	.030	.040	567.00	300.00
.001752	84.	84.	84.	2	0	0	0.00	45.00	345.00

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB XK	XKOR	COEQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
0.00	1.15	2.50	0.00	35.00	0.00	500.00	.40	567.00	567.00

*SECNO 616.000

6070,LOW FLOW BY NORMAL BRIDGE

EGPRS= 0.000 EGLWC= 577.759 ELLC= 579.500 PCWSE= 577.245 ELTRD= 580.400

3370 NORMAL BRIDGE,NRD= 6 MIN ELTRD= 580.40 MAX ELLC= 579.50

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 580.40 ELREA= 580.40

UPSTREAM SECTION AT TRA ROAD

616.00	10.31	577.31	0.00	0.00	577.81	.51	.06	.00	576.50
2140.	0.	2140.	0.	0.	375.	0.	5.	1.	574.80
.03	0.00	5.71	0.00	.030	.040	.030	.040	567.00	300.00
.001710	32.	32.	32.	2	0	0	0.00	45.00	345.00

*SECNO 645.000

645.00	9.10	577.70	0.00	0.00	577.88	.18	.03	.03	579.30
2140.	0.	2140.	0.	0.	625.	0.	6.	1.	579.30
.03	0.00	3.42	0.00	.030	.040	.030	.040	568.60	303.48
.000794	29.	29.	29.	2	0	0	0.00	103.04	406.52

3265 DIVIDED FLOW

3280 CROSS SECTION 1600.00 EXTENDED 1.67 FEET

1600.00	8.48	578.18	0.00	0.00	578.20	.02	.30	.02	576.90
2140.	189.	1943.	7.	572.	1725.	46.	38.	10.	577.60
.29	.33	1.13	.16	.090	.050	.090	.046	569.70	0.00
.000170	955.	955.	955.	2	0	0	0.00	728.36	772.46

*SECNO 3000.000

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	XLOBI	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3000.00	6.16	578.46	0.00	0.00	578.50	.04	.29	.01	576.50
1350.	38.	1177.	135.	42.	717.	247.	92.	28.	576.50
.54	.91	1.64	.55	.030	.040	.060	.043	572.30	290.72
.000305	1400.	1400.	1400.	2	0	0	0.00	413.28	704.00

*SECNO 4300.000

4300.00	6.85	579.15	0.00	0.00	579.17	.02	.67	.00	577.00
1350.	13.	1193.	144.	35.	1056.	197.	126.	40.	576.90
.88	.39	1.13	.73	.130	.104	.156	.061	572.30	267.49
.001037	1300.	1300.	1300.	2	0	0	0.00	359.96	627.45

*SECNO 6400.000

3280 CROSS SECTION 6400.00 EXTENDED 3.64 FEET

6400.00	9.35	580.95	0.00	0.00	580.97	.02	1.80	.00	586.80
1350.	0.	545.	805.	0.	343.	1051.	191.	57.	578.20
1.41	0.00	1.59	.77	.070	.080	.120	.068	571.60	314.64
.000722	2100.	2100.	2100.	2	0	0	0.00	355.36	670.00

*SECNO 7400.000

7400.00	9.04	581.64	0.00	0.00	581.66	.03	.69	.00	577.30
1350.	141.	523.	686.	158.	365.	560.	219.	64.	578.30
1.63	.89	1.43	1.22	.070	.100	.070	.072	572.60	225.76
.000669	1000.	1000.	1000.	2	0	0	0.00	298.36	524.12

*SECNO 8235.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 151.2 240.1 TYPE= 1 TARGET= 88.870

8235.00	6.41	582.71	0.00	0.00	583.71	1.00	1.75	.29100000.00	
1350.	0.	1349.	1.	0.	168.	2.	231.	68.	584.00
1.66	0.00	8.05	.61	.140	.100	.140	.075	576.30	151.20
.040148	835.	835.	835.	3	0	0	0.00	47.57	240.01

*SECNO 8434.000

3301 HV CHANGED MORE THAN HVINS

SF	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	XLOBI	XLCH	XLOBR	ITRIAL	TOC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 150.0 190.0 TYPE= 1 TARGET= 40.000

DOWNSTREAM SECTION AT SHORT CUT ROAD

8634.00	12.74	585.94	0.00	0.00	586.06	.12	2.26	.09	584.80
1350.	0.	1350.	0.	0.	491.	0.	234.	68.	100000.00
1.70	0.00	2.75	0.00	.140	.100	.140	.076	573.20	150.00
.002143	399.	399.	399.	4	0	0	0.00	40.00	190.00

SPECIAL BRIDGE

5070.VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB XK	XKOR	COEQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
0.00	1.17	2.50	0.00	35.75	0.00	352.00	.23	573.20	573.20

*SECNO 8666.000
PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
586.21	586.06	0.00	60.	1291.	352.	352.	582.50	585.90

3470 ENCROACHMENT STATIONS= 150.0 190.0 TYPE= 1 TARGET= 40.000

UPSTREAM SECTION AT SHORT CUT ROAD

8666.00	12.87	586.07	0.00	0.00	586.18	.11	.13	0.00	584.80
1350.	0.	1350.	0.	0.	496.	0.	235.	68.	100000.00
1.70	0.00	2.72	0.00	.140	.100	.140	.076	573.20	150.00
.002081	32.	32.	32.	2	0	0	0.00	40.00	190.00

*SECNO 8765.000

3470 ENCROACHMENT STATIONS= 42.6 310.1 TYPE= 1 TARGET= 267.520

8765.00	10.04	586.34	0.00	0.00	586.42	.08	.23	.00	584.80
1350.	197.	808.	345.	221.	289.	322.	236.	68.	584.00
1.71	.89	2.79	1.07	.140	.100	.140	.076	576.30	42.56
.002647	99.	99.	99.	2	0	0	0.00	267.52	310.08

*SECNO 9900.000
3280 CROSS SECTION 9900.00 EXTENDED 1.64 FEET

9900.00	9.74	587.04	0.00	0.00	587.04	.01	.62	.01	581.80
1350.	313.	921.	116.	463.	1340.	236.	274.	70.	582.30
2.18	.68	.69	.09	.100	.120	.120	.081	577.30	7.05
.000226	1135.	1135.	1135.	3	0	0	0.00	334.95	342.00

*SECNO 11401.000

*SECNO 11400.000
3280 CROSS SECTION 11400.00 EXTENDED 5.87 FEET

11600.00	9.57	587.47	0.00	0.00	587.48	.01	.43	.00	581.70
1350.	156.	887.	306.	310.	1399.	595.	358.	90.	582.80
2.98	.50	.63	.51	.150	.150	.150	.091	577.90	35.87
.000291	1700.	1700.	1700.	3	0	0	0.00	364.13	400.00

*SECNO 13150.000
3280 CROSS SECTION 13150.00 EXTENDED 4.05 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	IOC	ICONT	CORAR	TOPWID	ENDST
13150.00	8.35	587.95	0.00	0.00	587.96	.00	.48	.00	583.30
1350.	633.	186.	531.	1255.	285.	999.	445.	107.	582.30
3.79	.50	.65	.53	.138	.150	.138	.098	579.60	0.00
.000329	1550.	1550.	1550.	2	0	0	0.00	572.29	572.29

*SECNO 14984.000
14984.00	6.29	589.29	0.00	0.00	589.31	.02	1.35	.01	586.20
1350.	544.	350.	456.	525.	197.	449.	523.	131.	587.70
4.20	1.03	1.78	1.02	.115	.130	.115	.102	583.00	7.03
.002272	1834.	1834.	1834.	2	0	0	0.00	588.59	595.62

*SECNO 15584.000
3280 CROSS SECTION 15584.00 EXTENDED .23 FEET

3470 ENCROACHMENT STATIONS= 260.0 600.0 TYPE= 1 TARGET= 340.000

DOWNSTREAM SECTION AT ARNOLD ROAD

15584.00	9.13	590.43	0.00	0.00	590.45	.02	1.14	.00	586.20
1350.	153.	421.	776.	144.	258.	789.	539.	137.	582.40
4.34	1.06	1.63	.98	.115	.130	.115	.103	581.30	260.00
.001359	600.	600.	600.	2	0	0	0.00	340.00	400.00

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED
SB XK	YKOR	COEO	RDLEN	RNC	BWP	BAREA	SS	ELCHU	ELCHD
0.00	1.21	2.50	0.00	25.50	0.00	183.00	.34	581.30	581.30

*SECNO 15616.000
3280 CROSS SECTION 15616.00 EXTENDED .41 FEET

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	HS	DWETR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
591.45	591.5	4.10	756.	597.	183.	183.	587.50	590.15

3470 ENCROACHMENT STATIONS= 260.0 600.0 TYPE= 1 TARGET= 340.000

UPSTREAM SECTION AT ARNOLD ROAD

15616.00	9.31	590.61	0.00	0.00	590.63	.02	.18	0.00	586.20
1350.	153.	404.	793.	151.	264.	838.	540.	138.	582.40
4.35	1.02	1.53	.95	.115	.130	.115	.103	581.30	260.00
.001146	32.	32.	32.	2	0	4	0.00	340.00	600.00

*SECNO 15766.000
3280 CROSS SECTION 15766.00 EXTENDED .54 FEET

15766.00	7.74	590.74	0.00	0.00	590.74	.01	.11	.00	586.20
1350.	407.	222.	521.	951.	252.	826.	546.	139.	587.70
4.41	.64	.88	.63	.115	.130	.115	.103	583.00	4.87
.000507	150.	150.	150.	2	0	0	0.00	595.13	600.00

*SECNO 16234.000
3280 CROSS SECTION 16234.00 EXTENDED .93 FEET

SECNO	DEPTH	CWSEL	CRITS	KSELK	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= 110.0 340.0 TYPE= 1 TARGET= 230.000

DOWNSTREAM SECTION AT HESSEN ROAD

16234.00	7.92	591.12	0.00	0.00	591.16	.03	.01	.01	586.20
1350.	897.	448.	4.	694.	262.	7.	562.	144.	587.70
4.50	1.29	1.71	.64	.115	.130	.115	.104	583.20	110.00
.001804	468.	468.	468.	0	0	0	0.00	230.00	340.00

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SR NOT SPECIFIED

SR	XK	XKOR	COFQ	RDLEN	AWC	AWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.20	2.50	0.00	24.75	0.00	200.00	.36	583.20	583.20

*SECNO 16266.000
3280 CROSS SECTION 16266.00 EXTENDED 1.45 FEET

PRESSURE AND WEIR FLOW

FGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
591.97	591.16	0.00	263.	1083.	200.	200.	590.50	590.60

3470 ENCROACHMENT STATIONS= 110.0 340.0 TYPE= 1 TARGET= 230.000

UPSTREAM SECTION AT HESSEN ROAD

16486.00	8.45	591.65	0.00	0.00	591.67	.03	.51	0.00	586.20
1350.	926.	420.	4.	792.	282.	8.	562.	144.	587.70
.51	1.17	1.49	.55	.115	.130	.5	.104	583.20	110.00
.0[illegible]42	32.	32.	32.	2	0	2	0.00	230.00	340.00

*SECNO 16416.000
3280 CROSS SECTION 16416.00 EXTENDED 4.56 FEET

16416.00	8.36	591.76	0.00	0.00	591.78	.01	.11	.00	586.10
1350.	128.	83.	1139.	122.	70.	1230.	567.	145.	586.00
4.55	1.05	1.18	.93	.090	.090	.090	.104	583.40	46.03
.000455	150.	150.	150.	2	0	0	0.00	323.97	370.00

*SECNO 18000.000
3280 CROSS SECTION 18000.00 EXTENDED 2.95 FEET

18000.00	5.05	593.25	0.00	0.00	593.31	.06	1.52	.01	593.50
1350.	0.	474.	876.	0.	160.	690.	608.	156.	591.70
4.79	0.00	2.96	1.27	.130	.065	.130	.101	588.20	64.81
.003212	1584.	1584.	1584.	2	0	0	0.00	305.19	370.00

*SECNO 20200.000

20200.00	8.28	596.88	0.00	0.00	596.89	.01	3.57	.01	593.30
1350.	580.	251.	519.	819.	198.	763.	674.	176.	592.50
5.55	.71	1.27	.68	.155	.127	.155	.104	588.60	29.71
.000975	2200.	2200.	2200.	3	0	0	0.00	491.66	521.37

*SECNO 22800.000

3265 DIVIDED FLOW

SECNO	DEPTH	CWSEL	CRITWS	WSELK	EG	HV	HL	OLOSS	RANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNP	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
22800.00	8.64	599.80	0.00	0.00	599.91	.07	3.00	.02	595.50
1350.	122.	932.	296.	135.	369.	308.	752.	198.	596.10
5.91	.90	2.53	.96	.115	.081	.115	.101	591.20	102.67
.001391	2600.	2600.	2600.	3	0	0	0.00	234.30	504.41

*SECNO 24200.000

24200.00	11.40	601.50	0.00	0.00	601.53	.03	1.62	.00	597.30
1350.	485.	606.	259.	572.	345.	370.	786.	207.	598.30
6.22	.85	1.76	.70	.142	.104	.142	.101	590.10	30.13
.000977	1400.	1400.	1400.	1	0	0	0.00	303.63	333.75

*SECNO 26000.000

26000.00	8.86	603.16	0.00	0.00	603.34	.18	1.76	.05	600.30
1350.	404.	915.	31.	206.	232.	33.	822.	215.	599.60
6.38	1.96	3.94	.95	.050	.040	.100	.097	594.30	230.33
.000982	1800.	1800.	1800.	2	0	0	0.00	115.50	345.84

THIS RUN EXECUTED 10 APR 78 04.11.29

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**************************************************
    HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
    ERROR CORR -  01,02
    MODIFICATION -  50,51,52,53
**************************************************

T1      FLOOD INSURANCE STUDY
T2      IRA TOWNSHIP    100 YR. WITH ENCROACHMENT
T3      SWAN CREEK

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
          0.        3.        0.        0.  0.000000      0.00      0.0    2140.   575.900     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
```

SWANCR 100 yr
Encroached w/ FDS

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*PPOF 2

CCHV=    .100 CEHV=    .300
*SECNO  .000
 2800 NAT Q1=    531.95  WSEL=    575.80  ENC Q1=    541.37  WSEL=    575.90  RATIO=  -.0177
 NAT Q1=    541.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=    575.90
   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


3470 ENCROACHMENT STATIONS=    300.0     360.0  TYPE=     4  TARGET=      0.000
      0.00     10.20   575.90      0.00   575.80   576.33      .43      0.00      0.00    583.30
      2140.       0.    2140.       0.       0.      407.       0.       0.        0.     583.30
      0.00      0.00     5.24      0.00     .030     .040     .030    0.000    565.70    303.95
   .001563        0.       0.        0.        0        0        0     0.00     48.65    352.59

*SECNO 315.000
 2800 NAT Q1=    581.17  WSEL=    576.32  ENC Q1=    591.48  WSEL=    576.42  RATIO=  -.0177
 NAT Q1=    591.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=    576.42

3470 ENCROACHMENT STATIONS=    300.0     360.0  TYPE=     4  TARGET=      0.000
    315.00     10.70   576.40      0.00   576.32   576.79      .38      .45       .00    583.30
      2140.       0.    2140.       0.       0.      431.       0.       3.        0.     583.30
       .02      0.00     4.96      0.00     .030     .040     .030     .040    565.70    303.68
   .001317       315.     315.      315.        2        0        0     0.00     49.14    352.82

*SECNO 374.000
 2800 NAT Q1=    298.67  WSEL=    575.85  ENC Q1=    304.46  WSEL=    575.95  RATIO=  -.0190
 NAT Q1=    304.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=    575.95

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=    300.0     345.0  TYPE=     4  TARGET=      0.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=      579.30 ELREA=      579.30

          DOWNSTREAM SECTION AT N=29

    374.00      9.46   575.96      0.00   575.85   577.18     1.23      .14       .25    577.30
      2140.       0.    2140.       0.       0.      241.       0.       3.        0.     570.80
       .02      0.00     8.89      0.00     .030     .040     .030     .040    566.50    310.87
   .005913         59.      59.       59.        2        0        0     0.00     34.13    345.00

SPECIAL BRIDGE

5070,VARIABLE FLCHU OR FLCHD ON CARD SR NOT SPECIFIED
 SS      XX        XXCR      COPD      XOLEN     BXC       BNP       AREA      SS       FLCHU     FLCHD
      0.00      1.20      2.50      0.00     19.40     0.00     412.00     1.00    566.50    566.50

*SECNO 420.000

5070,FLCHU FLCHD BY NORMAL BRIDGE
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NAT Q1=     329.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=     576.34
WATER EXCHANGE FROM NATURAL PROFILES BRIDGE

3470 ENCROACHMENT STATIONS=      300.0      345.0  TYPE=      4  TARGET=        0.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=       582.30 ELREA=       582.30


        UPSTREAM SECTION AT M-29

   426.00      9.84    576.34      0.00    576.24    577.45      1.10       .28       .01    577.30
    2140.        0.     2140.        0.        0.      254.        0.        4.        0.    570.80
      .02      0.00      8.43      0.00      .030      .040      .030      .040    566.50    310.35
  .005027       52.       52.       52.         0         0         0      0.00     34.65    345.00


*SECNO 500.000
 2800 NAT Q1=     676.24  WSEL=     577.27  ENC Q1=     686.16  WSEL=     577.37  RATIO=  -.0147
 NAT Q1=     686.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=     577.37

3301 HV CHANGED MORE THAN HVINS

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


3470 ENCROACHMENT STATIONS=      300.0      360.0  TYPE=      4  TARGET=        0.000
   500.00     11.66    577.36      0.00    577.27    577.67       .31       .14       .08    583.30
    2140.        0.     2140.        0.        0.      479.        0.        4.        1.    583.30
      .03      0.00      4.47      0.00      .030      .040      .030      .040    565.70    303.17
  .000977       74.       74.       74.         2         0         0      0.00     50.43    353.60


*SECNO 584.000
 2800 NAT Q1=     511.21  WSEL=     577.25  ENC Q1=     521.11  WSEL=     577.35  RATIO=  -.0194
 NAT Q1=     521.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=     577.35

3470 ENCROACHMENT STATIONS=      300.0      345.0  TYPE=      4  TARGET=        0.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=       779.50 ELREA=       779.50


        DOWNSTREAM SECTION AT TRA ROAD

   584.00     10.33    577.33      0.00    577.25    577.83       .50       .11       .06    576.50
    2140.        0.     2140.        0.        0.      376.        0.        5.        1.    574.80
      .03      0.00      5.69      0.00      .030      .040      .030      .040    567.00    300.00
  .001824       84.       84.       84.         2         0         0      0.00     45.00    345.00


SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED
SB  XK        XKOR      COEQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.00      1.15      2.50      0.00     35.00      0.00    500.00       .40    567.00    567.00

*SECNO 616.000

6070,LOW FLOW BY NORMAL BRIDGE

EGPRS=      0.000  EGLWC=    577.903  ELLC=    579.500  BCWSE=    577.331  ELTRD=    580.400
 [illegible]
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NAT Q1=    [illegible]  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=    577.41
WATER EL=CHANGE FROM NATURAL PROFILES BRIDGE

3470 ENCROACHMENT STATIONS=     300.0     345.0  TYPE=     4  TARGET=        0.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=      580.40 ELREA=      580.40

        UPSTREAM SECTION AT IRA ROAD

   616.00    10.39   577.39     0.00   577.31   577.89      .50      .06      .00   576.50
    2140.       0.    2140.       0.       0.     379.       0.       6.       1.   574.80
      .03     0.00     5.65     0.00     .030     .040     .030     .040   567.00   300.00
  .001784      32.      32.      32.        0        0        0     0.00    45.00   345.00

*SECNO 645.000
 2800 NAT Q1=    759.38  WSEL=    577.70  ENC Q1=    777.88  WSEL=    577.80  RATIO=  -.0244
 NAT Q1=    778.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=    577.80

3470 ENCROACHMENT STATIONS=     300.0     410.0  TYPE=     4  TARGET=        0.000
   645.00     9.18   577.78     0.00   577.70   577.95      .18      .03      .03   579.30
    2140.       0.    2140.       0.       0.     633.       0.       6.       1.   579.30
      .03     0.00     3.38     0.00     .030     .040     .030     .040   568.60   303.31
  .000764      29.      29.      29.        2        0        0     0.00   103.38   406.69

*SECNO 1600.000
 2800 NAT Q1=   1643.09  WSEL=    578.18  ENC Q1=   1643.09  WSEL=    578.28  RATIO=  0.0000
 NAT Q1=   1713.  RATIOS LOB,CH,ROB=   .0930   .9029   .0041  WSEL=    578.28
3280 CROSS SECTION   1600.00 EXTENDED      1.75 FEET

3470 ENCROACHMENT STATIONS=     127.0     645.0  TYPE=     4  TARGET=         .041
  1600.00     8.55   578.25     0.00   578.18   578.27      .02      .30      .02   576.90
    2140.     125.    2015.       0.     356.    1753.       0.      36.       8.   577.60
      .27      .35     1.15     0.00     .090     .050     .090     .046   569.70   127.00
  .000173     955.     955.     955.        2        0        0     0.00   518.00   645.00

*SECNO 3000.000
 2800 NAT Q1=    773.26  WSEL=    578.46  ENC Q1=    773.26  WSEL=    578.56  RATIO=  0.0000
 NAT Q1=    814.  RATIOS LOB,CH,ROB=   .0313   .8620   .1066  WSEL=    578.56
   SECNO    DEPTH    CWSEL    CRTWS    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      ELMTN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST

3470 ENCROACHMENT STATIONS=     333.4     626.3  TYPE=     4  TARGET=         .050
  3000.00     6.24   578.54     0.00   578.46   578.58      .04      .30      .01   576.50
    1350.       7.    1228.     115.       7.     730.     187.      85.      21.   576.50
      .52     1.03     1.68      .61     .030     .040     .060     .043   572.30   333.43
  .000311    1400.    1400.    1400.        2        0        0     0.00   292.82   626.25

*SECNO 4300.000
 2800 NAT Q1=    419.26  WSEL=    579.15  ENC Q1=    419.26  WSEL=    579.25  RATIO=  -.0000
 NAT Q1=    438.  RATIOS LOB,CH,ROB=   .0108   .8828   .1064  WSEL=    579.25

3470 ENCROACHMENT STATIONS=     300.0     609.6  TYPE=     4  TARGET=         .043
  4300.00     6.94   579.24     0.00   579.15   579.26      .02      .68      .00   577.00
    1350.       0.    1245.     105.       0.    1082.     147.     117.      30.   576.90
      .24     0.00     1.15      .72     .130     .104     .156     .061   572.30   300.00
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 .001053    1300.    1300.    1300.        2        0        0     0.00   309.65   609.65

*SECNO 6400.000
 2800 NAT Q1=     502.51  WSEL=     580.95  ENC Q1=     502.51  WSEL=     581.05  RATIO=  0.0000
 NAT Q1=     522.  RATIOS LOB,CH,ROB=  0.0000   .3982   .6018  WSEL=     581.05
3280 CROSS SECTION   6400.00 EXTENDED       3.75 FEET

3470 ENCROACHMENT STATIONS=      300.0      651.8  TYPE=      4  TARGET=          .038
  6400.00      9.45   581.05      0.00   580.95   581.07      .02      1.81      .00   586.80
    1350.        0.     558.      792.       0.     349.    1015.      179.      45.   578.20
     1.36      0.00     1.60       .78     .070     .080     .120      .068   571.60   314.38
 .000720     2100.    2100.     2100.        0        0        0     0.00   337.44   651.81

*SECNO 7400.000
 2800 NAT Q1=     521.96  WSEL=     581.64  ENC Q1=     521.96  WSEL=     581.74  RATIO=  0.0000
 NAT Q1=     544.  RATIOS LOB,CH,ROB=   .1085   .3799   .5117  WSEL=     581.74

3470 ENCROACHMENT STATIONS=      242.3      502.2  TYPE=      4  TARGET=          .041
  7400.00      9.14   581.74      0.00   581.64   581.77      .03       .69      .00   577.30
    1350.      124.     535.      690.     136.     370.     541.      207.      52.   578.30
     1.58       .91     1.45      1.28     .070     .100     .070      .072   572.60   242.25
 .000670     1000.    1000.     1000.        2        0        0     0.00   259.94   502.19

*SECNO 8235.000

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=      151.2      240.1  TYPE=      1  TARGET=        88.870
  8235.00      6.54   582.84      0.00   582.71   583.78      .95      1.74      .28100000.00
    1350.        0.    1346.        4.       0.     172.       5.      219.      55.   584.00
     1.61      0.00     7.82       .80     .140     .100     .140      .075   576.30   151.19
 .037061      835.     835.      835.        2        0        0     0.00    52.05   240.06

*SECNO 8634.000

3301 HV CHANGED MORE THAN HVINS

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

3470 ENCROACHMENT STATIONS=      150.0      190.0  TYPE=      1  TARGET=        40.000

        DOWNSTREAM SECTION AT SHORT CUT ROAD

  8634.00     12.76   585.96      0.00   585.94   586.08      .12      2.21      .08   584.80
    1350.        0.    1350.        0.       0.     492.       0.      222.      55.  100000.00
     1.65      0.00     2.74      0.00     .140     .100     .140      .076   573.20   150.00
 .002131      399.     399.      399.        4        0        0     0.00    40.00   190.00
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SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SR NOT SPECIFIED

SR	XK	WKOR	COFQ	RDLEN	RWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.17	2.50	0.00	35.75	0.00	352.00	.23	573.20	573.20

*SECNO 8666.000

6070,LOW FLOW BY NORMAL BRIDGE

EGPRS= 586.230 EGLWC= 586.593 ELLC= 582.500 PCWSE= 585.963 ELTRD= 585.900

3370 NORMAL BRIDGE,NPD= 6 MIN ELTRD= 585.90 MAX ELLC= 582.50

3470 ENCROACHMENT STATIONS= 150.0 190.0 TYPE= 1 TARGET= 40.000

UPSTREAM SECTION AT SHORT CUT ROAD

8666.00	12.95	586.05	0.00	586.07	586.25	.21	.15	.03	584.80
1350.	0.	1350.	0.	0.	370.	0.	222.	55.	100000.00
1.65	0.00	3.65	0.00	.140	.100	.140	.076	573.20	150.00
.016775	32.	32.	32.	2	0	0	-125.83	40.00	190.00

*SECNO 8765.000

3470 ENCROACHMENT STATIONS= 42.6 310.1 TYPE= 1 TARGET= 267.520

8765.00	10.36	586.66	0.00	586.38	586.72	.06	.45	.01	584.80
1350.	221.	761.	368.	255.	300.	362.	224.	56.	584.00
1.66	.87	2.54	1.02	.140	.100	.140	.076	576.30	42.56
.002094	99.	99.	99.	2	0	0	0.00	267.52	310.08

*SECNO 9900.000

2800 NAT Q1= 897.17 WSEL= 587.04 ENC Q1= 897.17 WSEL= 587.14 RATIO= 0.0000

NAT Q1= 920. RATIOS LOB,CH,ROB= .2330 .6798 .0872 WSEL= 587.14

3280 CROSS SECTION 9900.00 EXTENDED 1.87 FEET

3470 ENCROACHMENT STATIONS= 25.0 326.1 TYPE= 4 TARGET= .025

9900.00	9.97	587.27	0.00	587.04	587.28	.01	.55	.01	581.80
1350.	307.	939.	105.	438.	1383.	205.	262.	63.	582.30
2.13	.70	.68	.51	.100	.120	.120	.081	577.30	24.99
.000212	1135.	1135.	1135.	2	0	0	0.00	301.14	326.13

*SECNO 11600.000

2800 NAT Q1= 791.80 WSEL= 587.47 ENC Q1= 791.80 WSEL= 587.57 RATIO= 0.0000

NAT Q1= 812. RATIOS LOB,CH,ROB= .1164 .6550 .2281 WSEL= 587.57

3280 CROSS SECTION 11600.00 EXTENDED 6.09 FEET

3470 ENCROACHMENT STATIONS= 56.0 398.1 TYPE= 4 TARGET= .025

11600.00	9.79	587.69	0.00	587.47	587.69	.01	.41	.00	581.70
1350.	142.	906.	301.	269.	1440.	608.	347.	76.	582.80
2.93	.53	.63	.50	.150	.150	.150	.091	577.90	56.03
.000275	1700.	1700.	1700.	0	0	0	0.00	342.09	398.12

*SECNO 13150.000

2800 NAT Q1= 744.13 WSEL= 587.95 ENC Q1= 744.13 WSEL= 588.05 RATIO= 0.0000

NAT Q1= 771. RATIOS LOB,CH,ROB= .0733 .1361 .7935 WSEL= 588.05

SEC	DEPTH	CWSEL	CRITS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	OLOB	OCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IPC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 11.6 542.0 TYPE= 4 TARGET= .035

13150.00	8.54	588.14	0.00	587.95	588.14	.00	.45	.00	583.30
1350.	634.	188.	528.	1262.	293.	976.	433.	91.	582.30
3.74	.50	.64	.54	.138	.150	.138	.098	579.60	11.55
.000309	1550.	1550.	1550.	0	0	0	0.00	530.41	541.96

*SECNO 14984.000
2800 NAT Q1= 251.90 WSEL= 589.29 ENC Q1= 251.90 WSEL= 589.39 RATIO= 0.0000
NAT Q1= 271. RATIOS LOB,CH,ROB= .4082 .2489 .3429 WSEL= 589.39

3470 ENCROACHMENT STATIONS= 29.4 557.2 TYPE= 4 TARGET= .070

14984.00	6.40	589.40	0.00	589.29	589.43	.03	1.28	.01	586.20
1350.	543.	359.	448.	514.	201.	422.	510.	114.	587.70
4.14	1.06	1.79	1.06	.115	.130	.115	.102	583.00	29.43
.002808	1834.	1834.	1834.	3	0	0	0.00	527.81	557.24

*SECNO 15584.000
3280 CROSS SECTION 15584.00 EXTENDED .30 FEET

3470 ENCROACHMENT STATIONS= 260.0 600.0 TYPE= 1 TARGET= 340.000

DOWNSTREAM SECTION AT ARNOLD ROAD

15584.00	9.20	590.50	0.00	590.43	590.52	.02	1.10	.00	586.20
1350.	153.	414.	783.	146.	260.	808.	526.	120.	582.40
4.29	1.05	1.59	.97	.115	.130	.115	.103	581.30	260.00
.001281	600.	600.	600.	2	0	0	0.00	340.00	600.00

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB XK	XKOR	COEQ	BDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
0.00	1.21	2.50	0.00	25.50	0.00	183.00	.34	581.30	581.30

*SECNO 15616.000
3280 CROSS SECTION 15616.00 EXTENDED .47 FEET

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
591.52	591.34	0.00	780.	582.	183.	183.	587.90	589.10

3470 ENCROACHMENT STATIONS= 260.0 600.0 TYPE= 1 TARGET= 340.000

UPSTREAM SECTION AT ARNOLD ROAD

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 15616.00      0.37    590.67      0.00    590.61    590.69      .06       .11                    582.40
    135.       153.      399.      798.      153.      265.      854.      527.      120.
      4.       1.00      1.50       .93       .115      .130      .11       .103    581.30    260.00
 .001111       32.       32.       32.         2         0                 0.00    340.00    600.00

*SECNO 15766.000
2800 NAT Q1=     599.40  WSEL=    590.74  ENC Q1=    599.40  WSEL=    590.84  RATIO= -.0000
 NAT Q1=    428.  RATIOS LOB,CH,ROB=   .4514   .1611   .3875  WSEL=   590.84
3280 CROSS SECTION  15766.00 EXTENDED       .59 FEET


3470 ENCROACHMENT STATIONS=      19.6     578.1  TYPE=     4  TARGET=       .046
 15766.00      7.79    590.79      0.00    590.74    590.80      .01       .11       .00    586.20
    1350.      605.      230.      515.      924.      254.      788.      533.      121.    587.70
      4.35      .66       .91       .65       .115      .130      .115      .103    583.00     19.62
 .000530       150.      150.      150.         0         0         0      0.00    558.50    578.12

*SECNO 16234.000
3280 CROSS SECTION  16234.00 EXTENDED       .98 FEET

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


3470 ENCROACHMENT STATIONS=      110.0     340.0  TYPE=     1  TARGET=     230.000
        DOWNSTREAM SECTION AT HESSEN ROAD

 16234.00      7.99    591.10      0.00    591.12    591.22      .03       .41       .01    586.20
    1350.      901.      405.        4.      705.      265.        7.      548.      126.    587.70
      4.45      1.28      1.68       .63       .115      .130      .115      .104    583.20    110.00
 .001729       468.      468.      468.         1         0         0      0.00    230.00    340.00

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SA NOT SPECIFIED
SA   XK        XKOR      COEQ      PDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
      0.00      1.20      2.50      0.00     24.75      0.00    200.00       .36    583.20    583.20

*SECNO 16266.000

6070,LOW FLOW BY NORMAL BRIDGE

EGPRS=   592.038  EGLWC=   592.133  ELLC=   590.500  PCWSE=   591.189  ELTRD=   590.600
3280 CROSS SECTION  16266.00 EXTENDED      1.06 FEET


3370 NORMAL BRIDGE,NRD=  6 MIN ELTRD=  590.60 MAX ELLC=  590.50

3470 ENCROACHMENT STATIONS=      110.0     340.0  TYPE=     1  TARGET=     230.000
        UPSTREAM SECTION AT HESSEN ROAD

 16266.00      8.06    591.26      0.00    591.65    591.36      .10       .12       .02    586.20
    1350.      810.      735.        4.      331.      240.        5.      548.      126.    587.70
```

```
 .015158      32.      32.      32.       2        0        0  -413.69   230.00   340.00

*SECNO 16416.000
 2800 NAT Q1=     632.86  WSEL=     591.76  ENC Q1=     632.86  WSEL=     591.86  RATIO=  -.0000
 NAT Q1=     657.  RATIOS LOB,CH,ROB=   .0944   .0607   .8448  WSEL=     591.86
3280 CROSS SECTION  16416.00 EXTENDED       4.39 FEET


3470 ENCROACHMENT STATIONS=       50.1      366.8  TYPE=      4  TARGET=          .036
 16416.00      8.19   591.59      0.00   591.76   591.61      .02      .24      .01   586.10
    1350.      110.      88.     1152.     107.      69.    1166.     552.     127.   586.00
     4.49      1.02     1.28      .99     .090     .090     .090     .104   583.40    50.12
  .000557      150.     150.     150.        3        0        0     0.00   316.65   366.76

*SECNO 18000.000
 2800 NAT Q1=     238.21  WSEL=     593.25  ENC Q1=     238.21  WSEL=     593.35  RATIO=  0.0000
 NAT Q1=     251.  RATIOS LOB,CH,ROB=  0.0000   .3467   .6533  WSEL=     593.35
3280 CROSS SECTION  18000.00 EXTENDED       3.03 FEET


3470 ENCROACHMENT STATIONS=       64.0      355.8  TYPE=      4  TARGET=          .052
 18000.00      5.13   593.33      0.00   593.25   593.39      .07     1.77      .02   593.50
    1350.        0.     495.     855.       0.     164.     665.     592.     138.   591.70
     4.72      0.00     3.03     1.29     .130     .065     .130     .101   588.20    64.57
  .003287     1584.    1584.    1584.        3        0        0     0.00   291.23   355.79

*SECNO 20200.000
 2800 NAT Q1=     432.37  WSEL=     596.88  ENC Q1=     432.37  WSEL=     596.98  RATIO=  0.0000
 NAT Q1=     451.  RATIOS LOB,CH,ROB=   .4306   .1826   .3868  WSEL=     596.98

3470 ENCROACHMENT STATIONS=       54.3      491.5  TYPE=      4  TARGET=          .041
 20200.00      8.37   596.97      0.00   596.88   596.99      .01     3.59      .01   593.30
    1350.      576.     257.     518.     790.     201.     733.     656.     156.   592.50
     5.46       .73     1.28      .71     .155     .127     .155     .104   588.60    54.28
  .000971     2200.    2200.    2200.        3        0        0     0.00   437.19   491.47

*SECNO 22800.000
 2800 NAT Q1=     362.03  WSEL=     599.84  ENC Q1=     362.03  WSEL=     599.94  RATIO=  0.0000
 NAT Q1=     374.  RATIOS LOB,CH,ROB=   .0932   .6833   .2235  WSEL=     599.94
   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    COPAR    TOPWID    ENDST


3470 ENCROACHMENT STATIONS=      169.0      325.7  TYPE=      4  TARGET=          .032
 22800.00      8.73   599.93      0.00   599.84   600.01      .08     3.00      .02   595.50
    1350.      108.     953.     289.     105.     373.     263.     730.     174.   596.10
     5.80      1.03     2.55     1.10     .115     .081     .115     .101   591.20   169.02
  .001394     2600.    2600.    2600.        0        0        0     0.00   156.72   325.74

*SECNO 24200.000
 2800 NAT Q1=     431.99  WSEL=     601.50  ENC Q1=     431.99  WSEL=     601.60  RATIO=  0.0000
 NAT Q1=     447.  RATIOS LOB,CH,ROB=   .3615   .4427   .1958  WSEL=     601.60

3470 ENCROACHMENT STATIONS=       42.7      310.5  TYPE=      4  TARGET=          .034
 24200.00     11.50   601.60      0.00   601.50   601.62      .03     1.61      .00   597.30
    1350.      447.     615.     249.     559.     348.     342.     762.     101.   596.50
```

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24200.00    11.50   601.60     0.00   601.[illegible]   601.[illegible]     .03     1.61     [illegible]   [illegible]
   1350.     [illegible]87.     615.     249.     559.     348.     342.     762.     181.     598.30
    6.11     [illegible].87     1.76      .73     .142     .104     .142     [illegible]1   590.10     42.70
 .000968     [illegible]00.    1400.    1400.        2        0        0     [illegible]0   267.84    310.54

*SECNO 26000.000
 2800 NAT Q1=     430.91  WSEL=     603.16  ENC Q1=     430.91  WSEL=     603.26  RATIO=  0.0000
 NAT Q1=     446.  RATIOS LOB,CH,ROB=    .3050    .6715    .0236  WSEL=     603.26

3470 ENCROACHMENT STATIONS=      244.2      337.7  TYPE=      4  TARGET=          .034
 26000.00     8.95   603.25     0.00   603.16   603.44      .19     1.77      .05   600.30
    1350.     399.     941.       9.     192.     235.      13.     797.     188.   599.60
     6.26     2.08     4.00      .70     .050     .040     .100     .097   594.30   244.24
 .000994     1800.    1800.    1800.        2        0        0     0.00    93.41   337.65
```

THIS RUN EXECUTED 10 APR 78 04.11.29

****
HEC2 RELEASE DATED NOV 76 UPDATED AUG1977
ERROR CORR - 01,02
MODIFICATION - 50,51,52,53
****

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

SWAN CREEK

SUMMARY PRINTOUT

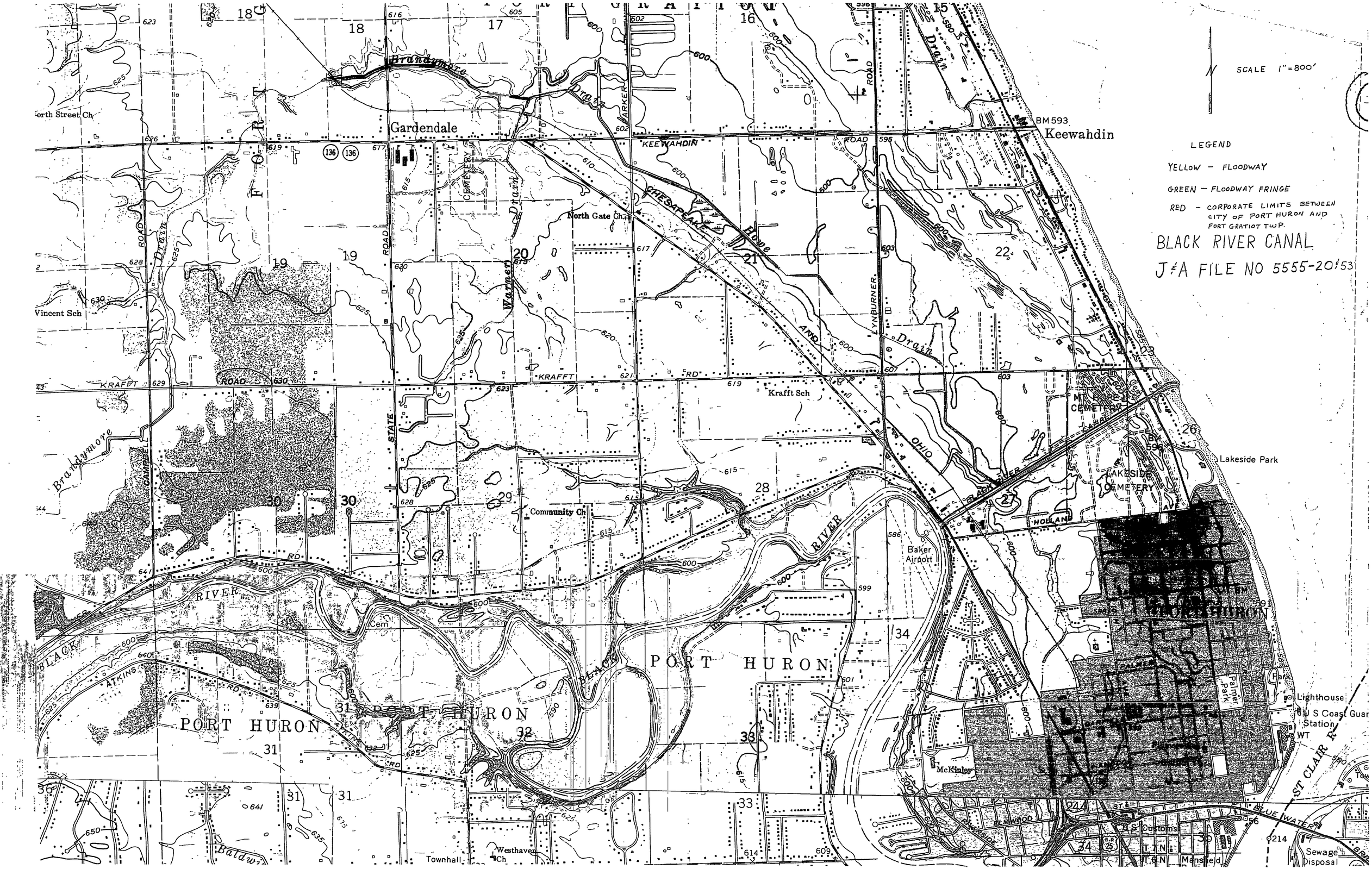
SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	TOPWID	STENCL	STENCR
0.000	0.00	0.00	0.00	565.70	2140.00	575.80	48.55	0.00	0.00
0.000	0.00	0.00	0.00	565.70	2140.00	575.90	48.65	300.00	360.00
315.000	315.00	0.00	0.00	565.70	2140.00	576.32	49.06	0.00	0.00
315.000	315.00	0.00	0.00	565.70	2140.00	576.40	49.14	300.00	360.00
374.000	59.00	0.00	0.00	566.50	2140.00	575.85	33.98	0.00	0.00
374.000	59.00	0.00	0.00	566.50	2140.00	575.96	34.13	300.00	345.00
426.000	52.00	582.30	579.30	566.50	2140.00 *	576.24	34.51	0.00	0.00
426.000	52.00	999999.00	0.00	566.50	2140.00	576.34	34.65	300.00	345.00
500.000	74.00	0.00	0.00	565.70	2140.00	577.27	50.30	0.00	0.00
500.000	74.00	0.00	0.00	565.70	2140.00	577.36	50.43	300.00	360.00
584.000	84.00	0.00	0.00	567.00	2140.00	577.25	45.00	0.00	0.00
584.000	84.00	0.00	0.00	567.00	2140.00	577.33	45.00	300.00	345.00
616.000	32.00	580.40	579.50	567.00	2140.00	577.31	45.00	0.00	0.00
616.000	32.00	999999.00	0.00	567.00	2140.00	577.39	45.00	300.00	345.00
645.000	29.00	0.00	0.00	568.60	2140.00	577.70	103.04	0.00	0.00
645.000	29.00	0.00	0.00	568.60	2140.00	577.78	103.38	300.00	410.00
1600.000	955.00	0.00	0.00	569.70	2140.00	578.18	724.36	0.00	0.00
1600.000	955.00	0.00	0.00	569.70	2140.00	578.25	518.00	127.00	645.00
3000.000	1400.00	0.00	0.00	572.30	1350.00	578.46	413.28	0.00	0.00
3000.000	1400.00	0.00	0.00	572.30	1350.00	578.54	292.82	333.43	626.25
4300.000	1300.00	0.00	0.00	572.30	1350.00	579.15	359.96	0.00	0.00
4300.000	1300.00	0.00	0.00	572.30	1350.00	579.24	309.65	300.00	609.65
6400.000	2100.00	0.00	0.00	571.60	1350.00	580.95	355.36	0.00	0.00
6400.000	2100.00	0.00	0.00	571.60	1350.00	581.05	337.44	300.00	651.82
7400.000	1000.00	0.00	0.00	572.60	1350.00	581.64	298.36	0.00	0.00
7400.000	1000.00	0.00	0.00	572.60	1350.00	581.74	259.94	242.25	502.19

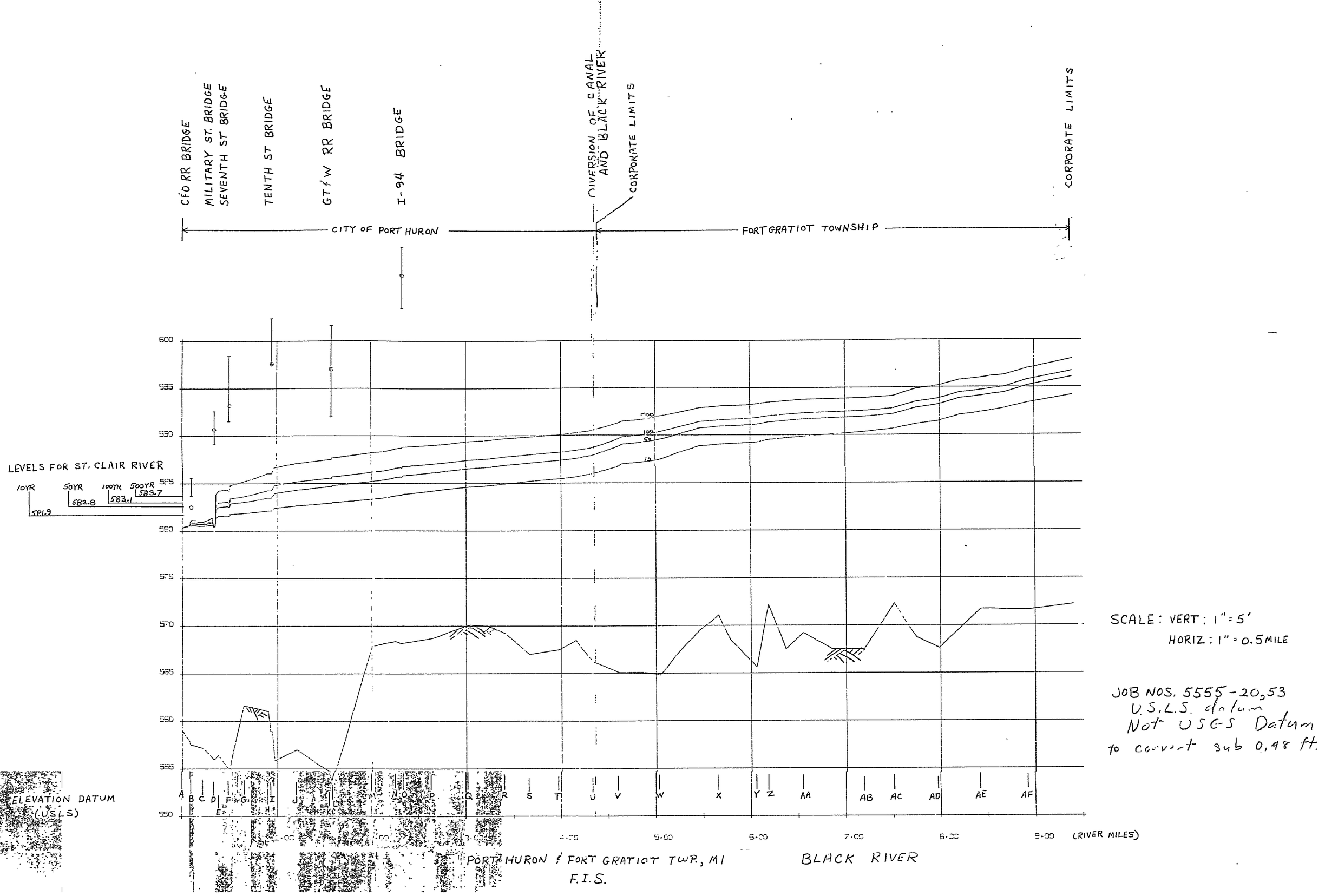
O	XLCH	FLTHD	FLLC	FLMIN	Q	CHSEL	TOPWID	STENCL	STENCR
8235.000	835.00	0.00	0.00	576.30	1350.00	582.71	47.57	151.19	240.06
8235.000	835.00	0.00	0.00	576.30	1350.00	582.84	52.05	151.19	240.06
8634.000	399.00	0.00	0.00	573.20	1350.00	585.94	40.00	150.00	190.00
8634.000	399.00	0.00	0.00	573.20	1350.00	585.96	40.00	150.00	190.00
8666.000	32.00	585.90	582.50	573.20	1350.00	584.07	40.00	150.00	190.00
8666.000	32.00	585.90	582.50	573.20	1350.00	586.05	40.00	150.00	190.00
8765.000	99.00	0.00	0.00	576.30	1350.00	586.34	267.52	42.56	310.08
8765.000	99.00	0.00	0.00	576.30	1350.00	586.66	267.52	42.56	310.08
9900.000	1135.00	0.00	0.00	577.30	1350.00	587.04	334.95	0.00	0.00
9900.000	1135.00	0.00	0.00	577.30	1350.00	587.27	301.14	24.99	326.13
11600.000	1700.00	0.00	0.00	577.90	1350.00	587.47	364.13	0.00	0.00
11600.000	1700.00	0.00	0.00	577.90	1350.00	587.69	342.09	56.03	398.12
13150.000	1550.00	0.00	0.00	579.60	1350.00	587.95	572.29	0.00	0.00
13150.000	1550.00	0.00	0.00	579.60	1350.00	588.14	530.41	11.55	541.96
14984.000	1834.00	0.00	0.00	583.00	1350.00	589.29	588.59	0.00	0.00
14984.000	1834.00	0.00	0.00	583.00	1350.00	589.40	527.81	29.43	557.24
15584.000	600.00	0.00	0.00	581.30	1350.00	590.43	340.00	260.00	600.00
15584.000	600.00	0.00	0.00	581.30	1350.00	590.50	340.00	260.00	600.00
15616.000	32.00	589.10	587.90	581.30	1350.00	590.61	340.00	260.00	600.00
15616.000	32.00	589.10	587.90	581.30	1350.00	590.67	340.00	260.00	600.00
15766.000	150.00	0.00	0.00	583.00	1350.00	590.74	595.13	0.00	0.00
15766.000	150.00	0.00	0.00	583.00	1350.00	590.79	558.50	19.62	578.12
16234.000	468.00	0.00	0.00	583.20	1350.00	591.12	230.00	110.00	340.00
16234.000	468.00	0.00	0.00	583.20	1350.00	591.19	230.00	110.00	340.00
16266.000	32.00	590.60	590.50	583.20	1350.00	591.65	230.00	110.00	340.00
16266.000	32.00	590.60	590.50	583.20	1350.00	591.26	230.00	110.00	340.00
16416.000	150.00	0.00	0.00	583.40	1350.00	591.76	323.97	0.00	0.00
16416.000	150.00	0.00	0.00	583.40	1350.00	591.59	316.65	50.12	366.77
18000.000	1584.00	0.00	0.00	588.20	1350.00	593.25	305.19	0.00	0.00
18000.000	1584.00	0.00	0.00	588.20	1350.00	593.33	291.23	64.00	355.80
20200.000	2200.00	0.00	0.00	588.60	1350.00	596.88	491.66	0.00	0.00
20200.000	2200.00	0.00	0.00	588.60	1350.00	596.97	437.19	54.28	491.47
22800.000	2600.00	0.00	0.00	591.20	1350.00	599.84	234.30	0.00	0.00
22800.000	2600.00	0.00	0.00	591.20	1350.00	599.93	156.72	169.02	325.74
24200.000	1400.00	0.00	0.00	590.10	1350.00	601.50	303.63	0.00	0.00
24200.000	1400.00	0.00	0.00	590.10	1350.00	601.60	267.84	42.70	310.54
26000.000	1800.00	0.00	0.00	594.30	1350.00	603.16	115.50	0.00	0.00
26000.000	1800.00	0.00	0.00	594.30	1350.00	603.25	93.41	244.24	337.65

SUMMARY OF ERRORS

FLOODWAY DATA, SWAN CREEK
PROFILE NO. 2

	STATION	FLOODWAY WIDTH (FT)	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
A	0.000	40.	407.	5.3	575.9	575.8	.1
B	315.000	40.	431.	5.0	576.4	576.3	.1
	374.000	30.	241.	8.9	575.9	575.8	.1
	426.000	35.	254.	8.4	576.3	576.2	.1
C	500.000	50.	479.	4.5	577.4	577.3	.1
	584.000	45.	376.	5.7	577.3	577.2	.1
	616.000	45.	379.	5.6	577.4	577.3	.1
D	645.000	103.	633.	3.4	577.8	577.7	.1
E	1600.000	518.	2109.	1.0	578.3	578.2	.1
F	3000.000	293.	924.	1.5	578.6	578.5	.1
G	4300.000	310.	1229.	1.1	579.2	579.1	.1
H	6400.000	337.	1344.	1.0	581.0	580.9	.1
I	7400.000	260.	1047.	1.3	581.7	581.6	.1
J	8235.000	89.	177.	7.6	582.8	582.7	.1
	8634.000	40.	492.	2.7	585.9	585.9	0.0
	8666.000	40.	370.	3.7	586.1	586.1	0.0
K	8765.000	268.	~~817~~ 832	~~1.5~~ 1.6	586.6	586.3	586.3 ~~.3~~ 0.0
L	9900.000	~~304~~ 335	~~2070~~ 2039	.7	587.2	587.0	587.0 ~~.2~~ 0.0
M	11600.000	~~342~~ 364	~~2316~~ 2304	.6	587.7	587.5	587.5 ~~.2~~ 0.0
N	13150.000	530.	2530.	.5	588.2	588.1	588.0 ~~.2~~ 0.1
O	14984.000	528.	1137.	1.2	589.4	589.3	.1
	15584.000	340.	1214.	1.1	590.5	590.4	.1
	15610.000	340.	1272.	1.1	590.7	590.6	.1
P	15766.000	558.	1965.	.7	590.8	590.7	.1
Q	16234.000	230.	976.	1.4	591.2	591.1	.1
	16266.000	230.	579.	2.3	591.3	591.6	-.3
R	16416.000	~~317~~ 324	~~1342~~ 1422	1.0 0.9	591.78	591.8	-.1 0.0
S	18000.000	291.	829.	1.6	593.4	593.3	.1
T	20200.000	437.	1724.	.8	597.0	596.9	.1
U	22800.000	157.	741.	1.8	599.9	599.8	.1
V	24200.000	268.	1249.	1.1	601.6	601.5	.1
W	26000.000	93.	440.	3.1	603.3	603.2	.1


SCALE 1"=800'
LEGEND
YELLOW - FLOODWAY
GREEN - FLOODWAY FRINGE
RED - CORPORATE LIMITS BETWEEN CITY OF PORT HURON AND FORT GRATIOT TWP.
BLACK RIVER CANAL
J&A FILE NO 5555-20&53
Gardendale
Keewahdin
North Gate Ch
Vincent Sch
Krafft Sch
Community Ch
Baker Airport
McKinley
Lakeside Park
Lighthouse
U S Coast Guard Station
Sewage Disposal
Townhall
Westhaven Ch
PORT HURON
BLACK RIVER
ST CLAIR R
CHESAPEAKE AND OHIO
Brandymore Drain
Warner Drain
Howe Drain
Lynburner Drain
Brandymore
Baldwin
KEEWAHDIN ROAD
KRAFFT ROAD
STATE ROAD
CAMPBELL ROAD
ATKINS RD
LYNBURNER ROAD
HOLLAND AVE
BLUE WATER
BM 593
Palmer Park
Mansfield
U S Customs
T 7 N
T 6 N



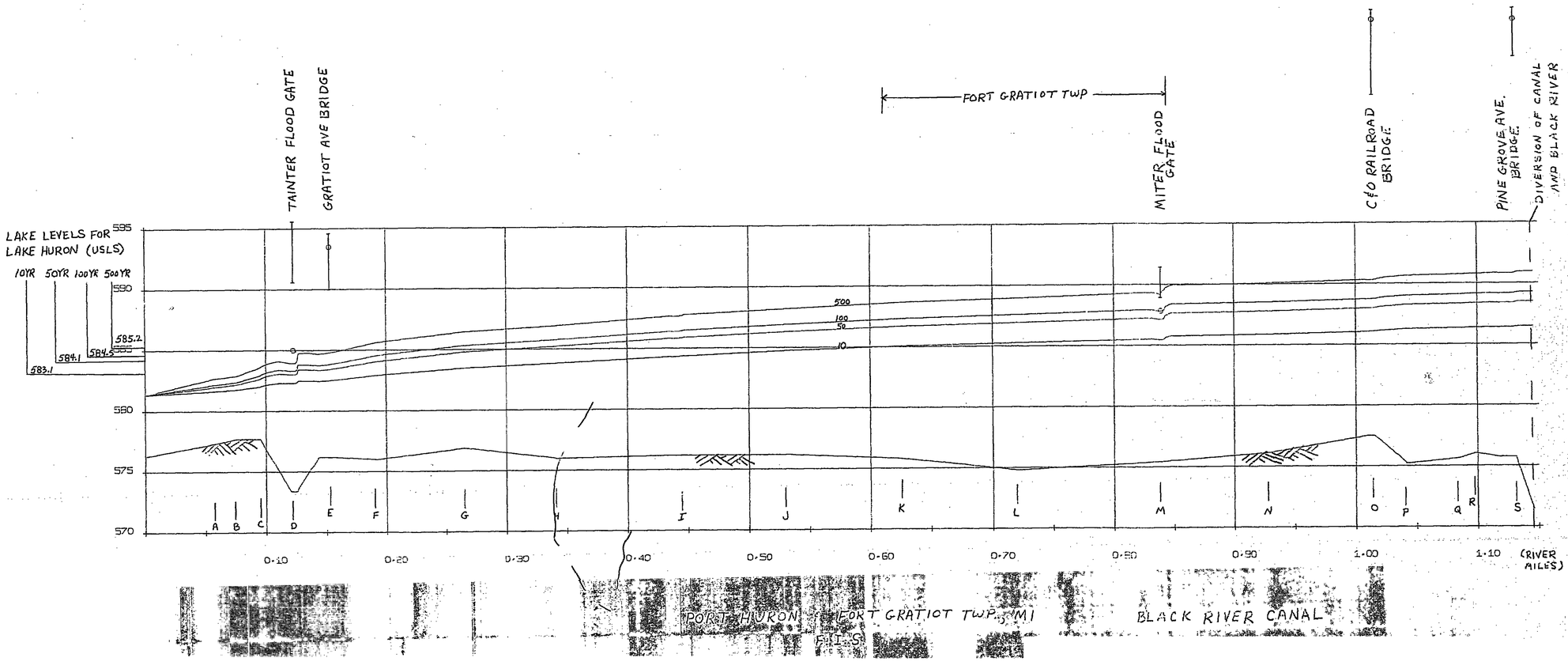
SCALE: VERT: 1" = 5'
HORIZ: 1" = 0.5 MILE

JOB NOS. 5555-20,53
U.S.L.S. datum
Not USGS Datum
to convert sub 0.48 ft.

PORT HURON & FORT GRATIOT TWP., MI
F.I.S.

BLACK RIVER

Black River



SCALE: VERT: 1" = 5'
HORIZ: 1" = 0.05 MILE

ELEVATION DATUM (USLS)

JOB NOS. 5555-20, 53

Subtract .78 to get M.S.L.

BLACK RIVER

FIS NOS. 5555-20,53

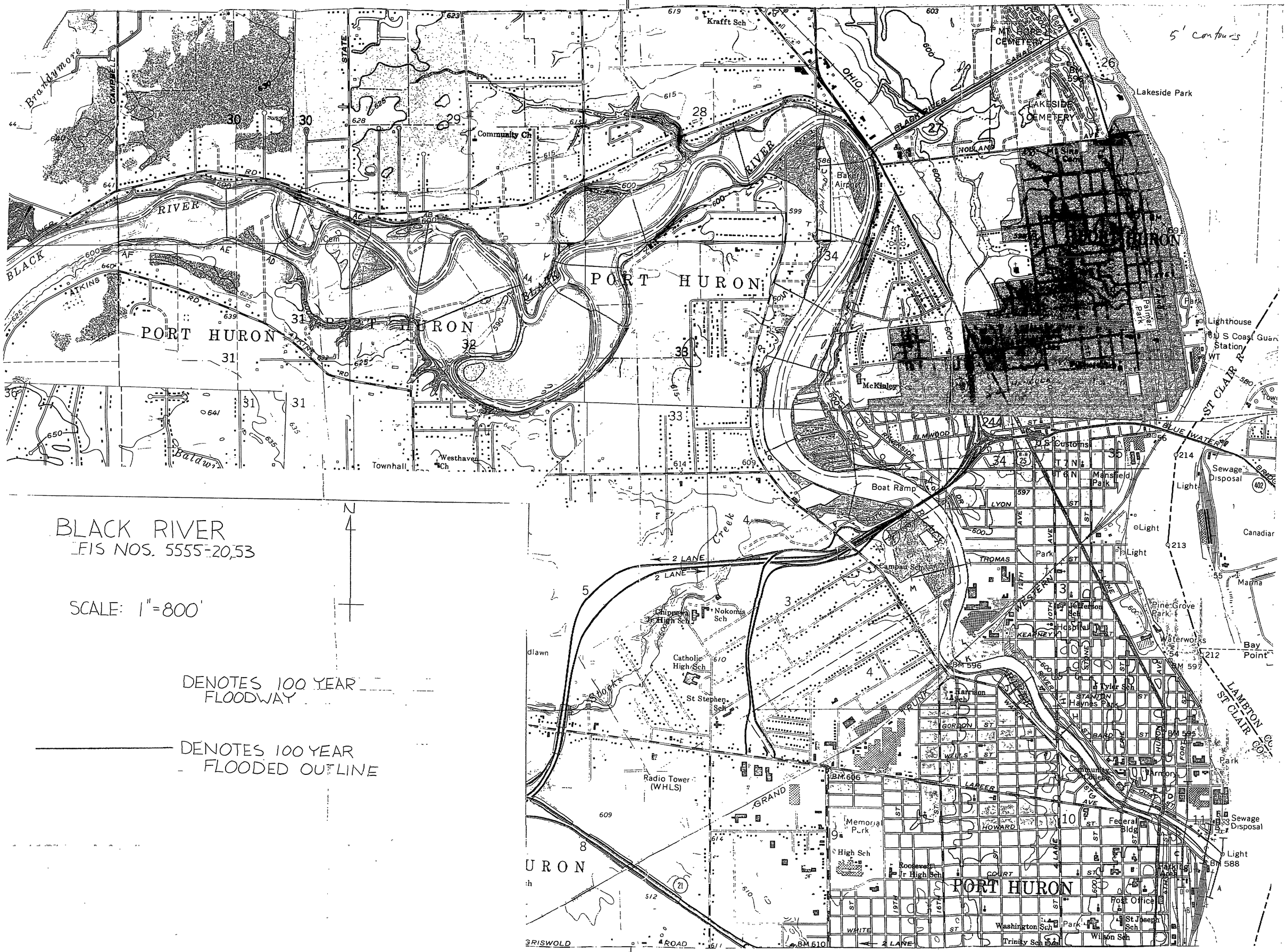
N

SCALE: 1"=800'

DENOTES 100 YEAR FLOODWAY

DENOTES 100 YEAR FLOODED OUTLINE

5' contours



N

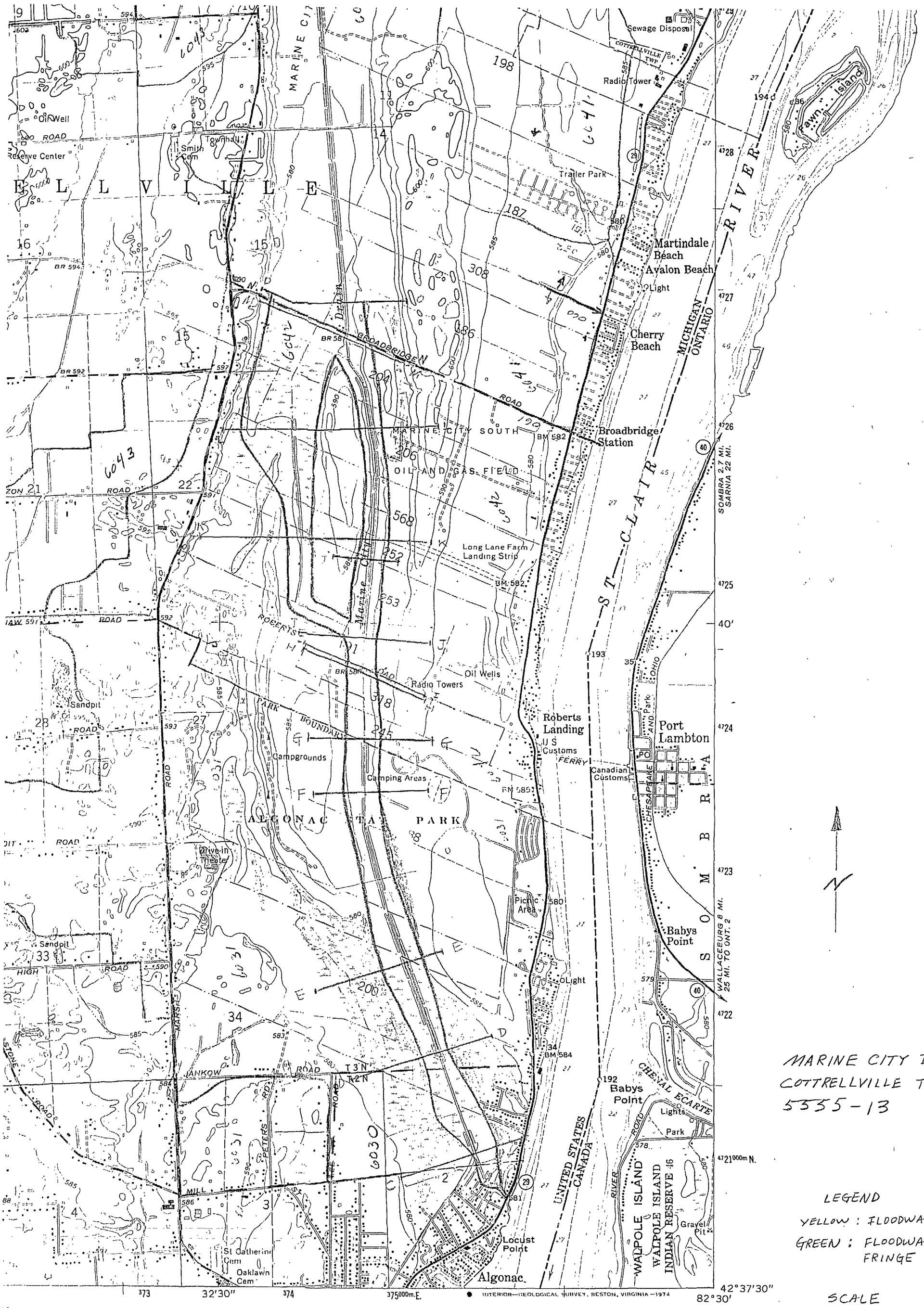
SCALE: 1"=800'

DENOTES
100 YEAR
FLOODWAY

DENOTES
100 YEAR
FLOODED
OUTLINE

BEAUBIEN
CREEK

COTTRELLVILLE
TWP
FIS #5555-13



MARINE CITY DRAIN
COTTRELLVILLE TWP.
5355-13

LEGEND

YELLOW : FLOODWAY

GREEN : FLOODWAY FRINGE

SCALE

1" = 2000'

1 MILE

4000 5000 6000 7000 FEET

1 KILOMETER

ATES AND 10 FEET IN CANADA
LEVEL
DATUM IS RIVER SURFACE AT
AND LAKE ST. CLAIR 571.7

NATIONAL MAP ACCURACY STANDARDS
VEY, RESTON, VIRGINIA 22092
SYMBOLS IS AVAILABLE ON REQUEST

MICHIGAN

QUADRANGLE LOCATION

Revisions shown in purple compiled from aerial photographs taken 1973. This information not

ROAD CLASSIFICATION

Primary highway, all weather, hard surface

Secondary highway, all weather, hard surface

Light-duty road, all weather, improved surface

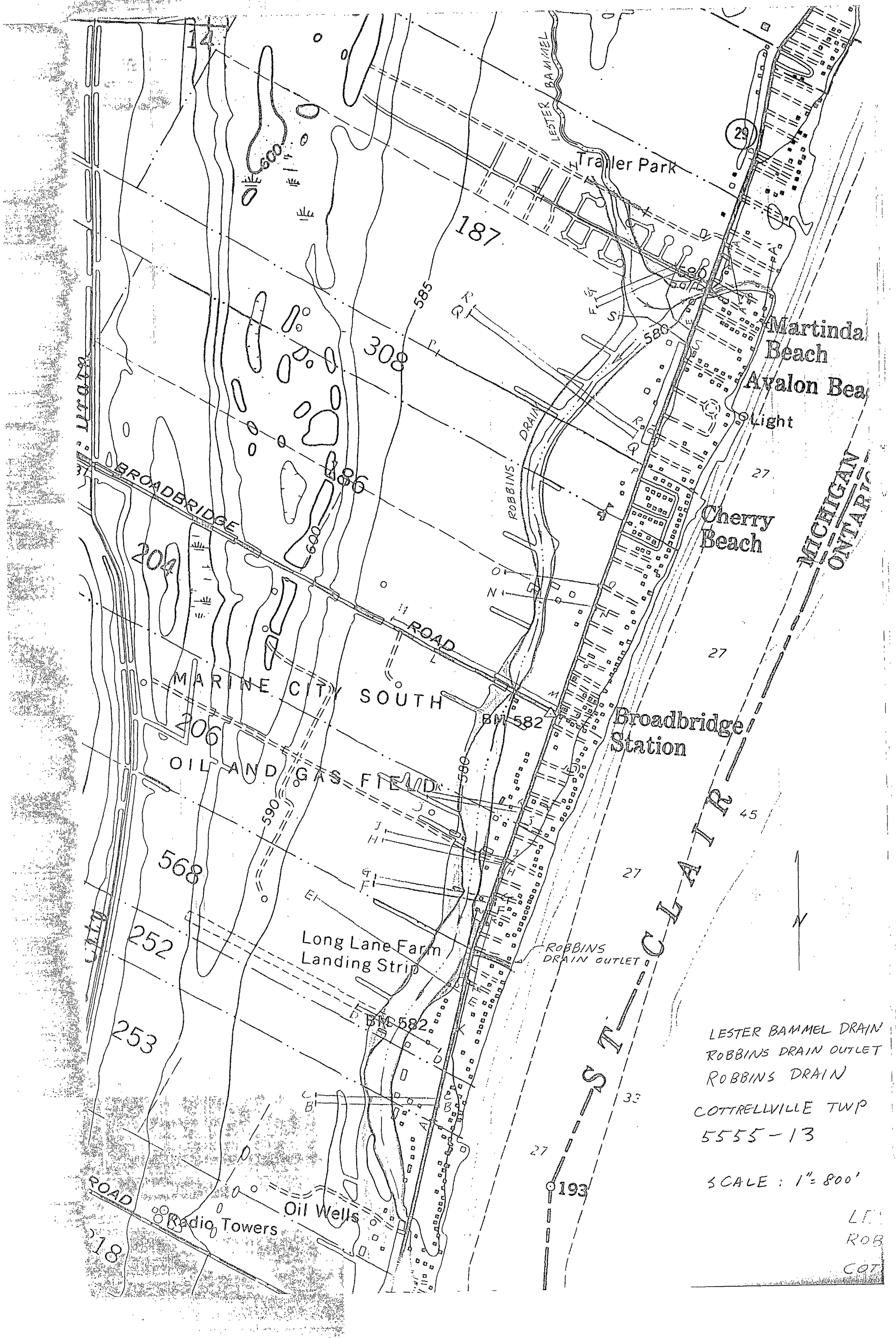
Unimproved road, fair or dry weather.

State Route

MARINE CITY, MICH.—ONT.

N4237.5—W8230/7.5

1968
PHOTOREVISED 1973



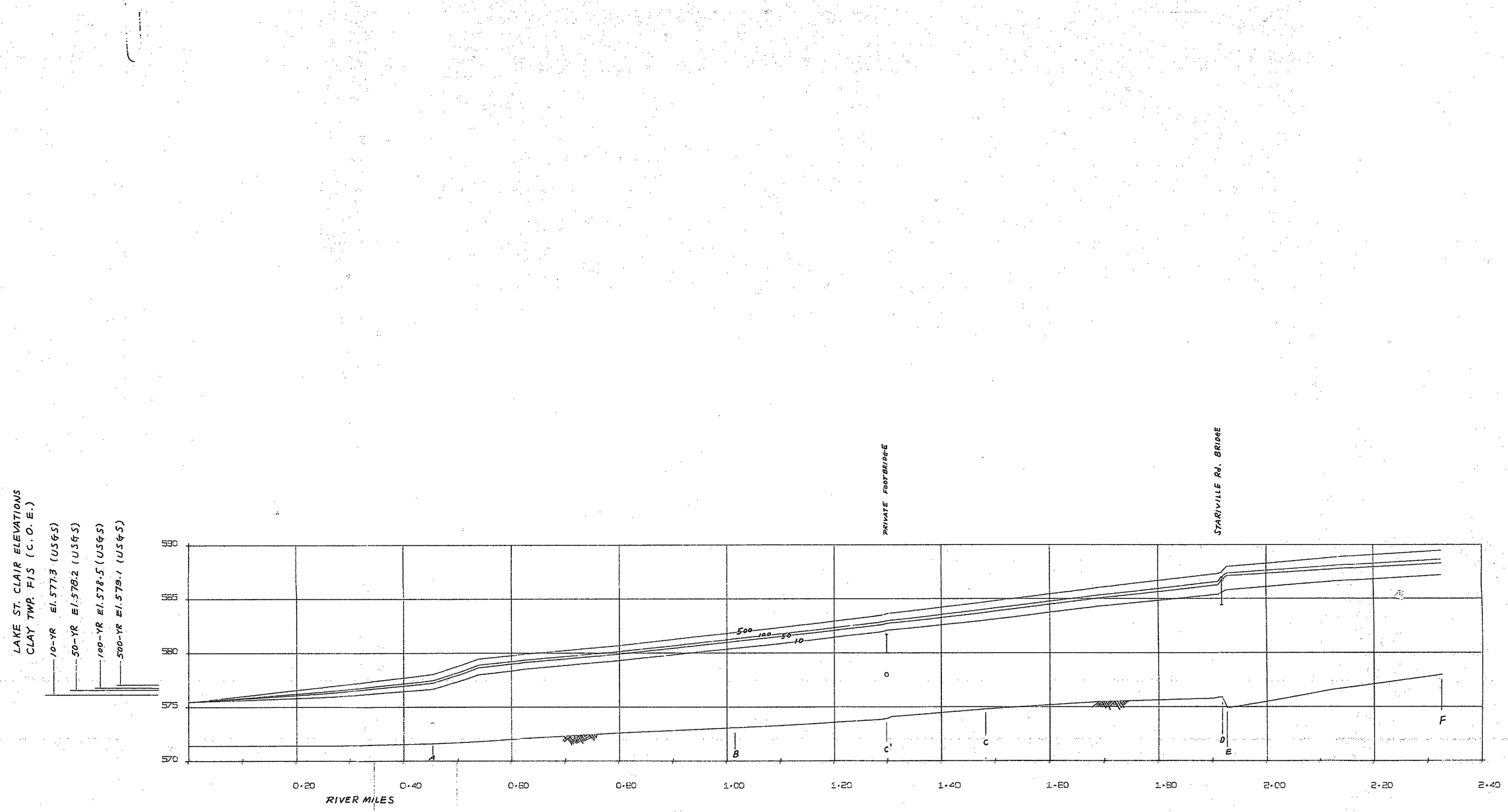
LESTER BAMMEL DRAIN
ROBBINS DRAIN OUTLET
ROBBINS DRAIN

COTTRELLVILLE TWP

5555 - 13

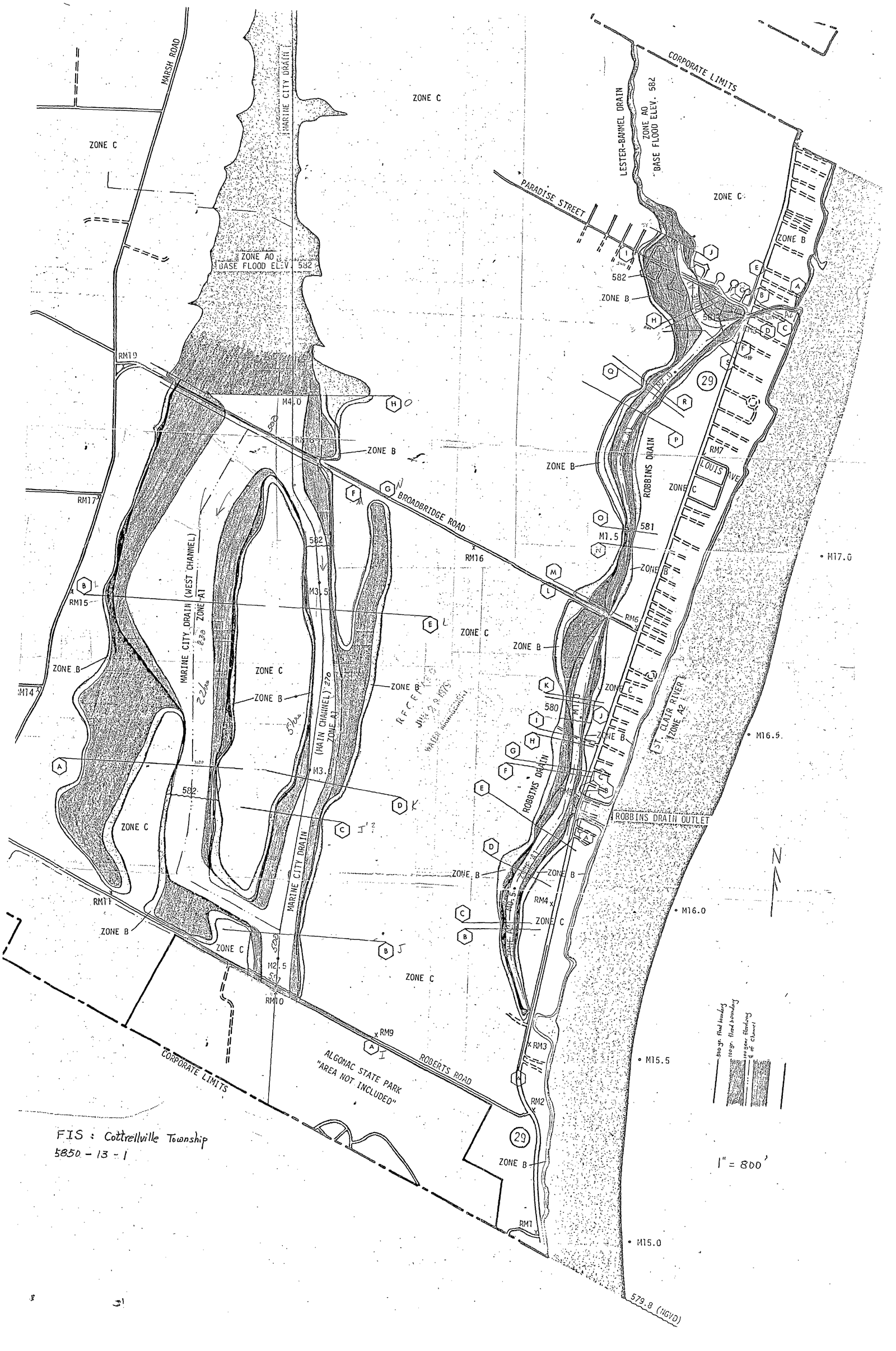
SCALE : 1" = 800'

LE
ROB
COT



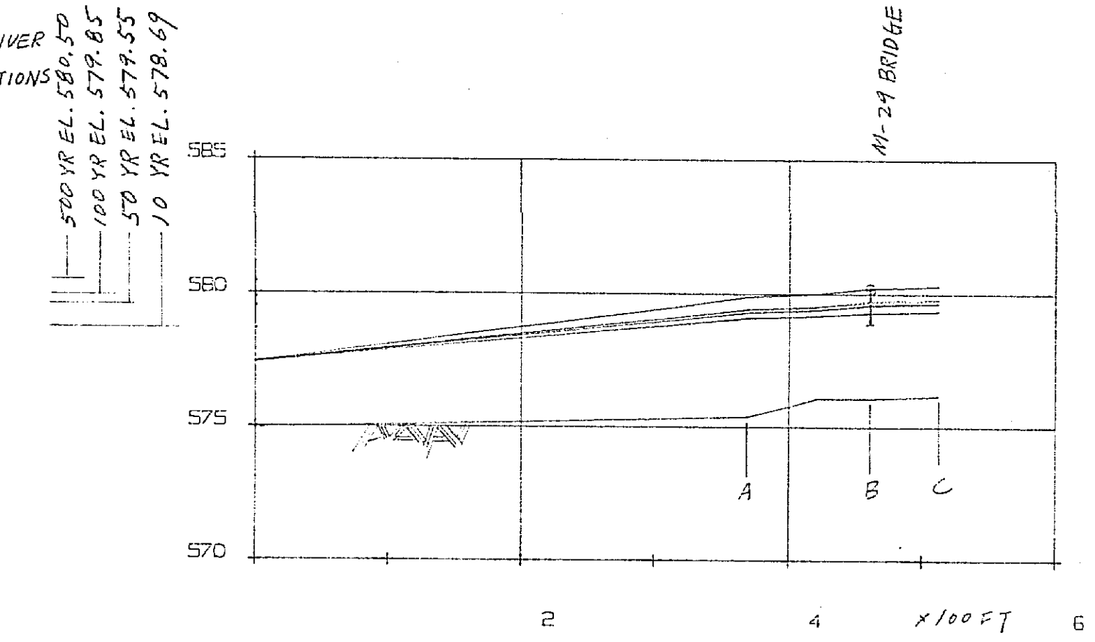
Note: Unrevised Profile - Check HEC-2 printout

BEAUBIEN CREEK
COTTRELLVILLE TOWNSHIP FIS 5555-13



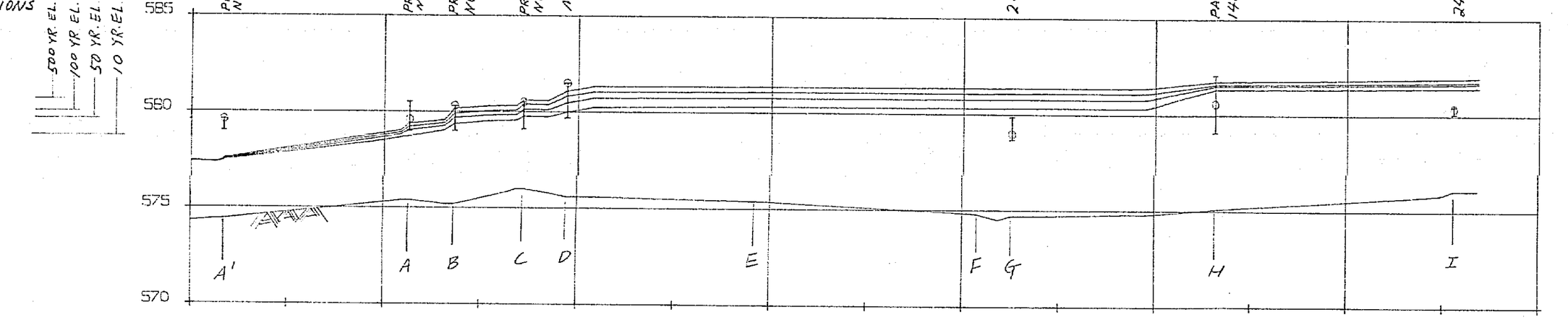
FIS : Cottrellville Township
5850 - 13 - 1

ST. CLAIR RIVER
FLOOD ELEVATIONS
500 YR EL. 580.50
100 YR EL. 579.85
50 YR EL. 579.55
10 YR EL. 578.69



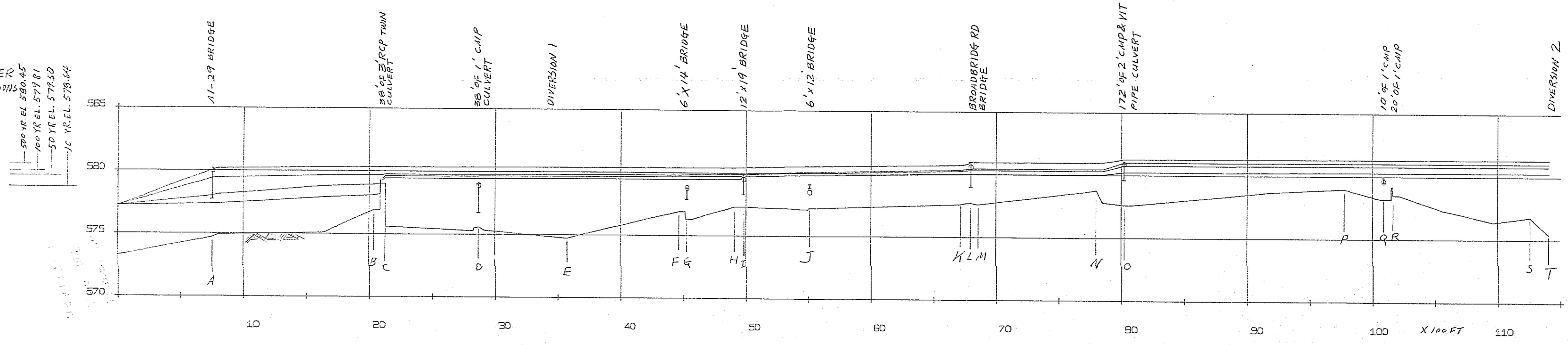
ROBBINS DRAIN OUTLET

ST. CLAIR RIVER
FLOOD ELEVATIONS
500 YR EL 580.58
100 YR EL 579.92
50 YR EL 579.62
10 YR EL 578.77

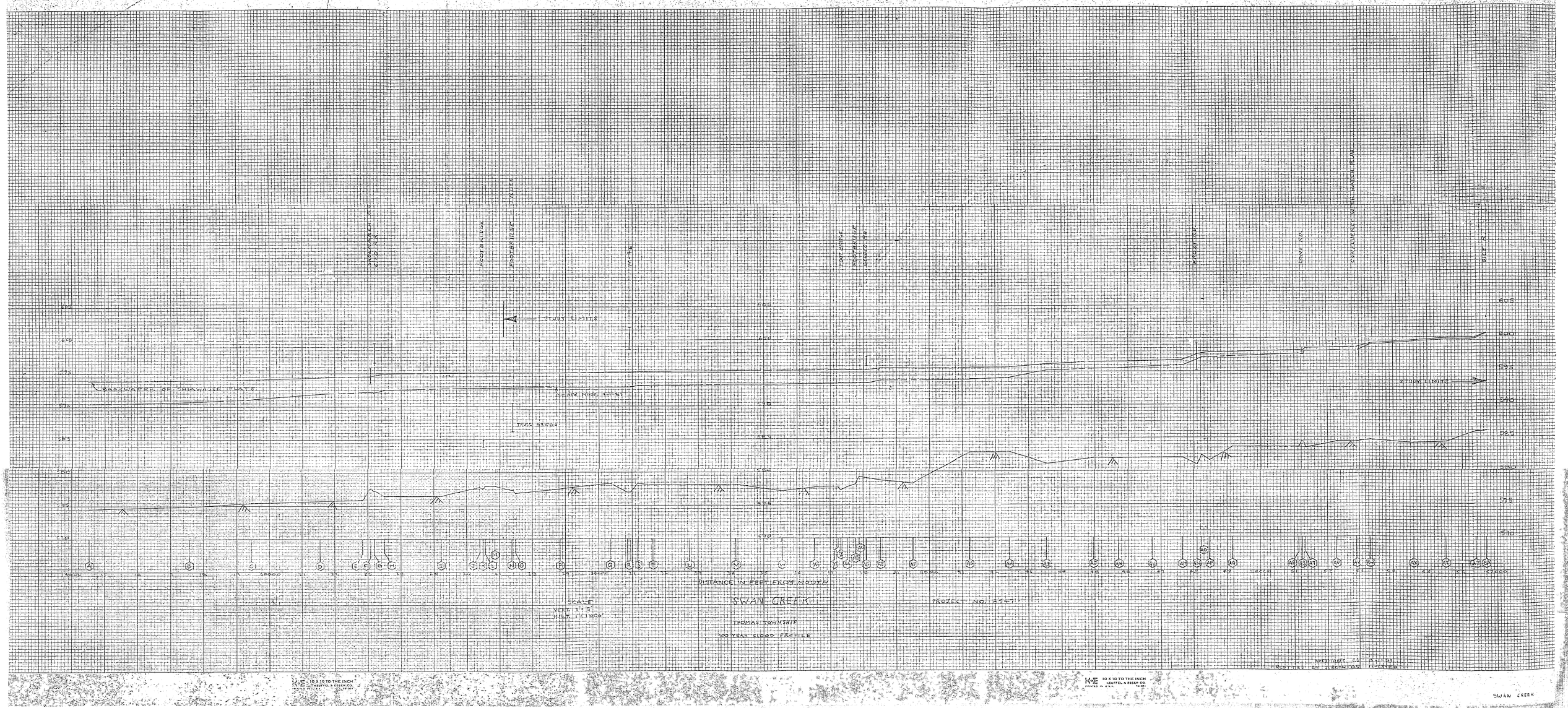


LESTER BAMMEL DRAIN

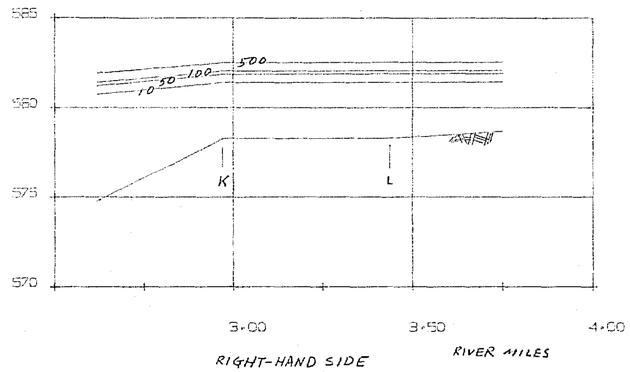
ST. CLAIR RIVER
FLOOD ELEVATIONS
500 YR EL 580.45
100 YR EL 579.81
50 YR EL 579.50
10 YR EL 578.64

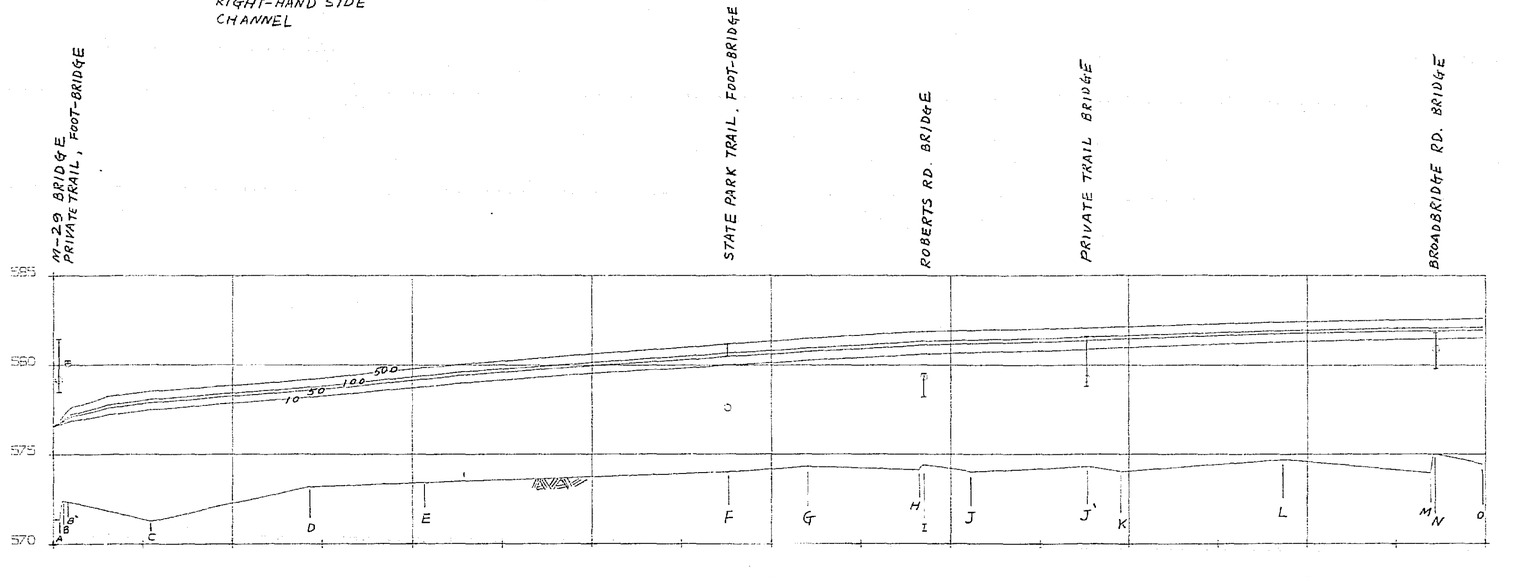


ROBBINS DRAIN


STUDY LIMITS
BACKWATER OF DRAINAGE DITCH
TAKE BRIDGE
STORM LIMITS
FOOTBRIDGE
FOOTBRIDGE
FOOTBRIDGE

MARINE CITY DRAIN
COTTRELLVILLE TWP. FIS
5555 - 13





MAIN CHANNEL

THOMAS TOWNSHIP
SAGINAW COUNTY
SWAN CREEK, HATCH RUN
SHEET 1 OF 3

SCALE 1" = 400'
CONTOUR INTERVAL 4'

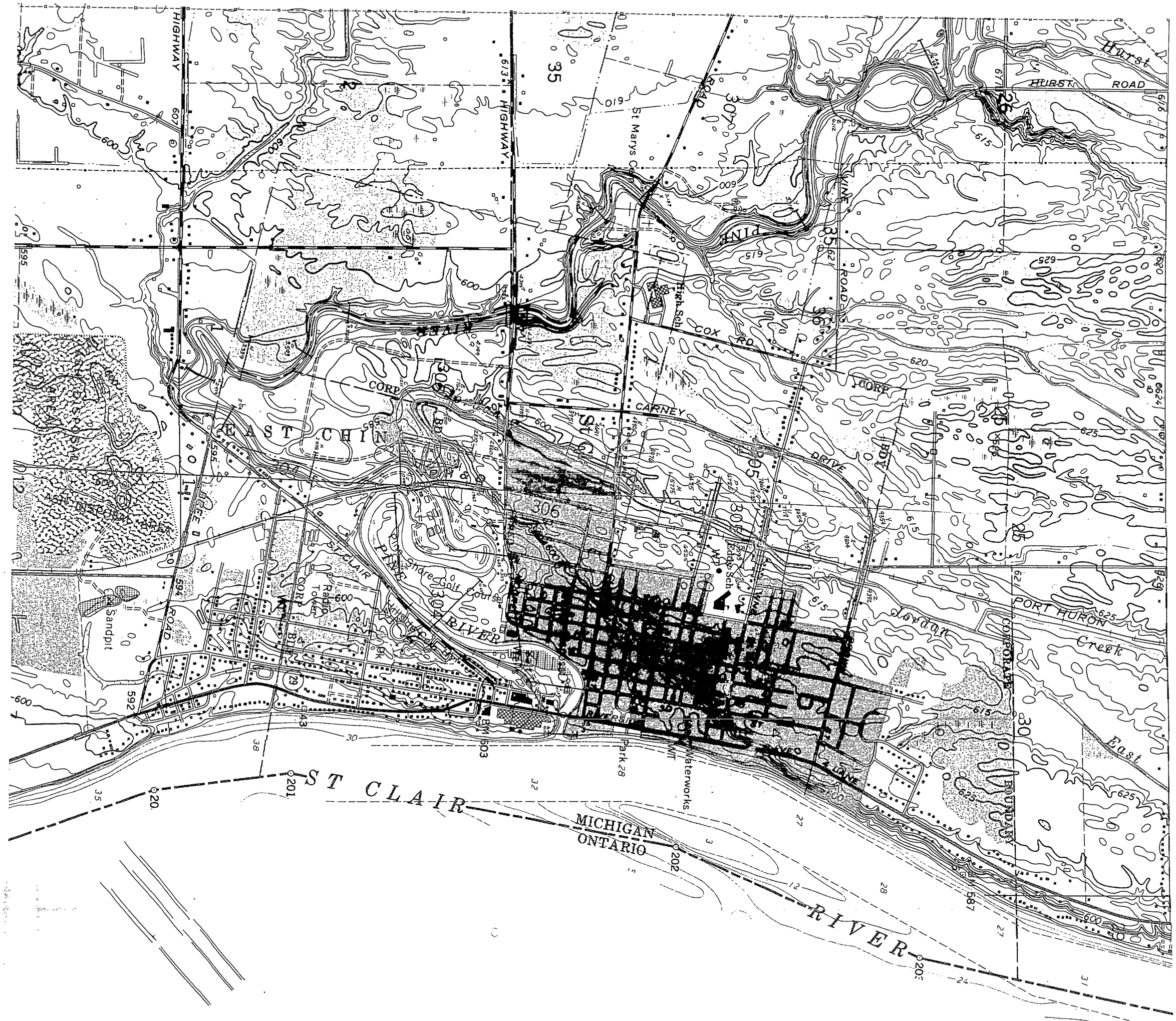
0 200 400 800 1200

SHEET INDEX

N

FRT

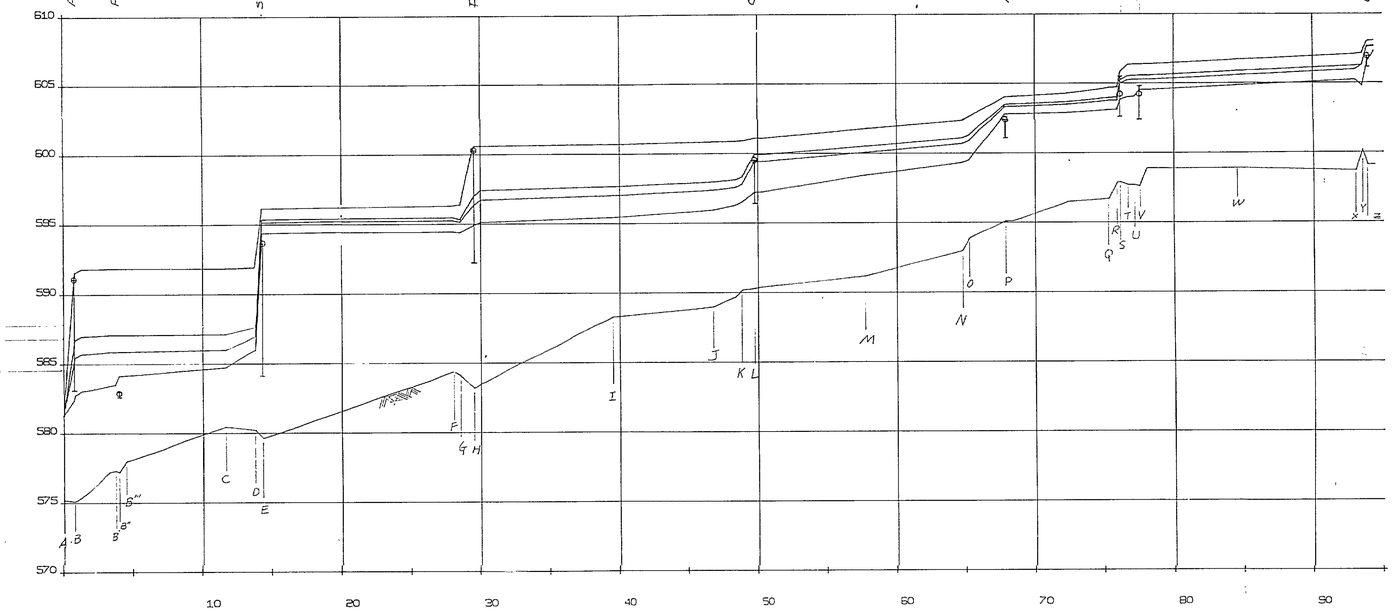

Thames Road
Dice Road
Lane
Road
Creek
Ditch
Drain
Road
Road
Road



HIGHWAY
HIGHWAY
HURST ROAD
Hurst
St Marys Cem
PINE
ROAD
COX RD
CARNEY
DRIVE
CORP
EAST CHIN
ST CLAIR
PINE
RIVER
Shore Golf Course
Radio Tower
Sandpit
ROAD
PORT HURON
Jordan
Creek
East
CORPORATE
BOUNDARY
Park 28
Waterworks
ST CLAIR
MICHIGAN
ONTARIO
RIVER

PINE RIVER FLOOD ELEVATIONS

10-YR FLOOD EL. 584.55
50-YR FLOOD EL. 586.88
100-YR FLOOD EL. 587.77
500-YR FLOOD EL. 589.86



ELEVATION DATUM
U. S. G. S.

NOTE: IN THE FINAL PROFILE, THE FLOOD LEVELS OF THE PINE RIVER WILL BE EXTENDED HORIZONTALLY TO INTERSECT THE CORRESPONDING FLOOD LEVELS SHOWN.

Job No. | Contr. No. | Part of Job No. | Sheet No. of Sheets | As Built | Section | City No. in County | Twp. No. in County | Village No. in County | County Numerical Share | State | Construction Connect | Job Code No.

DRAWN:
DESIGN:
CHECKED:
FINAL:
DATE COMPLETED:
PRELIMINARY:

SCALE: VERT. 1"= 5'
HORIZ. 1"= 500'

REVISIONS	MARK	BULLETIN	DATE	MARK	BULLETIN	DATE	MARK	BULLETIN	DATE

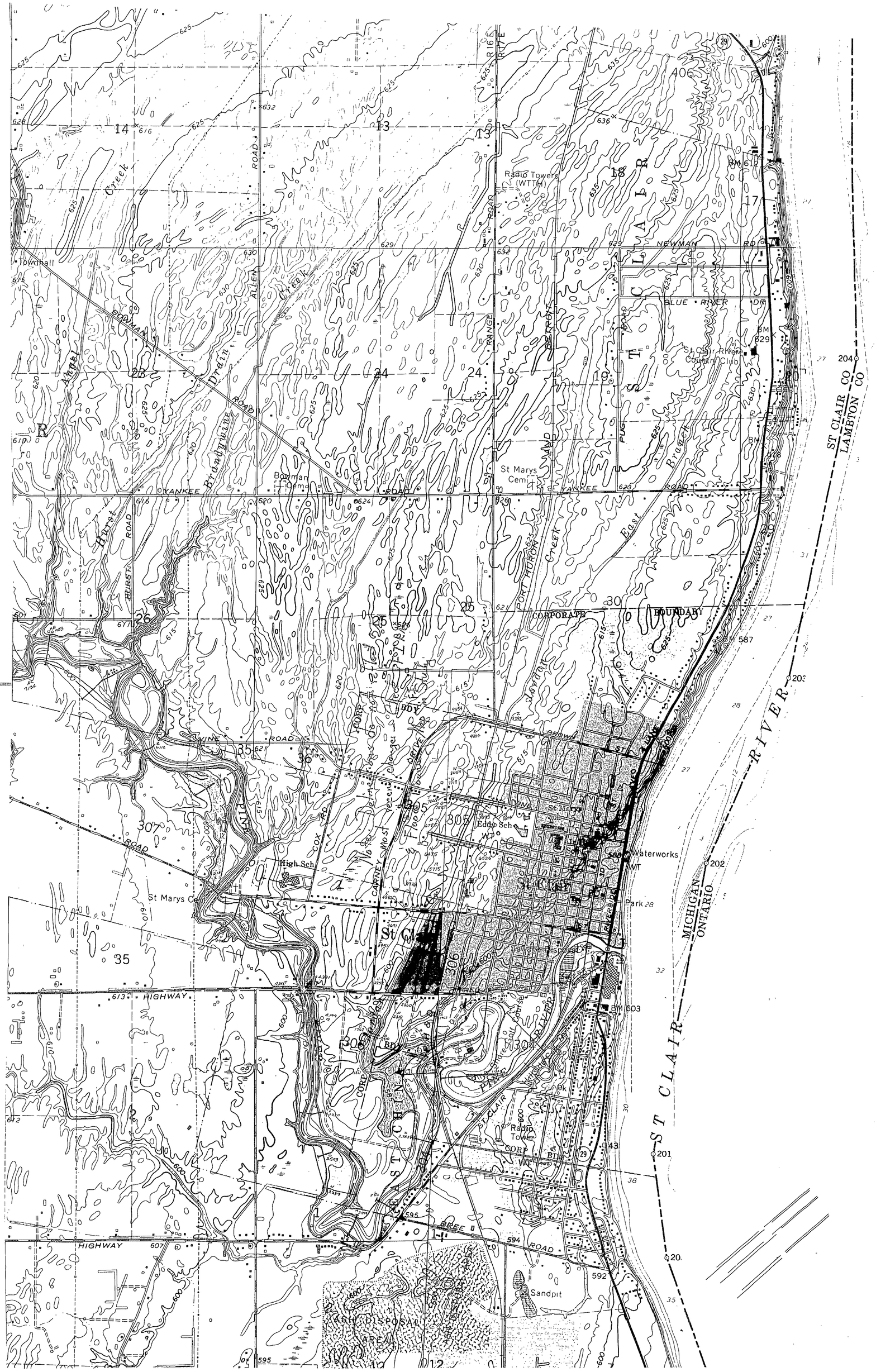
JOHNSON & ANDERSON, INC.
CONSULTING ENGINEERS
PONTIAC, MICHIGAN

CITY OF ST. CLAIR
EAST CHINA TWP.

FIS

JORDAN CREEK

JOB NO. 5333-61.15
DATE ISSUED
SHEET NO.



Radio Towers (WTTH)
Townhall
St Clair River Country Club
St Marys Cem
Bowman Cem
Waterworks
Park
High Sch
Eddy Sch
Radio Tower
Sandpit
ASH DISPOSAL AREA
ST CLAIR RIVER
ST CLAIR CO
LAMBTON CO
MICHIGAN
ONTARIO
CORPORATE BOUNDARY
NEWMAN RD
BLUE RIVER DR
YANKEE ROAD
HIGHWAY
BREE ROAD
BOWMAN ROAD
ALLEN ROAD
HURST ROAD
PORT HURON
CARNEY
COX RD
Angel Creek
Drain Creek
Brandywine
East Branch
Creek

M-29

PORT HURON & DETROIT RAILWAY

OLD FRED MOORE HWY BRIDGE
NEW FRED MOORE HWY BRIDGE

RATTLE RUN RD.

VINE RD.

NEWMAN RD.

I-94 E. BOUND
I-94 W. BOUND

WADHAM RD

GRATIOT RD.

FIRTH RD.

ST. CLAIR RIVER FLOOD ELEVATIONS
500-YR FLOOD EL. 581.76
100-YR FLOOD EL. 581.11
50-YR FLOOD EL. 580.78
10-YR FLOOD EL. 579.85

600
595
590
585
580
575
570

500
100
50
10

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z AA AB AC AD AE AF AG AH AI AJ AK AL AM AN AO AP AQ AR AS AT AU AV AW AX AY AZ BA BB BC BD BE

ELEVATION DATUM U.S.G.S.

RIVER MILES

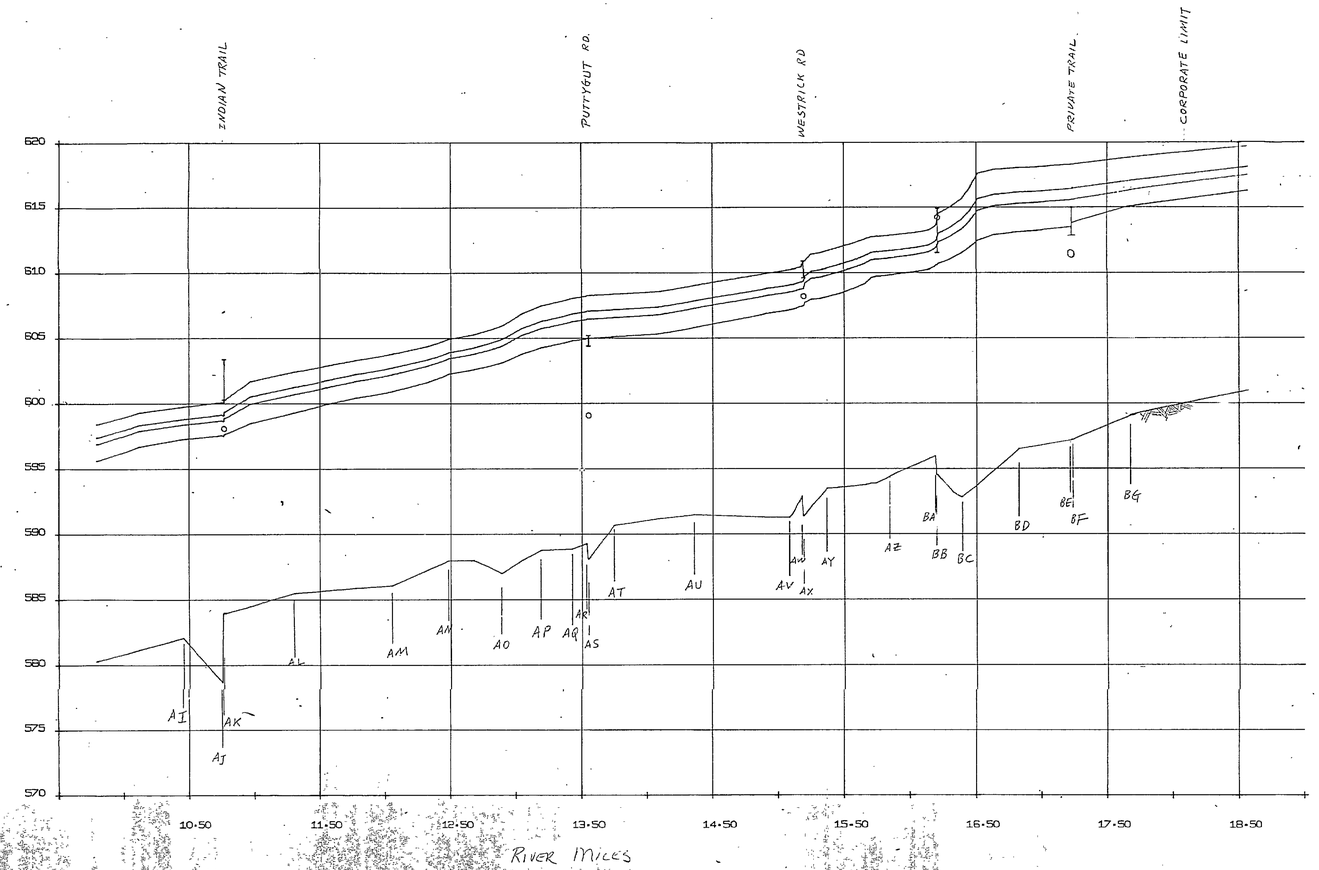
3·00 4·00 5·00 6·00 7·00 8·00 9·00 10·00 11·00 12·00 13·00 14·00 15·00 16·00

NOTE: IN THE FINAL PROFILE, THE FLOOD LEVELS OF THE ST. CLAIR RIVER WILL BE EXTENDED HORIZONTALLY TO INTERSECT THE CORRESPONDING FLOOD LEVELS SHOWN

PINE RIVER

5555-12, 15, 61 & 62
CITY OF ST. CLAIR
CHINA, E. CHINA, &
ST. CLAIR TWPS.

SCALE: VERT: 1" = 5'
HORIZ 1" = 0.5 MILES



DRAWN:
DESIGN:
CHECKED:
FINAL:
DATE COMPLETED:
PRELIMINARY:

SCALE: VERT. 1" = 5'
HORIZ. 1" = 0.5 MILES

REVISIONS	MARK	BULLETIN	DATE	MARK	BULLETIN	DATE	MARK	BULLETIN	DATE

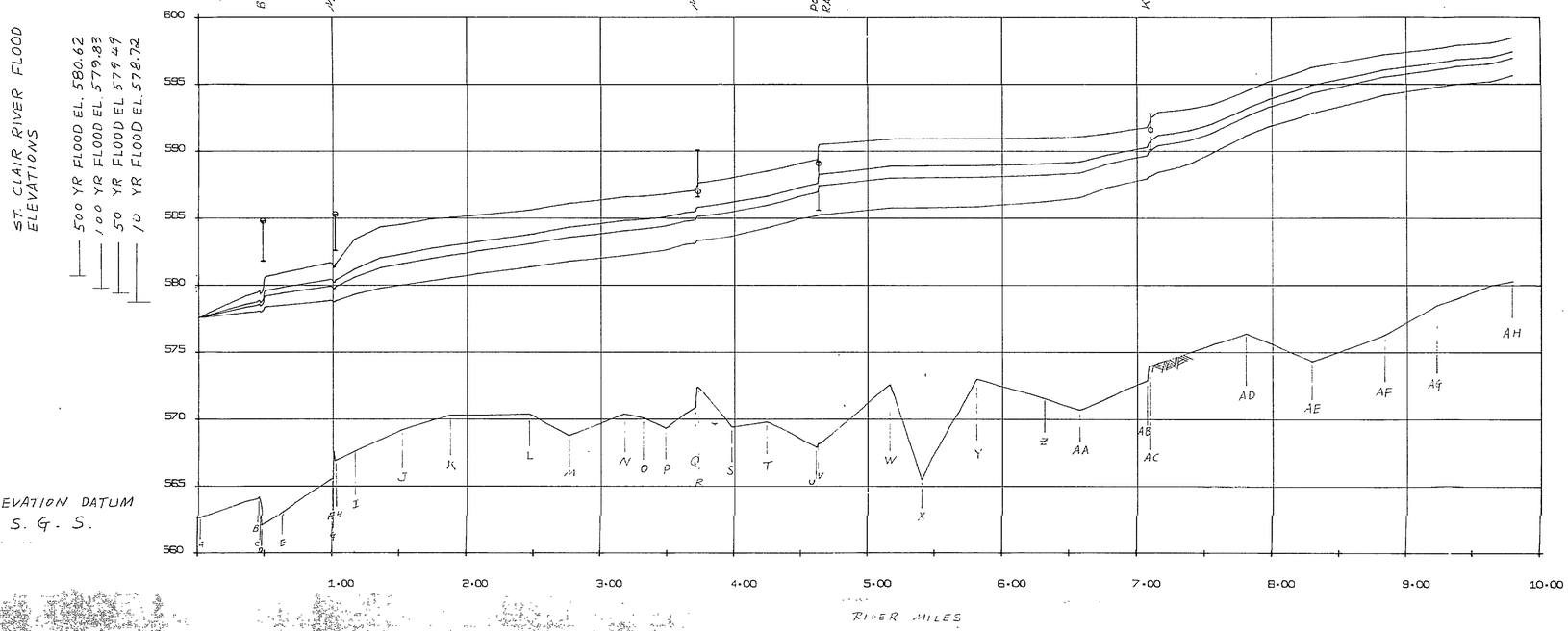
JOHNSON & ANDERSON, INC.
CONSULTING ENGINEERS
PONTIAC, MICHIGAN

CHINA & E. CHINA TWPS, FI S

BELLE RIVER

JOB NO. 5555-1215
DATE ISSUED
SHEET NO. 2 OF 2

Job No.	Contr. No.	Cont. Tab No.	Type of Job No.	Sheet No. or Sheet No. of Sheets	Alt Right	Section	City No. in County	Twp. No. in County	Village No. in County	County No. in State	State	Construction Contract	Job Code No.
1 2 3 4 5	6 7 8	9 10 11	12 13 14	15 16 17 18 19 20 21 22 23 24	25	26 27 28	29 30 31	32 33 34	35 36 37	38 39 40	41 42 43	44 45 46 47	48 49 50 51 52 53 54 55 56 57 58 59 60



NOTE - IN THE FINAL PROFILE, THE FLOOD LEVELS OF THE ST. CLAIR RIVER WILL BE EXTENDED HORIZONTALLY TO INTERSECT THE CORRESPONDING FLOOD LEVELS SHOWN.

DRAWN:
DESIGN:
CHECKED:
FINAL:
DATE COMPLETED
PRELIMINARY:

SCALE: VERT 1" = 5'
HORIZ. 1" = 0.5 MILES

REVISIONS	MARK	BULLETIN	DATE	MARK	BULLETIN	DATE	MARK	BULLETIN	DATE

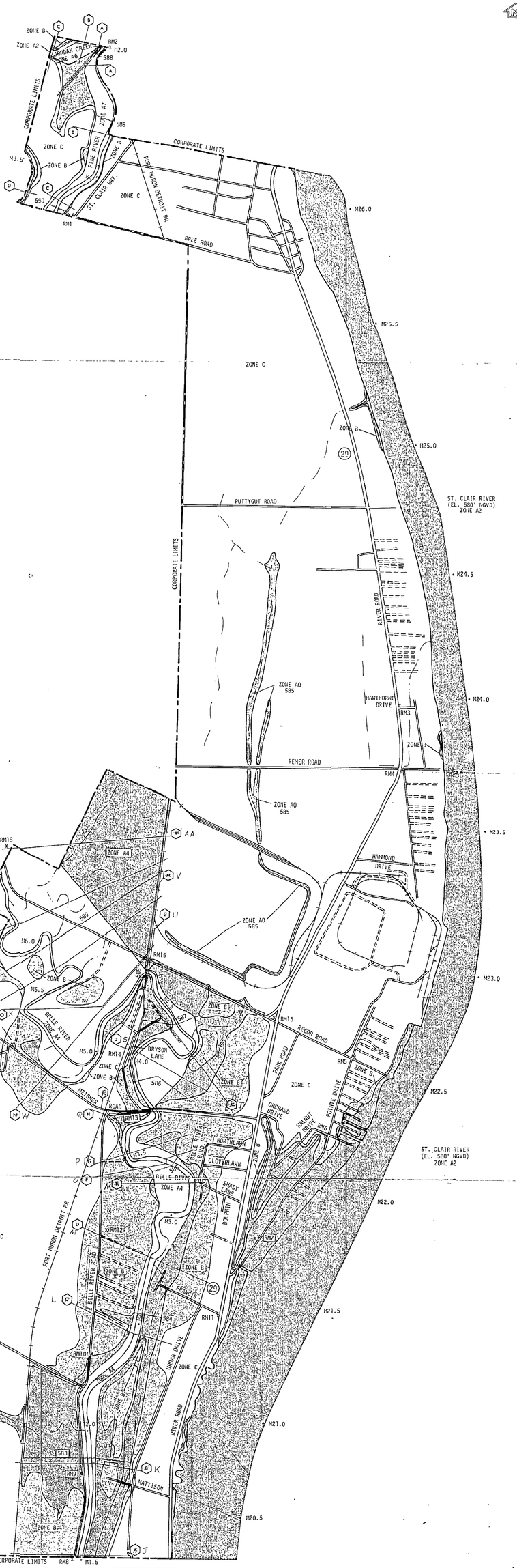
JOHNSON & ANDERSON, INC.
CONSULTING ENGINEERS
PONTIAC, MICHIGAN

CHINA & E. CHINA TWPS FIS

BELLE RIVER

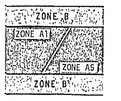
JOB NO. 5335-12.15
DATE ISSUED
SHEET NO. 1 of 2

Note: Delineations do not reflect most recent changes - Check FIRM or Flood Boundary Map in Flood Insurance Study.



KEY TO SYMBOLS

ZONE DESIGNATIONS*



Base Flood Elevation Line with elevation in feet — 513

Base Flood Elevation where uniform within zone (EL 907 MSL)

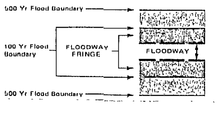
Elevation Reference Mark RM1 ✕

River Mile • M1.5

*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	Areas of 100 year flood; base flood elevations and flood hazard factors not determined.
AO	Areas of 100 year shallow flooding; flood depths 1 to 3 feet (natural or flood depth (feet)) and velocity (feet per second) less than 5%
A1 a30	Areas of 100 year flood; base flood elevations and flood hazard factors determined.
AVE	Areas of 100 year flood to be protected by a flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of 100 year flood and 500 year flood; or certain areas of 100 year shallow flooding where depths less than 1 foot
C	Areas outside 500 year flood
D	Areas of undetermined but possible flood hazards



Approximate 100 Yr Flood Boundary

Cross Section Line D

Note: 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.

800 0 800 1600 2400
SCALE in feet

BELLE RIVER

RECEIVED
MAY 31 1977
WATER MANAGEMENT

PRELIMINARY

PANEL 01

TOWNSHIP OF EAST CHINA
ST. CLAIR COUNTY, MICHIGAN

Flood Insurance Rate – Flood Boundary And Floodway Work Map

Prepared by
Johnson & Anderson Inc.
Pontiac, Michigan
For
U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

CORPORATE LIMITS

FRED W. MOORE HIGHWAY

ST. CLAIR HIGHWAY

ALLINGTON ROAD

DRIVE

CORPORATE LIMITS

WESTRICK ROAD

McKINLEY ROAD

WADHAMS ROAD

BELLE RIVER ROAD

PUTTYGUT ROAD

TRIPP ROAD

LINDSEY ROAD

MAYER ROAD

STARVILLE ROAD

McKINLEY ROAD

MEISNER ROAD

INDIAN TRAIL

SCHNEIDER CHINA DRAIN

BAIRD DRAIN

SPRINGBORN ROAD

BEAUBIEN CREEK

CORPORATE LIMITS

MARINE CITY HIGHWAY

ZONE B

ZONE C

BELLE RIVER ZONE A4

M18.0

M17.5

M17.0

M16.5

M16.0

M15.5

M15.0

M14.5

M14.0

M13.5

M13.0

M12.5

M12.0

M11.5

M11.0

RM22

RM21

RM20

RM19

RM18

RM17

RM16

RM15

RM14

RM13

RM12

RM11

RM10

RM9

617

616

615

614

613

612

611

610

609

608

607

606

605

604

603

602

601

AH

AG

AE

AD

AB

AC

AA

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AR

AQ

AP

AO

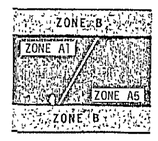
AN

AM

AL

KEY TO SYMBOLS

ZONE DESIGNATIONS*



Base Flood Elevation Line with elevation in feet — 513

Base Flood Elevation where uniform within zone — (EL 987' MSL)

Elevation Reference Mark — RM7 ×

River Mile — • M1.5

*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	Areas of 100-year flood; base flood elevations and flood hazard factors not determined
AO	Areas of 100 year shallow flooding; flood depth 1 to 3 feet, predict. of flood depth (feet) and velocity (feet per second) less than 1%
A1 A30	Areas of 100 year flood, base flood elevations and flood hazard factors determined
A99	Areas of 100 year flood to be protected by a flood protection system under construction, base flood elevations and flood hazard factors not determined
B	Area between limits of 100 year flood and 500 year flood, areas of 100 year shallow flooding where depths less than 1 foot
C	Areas outside 500 year flood
D	Areas of undetermined, but possible flood hazards

500 Yr Flood Boundary

100 Yr Flood Boundary — FLOODWAY FRINGE — FLOODWAY

500 Yr Flood Boundary

Approximate 100 Yr Flood Boundary

Cross Section Line (D)

Note: 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.

NOTE: IN THOSE AREAS WHERE THE FLOODWAY BOUNDARY AND THE 100-YEAR FLOOD BOUNDARY COINCIDE, ONLY THE 100-YEAR FLOOD BOUNDARY HAS BEEN DEPICTED.

800 0 800 1600 2400
SCALE in feet

BELLE RIVER
Map 1 of 3

PRELIMINARY

PANEL 02

TOWNSHIP OF CHINA
ST. CLAIR COUNTY, MICHIGAN

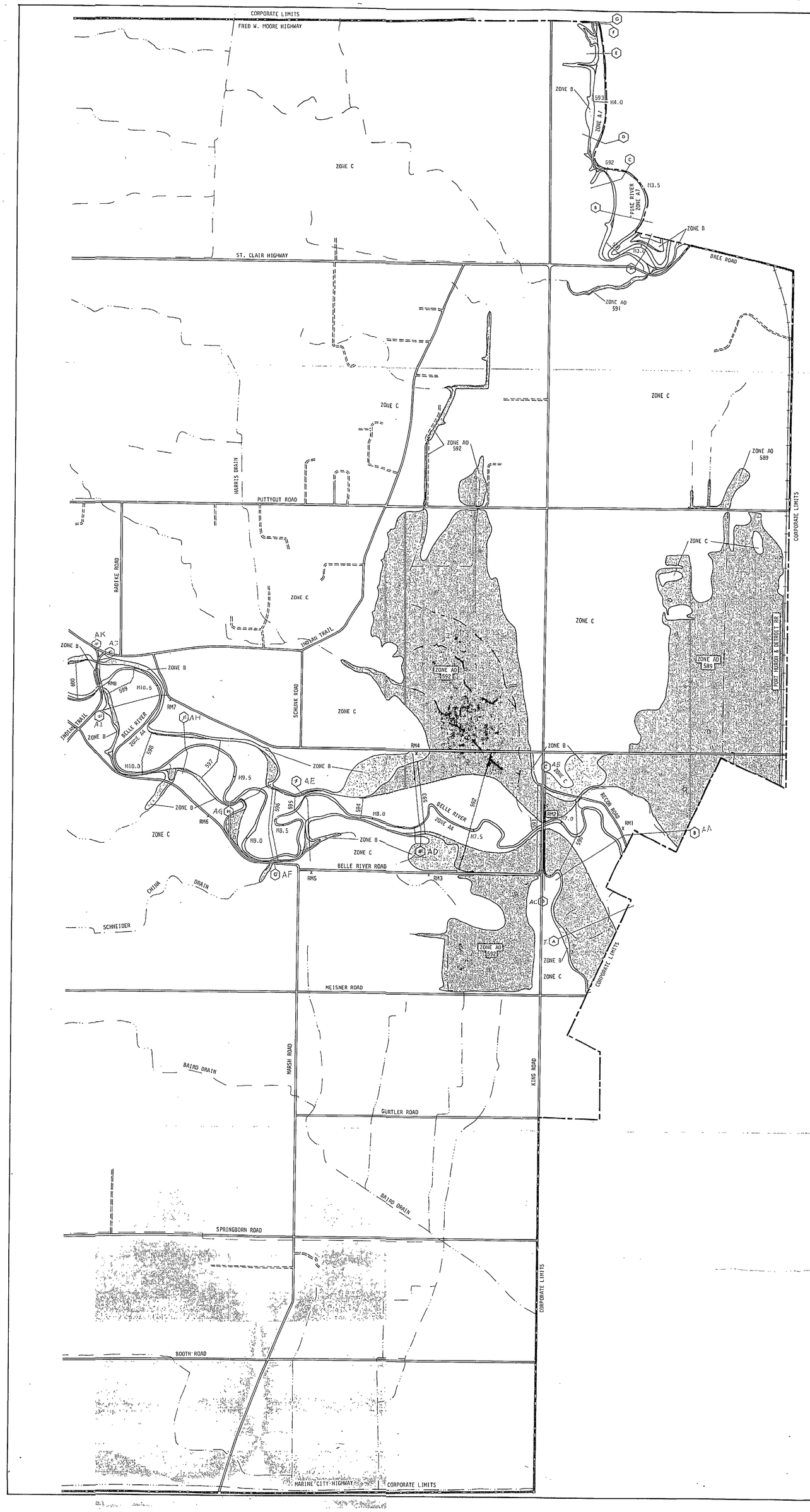
Flood Insurance Rate — Flood Boundary And Floodway Work Map

Prepared by

Johnson & Anderson Inc.
Pontiac, Michigan

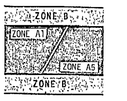
For

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration



KEY TO SYMBOLS

ZONE DESIGNATIONS*



Base Flood Elevation Line with elevation in feet — 513

Base Flood Elevation where uniform within zone — (EL 987 MSL)

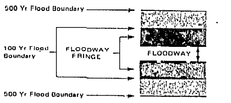
Elevation Reference Mark — RM2 ✕

River Mile — • M1.5

*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	Areas of 100-year flood; base flood elevations and flood hazard factors not determined
AO	Areas of 100 year shallow flooding; flood depth 1 to 3 feet (usually sheet flow); flood velocities (feet per second) less than 15
A1-A30	Areas of 100 year flood; base flood elevations and flood hazard factors determined
A99	Areas of 100 year flood to be protected by a flood protection system under construction; base flood elevations and flood hazard factors not determined
B	Areas between limits of 100-year flood and 500 year flood; areas of 100-year shallow flooding where depths less than 1 foot
C	Areas outside 500 year flood
D	Areas of undetermined, but possible, flood hazards



Approximate 100 Yr Flood Boundary

Cross Section Line — D

Note: 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.

NOTE: IN THOSE AREAS WHERE THE FLOODWAY BOUNDARY AND THE 100-YEAR FLOOD BOUNDARY COINCIDE, ONLY THE 100-YEAR FLOOD BOUNDARY HAS BEEN DEPICTED.

800 0 800 1600 2400
SCALE in Feet

PRELIMINARY

PANEL 01

TOWNSHIP OF CHINA
ST. CLAIR COUNTY, MICHIGAN

Flood Insurance Rate — Flood Boundary And Floodway Work Map

Prepared by

Johnson & Anderson Inc.
Pontiac, Michigan

For

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration



1) COUNTY: ST. CLAIR

2) STUDY NAME: CITY OF PORT HURON & FORT GRATIOT TWP

3) WATERCOURSE: BLACK RIVER & BLACK RIVER CANAL

4) DOCUMENT TYPE: REPORT



BLACK RIVER CANAL

City of Port Huron
and
Fort Gratiot Township
St. Clair County, Michigan

Hydraulic Analysis

Bibliography

SECNO Chart

Bridge Data

Gilbert M. Font, P.E., Project Manager

HYDRAULIC ANALYSIS

Introduction

This study involves the Black River Canal in the City of Port Huron and the Township of Fort Gratiot, St. Clair County, Michigan. This canal normally flows from Lake Huron to its confluence with the Black River, a total of about 1.1 miles; under flood conditions the flow is reversed.

The 10-, 50-, 100-, and 500-year flood frequency flows used in this study have been approved by Michigan's Department of Natural Resources. These discharges were computed from a study of recording gages at Norman Road, near Fargo, Michigan, and at Bricker Road (Mill Creek), near Avoca, Michigan.

Method of Analysis

The water-surface profiles were computed by the HEC-2 computer program developed by the U.S. Army Corps of Engineers.[1]

All bridges have been modeled according to the HEC Training Document No. 6, Application of HEC-2 Bridge Routines.[2] The "normal bridge" routine was used for all bridges.

The hydraulic model of the floodway was developed for the 100-year flow. The guidelines set forth on pages 18 through 21 in the HEC-2 Training Document No. 6,[3] were used to locate valley sections upstream and downstream of

the bridges. If additional sections were found necessary within this distance, the intermediate sections were encroached as appropriate.

The cross sections in this study originated from J&A field surveys and surveys made by the City of Port Huron which were both completed in the winter of 1976.

Variables and Coefficients

The roughness factors (Manning's "n") were chosen after studying aerial photographs and photographs taken during the field survey, from observations made in field inspection trips to the study area, and from descriptions given in Chow[4] and in Water-Supply Paper No. 1849.[5] In general, the following range of values, indicative of summer conditions, was used:

Description	Location	Manning's "n"
1. Channel (U-shaped)		
a. Bottom silts and find sands	(.001 - .156)	.025 - .028
b. Coarser sand & organic debris	(.191 - 4.464)	.051 - .052
2. Flood Plain (side slopes of canal)		
a. Scattered brush, heavy weeds		.04 - .06
b. Medium to dense brush, in summer		.07 - .10
c. Heavy stand of timber, a few downed trees, little undergrowth, flood stage below branches		.08 - .10
d. Same as above, with flood stage reaching branches		.10 - .13

The coefficients of contraction (.3) and of expansion (.5) were used throughout this study indicating a moderate transition between cross sections, per

Exhibit 2 of HEC-2 Water Surface Profiles,[6] page 2.

Starting Elevation

The initial water-surface elevation at the mouth of the Black River Canal (581.36 U.S.L.S.) is based on a Johnson & Anderson, Inc., study of the 10-, 50-, 100-, and 500-year flood levels on Lake Huron. It is the mean annual flood level (50 percent frequency) at the Fort Gratiot gage. This study has been approved by the Department of Natural Resources.

Discussion

1. The City of Port Huron has several government bench marks which were established under the U.S. Geological Survey, U.S. Lake Survey of 1935 and recent International Great Lakes Datum of 1955. A city-wide bench mark system was tied to Lake Survey datum in 1968. The 1968 bench mark system consisted of 53 monuments with recorded elevations based on the U.S. Lake Survey of 1935. The U.S.L.S. of 1935 datum was chosen because it coincided with the datum used for utility and road construction. To convert from U.S.L.S. to U.S.G.S. datum, subtract 0.48 feet.

2. The Tainter floodgate (sections .151 - .155) has been coded as a normal bridge with a width of "road" of three feet for the arch of the floodgate. The Tainter gate has a wind sensor which automatically shuts it when winds blow from the lake. The purpose of the gate is to keep sand deposited by wave action outside the canal. In winter,

the wind sensor is not in operation and the gate is shut; in spring, the gate is opened and the wind sensor is activated. However, there is a manual override which is used if a high stage occurs in the Black River and diversion of flow is required.

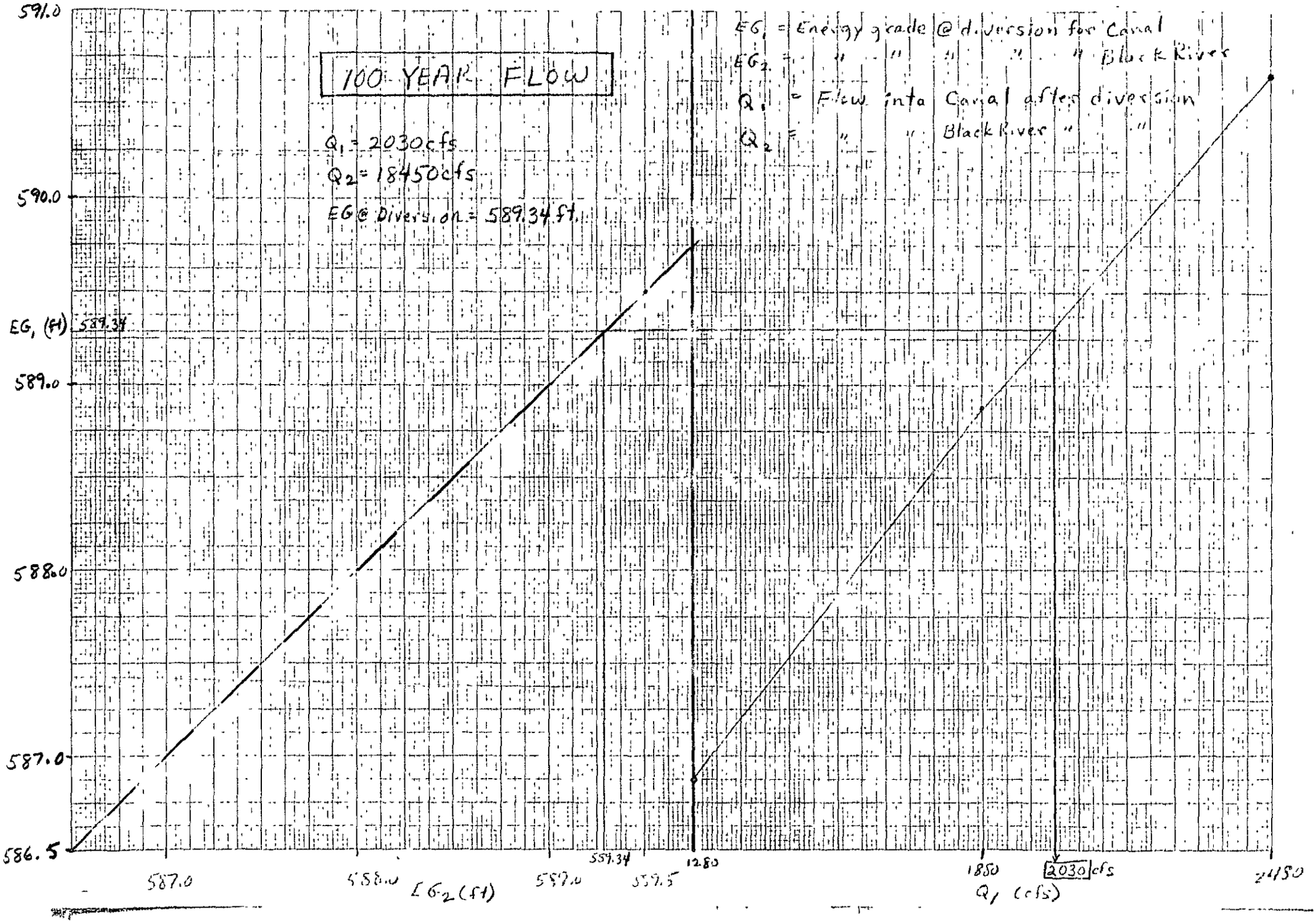
It was assumed that the three-foot deep sediment upon the concrete channel at this gate will be scoured by the high-velocities (6.85 ft/sec.) expected for the 100-year flow. The concrete channel extends 13 feet from the downstream face of the floodgate. Scouring in a medium-grained (0.5 mm) sandy bottom is estimated to occur at a velocity of 4.1 fps. This was calculated by the "tractive force method," described in Henderson.[7]

Referring to Figure 10-5, page 417, in Henderson, the following method was used to estimate the threshold velocity at which scouring occurs: 1. The material size (grain size) of the channel is 0.5 mm, or 0.02 in. (the abscissa); using the curve for a low amount of suspended fine sediment, RS (the ordinate) is found to be 0.0009. 2. The slope of the channel bed, S, is 0.001; thus, R = 0.9. 3. The Manning "n" is found by using the formula $n = 0.031d^{1/6}$,[8] where d is the particle diameter measured in feet (0.0017 feet). 4. With "n," R, and S known, the threshold velocity can then be solved through the use of Manning's equation ($v = \frac{1.49\ R^{2/3}\ S^{1/2}}{n}$).

With a velocity 31 percent greater than the threshold velocity (before scouring occurs), the sediment at Tainter floodgate will be transported, leaving the concrete channel exposed.

3. The Miter floodgate (sections .809 - .810), like the Tainter floodgate, has been coded as a normal bridge. The policy of the City of Port Huron is to leave the Miter floodgate open during periods of flooding. This gate has two wooden, hinged doors that are held open by steel cables. The arch over the gate is 2.5 feet wide.

4. The flows for the Black River and the Black River Canal at their diversion were approximated through the use of the island problem approach.[9] For each of the four flows, several assumed sets of discharges (Q_r [discharge in river] and Q_c [discharge in canal]) of different proportions were used in the backwater analyses. The resulting energy heads (H) of the river for each of the four flows were plotted against the same for the canal. Since the flow is divided, the two computed energy heads (H) at the diversion should be equal if the assumed diversion of flows was correct. Thus, the energy head (H) at the diversion corresponding to the correct division of flows could be obtained for the plotted curve at which the curve is intersected by a dashed line bisecting the coordinate axes. The dashed line (a 45° line from origin of coordinate axes) represents the condition that the two energy heads (H) are equal. Concurrently, the computed energy head (H) at the diversion for the river was plotted against the discharge for the river. From this curve, the correct discharge for the river (Q_r) could be obtained for the correct energy head (H). The corresponding discharge for the channel (Q_c) was therefore equal to $Q_c = Q_t - Q_r$.


100 YEAR FLOW
Q1 = 2030cfs
Q2 = 18450cfs
EG @ Diversion = 589.34 ft.
EG1 = Energy grade @ diversion for Canal
EG2 = " " " " " Black River
Q1 = Flow into Canal after diversion
Q2 = " " Black River " "
591.0
590.0
589.0
588.0
587.0
586.5
EG1 (ft) 589.34
587.0
588.0
589.0
589.5
589.34
1280
1850
2030 cfs
2450
EG2 (ft)
Q1 (cfs)

5. The City of Port Huron maintains the Black River Canal; it is cleaned as the need arises.

References

[1]U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, Users Manual, 1973.

[2]U.S. Army Corps of Engineers, Hydrologic Engineering Center, Application of HEC-2 Bridge Routines, Training Document No. 6, 1974.

[3]Ibid., pp. 18-22.

[4]Chow, Ven Te, Open-Channel Hydraulics, McGraw-Hill, 1959, pp. 101-123.

[5]Geological Survey Water-Surface Paper 1849, Roughness Characteristics in Natural Channels, U.S. Government Printing Office, pp. 139-141.

[6]U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, p. 2.

[7]Henderson, F. M., Open Channel Flow, Macmillan Publishing Co., Inc., New York, 1966, p. 417.

[8]Henderson, op. cit., p. 98.

[9]Chow, op. cit., pp. 320-321.

Black River Canal

Cross Section	SECNO Miles	Location
	.001	Mouth of Black River Canal
*A	.057	300' u/s of mouth of canal
*B	.076	400' u/s of mouth of canal
*C	.095	500' u/s of mouth of canal
	.102	100' d/s of Taintor Floodgate
	.110	60' d/s of Taintor Floodgate
	.121	1' d/s of Taintor Floodgate
D	.122	d/s face of Taintor Floodgate
	.123	u/s face of Taintor Floodgate
	.124	1' u/s of Taintor Floodgate
	.125	17' u/s of Taintor Floodgate
	.126	18' u/s of Taintor Floodgate
	.127	25' u/s of Taintor Floodgate
	.135	69' u/s of Taintor Floodgate
	.141	12' d/s of Gratiot Avenue bridge
	.143	d/s face of Gratiot Avenue bridge
	.153	u/s face of Gratiot Avenue bridge
E	.156	12' u/s of Gratiot Avenue bridge
F	.191	200' u/s of Gratiot Avenue bridge
*G	.265	590' u/s of Gratiot Avenue bridge
*H	.341	990' u/s of Gratiot Avenue bridge
	.434	12' d/s of abandoned bridge abutments

Cross Section	SECNO Miles	Location
	.437	d/s face of abandoned bridge abutments
I	.445	u/s face of abandoned bridge abutments
	.447	12' u/s of abandoned bridge abutments
*J	.530	450' u/s of abandoned bridge abutments
*K	.625	950' u/s of abandoned bridge abutments
*L	.720	618' d/s of Miter Floodgate
	.827	50' d/s of Miter Floodgate
	.832	24' d/s of Miter Floodgate
	.834	12' d/s of Miter Floodgate
	.836	4' d/s of Miter Floodgate
	.837	1' d/s of Miter Floodgate
M	.838	d/s face of Miter Floodgate
	.839	us/ face of Miter Floodgate
	.840	1' u/s of Miter Floodgate
	.841	22' u/s of Miter Floodgate
	.842	23.5' u/s of Miter Floodgate
	.843	29' u/s of Miter Floodgate
	.848	58' u/s of Miter Floodgate
*N	.928	480' u/s of Miter Floodgate
	1.001	50' d/s of C&O Railroad bridge
	1.010	1' d/s of C&O Railroad bridge
	1.011	d/s face of C&O Railroad bridge

Cross Section	SECNO Miles	Location
O	1.015	u/s face of C&O Railroad bridge
	1.016	1' u/s of C&O Railroad bridge
	1.025	50' u/s of C&O Railroad bridge
*P	1.042	140' u/s of C&O Railroad bridge
Q	1.085	168' d/s of Pine Grove Avenue bridge
*R	1.098	98' d/s of Pine Grove Avenue bridge
	1.117	1' d/s of Pine Grove Avenue bridge
	1.118	d/s face of Pine Grove Avenue bridge
S	1.131	u/s face of Pine Grove Avenue bridge
	1.132	1' u/s of Pine Grove Avenue bridge
	1.146	80' u/s of Pine Grove Avenue bridge and confluence with Black River

* City of Port Huron Cross Sections, taken by their survey crew.

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Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

SS #1

Code No. 5555-20-1

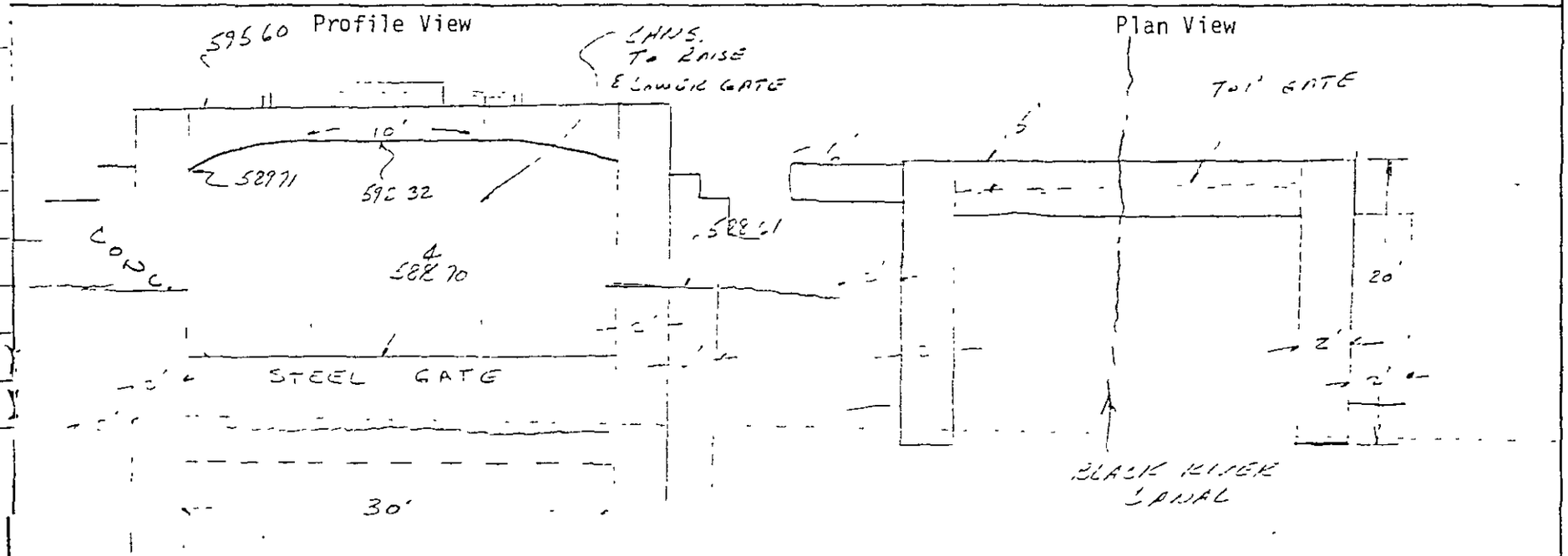
Job Name: FORT GRATIOT TWP FIS		By: J. KAPELCZAK
Date: JAN 26 1976	Feature: FLOOD GATE	Water Course: BLACK RIVER CANAL

Remarks: FLOOD CONTROL DAM APPROX 100' EAST OF GRATIOT AVE IN THE BLACK RIVER CANAL

TAINTER FLOOD GATE

Photo / 06	24 D.S.F. / 25 U	26 R / 27 U.S.F. / 28 D.S. / 29 L	
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation: 580.30	Length:	Width of Deck:	Skew: N.A.

FIELD SKETCH



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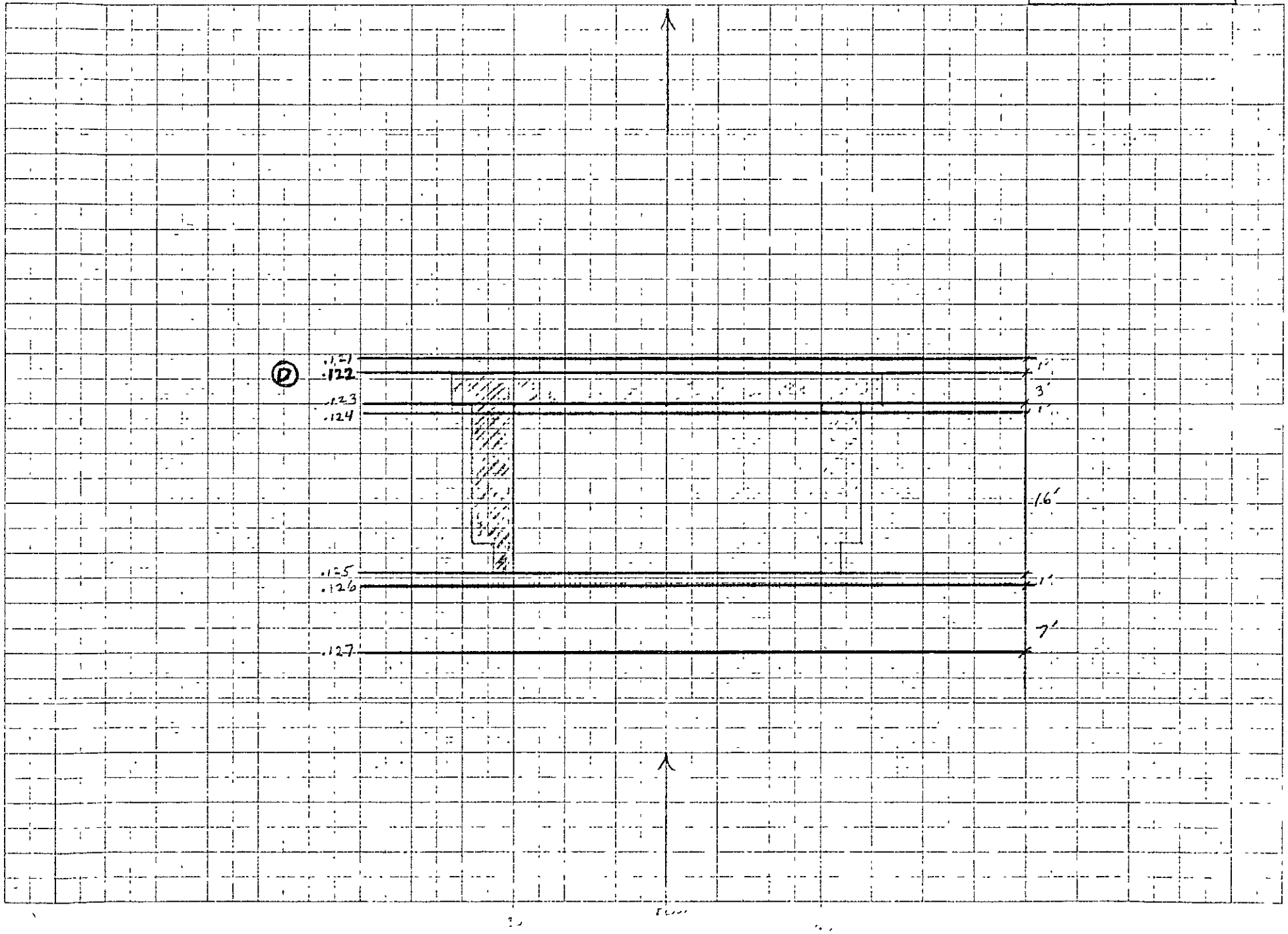
KEUFFEL & ESSER CO

461510

TAINTER FLOOD GATE

Scale: 1cm = 5'



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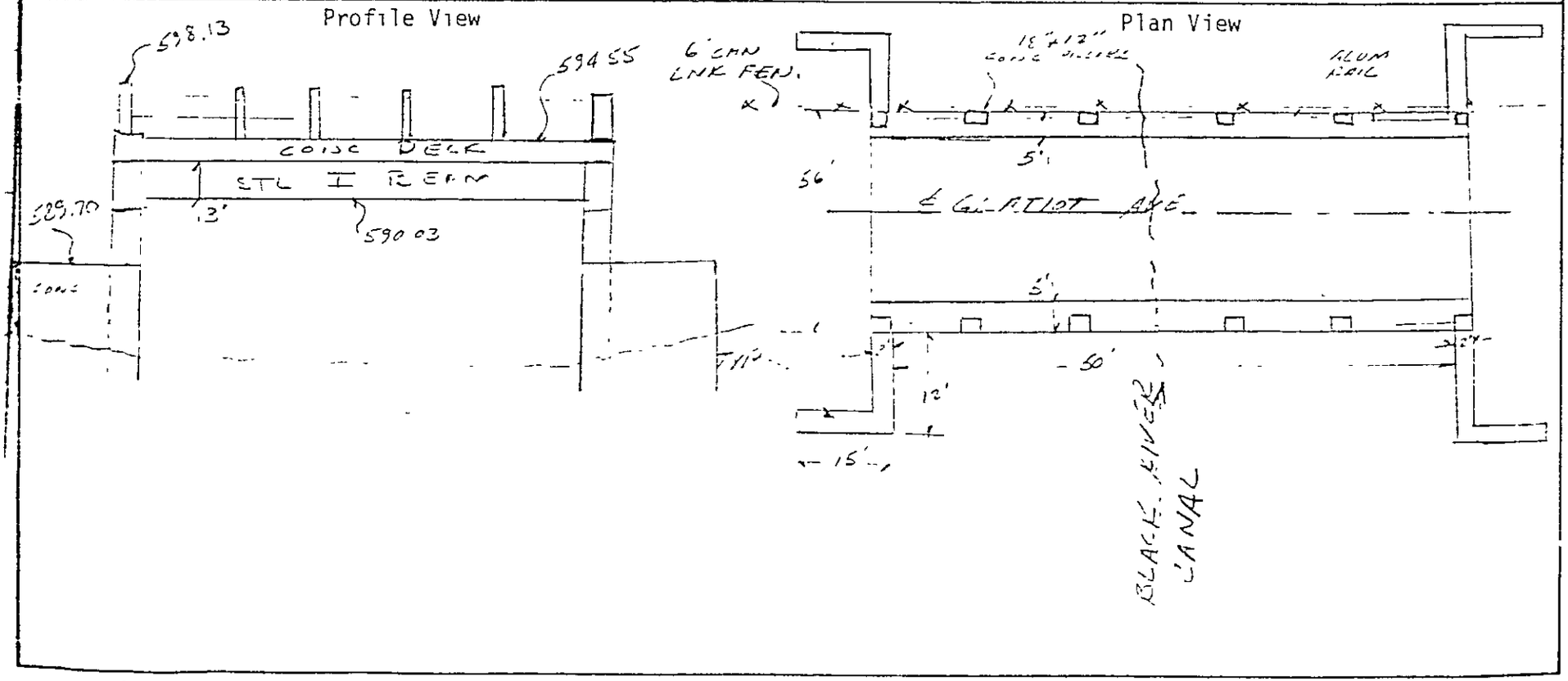
HYDRAULIC STRUCTURAL DATA

BS #2

Code No. 555-50-2

Job Name: FORT GRATIOT TWP FIS			By: J KAPELCZAK
Date. 1-26-76	Feature: CONC SLOPED BRIDGE		Water Course: BLACK RIVER CANAL
Remarks: BS #2 · GRATIOT AVE AT BLACK RIVER CANAL			
GRATIOT AVE. BRIDGE			
WATER LOG 14 E 15 E 16 J 17 D 18 WEST F 19 EAST F			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation: 580.15	Length:	Width of Deck:	Skew: NONE

FIELD SKETCH



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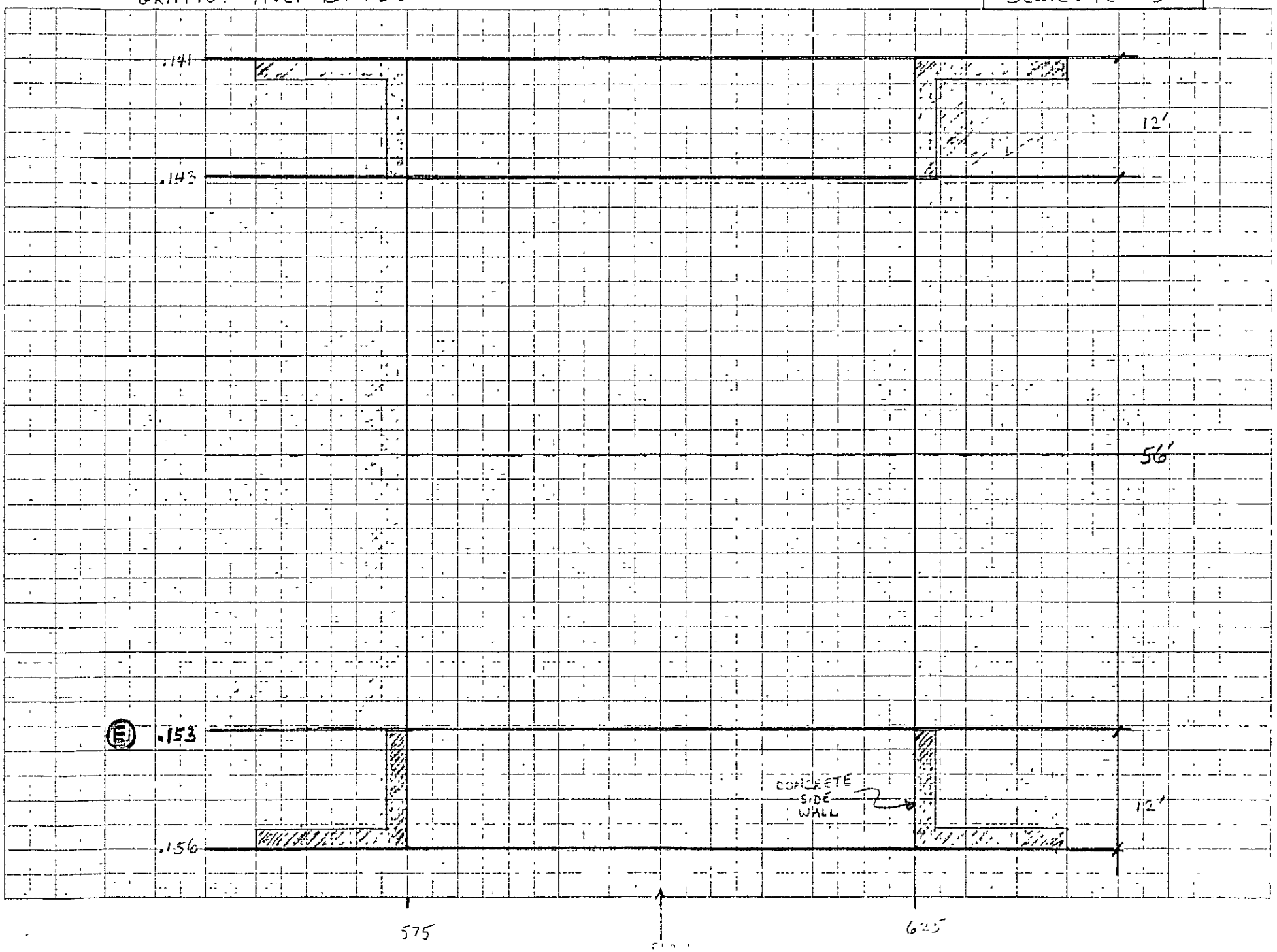
GRATIOT AVE. BRIDGE

Scale: 1cm - 5'



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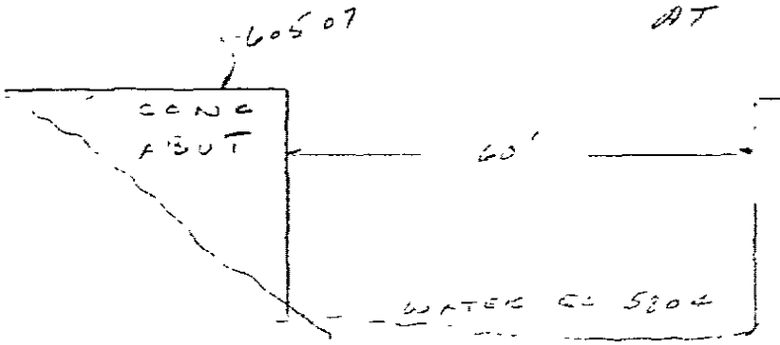
HYDRAULIC STRUCTURAL DATA V.S. #4

Code No. _____

Name:			By:
e:	Feature:		Water Course:
erks:			
ABANDONED BRIDGE ABUTMENTS			
th of Piers:	Pier Shape:	No. of Piers:	Area:
er Elevation:	Length:	Width of Deck:	Skew:

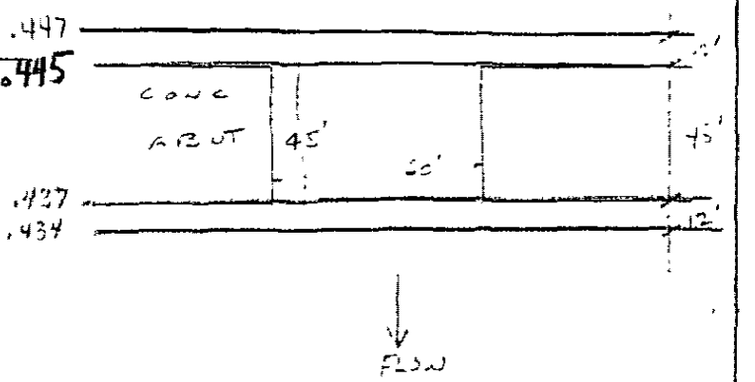
FIELD SKETCH

Profile View



ABANDONED BRIDGE AT V.S. #4

Plan View



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HYDRAULIC STRUCTURAL DATA VS #5

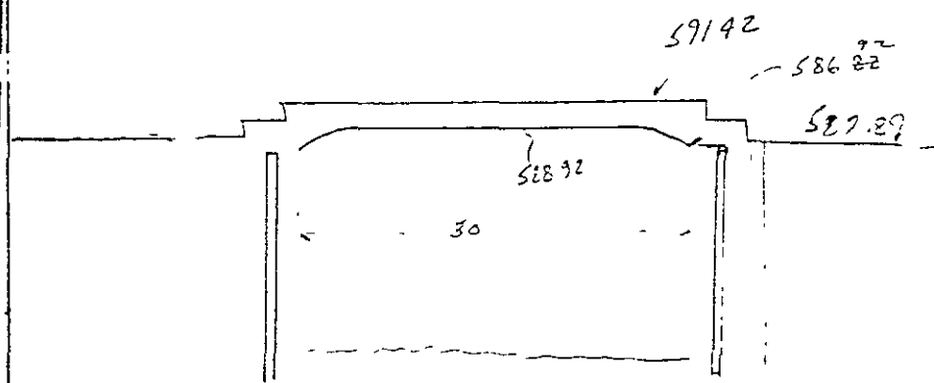
Code No. _____

Job Name:		By: J. KAPELCZAK
Date:	Feature:	Water Course:
Remarks: NOTE VS #5 TAKEN IN FRONT OF FLOOD GATE		
APPROX 900' DOWN STREAM FROM RS #6 RR BRIDGE		
[MITER FLOOD GATE]		

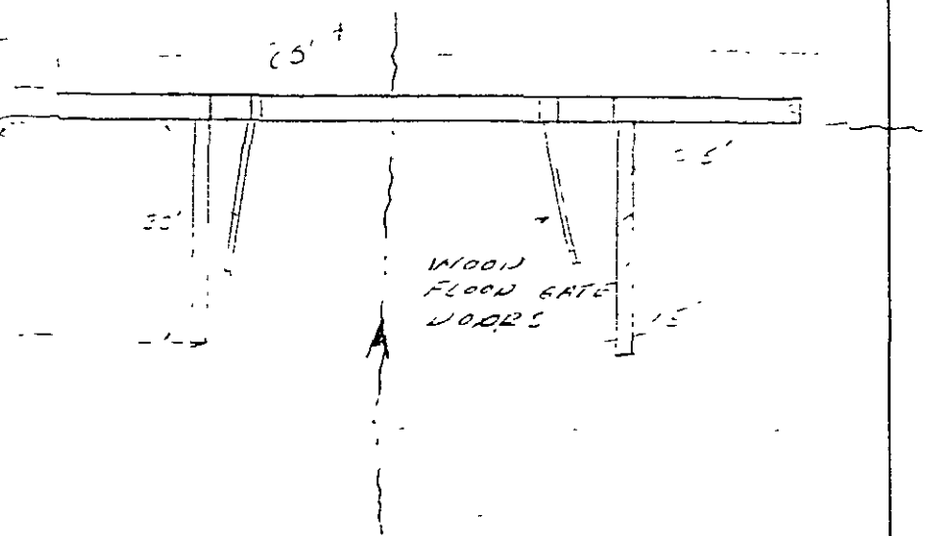
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View



Plan View



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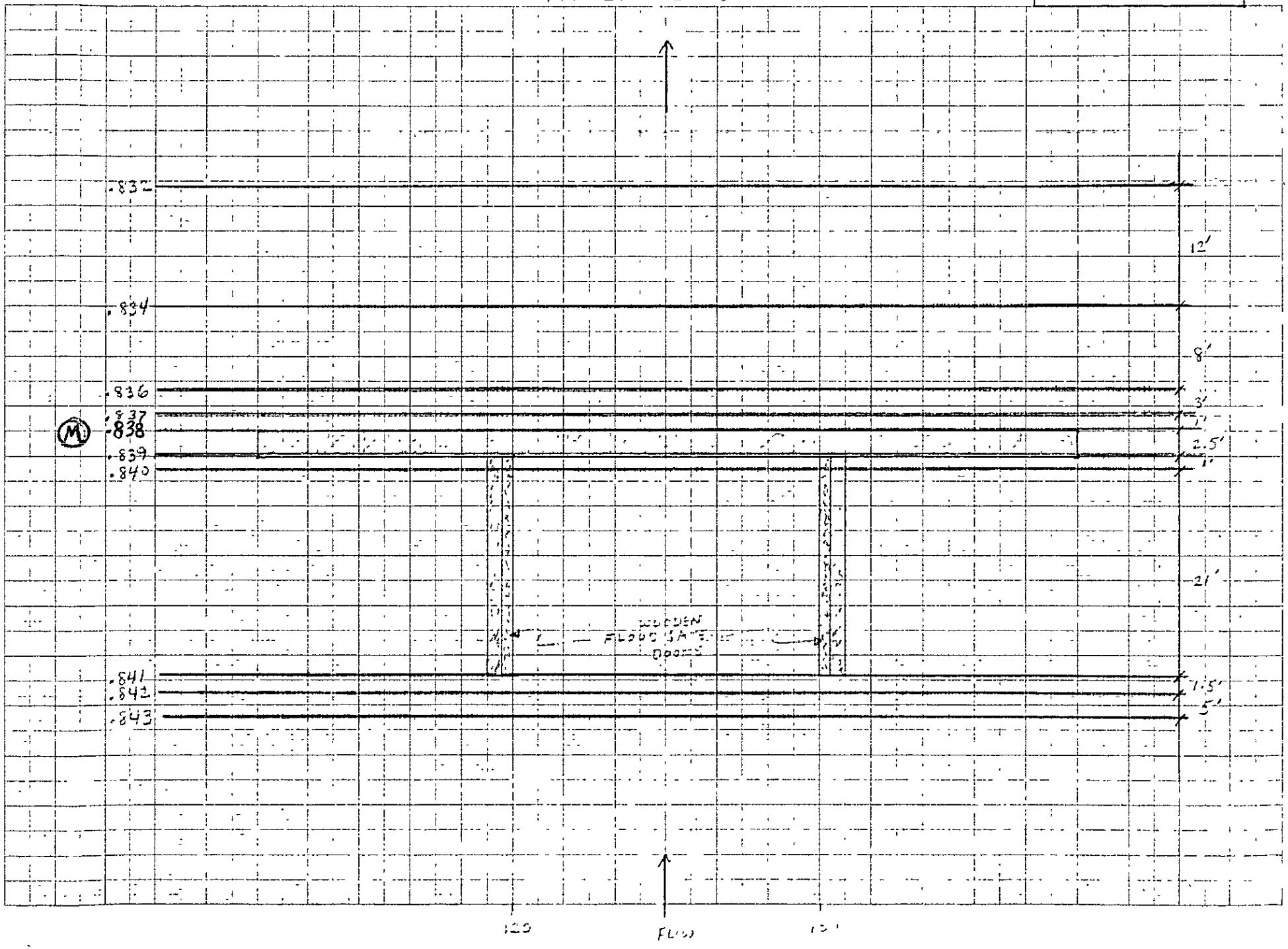
MITER FLOOD GATE

Scale: 1cm 5'



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HYDRAULIC STRUCTURAL DATA

BS #6

[C/O RR BRIDGE]

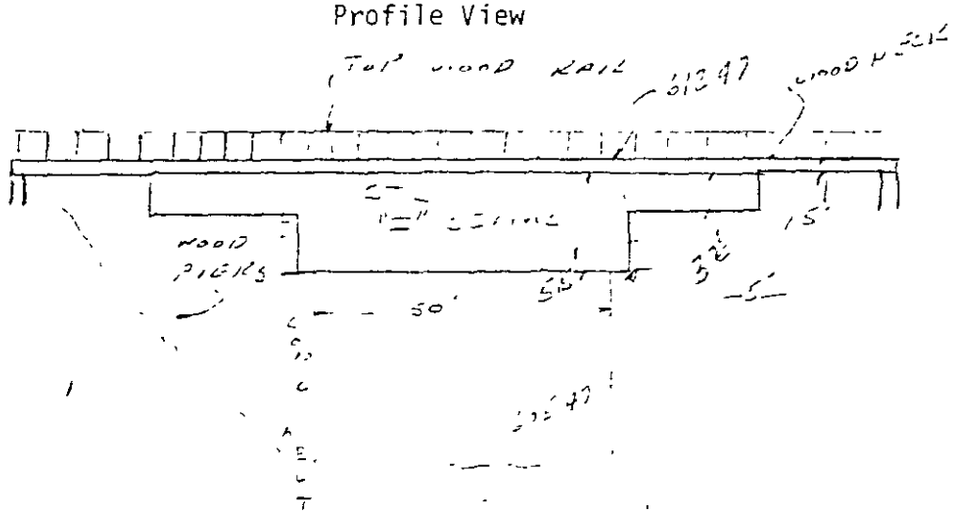
Code No. 5555-20 L

Job Name: FORT GRATIOT TWP FIS		By: J. KAPELCZAK
Date: JAN 27 1976	Feature: WOOD RR. BRIDGE	Water Course: BLACK RIVER CANAL
Remarks: BLACK RIVER CANAL - RR BRIDGE		
[illegible]		
PHOTO LOG / 1 R / 2 L / 3 U / 4 D / 5 USF / 6 DSF / /		

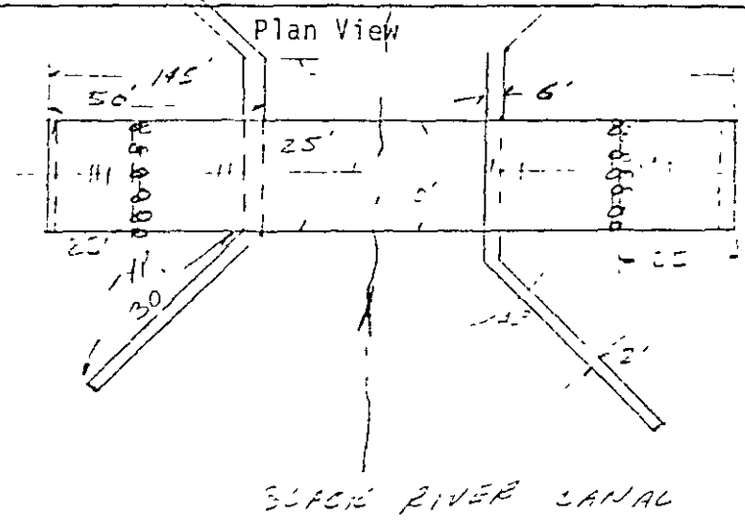
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation: 580 37	Length:	Width of Deck:	Skew: N A

FIELD SKETCH

Profile View



Plan View



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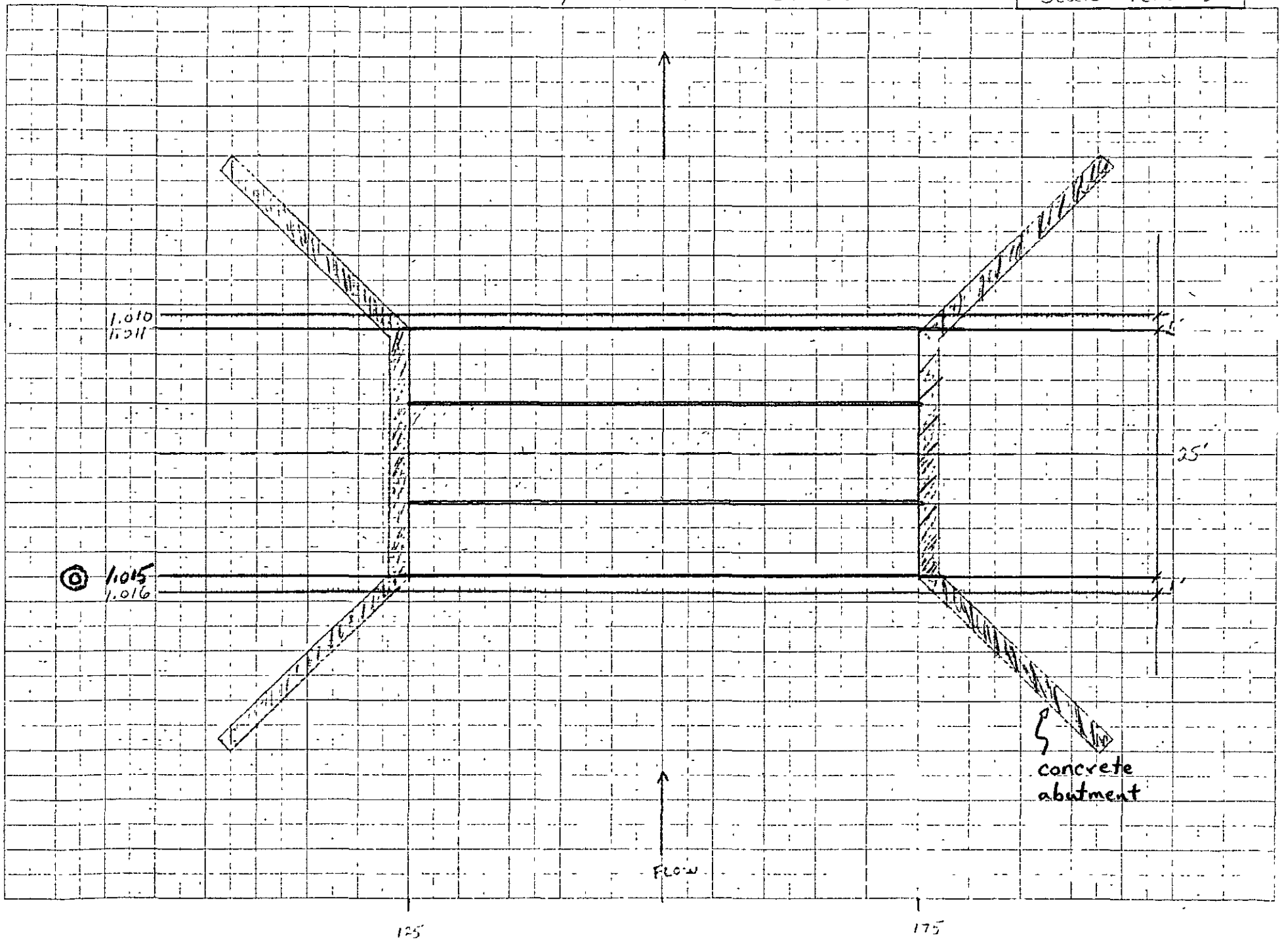
C & O RAILROAD BRIDGE

Scale 1cm = 5'



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HYDRAULIC STRUCTURAL DATA

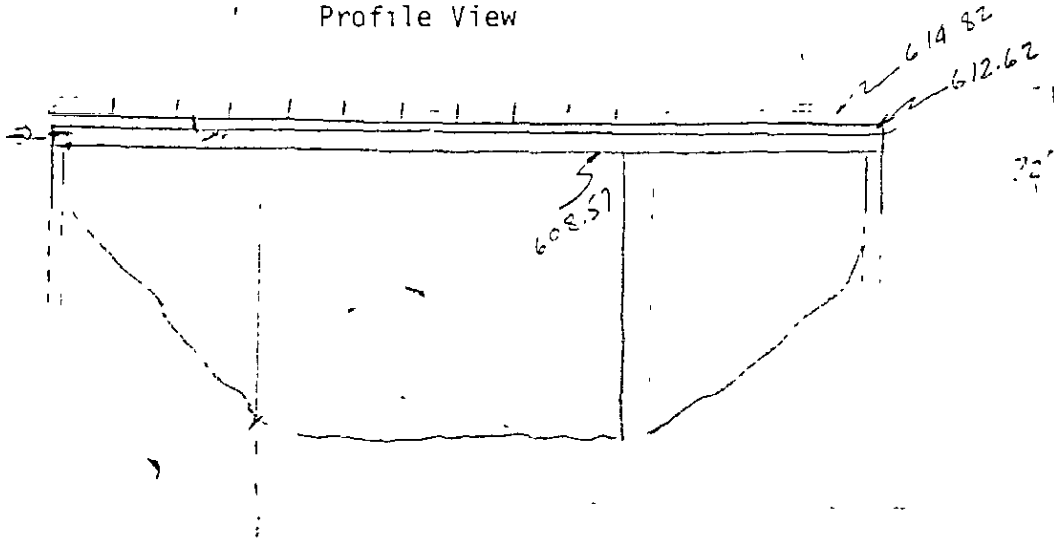
Code No. 5555-20-8

Job Name: FORT GRATIOT TWP F [illegible]		By: J. KAPELCZAK
Date: JAN 27 1976	Feature: [illegible] HWY BRIDGE	Water Course: BLACK RIVER CANAL
Remarks: STATE HWY BRIDGE [illegible] GROVE AVE & BLACK RIVER CANAL		
[PINE GROVE AVE. BRIDGE]		
Photo Log / [illegible] / R [illegible] SF / US / DSF / DS		

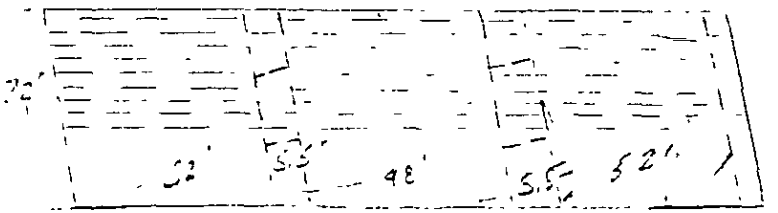
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation: 579.96	Length:	Width of Deck:	Skew: 15° 96.59

FIELD SKETCH

Profile View



Plan View



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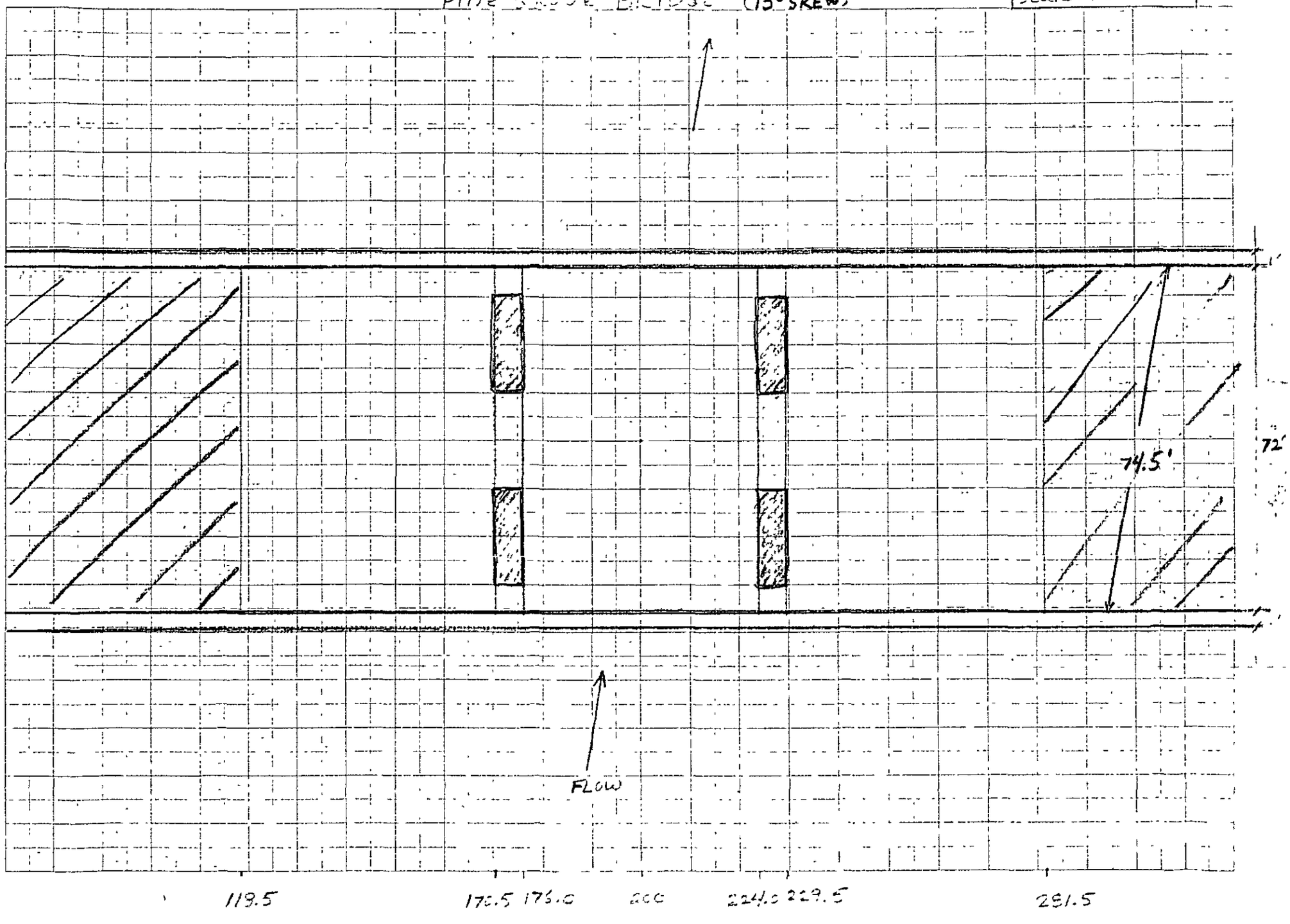
PIPE ARCH BRIDGE (15° SKEW)

Scale: 1cm = 10'



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FTGJODO JANDA 03/07/77 09.46.18 7600 JO

BLACK RIVER CANAL

J&A FILE NOS. 5555-20 & 53
10-50-100-500-YEAR FLOWS
DNR SUBMITTAL
MARCH 10, 1977

PROGRAM WILL BE ENTERED AT HEC2 (= 373) SCM LENGTH 146657 LCM LENGTH 0

BLOCK	ADDRESS	LENGTH
/ALPHA/	100	101
HEC2	201	11606
CARD	12007	1673
SUMPO	13702	1063
CHIMP	14765	1645
DC	16632	703
FLODIS	17535	444
BLELO	20201	1003
ADDPTS	21204	334
BWEIR	21540	1356
YCRIT	23116	122
SLARA	23240	256
SCALE	23516	246
XSEC	23764	1264
PROF	25250	1142
EXP	26412	102
/FCL.C./	26514	23
/Q8.IO./	26537	137
/HEADING/	26676	16
OUTC=	26714	1017
Q8NTRY=	27733	1
COMIO=	27734	44
ENDFIL=	30000	45
FECMSK=	30045	41
FLTIN=	30106	154
FLTOUT=	30262	314
FMTAP=	30576	372
FORSYS=	31170	556
FORUTL=	31746	16
GETFIT=	31764	43
INCOM=	32027	257
INRC=	32306	173
KODER=	32501	467
KRAKER=	33170	454
OUTCOM=	33644	203
REWIND=	34047	35
GOTOER=	34104	14
ALOG	34120	77
ITOJ*	34217	52
SYSAID=	34271	1
SYS=1ST	34272	62
XTOY*	34354	55
//	34431	112226

```
*****************************************
HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
*****************************************
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```
C
1       BLACK RIVER  CITY OF PORT HURON, FORT GRATIOT TOWNSHIP  5555-53*20
T2        10 YEAR FLOW
T3       BLACK RIVER CANAL

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC    HVINS     Q        WSEL     FQ

      -0.       2.       -0.      -0. -0.000000    -0.00     -0.0      -0.   581.360   -0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN       ALLDC     IBW      CHNIM     ITRACE

     1.000    -0.000    -1.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

J3      1.000     10.000     11.000     12.000     14.000      8.000      4.000     -0.000     -0.000     -0.000
NC       .028       .028       .028       .300       .500     -0.000     -0.000     -0.000     -0.000     -0.000
QT      4.000   1170.000   1770.000   2030.000   2620.000     -0.000     -0.000     -0.000     -0.000     -0.000

X1       .001     15.000     20.000    116.000     -0.000     -0.000     -0.000     -0.000     -1.000     -0.000
GR    590.000      0.000    589.600     10.000    589.100     20.000    580.000     28.000    579.200     30.000
GR    577.600     40.000    577.300     50.000    577.500     60.000    577.800     70.000    578.400     80.000
GR    579.100     90.000    580.000    100.000    580.400    106.000    590.800    116.000    591.000    150.000

X1       .057     15.000     20.000    116.000    300.000    300.000    300.000     -0.000     -0.000     -0.000
GR    590.000      0.000    589.600     10.000    589.100     20.000    580.000     28.000    579.200     30.000
GR    577.600     40.000    577.300     50.000    577.500     60.000    577.800     70.000    578.400     80.000
GR    579.100     90.000    580.000    100.000    580.400    106.000    590.800    116.000    591.000    150.000
NH      5.000       .040     28.000       .055     40.000       .028    103.000       .030    125.000       .040
NH    150.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000

X1       .076     13.000     28.000    125.000    100.000    100.000    100.000     -0.000     -0.000     -0.000
GR    593.000      0.000    592.800     28.000    580.000     40.000    578.200     50.000    578.000     60.000
GR    577.900     70.000    577.800     80.000    577.700     85.000    577.800     90.000    579.500    100.000
GR    580.000    103.000    591.700    125.000    591.800    150.000     -0.000     -0.000     -0.000     -0.000
NH      5.000       .040     30.000       .055     41.000       .028    108.000       .030    124.000       .040
NH    150.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000

X1       .095     12.000     30.000    124.000    100.000    100.000    100.000     -0.000     -0.000     -0.000
GR    591.700      0.000    591.000     30.000    580.000     41.000    578.700     50.000    577.700     60.000
GR    578.000     70.000    578.100     80.000    578.300     90.000    579.000    100.000    580.000    108.000
GR    591.600    124.000    592.300    150.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000

X1       .102     12.000     30.000    124.000     40.000     40.000     40.000     -0.000     -0.000     -0.000
GR    591.700      0.000    591.000     30.000    580.000     41.000    578.100     50.000    576.500     60.000
GR    577.400     70.000    578.100     80.000    578.300     90.000    579.000    100.000    580.000    108.000
GR    591.600    124.000    592.300    150.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000

X1       .110     12.000     30.000    124.000     40.000     40.000     40.000     -0.000     -0.000     -0.000
GR    591.700      0.000    591.000     30.000    580.000     41.000    577.500     50.000    575.300     60.000
GR    576.800     70.000    578.100     80.000    578.300     90.000    579.000    100.000    580.000    108.000
GR    591.600    124.000    592.300    150.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000
NC       .050       .030       .028     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000

X1       .121     18.000      0.000     97.000     59.000     59.000     59.000     -0.000     -0.000     -0.000
X3     -0.000     -0.000     -0.000     29.750     -0.000     60.250     -0.000     -0.000     -0.000     -0.000
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GR	592.900	0.000	585.000	14.000	580.700	22.000	576.000	28.000	575.000	30.000
GR	574.500	32.000	573.400	35.000	573.400	40.000	573.400	45.000	573.400	50.000
GR	573.400	55.000	573.600	58.000	573.800	60.000	574.000	62.000	575.500	68.000
GR	580.700	77.000	585.000	87.000	590.700	97.000	-0.000	-0.000	-0.000	-0.000
NC	.025	.025	.015	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.122	14.000	30.000	60.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
BT	10.000	22.000	585.000	0.000	28.000	591.000	585.000	30.000	595.600	585.000
BT	30.000	595.600	589.700	32.000	595.600	590.600	58.000	595.600	590.600	60.000
BT	595.600	589.700	60.000	595.600	588.600	62.000	591.000	588.600	68.000	588.600
BT	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	592.900	0.000	585.000	14.000	585.000	22.000	585.000	28.000	585.000	30.000
GR	573.400	30.000	573.400	32.000	573.400	58.000	573.400	60.000	588.600	60.000
GR	588.600	62.000	588.600	68.000	590.000	76.000	590.700	97.000	-0.000	-0.000
X1	.123	-0.000	-0.000	-0.000	3.000	3.000	3.000	-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
X1	.124	-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	30.000	-0.000	60.000	-0.000	-0.000	-0.000	-0.000
NC	.040	.035	.020	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.125	-0.000	-0.000	-0.000	16.000	16.000	16.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	30.000	-0.000	60.000	-0.000	-0.000	-0.000	-0.000
NC	.040	.050	.030	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.126	18.000	0.000	97.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	29.000	-0.000	61.000	-0.000	-0.000	-0.000	-0.000
GR	592.900	0.000	585.000	14.000	580.700	22.000	576.000	28.000	575.000	30.000
GR	574.500	32.000	573.430	35.000	573.430	40.000	573.430	45.000	573.430	50.000
GR	573.430	55.000	573.600	58.000	573.800	60.000	574.000	62.000	575.500	68.000
GR	580.700	77.000	585.000	87.000	590.700	97.000	-0.000	-0.000	-0.000	-0.000
X1	.127	18.000	0.000	97.000	7.000	7.000	7.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	22.000	-0.000	68.000	-0.000	-0.000	-0.000	-0.000
GR	592.900	0.000	585.000	14.000	580.700	22.000	576.000	28.000	575.000	30.000
GR	574.500	32.000	573.640	35.000	573.640	40.000	573.640	45.000	573.640	50.000
GR	573.640	55.000	573.640	58.000	573.800	60.000	574.000	62.000	575.500	68.000
GR	580.700	77.000	585.000	87.000	590.700	97.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.040	22.000	.030	77.000	.040	87.000	.060	97.000	-0.000
X1	.135	16.000	0.000	97.000	44.000	44.000	44.000	-0.000	-0.000	-0.000
GR	592.900	0.000	585.000	14.000	580.700	22.000	577.000	28.000	576.200	30.000
GR	575.950	35.000	575.030	40.000	574.950	45.000	575.050	50.000	575.950	55.000
GR	576.500	60.000	576.700	62.000	577.900	68.000	580.700	77.000	585.000	87.000
GR	590.700	97.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.060	.060	.028	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.141	25.000	500.000	700.000	30.000	30.000	30.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	575.000	-0.000	625.000	-0.000	-0.000	-0.000	-0.000
GR	592.100	0.000	591.900	100.000	591.800	200.000	591.900	300.000	592.300	400.000
GR	593.500	500.000	590.000	550.000	582.100	570.000	580.100	575.000	575.840	580.000
GR	575.840	585.000	575.840	595.000	576.600	600.000	576.700	605.000	577.500	615.000
GR	579.600	620.000	580.700	625.000	582.600	630.000	590.000	650.000	593.900	700.000
GR	593.700	800.000	593.400	900.000	593.200	1000.000	592.900	1100.000	592.800	1200.000
X1	.143	13.000	575.000	625.000	12.000	12.000	12.000	-0.000	-0.000	-0.000
BT	4.000	575.000	594.600	0.000	575.000	594.600	590.000	625.000	594.600	590.000
BT	625.000	594.600	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	593.500	500.000	594.600	575.000	580.100	575.000	577.500	580.000	576.200	585.000
GR	576.500	595.000	576.600	600.000	576.700	605.000	577.500	615.000	579.600	620.000
GR	580.700	625.000	594.600	625.000	593.900	700.000	-0.000	-0.000	-0.000	-0.000
X1	.153	-0.000	-0.000	-0.000	56.000	56.000	56.000	-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	.060	.060	.036	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

X1	.156	25.000	500.000	700.000	12.000	12.000	12.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	575.000	-0.000	625.000	-0.000	-0.000	-0.000	-0.000
GR	592.100	0.000	591.900	100.000	591.800	200.000	591.900	300.000	592.300	400.000
GR	593.500	500.000	590.000	550.000	582.100	570.000	580.100	575.000	577.500	580.000
GR	576.190	585.000	576.500	595.000	576.600	600.000	576.700	605.000	577.500	615.000
GR	579.600	620.000	580.700	625.000	582.600	630.000	590.000	650.000	593.900	700.000
GR	593.700	800.000	593.400	900.000	593.200	1000.000	592.900	1100.000	592.800	1200.000
NH	5.000	.040	72.000	.060	100.000	.043	150.000	.100	177.000	.040
NH	200.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.191	10.000	72.000	177.000	188.000	188.000	188.000	-0.000	-0.000	-0.000
GR	595.700	0.000	598.200	72.000	580.100	100.000	576.700	110.000	576.900	120.000
GR	576.300	130.000	576.000	140.000	580.100	150.000	599.300	177.000	599.800	200.000
NH	4.000	.050	91.000	.051	154.000	.120	180.000	.050	250.000	-0.000
X1	.265	12.000	45.000	180.000	390.000	390.000	390.000	-0.000	-0.000	-0.000
GR	604.400	0.000	604.400	45.000	584.000	90.000	579.000	91.000	577.400	100.000
GR	576.900	110.000	576.900	140.000	578.000	150.000	580.000	157.000	604.400	180.000
GR	608.000	190.000	606.200	250.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.120	95.000	.051	152.000	.120	170.000	.050	250.000	-0.000
X1	.341	17.000	63.000	170.000	400.000	400.000	400.000	-0.000	-0.000	-0.000
GR	605.000	0.000	604.400	63.000	595.000	87.000	585.000	94.000	580.000	95.000
GR	577.800	100.000	576.700	110.000	576.000	123.000	576.500	130.000	577.600	140.000
GR	579.600	150.000	580.000	152.000	590.000	154.000	594.000	160.000	603.300	170.000
GR	607.600	180.000	604.300	250.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.045	97.000	.051	160.000	.045	185.000	.050	200.000	-0.000
X1	.434	17.000	70.000	185.000	493.000	493.000	493.000	-0.000	-0.000	-0.000
GR	603.500	0.000	604.000	70.000	581.000	97.000	580.400	100.000	580.000	105.000
GR	578.000	110.000	576.400	115.000	576.200	120.000	576.500	125.000	576.800	130.000
GR	577.000	135.000	577.100	140.000	579.000	145.000	580.300	150.000	581.000	160.000
GR	604.000	185.000	603.500	200.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.060	.060	.033	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.437	18.000	100.000	160.000	12.000	12.000	12.000	-0.000	-0.000	-0.000
GR	603.500	0.000	604.000	70.000	605.100	100.000	580.400	100.000	580.000	105.000
GR	578.000	110.000	576.400	115.000	576.200	120.000	576.500	125.000	576.800	130.000
GR	577.000	135.000	577.100	140.000	579.000	145.000	580.300	150.000	581.000	160.000
GR	605.100	160.000	604.000	185.000	603.500	200.000	-0.000	-0.000	-0.000	-0.000
X1	.445	-0.000	-0.000	-0.000	45.000	45.000	45.000	-0.000	-0.000	-0.000
NH	5.000	.040	70.000	.045	97.000	.051	160.000	.045	185.000	.030
NH	200.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.447	17.000	70.000	185.000	12.000	12.000	12.000	-0.000	-0.000	-0.000
GR	603.500	0.000	604.000	70.000	581.000	97.000	580.400	100.000	580.000	105.000
GR	578.000	110.000	576.400	115.000	576.200	120.000	576.500	125.000	576.800	130.000
GR	577.000	135.000	577.100	140.000	579.000	145.000	580.300	150.000	581.000	160.000
GR	604.000	185.000	603.500	200.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.120	102.000	.051	159.000	.120	183.000	.050	250.000	-0.000
X1	.530	15.000	70.000	183.000	438.000	438.000	438.000	-0.000	-0.000	-0.000
GR	604.000	0.000	604.300	70.000	602.500	80.000	594.000	100.000	580.000	102.000
GR	578.900	110.000	577.800	120.000	576.600	130.000	576.200	135.000	576.200	147.000
GR	577.000	150.000	579.000	158.000	580.000	159.000	609.800	183.000	603.500	250.000
NH	4.000	.120	101.000	.051	162.000	.120	190.000	.050	250.000	-0.000
X1	.625	16.000	70.000	190.000	500.000	500.000	500.000	-0.000	-0.000	-0.000
GR	603.800	0.000	601.000	70.000	595.000	86.000	590.000	95.000	585.000	100.000
GR	580.000	101.000	577.000	110.000	576.000	120.000	576.500	132.000	576.100	140.000
GR	575.800	148.000	576.000	150.000	579.500	160.000	580.000	162.000	606.700	190.000
GR	605.300	250.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.120	102.000	.051	152.000	.120	178.000	.050	250.000	-0.000

	X1	.720	15.000	68.000	178.000	300.000	300.000				
	GR	600.900	0.000	601.800	68.000	590.000	96.000	585.000	100.000	580.000	102.000
	GR	576.000	110.000	575.300	120.000	574.800	130.000	575.000	140.000	578.000	150.000
	GR	579.000	151.000	580.000	152.000	590.000	157.000	602.500	178.000	600.400	250.000
	NH	5.000	.040	35.000	.090	100.000	.051	170.000	.090	205.000	.040
6	NH	250.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	X1	.827	18.000	35.000	205.000	568.000	568.000	568.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	107.500	588.000	162.500	588.000	-0.000	-0.000	-0.000
	GR	602.700	0.000	602.200	35.000	587.800	97.000	580.500	100.000	580.300	105.000
	GR	577.600	110.000	576.200	115.000	575.350	120.000	575.800	130.000	575.900	140.000
	GR	576.700	150.000	577.400	155.000	578.600	160.000	580.300	170.000	580.600	175.000
	GR	587.800	180.000	605.800	205.000	605.600	250.000	-0.000	-0.000	-0.000	-0.000
	X1	.832	18.000	35.000	205.000	26.000	26.000	26.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	114.000	588.000	156.000	588.000	-0.000	-0.000	-0.000
	GR	602.700	0.000	602.200	35.000	587.800	97.000	580.500	100.000	580.300	105.000
	GR	577.600	110.000	576.200	115.000	575.380	120.000	575.800	130.000	575.900	140.000
	GR	576.700	150.000	577.400	155.000	578.600	160.000	580.300	170.000	580.600	175.000
	GR	587.800	180.000	605.800	205.000	605.600	250.000	-0.000	-0.000	-0.000	-0.000
	X1	.834	18.000	35.000	205.000	12.000	12.000	12.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	117.000	588.000	153.000	588.000	-0.000	-0.000	-0.000
	GR	602.700	0.000	602.200	35.000	587.800	97.000	580.500	100.000	580.300	105.000
	GR	577.600	110.000	576.200	115.000	575.390	120.000	575.800	130.000	575.900	140.000
	GR	576.700	150.000	577.400	155.000	578.600	160.000	580.300	170.000	580.600	175.000
	GR	587.800	180.000	605.800	205.000	605.600	250.000	-0.000	-0.000	-0.000	-0.000
	X1	.836	-0.000	-0.000	-0.000	8.000	8.000	8.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	119.000	588.000	151.000	588.000	-0.000	-0.000	-0.000
	NC	.060	.060	.051	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	X1	.837	18.000	35.000	205.000	3.000	3.000	3.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	119.750	588.000	150.250	588.000	-0.000	-0.000	-0.000
	GR	602.700	0.000	602.200	35.000	587.800	97.000	580.500	100.000	580.300	105.000
	GR	577.600	110.000	576.200	115.000	575.400	120.000	575.800	130.000	575.900	140.000
	GR	576.700	150.000	577.400	155.000	578.600	160.000	580.300	170.000	580.600	175.000
	GR	587.800	180.000	605.800	205.000	605.600	250.000	-0.000	-0.000	-0.000	-0.000
	NC	.090	.090	.031	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	X1	.838	13.000	120.000	150.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
	BT	6.000	115.000	587.800	0.000	120.000	591.400	587.800	120.000	591.400	588.900
	BT	150.000	591.400	588.900	150.000	591.400	587.800	155.000	587.800	0.000	-0.000
	GR	602.700	0.000	602.200	35.000	587.800	97.000	587.800	115.000	587.800	120.000
	GR	575.400	120.000	575.800	130.000	575.900	140.000	576.700	150.000	587.800	150.000
	GR	587.800	155.000	587.800	180.000	605.800	205.000	-0.000	-0.000	-0.000	-0.000
	X1	.839	-0.000	-0.000	-0.000	2.500	2.500	2.500	-0.000	-0.000	-0.000
	X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	1.000	-0.000	-0.000	-0.000
	X1	.840	18.000	35.000	205.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	120.000	588.000	150.000	588.000	-0.000	-0.000	-0.000
	GR	602.700	0.000	602.200	35.000	587.800	97.000	580.500	100.000	580.300	105.000
	GR	577.600	110.000	576.200	115.000	575.400	120.000	575.800	130.000	575.900	140.000
	GR	576.700	150.000	577.400	155.000	578.600	160.000	580.300	170.000	580.600	175.000
	GR	587.800	180.000	605.800	205.000	605.600	250.000	-0.000	-0.000	-0.000	-0.000
	X1	.841	18.000	35.000	205.000	21.000	21.000	21.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	120.000	588.000	150.000	588.000	-0.000	-0.000	-0.000
	GR	602.700	0.000	602.200	35.000	587.800	97.000	580.500	100.000	580.300	105.000
	GR	577.600	110.000	576.200	115.000	575.430	120.000	575.800	130.000	575.900	140.000
	GR	576.700	150.000	577.400	155.000	578.600	160.000	580.300	170.000	580.600	175.000
	GR	587.800	180.000	605.800	205.000	605.600	250.000	-0.000	-0.000	-0.000	-0.000
	NH	5.000	.040	35.000	.090	100.000	.051	170.000	.090	205.000	.040
	NH	250.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

X1	.842	18.000	35.000	205.000	1.500	1.500	1.500	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	118.500	588.000	151.500	588.000	-0.000	-0.000	-0.000
GR	602.700	0.000	602.200	35.000	587.800	97.000	580.500	100.000	580.300	105.000
GR	577.600	110.000	576.200	115.000	575.430	120.000	575.800	130.000	575.900	140.000
GR	576.700	150.000	577.400	155.000	578.600	160.000	580.300	170.000	580.600	175.000
GR	587.800	180.000	605.800	205.000	605.600	250.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.040	35.000	.090	100.000	.052	170.000	.090	205.000	.040
NH	250.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.843	18.000	35.000	205.000	5.000	5.000	5.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	113.500	588.000	156.500	588.000	-0.000	-0.000	-0.000
GR	602.700	0.000	602.200	35.000	587.800	97.000	580.500	100.000	580.300	105.000
GR	577.600	110.000	576.200	115.000	575.440	120.000	575.800	130.000	575.900	140.000
GR	576.700	150.000	577.400	155.000	578.600	160.000	580.300	170.000	580.600	175.000
GR	587.800	180.000	605.800	205.000	605.600	250.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.050	35.000	.130	100.000	.052	170.000	.130	205.000	.050
NH	250.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.848	18.000	35.000	205.000	29.000	29.000	29.000	-0.000	-0.000	-0.000
GR	602.700	0.000	602.200	35.000	587.800	97.000	580.500	100.000	580.300	105.000
GR	577.600	110.000	576.200	115.000	575.480	120.000	575.800	130.000	575.900	140.000
GR	576.700	150.000	577.400	155.000	578.600	160.000	580.300	170.000	580.600	175.000
GR	587.800	180.000	605.800	205.000	605.600	250.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.120	88.000	.052	148.000	.130	190.000	.050	250.000	-0.000
X1	.928	16.000	50.000	190.000	422.000	422.000	422.000	-0.000	-0.000	-0.000
GR	600.000	0.000	601.000	50.000	595.000	72.000	585.000	86.000	580.000	88.000
GR	579.300	90.000	576.900	100.000	576.400	110.000	576.200	120.000	576.100	128.000
GR	576.200	130.000	577.200	140.000	579.000	147.000	580.000	148.000	611.700	190.000
GR	610.800	250.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.040	75.000	.120	125.000	.052	175.000	.110	220.000	.040
NH	300.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.001	11.000	75.000	220.000	385.000	385.000	385.000	-0.000	-0.000	-0.000
GR	612.100	0.000	612.500	75.000	580.200	125.000	578.300	135.000	578.000	145.000
GR	577.340	150.000	577.340	155.000	579.300	165.000	580.000	175.000	612.500	220.000
GR	611.700	300.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.060	.060	.043	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.010	11.000	75.000	220.000	49.000	49.000	49.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	124.750	-0.000	175.250	-0.000	-0.000	-0.000	-0.000
GR	612.100	0.000	612.500	75.000	580.200	125.000	578.300	135.000	578.000	145.000
GR	577.500	150.000	577.500	155.000	579.300	165.000	580.000	175.000	612.500	220.000
GR	611.700	300.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.011	13.000	125.000	175.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
BT	4.000	125.000	612.500	0.000	125.000	612.500	605.500	175.000	612.500	605.500
BT	175.000	612.500	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	612.100	0.000	612.500	75.000	612.500	125.000	580.200	125.000	578.300	135.000
GR	578.000	145.000	577.500	150.000	577.500	155.000	579.300	165.000	580.000	175.000
GR	612.500	175.000	612.500	220.000	611.700	300.000	-0.000	-0.000	-0.000	-0.000
X1	1.015	-0.000	-0.000	-0.000	25.000	25.000	25.000	-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
NH	5.000	.040	75.000	.110	125.000	.043	175.000	.120	220.000	.050
NH	300.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.016	11.000	75.000	220.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	124.000	-0.000	176.000	-0.000	-0.000	-0.000	-0.000
GR	612.100	0.000	612.500	75.000	580.200	125.000	578.300	135.000	578.000	145.000
GR	577.480	150.000	577.480	155.000	579.300	165.000	580.000	175.000	612.500	220.000
GR	611.700	300.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.080	.080	.052	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.025	11.000	75.000	220.000	49.000	49.000	49.000	-0.000	-0.000	-0.000
GR	612.100	0.000	612.500	75.000	580.200	125.000	578.300	135.000	578.000	145.000

GR	576.680	150.000	576.680	155.000	579.300	165.000	580.000	175.000	612.500	220.000
GR	611.700	300.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.090	90.000	.052	148.000	.110	190.000	.050	250.000	-0.000
X1	1.042	14.000	50.000	190.000	90.000	90.000	90.000	-0.000	-0.000	-0.000
GR	602.400	0.000	600.500	50.000	590.000	79.000	580.000	90.000	577.200	100.000
GR	576.300	105.000	576.400	110.000	576.600	120.000	575.800	130.000	575.200	134.000
GR	577.200	140.000	580.000	148.000	613.600	190.000	611.700	250.000	-0.000	-0.000
NH	4.000	.090	100.000	.052	153.000	.110	185.000	.050	250.000	-0.000
X1	1.085	11.000	60.000	185.000	230.000	230.000	230.000	-0.000	-0.000	-0.000
GR	612.500	0.000	610.900	60.000	579.800	100.000	576.100	110.000	575.700	120.000
GR	575.600	130.000	576.700	140.000	579.500	150.000	579.800	153.000	612.100	185.000
GR	613.200	250.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.090	104.000	.052	164.000	.110	210.000	.050	250.000	-0.000
X1	1.098	16.000	52.000	210.000	70.000	70.000	70.000	-0.000	-0.000	-0.000
GR	602.200	0.000	601.100	52.000	590.000	92.000	585.000	100.000	580.000	104.000
GR	577.200	110.000	576.100	120.000	576.000	130.000	576.200	140.000	576.900	150.000
GR	578.200	160.000	580.000	164.000	585.000	165.000	590.000	169.000	612.800	210.000
GR	613.000	250.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.030	114.470	.060	164.700	.043	221.700	.060	271.930	.030
NH	386.400	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.117	18.000	118.500	281.500	97.000	97.000	97.000	.966	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	612.600	612.600	-0.000
GR	611.700	-0.000	611.700	100.000	612.600	118.500	606.000	118.500	580.100	170.500
GR	579.900	172.000	578.700	176.000	577.000	180.000	575.700	190.000	575.800	200.000
GR	577.400	210.000	578.700	220.000	579.200	224.000	579.800	229.500	608.600	281.500
GR	612.600	281.500	612.600	300.000	612.800	400.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.030	114.470	.045	164.700	.043	221.700	.045	271.930	.030
NH	386.400	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.118	-0.000	-0.000	-0.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	.966	-0.000
BT	13.000	118.500	612.600	0.000	118.500	612.600	608.600	170.500	612.600	608.600
BT	170.500	612.600	580.100	172.000	612.600	579.900	176.000	612.600	578.700	176.000
BT	612.600	608.600	224.000	612.600	608.600	224.000	612.600	579.200	229.500	612.600
BT	579.800	229.500	612.600	608.600	281.500	612.600	608.600	281.500	612.600	0.000
X1	1.131	-0.000	-0.000	-0.000	74.500	74.500	74.500	-0.000	-0.000	-0.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	1.000	-0.000	.966	-0.000
NH	5.000	.030	114.470	.045	164.700	.043	221.700	.045	271.930	.032
NH	386.400	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.132	18.000	118.500	281.500	1.000	1.000	1.000	.966	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	612.600	612.600	-0.000
GR	611.700	-0.000	611.700	100.000	612.600	118.500	606.000	118.500	580.100	170.500
GR	579.900	172.000	578.700	176.000	577.000	180.000	575.700	190.000	575.800	200.000
GR	577.400	210.000	578.700	220.000	579.200	224.000	579.800	229.500	608.600	281.500
GR	612.600	281.500	612.600	300.000	612.800	400.000	-0.000	-0.000	-0.000	-0.000
NC	.060	.060	.040	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.146	48.000	118.500	281.500	79.000	79.000	79.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	119.500	-0.000	231.500	-0.000	-0.000	-0.000	-0.000
GR	611.700	0.000	611.700	100.000	612.600	118.500	606.000	118.500	580.100	170.500
GR	579.900	172.000	576.700	176.000	574.000	180.000	571.400	190.000	574.800	200.000
GR	577.400	210.000	578.700	220.000	579.200	224.000	579.800	229.500	608.600	281.500
GR	612.600	281.500	612.600	300.000	612.800	400.000	612.700	450.000	582.200	497.000
GR	581.100	500.000	579.700	510.000	569.200	520.000	568.900	530.000	568.300	540.000
GR	568.600	550.000	569.000	560.000	568.300	570.000	567.800	580.000	567.900	590.000
GR	567.800	600.000	566.200	610.000	569.900	625.000	572.500	630.000	575.600	640.000
GR	580.700	650.000	586.300	655.000	587.200	700.000	587.700	730.000	588.200	880.000
GR	588.100	900.000	588.000	950.000	588.100	1050.000	587.600	1150.000	586.800	1250.000
GR	586.000	1430.000	589.300	1450.000	589.300	1550.000	-0.000	-0.000	-0.000	-0.000
EJ	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

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HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
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T1      BLACK RIVER- CITY OF PORT HURON, FORT GRATIOT TOWNSHIP  5555-53*20
T2      100 YEAR FLOOD
T3      BLACK RIVER CANAL
J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
       -0.       4.       -0.       -0.  -0.000000    -0.00     -0.0      -0.    581.360   -0.000
J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
    3.000     -0.000    -1.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000
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CCHV= .300 CEHV= .500

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

ABBREVIATIONS: A=ACTUAL FIELD CROSS SECTION TAKEN 1/27/76

R=REPEATED CROSS SECTION

CPH=CITY OF PORT HURON DATA, TAKEN 1/16/76

MOUTH OF BLACK RIVER CANAL---R.057

.00	5.06	581.36	0.00	581.36	582.00	.64	0.00	0.00	588.10
2030.	0.	2030.	0.	0.	315.	0.	0.	0.	589.80
0.00	0.00	6.44	0.00	.028	.028	.028	0.000	576.30	25.93
.002541	0.	0.	0.	0	0	1	0.00	81.96	107.88

A 300' U/S OF MOUTH---A;CPH(3+00)

.06	4.85	582.15	0.00	0.00	582.87	.72	.83	.04	589.10
2030.	0.	2030.	0.	0.	298.	0.	2.	1.	590.80
.01	0.00	6.81	0.00	.028	.028	.028	.028	577.30	26.11
.003028	300.	300.	300.	2	0	1	0.00	81.58	107.69

1490 NH CARD USED

B 400' U/S OF MOUTH---A;CPH(4+00)

.08	4.67	582.37	0.00	0.00	583.29	.92	.32	.10	592.80
2030.	0.	2030.	0.	0.	264.	0.	3.	1.	591.70
.02	0.00	7.69	0.00	.028	.028	.028	.028	577.70	37.78
.003316	100.	100.	100.	2	0	1	0.00	69.68	107.46

C 500' U/S OF MOUTH---4.GPH(5+00)

.10	5.26	582.96	0.00	0.00	583.63	.67	.26	.08	591.00
2030.	0.	2030.	0.	0.	310.	0.	3.	1.	591.60
.02	0.00	6.56	0.00	.028	.028	.028	.028	577.70	38.03
.002144	100.	100.	100.	2	0	1	0.00	74.06	112.09

100' D/S OF TAINTOR FLOOD GATE---R.095

.10	6.73	583.23	0.00	0.00	583.74	.51	.07	.05	591.00
2030.	0.	2030.	0.	0.	353.	0.	4.	1.	591.60
.02	0.00	5.75	0.00	.028	.028	.028	.028	576.50	37.77
.001385	40.	40.	40.	2	0	1	0.00	74.68	112.45

60' D/S OF TAINTOR FLOOD GATE---R.095

.11	8.09	583.39	0.00	0.00	583.82	.42	.05	.03	591.00
2030.	0.	2030.	0.	0.	389.	0.	4.	1.	591.60
.02	0.00	5.22	0.00	.028	.028	.028	.028	575.30	37.61
.000995	40.	40.	40.	2	0	1	0.00	75.07	112.68

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

3470 ENCROACHMENT STATIONS= 29.8 60.3 TYPE= 1 TARGET= 30.500

1' D/S OF TAINTOR FLOOD GATE---R.122

.12	9.91	583.31	0.00	0.00	584.04	.73	.07	.15100000.00	
2030.	0.	2030.	0.	0.	296.	0.	5.	1. 100000.00	
.03	0.00	6.85	0.00	.050	.028	.030	.028	573.40	29.75
.001488	59.	59.	59.	2	0	1	0.00	30.50	60.25

NORMAL BRIDGE, NRD=10 MIN ELTRD= 585.00 MAX ELLC= 590.60

D D/S FACE OF TAINTOR FLOOD GATE---A

.12	9.92	583.32	0.00	0.00	584.04	.72	.00	.00	585.00
2030.	0.	2030.	0.	0.	297.	0.	5.	1.	588.60
.03	0.00	6.83	0.00	.025	.015	.025	.028	573.40	30.00
.000439	1.	1.	1.	0	0	1	0.00	30.00	60.00

NORMAL BRIDGE, NRD=10 MIN ELTRD= 585.00 MAX ELLC= 590.60

U/S FACE OF TAINTOR FLOOD GATE---R.122

.12	9.92	583.32	0.00	0.00	584.04	.72	.00	.00	585.00
2030.	0.	2030.	0.	0.	297.	0.	5.	1.	588.60
.03	0.00	6.82	0.00	.025	.015	.025	.028	573.40	30.00
.000438	3.	3.	3.	0	0	1			

1' U/S OF TAINTOR FLOOD GATE---R.122

.12	9.92	583.32	0.00	0.00	584.04	.72	.00	.00	585.00
2030.	0.	2030.	0.	0.	297.	0.	5.	1.	100000.00
.03	0.00	6.82	0.00	.025	.015	.025	.028	573.40	30.00
.000438	1.	1.	1.	0	0	1	0.00	30.00	60.00

3470 ENCROACHMENT STATIONS= 30.0 60.0 TYPE= 1 TARGET= 30.000

17' U/S OF TAINTOR FLOOD GATE---R.122

.13	9.93	583.33	0.00	0.00	584.05	.72	.01	.00	585.00
2030.	0.	2030.	0.	0.	298.	0.	5.	1.	100000.00
.03	0.00	6.82	0.00	.040	.020	.035	.027	573.40	30.00
.000778	16.	16.	16.	0	0	1	0.00	30.00	60.00

3470 ENCROACHMENT STATIONS= 29.0 61.0 TYPE= 1 TARGET= 32.000

18' U/S OF TAINTOR FLOOD GATE---R.122

.13	9.99	583.42	0.00	0.00	584.07	.66	.00	.02	100000.00
2030.	0.	2030.	0.	0.	312.	0.	5.	1.	100000.00
.03	0.00	6.50	0.00	.040	.030	.050	.027	573.43	29.00
.001490	1.	1.	1.	2	0	1	0.00	32.00	61.00

3470 ENCROACHMENT STATIONS= 22.0 68.0 TYPE= 1 TARGET= 46.000

25' U/S OF TAINTOR FLOOD GATE---R.122

.13	10.18	583.82	0.00	0.00	584.17	.35	.01	.09	100000.00
2030.	0.	2030.	0.	0.	425.	0.	5.	1.	100000.00
.03	0.00	4.77	0.00	.040	.030	.050	.027	573.64	22.00
.000677	7.	7.	7.	2	0	1	0.00	46.00	68.00

1490 NH CARD USED

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

69' U/S OF TAINTOR FLOOD GATE---R.122

.14	9.88	583.83	0.00	0.00	584.22	.38	.03	.02	592.90
2030.	0.	2030.	0.	0.	408.	0.	5.	1.	590.70
.03	0.00	4.98	0.00	.040	.030	.050	.027	574.95	16.17
.000786	44.	44.	44.	2	0	1	0.00	68.12	84.29

3470 ENCROACHMENT STATIONS= 575.0 625.0 TYPE= 1 TARGET= 50.000

12' D/S OF GRATIOT AVE BRIDGE---R.156

.14	7.93	583.77	0.00	0.00	584.35	.58	.03	.10	100000.00
2030.	0.	2030.	0.	0.	332.	0.	5.	1.	100000.00
.03	0.00	6.12	0.00	.060	.028	.060	.027	575.84	575.00
.001325	30.	30.	30.	2	0	1	0.00	50.00	625.00

D/S FACE OF GRATIOT AVE BRIDGE---R.156

.14	7.55	583.75	0.00	0.00	584.39	.64	.02	.03	594.60
2030.	0.	2030.	0.	0.	315.	0.	5.	1.	594.60
.03	0.00	6.44	0.00	.060	.028	.060	.027	576.20	575.00
.001543	12.	12.	12.	2	0	1	0.00	50.00	625.00

NORMAL BRIDGE.NRD= 4 MIN ELTRD= 594.60 MAX ELLC= 590.00

U/S FACE OF GRATIOT AVE BRIDGE---R.156

.15	7.66	583.86	0.00	0.00	584.49	.62	.08	.01	594.60
2030.	0.	2030.	0.	0.	321.	0.	6.	1.	594.60
.03	0.00	6.32	0.00	.060	.028	.060	.027	576.20	575.00
.001461	56.	56.	56.	2	0	1	0.00	50.00	625.00

3470 ENCROACHMENT STATIONS= 575.0 625.0 TYPE= 1 TARGET= 50.000

E 12' U/S OF GRATIOT AVE BRIDGE---A

.16	7.70	583.89	0.00	0.00	584.51	.62	.02	.00100000.00	
2030.	0.	2030.	0.	0.	322.	0.	6.	1.100000.00	
.04	0.00	6.31	0.00	.060	.036	.060	.027	576.19	575.00
.002393	12.	12.	12.	0	0	1	0.00	50.00	625.00

1490 NH CARD USED

F 200' U/S OF GRATIOT AVE BRIDGE---A

.19	8.55	584.55	0.00	0.00	584.95	.41	.38	.06	598.20
2030.	0.	2030.	0.	0.	397.	0.	8.	2.	599.30
.05	0.00	5.12	0.00	.060	.044	.060	.029	576.00	93.12
.001746	188.	188.	188.	2	0	1	0.00	63.14	156.26

1490 NH CARD USED

G 590' U/S OF GRATIOT AVE BRIDGE---A,CPH(14+00)

.27	8.43	585.33	0.00	0.00	585.55	.22	.54	.06	604.40
2030.	0.	2030.	0.	0.	541.	0.	12.	2.	604.40
.07	0.00	3.75	0.00	.060	.051	.060	.031	576.90	87.07
.001116	390.	390.	390.	2	0	1	0.00	74.95	162.02

1490 NH CARD USED

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

H 990' U/S OF GRATIOT AVE BRIDGE---A,CPH(18+00)

.34	9.77	585.77	0.00	0.00	586.04	.27	.47	.03	604.40
2030.	0.	2030.	0.	0.	486.	0.	16.	3.	603.30
10	0.00	4.17	0.00	.060	.051	.060	.032	576.00	93.46

1490 NH CARD USED

12' D/S OF ABANDONED BRIDGE ABUTMENTS---R.445

.43	10.20	586.40	0.00	0.00	586.62	.22	.57	.02	604.00
2030.	0.	2030.	0.	0.	541.	0.	22.	4.	604.00
.14	0.00	3.75	0.00	.060	.051	.060	.033	576.20	90.66
.001072	493.	493.	493.	2	0	1	0.00	75.22	165.87

D/S FACE OF ABANDONED BRIDGE ABUTMENTS---R.445

.44	10.19	586.39	0.00	0.00	586.66	.27	.01	.02	605.10
2030.	0.	2030.	0.	0.	490.	0.	22.	4.	605.10
.14	0.00	4.14	0.00	.060	.033	.060	.033	576.20	100.00
.000663	12.	12.	12.	2	0	1	0.00	60.00	160.00

I U/S FACE OF ABANDONED BRIDGE ABUTMENTS---A

.45	10.22	586.42	0.00	0.00	586.69	.26	.03	.00	605.10
2030.	0.	2030.	0.	0.	492.	0.	23.	4.	605.10
.14	0.00	4.12	0.00	.060	.033	.060	.033	576.20	100.00
.000653	45.	45.	45.	0	0	1	0.00	60.00	160.00

1490 NH CARD USED

12' U/S OF ABANDONED BRIDGE ABUTMENTS---R.445

.45	10.30	586.50	0.00	0.00	586.71	.21	.01	.02	604.00
2030.	0.	2030.	0.	0.	548.	0.	23.	4.	604.00
.14	0.00	3.70	0.00	.060	.051	.060	.033	576.20	90.55
.001031	12.	12.	12.	2	0	1	0.00	75.43	165.98

1490 NH CARD USED

J 450' U/S OF ABANDONED BRIDGE ABUTMENTS---A,CPH(28+00)

.53	10.72	586.92	0.00	0.00	587.12	.21	.41	.00	604.30
2030.	0.	2030.	0.	0.	556.	0.	29.	4.	609.80
.18	0.00	3.65	0.00	.060	.051	.060	.033	576.20	101.01
.000855	438.	438.	438.	2	0	1	0.00	63.56	164.57

1490 NH CARD USED

K 950' U/S OF ABANDONED BRIDGE ABUTMENTS---A,CPH(33+00)

.63	11.53	587.33	0.00	0.00	587.47	.14	.33	.02	601.00
2030.	0.	2030.	0.	0.	670.	0.	36.	5.	606.70
.22	0.00	3.03	0.00	.060	.052	.060	.033	575.80	97.67
.000529	500.	500.	500.	2	0	1	0.00	72.02	169.69

1490 NH CARD USED

L 618' D/S OF MITER FLOOD GATE---A,CPH(38+00)

.72	12.79	587.59	0.00	0.00	587.76	.18	.27	.02	601.80
2030.	0.	2030.	0.	0.	604.	0.	43.	6.	602.50
.26	0.00	3.36	0.00	.060	.051	.060	.033	574.80	97.93
.000769	500.	500.	500.	2	0	1	0.00	57.87	155.79

1490 NH CARD USED

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

3470 ENCROACHMENT STATIONS= 107.5 162.5 TYPE= 1 TARGET= -55.000
ELENCL= 588.00 ELENCR= 588.00

50' D/S OF MITER FLOOD GATE---R.838

.83	12.55	587.90	0.00	0.00	588.07	.16	.30	.00	602.20
2030.	0.	2030.	0.	0.	626.	0.	51.	7.	605.80
.31	0.00	3.24	0.00	.060	.051	.060	.033	575.35	107.50
.000488	568.	568.	568.	0	0	1	0.00	55.00	162.50

3470 ENCROACHMENT STATIONS= 114.0 156.0 TYPE= 1 TARGET= 42.000
ELENCL= 588.00 ELENCR= 588.00

24' D/S OF MITER FLOOD GATE---R.838

.83	12.49	587.87	0.00	0.00	588.13	.26	.02	.05	602.20
2030.	0.	2030.	0.	0.	495.	0.	51.	7.	605.80
.31	0.00	4.10	0.00	.060	.051	.060	.033	575.38	114.00
.000741	26.	26.	26.	2	0	1	0.00	42.00	156.00

3470 ENCROACHMENT STATIONS= 117.0 153.0 TYPE= 1 TARGET= 36.000
ELENCL= 588.00 ELENCR= 588.00

12' D/S OF MITER FLOOD GATE---R.838

.83	12.45	587.84	0.00	0.00	588.19	.35	.01	.04	602.20
2030.	0.	2030.	0.	0.	427.	0.	51.	7.	605.80
.31	0.00	4.75	0.00	.060	.051	.060	.033	575.39	117.00
.000987	12.	12.	12.	2	0	1	0.00	36.00	153.00

3470 ENCROACHMENT STATIONS= 119.0 151.0 TYPE= 1 TARGET= 32.000
ELENCL= 588.00 ELENCR= 588.00

4' D/S OF MITER FLOOD GATE---R.838

.84	12.41	587.80	0.00	0.00	588.24	.44	.01	.05	602.20
2030.	0.	2030.	0.	0.	380.	0.	52.	7.	605.80
.31	0.00	5.34	0.00	.060	.051	.060	.033	575.39	119.00
.001244	8.	8.	8.	2	0	1	0.00	32.00	151.00

3470 ENCROACHMENT STATIONS= 119.8 150.3 TYPE= 1 TARGET= 30.500
ELENCL= 588.00 ELENCR= 588.00

1' D/S OF MITER FLOOD GATE---R.838

.84	12.38	587.78	0.00	0.00	588.27	.49	.01	.02	602.20
2030.	0.	2030.	0.	0.	362.	0.	52.	7.	605.80
.31	0.00	5.61	0.00	.060	.051	.060	.033	575.40	119.75
.002930	3.	3.	3.	2	0	1	0.00	30.50	150.25

NORMAL BRIDGE,NRD= 6 MIN ELTRD= 587.80 MAX ELLC= 588.90

M D/S FACE OF MITER FLOOD GATE---A

.84	12.38	587.78	0.00	0.00	588.28	.50	.00	.01	587.80
2030.	0.	2030.	0.	0.	356.	0.	52.	7.	587.80
.31	0.00	5.70	0.00	.090	.031	.090	.033	575.40	120.00
.001131	1.	1.	1.	0	0	1	0.00	30.00	150.00

NORMAL BRIDGE,NRD= 6 MIN ELTRD= 587.80 MAX ELLC= 588.90

U/S FACE OF MITER FLOOD GATE---R.838

.84	12.38	587.78	0.00	0.00	588.28	.50	.00	.00	587.80
2030.	0.	2030.	0.	0.	356.	0.	52.	7.	587.80
.31	0.00	5.70	0.00	.090	.031	.090	.033	575.40	120.00
.001131	3.	3.	3.	1	0	1	0.00	30.00	150.00

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

3470 ENCROACHMENT STATIONS= 120.0 150.0 TYPE= 1 TARGET= 30.000
ELENCL= 588.00 ELENCR= 588.00

1' U/S OF MITER FLOOD GATE---R.838

.84	12.38	587.78	0.00	0.00	588.28	.50	.00	.00	602.20
2030.	0.	2030.	0.	0.	356.	0.	52.	7.	605.80
.31	0.00	5.70	0.00	.090	.031	.090	.033	575.40	120.00
.001130	1.	1.	1.	0	0	1	0.00	30.00	150.00

3470 ENCROACHMENT STATIONS= 120.0 150.0 TYPE= 1 TARGET= 30.000
ELENCL= 588.00 ELENCR= 588.00

22' U/S OF MITER FLOOD GATE---R.838

.84	12.38	587.81	0.00	0.00	588.31	.50	.02	.00	602.20
2030.	0.	2030.	0.	0.	357.	0.	52.	7.	605.80
.32	0.00	5.69	0.00	.090	.031	.090	.033	575.43	120.00
.001125	21.	21.	21.	0	0	1	0.00	30.00	150.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 118.5 151.5 TYPE= 1 TARGET= 33.000
ELENCL= 588.00 ELENCR= 588.00

23.5' U/S OF MITER FLOOD GATE---R.838

.84	12.50	587.93	0.00	0.00	588.34	.41	.00	.03	602.20
2030.	0.	2030.	0.	0.	395.	0.	52.	7.	605.80
.32	0.00	5.13	0.00	.090	.051	.090	.033	575.43	118.50
			2	0	1	0.00	33.00	151.50	

ELENCL= 588.00 ELENCR= 588.00

29' U/S OF MITER FLOOD GATE---R.838

.84	12.72	588.16	0.00	0.00	588.40	.23	.00	.05	602.20
2030.	0.	2030.	0.	0.	524.	0.	52.	7.	605.80
.32	0.00	3.87	0.00	.090	.052	.090	.033	575.44	96.30
.000684	5.	5.	5.	2	0	1	0.00	83.92	180.22

1490 NH CARD USED

58' U/S OF MITER FLOOD GATE---R.838

.85	12.88	588.36	0.00	0.00	588.45	.09	.01	.04	602.20
2030.	0.	2030.	0.	0.	851.	0.	52.	7.	605.80
.32	0.00	2.38	0.00	.090	.054	.090	.033	575.48	94.57
.000322	29.	29.	29.	2	0	1	0.00	86.21	180.78

1490 NH CARD USED

N 430' U/S OF MITER FLOOD GATE---A,CPH(49+00)

.93	12.40	588.50	0.00	0.00	588.62	.11	.15	.01	601.00
2030.	0.	2030.	0.	0.	754.	0.	60.	8.	611.70
.36	0.00	2.69	0.00	.090	.053	.090	.033	576.10	81.09
.000407	422.	422.	422.	2	0	1	0.00	78.17	159.27

1490 NH CARD USED

50' D/S OF C&O RAILROAD BRIDGE---R1.015

1.00	11.35	588.69	0.00	0.00	588.86	.17	.22	.03	612.50
2030.	0.	2030.	0.	0.	614.	0.	66.	8.	612.50
.40	0.00	3.31	0.00	.090	.055	.090	.032	577.34	111.86
.000824	385.	385.	385.	2	0	1	0.00	75.18	187.03

3470 ENCROACHMENT STATIONS= 124.8 175.3 TYPE= 1 TARGET= 50.500

1' D/S OF C&O RAILROAD BRIDGE---R1.015

1.01	11.19	588.69	0.00	0.00	588.94	.25	.04	.04	100000.00
2030.	0.	2030.	0.	0.	508.	0.	67.	8.	100000.00
.40	0.00	3.99	0.00	.060	.043	.060	.033	577.50	124.75
.000911	49.	49.	49.	2	0	1	0.00	50.50	175.25

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

NORMAL BRIDGE,NRD= 4 MIN ELTRD= 612.50 MAX ELLC= 605.50

D/S FACE OF C&O RAILROAD BRIDGE---R1.015

1.01	11.19	588.69	0.00	0.00	588.95	.25	.00	.00	612.50
2030.	0.	2030.	0.	0.	504.	0.	67.	8.	612.50
40	0.00	4.03	0.00						

1' D/S OF PINE GROVE AVE BRIDGE---R1.131 SKEW-15

1.12	13.46	589.16	0.00	0.00	589.25	.09	.03	.00	612.60
2030.	0.	2030.	0.	0.	823.	0.	76.	9.	612.60
.46	0.00	2.47	0.00	.080	.044	.080	.034	575.70	147.13
.000250	97.	97.	97.	1	0	1	0.00	90.85	237.98

1490 NH CARD USED

NORMAL BRIDGE,NRD=13 MIN EL TRD= 612.60 MAX ELLC= 608.60

D/S FACE OF PINE GROVE AVE BRIDGE---R1.131 SKEW-15

1.12	13.43	589.13	0.00	0.00	589.28	.15	.00	.03	612.60
2030.	0.	2030.	0.	0.	655.	0.	76.	9.	612.60
.46	0.00	3.10	0.00	.080	.043	.080	.034	575.70	147.17
.000355	1.	1.	1.	2	0	1	-165.50	90.77	237.95

NORMAL BRIDGE,NRD=13 MIN EL TRD= 612.60 MAX ELLC= 608.60

S U/S FACE OF PINE GROVE AVE BRIDGE---A SKEW-15

1.13	13.46	589.16	0.00	0.00	589.31	.15	.03	.00	612.60
2030.	0.	2030.	0.	0.	657.	0.	77.	9.	612.60
.46	0.00	3.09	0.00	.080	.043	.080	.035	575.70	147.13
.000353	75.	75.	75.	0	0	1	-166.07	90.85	237.98

1490 NH CARD USED

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 612.60 ELREA= 612.60

1' U/S OF PINE GROVE AVE BRIDGE---R1.131 SKEW-15

1.13	13.53	589.23	0.00	0.00	589.32	.09	.00	.02	612.60
2030.	0.	2030.	0.	0.	830.	0.	77.	9.	612.60
.46	0.00	2.45	0.00	.080	.043	.080	.035	575.70	146.98
.000232	1.	1.	1.	2	0	1	0.00	91.14	238.12

3470 ENCROACHMENT STATIONS= 118.5 281.5 TYPE= 1 TARGET= 163.000

80' U/S OF PINE GROVE AVE BRIDGE AND DIVERSION OF CANAL AND

BLACK RIVER---R1.131

1.15	17.87	589.27	0.00	0.00	589.34	.07	.02	.01	612.60
2030.	0.	2030.	0.	0.	945.	0.	79.	10.	100000.00
.47	0.00	2.15	0.00	.060	.040	.060	.035	571.40	152.08
.000173	79.	79.	79.	2	0	1	0.00	94.52	246.60

O U/S FACE OF C&O RAILROAD BRIDGE---A

1.02	11.22	588.72	0.00	0.00	588.97	.25	.02	.00	612.50
2030.	0.	2030.	0.	0.	505.	0.	67.	8.	612.50
.40	0.00	4.02	0.00	.060	.043	.060	.033	577.50	125.00
.000926	25.	25.	25.	0	0	1	0.00	50.00	175.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 124.0 176.0 TYPE= 1 TARGET= 52.000

1' U/S OF C&O RAILROAD BRIDGE---R1.015

1.02	11.26	588.74	0.00	0.00	588.97	.23	.00	.01	100000.00
2030.	0.	2030.	0.	0.	523.	0.	67.	8.	100000.00
.40	0.00	3.88	0.00	.060	.044	.060	.033	577.48	124.00
.000604	1.	1.	1.	2	0	1	0.00	52.00	176.00

50' U/S OF C&O RAILROAD BRIDGE---R1.015

1.03	12.19	588.87	0.00	0.00	589.03	.16	.03	.02	612.50
2030.	0.	2030.	0.	0.	636.	0.	68.	8.	612.50
.40	0.00	3.19	0.00	.080	.052	.080	.033	576.68	111.57
.000811	49.	49.	49.	2	0	1	0.00	75.71	187.29

1490 NH CARD USED

P 140' U/S OF C&O RAILROAD BRIDGE---A,CPH(55+00)

1.04	13.79	588.99	0.00	0.00	589.10	.10	.05	.02	600.50
2030.	0.	2030.	0.	0.	790.	0.	69.	9.	613.60
.41	0.00	2.57	0.00	.080	.053	.080	.033	575.20	80.11
.000364	90.	90.	90.	2	0	1	0.00	79.13	159.24

1490 NH CARD USED

Q 168' D/S OF PINE GROVE AVE BRIDGE---A

1.09	13.47	589.07	0.00	0.00	589.19	.12	.09	.01	610.90
2030.	0.	2030.	0.	0.	742.	0.	73.	9.	612.10
.44	0.00	2.73	0.00	.080	.054	.080	.034	575.60	88.07
.000410	230.	230.	230.	2	0	1	0.00	74.12	162.19

1490 NH CARD USED

R 98' D/S OF PINE GROVE AVE BRIDGE---A,CPH(58+00)

1.10	13.12	589.12	0.00	0.00	589.22	.10	.03	.00	601.10
2030.	0.	2030.	0.	0.	783.	0.	74.	9.	612.80
.45	0.00	2.59	0.00	.080	.053	.080	.034	576.00	93.43
.000333	70.	70.	70.	1	0	1	0.00	74.86	168.29

1490 NH CARD USED

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

SUMMARY PRINTOUT FOR MULTIPLE PROFILES

BLACK RIVER CANAL

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
.00	0.00	0.00	0.00	576.30	1170.00	581.36	.21	0.00	0.00	1170.00	5.06	81.96
.00	0.00	0.00	0.00	576.30	1770.00	581.36	.49	0.00	0.00	1770.00	5.06	81.96
.00	0.00	0.00	0.00	576.30	2030.00	581.36	.64	0.00	0.00	2030.00	5.06	81.96
.00	0.00	0.00	0.00	576.30	2620.00	581.36	1.07	0.00	0.00	2620.00	5.06	81.96
.06	300.00	0.00	0.00	577.30	1170.00	581.65	.32	.34	.05	1170.00	4.35	80.65
.06	300.00	0.00	0.00	577.30	1770.00	581.98	.60	.68	.06	1770.00	4.68	81.26
.06	300.00	0.00	0.00	577.30	2030.00	582.15	.72	.83	.04	2030.00	4.85	81.58
.06	300.00	0.00	0.00	577.30	2620.00	582.68	.91	1.11	.05	2620.00	5.38	82.55
.08	100.00	0.00	0.00	577.70	1170.00	581.77	.43	.17	.05	1170.00	4.07	67.99
.08	100.00	0.00	0.00	577.70	1770.00	582.18	.77	.28	.09	1770.00	4.48	69.14
.08	100.00	0.00	0.00	577.70	2030.00	582.37	.92	.32	.10	2030.00	4.67	69.68
.08	100.00	0.00	0.00	577.70	2620.00	582.90	1.17	.35	.13	2620.00	5.20	71.17
.10	100.00	0.00	0.00	577.70	1170.00	582.02	.37	.17	.02	1170.00	4.32	71.80
.10	100.00	0.00	0.00	577.70	1770.00	582.66	.59	.24	.06	1770.00	4.96	73.35
.10	100.00	0.00	0.00	577.70	2030.00	582.96	.67	.26	.08	2030.00	5.26	74.06
.10	100.00	0.00	0.00	577.70	2620.00	583.64	.82	.28	.11	2620.00	5.94	75.65
.10	40.00	0.00	0.00	576.50	1170.00	582.18	.28	.05	.03	1170.00	5.68	72.19
.10	40.00	0.00	0.00	576.50	1770.00	582.91	.45	.06	.04	1770.00	6.41	73.93
.10	40.00	0.00	0.00	576.50	2030.00	583.23	.51	.07	.05	2030.00	6.73	74.68
.10	40.00	0.00	0.00	576.50	2620.00	583.94	.64	.07	.05	2620.00	7.44	76.38
.11	40.00	0.00	0.00	575.30	1170.00	582.28	.23	.03	.02	1170.00	6.98	72.44
.11	40.00	0.00	0.00	575.30	1770.00	583.06	.37	.04	.02	1770.00	7.76	74.28
.11	40.00	0.00	0.00	575.30	2030.00	583.39	.42	.05	.03	2030.00	8.09	75.07
.11	40.00	0.00	0.00	575.30	2620.00	584.13	.54	.05	.03	2620.00	8.83	76.83
.12	59.00	0.00	0.00	573.40	1170.00	582.29	.30	.04	.04	1170.00	8.89	30.50
.12	59.00	0.00	0.00	573.40	1770.00	583.01	.59	.06	.11	1770.00	9.61	30.50
.12	59.00	0.00	0.00	573.40	2030.00	583.31	.73	.07	.15	2030.00	9.91	30.50
.12	59.00	0.00	0.00	573.40	2620.00	583.95	1.07	.09	.26	2620.00	10.55	30.50
.12	1.00	585.00	590.60	573.40	1170.00	582.29	.30	.00	.00	1170.00	8.89	30.00
.12	1.00	585.00	590.60	573.40	1770.00	583.02	.58	.00	.00	1770.00	9.62	30.00
.12	1.00	585.00	590.60	573.40	2030.00	583.32	.72	.00	.00	2030.00	9.92	30.00
.12	1.00	585.00	590.60	573.40	2620.00	583.96	1.06	.00	.00	2620.00	10.56	30.00
.12	3.00	585.00	590.60	573.40	1170.00	582.29	.30	.00	.00	1170.00	8.89	30.00
.12	3.00	585.00	590.60	573.40	1770.00	583.02	.58	.00	.00	1770.00	9.62	30.00
.12	3.00	585.00	590.60	573.40	2030.00	583.32	.72	.00	.00	2030.00	9.92	30.00
.12	3.00	585.00	590.60	573.40	2620.00	583.96	1.06	.00	.00	2620.00	10.56	30.00
.12	1.00	0.00	0.00	573.40	1170.00	582.29	.30	.00	.00	1170.00	8.89	30.00
.12	1.00	0.00	0.00	573.40	1770.00	583.02	.58	.00	.00	1770.00	9.62	30.00
.12	1.00	0.00	0.00	573.40	2030.00	583.32	.72	.00	.00	2030.00	9.92	30.00
.12	1.00	0.00	0.00	573.40	2620.00	583.96	1.06	.00	.00	2620.00	10.56	30.00

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
.13	16.00	0.00	0.00	573.40	1170.00	582.30	.30	.00	.00	1170.00	8.90	30.00
.13	16.00	0.00	0.00	573.40	1770.00	583.03	.58	.01	.00	1770.00	9.63	30.00
.13	16.00	0.00	0.00	573.40	2030.00	583.33	.72	.01	.00	2030.00	9.93	30.00
.13	16.00	0.00	0.00	573.40	2620.00	583.98	1.06	.01	.00	2620.00	10.58	30.00
.13	1.00	0.00	0.00	573.43	1170.00	582.33	.28	.00	.01	1170.00	8.90	32.00
.13	1.00	0.00	0.00	573.43	1770.00	583.09	.53	.00	.02	1770.00	9.66	32.00
.13	1.00	0.00	0.00	573.43	2030.00	583.42	.66	.00	.02	2030.00	9.99	32.00
.13	1.00	0.00	0.00	573.43	2620.00	584.12	.95	.00	.03	2620.00	10.69	32.00
.13	7.00	0.00	0.00	573.64	1170.00	582.48	.16	.00	.03	1170.00	8.84	46.00
.13	7.00	0.00	0.00	573.64	1770.00	583.41	.29	.01	.07	1770.00	9.77	46.00
.13	7.00	0.00	0.00	573.64	2030.00	583.82	.35	.01	.09	2030.00	10.18	46.00
.13	7.00	0.00	0.00	573.64	2620.00	584.73	.49	.01	.14	2620.00	11.09	46.00
.14	44.00	0.00	0.00	574.95	1170.00	582.47	.21	.02	.02	1170.00	7.52	62.43
.14	44.00	0.00	0.00	574.95	1770.00	583.42	.34	.03	.02	1770.00	8.47	66.38
.14	44.00	0.00	0.00	574.95	2030.00	583.83	.38	.03	.02	2030.00	8.88	68.12
.14	44.00	0.00	0.00	574.95	2620.00	584.79	.47	.04	.01	2620.00	9.84	72.16
.14	30.00	0.00	0.00	575.84	1170.00	582.45	.30	.02	.05	1170.00	6.61	50.00
.14	30.00	0.00	0.00	575.84	1770.00	583.37	.50	.03	.08	1770.00	7.53	50.00
.14	30.00	0.00	0.00	575.84	2030.00	583.77	.58	.03	.10	2030.00	7.93	50.00
.14	30.00	0.00	0.00	575.84	2620.00	584.69	.75	.03	.14	2620.00	8.85	50.00
.14	12.00	594.60	590.00	576.20	1170.00	582.44	.34	.01	.02	1170.00	6.24	50.00
.14	12.00	594.60	590.00	576.20	1770.00	583.35	.56	.02	.03	1770.00	7.15	50.00
.14	12.00	594.60	590.00	576.20	2030.00	583.75	.64	.02	.03	2030.00	7.55	50.00
.14	12.00	594.60	590.00	576.20	2620.00	584.67	.82	.02	.04	2620.00	8.47	50.00
.15	56.00	594.60	590.00	576.20	1170.00	582.51	.33	.06	.00	1170.00	6.31	50.00
.15	56.00	594.60	590.00	576.20	1770.00	583.45	.54	.08	.01	1770.00	7.25	50.00
.15	56.00	594.60	590.00	576.20	2030.00	583.86	.62	.08	.01	2030.00	7.66	50.00
.15	56.00	594.60	590.00	576.20	2620.00	584.80	.79	.09	.01	2620.00	8.60	50.00
.16	12.00	0.00	0.00	576.19	1170.00	582.52	.33	.02	.00	1170.00	6.33	50.00
.16	12.00	0.00	0.00	576.19	1770.00	583.48	.54	.02	.00	1770.00	7.29	50.00
.16	12.00	0.00	0.00	576.19	2030.00	583.89	.62	.02	.00	2030.00	7.70	50.00
.16	12.00	0.00	0.00	576.19	2620.00	584.83	.78	.02	.00	2620.00	8.64	50.00
.19	188.00	0.00	0.00	576.00	1170.00	582.92	.24	.28	.03	1170.00	6.92	58.34
.19	188.00	0.00	0.00	576.00	1770.00	584.07	.36	.36	.05	1770.00	8.07	61.71
.19	188.00	0.00	0.00	576.00	2030.00	584.55	.41	.38	.06	2030.00	8.55	63.14
.19	188.00	0.00	0.00	576.00	2620.00	585.62	.49	.41	.09	2620.00	9.62	66.31
.27	390.00	0.00	0.00	576.90	1170.00	583.49	.13	.42	.03	1170.00	6.59	70.20
.27	390.00	0.00	0.00	576.90	1770.00	584.80	.19	.51	.05	1770.00	7.90	73.29
.27	390.00	0.00	0.00	576.90	2030.00	585.33	.22	.54	.06	2030.00	8.43	74.95
.27	390.00	0.00	0.00	576.90	2620.00	586.47	.27	.57	.07	2620.00	9.57	78.56

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
.34	400.00	0.00	0.00	576.00	1170.00	583.85	.15	.37	.01	1170.00	7.85	58.54
.34	400.00	0.00	0.00	576.00	1770.00	585.22	.24	.45	.02	1770.00	9.22	59.20
.34	400.00	0.00	0.00	576.00	2030.00	585.77	.27	.47	.03	2030.00	9.77	59.69
.34	400.00	0.00	0.00	576.00	2620.00	586.94	.34	.50	.04	2620.00	10.94	60.74
.43	493.00	0.00	0.00	576.20	1170.00	584.34	.14	.47	.00	1170.00	8.14	70.54
.43	493.00	0.00	0.00	576.20	1770.00	585.82	.20	.54	.01	1770.00	9.62	73.90
.43	493.00	0.00	0.00	576.20	2030.00	586.40	.22	.57	.02	2030.00	10.20	75.22
.43	493.00	0.00	0.00	576.20	2620.00	587.64	.26	.60	.02	2620.00	11.44	78.00
.44	12.00	0.00	0.00	576.20	1170.00	584.33	.16	.01	.01	1170.00	8.13	60.00
.44	12.00	0.00	0.00	576.20	1770.00	585.81	.23	.01	.02	1770.00	9.61	60.00
.44	12.00	0.00	0.00	576.20	2030.00	586.39	.27	.01	.02	2030.00	10.19	60.00
.44	12.00	0.00	0.00	576.20	2620.00	587.61	.34	.01	.04	2620.00	11.41	60.00
.45	45.00	0.00	0.00	576.20	1170.00	584.36	.16	.02	.00	1170.00	8.16	60.00
.45	45.00	0.00	0.00	576.20	1770.00	585.84	.23	.03	.00	1770.00	9.64	60.00
.45	45.00	0.00	0.00	576.20	2030.00	586.42	.26	.03	.00	2030.00	10.22	60.00
.45	45.00	0.00	0.00	576.20	2620.00	587.65	.33	.03	.00	2620.00	11.45	60.00
.45	12.00	0.00	0.00	576.20	1170.00	584.39	.14	.01	.01	1170.00	8.19	70.67
.45	12.00	0.00	0.00	576.20	1770.00	585.90	.19	.01	.01	1770.00	9.70	74.09
.45	12.00	0.00	0.00	576.20	2030.00	586.50	.21	.01	.02	2030.00	10.30	75.43
.45	12.00	0.00	0.00	576.20	2620.00	587.76	.26	.01	.02	2620.00	11.56	78.28
.53	438.00	0.00	0.00	576.20	1170.00	584.76	.12	.34	.01	1170.00	8.56	61.51
.53	438.00	0.00	0.00	576.20	1770.00	586.31	.18	.40	.00	1770.00	10.11	62.99
.53	438.00	0.00	0.00	576.20	2030.00	586.92	.21	.41	.00	2030.00	10.72	63.56
.53	438.00	0.00	0.00	576.20	2620.00	588.19	.26	.43	.00	2620.00	11.99	64.76
.63	500.00	0.00	0.00	575.80	1170.00	585.06	.08	.26	.01	1170.00	9.26	67.38
.63	500.00	0.00	0.00	575.80	1770.00	586.70	.12	.31	.02	1770.00	10.90	70.72
.63	500.00	0.00	0.00	575.80	2030.00	587.33	.14	.33	.02	2030.00	11.53	72.02
.63	500.00	0.00	0.00	575.80	2620.00	588.66	.18	.37	.02	2620.00	12.86	74.74
.72	500.00	0.00	0.00	574.80	1170.00	585.26	.10	.20	.01	1170.00	10.46	54.83
.72	500.00	0.00	0.00	574.80	1770.00	586.94	.15	.25	.01	1770.00	12.14	57.02
.72	500.00	0.00	0.00	574.80	2030.00	587.59	.18	.27	.02	2030.00	12.79	57.87
.72	500.00	0.00	0.00	574.80	2620.00	588.95	.23	.31	.02	2620.00	14.15	59.63
.83	568.00	0.00	0.00	575.35	1170.00	585.48	.09	.21	.00	1170.00	10.13	55.00
.83	568.00	0.00	0.00	575.35	1770.00	587.23	.14	.28	.00	1770.00	11.88	55.00
.83	568.00	0.00	0.00	575.35	2030.00	587.90	.16	.30	.00	2030.00	12.55	55.00
.83	568.00	0.00	0.00	575.35	2620.00	589.33	.19	.34	.01	2620.00	13.98	90.68
.83	26.00	0.00	0.00	575.38	1170.00	585.47	.14	.01	.02	1170.00	10.09	42.00
.83	26.00	0.00	0.00	575.38	1770.00	587.21	.22	.01	.04	1770.00	11.83	42.00
.83	26.00	0.00	0.00	575.38	2030.00	587.87	.26	.02	.05	2030.00	12.49	42.00
.83	26.00	0.00	0.00	575.38	2620.00	589.30	.28	.02	.05	2620.00	13.92	90.51

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
.83	12.00	0.00	0.00	575.39	1170.00	585.45	.18	.01	.02	1170.00	10.06	36.00
.83	12.00	0.00	0.00	575.39	1770.00	587.18	.30	.01	.04	1770.00	11.79	36.00
.83	12.00	0.00	0.00	575.39	2030.00	587.84	.35	.01	.04	2030.00	12.45	36.00
.83	12.00	0.00	0.00	575.39	2620.00	589.27	.36	.01	.04	2620.00	13.88	90.35
.84	8.00	0.00	0.00	575.39	1170.00	585.44	.23	.01	.02	1170.00	10.05	32.00
.84	8.00	0.00	0.00	575.39	1770.00	587.15	.38	.01	.04	1770.00	11.76	32.00
.84	8.00	0.00	0.00	575.39	2030.00	587.80	.44	.01	.05	2030.00	12.41	32.00
.84	8.00	0.00	0.00	575.39	2620.00	589.25	.44	.01	.04	2620.00	13.86	90.19
.84	3.00	0.00	0.00	575.40	1170.00	585.43	.25	.00	.01	1170.00	10.03	30.50
.84	3.00	0.00	0.00	575.40	1770.00	587.13	.42	.00	.02	1770.00	11.73	30.50
.84	3.00	0.00	0.00	575.40	2030.00	587.78	.49	.01	.02	2030.00	12.38	30.50
.84	3.00	0.00	0.00	575.40	2620.00	589.24	.47	.01	.02	2620.00	13.84	90.17
.84	1.00	587.80	588.90	575.40	1170.00	585.42	.26	.00	.00	1170.00	10.02	30.00
.84	1.00	587.80	588.90	575.40	1770.00	587.13	.43	.00	.01	1770.00	11.73	30.00
.84	1.00	587.80	588.90	575.40	2030.00	587.78	.50	.00	.01	2030.00	12.38	30.00
.84	1.00	587.80	588.90	575.40	2620.00	589.15	.65	.00	.09	2555.45	13.75	90.68
.84	2.50	587.80	588.90	575.40	1170.00	585.43	.26	.00	.00	1170.00	10.03	30.00
.84	2.50	587.80	588.90	575.40	1770.00	587.13	.43	.00	.00	1770.00	11.73	30.00
.84	2.50	587.80	588.90	575.40	2030.00	587.78	.50	.00	.00	2030.00	12.38	30.00
.84	2.50	587.80	588.90	575.40	2620.00	589.15	.65	.01	.00	2554.68	13.75	90.73
.84	1.00	0.00	0.00	575.40	1170.00	585.43	.26	.00	.00	1170.00	10.03	30.00
.84	1.00	0.00	0.00	575.40	1770.00	587.13	.43	.00	.00	1770.00	11.73	30.00
.84	1.00	0.00	0.00	575.40	2030.00	587.78	.50	.00	.00	2030.00	12.38	30.00
.84	1.00	0.00	0.00	575.40	2620.00	589.42	.45	.00	.06	2620.00	14.02	91.20
.84	21.00	0.00	0.00	575.43	1170.00	585.44	.26	.01	.00	1170.00	10.01	30.00
.84	21.00	0.00	0.00	575.43	1770.00	587.15	.43	.02	.00	1770.00	11.72	30.00
.84	21.00	0.00	0.00	575.43	2030.00	587.81	.50	.02	.00	2030.00	12.38	30.00
.84	21.00	0.00	0.00	575.43	2620.00	589.47	.44	.04	.00	2620.00	14.04	91.46
.84	1.50	0.00	0.00	575.43	1170.00	585.50	.21	.00	.01	1170.00	10.07	33.00
.84	1.50	0.00	0.00	575.43	1770.00	587.26	.35	.00	.02	1770.00	11.83	33.00
.84	1.50	0.00	0.00	575.43	2030.00	587.93	.41	.00	.03	2030.00	12.50	33.00
.84	1.50	0.00	0.00	575.43	2620.00	589.56	.37	.00	.02	2620.00	14.13	92.00
.84	5.00	0.00	0.00	575.44	1170.00	585.62	.13	.00	.03	1170.00	10.18	43.00
.84	5.00	0.00	0.00	575.44	1770.00	587.45	.20	.00	.04	1770.00	12.01	43.00
.84	5.00	0.00	0.00	575.44	2030.00	588.16	.23	.00	.05	2030.00	12.72	83.92
.84	5.00	0.00	0.00	575.44	2620.00	589.73	.24	.00	.04	2620.00	14.29	93.01
.85	29.00	0.00	0.00	575.48	1170.00	585.73	.05	.01	.02	1170.00	10.25	80.71
.85	29.00	0.00	0.00	575.48	1770.00	587.63	.08	.01	.04	1770.00	12.15	82.81
.85	29.00	0.00	0.00	575.48	2030.00	588.36	.09	.01	.04	2030.00	12.88	86.21
.85	29.00	0.00	0.00	575.48	2620.00	589.92	.11	.01	.04	2620.00	14.44	95.09

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
.93	422.00	0.00	0.00	576.10	1170.00	585.84	.07	.12	.01	1170.00	9.74	70.92
.93	422.00	0.00	0.00	576.10	1770.00	587.76	.10	.15	.01	1770.00	11.66	76.14
.93	422.00	0.00	0.00	576.10	2030.00	588.50	.11	.15	.01	2030.00	12.40	78.17
.93	422.00	0.00	0.00	576.10	2620.00	590.07	.14	.16	.01	2620.00	13.97	82.44
1.00	385.00	0.00	0.00	577.34	1170.00	586.00	.12	.19	.03	1170.00	8.66	67.30
1.00	385.00	0.00	0.00	577.34	1770.00	587.94	.16	.21	.03	1770.00	10.60	72.98
1.00	385.00	0.00	0.00	577.34	2030.00	588.69	.17	.22	.03	2030.00	11.35	75.18
1.00	385.00	0.00	0.00	577.34	2620.00	590.27	.20	.23	.03	2620.00	12.93	79.80
1.01	49.00	0.00	0.00	577.50	1170.00	586.03	.15	.04	.02	1170.00	8.53	50.50
1.01	49.00	0.00	0.00	577.50	1770.00	587.95	.22	.04	.03	1770.00	10.45	50.50
1.01	49.00	0.00	0.00	577.50	2030.00	588.69	.25	.04	.04	2030.00	11.19	50.50
1.01	49.00	0.00	0.00	577.50	2620.00	590.26	.31	.04	.06	2620.00	12.76	50.50
1.01	1.00	612.50	605.50	577.50	1170.00	586.03	.15	.00	.00	1170.00	8.53	50.00
1.01	1.00	612.50	605.50	577.50	1770.00	587.95	.22	.00	.00	1770.00	10.45	50.00
1.01	1.00	612.50	605.50	577.50	2030.00	588.69	.25	.00	.00	2030.00	11.19	50.00
1.01	1.00	612.50	605.50	577.50	2620.00	590.25	.31	.00	.00	2620.00	12.75	50.00
1.02	25.00	612.50	605.50	577.50	1170.00	586.05	.15	.02	.00	1170.00	8.55	50.00
1.02	25.00	612.50	605.50	577.50	1770.00	587.97	.22	.02	.00	1770.00	10.47	50.00
1.02	25.00	612.50	605.50	577.50	2030.00	588.72	.25	.02	.00	2030.00	11.22	50.00
1.02	25.00	612.50	605.50	577.50	2620.00	590.28	.31	.03	.00	2620.00	12.78	50.00
1.02	1.00	0.00	0.00	577.48	1170.00	586.06	.14	.00	.00	1170.00	8.58	52.00
1.02	1.00	0.00	0.00	577.48	1770.00	587.99	.21	.00	.00	1770.00	10.51	52.00
1.02	1.00	0.00	0.00	577.48	2030.00	588.74	.23	.00	.01	2030.00	11.26	52.00
1.02	1.00	0.00	0.00	577.48	2620.00	590.31	.29	.00	.01	2620.00	12.83	52.00
1.03	49.00	0.00	0.00	576.68	1170.00	586.14	.11	.03	.01	1170.00	9.46	67.68
1.03	49.00	0.00	0.00	576.68	1770.00	588.11	.15	.03	.02	1770.00	11.43	73.47
1.03	49.00	0.00	0.00	576.68	2030.00	588.87	.16	.03	.02	2030.00	12.19	75.71
1.03	49.00	0.00	0.00	576.68	2620.00	590.49	.18	.03	.03	2620.00	13.81	80.44
1.04	90.00	0.00	0.00	575.20	1170.00	586.24	.06	.04	.01	1170.00	11.04	72.66
1.04	90.00	0.00	0.00	575.20	1770.00	588.22	.09	.05	.02	1770.00	13.02	77.33
1.04	90.00	0.00	0.00	575.20	2030.00	588.99	.10	.05	.02	2030.00	13.79	79.13
1.04	90.00	0.00	0.00	575.20	2620.00	590.61	.13	.05	.02	2620.00	15.41	83.95
1.09	230.00	0.00	0.00	575.60	1170.00	586.30	.07	.07	.00	1170.00	10.70	67.81
1.09	230.00	0.00	0.00	575.60	1770.00	588.30	.10	.08	.01	1770.00	12.70	72.36
1.09	230.00	0.00	0.00	575.60	2030.00	589.07	.12	.09	.01	2030.00	13.47	74.12
1.09	230.00	0.00	0.00	575.60	2620.00	590.70	.14	.10	.01	2620.00	15.10	77.81
1.10	70.00	0.00	0.00	576.00	1170.00	586.34	.06	.02	.00	1170.00	10.34	68.19
1.10	70.00	0.00	0.00	576.00	1770.00	588.34	.09	.02	.00	1770.00	12.34	73.00
1.10	70.00	0.00	0.00	576.00	2030.00	589.12	.10	.03	.00	2030.00	13.12	74.86
1.10	70.00	0.00	0.00	576.00	2620.00	590.74	.13	.03	.00	2620.00	14.74	80.97

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
1.12	97.00	0.00	0.00	575.70	1170.00	586.36	.06	.02	.00	1170.00	10.66	80.57
1.12	97.00	0.00	0.00	575.70	1770.00	588.38	.09	.03	.00	1770.00	12.68	87.97
1.12	97.00	0.00	0.00	575.70	2030.00	589.16	.09	.03	.00	2030.00	13.46	90.85
1.12	97.00	0.00	0.00	575.70	2620.00	590.80	.11	.03	.01	2620.00	15.10	96.91
1.12	1.00	612.60	608.60	575.70	1170.00	586.35	.09	.00	.01	1170.00	10.65	80.54
1.12	1.00	612.60	608.60	575.70	1770.00	588.35	.13	.00	.02	1770.00	12.65	87.94
1.12	1.00	612.60	608.60	575.70	2030.00	589.13	.15	.00	.03	2030.00	13.43	90.77
1.12	1.00	612.60	608.60	575.70	2620.00	590.76	.18	.00	.04	2620.00	15.06	96.78
1.13	74.50	612.60	608.60	575.70	1170.00	586.37	.09	.02	.00	1170.00	10.67	80.61
1.13	74.50	612.60	608.60	575.70	1770.00	588.38	.13	.03	.00	1770.00	12.68	88.02
1.13	74.50	612.60	608.60	575.70	2030.00	589.16	.15	.03	.00	2030.00	13.46	90.85
1.13	74.50	612.60	608.60	575.70	2620.00	590.79	.18	.03	.00	2620.00	15.09	96.86
1.13	1.00	0.00	0.00	575.70	1170.00	586.41	.06	.00	.01	1170.00	10.71	80.74
1.13	1.00	0.00	0.00	575.70	1770.00	588.44	.08	.00	.01	1770.00	12.74	88.24
1.13	1.00	0.00	0.00	575.70	2030.00	589.23	.09	.00	.02	2030.00	13.53	91.14
1.13	1.00	0.00	0.00	575.70	2620.00	590.88	.11	.00	.02	2620.00	15.18	97.23
1.15	79.00	0.00	0.00	571.40	1170.00	586.44	.04	.01	.01	1170.00	15.04	83.69
1.15	79.00	0.00	0.00	571.40	1770.00	588.48	.06	.02	.01	1770.00	17.08	91.47
1.15	79.00	0.00	0.00	571.40	2030.00	589.27	.07	.02	.01	2030.00	17.87	94.52
1.15	79.00	0.00	0.00	571.40	2620.00	590.93	.09	.02	.01	2620.00	19.53	100.84

SECTION NUMBER	DISCHARGE CFS	CWSEL	CWSEL DIFF EACH Q	CWSEL DIFF EACH SECTION	CWSEL-WSELK	TOPWID	T.W. DIFF	LENGTH
.001	1170.000	581.360	0.000	0.000	0.000	81.959	0.000	-0.000
.001	1770.000	581.360	0.000	0.000	0.000	81.959	0.000	-0.000
.001	2030.000	581.360	0.000	0.000	0.000	81.959	0.000	-0.000
.001	2620.000	581.360	0.000	0.000	0.000	81.959	0.000	-0.000
.057	1170.000	581.647	0.000	.287	0.000	80.647	0.000	300.000
.057	1770.000	581.982	.335	.622	0.000	81.264	-.616	300.000
.057	2030.000	582.153	.171	.793	0.000	81.578	-.931	300.000
.057	2620.000	582.681	.528	1.321	0.000	82.551	-1.904	300.000
.076	1170.000	581.767	0.000	.120	0.000	67.988	0.000	100.000
.076	1770.000	582.178	.410	.196	0.000	69.137	-1.149	100.000
.076	2030.000	582.371	.193	.218	0.000	69.681	-1.694	100.000
.076	2620.000	582.898	.527	.216	0.000	71.168	-3.181	100.000
.095	1170.000	582.018	0.000	.251	0.000	71.803	0.000	100.000
.095	1770.000	582.665	.647	.487	0.000	73.349	-1.547	100.000
.095	2030.000	582.960	.295	.589	0.000	74.060	-2.257	100.000
.095	2620.000	583.636	.676	.738	0.000	75.648	-3.845	100.000
.102	1170.000	582.183	0.000	.164	0.000	72.194	0.000	40.000
.102	1770.000	582.910	.728	.246	0.000	73.927	-1.733	40.000
.102	2030.000	583.227	.317	.267	0.000	74.681	-2.488	40.000
.102	2620.000	583.942	.715	.307	0.000	76.385	-4.191	40.000
.110	1170.000	582.285	0.000	.102	0.000	72.436	0.000	40.000
.110	1770.000	583.060	.775	.150	0.000	74.281	-1.845	40.000
.110	2030.000	583.392	.332	.165	0.000	75.071	-2.635	40.000
.110	2620.000	584.130	.738	.188	0.000	76.827	-4.391	40.000
.121	1170.000	582.286	0.000	.002	0.000	30.499	-0.000	59.000
.121	1770.000	583.012	.726	-.048	0.000	30.499	-.000	59.000
.121	2030.000	583.311	.299	-.081	0.000	30.499	-.000	59.000
.121	2620.000	583.953	.642	-.177	0.000	30.499	-.000	59.000

.122	1170.000	582.291	0.000	.004	0.000	30.000	0.000	1.000
.122	1770.000	583.018	.727	.006	0.000	30.000	0.000	1.000
.122	2030.000	583.317	.299	.006	0.000	30.000	0.000	1.000
.122	2620.000	583.959	.642	.006	0.000	30.000	0.000	1.000
.123	1170.000	582.291	0.000	.001	0.000	30.000	0.000	3.000
.123	1770.000	583.019	.728	.001	0.000	30.000	0.000	3.000
.123	2030.000	583.319	.299	.002	0.000	30.000	0.000	3.000
.123	2620.000	583.961	.643	.003	0.000	30.000	0.000	3.000
.124	1170.000	582.292	0.000	.000	0.000	29.999	0.000	1.000
.124	1770.000	583.020	.728	.000	0.000	29.999	-.000	1.000
.124	2030.000	583.319	.300	.000	0.000	29.999	-.000	1.000
.124	2620.000	583.962	.643	.001	0.000	29.999	-.000	1.000
.125	1170.000	582.296	0.000	.004	0.000	29.999	0.000	16.000
.125	1770.000	583.028	.732	.009	0.000	29.999	-.000	16.000
.125	2030.000	583.330	.301	.010	0.000	29.999	-.000	16.000
.125	2620.000	583.977	.648	.015	0.000	29.999	-.000	16.000
.126	1170.000	582.326	0.000	.030	0.000	31.999	0.000	1.000
.126	1770.000	583.095	.769	.066	0.000	31.999	-.000	1.000
.126	2030.000	583.417	.322	.087	0.000	31.999	-.000	1.000
.126	2620.000	584.121	.705	.144	0.000	31.999	-.000	1.000
.127	1170.000	582.479	0.000	.154	0.000	45.999	0.000	7.000
.127	1770.000	583.412	.932	.317	0.000	45.999	-.000	7.000
.127	2030.000	583.817	.405	.400	0.000	45.999	-.000	7.000
.127	2620.000	584.732	.916	.611	0.000	45.999	-.000	7.000
.135	1170.000	582.474	0.000	-.005	0.000	62.427	0.000	44.000
.135	1770.000	583.419	.945	.007	0.000	66.382	-3.954	44.000
.135	2030.000	583.833	.414	.017	0.000	68.116	-5.688	44.000
.135	2620.000	584.792	.958	.059	0.000	72.165	-9.737	44.000
.141	1170.000	582.448	0.000	-.026	0.000	49.999	0.000	30.000
.141	1770.000	583.365	.917	-.054	0.000	49.999	-.000	30.000
.141	2030.000	583.765	.400	-.068	0.000	49.999	-.000	30.000
.141	2620.000	584.687	.922	-.104	0.000	49.999	-.000	30.000
.143	1170.000	582.440	0.000	-.008	0.000	50.000	0.000	12.000
.143	1770.000	583.352	.912	-.013	0.000	50.000	0.000	12.000
.143	2030.000	583.751	.399	-.014	0.000	50.000	0.000	12.000
.143	2620.000	584.671	.920	-.016	0.000	50.000	0.000	12.000
.153	1170.000	582.507	0.000	.067	0.000	50.000	0.000	56.000
.153	1770.000	583.455	.948	.103	0.000	50.000	0.000	56.000
.153	2030.000	583.864	.409	.113	0.000	50.000	0.000	56.000
.153	2620.000	584.801	.937	.130	0.000	50.000	0.000	56.000
.156	1170.000	582.524	0.000	.018	0.000	49.999	0.000	12.000
.156	1770.000	583.479	.955	.025	0.000	49.999	-.000	12.000
.156	2030.000	583.891	.412	.027	0.000	49.999	-.000	12.000
.156	2620.000	584.832	.941	.032	0.000	49.999	-.000	12.000
.191	1170.000	582.922	0.000	.398	0.000	58.336	0.000	188.000
.191	1770.000	584.065	1.143	.586	0.000	61.713	-3.377	188.000
.191	2030.000	584.547	.481	.656	0.000	63.136	-4.800	188.000
.191	2620.000	585.621	1.074	.788	0.000	66.312	-7.976	188.000
.265	1170.000	583.491	0.000	.569	0.000	70.198	0.000	390.000
.265	1770.000	584.800	1.309	.734	0.000	73.289	-3.091	390.000
.265	2030.000	585.329	.529	.782	0.000	74.955	-4.757	390.000
.265	2620.000	586.473	1.144	.852	0.000	78.557	-8.359	390.000

.341	1170.000	583.848	0.000	.357	0.000	58.539	0.000	400.000
.341	1770.000	585.225	1.377	.425	0.000	59.202	-.663	400.000
.341	2030.000	585.771	.546	.442	0.000	59.694	-1.155	400.000
.341	2620.000	586.936	1.165	.463	0.000	60.743	-2.204	400.000
.434	1170.000	584.335	0.000	.487	0.000	70.540	0.000	493.000
.434	1770.000	585.821	1.486	.596	0.000	73.899	-3.359	493.000
.434	2030.000	586.404	.583	.633	0.000	75.217	-4.677	493.000
.434	2620.000	587.637	1.233	.700	0.000	78.005	-7.465	493.000
.437	1170.000	584.334	0.000	-.001	0.000	60.000	0.000	12.000
.437	1770.000	585.811	1.477	-.009	0.000	60.000	0.000	12.000
.437	2030.000	586.390	.578	-.014	0.000	60.000	0.000	12.000
.437	2620.000	587.611	1.222	-.025	0.000	60.000	0.000	12.000
.445	1170.000	584.360	0.000	.026	0.000	60.000	0.000	45.000
.445	1770.000	585.842	1.482	.031	0.000	60.000	0.000	45.000
.445	2030.000	586.423	.580	.033	0.000	60.000	0.000	45.000
.445	2620.000	587.648	1.225	.036	0.000	60.000	0.000	45.000
.447	1170.000	584.394	0.000	.034	0.000	70.673	0.000	12.000
.447	1770.000	585.905	1.511	.062	0.000	74.089	-3.416	12.000
.447	2030.000	586.499	.594	.076	0.000	75.432	-4.759	12.000
.447	2620.000	587.758	1.259	.110	0.000	78.278	-7.605	12.000
.530	1170.000	584.759	0.000	.365	0.000	61.513	0.000	438.000
.530	1770.000	586.313	1.554	.409	0.000	62.986	-1.474	438.000
.530	2030.000	586.917	.603	.418	0.000	63.559	-2.046	438.000
.530	2620.000	588.188	1.272	.431	0.000	64.764	-3.252	438.000
.625	1170.000	585.064	0.000	.305	0.000	67.375	0.000	500.000
.625	1770.000	586.699	1.635	.386	0.000	70.725	-3.349	500.000
.625	2030.000	587.332	.632	.415	0.000	72.020	-4.645	500.000
.625	2620.000	588.659	1.327	.471	0.000	74.740	-7.365	500.000
.720	1170.000	585.257	0.000	.193	0.000	54.834	0.000	500.000
.720	1770.000	586.941	1.684	.242	0.000	57.023	-2.189	500.000
.720	2030.000	587.589	.649	.258	0.000	57.866	-3.032	500.000
.720	2620.000	588.946	1.356	.287	0.000	59.629	-4.795	500.000
.827	1170.000	585.482	0.000	.225	0.000	55.000	0.000	568.000
.827	1770.000	587.232	1.751	.292	0.000	55.001	-.000	568.000
.827	2030.000	587.904	.672	.315	0.000	55.001	-.001	568.000
.827	2620.000	589.330	1.426	.385	0.000	90.677	-35.677	568.000
.832	1170.000	585.468	0.000	-.013	0.000	42.001	0.000	26.000
.832	1770.000	587.205	1.737	-.027	0.000	42.001	-.000	26.000
.832	2030.000	587.871	.666	-.033	0.000	42.001	-.000	26.000
.832	2620.000	589.301	1.430	-.029	0.000	90.510	-48.509	26.000
.834	1170.000	585.452	0.000	-.016	0.000	36.001	0.000	12.000
.834	1770.000	587.177	1.724	-.029	0.000	36.001	-.000	12.000
.834	2030.000	587.836	.660	-.035	0.000	36.001	-.000	12.000
.834	2620.000	589.274	1.437	-.028	0.000	90.349	-54.349	12.000
.836	1170.000	585.435	0.000	-.017	0.000	32.001	0.000	8.000
.836	1770.000	587.146	1.710	-.031	0.000	32.001	-.000	8.000
.836	2030.000	587.799	.653	-.037	0.000	32.001	-.000	8.000
.836	2620.000	589.245	1.447	-.028	0.000	90.187	-58.186	8.000
.837	1170.000	585.427	0.000	-.008	0.000	30.501	0.000	3.000
.837	1770.000	587.132	1.704	-.014	0.000	30.501	-.000	3.000
.837	2030.000	587.782	.650	-.017	0.000	30.501	-.000	3.000
.837	2620.000	589.236	1.454	-.010	0.000	90.171	-59.670	3.000
.838	1170.000	585.424	0.000	-.003	0.000	30.000	0.000	1.000

.838	1770.000	587.126	1.702	-.006	0.000	30.000	0.000	1.000
.838	2030.000	587.775	.649	-.006	0.000	30.000	0.000	1.000
.838	2620.000	589.148	1.373	-.088	0.000	90.676	-60.676	1.000
.839	1170.000	585.426	0.000	.002	0.000	30.000	0.000	2.500
.839	1770.000	587.129	1.703	.003	0.000	30.000	0.000	2.500
.839	2030.000	587.778	.649	.003	0.000	30.000	0.000	2.500
.839	2620.000	589.155	1.377	.007	0.000	90.732	-60.732	2.500
.840	1170.000	585.427	0.000	.001	0.000	30.001	0.000	1.000
.840	1770.000	587.130	1.703	.001	0.000	30.001	-.000	1.000
.840	2030.000	587.779	.649	.001	0.000	30.001	-.000	1.000
.840	2620.000	589.418	1.639	.263	0.000	91.198	-61.197	1.000
.841	1170.000	585.442	0.000	-.015	0.000	30.001	0.000	21.000
.841	1770.000	587.153	1.711	.023	0.000	30.001	-.000	21.000
.841	2030.000	587.805	.652	.026	0.000	30.001	-.000	21.000
.841	2620.000	589.466	1.661	.048	0.000	91.456	-61.456	21.000
.842	1170.000	585.504	0.000	.062	0.000	33.001	0.000	1.500
.842	1770.000	587.257	1.753	.104	0.000	33.001	-.000	1.500
.842	2030.000	587.929	.672	.124	0.000	33.001	-.000	1.500
.842	2620.000	589.560	1.630	.093	0.000	92.001	-59.000	1.500
.843	1170.000	585.619	0.000	.115	0.000	43.001	0.000	5.000
.843	1770.000	587.448	1.829	.191	0.000	43.001	-.000	5.000
.843	2030.000	588.163	.714	.234	0.000	83.920	-40.919	5.000
.843	2620.000	589.735	1.572	.175	0.000	93.013	-50.012	5.000
.848	1170.000	585.726	0.000	.107	0.000	80.707	0.000	29.000
.848	1770.000	587.625	1.899	.177	0.000	82.807	-2.100	29.000
.848	2030.000	588.364	.738	.201	0.000	86.210	-5.502	29.000
.848	2620.000	589.923	1.559	.188	0.000	95.088	-14.381	29.000
.928	1170.000	585.842	0.000	.116	0.000	70.918	0.000	422.000
.928	1770.000	587.760	1.918	.134	0.000	76.145	-5.226	422.000
.928	2030.000	588.504	.744	.140	0.000	78.172	-7.253	422.000
.928	2620.000	590.071	1.568	.149	0.000	82.444	-11.526	422.000
1.001	1170.000	586.004	0.000	.162	0.000	67.298	0.000	385.000
1.001	1770.000	587.942	1.937	.182	0.000	72.980	-5.681	385.000
1.001	2030.000	588.691	.750	.188	0.000	75.179	-7.880	385.000
1.001	2620.000	590.268	1.577	.197	0.000	79.804	-12.505	385.000
1.010	1170.000	586.026	0.000	.021	0.000	50.499	0.000	49.000
1.010	1770.000	587.951	1.926	.010	0.000	50.499	-.000	49.000
1.010	2030.000	588.695	.744	.003	0.000	50.499	-.000	49.000
1.010	2620.000	590.257	1.562	-.012	0.000	50.499	-.000	49.000
1.011	1170.000	586.025	0.000	-.000	0.000	50.000	0.000	1.000
1.011	1770.000	587.950	1.925	-.001	0.000	50.000	0.000	1.000
1.011	2030.000	588.694	.744	-.001	0.000	50.000	0.000	1.000
1.011	2620.000	590.255	1.561	-.002	0.000	50.000	0.000	1.000
1.015	1170.000	586.045	0.000	.020	0.000	50.000	0.000	25.000
1.015	1770.000	587.974	1.928	.023	0.000	50.000	0.000	25.000
1.015	2030.000	588.718	.745	.025	0.000	50.000	0.000	25.000
1.015	2620.000	590.282	1.564	.027	0.000	50.000	0.000	25.000
1.016	1170.000	586.058	0.000	.012	0.000	51.999	0.000	1.000
1.016	1770.000	587.993	1.935	.019	0.000	51.999	-.000	1.000
1.016	2030.000	588.741	.748	.023	0.000	51.999	-.000	1.000
1.016	2620.000	590.311	1.570	.029	0.000	51.999	-.000	1.000
1.025	1170.000	586.135	0.000	.077	0.000	67.682	0.000	49.000
1.025	1770.000	588.108	1.973	.115	0.000	73.468	-5.786	49.000

1.025	2030.000	588.873	.765	.132	0.000	75.713	-8.031	49.000
1.025	2620.000	590.486	1.613	.175	0.000	80.442	-12.760	49.000
1.042	1170.000	586.237	0.000	.102	0.000	72.657	0.000	90.000
1.042	1770.000	588.224	1.987	.116	0.000	77.326	-4.669	90.000
1.042	2030.000	588.993	.769	.119	0.000	79.133	-6.477	90.000
1.042	2620.000	590.611	1.618	.125	0.000	83.950	-11.293	90.000
1.085	1170.000	586.304	0.000	.067	0.000	67.809	0.000	230.000
1.085	1770.000	588.302	1.998	.079	0.000	72.359	-4.550	230.000
1.085	2030.000	589.075	.773	.082	0.000	74.118	-6.309	230.000
1.085	2620.000	590.698	1.623	.088	0.000	77.814	-10.005	230.000
1.098	1170.000	586.337	0.000	.032	0.000	68.195	0.000	70.000
1.098	1770.000	588.341	2.005	.039	0.000	73.003	-4.808	70.000
1.098	2030.000	589.116	.775	.041	0.000	74.862	-6.667	70.000
1.098	2620.000	590.743	1.627	.045	0.000	80.971	-12.776	70.000
1.117	1170.000	586.360	0.000	.023	0.000	80.569	0.000	97.000
1.117	1770.000	588.377	2.017	.035	0.000	87.968	-7.399	97.000
1.117	2030.000	589.157	.780	.041	0.000	90.848	-10.279	97.000
1.117	2620.000	590.795	1.639	.052	0.000	96.905	-16.337	97.000
1.118	1170.000	586.345	0.000	-.014	0.000	80.542	0.000	1.000
1.118	1770.000	588.354	2.008	-.023	0.000	87.940	-7.398	1.000
1.118	2030.000	589.130	.776	-.027	0.000	90.770	-10.228	1.000
1.118	2620.000	590.760	1.631	-.035	0.000	96.776	-16.234	1.000
1.131	1170.000	586.368	0.000	.022	0.000	80.612	0.000	74.500
1.131	1770.000	588.380	2.012	.026	0.000	88.020	-7.408	74.500
1.131	2030.000	589.157	.777	.027	0.000	90.853	-10.241	74.500
1.131	2620.000	590.789	1.632	.029	0.000	96.863	-16.251	74.500
1.132	1170.000	586.406	0.000	.039	0.000	80.740	0.000	1.000
1.132	1770.000	588.442	2.035	.062	0.000	88.236	-7.496	1.000
1.132	2030.000	589.229	.788	.072	0.000	91.137	-10.397	1.000
1.132	2620.000	590.883	1.654	.094	0.000	97.228	-16.489	1.000
1.146	1170.000	586.442	0.000	.036	0.000	83.695	0.000	79.000
1.146	1770.000	588.483	2.041	.041	0.000	91.472	-7.777	79.000
1.146	2030.000	589.273	.789	.043	0.000	94.519	-10.824	79.000
1.146	2620.000	590.929	1.657	.046	0.000	100.836	-17.141	79.000

DATA FOR LAST CROSS SECTION

PROFILE	TYPE ENC	TARGET	TOP WIDTH AREA-ACRES	TOP WIDTH AREA-DIFF
1	0.000	163.000	9.054	0.000
2	0.000	163.000	9.418	.364
3	0.000	163.000	9.597	.544
4	0.000	163.000	10.294	1.240

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**** 7000 SCOPE 2.1 LVL  221  02/05/77  12.00.12  03/07/77      77066

SYS DEVICES 819/ 4/PF FLS=200K FLL=764K MXS=160K MXL=457K MXB=457B

HH.MM.SS CPU SECOND ORIGIN
         09.45.47.MFA. JO    20PPU CBR73 B+W LYN ECS-2CPUS 02/15/77
09.45.09 00000.011 MFZ.    -FTGJO20,T20,CP70.  FT. GRATIOT FIS
09.45.09 00000.012 JOB.    -CHARGE.810-0037-45-78-5520,JANDA,001,D,JANDA.
09.46.20 00000.054 JOB.    -ATTACH(HEC2,HEC2PROD,ID=MULLAN)
09.46.24 00000.059 MFZ.      PF254  CYCLE    1 ATTACHED FROM SN=SYSTEM
09.46.24 00000.060 LOD.    -HEC2(PL=99999).
09.48.16 00000.478 MFZ.      LD610 - FLS REQUIRED TO LOAD - 0025222 OU.COG
09.48.17 00000.488 MFZ.      LD603 - EXECUTION INITIATED OS.EXP
09.48.17 00000.489 USR.      FORTRAN LIBRARY 217-MODIFIED 03/16/76
09.48.23 00002.720 USR.        STOP
09.48.23 00002.720 USR.      2.230 CP SECONDS EXECUTION TIME
09.48.23 00002.723 MFZ.      RM770 - MAXIMUM ACTIVE FILES                    3
09.48.23 00002.723 MFZ.      RM771 - OPEN/CLOSE CALLS                       22
09.48.23 00002.723 MFZ.      RM772 - DATA TRANSFER CALLS                 6,049
09.48.23 00002.724 MFZ.      RM773 - CONTROL/POSITIONING CALLS              26
09.48.23 00002.724 MFZ.      RM774 - BM DATA TRANSFER CALLS                415
09.48.23 00002.724 MFZ.      RM775 - BM CONTROL/POSITIONING CALLS           54
09.48.23 00002.724 MFZ.      RM776 - QUEUE MANAGER CALLS                    83
09.48.23 00002.724 MFZ.      RM777 - RECALL CALLS                           60
09.48.23 00002.725 MFZ.      BWMSG - NUMBER OF TAPES MOUNTED
09.48.23 00002.725 MFZ.      SRU                 3.249  SRU
09.48.23 00002.725 MFZ.      SCM               124.016  KWS
09.48.23 00002.726 MFZ.      I/O                 0.061  MW
09.48.23 00002.726 MFZ.      RMS                 0.066  MWS
09.48.23 00002.726 MFZ.      USER                1.759  SEC
09.48.23 00002.726 MFZ.      JOB                 2.728  SEC
09.48.23 00002.726 MFZ.      SC050 - 000065 SC/LC SWAPS
09.48.23 00002.727 MFZ.    FTGJODO   FTGJODO
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4.23

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$$$$$$$   $$$$$$$$  $$    $$  $$$$$$$$   $$$$$ $  $      $  $$   $$
$$    $$     $$     $$    $$     $$     $$    $   $$    $$  $$  $$
$$    $$     $$     $$    $$     $$     $$   $$$  $$$  $$$  $$ $$
$$    $$     $$     $$$$$$$$     $$     $$  $ $$  $$$$$$$$  $$$$
$$    $$     $$     $$    $$     $$     $$ $$ $$  $$ $$ $$  $$$$
$$$$$$$      $$     $$    $$     $$     $$ $  $$  $$    $$  $$ $$
$$           $$     $$    $$     $$     $$$   $$  $$    $$  $$  $$
$$           $$     $$    $$  $$ $$      $    $$  $$    $$  $$   $$
$$           $$     $$    $$   $$$      $ $$$$$   $$    $$  $$   $$
PTHJOMK  JANDA            03/09/77  10.47.56  7600   JO
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BLACK RIVER

J&A FILE NOS. 5555-20 & 53
100-YEAR FLOW - NATURAL FLOODWAY
DNR SUBMITTAL
MARCH 10, 1977

PROGRAM WILL BE ENTERED AT HEC2 (= 373) SCM LENGTH = 146657 LCM LENGTH = 0

BLOCK	ADDRESS	LENGTH
/ALPHA/	100	101
HEC2	201	11606
CARD	12007	1673
SUMPO	13702	1063
CHIMP	14765	1645
DC	16632	703
FLODIS	17535	444
BLELO	20201	1003
ADDPTS	21204	334
BWEIR	21540	1356
YCRIT	23116	122
SLARA	23240	256
SCALE	23516	246
XSEC	23764	1264
PROF	25250	1142
EXP	26412	102
/FCL.C./	26514	23
/Q8.IO./	26537	137
/HEADING/	26676	16
OUTC=	26714	1017
Q8NTRY=	27733	1
COMIO=	27734	44
ENDFIL=	30000	45
FECMSK=	30045	41
FLTIN=	30106	154
FLTOUT=	30262	314
FMTAP=	30576	372
FORSYS=	31170	556
FORUTL=	31746	16
GETFIT=	31764	43
INCOM=	32027	257
INRC=	32306	173
KODER=	32501	467
KRAKER=	33170	454
OUTCOM=	33644	203
REWIND=	34047	35
GOTOER=	34104	14
ALOG	34120	77
ITOJ*	34217	52
SYSAID=	34271	1
SYS=1ST	34272	62
XTOY*	34354	55
//	34431	112226

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*********************************************
HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
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USLS datum of 1935

→ to convert to IGLD subtract 1.65 ft
→ to convert to USGS subtract .48 ft

BEM

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C
1      BLACK RIVER  CITY OF PORT HURON, FORT GRATIOT TOWNSHIP  5555-53*21
T2      100 YEAR FLOOD
T3      BLACK RIVER

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q       WSEL      FQ

     -0.        4.        -0.       -0.  -0.000000     -0.00      -0.0      -0.   520.350   -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      .040      .040      .027      .300      .500     -0.000     -0.000     -0.000     -0.000     -0.000
QT     4.000  12590.000  16810.000  18450.000  22160.000     -0.000     -0.000     -0.000     -0.000     -0.000

X1      .001    35.000   400.000   615.000    -0.000     -0.000     -0.000     -0.000     -0.000     -0.000
GR   584.800     0.000   584.500   100.000   585.000   200.000   582.900   300.000   585.000   380.000
GR   579.900   400.000   571.000   410.000   565.800   420.000   564.300   430.000   561.500   440.000
GR   559.300   450.000   559.000   460.000   559.000   470.000   559.400   480.000   559.400   490.000
GR   560.000   500.000   560.300   510.000   561.700   520.000   563.700   530.000   565.200   540.000
GR   566.400   550.000   569.800   560.000   575.000   570.000   577.600   580.000   578.700   590.000
GR   579.900   600.000   589.400   615.000   588.200   700.000   587.400   800.000   586.400   900.000
GR   585.500  1000.000   585.500  1100.000   585.400  1200.000   585.300  1300.000   585.300  1400.000

X1      .076    -0.000    -0.000    -0.000   400.000   400.000   400.000    -0.000    -1.100    -0.000

X1      .085    30.000   331.000   645.000    74.000    24.000    49.000      .899    -0.000    -0.000
X3    10.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000   583.700   583.700    -0.000
GR   582.600     0.000   582.550    50.000   582.500   100.000   583.100   150.000   583.700   200.000
GR   585.200   300.000   585.600   331.000   583.000   331.000   580.600   390.000   569.600   400.000
GR   564.500   411.000   561.300   418.000   560.400   420.000   558.900   440.000   557.500   460.000
GR   558.400   480.000   560.400   500.000   560.600   520.000   560.300   540.000   559.100   560.000
GR   564.100   580.000   565.200   583.000   567.900   590.000   571.600   600.000   577.500   620.000
GR   580.600   645.000   585.600   645.000   585.200   700.000   584.200   800.000   584.100   900.000
NC      .040      .040      .026    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

X1      .086    -0.000    -0.000    -0.000     1.000     1.000     1.000    -0.000    -0.000    -0.000
X2    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000      .899    -0.000
BT    20.000     0.000   582.600     0.000    50.000   582.550     0.000   100.000   582.500     0.000
BT   200.000   583.700     0.000   300.000   585.200     0.000   331.000   585.600     0.000   331.000
BT   585.600   583.700   411.000   585.600   583.700   411.000   585.600   564.500   418.000   585.600
BT   561.300   418.000   585.600   583.700   583.000   585.600   583.700   583.000   585.600   585.200
BT   590.000   585.600   567.900   590.000   585.600   583.700   645.000   585.600   583.700   645.000
BT   585.600     0.000   700.000   585.200     0.000   800.000   584.200     0.000   900.000   584.100
BT     0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

X1      .091    -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      .899    -0.000
NC      .030      .020      .027    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

X1      .092    -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   583.700   583.700    -0.000
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X1	.100	-0.000	-0.000	-0.000	24.000	14.000	49.000	-0.000	-0.000	-0.000
X1	.138	27.000	32.000	190.000	200.000	200.000	200.000	-0.000	-0.000	-0.000
GR	586.000	0.000	585.000	10.000	584.000	20.000	583.000	32.000	569.500	33.000
GR	564.500	35.000	562.300	40.000	560.200	50.000	558.700	60.000	558.200	70.000
GR	557.400	80.000	557.400	90.000	558.200	100.000	558.400	110.000	559.300	120.000
GR	559.600	130.000	559.600	140.000	559.500	150.000	559.500	160.000	561.700	170.000
GR	564.100	180.000	566.500	185.000	569.300	189.000	583.000	190.000	583.000	200.000
GR	584.000	210.000	585.000	220.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.166	24.000	999.000	1148.000	150.000	150.000	150.000	1.100	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1029.000	-0.000	1148.000	-0.000	-0.000	-0.000	-0.000
GR	594.700	0.000	593.000	300.000	592.200	500.000	589.300	700.000	587.700	900.000
GR	583.900	999.000	567.800	1000.000	565.600	1007.000	564.900	1015.000	560.300	1039.000
GR	557.300	1050.000	557.400	1075.000	562.400	1100.000	565.300	1125.000	568.300	1135.000
GR	571.000	1147.000	583.500	1148.000	585.500	1200.000	584.800	1400.000	554.500	1600.000
GR	584.200	1800.000	585.100	2000.000	586.300	2200.000	587.300	2400.000	-0.000	-0.000
X1	.206	24.000	999.000	1148.000	230.000	225.000	210.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1029.000	-0.000	1148.000	-0.000	-0.000	-0.000	-0.000
GR	594.700	0.000	593.000	300.000	592.200	500.000	589.300	700.000	587.700	900.000
GR	583.900	999.000	567.800	1000.000	565.600	1007.000	564.900	1015.000	560.300	1039.000
GR	557.200	1050.000	557.400	1075.000	562.400	1100.000	565.300	1125.000	568.300	1135.000
GR	571.000	1147.000	583.500	1148.000	585.500	1200.000	584.800	1400.000	554.500	1600.000
GR	584.200	1800.000	585.100	2000.000	586.300	2200.000	587.300	2400.000	-0.000	-0.000
NC	.020	.020	.027	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.305	15.000	430.000	565.000	525.000	525.000	525.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	449.000	-0.000	551.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.190	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.309	15.000	430.000	565.000	20.000	20.000	20.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	454.000	-0.000	546.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.150	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.313	15.000	430.000	565.000	20.000	20.000	20.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	459.000	-0.000	541.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.110	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.315	15.000	430.000	565.000	19.000	6.000	12.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	462.000	-0.000	538.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.090	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.318	15.000	430.000	565.000	19.000	6.000	12.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	465.000	-0.000	535.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.060	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.319	15.000	430.000	565.000	6.000	3.000	4.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	466.000	-0.000	534.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.050	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
NC	.020	.020	.024	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.320	15.000	430.000	565.000	12.000	6.000	8.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	468.000	581.300	532.000	544.300	-0.000	-0.000	-0.000

GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.040	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.324	15.000	430.000	565.000	24.000	24.000	24.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	468.000	584.300	532.000	584.300	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.000	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.325	-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	468.000	584.300	532.000	584.300	-0.000	-0.000	-0.000
BT	13.000	430.000	590.820	0.000	430.000	590.820	573.900	440.000	591.160	570.400
BT	459.000	591.800	561.400	459.000	591.800	584.300	500.000	592.600	589.100	541.000
BT	591.800	584.300	541.000	591.800	561.700	555.000	590.940	569.900	565.000	590.900
BT	574.000	565.000	590.900	584.000	575.000	590.600	584.000	575.000	590.600	0.000
X1	.333	-0.000	-0.000	-0.000	46.000	46.000	46.000	-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	468.000	584.300	532.000	584.300	-0.000	-0.000	-0.000
X1	.334	-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	468.000	584.300	532.000	584.300	-0.000	-0.000	-0.000
X1	.337	15.000	430.000	565.000	19.000	19.000	19.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	468.000	584.300	532.000	584.300	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.030	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
NC	.020	.020	.027	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.338	15.000	430.000	565.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	467.000	-0.000	533.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.040	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.339	-0.000	-0.000	-0.000	2.000	2.000	2.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	465.000	-0.000	535.000	-0.000	-0.000	-0.000	-0.000
X1	.340	15.000	430.000	565.000	3.000	3.000	3.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	462.000	-0.000	538.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.050	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.341	15.000	430.000	565.000	5.000	5.000	5.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	457.000	-0.000	543.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.060	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.342	15.000	430.000	565.000	6.000	6.000	6.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	451.000	-0.000	549.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.070	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.343	15.000	430.000	565.000	10.000	10.000	10.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	441.000	-0.000	559.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.080	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
NC	.040	.060	.027	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.377	16.000	299.000	32.000	186.000	186.000	186.000	-0.000	-0.000	-0.000

GR	592.400	0.000	589.400	100.000	587.700	200.000	584.400	299.000	587.400	299.000
GR	567.400	300.000	562.100	320.000	558.200	340.000	556.900	360.000	556.400	380.000
GR	557.500	400.000	563.900	420.000	568.800	430.000	568.800	432.000	586.000	432.000
GR	590.100	500.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.030	.030	.027	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.476	23.000	350.000	650.000	520.000	520.000	520.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	442.300	-0.000	554.300	-0.000	-0.000	-0.000	-0.000
GR	593.000	0.000	591.700	100.000	591.200	200.000	593.200	300.000	589.400	350.000
GR	584.000	421.000	584.000	431.000	571.800	431.000	568.300	440.000	563.600	449.000
GR	557.900	460.000	556.200	480.000	555.300	500.000	555.130	520.000	557.200	540.000
GR	561.100	551.000	563.300	560.000	569.900	570.000	575.300	580.000	580.200	586.000
GR	590.200	650.000	598.000	700.000	598.600	800.000	-0.000	-0.000	-0.000	-0.000
NH	3.000	.035	450.000	.022	547.000	.900	800.000	-0.000	-0.000	-0.000
X1	.482	23.000	350.000	650.000	30.500	30.500	30.500	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	450.000	-0.000	547.000	584.000	-0.000	-0.000	-0.000
GR	593.000	0.000	591.700	100.000	591.200	200.000	593.200	300.000	589.400	350.000
GR	584.000	421.000	584.000	431.000	571.800	431.000	568.300	440.000	563.600	449.000
GR	557.900	460.000	556.200	480.000	555.300	500.000	555.030	520.000	557.200	540.000
GR	561.100	551.000	563.300	560.000	569.900	570.000	575.300	580.000	580.200	586.000
GR	590.200	650.000	598.000	700.000	598.600	800.000	-0.000	-0.000	-0.000	-0.000
NH	3.000	.035	431.000	.022	551.000	.900	800.000	-0.000	-0.000	-0.000
X1	.484	23.000	350.000	650.000	12.000	12.000	12.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	453.000	584.000	547.000	584.000	-0.000	-0.000	-0.000
GR	593.000	0.000	591.700	100.000	591.200	200.000	593.200	300.000	589.400	350.000
GR	584.000	421.000	584.000	431.000	571.800	431.000	568.300	440.000	563.600	449.000
GR	557.900	460.000	556.200	480.000	555.300	500.000	555.000	520.000	557.200	540.000
GR	561.100	551.000	563.300	560.000	569.900	570.000	575.300	580.000	580.200	586.000
GR	590.200	650.000	598.000	700.000	598.600	800.000	-0.000	-0.000	-0.000	-0.000
X1	.487	-0.000	-0.000	-0.000	13.500	13.500	13.500	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	453.000	584.000	547.000	584.000	-0.000	-0.000	-0.000
X1	.488	-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	453.000	584.000	547.000	584.000	-0.000	-0.000	-0.000
BT	16.000	300.000	593.200	0.000	350.000	594.700	589.400	421.000	597.500	584.000
BT	421.000	597.500	591.500	431.000	597.600	591.500	431.000	597.600	571.800	440.000
BT	597.600	568.300	449.000	597.700	563.600	449.000	597.700	585.500	500.000	598.200
BT	590.500	551.000	598.300	585.500	551.000	598.300	561.100	560.000	596.330	563.300
BT	586.000	598.400	580.200	650.000	597.700	590.200	700.000	598.000	0.000	-0.000
X1	.494	-0.000	-0.000	-0.000	40.000	40.000	40.000	-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	453.000	584.000	547.000	584.000	-0.000	-0.000	-0.000
NC	.040	.060	.022	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.495	-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	453.000	584.000	547.000	584.000	-0.000	-0.000	-0.000
X1	.497	-0.000	-0.000	-0.000	13.500	13.500	13.500	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	453.000	584.000	547.000	584.000	-0.000	-0.000	-0.000
NC	.040	.060	.027	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.500	25.000	350.000	650.000	16.000	16.000	16.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	437.000	584.500	563.000	584.500	-0.000	-0.000	-0.000
GR	595.300	0.000	595.900	100.000	596.500	200.000	597.100	300.000	597.400	350.000
GR	588.000	400.000	584.000	421.000	584.000	431.000	571.800	431.000	568.300	440.000
GR	563.600	449.000	557.900	460.000	556.200	480.000	555.300	500.000	555.140	520.000
GR	557.200	540.000	561.100	551.000	563.300	560.000	569.300	570.000	575.300	580.000
GR	580.200	586.000	584.000	600.000	597.700	650.000	598.000	700.000	598.600	800.000
NC	.040	.060	.027	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.639	17.000	0.000	450.000	695.000	765.000	735.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	139.000	584.100	400.000	584.300	-0.000	-0.000	-0.000

GR	594.100	0.000	590.600	50.000	584.100	99.000	574.900	100.000	573.300	110.000
GR	571.200	130.000	565.900	140.000	562.500	170.000	561.900	200.000	561.600	230.000
GR	563.400	260.000	565.200	270.000	570.300	280.000	581.100	281.000	582.600	300.000
GR	584.300	400.000	593.200	450.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.901	23.000	-0.000	382.000	1390.000	1360.000	1380.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	239.000	583.900	368.000	580.000	-0.000	-0.000	-0.000
GR	597.500	0.000	586.900	100.000	583.900	199.000	574.900	200.000	573.300	210.000
GR	568.600	220.000	564.900	230.000	563.300	239.000	561.400	250.000	561.200	260.000
GR	561.000	270.000	561.000	280.000	561.100	290.000	561.200	300.000	561.300	310.000
GR	561.400	320.000	561.500	330.000	564.600	340.000	567.600	350.000	579.600	367.000
GR	580.000	368.000	589.000	382.000	607.000	382.000	-0.000	-0.000	-0.000	-0.000
NH	7.000	.200	211.420	.120	263.750	.200	316.780	.022	415.070	.200
NH	443.350	.035	478.710	.200	530.330	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.928	21.000	299.000	677.000	270.000	50.000	145.000	.707	-0.000	-0.000
X3	-0.000	-0.000	-0.000	413.000	584.300	587.000	584.500	-0.000	-0.000	-0.000
GR	596.800	0.000	596.000	68.000	593.000	168.000	588.900	299.000	584.300	373.000
GR	584.300	413.000	568.600	413.000	568.000	425.000	567.500	440.000	567.100	448.000
GR	566.500	460.000	565.700	480.000	561.900	500.000	560.100	520.000	558.900	530.000
GR	561.200	550.000	564.800	570.000	566.300	587.000	586.000	627.000	590.000	677.000
GR	599.100	750.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	7.000	.200	211.420	.120	263.750	.200	316.780	.022	415.070	.200
NH	443.350	.035	478.710	.200	530.330	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.929	21.000	299.000	677.000	1.000	1.000	1.000	.707	-0.000	-0.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	.707	-0.000
X3	-0.000	-0.000	-0.000	413.000	584.300	587.000	584.500	-0.000	-0.000	-0.000
BT	17.000	0.000	597.200	0.000	68.000	597.600	596.000	168.000	598.200	593.000
BT	299.000	598.900	588.900	299.000	598.900	594.300	373.000	600.600	596.600	373.000
BT	600.600	584.300	413.000	601.500	584.300	413.000	601.500	586.800	500.000	602.400
BT	597.600	587.000	601.600	586.800	587.000	601.600	566.300	627.000	600.600	586.000
BT	627.000	600.600	596.000	677.000	599.100	594.500	677.000	599.100	590.000	750.000
BT	599.100	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	596.800	0.000	596.000	68.000	593.000	168.000	588.900	299.000	584.300	373.000
GR	584.300	413.000	568.600	413.000	568.000	425.000	567.500	440.000	567.100	448.000
GR	566.500	460.000	565.700	480.000	561.900	500.000	560.100	520.000	558.900	530.000
GR	561.200	550.000	564.800	570.000	566.300	587.000	586.000	627.000	590.000	677.000
GR	599.100	750.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	7.000	.200	211.420	.120	263.750	.022	292.030	.022	415.070	.012
NH	443.350	.035	471.640	.200	530.330	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.945	21.000	299.000	677.000	82.000	82.000	82.000	.707	-0.000	-0.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	.707	-0.000
X3	-0.000	-0.000	-0.000	413.000	584.300	587.000	584.500	-0.000	-0.000	-0.000
BT	17.000	0.000	597.200	0.000	68.000	597.600	596.000	168.000	598.200	593.000
BT	299.000	598.900	588.900	299.000	598.900	594.300	373.000	600.600	596.600	373.000
BT	600.600	584.300	413.000	601.500	584.300	413.000	601.500	586.800	500.000	602.400
BT	597.600	587.000	601.600	586.800	587.000	601.600	566.300	627.000	600.600	586.000
BT	627.000	600.600	596.000	677.000	599.100	594.500	677.000	599.100	590.000	750.000
BT	599.100	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	596.800	0.000	596.000	68.000	593.000	168.000	588.900	299.000	584.300	373.000
GR	584.300	413.000	568.600	413.000	568.000	425.000	567.500	440.000	567.100	448.000
GR	566.500	460.000	565.700	480.000	561.900	500.000	560.100	520.000	558.900	530.000
GR	561.200	550.000	564.800	570.000	566.300	587.000	586.000	627.000	590.000	677.000
GR	599.100	750.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	7.000	.200	211.420	.120	263.750	.022	292.030	.022	415.070	.022
NH	443.350	.035	471.640	.200	530.330	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.946	21.000	299.000	677.000	1.000	1.000	1.000	.707	-0.000	-0.000
X3	-0.000	-0.000	-0.000	413.000	584.300	587.000	584.500	-0.000	-0.000	-0.000
GR	596.800	0.000	596.000	68.000	593.000	168.000	588.900	299.000	584.300	373.000
GR	584.300	413.000	568.600	413.000	568.000	425.000	567.500	440.000	567.100	448.000
GR	566.500	460.000	565.700	480.000	561.900	500.000	560.100	520.000	558.900	530.000
GR	561.200	550.000	564.800	570.000	566.300	587.000	586.000	627.000	590.000	677.000
GR	599.100	750.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

NC	.030	.070	.027	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.973	25.000	0.000	330.000	53.000	253.000	150.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	160.000	584.300	350.000	597.000	-0.000	-0.000	-0.000
GR	596.000	0.000	588.900	74.000	584.300	120.000	575.000	121.000	570.900	150.000
GR	568.800	160.000	568.300	170.000	567.000	180.000	565.900	190.000	565.000	200.000
GR	564.300	210.000	563.900	220.000	562.900	230.000	562.200	240.000	560.800	250.000
GR	555.840	260.000	555.840	270.000	559.100	280.000	561.000	290.000	567.000	300.000
GR	575.800	310.000	580.000	320.000	588.000	330.000	595.000	340.000	597.000	350.000
NC	.060	.060	.027	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.194	26.000	0.000	221.000	1360.000	1110.000	1170.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	-0.000	-0.000	221.000	-0.000	-0.000	-0.000	-0.000
GR	597.100	0.000	582.400	25.000	579.700	30.000	573.600	40.000	568.200	50.000
GR	565.200	60.000	561.400	70.000	557.400	80.000	557.000	90.000	557.600	100.000
GR	558.800	110.000	560.600	120.000	562.000	130.000	562.700	140.000	563.400	150.000
GR	565.000	160.000	571.300	170.000	575.700	180.000	575.700	190.000	575.700	200.000
GR	574.700	210.000	574.700	220.000	582.100	221.000	584.400	420.000	594.400	610.000
GR	595.400	720.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.035	.035	.027	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.543	28.000	25.000	275.000	1740.000	1920.000	1850.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	-0.000	-0.000	210.000	-0.000	-0.000	-0.000	-0.000
GR	594.900	0.000	593.900	25.000	581.100	42.000	580.100	45.000	579.700	50.000
GR	578.400	60.000	576.800	70.000	572.800	80.000	571.300	90.000	569.200	100.000
GR	566.800	110.000	560.800	120.000	558.300	130.000	556.400	140.000	555.300	150.000
GR	554.700	160.000	555.800	170.000	555.800	180.000	556.400	190.000	558.100	200.000
GR	560.200	210.000	565.000	220.000	569.000	230.000	576.000	239.000	580.100	250.000
GR	582.400	252.000	582.900	261.000	597.700	275.000	-0.000	-0.000	-0.000	-0.000
NH	8.000	.060	420.000	.027	475.000	.080	480.000	.027	500.000	.080
NH	506.000	.027	592.500	1.000	670.000	.060	700.000	-0.000	-0.000	-0.000
X1	1.567	36.000	399.500	684.000	125.000	125.000	125.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	300.000	-0.000	592.500	-0.000	-0.000	-0.000	-0.000
GR	596.100	0.000	596.400	200.000	596.700	300.000	586.400	399.500	582.000	408.000
GR	580.700	420.000	579.800	430.000	578.600	440.000	577.000	450.000	576.700	460.000
GR	570.500	475.000	567.100	480.000	568.600	490.000	566.700	497.000	566.500	500.000
GR	564.100	506.000	558.200	520.000	556.400	530.000	555.100	540.000	553.950	550.000
GR	554.300	560.000	554.100	570.000	555.000	580.000	562.400	592.500	571.000	598.500
GR	567.300	606.500	567.100	610.000	571.300	620.000	575.200	630.000	575.900	640.000
GR	577.100	650.000	579.300	660.000	580.000	670.000	581.000	679.000	583.000	644.000
GR	597.200	700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	9.000	.060	420.000	.022	472.000	.080	475.000	.200	483.000	.022
NH	497.000	.200	509.000	.022	592.500	1.000	670.000	.060	700.000	-0.000
X1	1.569	47.000	399.500	684.000	10.000	10.000	10.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	300.000	-0.000	592.500	-0.000	-0.000	-0.000	-0.000
GR	596.100	0.000	596.400	200.000	596.700	300.000	597.000	399.500	586.400	399.500
GR	582.000	408.000	580.700	420.000	579.800	430.000	578.600	440.000	577.000	450.000
GR	576.700	460.000	572.800	472.000	571.800	473.000	570.500	475.000	569.100	477.000
GR	567.600	483.000	568.600	490.000	566.700	497.000	591.830	497.000	591.850	509.000
GR	562.700	509.000	562.400	510.000	558.200	520.000	556.400	530.000	555.100	540.000
GR	553.890	550.000	554.300	560.000	554.100	570.000	555.000	580.000	558.800	590.000
GR	562.400	592.500	591.990	592.500	592.000	602.500	588.000	602.500	588.000	606.500
GR	567.300	606.500	567.100	610.000	571.300	620.000	575.200	630.000	575.900	640.000
GR	577.100	650.000	579.300	660.000	580.000	670.000	581.000	679.000	583.000	644.000
GR	597.200	684.000	597.200	700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.060	.060	.022	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.570	48.000	399.500	684.000	5.000	5.000	5.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	300.000	-0.000	592.500	-0.000	-0.000	-0.000	-0.000
GR	596.100	0.000	596.400	200.000	596.700	300.000	597.000	399.500	586.400	399.500
GR	582.000	408.000	580.700	420.000	579.800	430.000	578.600	440.000	577.000	450.000
GR	576.700	460.000	573.200	471.000	587.800	471.000	587.800	477.000	591.900	477.000
GR	591.810	480.000	567.100	480.000	568.600	490.000	566.700	497.000	591.830	497.000
GR	591.850	509.000	562.700	509.000	562.400	510.000	556.200	520.000	556.400	530.000

GR	555.100	540.000	553.860	550.000	554.300	560.000	554.100	570.000	555.000	580.000
GR	558.800	590.000	562.400	592.500	591.990	592.500	592.000	602.500	588.000	602.500
GR	588.000	606.500	567.300	606.500	567.100	610.000	571.300	620.000	575.200	630.000
GR	575.900	640.000	577.100	650.000	579.300	660.000	580.000	670.000	581.000	679.000
GR	583.000	684.000	597.200	684.000	597.200	700.000	-0.000	-0.000	-0.000	-0.000

X1	1.572	48.000	399.500	684.000	9.000	9.000	9.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	300.000	-0.000	592.500	-0.000	-0.000	-0.000	-0.000
GR	596.100	0.000	596.400	200.000	596.700	300.000	597.000	399.500	586.400	399.500
GR	582.000	408.000	580.700	420.000	579.800	430.000	578.600	440.000	577.000	450.000
GR	576.700	460.000	573.200	471.000	587.800	471.000	587.800	477.000	591.800	477.000
GR	591.810	480.000	567.100	480.000	568.600	490.000	566.700	497.000	591.830	497.000
GR	591.850	509.000	562.700	509.000	562.400	510.000	558.200	520.000	556.400	530.000
GR	555.100	540.000	553.810	550.000	554.300	560.000	554.100	570.000	555.000	580.000
GR	558.800	590.000	562.400	592.500	591.990	592.500	592.000	602.500	588.000	602.500
GR	588.000	606.500	567.300	606.500	567.100	610.000	571.300	620.000	575.200	630.000
GR	575.900	640.000	577.100	650.000	579.300	660.000	580.000	670.000	581.000	679.000
GR	583.000	684.000	597.200	684.000	597.200	700.000	-0.000	-0.000	-0.000	-0.000

X1	1.573	48.000	399.500	684.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	300.000	-0.000	592.500	-0.000	-0.000	-0.000	-0.000
BT	14.000	399.500	597.000	0.000	399.500	597.000	587.600	471.000	597.180	587.600
BT	477.000	597.200	587.800	477.000	601.400	591.800	480.000	501.410	591.810	497.000
BT	601.430	591.830	509.000	601.450	591.850	592.500	601.590	591.990	602.500	601.600
BT	592.000	602.500	597.400	588.000	606.500	597.390	588.000	684.000	597.200	587.500
BT	684.000	597.200	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	596.100	0.000	596.400	200.000	596.700	300.000	597.000	399.500	586.400	399.500
GR	582.000	408.000	580.700	420.000	579.800	430.000	578.600	440.000	577.000	450.000
GR	576.700	460.000	573.200	471.000	587.800	471.000	587.800	477.000	591.800	477.000
GR	591.810	480.000	567.100	480.000	568.600	490.000	566.700	497.000	591.830	497.000
GR	591.850	509.000	562.700	509.000	562.400	510.000	558.200	520.000	556.400	530.000
GR	555.100	540.000	553.800	550.000	554.300	560.000	554.100	570.000	555.000	580.000
GR	558.800	590.000	562.400	592.500	591.990	592.500	592.000	602.500	588.000	602.500
GR	588.000	606.500	567.300	606.500	567.100	610.000	571.300	620.000	575.200	630.000
GR	575.900	640.000	577.100	650.000	579.300	660.000	580.000	670.000	581.000	679.000
GR	583.000	684.000	597.200	684.000	597.200	700.000	-0.000	-0.000	-0.000	-0.000

X1	1.576	-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	-0.000	-0.000	-0.000	1.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	300.000	-0.000	592.500	-0.000	-0.000	-0.000	-0.000

X1	1.577	48.000	399.500	684.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	300.000	-0.000	592.500	-0.000	-0.000	-0.000	-0.000
GR	596.100	0.000	596.400	200.000	596.700	300.000	597.000	399.500	586.400	399.500
GR	582.000	408.000	580.700	420.000	579.800	430.000	578.600	440.000	577.000	450.000
GR	576.700	460.000	573.200	471.000	587.800	471.000	587.800	477.000	591.800	477.000
GR	591.810	480.000	567.100	480.000	568.600	490.000	566.700	497.000	591.830	497.000
GR	591.850	509.000	562.700	509.000	562.400	510.000	558.200	520.000	556.400	530.000
GR	555.100	540.000	553.810	550.000	554.300	560.000	554.100	570.000	555.000	580.000
GR	558.800	590.000	562.400	592.500	591.990	592.500	592.000	602.500	588.000	602.500
GR	588.000	606.500	567.300	606.500	567.100	610.000	571.300	620.000	575.200	630.000
GR	575.900	640.000	577.100	650.000	579.300	660.000	580.000	670.000	581.000	679.000
GR	583.000	684.000	597.200	684.000	597.200	700.000	-0.000	-0.000	-0.000	-0.000
NH	6.000	.060	420.000	.022	480.000	.080	482.000	.022	592.500	1.000
NH	670.000	.060	700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

X1	1.578	48.000	399.500	684.000	9.000	9.000	9.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	300.000	-0.000	592.500	-0.000	-0.000	-0.000	-0.000
GR	596.100	0.000	596.400	200.000	596.700	300.000	597.000	399.500	586.400	399.500
GR	582.000	408.000	580.700	420.000	579.800	430.000	578.600	440.000	577.000	450.000
GR	576.700	460.000	573.200	471.000	587.800	471.000	587.800	477.000	591.800	477.000
GR	591.810	480.000	567.100	480.000	567.500	482.000	566.700	497.000	591.830	497.000
GR	591.850	509.000	562.700	509.000	562.400	510.000	558.200	520.000	556.400	530.000
GR	555.100	540.000	553.860	550.000	554.300	560.000	554.100	570.000	555.000	580.000
GR	558.800	590.000	562.400	592.500	591.990	592.500	592.000	602.500	588.000	602.500
GR	588.000	606.500	567.300	606.500	567.100	610.000	571.300	620.000	575.200	630.000

GR	575.900	640.000	577.100	650.000	579.300	660.000	580.000	670.000	581.000	679.000
GR	583.000	684.000	597.200	684.000	597.200	700.000	-0.000	-0.000	-0.000	-0.000
NH	6.000	.060	420.000	.022	475.000	.200	483.000	.022	592.500	1.000
NH	670.000	.060	700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.579	47.000	399.500	684.000	5.000	5.000	5.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	300.000	-0.000	592.500	-0.000	-0.000	-0.000	-0.000
GR	596.100	0.000	596.400	200.000	596.700	300.000	597.000	399.500	586.400	399.500
GR	582.000	408.000	580.700	420.000	579.800	430.000	578.600	440.000	577.000	450.000
GR	576.700	460.000	573.200	471.000	571.800	473.000	570.500	475.000	569.100	477.000
GR	567.600	483.000	568.600	490.000	566.700	497.000	591.830	497.000	591.850	509.000
GR	562.700	509.000	562.400	510.000	558.200	520.000	556.400	530.000	555.100	540.000
GR	553.890	550.000	554.300	560.000	554.100	570.000	555.000	580.000	558.800	590.000
GR	562.400	592.500	591.990	592.500	592.000	602.500	568.000	602.500	588.000	606.500
GR	567.300	606.500	567.100	610.000	571.300	620.000	575.200	630.000	575.900	640.000
GR	577.100	650.000	579.300	660.000	580.000	670.000	581.000	679.000	583.000	684.000
GR	597.200	684.000	597.200	700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	6.000	.060	420.000	.027	503.000	.080	506.000	.027	592.500	1.000
NH	670.000	.060	700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.580	37.000	399.500	695.000	5.000	5.000	5.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	300.000	-0.000	597.500	-0.000	-0.000	-0.000	-0.000
GR	596.100	0.000	596.400	200.000	596.700	300.000	586.400	399.500	592.000	408.000
GR	580.700	420.000	579.800	430.000	578.600	440.000	577.000	450.000	576.700	460.000
GR	573.200	471.000	567.100	480.000	568.600	490.000	566.700	497.000	566.370	503.000
GR	565.740	506.000	558.200	520.000	556.400	530.000	555.100	540.000	553.920	550.000
GR	554.300	560.000	554.100	570.000	555.000	580.000	562.400	592.500	571.000	598.500
GR	567.300	606.500	567.100	610.000	571.300	620.000	575.200	630.000	575.900	640.000
GR	577.100	650.000	579.300	660.000	580.000	670.000	581.000	679.000	583.000	684.000
GR	597.200	695.000	597.200	700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.030	.035	.028	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.004	21.000	99.000	375.000	2240.000	2140.000	2240.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	90.000	-0.000	385.000	-0.000	-0.000	-0.000	-0.000
GR	595.000	0.000	592.900	75.000	584.100	99.000	578.500	100.000	572.500	120.000
GR	569.400	140.000	567.900	180.000	568.200	220.000	569.000	260.000	572.200	300.000
GR	574.200	320.000	575.100	340.000	576.600	350.000	580.100	375.000	584.400	385.000
GR	584.200	400.000	584.600	600.000	584.200	800.000	584.700	1000.000	587.900	1200.000
GR	591.000	1400.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.135	25.000	359.000	630.000	740.000	650.000	690.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	310.000	-0.000	630.000	-0.000	-0.000	-0.000	-0.000
GR	600.000	0.000	595.000	300.000	590.000	310.000	545.000	340.000	580.000	359.000
GR	577.100	360.000	575.200	370.000	572.200	380.000	570.600	390.000	570.200	400.000
GR	569.800	410.000	569.400	420.000	569.400	430.000	568.200	440.000	568.700	540.000
GR	572.300	550.000	573.000	560.000	573.500	570.000	574.200	580.000	574.900	590.000
GR	574.800	600.000	576.700	610.000	576.600	620.000	587.700	630.000	589.300	760.000
NC	.035	.035	.028	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.257	27.000	298.000	665.000	660.000	630.000	650.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	320.000	-0.000	840.000	-0.000	-0.000	-0.000	-0.000
GR	594.200	0.000	586.200	100.000	585.200	200.000	582.200	298.000	580.300	300.000
GR	576.900	310.000	576.000	320.000	571.800	340.000	569.600	380.000	569.000	420.000
GR	568.400	460.000	568.800	500.000	571.400	540.000	573.300	560.000	575.600	580.000
GR	576.000	620.000	576.400	640.000	576.900	650.000	580.300	658.000	584.700	665.000
GR	584.400	700.000	583.400	900.000	582.800	1100.000	584.100	1300.000	584.200	1500.000
GR	588.400	1700.000	590.000	1800.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.035	.035	.028	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.305	41.000	318.000	931.000	220.000	260.000	250.000	.940	-0.000	-0.000
X3	-0.000	-0.000	-0.000	318.000	-0.000	915.000	-0.000	-0.000	-0.000	-0.000
GR	607.000	0.000	606.600	100.000	603.800	150.000	600.900	200.000	586.900	252.000
GR	587.400	257.000	589.000	272.000	588.500	309.000	588.600	315.000	588.500	318.000
GR	583.000	326.000	580.500	355.000	577.500	370.000	573.400	400.000	572.700	405.000
GR	571.600	412.000	568.230	435.000	569.000	465.000	569.200	500.000	569.200	535.000
GR	569.900	548.000	570.300	555.000	571.100	570.000	573.300	620.000	576.500	645.000

GR	582.500	765.000	582.600	800.000	582.600	817.000	582.700	822.000	583.200	874.000
GR	583.200	879.000	583.900	900.000	584.400	920.000	584.400	931.000	584.400	970.000
GR	602.600	1100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.035	.035	.022	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.314	41.000	318.000	931.000	49.000	49.000	49.000	.940	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	599.000	599.000	-0.000
GR	607.000	0.000	606.600	100.000	603.800	150.000	600.900	200.000	586.900	252.000
GR	587.400	257.000	589.000	272.000	588.500	309.000	588.600	315.000	588.600	318.000
GR	583.000	326.000	580.500	355.000	577.500	370.000	573.400	400.000	572.700	405.000
GR	571.600	412.000	568.200	435.000	569.000	465.000	569.200	500.000	569.200	535.000
GR	569.900	548.000	570.300	555.000	571.100	570.000	573.300	620.000	576.800	645.000
GR	577.500	651.000	581.900	700.000	582.000	703.000	582.000	708.000	582.500	760.000
GR	582.500	765.000	582.600	800.000	582.600	817.000	582.700	822.000	583.200	874.000
GR	583.200	879.000	583.900	900.000	584.400	920.000	587.200	931.000	597.400	970.000
GR	602.600	1100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.035	.035	.022	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.315	42.000	318.000	931.000	1.000	1.000	1.000	.940	-0.000	-0.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	.940	-0.000
BT	43.000	200.000	609.900	0.000	200.000	609.900	602.700	252.000	609.300	602.600
BT	252.000	609.800	586.900	257.000	609.790	587.400	257.000	609.790	602.590	309.000
BT	609.680	602.480	309.000	609.680	588.500	315.000	609.680	588.600	315.000	609.680
BT	599.570	405.000	609.480	599.370	405.000	609.480	572.700	412.000	609.450	571.600
BT	412.000	609.450	599.340	548.000	608.910	598.800	548.000	608.910	569.900	555.000
BT	608.880	570.300	555.000	608.880	598.770	645.000	608.480	598.370	645.000	608.480
BT	576.800	651.000	608.450	577.500	651.000	608.450	600.750	703.000	608.190	600.490
BT	703.000	608.190	582.000	708.000	608.160	582.000	708.000	608.160	600.460	760.000
BT	607.900	600.200	760.000	607.900	582.500	765.000	607.880	582.500	765.000	607.880
BT	600.180	817.000	607.630	599.930	817.000	607.630	582.600	822.000	607.610	582.700
BT	822.000	607.610	599.910	874.000	607.400	599.700	874.000	607.400	583.200	879.000
BT	607.380	583.200	879.000	607.380	599.680	931.000	607.110	599.400	931.000	607.110
BT	587.200	970.000	606.880	597.400	970.000	606.880	603.380	970.000	606.880	0.000
GR	607.000	0.000	606.600	100.000	606.400	200.000	600.900	200.000	586.900	252.000
GR	587.400	257.000	589.000	272.000	588.500	309.000	588.600	315.000	588.600	318.000
GR	583.000	326.000	580.500	355.000	577.500	370.000	573.400	400.000	572.700	405.000
GR	571.600	412.000	568.200	435.000	569.000	465.000	569.200	500.000	569.200	535.000
GR	569.900	548.000	570.300	555.000	571.100	570.000	573.300	620.000	576.800	645.000
GR	577.500	651.000	581.900	700.000	582.000	703.000	582.000	708.000	582.500	760.000
GR	582.500	765.000	582.600	800.000	582.600	817.000	582.700	822.000	583.200	874.000
GR	583.200	879.000	583.900	900.000	584.400	920.000	587.200	931.000	597.400	970.000
GR	603.380	970.000	602.600	1100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.328	-0.000	-0.000	-0.000	74.000	74.000	74.000	-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	.035	.035	.022	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.329	41.000	318.000	931.000	1.000	1.000	1.000	.940	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	599.000	599.000	-0.000
GR	607.000	0.000	606.600	100.000	603.800	150.000	600.900	200.000	586.900	252.000
GR	587.400	257.000	589.000	272.000	588.500	309.000	588.600	315.000	588.600	318.000
GR	583.000	326.000	580.500	355.000	577.500	370.000	573.400	400.000	572.700	405.000
GR	571.600	412.000	568.200	435.000	569.000	465.000	569.200	500.000	569.200	535.000
GR	569.900	548.000	570.300	555.000	571.100	570.000	573.300	620.000	576.800	645.000
GR	577.500	651.000	581.900	700.000	582.000	703.000	582.000	708.000	582.500	760.000
GR	582.500	765.000	582.600	800.000	582.600	817.000	582.700	822.000	583.200	874.000
GR	583.200	879.000	583.900	900.000	584.400	920.000	587.200	931.000	597.400	970.000
GR	602.600	1100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.035	.040	.028	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.338	41.000	318.000	931.000	49.000	49.000	49.000	.940	-0.000	-0.000
X3	-0.000	-0.000	-0.000	318.000	-0.000	950.000	-0.000	-0.000	-0.000	-0.000
GR	607.000	0.000	606.600	100.000	603.800	150.000	600.900	200.000	586.900	252.000
GR	587.400	257.000	589.000	272.000	588.500	309.000	588.600	315.000	588.600	318.000
GR	583.000	326.000	580.500	355.000	577.500	370.000	573.400	400.000	572.700	405.000

GR	571.600	412.000	568.220	435.000	569.000	465.000	564.200	500.000	569.200	535.000
GR	569.900	548.000	570.300	555.000	571.100	570.000	573.300	620.000	576.800	645.000
GR	577.500	651.000	581.900	700.000	582.000	703.000	582.000	708.000	582.500	760.000
GR	582.500	765.000	582.600	800.000	582.600	817.000	582.700	822.000	583.200	874.000
GR	583.200	879.000	583.900	900.000	584.400	920.000	584.400	931.000	584.400	970.000
GR	602.600	1100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.035	.040	.030	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.643	35.000	599.000	910.000	1850.000	1250.000	1610.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	550.000	-0.000	1160.000	-0.000	-0.000	-0.000	-0.000
GR	600.000	0.000	595.000	150.000	590.000	200.000	589.100	300.000	585.200	550.000
GR	581.800	599.000	580.300	600.000	577.800	610.000	577.900	620.000	577.600	630.000
GR	577.300	640.000	576.800	660.000	574.700	680.000	572.600	700.000	571.600	730.000
GR	570.400	760.000	570.000	790.000	569.000	820.000	568.800	840.000	568.700	860.000
GR	571.400	870.000	576.000	880.000	578.600	890.000	580.300	900.000	583.100	910.000
GR	581.700	1100.000	582.300	1300.000	583.000	1500.000	580.400	1525.000	577.400	1545.000
GR	576.900	1565.000	580.400	1585.000	584.100	1600.000	594.100	1690.000	595.000	1700.000
X1	2.789	28.000	25.000	360.000	686.000	934.000	770.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	-0.000	420.000	-0.000	-0.000	-0.000	-0.000
GR	585.000	0.000	583.000	25.000	580.000	30.000	574.800	40.000	574.900	60.000
GR	574.700	70.000	574.700	80.000	574.900	90.000	569.230	100.000	569.230	200.000
GR	571.900	210.000	571.900	220.000	571.700	230.000	571.400	240.000	571.200	250.000
GR	571.000	260.000	570.700	270.000	570.400	280.000	570.400	290.000	570.700	300.000
GR	572.700	310.000	574.200	320.000	578.700	330.000	579.400	340.000	580.000	350.000
GR	583.000	360.000	584.000	420.000	592.300	455.000	-0.000	-0.000	-0.000	-0.000
NC	.035	.035	.032	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3.026	30.000	99.000	530.000	1114.000	1516.000	1250.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	-0.000	675.000	-0.000	-0.000	-0.000	-0.000
GR	590.900	0.000	587.200	50.000	582.700	99.000	575.200	100.000	574.500	110.000
GR	573.600	120.000	572.400	140.000	572.600	160.000	572.300	180.000	573.400	200.000
GR	574.500	230.000	573.900	250.000	570.200	260.000	570.100	290.000	570.500	320.000
GR	570.600	350.000	570.900	360.000	575.700	380.000	575.500	410.000	573.700	440.000
GR	572.000	470.000	573.600	490.000	575.600	510.000	578.800	520.000	580.300	530.000
GR	582.700	534.000	583.700	600.000	590.300	700.000	595.000	750.000	600.000	790.000
X1	3.168	33.000	95.000	455.000	690.000	825.000	750.000	-0.000	-0.000	-0.000
GR	589.300	0.000	584.000	20.000	583.000	95.000	581.000	100.000	578.900	120.000
GR	575.300	130.000	572.300	140.000	572.000	150.000	571.200	160.000	571.600	170.000
GR	572.700	180.000	574.100	190.000	575.100	200.000	574.800	210.000	574.600	220.000
GR	570.000	230.000	570.000	330.000	573.000	340.000	572.900	350.000	572.800	360.000
GR	572.700	370.000	572.400	380.000	572.000	390.000	572.000	400.000	571.900	410.000
GR	573.100	420.000	579.400	430.000	580.000	450.000	583.000	455.000	585.000	630.000
GR	590.000	650.000	595.000	680.000	600.000	730.000	-0.000	-0.000	-0.000	-0.000
X1	3.221	30.000	165.000	495.000	270.000	280.000	280.000	-0.000	-0.000	-0.000
GR	589.300	0.000	584.000	20.000	583.000	165.000	581.000	170.000	579.100	180.000
GR	578.300	190.000	576.400	200.000	575.500	210.000	575.400	220.000	575.100	230.000
GR	574.800	240.000	574.500	250.000	574.300	260.000	574.200	270.000	574.000	280.000
GR	570.000	290.000	570.000	390.000	572.100	400.000	571.900	410.000	571.700	420.000
GR	571.500	430.000	571.000	440.000	571.200	450.000	578.400	460.000	580.000	490.000
GR	583.000	495.000	585.000	660.000	590.000	690.000	595.000	720.000	600.000	760.000
NH	6.000	.040	510.000	.070	760.000	.035	810.000	.032	1095.000	.040
NH	1220.000	.070	1440.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3.410	31.000	810.000	1095.000	940.000	1200.000	1000.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	200.000	-0.000	1255.000	-0.000	-0.000	-0.000	-0.000
GR	600.000	0.000	592.000	60.000	584.500	220.000	583.000	420.000	582.900	510.000
GR	582.800	620.000	583.200	760.000	583.400	810.000	580.100	520.000	577.900	630.000
GR	576.200	840.000	575.400	860.000	575.000	880.000	574.100	900.000	570.800	920.000
GR	569.700	940.000	570.000	960.000	570.000	980.000	569.600	1000.000	569.200	1020.000
GR	572.200	1040.000	572.200	1060.000	572.400	1070.000	575.900	1080.000	580.100	1090.000
GR	583.600	1095.000	583.400	1120.000	584.100	1220.000	590.400	1280.000	595.000	1310.000
GR	600.000	1440.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.060	395.000	.040	592.000	.034	870.000	.060	1900.000	-0.000

X1	3.656	32.000	592.000	870.000	1250.000	1350.000	1300.000	-0.000	-0.000	-0.000
GR	600.000	0.000	597.100	30.000	583.900	175.000	583.400	195.000	583.200	395.000
GR	583.400	495.000	583.500	592.000	580.400	595.000	578.200	601.000	573.100	615.000
GR	572.500	625.000	572.500	635.000	572.800	655.000	567.700	675.000	567.700	695.000
GR	567.500	715.000	567.700	735.000	567.000	755.000	568.000	775.000	573.000	795.000
GR	573.500	815.000	573.800	835.000	573.800	845.000	575.200	855.000	578.700	865.000
GR	580.400	868.000	582.400	870.000	584.600	910.000	584.500	995.000	584.400	1060.000
GR	596.400	1195.000	600.000	1900.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	6.000	.120	140.000	.034	405.000	.080	570.000	.060	750.000	.080
NH	930.000	.040	1245.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3.970	29.000	140.000	405.000	1690.000	1440.000	1655.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	20.000	-0.000	930.000	-0.000	-0.000	-0.000	-0.000
GR	600.000	0.000	597.900	20.000	595.000	45.000	585.000	135.000	583.200	140.000
GR	581.300	145.000	579.400	155.000	577.800	165.000	574.900	175.000	572.200	195.000
GR	568.600	215.000	568.800	235.000	568.600	255.000	567.900	275.000	567.500	295.000
GR	569.200	315.000	573.000	335.000	574.800	355.000	576.000	375.000	578.900	385.000
GR	580.200	395.000	581.300	400.000	583.600	405.000	584.400	545.000	584.200	570.000
GR	583.200	750.000	582.900	904.000	589.300	930.000	590.700	1245.000	-0.000	-0.000
NH	6.000	.080	70.000	.034	235.000	.200	265.000	.060	315.000	.200
NH	600.000	.040	1120.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.151	27.000	70.000	265.000	990.000	870.000	960.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	45.000	-0.000	1120.000	-0.000	-0.000	-0.000	-0.000
GR	600.000	0.000	598.000	20.000	595.000	45.000	581.000	70.000	574.900	80.000
GR	570.900	90.000	568.500	100.000	568.500	120.000	568.500	140.000	566.500	150.000
GR	568.500	170.000	568.500	180.000	568.500	200.000	571.900	210.000	574.000	220.000
GR	574.900	235.000	577.200	250.000	581.000	260.000	584.900	265.000	585.500	315.000
GR	586.300	385.000	585.700	600.000	585.400	765.000	585.600	935.000	585.700	1105.000
GR	589.300	1120.000	589.300	1200.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	6.000	.060	97.000	.034	225.000	.200	255.000	.060	300.000	.200
NH	690.000	.040	1035.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.340	32.000	97.000	255.000	1050.000	850.000	1000.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	49.000	-0.000	1035.000	-0.000	-0.000	-0.000	-0.000
GR	613.000	0.000	612.700	49.000	582.200	97.000	581.100	100.000	579.700	110.000
GR	569.200	120.000	568.900	130.000	568.300	140.000	568.600	150.000	569.000	160.000
GR	568.300	170.000	567.800	180.000	567.900	190.000	567.800	200.000	566.200	210.000
GR	569.900	225.000	572.500	230.000	575.600	240.000	580.700	250.000	586.300	255.000
GR	587.200	300.000	587.700	330.000	588.200	450.000	588.100	500.000	588.000	550.000
GR	588.000	690.000	587.600	750.000	586.800	850.000	586.000	1015.000	589.300	1035.000
GR	589.300	1150.000	589.300	1250.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	6.000	.060	497.000	.034	625.000	.200	655.000	.060	700.000	.200
NH	1070.000	.040	1400.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.369	48.000	497.000	655.000	160.000	100.000	150.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	450.000	-0.000	1400.000	-0.000	-0.000	-0.000	-0.000
GR	611.700	0.000	611.700	100.000	612.600	118.500	606.000	118.500	580.100	170.500
GR	579.900	172.000	576.700	176.000	574.000	180.000	571.400	190.000	574.600	200.000
GR	577.400	210.000	578.700	220.000	579.200	224.000	579.800	229.500	608.600	241.500
GR	612.600	281.500	612.600	300.000	612.800	400.000	612.700	450.000	582.200	497.000
GR	581.100	500.000	579.700	510.000	569.200	520.000	568.900	530.000	568.300	540.000
GR	568.600	550.000	569.000	560.000	568.300	570.000	567.800	580.000	567.900	590.000
GR	567.800	600.000	566.100	610.000	569.900	625.000	572.500	630.000	575.600	640.000
GR	580.700	650.000	586.300	655.000	587.200	700.000	587.700	730.000	588.200	750.000
GR	588.100	800.000	588.000	850.000	588.000	1010.000	587.600	1050.000	586.800	1250.000
GR	586.000	1380.000	589.300	1400.000	589.300	1550.000	-0.000	-0.000	-0.000	-0.000
NC	.060	.040	.036	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
QT	4.000	13760.000	18580.000	20480.000	24780.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.600	32.000	92.000	310.000	1350.000	810.000	1220.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	57.000	-0.000	910.000	-0.000	-0.000	-0.000	-0.000
GR	610.000	0.000	604.300	50.000	603.100	57.000	594.200	92.000	581.200	95.000
GR	579.300	110.000	569.300	120.000	567.900	130.000	565.400	140.000	565.100	150.000
GR	566.100	160.000	566.600	170.000	567.500	180.000	569.300	190.000	570.700	200.000

	GR	572.000	210.000	572.800	220.000	573.800	230.000	574.700	240.000	576.300	250.000
	GR	577.000	260.000	577.500	270.000	578.500	280.000	579.000	290.000	580.000	297.000
	GR	581.200	300.000	585.600	310.000	585.300	400.000	585.500	500.000	586.000	700.000
	GR	589.300	870.000	589.300	1100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	NH	5.000	.040	195.000	.036	450.000	.050	500.000	.200	600.000	.040
	NH	965.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	X1	4.651	29.000	195.000	450.000	360.000	155.000	265.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	50.000	-0.000	850.000	-0.000	-0.000	-0.000	-0.000
	GR	595.000	0.000	585.000	50.000	583.000	195.000	580.000	200.000	579.300	212.000
	GR	569.300	225.000	567.900	237.000	565.400	250.000	565.100	262.000	566.100	275.000
	GR	566.600	287.000	567.500	300.000	569.300	312.000	570.700	325.000	572.000	337.000
	GR	572.800	350.000	573.800	362.000	574.700	375.000	576.800	387.000	577.000	400.000
	GR	577.500	412.000	578.500	425.000	579.000	437.000	580.000	445.000	583.000	450.000
	GR	583.000	500.000	584.500	600.000	585.500	930.000	589.300	965.000	-0.000	-0.000
	NH	4.000	.070	805.000	.036	1025.000	.040	1060.000	.200	1515.000	-0.000
	X1	4.870	27.000	805.000	1025.000	1290.000	1030.000	1160.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	0.000	-0.000	1060.000	-0.000	-0.000	-0.000	-0.000
	GR	600.000	0.000	595.000	45.000	590.000	300.000	585.000	475.000	583.000	805.000
	GR	580.000	810.000	579.000	820.000	577.400	830.000	575.200	840.000	573.100	850.000
	GR	571.200	865.000	569.700	875.000	567.300	890.000	565.800	900.000	565.100	915.000
	GR	565.900	925.000	567.000	935.000	569.300	950.000	571.000	960.000	573.200	975.000
	GR	575.400	985.000	577.300	1000.000	579.000	1010.000	580.000	1020.000	583.000	1025.000
	GR	585.000	1060.000	585.000	1515.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	NC	.070	.070	.043	.300	.500	-0.000	-0.000	-0.000	-0.000	-0.000
	X1	5.041	30.000	1250.000	1402.000	620.000	950.000	900.000	-0.000	-0.000	-0.000
	GR	603.100	0.000	593.400	100.000	586.400	200.000	584.300	400.000	584.500	600.000
	GR	584.500	800.000	585.500	1000.000	586.100	1200.000	585.500	1250.000	581.000	1255.000
	GR	580.600	1260.000	579.000	1270.000	576.200	1280.000	574.600	1290.000	572.000	1300.000
	GR	570.600	1310.000	570.600	1320.000	568.900	1330.000	567.900	1340.000	568.200	1350.000
	GR	566.600	1360.000	564.800	1370.000	566.700	1380.000	571.900	1390.000	580.300	1397.000
	GR	581.500	1400.000	583.400	1402.000	593.200	1425.000	599.300	1450.000	602.200	1500.000
	NC	.070	.050	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	X1	5.249	25.000	250.000	395.000	825.000	850.000	1100.000	-0.000	-0.000	-0.000
	GR	600.000	0.000	595.000	30.000	590.000	70.000	585.000	110.000	583.900	250.000
	GR	582.700	253.000	574.300	260.000	569.100	270.000	567.200	280.000	569.000	290.000
	GR	570.600	300.000	570.200	310.000	571.300	320.000	573.000	330.000	573.000	340.000
	GR	574.400	350.000	577.000	360.000	578.600	370.000	581.400	380.000	583.000	390.000
	GR	583.400	395.000	585.000	475.000	590.000	1050.000	595.000	1100.000	600.000	1250.000
	NC	.030	.050	.036	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	X1	5.458	34.000	630.000	853.000	1075.000	875.000	1100.000	-0.000	-0.000	-0.000
	GR	600.000	0.000	595.000	40.000	590.000	60.000	585.000	120.000	585.000	400.000
	GR	585.900	630.000	580.900	635.000	579.700	640.000	576.700	650.000	573.300	660.000
	GR	572.600	670.000	572.900	680.000	572.400	690.000	572.800	700.000	571.600	710.000
	GR	571.100	720.000	571.200	730.000	570.600	740.000	570.500	750.000	570.300	760.000
	GR	570.600	770.000	569.800	780.000	569.600	790.000	569.700	800.000	569.500	810.000
	GR	569.500	820.000	573.400	830.000	578.000	840.000	579.900	847.000	580.900	850.000
	GR	582.600	853.000	590.000	980.000	595.000	1020.000	600.000	1050.000	-0.000	-0.000
	NC	.030	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	X1	5.666	40.000	980.000	1203.000	900.000	1200.000	1100.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	50.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	GR	590.000	0.000	590.000	0.000	586.000	100.000	585.200	200.000	585.600	300.000
	GR	586.000	400.000	584.100	500.000	585.000	600.000	584.900	700.000	584.400	800.000
	GR	586.300	900.000	587.500	980.000	582.500	985.000	581.300	990.000	576.300	1000.000
	GR	574.900	1010.000	574.200	1020.000	574.500	1030.000	574.000	1040.000	574.400	1050.000
	GR	573.200	1060.000	572.700	1070.000	572.800	1080.000	572.200	1090.000	572.100	1100.000
	GR	571.900	1110.000	572.200	1120.000	571.400	1130.000	571.200	1140.000	571.300	1150.000
	GR	571.100	1160.000	571.100	1170.000	575.000	1180.000	579.600	1190.000	581.500	1197.000
	GR	582.500	1200.000	584.200	1203.000	589.700	1250.000	597.500	1300.000	600.600	1337.000
	NC	.030	.050	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

X1	5.189	41.000	1480.000	1703.000	775.000	650.000	650.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	950.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	600.000	0.000	590.000	80.000	586.000	600.000	585.200	700.000	585.600	800.000
GR	586.000	900.000	584.100	1000.000	585.000	1100.000	584.900	1200.000	584.400	1300.000
GR	586.300	1400.000	584.900	1480.000	579.900	1485.000	578.700	1490.000	574.700	1500.000
GR	572.300	1510.000	571.600	1520.000	571.900	1530.000	571.400	1540.000	571.800	1550.000
GR	570.600	1560.000	570.100	1570.000	570.200	1580.000	569.600	1590.000	569.500	1600.000
GR	569.300	1610.000	569.600	1620.000	568.800	1630.000	568.600	1640.000	568.700	1650.000
GR	568.500	1660.000	568.500	1670.000	572.400	1680.000	577.000	1690.000	578.900	1697.000
GR	579.900	1700.000	581.600	1703.000	585.000	1780.000	590.000	1860.000	595.000	1900.000
GR	600.000	2070.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.050	.050	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	5.926	43.000	1080.000	1303.000	600.000	425.000	725.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	600.800	0.000	590.000	100.000	586.000	200.000	585.200	300.000	585.600	400.000
GR	586.000	500.000	584.100	600.000	585.000	700.000	584.900	800.000	584.400	900.000
GR	586.300	1000.000	583.400	1080.000	578.400	1083.000	577.400	1090.000	575.500	1100.000
GR	570.900	1110.000	567.000	1120.000	567.000	1130.000	567.200	1140.000	567.100	1150.000
GR	567.300	1160.000	568.100	1170.000	567.800	1180.000	568.000	1190.000	568.100	1200.000
GR	568.600	1210.000	569.100	1220.000	570.300	1230.000	569.900	1240.000	570.400	1250.000
GR	570.100	1260.000	570.800	1270.000	574.200	1280.000	577.200	1290.000	578.400	1300.000
GR	580.100	1303.000	585.600	1350.000	586.400	1450.000	584.200	1650.000	584.600	1850.000
GR	586.700	1950.000	594.800	2050.000	604.800	2150.000	-0.000	-0.000	-0.000	-0.000
NC	.070	.050	.047	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	6.059	30.000	92.000	225.000	800.000	325.000	700.000	-0.000	-0.000	-0.000
GR	610.200	0.000	603.700	15.000	584.800	63.000	582.300	92.000	580.900	95.000
GR	577.800	100.000	575.900	105.000	570.700	115.000	567.200	125.000	568.000	135.000
GR	565.800	145.000	566.200	155.000	566.400	165.000	565.600	175.000	565.600	185.000
GR	566.000	195.000	573.000	205.000	579.000	210.000	580.900	215.000	586.600	222.000
GR	587.900	225.000	586.200	295.000	587.200	495.000	586.300	695.000	586.400	895.000
GR	584.200	1095.000	584.600	1295.000	586.700	1395.000	594.800	1495.000	604.800	1595.000
NH	5.000	.070	175.000	.047	421.000	.050	1293.000	.040	1428.000	.050
NH	2250.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	6.192	62.000	162.000	421.000	550.000	975.000	700.000	-0.000	-0.000	-0.000
GR	601.800	0.000	594.100	78.000	587.800	162.000	582.800	175.000	580.900	178.000
GR	580.200	183.000	580.000	188.000	579.500	198.000	578.200	208.000	577.700	218.000
GR	576.600	228.000	576.000	238.000	575.600	248.000	575.300	258.000	575.200	268.000
GR	575.100	278.000	575.100	288.000	574.600	298.000	574.200	308.000	574.400	318.000
GR	574.200	328.000	573.300	338.000	572.900	348.000	573.200	358.000	572.200	368.000
GR	573.100	378.000	573.800	388.000	572.900	398.000	575.000	408.000	578.000	413.000
GR	580.900	418.000	588.200	421.000	587.100	478.000	585.900	678.000	586.100	878.000
GR	584.500	1078.000	586.000	1278.000	586.100	1288.000	580.700	1293.000	579.300	1298.000
GR	578.000	1308.000	577.600	1318.000	577.400	1328.000	577.100	1338.000	576.800	1348.000
GR	576.700	1358.000	576.500	1368.000	576.500	1378.000	576.100	1388.000	575.800	1398.000
GR	575.800	1408.000	577.200	1418.000	578.300	1423.000	580.700	1428.000	582.100	1433.000
GR	587.700	1445.000	587.100	1478.000	586.600	1578.000	588.200	1678.000	586.600	1778.000
GR	590.000	2150.000	600.000	2250.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	6.000	.090	502.000	.047	647.000	.050	1800.000	.110	2400.000	.040
NH	2570.000	.110	2725.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	6.367	54.000	502.000	647.000	775.000	2075.000	925.000	-0.000	-0.000	-0.000
GR	600.000	0.000	590.000	200.000	585.000	450.000	581.300	502.000	578.900	510.000
GR	578.400	515.000	576.900	525.000	571.600	535.000	571.400	545.000	568.400	555.000
GR	567.500	565.000	568.000	575.000	567.600	585.000	567.600	595.000	570.500	605.000
GR	571.100	615.000	573.500	625.000	574.900	635.000	576.700	640.000	581.300	645.000
GR	580.500	647.000	585.000	700.000	587.300	900.000	586.800	1100.000	586.100	1300.000
GR	585.900	1500.000	586.700	1700.000	587.400	1900.000	587.400	1900.000	587.500	2100.000
GR	587.500	2100.000	587.000	2200.000	587.200	2300.000	587.700	2377.000	582.200	2397.000
GR	580.800	2400.000	579.200	2410.000	578.100	2420.000	577.700	2430.000	577.300	2440.000
GR	576.100	2500.000	576.100	2510.000	576.200	2520.000	576.200	2530.000	576.300	2540.000
GR	576.700	2550.000	577.600	2560.000	578.600	2565.000	580.800	2570.000	581.500	2575.000
GR	588.100	2600.000	593.500	2650.000	597.900	2700.000	600.900	2725.000	-0.000	-0.000
NH	4.000	.070	0.000	.040	220.000	.110	1415.000	.030	2500.000	-0.000

X1	6.547	35.000	40.000	220.000	600.000	1950.000	950.000	-0.000	-0.000	-0.000
GR	610.400	0.000	607.300	15.000	593.700	40.000	583.000	63.000	580.900	65.000
GR	577.500	70.000	575.000	75.000	574.000	85.000	572.400	95.000	571.000	105.000
GR	571.100	115.000	569.700	125.000	569.200	135.000	572.000	145.000	572.100	155.000
GR	570.700	165.000	573.200	175.000	573.200	185.000	572.700	195.000	576.700	205.000
GR	579.000	210.000	580.900	215.000	587.100	220.000	587.300	415.000	586.800	615.000
GR	586.100	815.000	585.900	1015.000	586.700	1215.000	587.400	1415.000	588.100	1615.000
GR	587.900	1715.000	585.000	2350.000	585.000	2400.000	590.000	2450.000	600.000	2500.000
NC	.070	.030	.043	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	6.854	37.000	50.000	215.000	1775.000	625.000	1625.000	-0.000	-0.000	-0.000
GR	600.000	0.000	589.000	50.000	580.500	58.000	581.300	60.000	576.700	65.000
GR	574.900	70.000	573.500	80.000	571.100	90.000	570.500	100.000	567.600	110.000
GR	567.600	120.000	568.000	130.000	567.500	140.000	568.400	150.000	571.400	160.000
GR	571.600	170.000	576.900	180.000	578.400	190.000	578.900	195.000	581.300	203.000
GR	581.300	205.000	588.700	215.000	590.000	400.000	590.000	550.000	587.300	800.000
GR	586.800	1000.000	586.100	1200.000	585.900	1400.000	586.700	1600.000	587.400	1800.000
GR	588.100	2000.000	587.900	2100.000	587.200	2200.000	585.500	2300.000	587.500	2400.000
GR	592.200	2500.000	601.600	2600.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.110	400.000	.050	1460.000	.043	1625.000	.050	2315.000	-0.000
X1	7.191	46.000	1460.000	1625.000	1025.000	1125.000	1775.000	-0.000	-0.000	-0.000
GR	600.700	0.000	599.000	15.000	595.000	45.000	585.700	65.000	583.900	75.000
GR	584.000	215.000	585.900	225.000	589.900	265.000	590.100	315.000	589.600	340.000
GR	585.800	355.000	583.800	415.000	585.600	545.000	589.200	580.000	589.200	615.000
GR	588.600	815.000	588.500	1015.000	589.500	1215.000	589.200	1415.000	588.700	1450.000
GR	581.300	1470.000	581.300	1472.000	578.900	1480.000	578.400	1485.000	576.900	1495.000
GR	571.600	1505.000	571.400	1515.000	568.400	1525.000	567.500	1535.000	568.000	1545.000
GR	567.600	1555.000	567.600	1565.000	570.500	1575.000	571.100	1585.000	573.500	1595.000
GR	574.900	1605.000	576.700	1610.000	581.300	1615.000	580.500	1617.000	589.000	1625.000
GR	589.600	1715.000	587.200	1915.000	585.500	2015.000	587.500	2115.000	592.200	2215.000
GR	601.600	2315.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.070	287.000	.036	469.000	.050	600.000	1.500	1500.000	.200
NH	2350.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.508	39.000	287.000	469.000	1325.000	1300.000	1675.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	150.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	603.000	0.000	596.500	25.000	589.500	100.000	590.600	200.000	590.900	225.000
GR	586.200	287.000	581.600	297.000	581.200	300.000	579.300	305.000	578.500	310.000
GR	575.300	320.000	573.300	330.000	573.300	340.000	573.300	350.000	573.000	360.000
GR	573.700	370.000	573.200	380.000	573.400	390.000	573.300	400.000	572.800	410.000
GR	572.300	420.000	575.300	430.000	575.800	440.000	577.300	450.000	578.800	455.000
GR	581.200	460.000	581.000	463.000	589.900	469.000	590.900	500.000	592.000	700.000
GR	593.500	900.000	593.800	1100.000	594.300	1300.000	590.300	1500.000	586.000	1700.000
GR	584.800	1800.000	585.000	2200.000	590.000	2250.000	600.000	2350.000	-0.000	-0.000
NC	.070	.050	.043	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.745	35.000	587.000	769.000	1200.000	1550.000	1250.000	-0.000	-0.000	-0.000
GR	600.000	0.000	595.000	50.000	590.000	360.000	585.000	560.000	582.600	587.000
GR	578.000	597.000	577.600	600.000	575.700	605.000	574.900	610.000	571.700	620.000
GR	569.700	630.000	569.700	640.000	569.700	650.000	569.400	660.000	570.100	670.000
GR	569.600	680.000	569.800	690.000	569.700	700.000	569.200	710.000	568.700	720.000
GR	571.700	730.000	572.200	740.000	573.700	750.000	575.200	755.000	577.600	760.000
GR	577.400	763.000	586.300	769.000	590.000	800.000	595.000	1000.000	595.000	1150.000
GR	590.000	1800.000	585.000	1900.000	590.000	2000.000	595.000	2100.000	600.000	2150.000
X1	7.986	36.000	1025.000	1207.000	625.000	950.000	1275.000	-0.000	-0.000	-0.000
GR	608.600	0.000	599.500	50.000	591.500	150.000	591.300	250.000	592.100	350.000
GR	591.300	550.000	591.600	750.000	590.300	950.000	591.100	1025.000	581.600	1047.000
GR	581.500	1050.000	579.800	1055.000	578.600	1060.000	576.600	1070.000	576.100	1090.000
GR	575.900	1090.000	575.400	1100.000	574.600	1110.000	573.600	1120.000	572.100	1130.000
GR	569.600	1140.000	569.300	1150.000	567.600	1160.000	568.400	1170.000	570.600	1190.000
GR	577.600	1190.000	579.600	1195.000	581.500	1200.000	583.600	1204.000	590.600	1207.000
GR	589.400	1250.000	589.500	1350.000	592.000	1450.000	591.600	1530.000	594.000	1550.000
GR	600.200	1585.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

NM	4.000	.050	46.000	.043	203.000	.050	1107.000	.110	1485.000	-0.000
X1	8.204	29.000	46.000	203.000	825.000	750.000	1150.000	-0.000	-0.000	-0.000
GR	600.000	0.000	585.700	46.000	583.600	50.000	581.700	55.000	579.700	60.000
GR	572.700	70.000	570.500	80.000	569.700	90.000	571.400	100.000	571.700	110.000
GR	574.200	120.000	575.700	130.000	576.700	140.000	577.500	150.000	578.000	160.000
GR	578.200	170.000	578.700	180.000	580.700	190.000	581.900	195.000	583.600	200.000
GR	583.700	203.000	590.000	700.000	590.800	1107.000	589.400	1150.000	589.500	1250.000
GR	592.000	1350.000	591.600	1430.000	594.000	1450.000	600.200	1485.000	-0.000	-0.000
NC	.050	.050	.040	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	8.422	32.000	382.000	555.000	1125.000	850.000	1150.000	-0.000	-0.000	-0.000
GR	611.500	0.000	591.900	100.000	588.300	140.000	589.000	200.000	591.200	300.000
GR	590.800	382.000	581.600	398.000	581.900	400.000	578.700	405.000	574.000	410.000
GR	573.500	420.000	572.400	430.000	573.000	440.000	573.000	450.000	572.700	460.000
GR	571.700	470.000	572.200	480.000	574.300	490.000	573.700	500.000	573.500	510.000
GR	575.100	520.000	575.700	530.000	578.700	540.000	581.900	545.000	582.900	547.000
GR	591.200	555.000	588.900	600.000	587.200	800.000	590.900	1000.000	593.100	1170.000
GR	596.100	1200.000	599.800	1235.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	8.540	32.000	382.000	555.000	625.000	600.000	625.000	-0.000	-0.000	-0.000
GR	611.500	0.000	591.900	100.000	590.000	140.000	590.000	200.000	591.200	300.000
GR	590.800	382.000	581.600	398.000	581.900	400.000	578.700	405.000	574.000	410.000
GR	573.500	420.000	572.400	430.000	573.000	440.000	573.000	450.000	572.700	460.000
GR	571.700	470.000	572.200	480.000	574.300	490.000	573.700	500.000	573.500	510.000
GR	575.100	520.000	575.700	530.000	578.700	540.000	581.900	545.000	582.900	547.000
GR	591.200	555.000	590.000	900.000	590.000	1000.000	590.900	1300.000	593.100	1470.000
GR	596.100	1500.000	599.800	1535.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	8.682	30.000	345.000	555.000	750.000	675.000	750.000	-0.000	-0.000	-0.000
GR	630.000	0.000	630.000	200.000	625.000	250.000	600.000	300.000	595.000	320.000
GR	591.500	345.000	583.800	363.000	581.800	365.000	577.900	370.000	571.900	375.000
GR	571.600	380.000	572.600	390.000	573.900	400.000	574.000	410.000	574.000	420.000
GR	574.200	430.000	574.400	440.000	574.400	450.000	574.600	460.000	574.100	470.000
GR	574.600	480.000	574.900	490.000	576.900	500.000	578.900	505.000	581.800	510.000
GR	582.000	513.000	584.900	517.000	592.800	555.000	595.000	1400.000	600.000	1450.000
NC	.050	.070	.040	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.050	.050	.036	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	8.919	34.000	345.000	555.000	1175.000	1200.000	1250.000	.986	-0.000	-0.000
GR	600.900	0.000	599.200	10.000	591.800	110.000	591.500	210.000	591.700	310.000
GR	591.500	345.000	583.800	363.000	581.800	365.000	577.900	370.000	571.900	375.000
GR	571.600	380.000	572.600	390.000	573.900	400.000	574.000	410.000	574.000	420.000
GR	574.200	430.000	574.400	440.000	574.400	450.000	574.600	460.000	574.100	470.000
GR	574.600	480.000	574.900	490.000	576.900	500.000	578.900	505.000	581.800	510.000
GR	582.000	513.000	584.900	517.000	592.800	555.000	594.500	610.000	594.500	710.000
GR	591.400	740.000	594.700	810.000	595.200	910.000	600.000	980.000	-0.000	-0.000
X1	9.397	27.000	45.000	255.000	2450.000	2200.000	2525.000	-0.000	-0.000	-0.000
GR	605.000	0.000	592.100	45.000	584.400	63.000	582.400	65.000	578.500	70.000
GR	572.500	75.000	572.200	80.000	573.200	90.000	574.500	100.000	574.600	110.000
GR	574.600	120.000	574.800	130.000	575.000	140.000	575.000	150.000	575.200	160.000
GR	574.700	170.000	575.200	180.000	575.500	190.000	577.500	200.000	579.500	205.000
GR	582.400	210.000	582.600	213.000	585.500	217.000	593.400	955.000	595.000	450.000
GR	595.000	800.000	605.000	910.000	-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

CCHV= .300 CEHV= .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

A=ACTUAL FIELD CROSS SECTION

R=REPEATED CROSS SECTION

M=MANUFACTURED CROSS SECTION

I=INTERPOLATED CROSS SECTION

COE=CORPS OF ENGINEERS' SOUNDINGS

LE=ENCROACHMENT IN LEFT OVERBANK FOR---

RE=ENCROACHMENT IN RIGHT OVERBANK FOR---

A MOUTH OF BLACK RIVER---A									
.00	21.35	580.35	0.00	580.35	580.98	.63	0.00	0.00	579.90
18450.	0.	18450.	0.	0.	2900.	0.	0.	0.	549.40
0.00	.27	6.36	0.00	.040	.027	.040	0.000	559.00	398.24
.000401	-0.	-0.	-0.	0	0	1	0.00	202.48	600.71
400' U/S OF MOUTH---R.001									
.08	22.72	580.62	0.00	0.00	581.15	.52	.14	.03	578.80
18450.	4.	18446.	0.	7.	3178.	0.	28.	2.	588.30
.02	.59	5.81	0.00	.040	.027	.040	.027	557.90	392.84
.000300	400.	400.	400.	2	0	1	0.00	210.04	602.88

OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 583.70 ELREA= 583.70

1' D/S OF C&O RAILROAD BRIDGE---R.091 SKEW-26									
.09	23.33	580.83	0.00	0.00	581.21	.37	.01	.05	585.60
18450.	0.	18450.	0.	0.	3765.	0.	32.	2.	585.60
.02	0.00	4.90	0.00	.040	.027	.040	.027	557.50	345.40
.000208	74.	49.	24.	2	0	1	0.00	234.33	579.73

NORMAL BRIDGE, NRD=20 MIN ELTRD= 582.50 MAX ELLC= 583.70

D/S FACE OF C&O RAILROAD BRIDGE---R.091 SKEW-26

.09	23.31	580.81	0.00	0.00	581.22	.41	.00	.02	585.60
18450.	0.	18450.	0.	0.	3585.	0.	32.	2.	585.60
.02	0.00	5.15	0.00	.040	.026	.040	.027	557.50	345.60
.000227	1.	1.	1.	1	0	1	-177.69	234.12	579.73

NORMAL BRIDGE,NRD=20 MIN ELTRD= 582.50 MAX ELLC= 583.70

B U/S FACE OF C&O RAILROAD BRIDGE---A SKEW-26

.09	23.32	580.82	0.00	0.00	581.23	.41	.01	.00	585.60
18450.	0.	18450.	0.	0.	3586.	0.	34.	2.	585.60
.02	0.00	5.14	0.00	.040	.026	.040	.027	557.50	345.47
.000227	28.	28.	28.	0	0	1	-177.76	234.26	579.73

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

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 583.70 ELREA= 583.70

1' U/S OF C&O RAILROAD BRIDGE---R.091 SKEW-26

.09	23.37	580.87	0.00	0.00	581.24	.37	.00	.01	585.60	
18450.	0.	18450.	0.	0.	3774.	0.	34.	2.	585.60	
.02	0.00	4.89	0.00	.030	.027	.020	.027	557.50	344.52	
.00208	1.	1.	1.	2	0	1	0.00	235.21	579.73	

50' U/S OF C&O RAILROAD BRIDGE---R.091

.10	23.38	580.88	0.00	0.00	581.25	.37	.01	.00	585.60	
18450.	0.	18450.	0.	0.	3777.	0.	39.	3.	585.60	
.03	0.00	4.89	0.00	.030	.027	.020	.027	557.50	344.28	
.00207	24.	49.	74.	0	0	1	0.00	235.44	579.73	

250' U/S OF C&O RAILROAD BRIDGE--M,COE

.14	23.46	580.86	0.00	0.00	581.36	.50	.04	.06	583.00	
18450.	0.	18450.	0.	0.	3266.	0.	55.	3.	583.00	
.04	0.00	5.65	0.00	.030	.027	.020	.027	557.40	32.16	
.00229	200.	200.	200.	2	0	1	0.00	157.69	189.84	

3470 ENCROACHMENT STATIONS= 1131.9 1262.8 TYPE= 1 TARGET= 119.000

400' U/S OF C&O RAILROAD BRIDGE---I LE---BOAT WELLS

.17	23.42	580.72	0.00	0.00	581.60	.87	.05	.19100000.00	
18450.	0.	18450.	0.	0.	2462.	0.	65.	4. 100000.00	
.04	0.00	7.49	0.00	.030	.027	.020	.027	557.30	1131.90
.000484	150.	150.	150.	2	0	1	0.00	130.65	1262.55

3470 ENCROACHMENT STATIONS= 1029.0 1148.0 TYPE= 1 TARGET= 119.000

C 610' U/S OF C&O RAILROAD BRIDGE---A LE---BOAT WELLS

.21	23.55	580.75	0.00	0.00	581.80	1.05	.11	.09100000.00	
18450.	0.	18450.	0.	0.	2243.	0.	76.	5. 100000.00	
.05	0.00	8.23	0.00	.030	.027	.020	.027	557.20	1029.00
.000597	230.	210.	225.	2	0	1	0.00	118.78	1147.78

3470 ENCROACHMENT STATIONS= 449.0 551.0 TYPE= 1 TARGET= 102.000

101' D/S OF MILITARY ST BRIDGE---R.333

.31	24.85	581.04	0.00	0.00	582.10	1.07	.30	.01100000.00	
18450.	0.	18450.	0.	0.	2226.	0.	103.	6. 100000.00	
.07	0.00	8.29	0.00	.020	.027	.020	.027	556.19	449.00
.000536	525.	525.	525.	0	0	1	0.00	102.00	551.00

.31	24.81	580.96	0.00	0.00	582.20	1.24	.01	.09100000.00	
18450.	0.	18450.	0.	0.	2066.	0.	104.	6. 100000.00	
.07	0.00	8.93	0.00	.020	.027	.020	.027	556.15	454.00
.000646	20.	20.	20.	2	0	1	0.00	92.00	546.00

3470 ENCROACHMENT STATIONS= 459.0 541.0 TYPE= 1 TARGET= 82.000

61' D/S OF MILITARY ST BRIDGE---R.333

.31	24.73	580.84	0.00	0.00	582.35	1.50	.01	.13100000.00	
18450.	0.	18450.	0.	0.	1876.	0.	105.	6. 100000.00	
.07	0.00	9.83	0.00	.020	.027	.020	.027	556.11	459.00
.000833	20.	20.	20.	2	0	1	0.00	82.00	541.00

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

3470 ENCROACHMENT STATIONS= 462.0 538.0 TYPE= 1 TARGET= 76.000

49' D/S OF MILITARY ST BRIDGE---R.333

.32	24.65	580.74	0.00	0.00	582.47	1.72	.01	.11100000.00	
18450.	0.	18450.	0.	0.	1751.	0.	105.	6. 100000.00	
.07	0.00	10.54	0.00	.020	.027	.020	.027	556.09	462.00
.000993	19.	12.	6.	2	0	1	0.00	76.00	538.00

3470 ENCROACHMENT STATIONS= 465.0 535.0 TYPE= 1 TARGET= 70.000

37' D/S OF MILITARY ST BRIDGE---R.333

.32	24.55	580.61	0.00	0.00	582.63	2.01	.01	.14100000.00	
18450.	0.	18450.	0.	0.	1621.	0.	106.	6. 100000.00	
.07	0.00	11.38	0.00	.020	.027	.020	.027	556.06	465.00
.001212	19.	12.	6.	2	0	1	0.00	70.00	535.00

3470 ENCROACHMENT STATIONS= 466.0 534.0 TYPE= 1 TARGET= 68.000

33' D/S OF MILITARY ST BRIDGE---R.333

.32	24.51	580.56	0.00	0.00	582.69	2.13	.01	.06100000.00	
18450.	0.	18450.	0.	0.	1576.	0.	106.	6. 100000.00	
.07	0.00	11.71	0.00	.020	.027	.020	.027	556.05	466.00
.001304	6.	4.	3.	2	0	1	0.00	68.00	534.00

3470 ENCROACHMENT STATIONS= 468.0 532.0 TYPE= 1 TARGET= 64.000
ELENCL= 584.30 ELENCR= 584.30

25' D/S OF MILITARY ST BRIDGE---R.333

.32	24.40	580.44	0.00	0.00	582.83	2.40	.01	.14	590.52
18450.	0.	18450.	0.	0.	1484.	0.	106.	6.	534.30
.07	0.00	12.43	0.00	.020	.024	.020	.027	556.04	468.00

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   18450.       0.   18450.       0.       0.    1487.       0.     107.       6.    584.30
      .07     0.00    12.41     0.00     .020     .024     .020     .027   556.00    468.00
  .001201      24.      24.      24.        0        0        1     0.00    64.00    532.00


NORMAL BRIDGE,NRD=13 MIN ELTRD=  590.60 MAX ELLC=  589.10

3470 ENCROACHMENT STATIONS=     468.0     532.0  TYPE=     1  TARGET=      64.000
 ELENCL=    584.30  ELENCR=    584.30

              D/S FACE OF MILITARY ST BRIDGE---R.333

      .33    24.48   580.48     0.00     0.00   582.87     2.39      .00      .00   590.82
   18450.       0.   18450.       0.       0.    1487.       0.     107.       6.    584.30
      .07     0.00    12.40     0.00     .020     .024     .020     .027   556.00    468.00
  .001200       1.       1.       1.        1        0        1     0.00    64.00    532.00


NORMAL BRIDGE,NRD=13 MIN ELTRD=  590.60 MAX ELLC=  589.10

3470 ENCROACHMENT STATIONS=     468.0     532.0  TYPE=     1  TARGET=      64.000
 ELENCL=    584.30  ELENCR=    584.30

          D   U/S FACE OF MILITARY ST BRIDGE---A

      .33    24.56   580.56     0.00     0.00   582.93     2.37      .05      .01   590.82
   18450.       0.   18450.       0.       0.    1493.       0.     109.       6.    584.30
      .07     0.00    12.36     0.00     .020     .024     .020     .027   556.00    468.00
  .001188      46.      46.      46.        2        0        1     0.00    64.00    532.00


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


3470 ENCROACHMENT STATIONS=     468.0     532.0  TYPE=     1  TARGET=      64.000
 ELENCL=    584.30  ELENCR=    584.30
      .33    24.56   580.56     0.00     0.00   582.93     2.37      .00      .00   590.82
   18450.       0.   18450.       0.       0.    1493.       0.     109.       6.    584.30
      .07     0.00    12.36     0.00     .020     .024     .020     .027   556.00    468.00
  .001188       1.       1.       1.        0        0        1     0.00    64.00    532.00


3470 ENCROACHMENT STATIONS=     468.0     532.0  TYPE=     1  TARGET=      64.000
 ELENCL=    584.30  ELENCR=    584.30

              20' U/S OF MILITARY ST BRIDGE---R.333

      .34    24.55   580.58     0.00     0.00   582.95     2.37      .02      .00   590.82
   18450.       0.   18450.       0.       0.    1494.       0.     109.       6.    584.30
      .07     0.00    12.35     0.00     .020     .024     .020     .027   556.03    468.00
  .001186      19.      19.      19.        0        0        1     0.00    64.00    532.00
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21' U/S OF MILITARY ST BRIDGE---R.333

.34	24.77	580.81	0.00	0.00	583.00	2.20	.00	.05	100000.00
18450.	0.	18450.	0.	0.	1551.	0.	109.	6.	100000.00
.07	0.00	11.90	0.00	.020	.027	.020	.026	556.04	467.00
.001358	1.	1.	1.	2	0	1	0.00	66.00	533.00

3470 ENCROACHMENT STATIONS= 465.0 535.0 TYPE= 1 TARGET= 70.000

23' U/S OF MILITARY ST BRIDGE---R.333

.34	25.13	581.17	0.00	0.00	583.09	1.92	.00	.09	100000.00
18450.	0.	18450.	0.	0.	1660.	0.	109.	6.	100000.00
.07	0.00	11.11	0.00	.020	.027	.020	.026	556.04	465.00
.001133	2.	2.	2.	2	0	1	0.00	70.00	535.00

3470 ENCROACHMENT STATIONS= 462.0 538.0 TYPE= 1 TARGET= 76.000

26' U/S OF MILITARY ST BRIDGE---R.333

.34	25.54	581.59	0.00	0.00	583.19	1.60	.00	.09	100000.00
18450.	0.	18450.	0.	0.	1816.	0.	109.	6.	100000.00
.07	0.00	10.16	0.00	.020	.027	.020	.026	556.05	462.00
.000897	3.	3.	3.	2	0	1	0.00	76.00	539.00

3470 ENCROACHMENT STATIONS= 457.0 543.0 TYPE= 1 TARGET= 86.000

31' U/S OF MILITARY ST BRIDGE---R.333

.34	25.99	582.05	0.00	0.00	583.30	1.25	.00	.11	100000.00
18450.	0.	18450.	0.	0.	2056.	0.	110.	6.	100000.00
.07	0.00	8.98	0.00	.020	.027	.020	.026	556.06	457.00
.000647	5.	5.	5.	2	0	1	0.00	86.00	543.00

3470 ENCROACHMENT STATIONS= 451.0 549.0 TYPE= 1 TARGET= 98.000

37' U/S OF MILITARY ST BRIDGE---R.333

.34	26.31	582.38	0.00	0.00	583.38	1.00	.00	.08	100000.00
18450.	0.	18450.	0.	0.	2302.	0.	110.	6.	100000.00
.07	0.00	8.01	0.00	.020	.027	.020	.026	556.07	451.00
.000481	6.	6.	6.	2	0	1	0.00	98.00	549.00

3470 ENCROACHMENT STATIONS= 441.0 559.0 TYPE= 1 TARGET= 118.000

47' U/S OF MILITARY ST BRIDGE---R.333

.34	26.60	582.68	0.00	0.00	583.45	.77	.00	.07	100000.00
18450.	0.	18450.	0.	0.	2617.	0.	111.	6.	100000.00
.07	0.00	7.05	0.00	.020	.027	.020	.026	556.08	441.00
.000355	10.	10.	10.	2	0	1	0.00	118.00	559.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	XLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL					

E 233' U/S OF MILITARY ST BRIDGE---A

.38	26.59	582.99	0.00	0.00	583.56	.57	.06	.06	584.40
18450.	0.	18450.	0.	0.	3034.	0.	123.	7.	596.00
.08	0.00	6.08	0.00	.040	.027	.060	.026	556.40	299.00
.000254	186.	186.	186.	2	0	1	0.00	133.00	432.00

3470 ENCROACHMENT STATIONS= 442.3 554.8 TYPE= 1 TARGET= 112.500

57.5' D/S OF SEVENTH ST BRIDGE---R.494

.48	27.96	583.09	0.00	0.00	583.73	.64	.14	.03100000.00	
18450.	0.	18450.	0.	0.	2874.	0.	158.	8.	100000.00
.10	0.00	6.42	0.00	.030	.027	.030	.027	555.13	442.30
.000272	520.	520.	520.	2	0	1	0.00	112.50	554.80

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 450.0 547.0 TYPE= 1 TARGET= 97.000

26.5' D/S OF SEVENTH ST BRIDGE---R.494

.48	27.99	583.02	0.00	0.00	583.82	.81	.01	.08100000.00	
18450.	0.	18450.	0.	0.	2557.	0.	160.	8.	590.20
.10	0.00	7.22	0.00	.030	.022	.030	.027	555.03	450.00
.000148	31.	31.	31.	2	0	1	0.00	97.00	547.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 453.0 547.0 TYPE= 1 TARGET= 94.000
ELENCL= 584.00 ELENCR= 584.00

14.5' D/S OF SEVENTH ST BRIDGE---R.494

.48	28.00	583.00	0.00	0.00	583.85	.85	.00	.02	589.40
18450.	0.	18450.	0.	0.	2494.	0.	161.	8.	590.20
.10	0.00	7.40	0.00	.030	.022	.030	.027	555.00	453.00
.000154	12.	12.	12.	2	0	1	0.00	94.00	547.00

3470 ENCROACHMENT STATIONS= 453.0 547.0 TYPE= 1 TARGET= 94.000
ELENCL= 584.00 ELENCR= 584.00

.49	28.00	583.00	0.00	0.00	583.85	.85	.00	.00	589.40
18450.	0.	18450.	0.	0.	2494.	0.	161.	8.	590.20
.10	0.00	7.40	0.00	.030	.022	.030	.027	555.00	453.00
.000154	14.	14.	14.	0	0	1	0.00	94.00	547.00

NORMAL BRIDGE,NRD=16 MIN ELTRD= 593.20 MAX ELLC= 591.50

3470 ENCROACHMENT STATIONS= 453.0 547.0 TYPE= 1 TARGET= 94.000
ELENCL= 584.00 ELENCR= 584.00

D/S FACE OF SEVENTH ST BRIDGE---R.494

.49	28.00	583.00	0.00	0.00	583.85	.85	.00	.00	589.40
18450.	0.	18450.	0.	0.	2494.	0.	161.	8.	590.20
.10	0.00	7.40	0.00	.030	.022	.030	.027	555.00	453.00

NORMAL BRIDGE,NRD=16 MIN ELTRD= 593.20 MAX ELLC= 591.50

3470 ENCROACHMENT STATIONS= 453.0 547.0 TYPE= 1 TARGET= 94.000
ELENCL= 584.00 ELENCR= 584.00

F U/S FACE OF SEVENTH ST BRIDGE---A

.49	28.01	583.01	0.00	0.00	583.85	.85	.01	.00	589.40
18450.	0.	18450.	0.	0.	2494.	0.	164.	8.	590.20
.11	0.00	7.40	0.00	.030	.022	.030	.027	555.00	453.00
.000154	40.	40.	40.	0	0	1	0.00	94.00	547.00

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

3470 ENCROACHMENT STATIONS= 453.0 547.0 TYPE= 1 TARGET= 94.000
ELENCL= 584.00 ELENCR= 584.00

.50	28.01	583.01	0.00	0.00	583.86	.85	.00	.00	589.40
18450.	0.	18450.	0.	0.	2494.	0.	164.	8.	590.20
.11	0.00	7.40	0.00	.040	.022	.060	.027	555.00	453.00
.000258	1.	1.	1.	0	0	1	0.00	94.00	547.00

3470 ENCROACHMENT STATIONS= 453.0 547.0 TYPE= 1 TARGET= 94.000
ELENCL= 584.00 ELENCR= 584.00

14.5' U/S OF SEVENTH ST BRIDGE---R.494

.50	28.01	583.01	0.00	0.00	583.86	.85	.00	.00	589.40
18450.	0.	18450.	0.	0.	2495.	0.	164.	8.	590.20
.11	0.00	7.40	0.00	.040	.022	.060	.026	555.00	453.00
.000258	14.	14.	14.	0	0	1	0.00	94.00	547.00

3470 ENCROACHMENT STATIONS= 437.0 563.0 TYPE= 1 TARGET= 126.000
ELENCL= 584.50 ELENCR= 584.50

30.5' U/S OF SEVENTH ST BRIDGE---R.494

.50	28.29	583.43	0.00	0.00	583.96	.53	.00	.10	597.40
18450.	0.	18450.	0.	0.	3157.	0.	165.	9.	597.70
.11	0.00	5.84	0.00	.040	.027	.060	.026	555.14	437.00
.000216	16.	16.	16.	2	0	1	0.00	126.00	563.00

3470 ENCROACHMENT STATIONS= 139.0 400.0 TYPE= 1 TARGET= 261.000
ELENCL= 584.10 ELENCR= 584.30

G 766' U/S OF SEVENTH ST BRIDGE---A LE---BOAT WELLS

.64	22.02	583.62	0.00	0.00	584.22	.61	.23	.04	594.10
18450.	0.	18450.	0.	0.	2954.	0.	217.	11.	593.20
					227	.060	.027	561.60	139.00

3470 ENCROACHMENT STATIONS= 239.0 368.0 TYPE= 1 TARGET= 129.000
ELENCL= 583.90 ELENCR= 580.00

H 146' D/S OF TENTH ST BRIDGE---A LE---BOAT WELLS

.90	23.25	584.25	0.00	0.00	584.98	.73	.69	.06	597.50
18450.	0.	18450.	0.	0.	2693.	0.	307.	18.	607.00
.20	0.00	6.85	0.00	.040	.027	.060	.027	561.00	187.52
.000529	1390.	1380.	1360.	2	0	1	0.00	187.09	374.61

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 292.0 415.1 TYPE= 1 TARGET= 174.000
ELENCL= 584.30 ELENCR= 584.50

.93	25.33	584.23	0.00	0.00	585.10	.87	.05	.07	588.90
18450.	0.	18450.	0.	0.	2469.	0.	315.	18.	590.00
.20	0.00	7.47	0.00	.040	.024	.060	.027	558.90	292.03
.000275	270.	145.	50.	2	0	1	0.00	123.04	415.07

1490 NH CARD USED

NORMAL BRIDGE,NRD=17 MIN ELTRD= 597.20 MAX ELLC= 597.60

3470 ENCROACHMENT STATIONS= 292.0 415.1 TYPE= 1 TARGET= 174.000
ELENCL= 584.30 ELENCR= 584.50

D/S FACE OF TENTH ST BRIDGE---R.945 SKEW=45

.93	25.33	584.23	0.00	0.00	585.10	.87	.00	.00	588.90
18450.	0.	18450.	0.	0.	2469.	0.	315.	18.	590.00
.20	0.00	7.47	0.00	.040	.024	.060	.027	558.90	292.03
.000275	1.	1.	1.	0	0	1	0.00	123.04	415.07

1490 NH CARD USED

NORMAL BRIDGE,NRD=17 MIN ELTRD= 597.20 MAX ELLC= 597.60

3470 ENCROACHMENT STATIONS= 292.0 415.1 TYPE= 1 TARGET= 174.000
ELENCL= 584.30 ELENCR= 584.50

I U/S FACE OF TENTH ST BRIDGE---A SKEW=45

.95	25.36	584.26	0.00	0.00	585.12	.86	.02	.00	588.90
18450.	0.	18450.	0.	0.	2472.	0.	320.	19.	590.00
.20	0.00	7.46	0.00	.040	.022	.060	.027	558.90	292.03
.000233	82.	82.	82.	0	0	1	0.00	123.04	415.07

1490 NH CARD USED

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

3470 ENCROACHMENT STATIONS= [illegible] 292.0 [illegible]
ELENCL= 584.30 ELENCR= 584.50

.95	25.36	584.26	0.00	0.00	585.12	.86	.00	.00	588.90
18450.	0.	18450.	0.	0.	2472.	0.	320.	19.	590.00
.20	0.00	7.46	0.00	.040	.022	.060	.027	558.90	292.03
.000233	1.	1.	1.	0	0	1	0.00	123.04	415.07

3470 ENCROACHMENT STATIONS= 160.0 350.0 TYPE= 1 TARGET= 190.000
ELENCL= 584.30 ELENCR= 597.00

151' U/S OF TENTH ST BRIDGE---M,COE LE---BOAT WELLS

.97	28.95	584.79	0.00	0.00	585.28	.48	.04	.11	596.00
18450.	0.	18450.	0.	0.	3311.	0.	330.	19.	588.00
.21	0.00	5.57	0.00	.030	.027	.070	.027	555.84	115.00
.000303	53.	150.	253.	2	0	1	0.00	211.00	326.00

3470 ENCROACHMENT STATIONS= .0 221.0 TYPE= 1 TARGET= 220.999

J 1339' U/S OF TENTH ST BRIDGE---A RE---BUILDINGS

1.19	28.18	585.18	0.00	0.00	585.59	.41	.29	.02100000.00	
18450.	0.	18450.	0.	0.	3586.	0.	422.	25.	100000.00
.28	0.00	5.14	0.00	.060	.027	.060	.027	557.00	20.27
.000211	1360.	1170.	1110.	2	0	1	0.00	200.73	221.00

3470 ENCROACHMENT STATIONS= .0 210.0 TYPE= 1 TARGET= 209.999

K 150' D/S OF GT&W RAILROAD BRIDGE---A RE---BOAT HOUSE

1.54	30.85	585.55	0.00	0.00	585.97	.41	.37	.00	593.90
18450.	0.	18450.	0.	0.	3576.	0.	575.	33.	100000.00
.37	0.00	5.16	0.00	.035	.027	.035	.027	554.70	36.09
.000194	1740.	1850.	1920.	2	0	1	0.00	173.91	210.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 300.0 592.5 TYPE= 1 TARGET= 292.500

25' D/S OF GT&W RAILROAD BRIDGE---R1.576 RE---BOAT HOUSE

1.57	31.63	585.58	0.00	0.00	585.99	.41	.02	.00	586.40
18450.	0.	18450.	0.	0.	3598.	0.	585.	33.	100000.00
.38	0.00	5.13	0.00	.035	.028	.035	.027	553.95	401.09
.00142	125.	125.	125.	0	0	1	0.00	191.41	592.50

1490 NH CARD USED

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 300.0 592.5 TYPE= 1 TARGET= 292.500

15' D/S OF GT&W RAILROAD BRIDGE---R1.576 RE---BOAT HOUSE

1.57	31.66	585.55	0.00	0.00	586.02	.47	.00	.03	597.00
18450.	0.	18450.	0.	0.	3351.	0.	586.	33.	100000.00
.38	0.00	5.51	0.00	.035	.023	.035	.027	553.89	401.14
					0	1	0.00	179.36	592.50

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 300.0 592.5 TYPE= 1 TARGET= 292.500

10' D/S OF GT&W RAILROAD BRIDGE---R1.576 RE---BOAT HOUSE

1.57	31.67	585.53	0.00	0.00	586.04	.51	.00	.02	597.00
18450.	0.	18450.	0.	0.	3213.	0.	586.	33.	100000.00
.38	0.00	5.74	0.00	.060	.022	.060	.027	553.86	401.18
.000268	5.	5.	5.	2	0	1	0.00	170.32	592.50

3265 DIVIDED FLOW

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

3470 ENCROACHMENT STATIONS= 300.0 592.5 TYPE= 1 TARGET= 292.500

1.57	31.72	585.53	0.00	0.00	586.05	.51	.00	.00	597.00
18450.	0.	18450.	0.	0.	3214.	0.	587.	33.	100000.00
.38	0.00	5.74	0.00	.060	.022	.060	.027	553.81	401.18
.000268	9.	9.	9.	0	0	1	0.00	170.32	592.50

3265 DIVIDED FLOW

NORMAL BRIDGE,NRD=14 MIN ELTRD= 597.00 MAX ELLC= 592.00

3470 ENCROACHMENT STATIONS= 300.0 592.5 TYPE= 1 TARGET= 292.500

D/S FACE OF GT&W RAILROAD BRIDGE---R1.576 RE---BOAT HOUSE

1.57	31.73	585.53	0.00	0.00	586.05	.51	.00	.00	597.00
18450.	0.	18450.	0.	0.	3214.	0.	587.	33.	100000.00
.38	0.00	5.74	0.00	.060	.022	.060	.027	553.80	401.17
.000268	1.	1.	1.	0	0	1	0.00	170.32	592.50

3265 DIVIDED FLOW

NORMAL BRIDGE,NRD=14 MIN ELTRD= 597.00 MAX ELLC= 592.00

3470 ENCROACHMENT STATIONS= 300.0 592.5 TYPE= 1 TARGET= 292.500

L U/S FACE OF GT&W RAILROAD BRIDGE---A RE---BOAT HOUSE

1.58	31.74	585.54	0.00	0.00	586.05	.51	.01	.00	597.00
18450.	0.	18450.	0.	0.	3215.	0.	588.	33.	100000.00
.38	0.00	5.74	0.00	.060	.022	.060	.027	553.80	401.16
.000268	20	20	20	0	0	1	0.00	170.33	592.50

3470 ENCROACHMENT STATIONS= 300.0 592.5 TYPE= 1 TARGET= 292.500

15' U/S OF GT&W RAILROAD BRIDGE---R1.576 RE---BOAT HOUSE

1.58	31.71	585.60	0.00	0.00	586.07	.47	.00	.01	597.00
18450.	0.	18450.	0.	0.	3359.	0.	589.	33.	100000.00
.38	0.00	5.49	0.00	.060	.023	.060	.027	553.89	401.05
.000110	5.	5.	5.	2	0	1	0.00	179.45	592.50

1490 NH CARD USED

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

3470 ENCROACHMENT STATIONS= 300.0 597.5 TYPE= 1 TARGET= 297.500

20' U/S OF GT&W RAILROAD BRIDGE---R1.576

1.58	31.78	585.70	0.00	0.00	586.09	.39	.00	.02	586.40
18450.	0.	18450.	0.	0.	3696.	0.	590.	34.	100000.00
.38	0.00	4.99	0.00	.060	.028	.060	.027	553.92	400.84
.000136	5.	5.	5.	2	0	1	0.00	196.66	597.50

3470 ENCROACHMENT STATIONS= 90.0 385.0 TYPE= 1 TARGET= 295.000

M 2260' U/S OF GT&W RAILROAD BRIDGE---A

2.00	18.27	586.17	0.00	0.00	586.49	.32	.37	.02	584.10
18450.	4.	18390.	56.	6.	4062.	39.	790.	46.	550.10
.52	.70	4.53	1.44	.030	.028	.035	.027	567.90	93.36
.000208	2240.	2240.	2140.	2	0	1	0.00	291.64	385.00

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 3265 DIVIDED FLOW

 3470 ENCROACHMENT STATIONS=    300.0    592.5  TYPE=    1  TARGET=    292.500
      1.58     31.73    585.54      0.00      0.00    586.05       .51       .00       .00    597.00
  18450.        0.     18450.        0.        0.      3215.        0.       588.       33.  100000.00
       .38      0.00      5.74      0.00      .060      .022      .060      .027    553.81    401.16
  .000268        1.        1.        1.         0         0         1      0.00    170.34    592.50

 1490 NH CARD USED

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=    300.0    592.5  TYPE=    1  TARGET=    292.500

                10' U/S OF GT&W RAILROAD BRIDGE---R1.576   RE---BOAT HOUSE

      1.58     31.69    585.55      0.00      0.00    586.05       .51       .00       .00    597.00
  18450.        0.     18450.        0.        0.      3226.        0.       589.       33.  100000.00
       .38      0.00      5.72      0.00      .060      .022      .060      .027    553.86    401.16
  .000116        9.        9.        9.         0         0         1      0.00    170.34    592.50

 1490 NH CARD USED

 3265 DIVIDED FLO
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2950 U/S OF G.I.&W. RAILROAD BRIDGE---M,COE

2.14	18.11	586.31	0.00	0.00	586.63	.32	.14	.00	580.00
18450.	126.	18324.	0.	78.	4031.	0.	855.	51.	100000.00
.56	1.62	4.55	0.00	.030	.028	.035	.027	568.20	332.14
.000207	740.	690.	650.	2	0	1	0.00	296.61	628.75

3470 ENCROACHMENT STATIONS= 320.0 840.0 TYPE= 1 TARGET= 520.000

N 300' D/S OF I-94 BRIDGE---A

2.26	18.18	586.58	0.00	0.00	586.77	.20	.11	.04	100000.00
18450.	0.	18070.	380.	0.	5030.	425.	927.	57.	584.70
.62	0.00	3.59	.90	.035	.028	.035	.027	568.40	320.00
.000135	660.	650.	630.	2	0	1	0.00	520.00	640.00

3470 ENCROACHMENT STATIONS= 298.8 859.8 TYPE= 1 TARGET= 597.000

50' D/S OF I-94 BRIDGE---R2.328 SKEW-20

2.31	18.41	586.64	0.00	0.00	586.82	.18	.04	.00	588.60
18450.	0.	18450.	0.	0.	5384.	0.	958.	60.	100000.00
.64	0.00	3.43	0.00	.035	.028	.035	.027	568.23	301.47
.000206	220.	250.	280.	1	0	1	0.00	558.35	859.82

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 599.00 ELREA= 599.00

2.31	18.45	586.65	0.00	0.00	586.83	.18	.01	.00	588.60
18450.	0.	18450.	0.	0.	5413.	0.	964.	61.	587.20
.64	0.00	3.41	0.00	.035	.022	.035	.027	568.20	301.45
.000128	49.	49.	49.	1	0	1	0.00	571.34	872.79

NORMAL BRIDGE,NRD=43 MIN ELTRD= 606.88 MAX ELLC= 603.38

D/S FACE OF I-94 BRIDGE---R2.328 SKEW-20

2.32	18.40	586.60	0.00	0.00	586.87	.27	.00	.04	588.60
18450.	0.	18450.	0.	0.	4429.	0.	964.	61.	587.20
.64	0.00	4.17	0.00	.035	.022	.035	.027	568.20	301.50
.000250	1.	1.	1.	2	0	1	-961.70	571.15	872.65

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

NORMAL BRIDGE,NRD=43 MIN ELTRD= 606.88 MAX ELLC= 603.38

0 U/S FACE OF I-94 BRIDGE---A SKEW-20

2.33	18.42	586.62	0.00	0.00	586.89	.27	.02	.00	588.60
18450.	0.	18450.	0.	0.	4435.	0.	972.	62.	587.20
.65	0.00	4.16	0.00	.035	.022	.035	.027	568.20	301.48

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 599.00 ELREA= 599.00

2.33	18.54	586.74	0.00	0.00	586.92	.18	.00	.03	588.60
18450.	0.	18450.	0.	0.	5470.	0.	972.	62.	587.20
.65	0.00	3.37	0.00	.035	.022	.035	.027	568.20	301.32
.000124	1.	1.	1.	2	0	1	0.00	571.85	873.16

3470 ENCROACHMENT STATIONS= 298.8 902.1 TYPE= 1 TARGET= 642.000

50' U/S OF I-94 BRIDGE---R2.328 SKEW-20

2.34	18.53	586.75	0.00	0.00	586.93	.17	.01	.00	588.60
18450.	0.	18391.	59.	0.	5489.	64.	978.	62.	584.40
.65	0.00	3.35	.92	.035	.028	.040	.027	568.22	301.30
.000198	49.	49.	49.	0	0	1	0.00	600.80	902.10

3470 ENCROACHMENT STATIONS= 550.0 1160.0 TYPE= 1 TARGET= 610.000

P 1660' U/S OF I-94 BRIDGE---A

2.64	18.34	587.04	0.00	0.00	587.25	.21	.31	.02	581.80
18450.	233.	16490.	1727.	174.	4280.	1197.	1180.	84.	583.10
.77	1.34	3.85	1.44	.035	.030	.040	.027	568.70	550.00
.000186	1850.	1610.	1250.	2	0	1	0.00	610.00	1160.00

3470 ENCROACHMENT STATIONS= .0 420.0 TYPE= 1 TARGET= 419.999

2430' U/S OF I-94 BRIDGE---M,COE

2.79	17.95	587.18	0.00	0.00	587.38	.21	.13	.00	563.00
18450.	92.	18113.	246.	80.	4918.	221.	1279.	93.	583.00
.83	1.15	3.68	1.11	.035	.030	.040	.028	569.23	.00
.000157	686.	770.	934.	1	0	1	0.00	420.00	420.00

3470 ENCROACHMENT STATIONS= .0 675.0 TYPE= 1 TARGET= 674.999

Q 3680' U/S OF I-94 BRIDGE---A

3.03	17.35	587.45	0.00	0.00	587.58	.13	.17	.02	582.70
18450.	103.	17906.	441.	123.	6173.	411.	1451.	108.	580.30
.95	.83	2.90	1.07	.035	.032	.035	.028	570.10	46.64
.000115	1114.	1250.	1516.	2	0	1	0.00	610.17	656.80

4430' U/S OF I-94 BRIDGE---M,COE

3.17	17.53	587.53	0.00	0.00	587.69	.17	.10	.02	583.00
18450.	421.	17267.	762.	326.	5144.	630.	1562.	119.	533.00
1.02	1.29	3.36	1.21	.035	.032	.035	.028	570.00	6.68
.000154	690.	750.	825.	2	0	1	0.00	633.44	640.12

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

4710' U/S OF I-94 BRIDGE---M,COE

3.22	17.56	587.56	0.00	0.00	587.75	.19	.05	.01	583.00
18450.	893.	16745.	812.	614.	4597.	608.	1601.	123.	583.00
1.04	1.46	3.64	1.33	.035	.032	.035	.028	570.00	6.54
.000187	270.	280.	280.	0	0	1	0.00	668.96	675.40

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 200.0 1255.0 TYPE= 1 TARGET= 1055.000

R 5710' U/S OF I-94 BRIDGE---A

3.41	18.57	587.77	0.00	0.00	587.93	.17	.17	.01	583.40
18450.	2823.	14996.	631.	2725.	4178.	573.	1754.	144.	583.60
1.13	1.04	3.59	1.10	.049	.032	.041	.028	569.20	200.00
.000158	940.	1000.	1200.	2	0	1	0.00	1054.93	1254.93

1490 NH CARD USED

S 3765' D/S OF DIVERSION OF BLACK RIVER AND CANAL---A

3.66	20.97	587.97	0.00	0.00	588.13	.16	.19	.00	583.50
18450.	1991.	15934.	525.	2015.	4606.	769.	1973.	173.	582.40
1.25	.99	3.46	.68	.049	.034	.060	.029	567.00	130.33
.000143	1250.	1300.	1350.	2	0	1	0.00	969.30	1100.13

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 20.0 930.0 TYPE= 1 TARGET= 910.000

T 2110' D/S OF DIVERSION OF BLACK RIVER AND CANAL---A

3.97	20.71	588.21	0.00	0.00	588.44	.23	.28	.03	583.20
18450.	20.	16526.	1904.	67.	4103.	2349.	2231.	206.	583.60
1.37	.30	4.03	.81	.120	.034	.072	.029	567.50	106.14
.000202	1690.	1655.	1440.	0	0	1	0.00	819.41	925.56

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 45.0 1120.0 TYPE= 1 TARGET= 1075.000

1150' D/S OF DIVERSION OF BLACK RIVER AND CANAL---M,COE

4.15	19.90	588.40	0.00	0.00	588.73	.33	.24	.05	581.00
18450.	35.	16202.	2213.	49.	3287.	2293.	2360.	225.	564.90
1.43	.72	4.93	.97	.080	.036	.053	.029	568.50	56.79
.000315	990.	960.	870.	2	0	1	0.00	1059.44	1116.23

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 49.0 1035.0 TYPE= 1 TARGET= 986.000

U 150' D/S OF DIVERSION OF BLACK RIVER AND CANAL---A

4.34	22.46	588.66	0.00	0.00	589.26	.60	.40	.13	582.20
18450.	37.	17531.	882.	33.	2754.	942.	2462.	245.	586.30
1.47	1.12	6.36	.94	.060	.037	.048	.029	566.20	86.84
				1	0	1	0.00	944.23	1031.08

3470 ENCROACHMENT STATIONS= 450.0 1400.0 TYPE= 1 TARGET=

DIVERSION OF BLACK RIVER AND CANAL---R4.340

Corp of Engrs
Spillway D

4.37	22.66	588.76V	0.00	0.00	589.34	.58	.08	.00	582.20
18450.	37.	17451.	962.	33.	2772.	1013.	2474.	247.	586.30
1.48	1.11	6.29	.95	.060	.037	.049	.029	566.10	486.89
.000519	160.	150.	100.	2	0	1	0.00	909.83	1396.72

3280 CROSS SECTION 4.60 EXTENDED .30 FEET

3470 ENCROACHMENT STATIONS= 57.0 810.0 TYPE= 1 TARGET= 753.000

V 1220' U/S OF DIVERSION---A

4.60	24.50	589.60V	0.00	0.00	589.92	.32	.50	.08	584.20
20480.	22.	17327.	3130.	27.	3547.	1841.	2590.	265.	585.60
1.56	.83	4.89	1.70	.060	.036	.040	.030	565.10	82.00
.000356	1350.	1220.	810.	2	0	1	0.00	727.99	810.00

1490 NH CARD USED
3280 CROSS SECTION 4.65 EXTENDED .53 FEET

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

3470 ENCROACHMENT STATIONS= 50.0 850.0 TYPE= 1 TARGET= 800.000

1485' U/S OF DIVERSION---M,COE

4.65	24.73	589.83	0.00	0.00	590.02	.19	.06	.04	583.00
20480.	1360.	16643.	2476.	846.	4373.	2188.	2625.	268.	583.00
1.58	1.61	3.81	1.13	.040	.036	.055	.030	565.10	50.00
.000179	360.	265.	155.	2	0	1	0.00	800.00	850.00

1490 NH CARD USED
3280 CROSS SECTION 4.87 EXTENDED 5.03 FEET

3470 ENCROACHMENT STATIONS= .0 1060.0 TYPE= 1 TARGET= 1059.999

2645' U/S OF DIVERSION---M,COE

4.87	24.93	590.03	0.00	0.00	590.31	.28	.24	.05	583.00
20480.	2482.	17589.	409.	2432.	3859.	211.	2811.	289.	583.00
1.66	1.02	4.56	1.94	.070	.036	.040	.030	565.10	298.51
.000249	1290.	1160.	1030.	2	0	1	0.00	761.49	1060.00

CCHV= .300 CEHV= .500

W 3545' U/S OF DIVERSION---A

5.04	25.57	590.37	0.00	0.00	590.59	.23	.26	.02	585.50
20480.	7522.	12904.	54.	5696.	2753.	57.	2940.	305.	583.40

4645' U/S OF DIVERSION---M5.041

5.25	23.63	590.83	0.00	0.00	591.19	.36	.53	.07	583.90
20480.	1871.	13835.	4774.	1029.	2420.	2448.	3094.	328.	583.40
1.79	1.82	5.72	1.95	.070	.043	.050	.031	567.20	63.36
.000684	825.	1100.	850.	2	0	1	0.00	994.93	1058.30

5745' U/S OF DIVERSION---M5.666

5.46	21.90	591.40	0.00	0.00	591.53	.12	.27	.07	585.90
20480.	6344.	13486.	650.	3397.	4155.	655.	3262.	350.	582.60
1.89	1.87	3.25	.99	.030	.036	.050	.031	569.50	54.41
.000130	1075.	1100.	875.	1	0	1	0.00	936.77	991.18

3470 ENCROACHMENT STATIONS= 50.0 1337.0 TYPE= 1 TARGET= -50.000

X 6845' U/S OF DIVERSION---A

5.67	20.48	591.58	0.00	0.00	591.66	.08	.12	.01	587.50
20480.	9787.	10561.	132.	5731.	3838.	229.	3470.	374.	584.20
2.02	1.71	2.75	.58	.030	.036	.070	.032	571.10	50.00
.000104	900.	1100.	1200.	2	0	1	0.00	1212.04	1262.04

3470 ENCROACHMENT STATIONS= 950.0 2070.0 TYPE= 1 TARGET= -950.000

7495' U/S OF DIVERSION---M5.666

5.79	23.14	591.64	0.00	0.00	591.74	.10	.07	.01	584.90
20480.	6227.	13214.	1039.	3542.	4441.	984.	3623.	392.	581.60
2.10	1.76	2.98	1.06	.030	.036	.050	.032	568.50	950.00
.000100	775.	650.	650.	2	0	1	0.00	923.11	1873.11

3470 ENCROACHMENT STATIONS= 1000.0 2150.0 TYPE= 1 TARGET= -1000.000

8220' U/S OF DIVERSION---M5.666

5.93	24.70	591.70	0.00	0.00	591.82	.12	.07	.01	583.40
20480.	607.	15018.	4854.	548.	4698.	4484.	3754.	404.	580.10
2.17	1.11	3.20	1.08	.050	.036	.050	.032	567.00	1000.00
.000107	600.	725.	425.	0	0	1	0.00	1011.70	2011.70

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

Y 8920' U/S OF DIVERSION---A

6.06	26.20	591.80	0.00	0.00	591.91	.11	.09	.00	582.30
20480.	361.	9747.	10372.	302.	2797.	7011.	3865.	415.	587.90
2.23	1.20	3.49	1.48	.070	.047	.050	.032	565.60	45.22
.000234	800.	700.	325.	2	0	1	0.00	1412.77	1457.99

1490 NH CARD USED

Z 9620' U/S OF DIVERSION---A

6.19	19.81	592.01	0.00	0.00	592.05	.04	.12	.02	587.80
20480.	41.	8260.	12180.	118.	4135.	10496.	4119.	453.	588.20
2.39	.34	2.00	1.16	.070	.047	.046	.032	572.20	105.80
.000097	550.	700.	975.	2	0	1	0.00	2064.35	2170.15

1490 NH CARD USED

10545' U/S OF DIVERSION---M7.191

6.37	24.67	592.17	0.00	0.00	592.21	.04	.16	.00	581.30
20480.	853.	6539.	13088.	1684.	2888.	12659.	4761.	550.	580.50
2.71	.51	2.26	1.03	.090	.047	.053	.032	567.50	156.57
.000094	775.	925.	2075.	2	0	1	0.00	2481.14	2637.70

1490 NH CARD USED

AA 11495' U/S OF DIVERSION---A

6.55	23.12	592.32	0.00	0.00	592.37	.05	.16	.01	593.70
20480.	0.	8257.	12223.	0.	3066.	12441.	5400.	650.	587.10
2.97	0.00	2.69	.98	.090	.040	.050	.032	569.20	42.97
.000108	600.	950.	1950.	2	0	1	0.00	2418.63	2461.60

13120' U/S OF DIVERSION---M7.191

6.85	24.93	592.43	0.00	0.00	592.47	.04	.09	.01	589.00
20480.	7.	6254.	14219.	27.	3083.	11065.	5683.	689.	588.70
3.15	.26	2.03	1.29	.070	.043	.030	.033	567.50	34.41
.000076	1775.	1625.	625.	2	0	1	0.00	2468.03	2502.44

1490 NH CARD USED

AB 14895' U/S OF DIVERSION---A

7.19	25.05	592.55	0.00	0.00	592.66	.10	.16	.03	588.70
20480.	6851.	10631.	2999.	6687.	3103.	2618.	6065.	750.	589.00
3.32	1.02	3.43	1.15	.061	.043	.050	.034	567.50	50.27
.000185	1025.	1775.	1125.	0	0	1	0.00	2168.46	2218.73

1490 NH CARD USED

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 150.0 2350.0 TYPE= 1 TARGET= -150.000

AC 16570' U/S OF DIVERSION---A

7.51	20.51	592.81	0.00	0.00	593.21	.40	.41	.15	586.20
20480.	425.	17177.	2878.	440.	3108.	5693.	6417.	808.	589.90
3.41	.97	5.53	.51	.070	.036	.201	.034	572.30	150.00
.000396	1325.	1675.	1300.	2	0	1	0.00	1562.04	2278.12

3265 DIVIDED FLOW

17820' U/S OF DIVERSION---M7.508

7.75	24.77	593.47	0.00	0.00	593.67	.20	.40	.06	582.60
20480.	1885.	15757.	2838.	1827.	3882.	2501.	6694.	859.	586.30
3.52	1.03	4.06	1.14	.070	.043	.050	.035	568.70	145.01
.000247	1200.	1250.	1550.	2	0	1	0.00	1513.84	2069.35

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

AD 19095' U/S OF DIVERSION---A

7.99	26.20	593.80	0.00	0.00	594.15	.35	.41	.07	591.10
20480.	1926.	16887.	1667.	2178.	3262.	1080.	6867.	887.	590.80
3.59	.88	5.18	1.54	.070	.043	.050	.035	567.60	121.21
.000520	625.	1275.	950.	2	0	1	0.00	1427.14	1548.36

1490 NH CARD USED

20245' U/S OF DIVERSION---M7.986

8.20	24.74	594.44	0.00	0.00	594.57	.13	.36	.06	585.70
20480.	149.	10845.	9486.	123.	2848.	6712.	7036.	914.	583.70
3.70	1.22	3.81	1.41	.050	.043	.054	.035	569.70	17.89
.000249	825.	1150.	750.	2	0	1	0.00	1434.57	1452.47

AE 21395' U/S OF DIVERSION---A

8.42	22.98	594.68	0.00	0.00	594.88	.20	.28	.03	590.40
20480.	1874.	13698.	4907.	1325.	3220.	3131.	7231.	941.	591.20
3.78	1.41	4.25	1.57	.050	.040	.050	.035	571.70	85.80
.000288	1125.	1150.	850.	2	0	1	0.00	1100.04	1185.83

22020' U/S OF DIVERSION---M8.422

8.54	23.16	594.86	0.00	0.00	595.06	.20	.18	.00	590.80
20480.	1591.	13938.	4951.	1211.	3250.	3776.	7343.	959.	591.20
3.83	1.31	4.29	1.31	.050	.040	.050	.035	571.70	84.92
.000290	625.	625.	600.	1	0	1	0.00	1402.63	1487.55

22770' U/S OF DIVERSION---M8.919

8.68	23.42	595.02	0.00	0.00	595.51	.49	.30	.14	591.50
20480.	47.	19686.	747.	44.	3431.	944.	7448.	978.	592.80
3.87	1.07	5.74	.79	.050	.040	.050	.036	571.60	319.93
.000611	750.	750.	675.	2	0	1	0.00	1080.24	1400.17

AF -24020' U/S OF DIVERSION---A

8.92	24.16	595.76	0.00	0.00	596.14	.38	.60	.03	591.50
20480.	1535.	18403.	542.	1063.	3537.	590.	7584.	1005.	592.80
3.94	1.44	5.20	.92	.050	.036	.050	.036	571.60	55.73
.000385	1175.	1250.	1200.	2	0	1	0.00	849.55	905.28

26545' U/S OF DIVERSION---M8.919

9.40	24.51	596.71	0.00	0.00	597.12	.41	.97	.02	592.10
20480.	37.	19405.	1038.	37.	3661.	1104.	7866.	1049.	593.40
4.08	.99	5.30	.94	.050	.036	.050	.036	572.20	28.92
.000388	2450.	2525.	2200.	2	0	1	0.00	789.89	818.81

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**** 7000 SCOPE 2.1 LVL  221  02/05/77  12.00.12  03/09/77      77068

SYS DEVICES 819/ 4/PF FLS=200K FLL=764K MXS=160K MXL=457K MXB=457B

HH.MM.SS CPU SECOND ORIGIN
          10.47.07.MFA. ::    20PPU CBR73 B+W LYN ECS-2CPUS R.B 05.16
10.47.49 00000.019 MFZ.     -PTHJ053,T20,CP70.  PT HURON FIS
10.47.49 00000.020 JOB.     -CHARGE.810-0037-45-78-5553,JANDA,001,D,JANDA.
10.47.56 00000.062 JOB.     -ATTACH(HEC2,HEC2PROD,ID=MULLAN)
10.47.56 00000.067 MFZ.     PF254  CYCLE   1 ATTACHED FROM SN=SYSTEM
10.47.56 00000.068 LOD.     -HEC2(PL=99999).
10.47.57 00000.487 MFZ.       LD610 - FLS REQUIRED TO LOAD - 0025222 OU.COG
10.48.29 00000.497 MFZ.       LD603  EXECUTION INITIATED OS.EXP
10.48.29 00000.498 USR.      FORTRAN LIBRARY 217-MODIFIED 03/16/76
10.48.32 00002.532 USR.        STOP
10.48.32 00002.532 USR.       2.034 CP SECONDS EXECUTION TIME
10.48.32 00002.535 MFZ.       RM770 - MAXIMUM ACTIVE FILES                    3
10.48.32 00002.535 MFZ.       RM771 - OPEN/CLOSE CALLS                       16
10.48.32 00002.535 MFZ.       RM772 - DATA TRANSFER CALLS                 5,168
10.48.32 00002.535 MFZ.       RM773 - CONTROL/POSITIONING CALLS              12
10.48.32 00002.536 MFZ.       RM774 - BM DATA TRANSFER CALLS                391
10.48.32 00002.536 MFZ.       RM775 - BM CONTROL/POSITIONING CALLS           53
10.48.32 00002.536 MFZ.       RM776 - QUEUE MANAGER CALLS                    79
10.48.32 00002.536 MFZ.       RM777 - RECALL CALLS                           52
10.48.32 00002.536 MFZ.       BWMSG - NUMBER OF TAPES MOUNTED
10.48.32 00002.537 MFZ.       SRU                 3.021  SRU
10.48.32 00002.537 MFZ.       SCM               113.510  KWS
10.48.32 00002.537 MFZ.       I/O                 0.059  MW
10.48.32 00002.538 MFZ.       RMS                 0.069  MWS
10.48.32 00002.538 MFZ.       USER                1.639  SEC
10.48.32 00002.538 MFZ.       JOB                 2.540  SEC
10.48.32 00002.538 MFZ.       SC050 - 000021 SC/LC SWAPS
10.48.32 00002.538 MFZ.     PTHJOMK   PTHJOMK
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BLACK RIVER

City of Port Huron
and
Fort Gratiot Township
St. Clair County, Michigan

Hydraulic Analysis

Bibliography

SECNO Chart

Bridge Data

Gilbert M. Font, P.E., Project Manager

HYDRAULIC ANALYSIS

Introduction

The river being studied is the Black River in the City of Port Huron and the Township of Fort Gratiot, St. Clair County, Michigan. The hydraulic investigations include a reach that totals approximately 9.4 river miles, which extends from the mouth of Black River to Campbell Road, Fort Gratiot Township line.

The 10-, 50-, 100- and 500-year flood frequency flows used in this study have been approved by Michigan's Department of Natural Resources. These discharges were computed from a study of recording gages at Norman Road near Fargo, Michigan, and at Bricker Road (Mill Creek) near Avoca, Michigan.

Method of Analysis

The water-surface profiles were computed by the HEC-2 computer program developed by the U.S. Army Corps of Engineers.[1]

All bridges have been modeled according to the HEC Training Document No. 6, Application of the HEC-2 Bridge Routines.[2] The "normal bridge" routine was used for all the bridges.

The hydraulic model of the floodway was developed for the 100-year flow. The guidelines set forth on pages 18 through 21, in the HEC-2 Training Document No. 6,[3] were used to locate valley sections upstream and downstream of the bridges. If additional sections were found necessary within

this distance, the intermediate sections were encroached as appropriate. These same guidelines were used in modeling natural constrictions in the floodway.

The cross sections in this study originated from field surveys, Corps of Engineers' soundings and from topographic information from USGS maps. Some cross sections were developed from a combination of the above data; for example, 2.789, 3.168, 3.221, 4.651, 4.870.

Variables and Coefficients

The roughness coefficients (Manning's "n") were chosen after studying both aerial photographs and photographs taken during the field survey, from observations made in field inspection trips to the study area, and from descriptions given both in Chow[4] and in Water-Supply Paper No. 1849.[5] In general, the following range of values, indicative of summer conditions, was used:

Description	Manning's "n"
1. Channel	
a. U-shaped	.027 - 0.28
b. Dredged	.03 - .036
c. u/s of canal	.036 - See note below
d. Obstructions	.2 - .9

Note:

The roughness coefficient of the channel upstream of the canal was increased by a factor of 1.1, 1.2, or 1.3 if its degree of meandering within the floodway was, respectively, moderate, appreciable, or severe.

Description	Manning's "n"
2. Overbank	
a. Concrete and asphalt pavement	.012 - .015
b. Lawns	.03
b. Fields	.035 - .05
c. Scattered brush	.05 - .06
d. Light to medium brush and trees	.07
e. Medium to dense brush and trees	.08 - .09
f. Heavy stand of timber	.10 - .12
g. Obstructions on overbank	.2 - 1.5 high

The coefficients of contraction and expansion used were 0.3 and 0.5; these values fall between those suggested for gradual and abrupt transitions in HEC-2 Water Surface Profiles, page 2, Exhibit 2.

Starting Elevation

The initial water-surface elevation at the mouth of the Black River (580.35 USLS) is based on a Johnson & Anderson, Inc., study of the 10-, 50-, 100- and 500-year flood levels on the St. Clair River. This study has been approved by the Department of Natural Resources. It is the mean annual flood level (frequency of 50 percent) at the Black River gage.

Discussion

1. The City of Port Huron has several government bench marks which were established under the U.S. Geological Survey, U.S. Lake Survey of 1935 and recent International Great Lakes Datum of 1955. A city-wide bench mark system was tied to Lake Survey datum in 1968. The 1968 bench mark system consisted of 53 monuments with recorded elevations based on U.S. U.S. Lake Survey of 1935. The U.S.L.S. of 1935 datum was chosen because

it coincided with the datum used for utility and road construction. This same datum has been used in Fort Gratiot Township. To convert from USLS datum to USC&GS datum, subtract 0.48 ft.

2. The first four bridges encountered in the analysis of the Black River (Chesapeake & Ohio Railroad Bridges, section .091; Military Street Bridge, section .333; Seventh Street Bridge, section .494; and Tenth Street Bridge, section .939) are draw bridges that could be placed in an upright position should floods threaten to damage their superstructures. In this analysis, however, they have been coded as normal bridges. The water-surface elevations for the 100-year and 500-year flows are lower than the elevation of the bridge girders.

3. Military Street Bridge, Section .333 "D"

Upstream and downstream from this bridge there are protective wooden pilings extending 20 feet from the upstream face and 25 feet from the downstream face. They have protected this bridge from ocean-traveling ships which have navigated this river.

There is a large decrease in the unobstructed area (2226 ft.^{2}, section .305 to 1484 ft.^{2}, section .320) due to the bridge abutments being in the channel. Encroached cross sections have been added upstream and downstream from the bridge to show the continuity of flow.

4. Seventh Street Bridge, Section .494 "F"

Under the left side of the bridge there is a walkway that is 10 feet

wide and 7.5 feet high (with elevations from 584.0 to 591.5 feet). It has been incorporated into the BT points to allow flow through it in case the flood stage rises to more than the 584.0 foot elevation. The bridge's abutments are guarded by 4-foot wide protective wooden pilings. This structure was also built in the river channel, thus reducing the area of flow. Encroached cross sections were also added to show continuity of flow.

5. Tenth Street Bridge, Section .945

This bridge is skewed at 45° and has two 40-foot wide piers which are partially constructed in the channel. On the downstream side of the bridge, these two piers cause a partial blockage of the floodway and create two small backwater areas. To properly model the floodway, these two portions have been segregated with a high "n" coefficient for the backwater and with encroachments to the elevation 584.5 for the sheet piling which is located next to the 40-foot pier on the right, and to elevation 584.3 for the docks on the left.

There are six groups of protective wooden piles—two downstream, two upstream and two within the bridge (see plan view of this bridge). The three groups on the left and the three on the right are parallel to the river flow. Since they are only six feet in diameter, they comprise a very small percentage of the flow area. These have been incorporated into an equivalent "n" determined for the channel.

6. Grand Trunk Western Railroad Bridge, Section 1.576 L

There are two boat houses on the downstream side of this bridge, starting at station 592.5, that hinder flood flow under the right span. This area has been encroached. Could be washaway?

There are two 6-foot wide protective wooden pilings extending 15 feet from the upstream and downstream faces. These have been coded as part of the bridge piers.

7. Interstate 94 Bridge, Section 2.328 O

The top of the road elevation (ELTRD) is set 3.5 feet higher than the field notes show to account for the concrete safety wall separating opposing traffic. OK

Scott Street passes under the bridge on the left bank (sections 272 to 290).

The line delineating the floodway, downstream on the right, is from the right abutment to the spoil area 950 feet downstream from the bridge. The floodway contracts downstream of I-94 rather than expands. True by DNR Permit City Marina

8. Corps of Engineers' Dredging Project, Summer 1975

The U.S. Army Corps of Engineers dredged the channel of the Black River from 1600 feet downstream of I-94 (2.328) to 450 feet downstream of section 4.600. The material removed was located in four spoil areas:

Black River Canal

a. Area "A" 950 feet downstream of I-94 (2.328)

With a height of 589.3 feet and located on the right bank next to the channel, this area caused the floodway to contract downstream from the I-94 bridge, as mentioned above. Section 2.135 was added in this area. Cross sections 2.257, 2.305, and 2.314 were encroached at this line of contraction.

b. Area "B" 350 feet upstream of 2.643

This area is 100 feet from the right bank and has a height of 592.3 feet. Section 2.789 was added to incorporate the location of this area into the hydraulic analysis.

c. Area "C"

This area has two small subareas located 100 feet apart and respectively 120 and 180 feet, to the left, from the left bank. The first one is located 750 feet upstream of 3.026; cross section 3.168 incorporates it into the hydraulic analysis. The other is located 1030 feet upstream of 3.026; likewise, cross section 3.221 incorporates it into the hydraulic analysis. These cross sections have been encroached to show the partial contraction of the floodway caused by this area.

d. Area "D"

This spoil area starts on section 3.970 and affects upstream cross sections through 4.870 on the right overbanks. It is 2100 feet long, 250 feet wide, and has an elevation of 589.3 feet. All these cross sections have been encroached to reflect it location.

During the planning stage of the Corps' project, a preliminary HEC-2 analysis was made of the Black River (from 250 feet upstream of 2.643 to 500 feet upstream of 4.600) to determine whether or not the location of the spoil areas would increase the water-surface elevation of the 100-year flood. The findings were that it would not. This present study, which is more comprehensive and more extensive (from the mouth of the Black River to the western limit of Fort Gratiot Township—a reach of approximately 9.4 miles), has by its very nature made the prior Corps' study obsolete. OK

9. Obstructions near Ema-Rold Boat Company Building, Sections 4.340 and 4.369
At these two sections there are both high ground elevations and obstructions. Most of the flow is in the river channel and about 2.4 percent of it on the stretch of field between Spoil Area "D" and the Ema-Rold Boat Company building. The obstructed area is about 390 feet wide at section 4.340 and about 310 feet in section 4.369, and includes the following: boats in storage, Baker Airport buildings, and Ema-Rold Boat Company building. To differentiate this area from the floodway, it was given an "n" value of 0.2. This region of high roughness coefficient was extended downstream to section 4.151, having a width of 285 feet. The Black River Boat Club building is 300 feet upstream of 4.151 and is within the region mentioned above. Between 4.151 and 3.970 the floodway is unaffected by the upstream obstructions.

Sections 3.970, 4.151, 4.340, 4.369, 4.600, 4.651 and 4.870 have also been encroached to delineate Spoil Area "D."

10. High-Water Mark of May, 1943

As a result of an unusually heavy rain, record floods occurred in the Black River and adjacent basins on May 12-13, 1943. An article in the local newspaper (Times Herald) dated May 13, 1943, quotes Mr. Harold Baker, operator of Baker's Airport (approximately at section 4.340), having observed the Black River rise to 9.5 feet above normal, approximately 587.8 ft. (USLS), at 2 p.m. on May 12, 1943. This flood had a recurrence interval of approximately 30-50 years, based on analysis of gages in the region.

11. Spanish Harbour Apartments Permit to Robert Bennet?

A permit has been granted for the building of an apartment complex within a portion of the flood plain at sections 5.789 - 5.926. The complex will have a marina on the first 400-500 feet off the left bank, with the apartment buildings located between the marina and the river bluff. The floodway has been encroached at these two sections to reflect the future location of this complex.

12. Upper Reach of the Black River

A manufactured section, 7.745, was added between cross sections AC and AD in order to model for high ground on the right overbank. Because

of the relatively short reach of this high ground, it was decided that an island study was not warranted.

Several manufactured sections (5.249, 5.458, 5.789, 5.926, 6.367, 6.854, 7.745, 8.204, 8.540, 8.682 and 9.397) were added in the upper reach of the Black River Study in order to model constrictions, reduce reach lengths and better model the meandering channel.

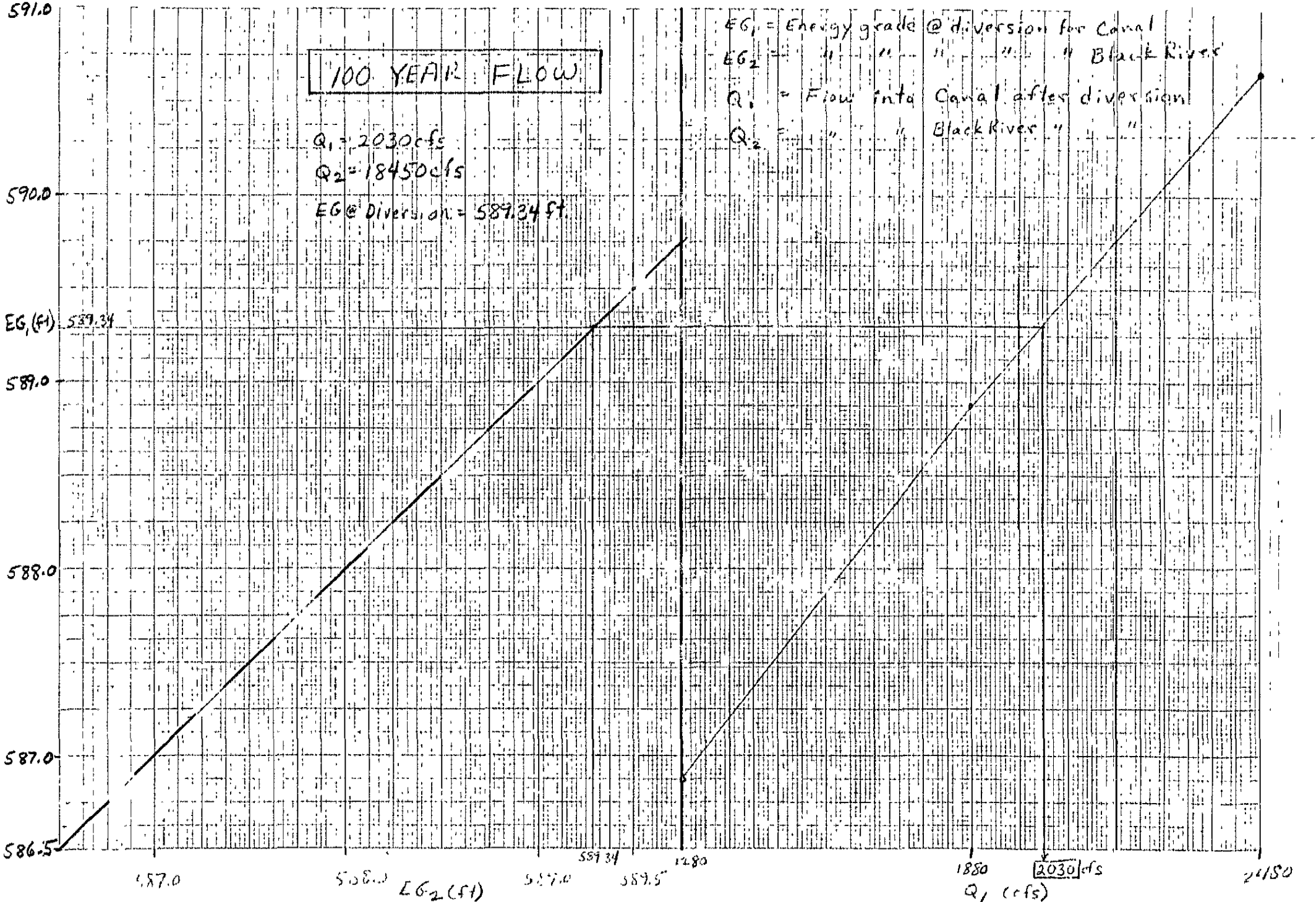
13. Floods and Ice James

Major floods can occur from either runoff or ice jams. Recent floods caused by runoff have occurred in 1904, 1942, 1943, 1947 and 1949. Likewise, recent floods caused by ice jams have occurred in 1934, 1964 and 1975.

14. Estimated Flows at the Diversion of the River and the Canal

The flows for the Black River and the Black River Canal at their diversion were approximated through the use of the island problem approach.[6] For each of the four flows, several assumed sets of discharges (Q_r [discharge in river] and Q_c [discharge in canal]) of different proportions were used in the backwater analyses. The resulting energy heads (H) of the river for each of the four flows were plotted against the same for the canal. Since the flow is divided, the two computed energy heads (H) at the diversion should be equal if the assumed diversion of flows was correct. Thus, the energy head (H) at the diversion corresponding to the correct division of flows could be obtained for the plotted curve

K+E 10 X 10 TO THE CENTIMETER
KEUFFEL & ESSER CO.



at which the curve is intersected by a dashed line bisecting the coordinate axes. The dashed line (a 45° line from origin of coordinate axes) represents the condition that the two energy heads (H) are equal. Concurrently, the computed energy head (H) at the diversion for the river was plotted against the discharge for the river. From this curve, the correct discharge for the river (Q_r) could be obtained for the correct energy head (H). The corresponding discharge for the channel (Q_c) was therefore equal to $Q_c = Q_t - Q_r$.

References

[1]U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, Users Manual, 1973.

[2]U.S. Army Corps of Engineers, Hydrologic Engineering Center, Application of HEC-2 Bridge Routines, 1974.

[3]Ibid.

[4]Chow, Ven Te, Open-Channel Hydraulics, pp. 101-123, McGraw-Hill, 1959.

[5]Geological Survey Water-Supply Paper No. 1849, Roughness Characteristics of Natural Channels, pp. 139-141, U.S. Government Printing Office (1967).

[6]Chow, op. cit., pp. 320-321.

City of Port Huron
and Fort Gratiot Township
St. Clair County, MI
5555-20 & 53

Black River

Cross Section	SECNO Miles	Location	
A	.001	Mouth of Black River	A
	.076	400' u/s of mouth	R .001
	.085	1' d/s of C&O RR bridge	R .091
	.086	d/s face of C&O RR bridge	R .091
B	.091	u/s face of C&O RR bridge	A
	.092	1' u/s of C&O RR bridge	R .091
	.100	50' u/s of C&O RR bridge	R .091
	.138	250' u/s of C&O RR bridge	M, COE
	.166	400' u/s of C&O RR bridge	I
C	.206	610' u/s of C&O RR bridge	A
	.305	101' d/s of Military Street bridge	R .333
	.309	81' d/s of Military Street bridge	R .333
	.313	61' d/s of Military Street bridge	R .333
	.315	49' d/s of Military Street bridge	R .333
	.318	37' d/s of Military Street bridge	R .333
	.319	33' d/s of Military Street bridge	R .333
	.320	25' d/s of Military Street bridge	R .333
	.324	1' d/s of Military Street bridge	R .333
	.325	d/s face of Military Street bridge	R .333
D	.333	u/s face of Military Street bridge	A

Cross Section	SECNO Miles	Location	
	.334	1' u/s of Military Street bridge	R .333
	.337	20' u/s of Military Street bridge	R .333
	.338	21' u/s of Military Street bridge	R .333
	.339	23' u/s of Military Street bridge	R .333
	.340	26' u/s of Military Street bridge	R .333
	.341	31' u/s of Military Street bridge	R .333
	.342	37' u/s of Military Street bridge	R .333
	.343	47' u/s of Military Street bridge	R .333
E	.377	233' u/s of Military Street bridge	A
	.476	57.5' d/s of Seventh Street bridge	R .494
	.482	26.5' d/s of Seventh Street bridge	R .494
	.484	14.5' d/s of Seventh Street bridge	R .494
	.487	1' d/s of Seventh Street bridge	R .494
	.488	d/s face of Seventh Street bridge	R .494
F	.494	u/s face of Seventh Street bridge	A
	.495	1' u/s of Seventh Street bridge	R .494
	.497	14.5' u/s of Seventh Street bridge	R .494
	.500	30.5' u/s of Seventh Street bridge	R .494
G	.639	766' u/s of Seventh Street bridge	A
H	.901	146' u/s of Seventh Street bridge	A
	.928	1' d/s of Tenth Street bridge	R .945
	.929	d/s face of Tenth Street bridge	R .945
I	.945	u/s face of Tenth Street bridge	A

Cross Section	SECNO Miles	Location	
	.946	1' u/s of Tenth Street bridge	R .945
	.973	151' u/s of Tenth Street bridge	M, COE
J	1.194	1339' u/s of Tenth Street bridge	A
K	1.543	150' d/s of GTW RR bridge	A
	1.567	25' d/s of GTW RR ridge	R 1.576
	1.569	15' d/s of GTW RR bridge	R 1.576
	1.570	10' d/s of GTW RR bridge	R 1.576
	1.572	1' d/s of GTW RR bridge	R 1.576
	1.573	d/s face GTW RR bridge	R 1.576
L	1.576	u/s face of GTW RR bridge	A
	1.577	1' u/s of GTW RR bridge	R 1.576
	1.578	10' u/s of GTW RR bridge	R 1.576
	1.579	15' u/s of GTW RR bridge	R 1.576
	1.580	20' u/s of GTW RR bridge	R 1.576
M	2.004	2260' u/s of GTW RR bridge	A
	2.135	2950' u/s of GTW RR bridge	M, COE
N	2.257	300' d/s of I-94 bridge	A
	2.305	50' d/s of I-94 bridge	R 2.328
	2.314	1' d/s of I-94 bridge	R 2.328
	2.315	d/s face of I-94 bridge	R 2.328
O	2.328	u/s face of I-94 bridge	A
	2.329	1' u/s of I-94 bridge	R 2.328
	2.338	50' u/s of I-94 bridge	R 2.328

Cross Section	SECNO Miles	Location	
P	2.643	166' u/s of I-94 bridge	A
	2.789	2430' u/s of I-94 bridge	M, COE
Q	3.026	3680' u/s of I-94 bridge	A
	3.168	4430' u/s of I-94 bridge	M, COE
	3.221	4710' u/s of I-94 bridge	M, COE
R	3.410	5710' u/s of I-94 bridge	A
S	3.656	3765' d/s of confluence of Black River and Canal	A
T	3.970	2110' d/s of confluence of Black River and Canal	A
	4.151	1150' d/s of confluence of Black River and Canal	M, COE
U	4.340	150' d/s of confluence of Black River and Canal	A
	4.369	Confluence of Black River and Canal	R 4.340
V	4.600	1220' u/s of Confluence	A
	4.651	1485' u/s of Confluence	M, COE
	4.870	2645' u/s of Confluence	M, COE
W	5.041	3545' u/s of Confluence	A
	5.249	4645' u/s of Confluence	R 5.041
	5.458	5745' u/s of Confluence	R 5.666
X	5.666	6845' u/s of Confluence	A
	5.789	7495' u/s of Confluence	R 5.666
	5.926	8220' u/s of Confluence	R 5.666
Y	6.059	8920' u/s of Confluence	A

Cross Section	SECNO Miles	Location	
Z	6.192	9620' u/s of Confluence	A
	6.367	10545' u/s of Confluence	R 7.191
AA	6.547	11495' u/s of Confluence	A
	6.854	13120' u/s of Confluence	R 7.191
AB	7.191	14895' u/s of Confluence	A
AC	7.508	16570' u/s of Confluence	A
	7.745	17820' u/s of Confluence	R 7.508
AD	7.986	19095' u/s of Confluence	A
	8.204	20245' u/s of Confluence	R 7.986
AE	8.422	21395' u/s of Confluence	A
	8.540	22020' u/s of Confluence	R 8.422
	8.682	22770' u/s of Confluence	R 8.919
AF	8.919	24020' u/s of Confluence	A
	9.397	26545' u/s of Confluence	R 8.919

A = Actual Field Cross Section

R = Repeated Cross Section

M = Manufactured Cross Section

I = Interpolated Cross Section

COE = Corps of Engineers' Soundings

Johnson & Anderson, Inc.
Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

Code No. 5555-53-2

Job Name: PORT HURON F I S		By: J. KAPELCZAK
Date: JAN 29-1976	Feature: STEEL R.R. DRAW BRIDGE	Water Course: BLACK RIVER
Remarks:		

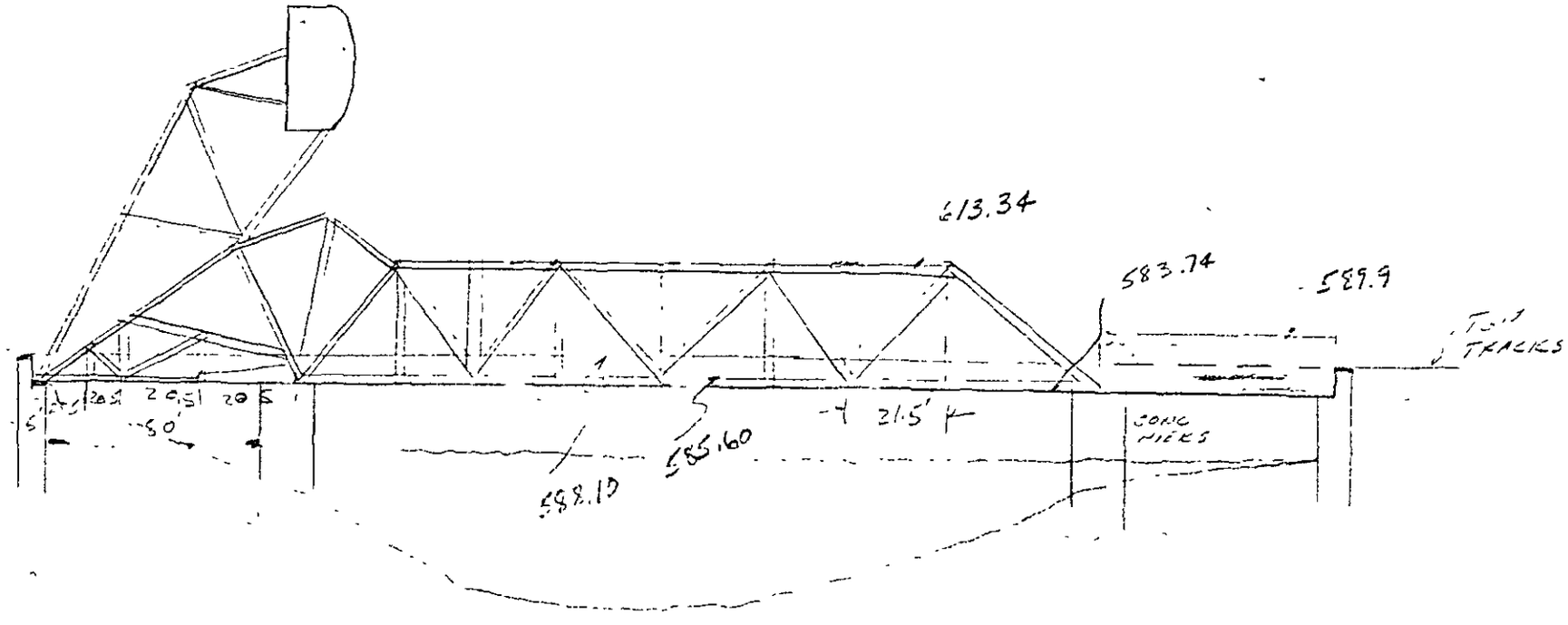
C & O RAILROAD BRIDGE

Sta To	25 L	26 R	27 U	28 D	29 U S F	30 D S F

Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation: 580.43	Length:	Width of Deck:	Skew: NONE

FIELD SKETCH

Profile View



Plan View

SHT 1 OF 2 SHTS

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Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

BS#2

Code No. _____

Job Name:		By:
Date:	Feature:	Water Course:
Remarks:		

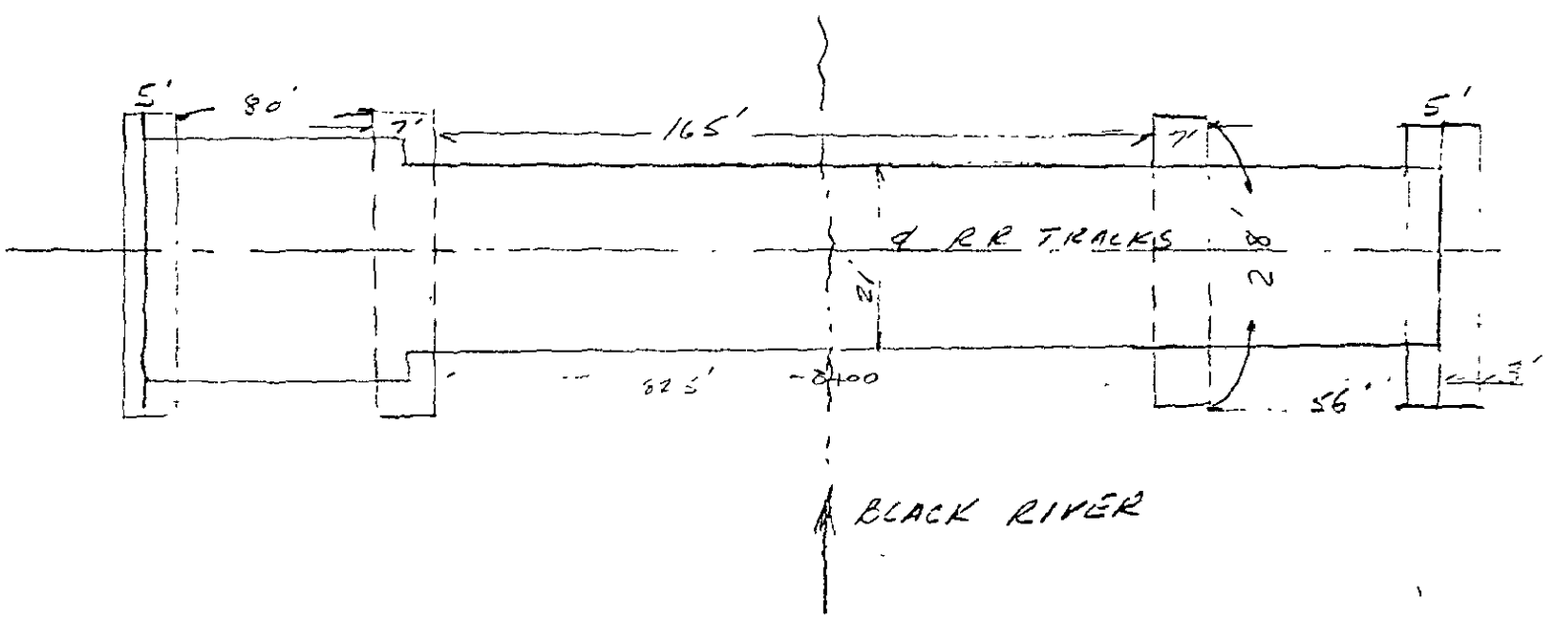
C&O RAILROAD BRIDGE

Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

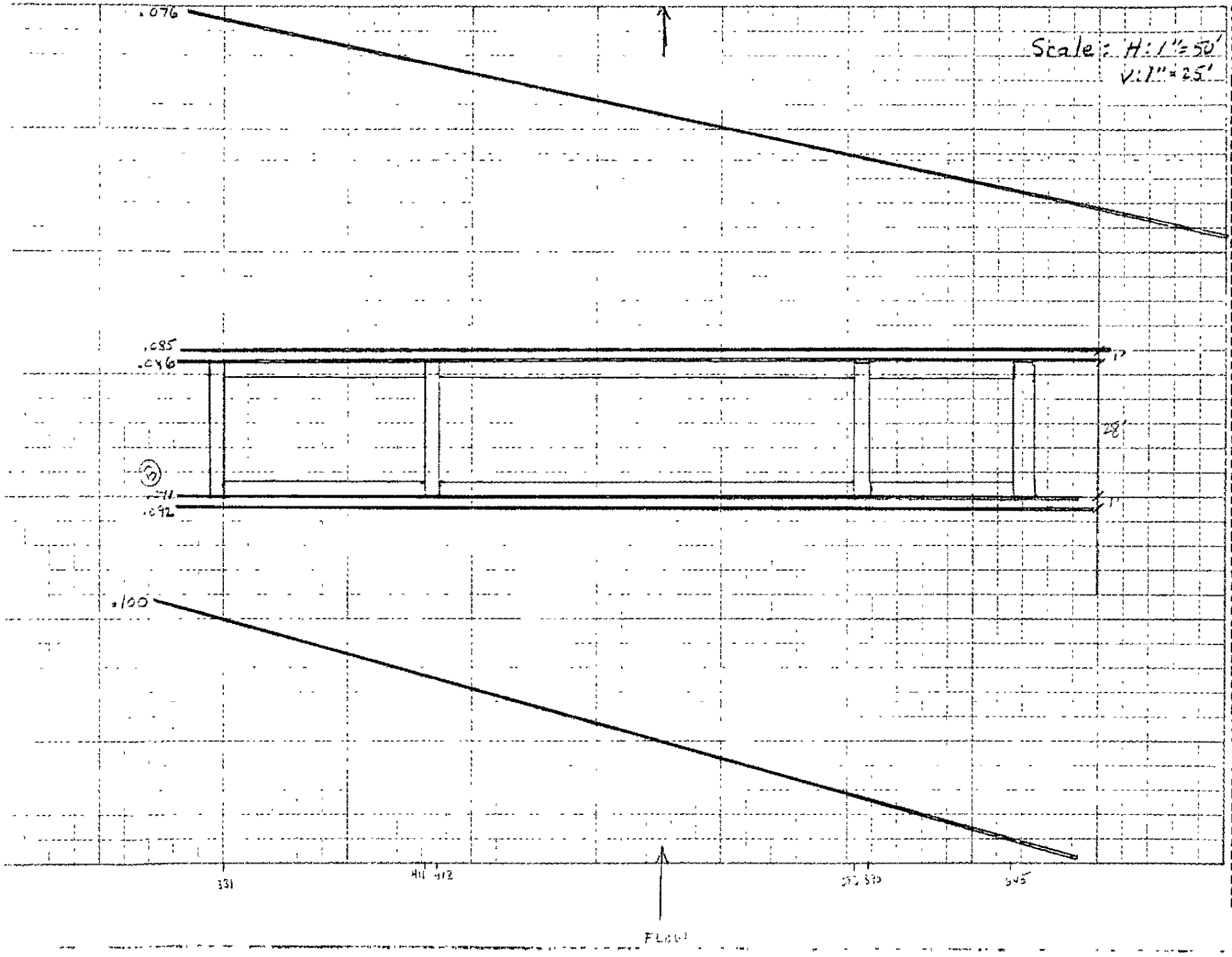
Profile View

Plan View



SHT 2 of 3 SHTS

C&O RR SEC. NO. .091



BY ____ DATE ____ JOB DESCRIPTION ____ SHEET ____ OF ____

SUBJECT ____ JOB NO ____

JOHNSON & ANDERSON, INC.
CONSULTING ENGINEERS

Johnson & Anderson, Inc.
Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

SS #4

Code No. 5555-53-4

Job Name: PORT HURON FIS			By: J. KAPELCZAK
Date: FEB 3 1976	Feature: DRAW BRIDGE		Water Course: BLACK RIVER
Remarks: DRAW BRIDGE AT MILITARY ST. E BLACK RIVER			

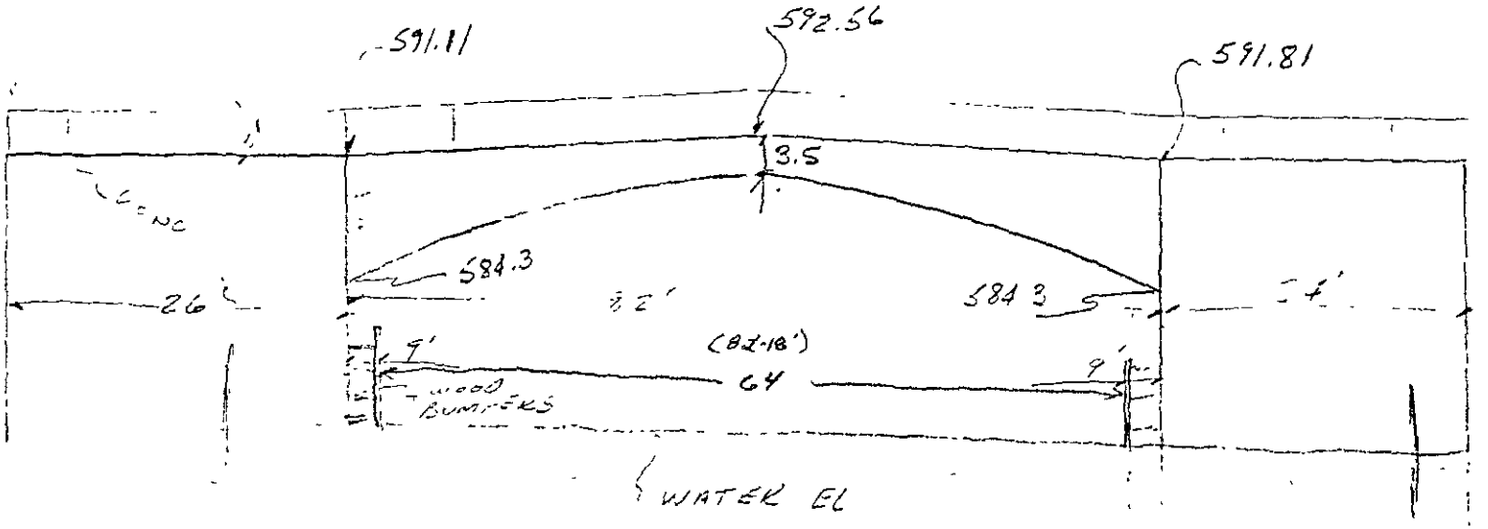
MILITARY ST BRIDGE

1 TO LOG	21 USF	22 DSF	23 U	24 D	25 L	26 R

Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation: 580.36	Length:	Width of Deck:	Skew: N.A

FIELD SKETCH

Profile View



Plan View

1" =

SHT 1 OF 2

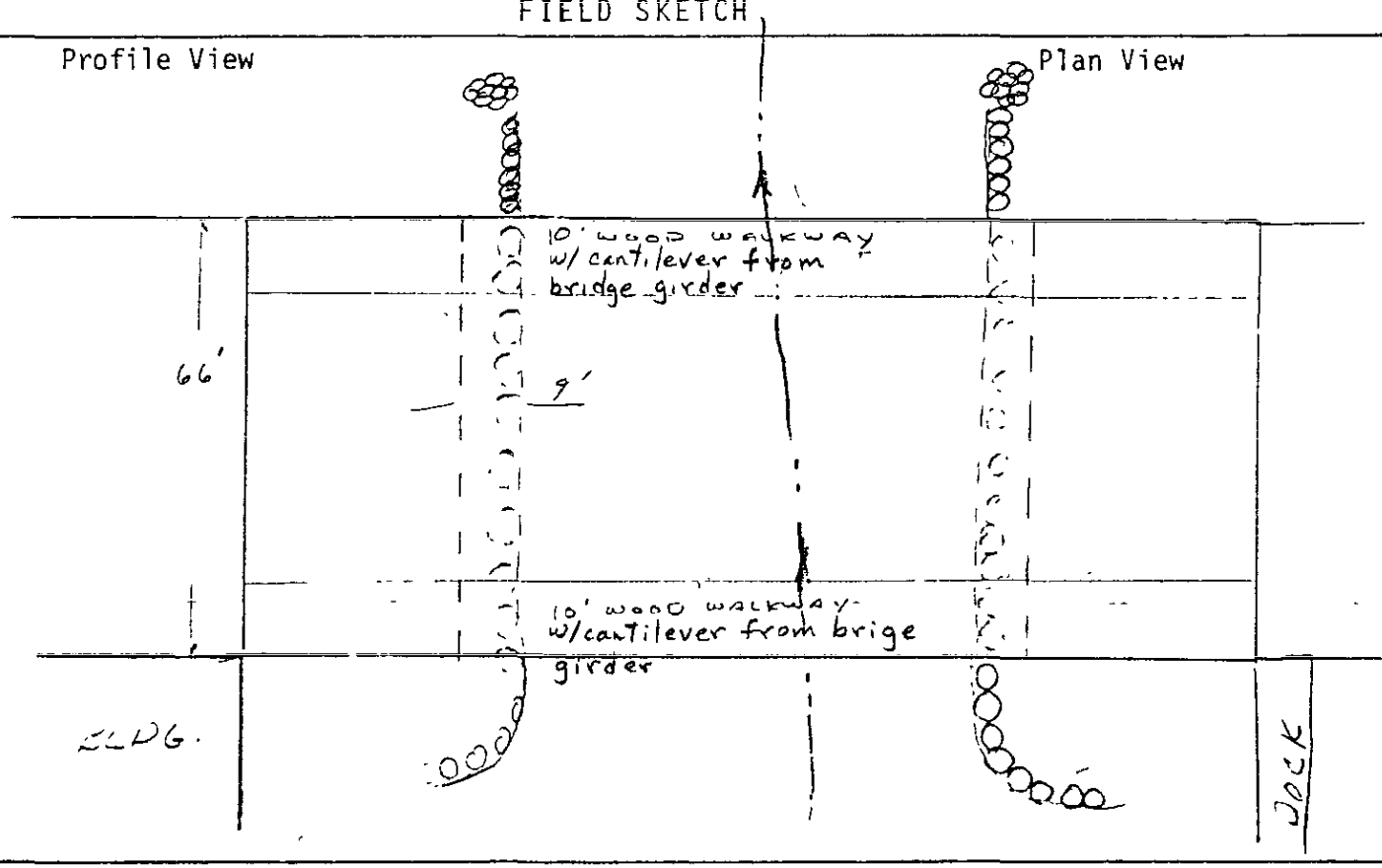
Johnson & Anderson, Inc.
Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

Code No. _____

Job Name:			By:
Date:	Feature:		Water Course:
Remarks:			
MILITARY ST BRIDGE			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

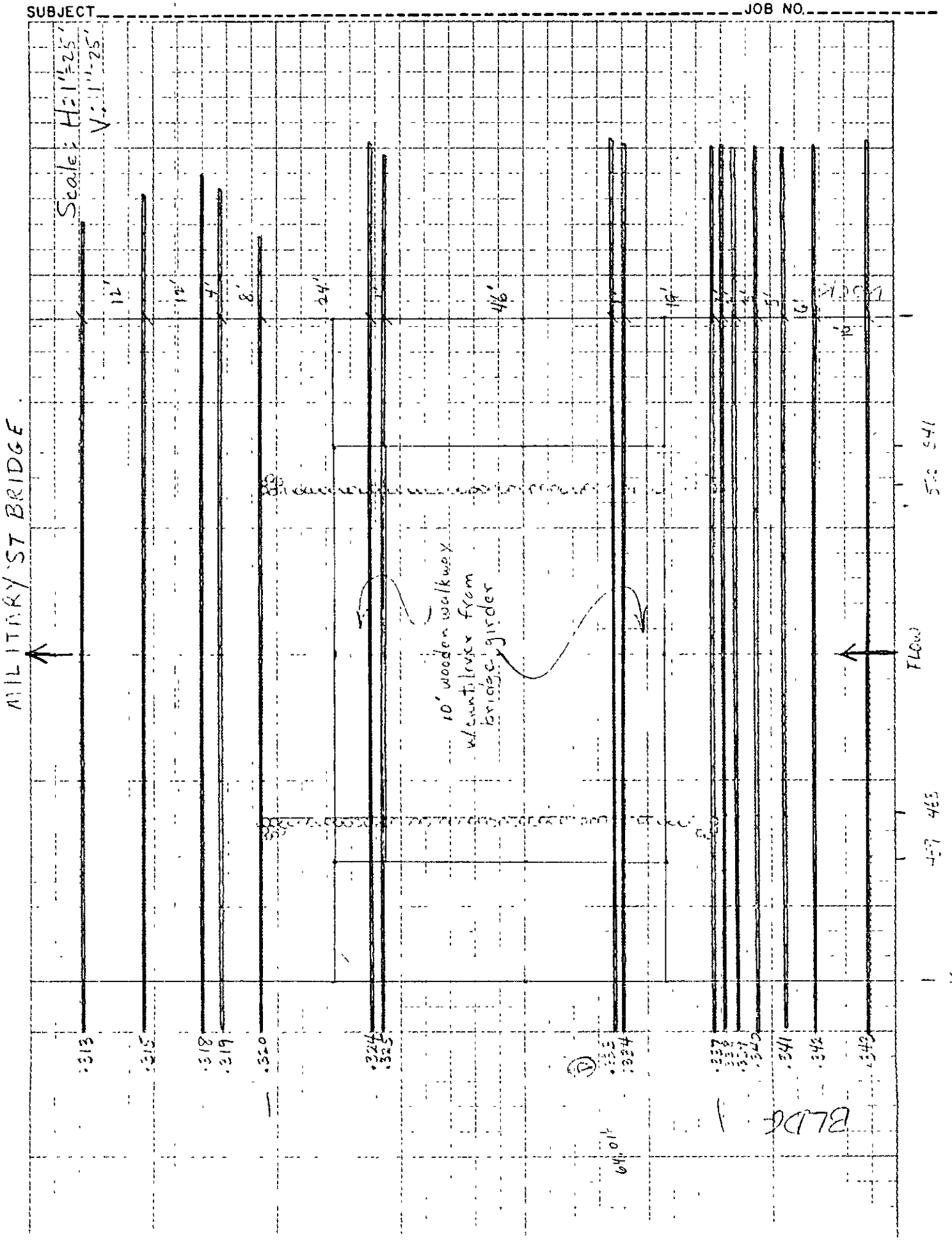
FIELD SKETCH



JOHNSON & ANDERSON, INC.
CONSULTING ENGINEERS

BY _____ DATE _____ JOB DESCRIPTION _____ SHEET _____ OF _____

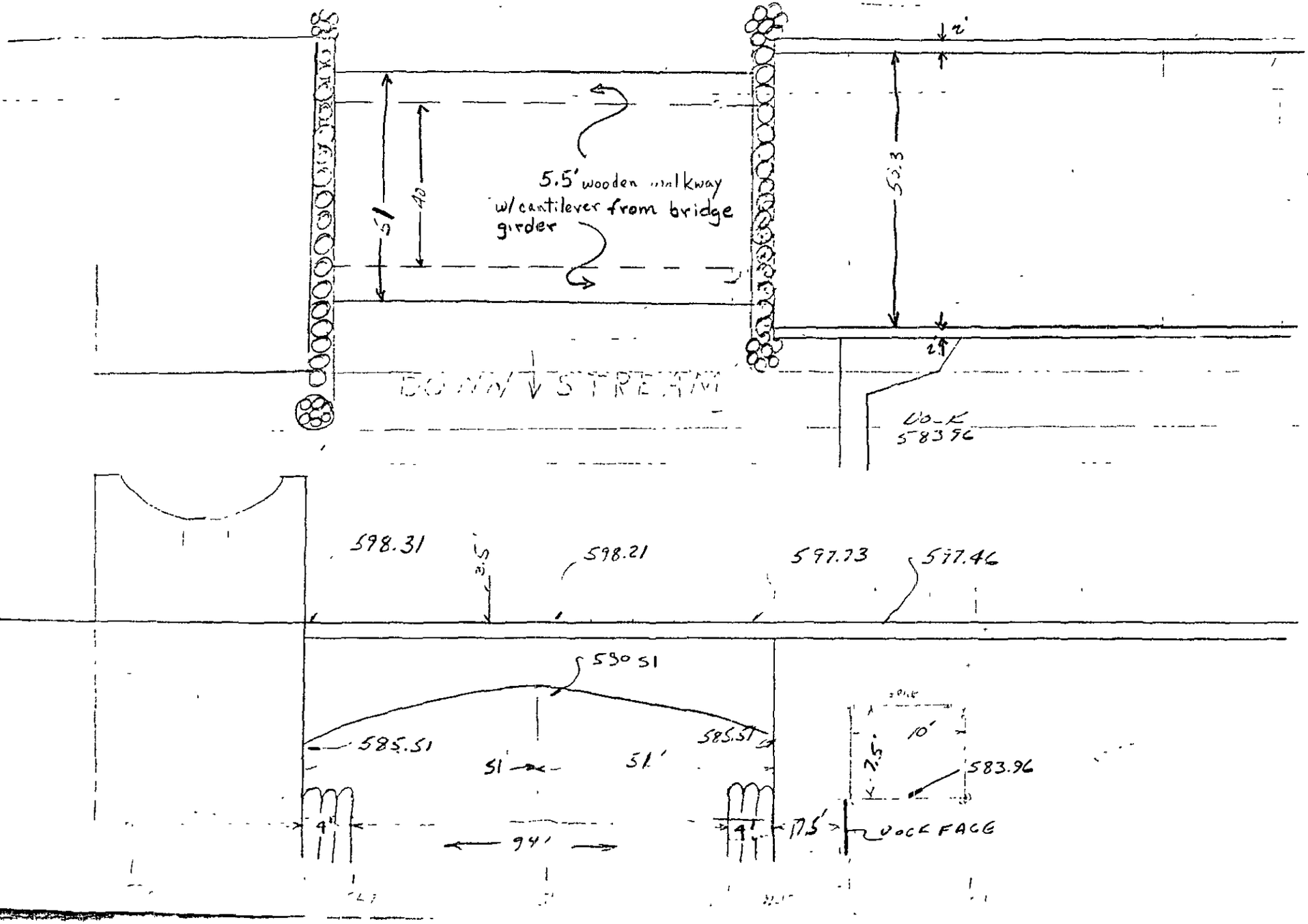
SUBJECT _____ JOB NO. _____



PORT HURON MIS RC #5

SEVENTH ST BRIDGE 5555-53-6

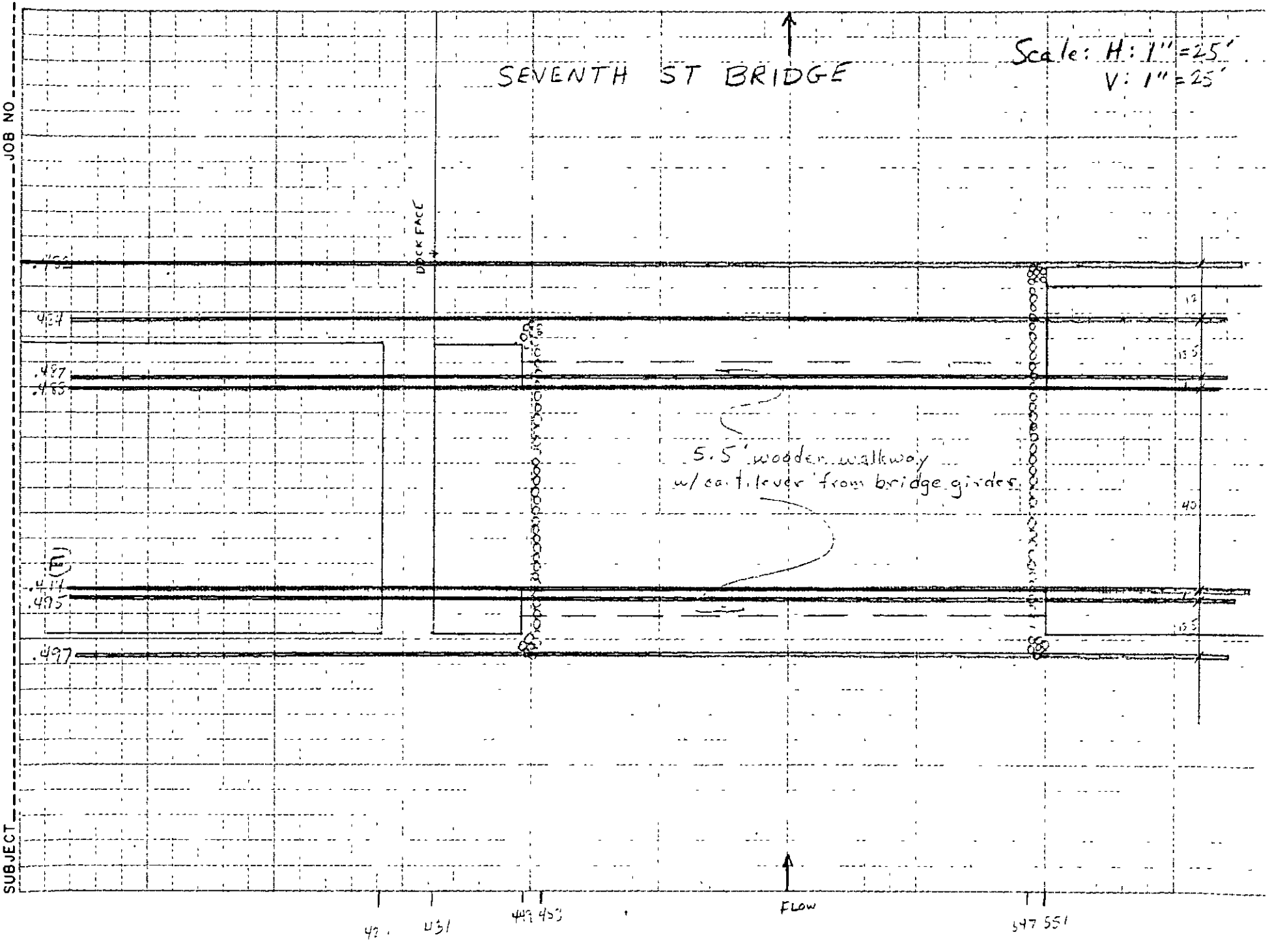
Jun 30 - 1970



JOHNSON & ANDERSON, INC.
CONSULTING ENGINEERS

BY _____ DATE _____ JOB DESCRIPTION _____ SHEET _____ OF _____

SUBJECT _____ JOB NO _____



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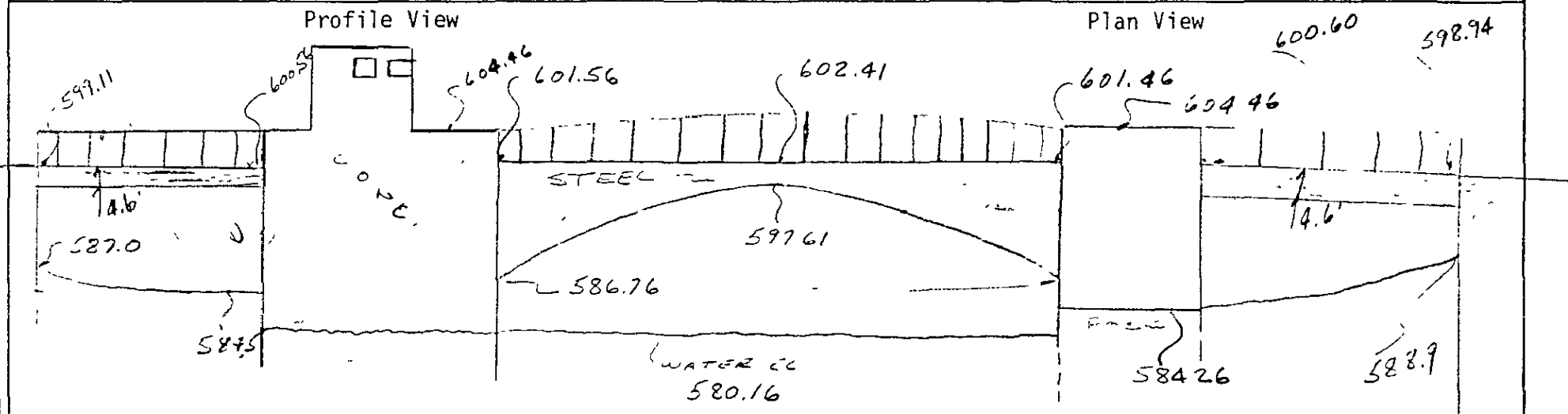
HYDRAULIC STRUCTURAL DATA BS #9

Code No. 5555-53-9

Job Name: PORT HURON F/S			By: J. KAPELCZAK
Date: FEB 3, 1976	Feature: DRAW BRIDGE		Water Course: BLACK RIVER
Remarks: 10TH ST. & THE BLACK RIVER DRAW BRIDGE			
10TH ST BRIDGE			
PHOTO LOG / 15 USF / 16 DSF / 17 U / 18 D / 19 L / 20 R /			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation: 580.16	Length:	Width of Deck:	Skew: 45°

FIELD SKETCH



SHT 1 OF 2 SHTS

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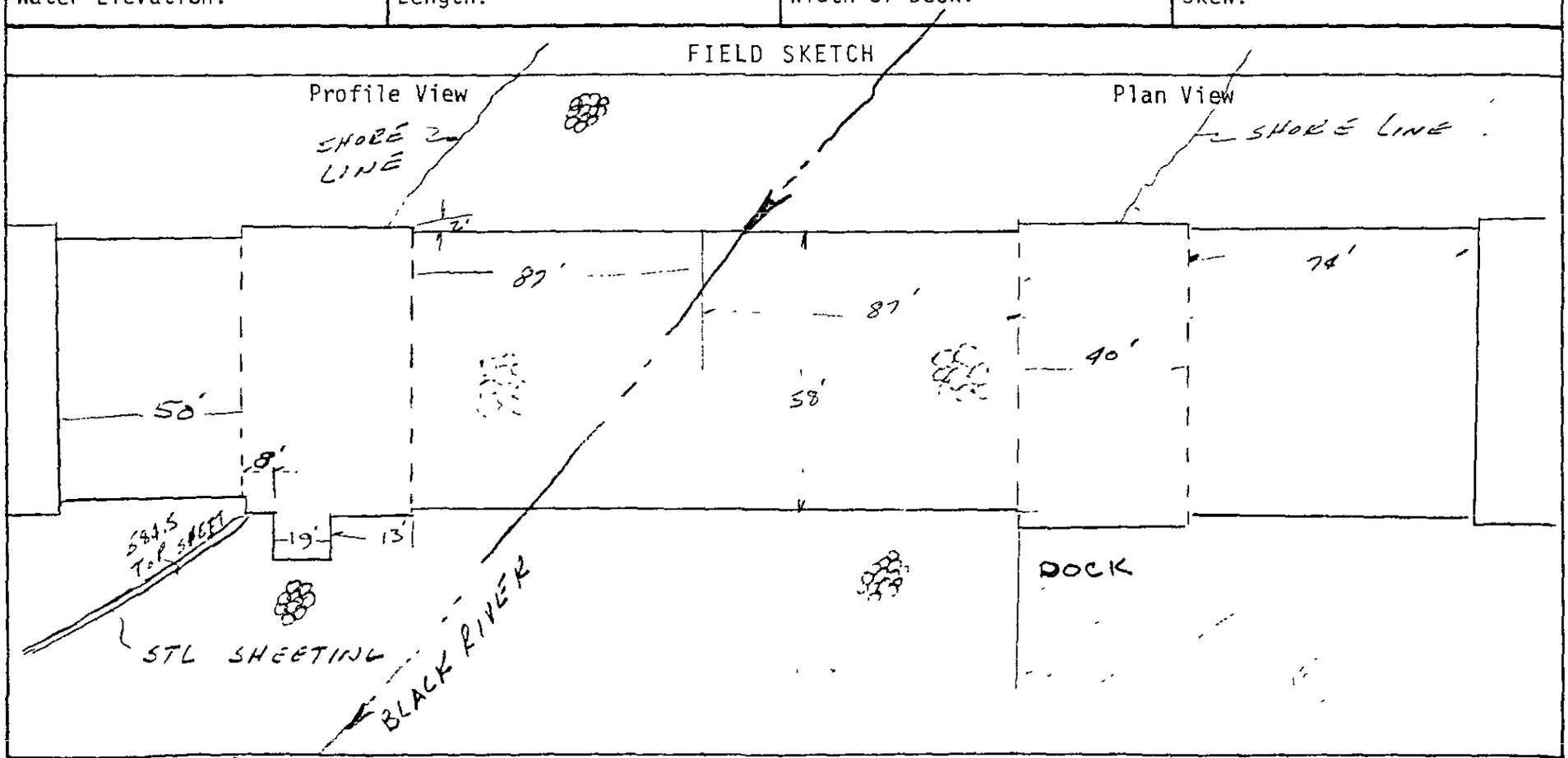
HYDRAULIC STRUCTURAL DATA

BS #9

Code No. _____

Job Name:			By:
Date:	Feature:		Water Course:
Remarks:			
TENTH ST BRIDGE			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

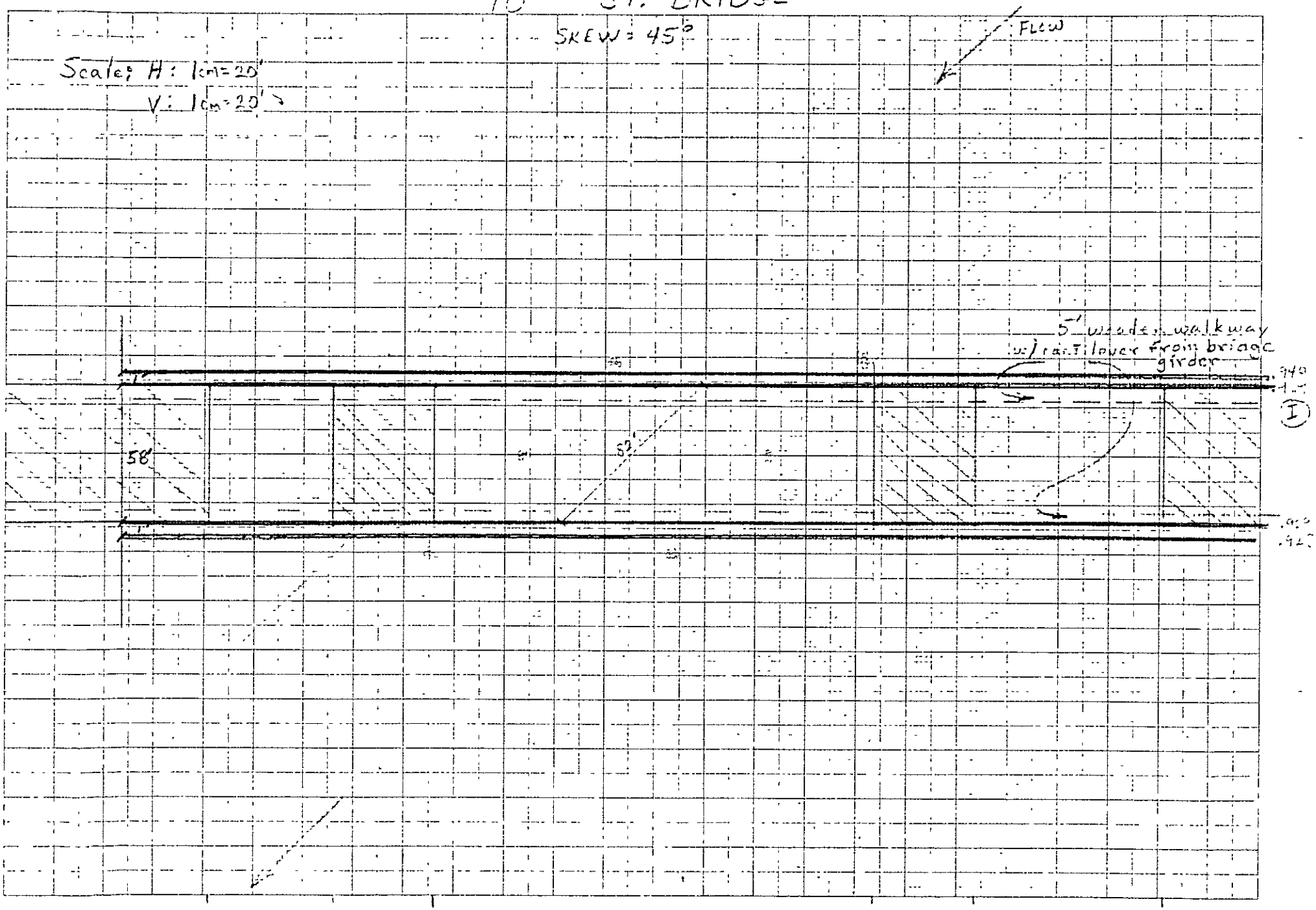
FIELD SKETCH



SHT 2 OF 2 SHTS

K&E 10 X 10 TO THE CENTIMETER
KEUFFEL & ESSER CO.

10TH ST. BRIDGE



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Consulting Engineers
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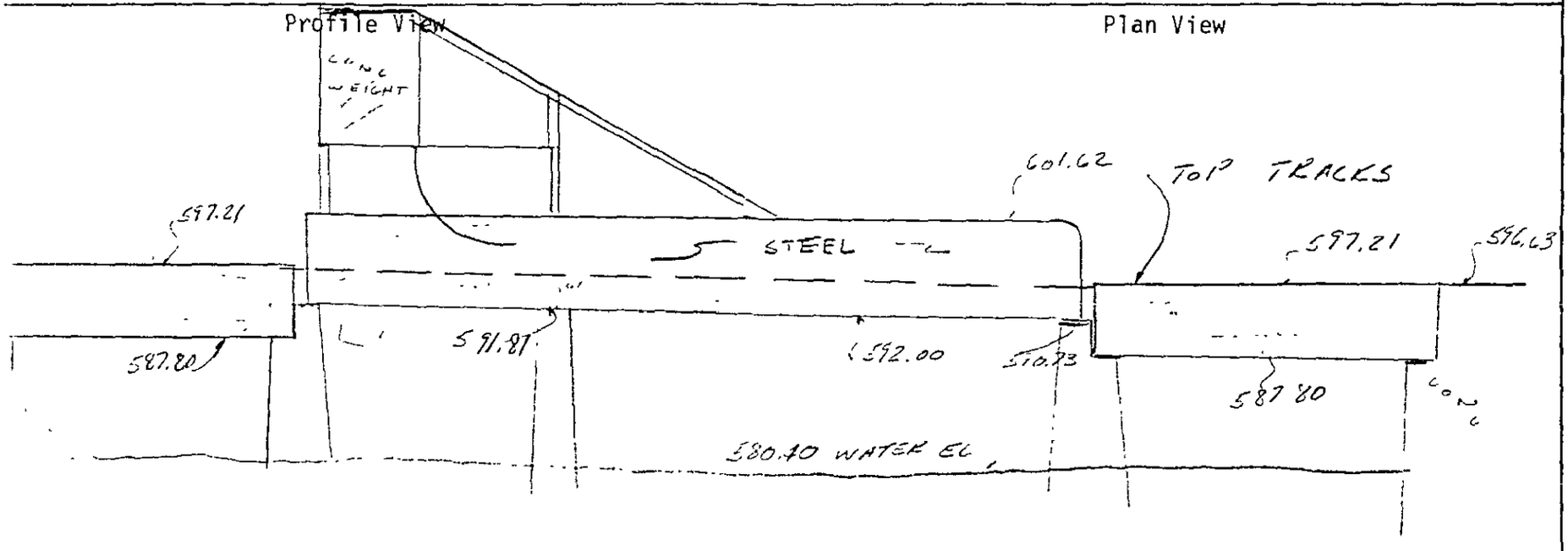
HYDRAULIC STRUCTURAL DATA

BSH 12

Code No. 5555-53-12

Job Name: PORT HURON FIS			By: J KAPELCZAK
Date: FEB 25, 1976	Feature: STEEL LIFT BRIDGE		Water Course: BLACK RIVER
Remarks: BRIDGE ON THE GT-W-R.R. OVER BLACK RIVER			
GT W RAILROAD BRIDGE			
HEC-2 Log	3A USF / 4 DSF / 5 U / 6 D / 7 L / 8 E /		
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation: 580.40	Length:	Width of Deck:	Skew: N. A.

FIELD SKETCH



SHT 1 OF 2

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HYDRAULIC STRUCTURAL DATA

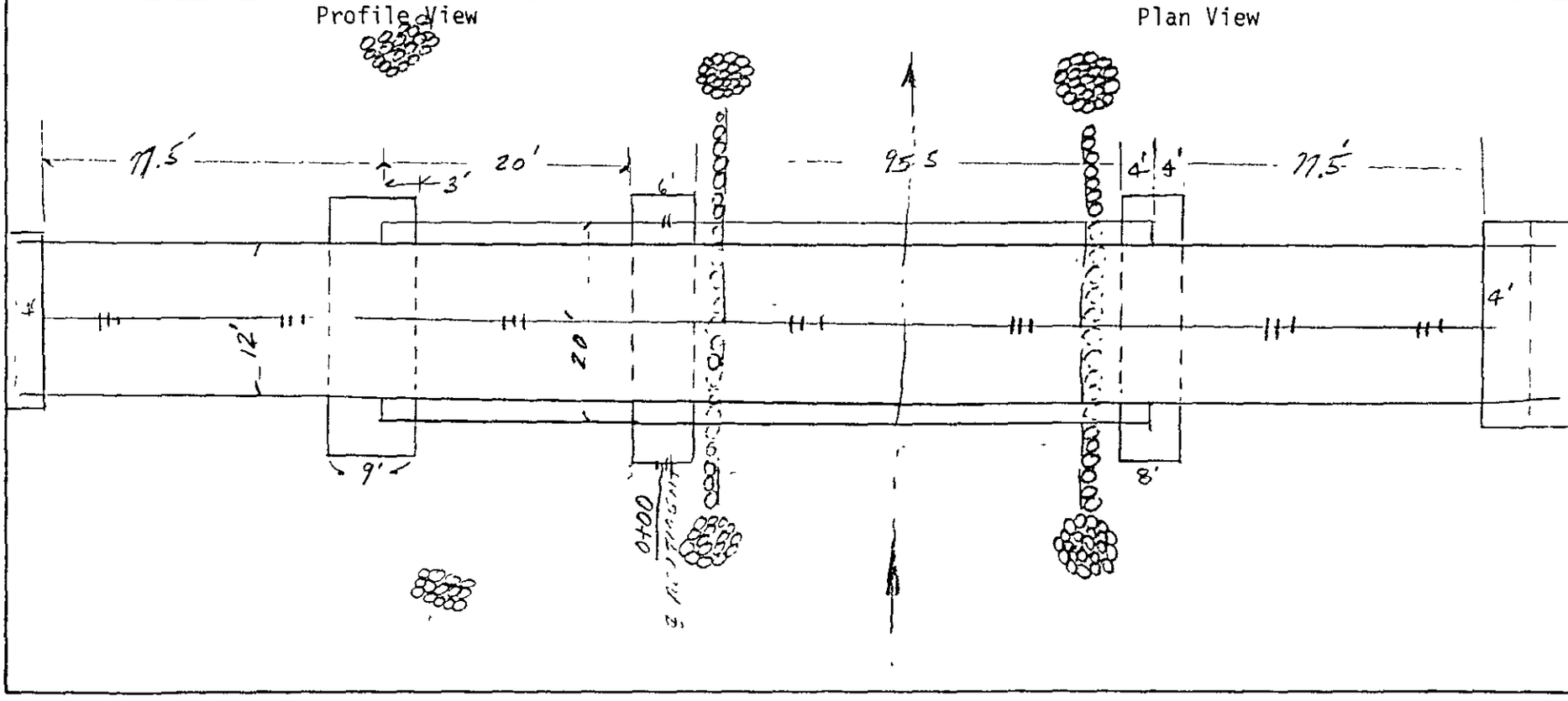
Code No. 15 #12

Job Name:		By:
Date:	Feature:	Water Course:
Remarks:		

GT&W RAILROAD BRIDGE

Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

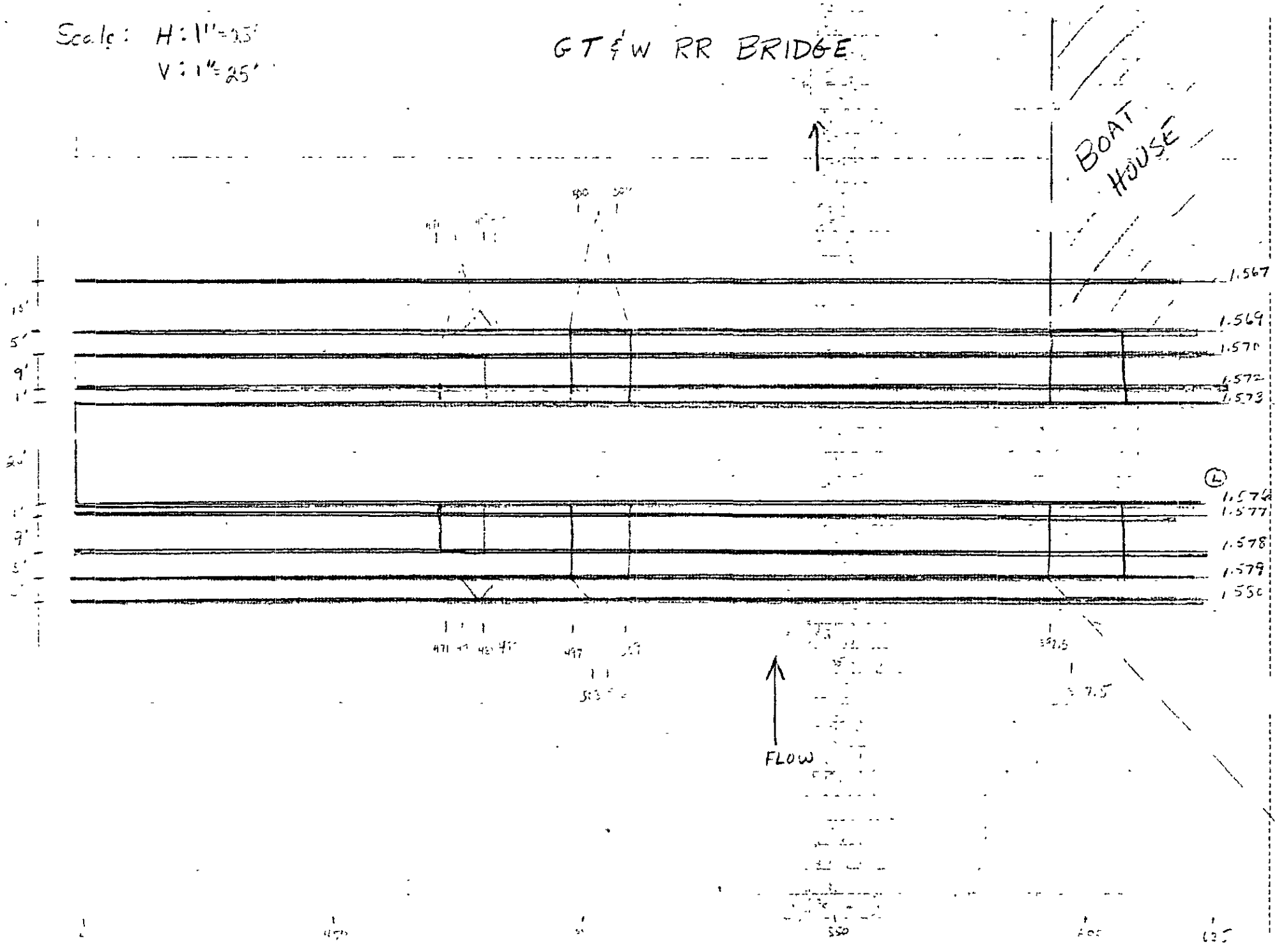
FIELD SKETCH



SHT 2 OF 2

Scale: H: 1"=25'
V: 1"=25'

GT & W RR BRIDGE



BY _____ DATE _____
CHKD BY _____ DATE _____
SUBJECT _____
SHEET NO _____ OF _____
JOB NO _____

Johnson & Anderson, Inc.
Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

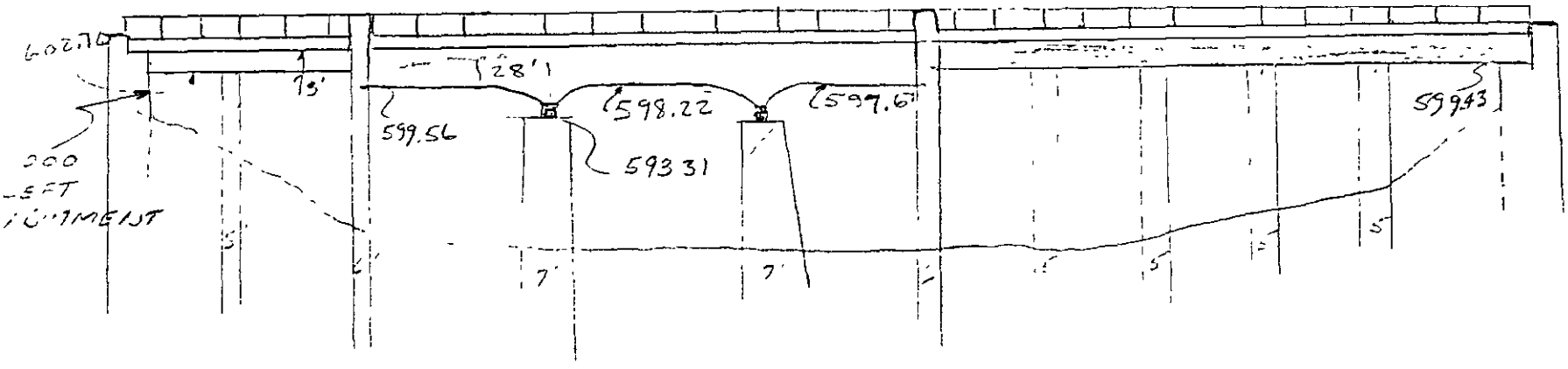
Code No. 5555-53-15

Job Name: PORT HURON FIS		By: J KAPELCZAK
Date: FEB 4, 1976	Feature: STATE HWY BRIDGE	Water Course: BLACK RIVER
Remarks: BRIDGE AT I-94 & BLACK RIVER		
I-94 BRIDGE 2.87 to 2.329		
TO LOG	31 DSF / 1 USF 2 U 3 D 4 L 5 R	

Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation: 580.55	Length:	Width of Deck:	Skew: 20°

FIELD SKETCH

Profile View Plan View



SHT 1 OF 2

Johnson & Anderson, Inc.
Consulting Engineers
O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

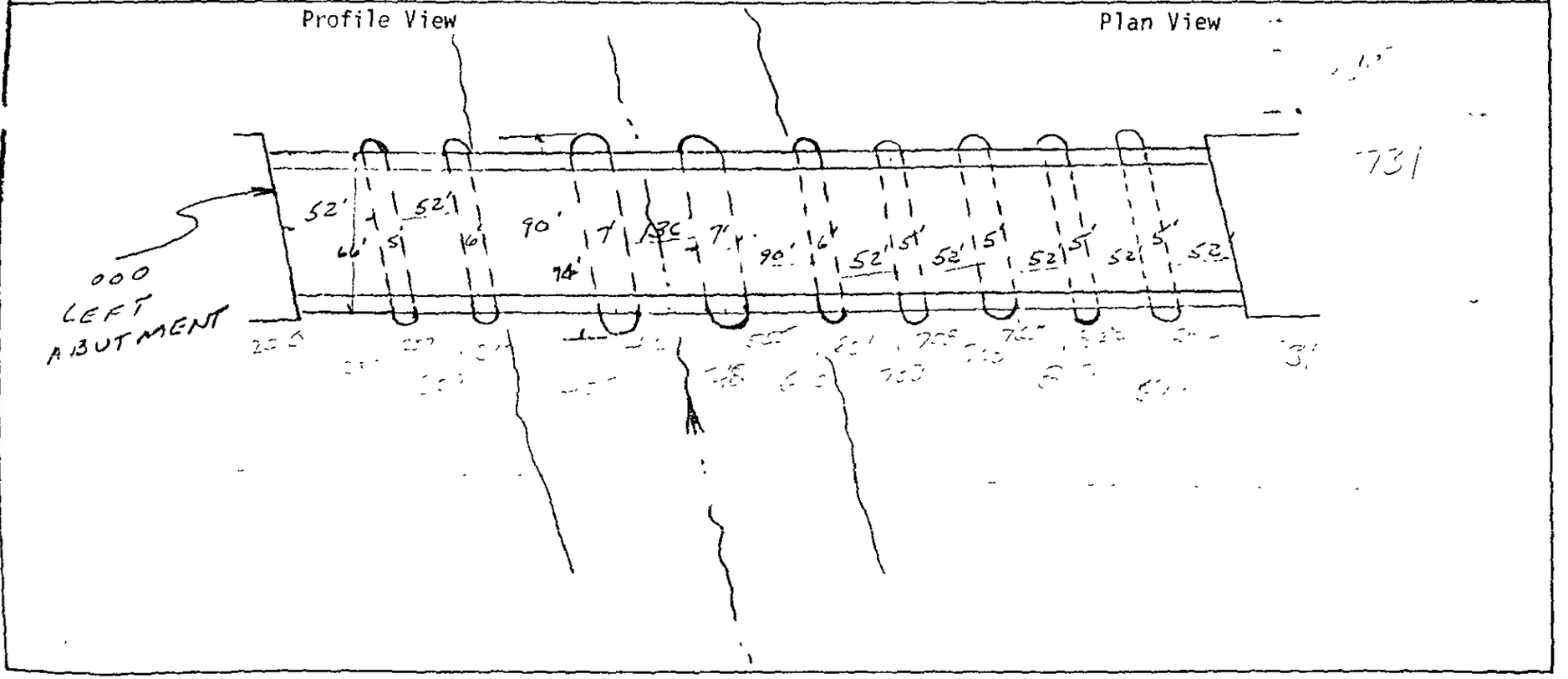
Code No. _____

Name:		By:
ite:	Feature:	Water Course:
emarks:		

I-94 BRIDGE

idth of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH



SHT 2 OF 2

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$$$$$$$   $$$$$$$$  $$    $$  $$$$$$$$   $$$$$ $  $$$$$$$$   $$$$$$
$$    $$     $$     $$    $$     $$     $$    $        $$   $$    $$
$$    $$     $$     $$    $$     $$     $$   $$$      $$    $$
$$    $$     $$     $$$$$$$$     $$     $$  $ $$     $$      $$$$$$
$$    $$     $$     $$    $$     $$     $$ $$ $$     $$           $$
$$$$$$$      $$     $$    $$     $$     $$ $  $$     $$           $$
$$           $$     $$    $$     $$     $$$   $$     $$           $$
$$           $$     $$    $$  $$ $$      $    $$     $$     $$    $$
$$           $$     $$    $$   $$$      $ $$$$$      $$      $$$$$$
PTHJ07S  JANDA          03/09/77  08.43.04  7600   JO
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BLACK RIVER

J&A FILE NOS. 5555-20 & 53
10-50-100-500-YEAR FLOWS
DNR SUBMITTAL
MARCH 10, 1977

PROGRAM WILL BE ENTERED AT HEC2 (373) SCM-LENGTH 146657 LCM-LENGTH 0

BLOCK	ADDRESS	LENGTH
/ALPHA/	100	101
HEC2	201	11606
CARD	12007	1673
SUMPO	13702	1063
CHIMP	14765	1645
DC	16632	703
FLODIS	17535	444
BLFLO	20201	1003
ADDPTS	21204	334
BJEIR	21540	1356
YCBIT	23115	122
SLARA	23240	256
SCALE	23516	246
XSEC	23764	1264
PROF	25250	1142
EXP	26412	102
/FCL.C./	26514	23
/Q8.IO./	26537	137
/HEADING/	26676	16
OUTC=	26714	1017
Q8NTRY=	27733	1
COMIO=	27734	44
ENDFIL=	30000	45
FECMSK=	30045	41
FLTIN=	30106	154
FLTOUT=	30262	314
FMTAP=	30576	372
FORSYS=	31170	556
FORUTI=	31746	16
GETFIT=	31764	43
INCOM=	32027	257
INPC=	32306	173
KODER=	32501	467
KRAKER=	33170	454
OUTCOM=	33644	203
REWIND=	34047	35
GOTOER=	34104	14
ALOG	34120	77
ITOJ*	34217	52
SYSAID=	34271	1
SYS=1ST	34272	62
XTOY*	34354	55
//	34431	112226

```
*****************************************
HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
*****************************************
```

```
C
1       BLACK RIVER  CITY OF PORT HURON, FORT GRATIOT TOWNSHIP  5555-53*20
T2        10 YEAR FLOW
T3       BLACK RIVER

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC    HVINS     Q       WSEL     FQ

     -0.       2.       -0.      -0. -0.000000    -0.00     -0.0      -0.   580.350   -0.000

J2  NPROF     IPLOT    PRFVS    XSECV    XSECH     FN       ALLDC     IBW      CHNIM    ITRACE

     1.000   -0.000   -1.000   -0.000   -0.000   -0.000   -0.000   -0.000   -0.000   -0.000

J3      1.000    10.000    11.000    12.000    14.000     3.000     4.000    -0.000    -0.000    -0.000
NC       .040      .040      .027      .300      .500    -0.000    -0.000    -0.000    -0.000    -0.000
QT      4.000 12590.000 16810.000 19450.000 22160.000    -0.000    -0.000    -0.000    -0.000    -0.000

X1       .001    35.000   400.000   615.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000
GR    584.800     0.000   584.500   100.000   585.000   200.000   582.900   300.000   585.000   380.000
GR    579.900   400.000   571.000   410.000   565.800   420.000   564.300   430.000   561.500   440.000
GR    559.300   450.000   559.000   460.000   559.000   470.000   559.400   480.000   559.400   490.000
GR    560.000   500.000   560.300   510.000   561.700   520.000   563.700   530.000   565.200   540.000
GR    566.400   550.000   569.800   560.000   575.000   570.000   577.600   580.000   578.700   590.000
GR    579.900   600.000   589.400   615.000   588.200   700.000   587.400   800.000   586.400   900.000
GR    585.500  1000.000   585.500  1100.000   585.400  1200.000   585.300  1300.000   585.300  1400.000

X1       .076    -0.000    -0.000    -0.000   400.000   400.000   400.000    -0.000    -1.100    -0.000

X1       .085    30.000   331.000   645.000    74.000    24.000    49.000      .899    -0.000    -0.000
X3     10.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000   583.700   583.700    -0.000
GR    582.600     0.000   582.550    50.000   582.500   100.000   583.100   150.000   583.700   200.000
GR    585.200   300.000   585.600   331.000   583.000   331.000   580.600   390.000   569.600   400.000
GR    564.500   411.000   561.300   418.000   560.400   420.000   558.900   440.000   557.500   460.000
GR    558.400   480.000   560.400   500.000   560.600   520.000   560.300   540.000   559.100   560.000
GR    564.100   580.000   565.200   583.000   567.900   590.000   571.600   600.000   577.500   620.000
GR    580.600   645.000   585.600   645.000   585.200   700.000   584.200   800.000   584.100   900.000
NC       .040      .040      .026    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

X1       .086    -0.000    -0.000    -0.000     1.000     1.000     1.000    -0.000    -0.000    -0.000
X2     -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000      .899    -0.000
BT     20.000     0.000   582.600     0.000    50.000   582.550     0.000   100.000   582.500     0.000
BT    200.000   583.700     0.000   300.000   585.200     0.000   331.000   585.600     0.000   331.000
BT    585.600   583.700   411.000   585.600   583.700   411.000   585.600   564.500   418.000   585.600
BT    561.300   418.000   585.600   583.700   583.000   585.600   583.700   583.000   585.600   565.200
BT    590.000   585.600   567.900   590.000   585.600   583.700   645.000   585.600   583.700   645.000
BT    585.600     0.000   700.000   585.200     0.000   800.000   584.200     0.000   900.000   584.100
BT      0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

X1       .091    -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      .899    -0.000
NC       .030      .020      .027    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

X1       .092    -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   583.700   583.700    -0.000
```

X1	.100	-0.000	-0.000	-0.000	24.000	74.000	49.000	-0.000	-0.000	-0.000
X1	.138	27.000	32.000	190.000	200.000	200.000	200.000	-0.000	-0.000	-0.000
GR	586.000	0.000	585.000	10.000	584.000	20.000	583.000	32.000	569.500	33.000
GR	564.500	35.000	562.300	40.000	560.200	50.000	558.700	60.000	558.200	70.000
GR	557.400	80.000	557.400	90.000	558.200	100.000	558.400	110.000	559.300	120.000
GR	559.600	130.000	559.600	140.000	559.500	150.000	559.500	160.000	561.700	170.000
GR	564.100	180.000	566.500	185.000	569.300	189.000	583.000	190.000	583.000	200.000
GR	584.000	210.000	585.000	220.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.166	24.000	999.000	1148.000	150.000	150.000	150.000	1.100	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1029.000	-0.000	1148.000	-0.000	-0.000	-0.000	-0.000
GR	594.700	0.000	593.000	300.000	592.200	500.000	589.300	700.000	587.700	900.000
GR	583.900	999.000	567.800	1000.000	565.600	1007.000	564.900	1015.000	560.300	1039.000
GR	557.300	1050.000	557.400	1075.000	562.400	1100.000	565.300	1125.000	568.300	1135.000
GR	571.000	1147.000	583.500	1148.000	585.500	1200.000	584.800	1400.000	584.500	1600.000
GR	584.200	1800.000	585.100	2000.000	586.300	2200.000	587.300	2400.000	-0.000	-0.000
X1	.206	24.000	999.000	1148.000	230.000	225.000	210.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1029.000	-0.000	1148.000	-0.000	-0.000	-0.000	-0.000
GR	594.700	0.000	593.000	300.000	592.200	500.000	589.300	700.000	587.700	900.000
GR	583.900	999.000	567.800	1000.000	565.600	1007.000	564.900	1015.000	560.300	1039.000
GR	557.200	1050.000	557.400	1075.000	562.400	1100.000	565.300	1125.000	568.300	1135.000
GR	571.000	1147.000	583.500	1148.000	585.500	1200.000	584.800	1400.000	584.500	1600.000
GR	584.200	1800.000	585.100	2000.000	586.300	2200.000	587.300	2400.000	-0.000	-0.000
NC	.020	.020	.027	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.305	15.000	430.000	565.000	525.000	525.000	525.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	449.000	-0.000	551.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.190	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.309	15.000	430.000	565.000	20.000	20.000	20.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	454.000	-0.000	546.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.150	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.313	15.000	430.000	565.000	20.000	20.000	20.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	459.000	-0.000	541.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.110	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.315	15.000	430.000	565.000	19.000	6.000	12.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	462.000	-0.000	539.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.090	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.318	15.000	430.000	565.000	19.000	6.000	12.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	465.000	-0.000	535.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.060	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.319	15.000	430.000	565.000	6.000	3.000	4.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	466.000	-0.000	534.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.050	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
NC	.020	.020	.024	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.320	15.000	430.000	565.000	12.000	6.000	8.000	0.000		

XJ	-0.000	-0.000	-0.000	463.000	584.300	532.000	584.300	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.040	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.324	15.000	430.000	565.000	24.000	24.000	24.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	468.000	584.300	532.000	584.300	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.000	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.325	-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	468.000	584.300	532.000	584.300	-0.000	-0.000	-0.000
BT	13.000	430.000	590.820	0.000	430.000	590.820	573.900	440.000	591.160	570.400
BT	459.000	591.000	561.400	459.000	591.800	534.300	500.000	592.600	589.100	541.000
BT	591.800	584.300	541.000	591.800	561.700	555.000	590.980	569.900	565.000	590.900
BT	574.000	565.000	590.900	584.000	575.000	590.600	584.000	575.000	590.600	0.000
X1	.333	-0.000	-0.000	-0.000	46.000	46.000	46.000	-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	468.000	584.300	532.000	584.300	-0.000	-0.000	-0.000
X1	.334	-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	468.000	584.300	532.000	584.300	-0.000	-0.000	-0.000
X1	.337	15.000	430.000	565.000	19.000	19.000	19.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	468.000	584.300	532.000	584.300	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.030	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
NC	.020	.020	.027	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.338	15.000	430.000	565.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	467.000	-0.000	533.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.040	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.339	-0.000	-0.000	-0.000	2.000	2.000	2.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	465.000	-0.000	535.000	-0.000	-0.000	-0.000	-0.000
X1	.340	15.000	430.000	565.000	3.000	3.000	3.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	467.000	-0.000	538.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.050	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.341	15.000	430.000	565.000	5.000	5.000	5.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	457.000	-0.000	543.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.060	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.342	15.000	430.000	565.000	6.000	6.000	6.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	451.000	-0.000	549.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.070	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
X1	.343	15.000	430.000	565.000	10.000	10.000	10.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	441.000	-0.000	559.000	-0.000	-0.000	-0.000	-0.000
GR	593.100	0.000	590.820	430.000	573.900	430.000	570.400	440.000	561.400	459.000
GR	556.900	480.000	557.200	500.000	556.080	520.000	561.700	541.000	569.900	555.000
GR	574.000	565.000	584.000	565.000	584.000	575.000	590.600	575.000	590.600	600.000
NC	.040	.060	.027	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

X1	.377	16.000	299.000	432.000	186.000	196.000	186.000	-0.000	-0.000	-0.000
GR	592.400	0.000	589.400	100.000	587.700	200.000	584.400	299.000	567.400	299.000
GR	567.400	300.000	562.100	320.000	558.200	340.000	556.900	360.000	556.400	380.000
GR	557.500	400.000	563.900	420.000	568.800	430.000	568.800	432.000	586.000	432.000
GR	590.100	500.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.030	.030	.027	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.476	23.000	350.000	650.000	520.000	520.000	520.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	442.300	-0.000	554.800	-0.000	-0.000	-0.000	-0.000
GR	593.000	0.000	591.700	100.000	591.200	200.000	593.200	300.000	589.400	350.000
GR	584.000	421.000	584.000	431.000	571.800	431.000	568.300	440.000	563.600	449.000
GR	557.900	460.000	556.200	480.000	555.300	500.000	555.130	520.000	557.200	540.000
GR	561.100	551.000	563.300	560.000	569.900	570.000	575.300	580.000	580.200	586.000
GR	590.200	650.000	598.000	700.000	598.600	800.000	-0.000	-0.000	-0.000	-0.000
NH	3.000	.035	450.000	.022	547.000	.900	800.000	-0.000	-0.000	-0.000
X1	.482	23.000	350.000	650.000	30.500	30.500	30.500	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	450.000	-0.000	547.000	584.000	-0.000	-0.000	-0.000
GR	593.000	0.000	591.700	100.000	591.200	200.000	593.200	300.000	589.400	350.000
GR	584.000	421.000	584.000	431.000	571.800	431.000	568.300	440.000	563.600	449.000
GR	557.900	460.000	556.200	480.000	555.300	500.000	555.030	520.000	557.200	540.000
GR	561.100	551.000	563.300	560.000	569.900	570.000	575.300	580.000	580.200	586.000
GR	590.200	650.000	598.000	700.000	598.600	800.000	-0.000	-0.000	-0.000	-0.000
NH	3.000	.035	431.000	.022	551.000	.900	800.000	-0.000	-0.000	-0.000
X1	.484	23.000	350.000	650.000	12.000	12.000	12.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	453.000	584.000	547.000	584.000	-0.000	-0.000	-0.000
GR	593.000	0.000	591.700	100.000	591.200	200.000	593.200	300.000	589.400	350.000
GR	584.000	421.000	584.000	431.000	571.800	431.000	568.300	440.000	563.600	449.000
GR	557.900	460.000	556.200	480.000	555.300	500.000	555.000	520.000	557.200	540.000
GR	561.100	551.000	563.300	560.000	569.900	570.000	575.300	580.000	580.200	586.000
GR	590.200	650.000	598.000	700.000	598.600	800.000	-0.000	-0.000	-0.000	-0.000
X1	.487	-0.000	-0.000	-0.000	13.500	13.500	13.500	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	453.000	584.000	547.000	584.000	-0.000	-0.000	-0.000
X1	.488	-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	453.000	584.000	547.000	584.000	-0.000	-0.000	-0.000
BT	16.000	300.000	593.200	-0.000	350.000	594.700	589.400	421.000	597.500	584.000
BT	421.000	597.500	591.500	431.000	597.600	591.500	431.000	597.600	571.800	440.000
BT	597.600	568.300	449.000	597.700	563.600	449.000	597.700	585.500	500.000	598.200
BT	590.500	551.000	598.300	595.500	551.000	593.300	561.100	560.000	598.330	563.300
BT	586.000	598.400	580.200	650.000	597.700	590.200	700.000	598.000	0.000	-0.000
X1	.494	-0.000	-0.000	-0.000	40.000	40.000	40.000	-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	453.000	584.000	547.000	584.000	-0.000	-0.000	-0.000
NC	.040	.060	.022	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.495	-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	453.000	584.000	547.000	584.000	-0.000	-0.000	-0.000
X1	.497	-0.000	-0.000	-0.000	13.500	13.500	13.500	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	453.000	584.000	547.000	584.000	-0.000	-0.000	-0.000
NC	.040	.060	.027	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.500	25.000	350.000	650.000	16.000	16.000	16.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	437.000	584.500	563.000	584.500	-0.000	-0.000	-0.000
GR	595.300	0.000	595.900	100.000	596.500	200.000	597.100	300.000	597.400	350.000
GR	588.000	400.000	584.000	421.000	584.000	431.000	571.800	431.000	568.300	440.000
GR	563.600	449.000	557.900	460.000	556.200	480.000	555.300	500.000	555.140	520.000
GR	557.200	540.000	561.100	551.000	563.300	560.000	569.300	570.000	575.300	580.000
GR	580.200	586.000	584.000	600.000	597.700	650.000	598.000	700.000	598.600	800.000
NC	.040	.060	.027	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.639	17.000	0.000	450.000	695.000	765.000	735.000	-0.000	-0.000	-0.000

	-0.000	-0.000	-0.000	139.000	584.100	400.000	584.300	-0.000	-0.000	-0.000
GR	594.100	0.000	590.600	50.000	584.100	99.000	574.900	100.000	573.300	110.000
GR	571.200	130.000	565.900	140.000	562.500	170.000	561.900	200.000	561.600	230.000
GR	563.400	260.000	565.200	270.000	570.300	280.000	581.100	281.000	582.600	300.000
GR	584.300	400.000	593.200	450.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.901	23.000	0.000	382.000	1390.000	1360.000	1380.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	239.000	583.900	368.000	580.000	-0.000	-0.000	-0.000
GR	597.500	0.000	586.900	100.000	583.900	199.000	574.900	200.000	573.300	210.000
GR	568.600	220.000	564.900	230.000	563.300	239.000	561.400	250.000	561.200	260.000
GR	561.000	270.000	561.000	280.000	561.100	290.000	561.200	300.000	561.300	310.000
GR	561.400	320.000	561.500	330.000	564.600	340.000	567.600	350.000	579.600	367.000
GR	580.000	368.000	589.000	382.000	607.000	382.000	-0.000	-0.000	-0.000	-0.000
NH	7.000	.200	211.420	.120	263.750	.200	316.780	.022	415.070	.200
NH	443.350	.035	478.710	.200	530.330	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.928	21.000	299.000	677.000	270.000	50.000	145.000	.707	-0.000	-0.000
X3	-0.000	-0.000	-0.000	413.000	584.300	587.000	584.500	-0.000	-0.000	-0.000
GR	596.800	0.000	596.000	68.000	593.000	168.000	588.900	299.000	584.300	373.000
GR	584.300	413.000	568.600	413.000	568.000	425.000	567.500	440.000	567.100	448.000
GR	566.500	460.000	565.700	480.000	561.900	500.000	560.100	520.000	558.900	530.000
GR	561.200	550.000	564.800	570.000	566.300	587.000	586.000	627.000	590.000	677.000
GR	599.100	750.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	7.000	.200	211.420	.120	263.750	.200	316.780	.022	415.070	.200
NH	443.350	.035	478.710	.200	530.330	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.929	21.000	299.000	677.000	1.000	1.000	1.000	.707	-0.000	-0.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	.707	-0.000
X3	-0.000	-0.000	-0.000	413.000	584.300	587.000	584.500	-0.000	-0.000	-0.000
BT	17.000	0.000	597.200	0.000	68.000	597.600	596.000	168.000	598.200	593.000
BT	299.000	598.900	588.900	299.000	598.900	594.300	373.000	600.600	596.600	373.000
BT	600.600	584.300	413.000	601.500	584.300	413.000	601.500	586.800	500.000	602.400
BT	597.600	587.000	601.600	586.900	587.000	601.600	566.300	627.000	600.600	586.000
BT	627.000	600.600	596.000	677.000	599.100	594.500	677.000	599.100	590.000	750.000
BT	599.100	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	596.800	0.000	596.000	68.000	593.000	168.000	588.900	299.000	584.300	373.000
GR	584.300	413.000	568.600	413.000	568.000	425.000	567.500	440.000	567.100	448.000
GR	566.500	460.000	565.700	480.000	561.900	500.000	560.100	520.000	558.900	530.000
GR	561.200	550.000	564.800	570.000	566.300	587.000	586.000	627.000	590.000	677.000
GR	599.100	750.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	7.000	.200	211.420	.120	263.750	.012	292.030	.022	415.070	.012
NH	443.350	.035	471.640	.200	530.330	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.945	21.000	299.000	677.000	82.000	82.000	82.000	.707	-0.000	-0.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	.707	-0.000
X3	-0.000	-0.000	-0.000	413.000	584.300	587.000	584.500	-0.000	-0.000	-0.000
BT	17.000	-0.000	597.200	0.000	68.000	597.600	596.000	168.000	598.200	593.000
BT	299.000	598.900	588.900	299.000	598.900	594.300	373.000	600.600	596.600	373.000
BT	600.600	584.300	413.000	601.500	584.300	413.000	601.500	586.800	500.000	602.400
BT	597.600	587.000	601.600	586.800	587.000	601.600	566.300	627.000	600.600	586.000
BT	627.000	600.600	596.000	677.000	599.100	594.500	677.000	599.100	590.000	750.000
BT	599.100	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	596.800	0.000	596.000	68.000	593.000	168.000	588.900	299.000	584.300	373.000
GR	584.300	413.000	568.600	413.000	568.000	425.000	567.500	440.000	567.100	448.000
GR	566.500	460.000	565.700	480.000	561.900	500.000	560.100	520.000	558.900	530.000
GR	561.200	550.000	564.800	570.000	566.300	587.000	586.000	627.000	590.000	677.000
GR	599.100	750.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	7.000	.200	211.420	.120	263.750	.022	292.030	.022	415.070	.022
NH	443.350	.035	471.640	.200	530.330	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.946	21.000	299.000	677.000	1.000	1.000	1.000	.707	-0.000	-0.000
X3	-0.000	-0.000	-0.000	413.000	584.300	587.000	584.500	-0.000	-0.000	-0.000
GR	596.800	0.000	596.000	68.000	593.000	168.000	588.900	299.000	584.300	373.000
GR	584.300	413.000	568.600	413.000	568.000	425.000	567.500	440.000	567.100	448.000
GR	566.500	460.000	565.700	480.000	561.900	500.000	560.100	520.000	558.900	530.000
GP	561.200	550.000	564.800	570.000	566.300	587.000	586.000	627.000	590.000	677.000

GR	599.100	750.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.030	.070	.027	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.973	25.000	0.000	330.000	53.000	253.000	150.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	160.000	584.300	350.000	597.000	-0.000	-0.000	-0.000
GR	596.000	0.000	588.900	74.000	584.300	120.000	575.000	121.000	570.900	150.000
GR	568.800	160.000	568.300	170.000	567.000	180.000	565.900	190.000	565.000	200.000
GR	564.300	210.000	563.900	220.000	562.900	230.000	562.200	240.000	560.800	250.000
GR	555.840	260.000	555.840	270.000	559.100	230.000	561.000	290.000	567.000	300.000
GR	575.800	310.000	580.000	320.000	588.000	330.000	595.000	340.000	597.000	350.000
NC	.060	.060	.027	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.194	26.000	0.000	221.000	1360.000	1110.000	1170.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	-0.000	-0.000	221.000	-0.000	-0.000	-0.000	-0.000
GR	597.100	0.000	582.400	25.000	579.700	30.000	573.600	40.000	568.200	50.000
GR	565.200	60.000	561.400	70.000	557.400	80.000	557.000	90.000	557.600	100.000
GR	558.800	110.000	560.600	120.000	562.000	130.000	562.700	140.000	563.400	150.000
GR	565.000	160.000	571.300	170.000	575.700	180.000	575.700	190.000	575.700	200.000
GR	574.700	210.000	574.700	220.000	582.100	221.000	584.400	420.000	594.400	610.000
GR	595.400	720.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.035	.035	.027	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.543	28.000	25.000	275.000	1740.000	1920.000	1850.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	-0.000	-0.000	210.000	-0.000	-0.000	-0.000	-0.000
GR	594.900	0.000	593.900	25.000	581.100	42.000	580.100	45.000	579.700	50.000
GR	578.400	60.000	576.800	70.000	572.800	80.000	571.300	90.000	569.200	100.000
GR	566.800	110.000	560.800	120.000	558.300	130.000	556.400	140.000	555.300	150.000
GR	554.700	160.000	555.800	170.000	555.800	180.000	556.400	190.000	558.100	200.000
GR	560.200	210.000	565.000	220.000	569.000	230.000	576.000	239.000	580.100	250.000
GR	582.400	252.000	582.900	261.000	597.700	275.000	-0.000	-0.000	-0.000	-0.000
NH	8.000	.060	420.000	.027	475.000	.080	480.000	.027	500.000	.080
NH	506.000	.027	592.500	1.000	670.000	.060	700.000	-0.000	-0.000	-0.000
X1	1.567	36.000	399.500	684.000	125.000	125.000	125.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	300.000	-0.000	592.500	-0.000	-0.000	-0.000	-0.000
GR	596.100	0.000	596.400	200.000	596.700	300.000	586.400	399.500	582.000	408.000
GR	580.700	420.000	579.800	430.000	578.600	440.000	577.000	450.000	576.700	460.000
GR	570.500	475.000	567.100	480.000	568.600	490.000	566.700	497.000	566.500	500.000
GR	564.100	506.000	558.200	520.000	556.400	530.000	555.100	540.000	553.950	550.000
GR	554.300	560.000	554.100	570.000	555.000	580.000	562.400	592.500	571.000	598.500
GR	567.300	606.500	567.100	610.000	571.300	620.000	575.200	630.000	575.900	640.000
GR	577.100	650.000	579.300	660.000	580.000	670.000	581.000	679.000	583.000	684.000
GR	597.200	700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	9.000	.060	420.000	.022	472.000	.080	475.000	.200	483.000	.022
NH	497.000	.200	509.000	.022	592.500	1.000	670.000	.060	700.000	-0.000
X1	1.569	-47.000	399.500	684.000	10.000	10.000	10.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	300.000	-0.000	592.500	-0.000	-0.000	-0.000	-0.000
GR	596.100	0.000	596.400	200.000	596.700	300.000	597.000	399.500	586.400	399.500
GR	592.000	408.000	580.700	420.000	579.800	430.000	578.600	440.000	577.000	450.000
GR	576.700	460.000	572.800	472.000	571.800	473.000	570.500	475.000	569.100	477.000
GR	567.600	483.000	568.600	490.000	566.700	497.000	591.830	497.000	591.850	509.000
GR	562.700	509.000	562.400	510.000	558.200	520.000	556.400	530.000	555.100	540.000
GR	553.890	550.000	554.300	560.000	554.100	570.000	555.000	580.000	558.800	590.000
GR	562.400	592.500	591.990	592.500	592.000	602.500	588.000	602.500	588.000	606.500
GR	567.300	606.500	567.100	610.000	571.300	620.000	575.200	630.000	575.900	640.000
GR	577.100	650.000	579.300	660.000	580.000	670.000	581.000	679.000	583.000	684.000
GR	597.200	684.000	597.200	700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.060	.060	.022	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.570	48.000	399.500	684.000	5.000	5.000	5.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	300.000	-0.000	592.500	-0.000	-0.000	-0.000	-0.000
GR	596.100	0.000	596.400	200.000	596.700	300.000	597.000	399.500	586.400	399.500
GR	582.000	408.000	580.700	420.000	579.800	430.000	578.600	440.000	577.000	450.000
GR	576.700	460.000	573.200	471.000	587.800	471.000	587.800	477.000	591.800	477.000
GR	591.810	480.000	567.100	480.000	568.600	490.000	566.700	497.000	591.830	497.000

	[illegible]	509.000	562.700	509.000	562.400	510.000	558.200	520.000	556.400	530.000
	GR	555.100	540.000	553.860	550.000	554.300	560.000	554.100	570.000	555.000	580.000
	GR	558.800	590.000	562.400	592.500	591.990	592.500	592.000	602.500	588.000	602.500
	GR	588.000	606.500	567.300	606.500	567.100	610.000	571.300	620.000	575.200	630.000
	GR	575.900	640.000	577.100	650.000	579.300	660.000	580.000	670.000	581.000	679.000
6	GR	583.000	684.000	597.200	684.000	597.200	700.000	-0.000	-0.000	-0.000	-0.000
	X1	1.572	48.000	399.500	684.000	9.000	9.000	9.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	300.000	-0.000	592.500	-0.000	-0.000	-0.000	-0.000
	GR	596.100	0.000	596.400	200.000	596.700	300.000	597.000	399.500	586.400	399.500
	GR	582.000	408.000	580.700	420.000	579.800	430.000	578.600	440.000	577.000	450.000
	GR	576.700	460.000	573.200	471.000	587.800	471.000	587.800	477.000	591.800	477.000
	GR	591.810	480.000	567.100	480.000	568.600	490.000	566.700	497.000	591.830	497.000
	GR	591.850	509.000	562.700	509.000	562.400	510.000	558.200	520.000	556.400	530.000
	GR	555.100	540.000	553.810	550.000	554.300	560.000	554.100	570.000	555.000	580.000
	GR	558.800	590.000	562.400	592.500	591.990	592.500	592.000	602.500	588.000	602.500
	GR	588.000	606.500	567.300	606.500	567.100	610.000	571.300	620.000	575.200	630.000
	GR	575.900	640.000	577.100	650.000	579.300	660.000	580.000	670.000	581.000	679.000
	GR	583.000	684.000	597.200	684.000	597.200	700.000	-0.000	-0.000	-0.000	-0.000
	X1	1.573	48.000	399.500	684.000	1.000	1.000	-0.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	300.000	-0.000	592.500	-0.000	-0.000	-0.000	-0.000
	BT	14.000	399.500	597.000	0.000	399.500	597.000	587.600	471.000	597.180	587.800
	BT	477.000	597.200	587.800	477.000	601.400	591.800	480.000	601.410	591.810	497.000
	BT	601.430	591.830	509.000	601.450	591.850	592.500	601.590	591.990	602.500	601.600
	BT	592.000	602.500	597.400	588.000	606.500	597.390	588.000	684.000	597.200	587.800
	BT	684.000	597.200	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	GR	596.100	0.000	596.400	200.000	596.700	300.000	597.000	399.500	586.400	399.500
	GR	582.000	408.000	580.700	420.000	579.800	430.000	578.600	440.000	577.000	450.000
	GR	576.700	460.000	573.200	471.000	587.800	471.000	587.800	477.000	591.800	477.000
	GR	591.810	480.000	567.100	480.000	568.600	490.000	566.700	497.000	591.830	497.000
	GR	591.850	509.000	562.700	509.000	562.400	510.000	558.200	520.000	556.400	530.000
	GR	555.100	540.000	553.800	550.000	554.300	560.000	554.100	570.000	555.000	580.000
	GR	558.800	590.000	562.400	592.500	591.990	592.500	592.000	602.500	588.000	602.500
	GR	588.000	606.500	567.300	606.500	567.100	610.000	571.300	620.000	575.200	630.000
	GR	575.900	640.000	577.100	650.000	579.300	660.000	580.000	670.000	581.000	679.000
	GR	583.000	684.000	597.200	684.000	597.200	700.000	-0.000	-0.000	-0.000	-0.000
	X1	1.576	-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	-0.000	-0.000	-0.000	1.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	300.000	-0.000	592.500	-0.000	-0.000	-0.000	-0.000
	X1	1.577	48.000	399.500	684.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	300.000	-0.000	592.500	-0.000	-0.000	-0.000	-0.000
	GR	596.100	0.000	596.400	200.000	596.700	300.000	597.000	399.500	586.400	399.500
	GR	582.000	408.000	580.700	420.000	579.800	430.000	578.600	440.000	577.000	450.000
	GR	576.700	460.000	573.200	471.000	587.800	471.000	587.800	477.000	591.800	477.000
	GR	591.810	480.000	567.100	480.000	568.600	490.000	566.700	497.000	591.830	497.000
	GR	591.850	509.000	562.700	509.000	562.400	510.000	558.200	520.000	556.400	530.000
	GR	555.100	540.000	553.810	550.000	554.300	560.000	554.100	570.000	555.000	580.000
	GR	558.800	590.000	562.400	592.500	591.990	592.500	592.000	602.500	588.000	602.500
	GR	588.000	606.500	567.300	606.500	567.100	610.000	571.300	620.000	575.200	630.000
	GR	575.900	640.000	577.100	650.000	579.300	660.000	580.000	670.000	581.000	679.000
	GR	583.000	684.000	597.200	684.000	597.200	700.000	-0.000	-0.000	-0.000	-0.000
	NH	6.000	.060	420.000	.022	480.000	.080	482.000	.022	592.500	1.000
	NH	670.000	.060	700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	X1	1.578	48.000	399.500	684.000	9.000	9.000	9.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	300.000	-0.000	592.500	-0.000	-0.000	-0.000	-0.000
	GR	596.100	0.000	596.400	200.000	596.700	300.000	597.000	399.500	586.400	399.500
	GR	582.000	408.000	580.700	420.000	579.800	430.000	578.600	440.000	577.000	450.000
	GR	576.700	460.000	573.200	471.000	587.800	471.000	587.800	477.000	591.800	477.000
	GR	591.810	480.000	567.100	480.000	567.500	482.000	566.700	497.000	591.830	497.000
	GR	591.850	509.000	562.700	509.000	562.400	510.000	558.200	520.000	556.400	530.000
	GR	555.100	540.000	553.860	550.000	554.300	560.000	554.100	570.000	555.000	580.000
	GR	558.800	590.000	562.400	592.500	591.990	592.500	592.000	602.500	588.000	602.500

GR	588.000	606.500	567.300	606.500	567.100	610.000	571.300	620.000	575.200	630.000
GR	575.900	640.000	577.100	650.000	579.300	660.000	580.000	670.000	581.000	679.000
GR	583.000	684.000	597.200	684.000	597.200	700.000	-0.000	-0.000	-0.000	-0.000
NH	6.000	.060	420.000	.022	475.000	.200	483.000	.022	592.500	1.000
NH	670.000	.060	700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.579	47.000	399.500	684.000	5.000	5.000	5.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	300.000	-0.000	592.500	-0.000	-0.000	-0.000	-0.000
GR	596.100	0.000	596.400	200.000	596.700	300.000	597.000	399.500	586.400	399.500
GR	582.000	408.000	580.700	420.000	579.800	430.000	578.600	440.000	577.000	450.000
GR	576.700	460.000	573.200	471.000	571.800	473.000	570.500	475.000	569.100	477.000
GR	567.600	483.000	568.600	490.000	566.700	497.000	591.830	497.000	591.850	509.000
GR	562.700	509.000	562.400	510.000	558.200	520.000	556.400	530.000	555.100	540.000
GR	553.890	550.000	554.300	560.000	554.100	570.000	555.000	580.000	558.800	590.000
GR	562.400	592.500	591.990	592.500	592.000	602.500	588.000	602.500	588.000	606.500
GR	567.300	606.500	567.100	610.000	571.300	620.000	575.200	630.000	575.900	640.000
GR	577.100	650.000	579.300	660.000	580.000	670.000	581.000	679.000	583.000	684.000
GR	597.200	684.000	597.200	700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	6.000	.060	420.000	.027	503.000	.080	506.000	.027	592.500	1.000
NH	670.000	.060	700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.580	37.000	399.500	695.000	5.000	5.000	5.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	300.000	-0.000	597.500	-0.000	-0.000	-0.000	-0.000
GR	596.100	0.000	596.400	200.000	596.700	300.000	586.400	399.500	582.000	408.000
GR	580.700	420.000	579.800	430.000	578.600	440.000	577.000	450.000	576.700	460.000
GR	573.200	471.000	567.100	480.000	568.600	490.000	566.700	497.000	566.370	503.000
GR	565.740	506.000	558.200	520.000	556.400	530.000	555.100	540.000	553.920	550.000
GR	554.300	560.000	554.100	570.000	555.000	580.000	562.400	592.500	571.000	598.500
GR	567.300	606.500	567.100	610.000	571.300	620.000	575.200	630.000	575.900	640.000
GR	577.100	650.000	579.300	660.000	580.000	670.000	581.000	679.000	583.000	684.000
GR	597.200	695.000	597.200	700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.030	.035	.028	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.004	21.000	99.000	375.000	2240.000	2140.000	2240.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	90.000	-0.000	385.000	-0.000	-0.000	-0.000	-0.000
GR	595.000	0.000	592.900	75.000	584.100	99.000	578.500	100.000	572.500	120.000
GR	569.400	140.000	567.900	180.000	568.200	220.000	569.000	260.000	572.200	300.000
GR	574.200	320.000	575.100	340.000	576.600	350.000	580.100	375.000	584.400	385.000
GR	584.200	400.000	584.600	600.000	584.200	800.000	584.700	1000.000	587.900	1200.000
GR	591.000	1400.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.135	25.000	359.000	630.000	740.000	650.000	690.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	310.000	-0.000	630.000	-0.000	-0.000	-0.000	-0.000
GR	600.000	0.000	595.000	300.000	590.000	310.000	585.000	340.000	580.000	359.000
GR	577.100	360.000	575.200	370.000	572.200	380.000	570.600	390.000	570.200	400.000
GR	569.800	410.000	569.400	420.000	569.400	430.000	568.200	440.000	568.700	540.000
GR	572.300	550.000	573.000	560.000	573.500	570.000	574.200	580.000	574.900	590.000
GR	574.800	600.000	576.700	610.000	576.600	620.000	587.700	630.000	589.300	760.000
NC	.035	.035	.028	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.257	27.000	298.000	665.000	660.000	630.000	650.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	320.000	-0.000	840.000	-0.000	-0.000	-0.000	-0.000
GR	594.200	0.000	596.200	100.000	585.200	200.000	582.200	298.000	580.300	300.000
GR	576.900	310.000	576.000	320.000	571.800	340.000	569.600	380.000	569.000	420.000
GR	568.400	460.000	568.800	500.000	571.400	540.000	573.300	560.000	575.600	580.000
GR	576.000	620.000	576.400	640.000	576.900	650.000	580.300	658.000	584.700	665.000
GR	584.400	700.000	583.400	900.000	582.800	1100.000	584.100	1300.000	584.200	1500.000
GR	588.400	1700.000	590.000	1800.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.035	.035	.028	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.305	41.000	315.000	931.000	220.000	280.000	250.000	.940	-0.000	-0.000
X3	-0.000	-0.000	-0.000	318.000	-0.000	915.000	-0.000	-0.000	-0.000	-0.000
GR	607.000	0.000	606.600	100.000	603.800	150.000	600.900	200.000	586.900	252.000
GR	587.400	257.000	589.000	272.000	588.500	309.000	588.600	315.000	588.600	318.000
GR	583.000	326.000	580.500	355.000	577.500	370.000	573.400	400.000	572.700	405.000
GR	571.600	412.000	562.230	435.000	559.000	465.000	569.200	500.000	569.200	535.000

GR	569.900	548.000	570.300	555.000	571.100	570.000	573.300	620.000	576.800	645.000
GR	577.500	651.000	581.900	700.000	582.000	703.000	582.000	708.000	582.500	760.000
GR	582.500	765.000	582.600	800.000	582.600	817.000	582.700	822.000	583.200	874.000
GR	583.200	879.000	583.900	900.000	584.400	920.000	584.400	931.000	584.400	970.000
GR	602.600	1100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.035	.035	.022	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.314	41.000	318.000	931.000	49.000	49.000	49.000	.940	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	599.000	599.000	-0.000
GR	607.000	0.000	606.600	100.000	603.800	150.000	600.900	200.000	586.900	252.000
GR	587.400	257.000	589.000	272.000	588.500	309.000	588.600	315.000	588.600	318.000
GR	583.000	326.000	580.500	355.000	577.500	370.000	573.400	400.000	572.700	405.000
GR	571.600	412.000	568.200	435.000	569.000	465.000	569.200	500.000	569.200	535.000
GR	569.900	548.000	570.300	555.000	571.100	570.000	573.300	620.000	576.800	645.000
GR	577.500	651.000	581.900	700.000	582.000	703.000	582.000	708.000	582.500	760.000
GR	582.500	765.000	582.600	800.000	582.600	817.000	582.700	822.000	583.200	874.000
GR	583.200	879.000	583.900	900.000	584.400	920.000	587.200	931.000	597.400	970.000
GR	602.600	1100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.035	.035	.022	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.315	42.000	318.000	931.000	1.000	1.000	1.000	.940	-0.000	-0.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	.940	-0.000
BT	43.000	200.000	609.900	0.000	200.000	609.900	602.700	252.000	609.800	602.600
BT	252.000	609.800	586.900	257.000	609.790	587.400	257.000	609.790	602.590	309.000
BT	609.680	602.480	309.000	609.680	588.500	315.000	609.680	588.600	315.000	609.680
BT	599.570	405.000	609.480	599.370	405.000	609.480	572.700	412.000	609.450	571.600
BT	412.000	609.450	599.340	549.000	608.910	598.800	548.000	608.910	569.900	555.000
BT	608.880	570.300	555.000	608.880	598.770	645.000	608.480	598.370	645.000	608.480
BT	576.800	651.000	608.450	577.500	651.000	608.450	600.750	703.000	608.190	600.490
BT	703.000	608.190	582.000	708.000	608.160	582.000	708.000	608.160	600.460	760.000
BT	607.900	600.200	760.000	607.900	582.500	765.000	607.880	582.500	765.000	607.880
BT	600.180	817.000	607.630	599.930	817.000	607.630	582.600	822.000	607.610	582.700
BT	822.000	607.610	599.910	874.000	607.400	599.700	874.000	607.400	583.200	879.000
BT	607.380	583.200	879.000	607.380	599.680	931.000	607.110	599.400	931.000	607.110
BT	587.200	970.000	606.880	597.400	970.000	606.880	603.380	970.000	606.880	0.000
GR	607.000	0.000	606.600	100.000	606.400	200.000	600.900	200.000	586.900	252.000
GR	587.400	257.000	589.000	272.000	588.500	309.000	588.600	315.000	588.600	318.000
GR	583.000	326.000	580.500	355.000	577.500	370.000	573.400	400.000	572.700	405.000
GR	571.600	412.000	568.200	435.000	569.000	465.000	569.200	500.000	569.200	535.000
GR	569.900	548.000	570.300	555.000	571.100	570.000	573.300	620.000	576.800	645.000
GR	577.500	651.000	581.900	700.000	582.000	703.000	582.000	708.000	582.500	760.000
GR	582.500	765.000	582.600	800.000	582.600	817.000	582.700	822.000	583.200	874.000
GR	583.200	879.000	583.900	900.000	584.400	920.000	587.200	931.000	597.400	970.000
GR	603.380	970.000	602.600	1100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.328	-0.000	-0.000	-0.000	74.000	74.000	74.000	-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	.035	.035	.022	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.329	41.000	318.000	931.000	1.000	1.000	1.000	.940	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	599.000	599.000	-0.000
GR	607.000	0.000	606.600	100.000	603.800	150.000	600.900	200.000	586.900	252.000
GR	587.400	257.000	589.000	272.000	588.500	309.000	588.600	315.000	588.600	318.000
GR	583.000	326.000	580.500	355.000	577.500	370.000	573.400	400.000	572.700	405.000
GR	571.600	412.000	568.200	435.000	569.000	465.000	569.200	500.000	569.200	535.000
GR	569.900	548.000	570.300	555.000	571.100	570.000	573.300	620.000	576.800	645.000
GR	577.500	651.000	581.900	700.000	582.000	703.000	582.000	708.000	582.500	760.000
GR	582.500	765.000	582.600	800.000	582.600	817.000	582.700	822.000	583.200	874.000
GR	583.200	879.000	583.900	900.000	584.400	920.000	587.200	931.000	597.400	970.000
GR	602.600	1100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.035	.040	.023	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.338	41.000	318.000	931.000	49.000	49.000	49.000	.940	-0.000	-0.000
X3	-0.000	-0.000	-0.000	318.000	-0.000	960.000	-0.000	-0.000	-0.000	-0.000
GR	607.000	0.000	606.600	100.000	603.800	150.000	600.900	200.000	586.900	252.000
GR	587.400	257.000	589.000	272.000	588.500	309.000	588.600	315.000	588.600	318.000

	[illegible]	320.000	380.500	355.000	577.500	370.000	573.400	400.000	572.700	405.000
GR	571.600	412.000	568.220	435.000	569.000	465.000	569.200	500.000	569.200	535.000
GR	569.900	548.000	570.300	555.000	571.100	570.000	573.300	620.000	576.800	645.000
GR	577.500	651.000	581.900	700.000	582.000	703.000	582.000	708.000	582.500	760.000
GR	582.500	765.000	582.600	800.000	582.600	817.000	582.700	822.000	583.200	874.000
GR	583.200	879.000	583.900	900.000	584.400	920.000	584.400	931.000	584.400	970.000
GR	602.600	1100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.035	.040	.030	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.643	35.000	599.000	910.000	1850.000	1250.000	1610.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	550.000	-0.000	1160.000	-0.000	-0.000	-0.000	-0.000
GR	600.000	0.000	595.000	150.000	590.000	200.000	589.100	300.000	585.200	550.000
GR	581.800	599.000	580.300	600.000	577.800	610.000	577.900	620.000	577.600	630.000
GR	577.300	640.000	576.800	660.000	574.700	680.000	572.600	700.000	571.600	730.000
GR	570.400	760.000	570.000	790.000	569.000	810.000	568.800	840.000	568.700	860.000
GR	571.400	870.000	576.000	880.000	578.600	890.000	580.300	900.000	583.100	910.000
GR	581.700	1100.000	582.300	1300.000	583.000	1500.000	580.400	1525.000	577.400	1545.000
GR	576.900	1565.000	580.400	1585.000	584.100	1600.000	594.100	1690.000	595.000	1700.000
X1	2.789	28.000	25.000	360.000	686.000	934.000	770.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	-0.000	440.000	-0.000	-0.000	-0.000	-0.000
GR	585.000	0.000	583.000	25.000	580.000	30.000	574.800	40.000	574.900	60.000
GR	574.700	70.000	574.700	80.000	574.900	90.000	569.230	100.000	569.230	200.000
GR	571.900	210.000	571.900	220.000	571.700	230.000	571.400	240.000	571.200	250.000
GR	571.000	260.000	570.700	270.000	570.400	280.000	570.400	290.000	570.700	300.000
GR	572.700	310.000	574.200	320.000	578.700	330.000	579.400	340.000	580.000	350.000
GR	583.000	360.000	584.000	420.000	592.300	455.000	-0.000	-0.000	-0.000	-0.000
NC	.035	.035	.032	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3.026	30.000	99.000	530.000	1114.000	1516.000	1250.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	-0.000	675.000	-0.000	-0.000	-0.000	-0.000
GR	590.900	0.000	587.200	50.000	582.700	99.000	575.200	100.000	574.500	110.000
GR	573.600	120.000	572.400	140.000	572.600	160.000	572.300	180.000	573.400	200.000
GR	574.500	230.000	573.900	250.000	570.200	260.000	570.100	290.000	570.500	320.000
GR	570.600	350.000	570.900	360.000	575.700	380.000	575.500	410.000	573.700	440.000
GR	572.000	470.000	573.600	490.000	575.600	510.000	578.800	520.000	580.300	530.000
GR	582.700	534.000	583.700	600.000	590.300	700.000	595.000	750.000	600.000	790.000
X1	3.168	33.000	95.000	455.000	690.000	825.000	750.000	-0.000	-0.000	-0.000
GR	589.300	0.000	584.000	20.000	583.000	95.000	581.000	100.000	578.900	120.000
GR	575.300	130.000	572.300	140.000	572.000	150.000	571.200	160.000	571.600	170.000
GR	572.700	180.000	574.100	190.000	575.100	200.000	574.800	210.000	574.600	220.000
GR	570.000	230.000	570.000	330.000	573.000	340.000	572.900	350.000	572.800	360.000
GR	572.700	370.000	572.400	380.000	572.000	390.000	572.000	400.000	571.900	410.000
GR	573.100	420.000	579.400	430.000	580.000	450.000	583.000	455.000	585.000	630.000
GR	590.000	650.000	595.000	680.000	600.000	730.000	-0.000	-0.000	-0.000	-0.000
X1	3.221	30.000	165.000	495.000	270.000	280.000	280.000	-0.000	-0.000	-0.000
GR	589.300	0.000	584.000	20.000	583.000	165.000	581.000	170.000	579.100	180.000
GR	578.300	190.000	576.400	200.000	575.500	210.000	575.400	220.000	575.100	230.000
GR	574.800	240.000	574.500	250.000	574.300	260.000	574.200	270.000	574.000	280.000
GR	570.000	290.000	570.000	390.000	572.100	400.000	571.900	410.000	571.700	420.000
GR	571.500	430.000	571.000	440.000	571.200	450.000	578.400	460.000	580.000	490.000
GR	583.000	495.000	585.000	660.000	590.000	690.000	595.000	720.000	600.000	760.000
NH	6.000	.040	510.000	.070	760.000	.035	810.000	.032	1095.000	.040
NH	1220.000	.070	1440.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3.410	31.000	810.000	1095.000	940.000	1200.000	1000.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	200.000	-0.000	1255.000	-0.000	-0.000	-0.000	-0.000
GR	600.000	0.000	592.000	60.000	584.500	220.000	583.000	420.000	582.900	510.000
GR	582.800	620.000	583.200	750.000	583.400	810.000	580.100	820.000	577.900	830.000
GR	576.200	840.000	575.400	850.000	575.000	880.000	574.100	900.000	570.800	920.000
GR	569.700	940.000	570.000	950.000	570.000	980.000	569.600	1000.000	569.200	1020.000
GR	572.200	1040.000	572.200	1060.000	572.400	1070.000	575.900	1080.000	580.100	1090.000
GR	583.600	1095.000	583.400	1120.000	584.100	1220.000	590.400	1280.000	595.000	1310.000
GR	600.000	1440.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

NH	4.000	.060	395.000	.040						
X1	3.656	32.000	592.000	870.000	1250.000	1350.000	1300.000	-0.000	-0.000	-0.000
GR	600.000	0.000	597.100	30.000	583.900	175.000	583.400	195.000	583.200	395.000
GR	583.400	495.000	583.500	592.000	580.400	595.000	578.200	601.000	573.100	615.000
GR	572.500	625.000	572.500	635.000	572.800	655.000	567.700	675.000	567.700	695.000
GR	567.500	715.000	567.700	735.000	567.000	755.000	568.000	775.000	573.000	795.000
GR	573.500	815.000	573.800	835.000	573.800	845.000	575.200	855.000	578.700	865.000
GR	580.400	868.000	582.400	870.000	584.600	910.000	584.500	995.000	584.400	1060.000
GR	596.400	1195.000	600.000	1900.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	6.000	.120	140.000	.034	405.000	.080	570.000	.060	750.000	.080
NH	930.000	.040	1245.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3.970	29.000	140.000	405.000	1690.000	1440.000	1655.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	20.000	-0.000	930.000	-0.000	-0.000	-0.000	-0.000
GR	600.000	0.000	597.900	30.000	595.000	45.000	585.000	135.000	583.200	140.000
GR	581.300	145.000	579.400	155.000	577.800	165.000	574.900	175.000	572.200	195.000
GR	568.600	215.000	568.800	235.000	568.600	255.000	567.900	275.000	567.500	295.000
GR	569.200	315.000	573.000	335.000	574.800	355.000	576.000	375.000	578.900	385.000
GR	580.200	395.000	581.300	400.000	583.600	405.000	584.400	545.000	584.200	570.000
GR	583.200	750.000	582.900	904.000	589.300	930.000	590.700	1245.000	-0.000	-0.000
NH	6.000	.080	70.000	.034	235.000	.200	265.000	.060	315.000	.200
NH	600.000	.040	1120.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.151	27.000	70.000	265.000	990.000	870.000	960.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	45.000	-0.000	1120.000	-0.000	-0.000	-0.000	-0.000
GR	600.000	0.000	598.000	20.000	595.000	45.000	581.000	70.000	574.900	80.000
GR	570.900	90.000	568.500	100.000	568.500	120.000	568.500	140.000	568.500	150.000
GR	568.500	170.000	568.500	180.000	568.500	200.000	571.900	210.000	574.000	220.000
GR	574.900	235.000	577.200	250.000	581.000	260.000	584.900	265.000	585.500	315.000
GR	586.300	385.000	585.700	600.000	585.400	765.000	585.600	935.000	585.700	1105.000
GR	589.300	1120.000	589.300	1200.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	6.000	.060	97.000	.034	225.000	.200	255.000	.060	300.000	.200
NH	690.000	.040	1035.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.340	32.000	97.000	255.000	1050.000	850.000	1000.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	45.000	-0.000	1035.000	-0.000	-0.000	-0.000	-0.000
GR	613.000	0.000	612.700	49.000	582.200	97.000	581.100	100.000	579.700	110.000
GR	569.200	120.000	568.900	130.000	565.300	140.000	568.600	150.000	569.000	160.000
GR	568.300	170.000	567.800	180.000	567.900	190.000	567.800	200.000	566.200	210.000
GR	569.900	225.000	572.500	230.000	575.600	240.000	580.700	250.000	586.300	255.000
GR	587.200	300.000	587.700	330.000	586.200	450.000	588.100	500.000	588.000	550.000
GR	588.000	690.000	587.600	750.000	586.800	850.000	586.000	1015.000	589.300	1035.000
GR	589.300	1150.000	589.300	1250.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	6.000	.060	497.000	.034	625.000	.200	655.000	.060	700.000	.200
NH	1070.000	.040	1400.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.369	48.000	497.000	655.000	160.000	100.000	150.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	450.000	-0.000	1400.000	-0.000	-0.000	-0.000	-0.000
GR	611.700	0.000	611.700	100.000	612.600	118.500	606.000	118.500	580.100	170.500
GR	579.900	172.000	576.700	175.000	574.000	180.000	571.400	190.000	574.800	200.000
GR	577.400	210.000	578.700	220.000	579.200	224.000	579.800	229.500	608.600	281.500
GR	612.600	281.500	612.600	300.000	612.800	400.000	612.700	450.000	582.200	497.000
GR	581.100	500.000	579.700	510.000	569.200	520.000	566.900	530.000	568.300	540.000
GR	568.600	550.000	569.000	560.000	568.300	570.000	567.800	580.000	567.900	590.000
GR	567.800	600.000	566.100	610.000	569.900	625.000	572.500	630.000	575.600	640.000
GR	580.700	650.000	586.300	655.000	587.200	700.000	587.700	730.000	588.200	750.000
GR	588.100	800.000	588.000	850.000	588.000	1010.000	587.600	1050.000	586.800	1250.000
GR	586.000	1380.000	589.300	1400.000	589.300	1550.000	-0.000	-0.000	-0.000	-0.000
NC	.060	.040	.036	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
QT	4.000	13760.000	18580.000	20480.000	24780.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.600	32.000	92.000	310.000	1350.000	810.000	1220.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	57.000	-0.000	810.000	-0.000	-0.000	-0.000	-0.000
GR	610.000	0.000	604.300	50.000	603.100	57.000	584.200	92.000	581.200	95.000
GR	579.300	110.000	569.300	120.000	567.900	130.000	565.400	140.000	565.100	150.000

GR	566.100	160.000	566.600	170.000	567.500	180.000	569.300	190.000	570.700	200.000
GR	572.000	210.000	572.800	220.000	573.800	230.000	574.700	240.000	576.800	250.000
GR	577.000	260.000	577.500	270.000	578.500	280.000	579.000	290.000	580.000	297.000
GR	581.200	300.000	585.600	310.000	585.300	400.000	585.500	500.000	586.000	700.000
GR	589.300	870.000	589.300	1100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.040	.050	.036	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.651	29.000	195.000	450.000	360.000	155.000	265.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	50.000	-0.000	600.000	-0.000	-0.000	-0.000	-0.000
GR	595.000	0.000	595.000	50.000	583.000	195.000	580.000	200.000	579.300	212.000
GR	569.300	225.000	567.900	237.000	565.400	250.000	565.100	262.000	566.100	275.000
GR	566.600	287.000	567.500	300.000	569.300	312.000	570.700	325.000	572.000	337.000
GR	572.800	350.000	573.800	362.000	574.700	375.000	576.800	387.000	577.000	400.000
GR	577.500	412.000	578.500	425.000	579.000	437.000	580.000	445.000	583.000	450.000
GR	583.000	500.000	584.500	600.000	585.500	930.000	589.300	965.000	-0.000	-0.000
NH	4.000	.070	805.000	.036	1025.000	.040	1060.000	.200	1515.000	-0.000
X1	4.870	27.000	805.000	1025.000	1290.000	1030.000	1160.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	-0.000	1060.000	-0.000	-0.000	-0.000	-0.000
GR	600.000	0.000	595.000	45.000	590.000	300.000	585.000	475.000	583.000	805.000
GR	580.000	810.000	579.000	820.000	577.400	830.000	575.200	840.000	573.100	850.000
GR	571.200	865.000	569.700	875.000	567.300	890.000	565.800	900.000	565.100	915.000
GR	565.900	925.000	567.000	935.000	569.300	950.000	571.000	960.000	573.200	975.000
GR	575.400	985.000	577.300	1000.000	579.000	1010.000	580.000	1020.000	583.000	1025.000
GR	585.000	1060.000	585.000	1515.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.070	.070	.043	.300	.500	-0.000	-0.000	-0.000	-0.000	-0.000
X1	5.041	30.000	1250.000	1402.000	620.000	950.000	900.000	-0.000	-0.000	-0.000
GR	603.100	0.000	593.400	100.000	586.400	200.000	584.300	400.000	584.500	600.000
GR	584.500	800.000	585.500	1000.000	586.100	1200.000	585.500	1250.000	581.000	1255.000
GR	580.600	1260.000	579.000	1270.000	576.200	1280.000	574.600	1290.000	572.000	1300.000
GR	570.600	1310.000	570.600	1320.000	568.900	1330.000	567.800	1340.000	568.200	1350.000
GR	566.600	1360.000	564.800	1370.000	566.700	1380.000	571.900	1390.000	580.300	1397.000
GR	581.500	1400.000	583.400	1402.000	593.200	1425.000	599.300	1450.000	602.200	1500.000
NC	.070	.050	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	5.249	25.000	250.000	395.000	825.000	850.000	1100.000	-0.000	-0.000	-0.000
GR	600.000	0.000	595.000	30.000	590.000	70.000	585.000	110.000	583.900	250.000
GR	582.700	253.000	574.300	260.000	569.100	270.000	567.200	280.000	569.000	290.000
GR	570.600	300.000	570.200	310.000	571.300	320.000	573.000	330.000	573.000	340.000
GR	574.400	350.000	577.000	360.000	578.600	370.000	581.400	380.000	583.000	390.000
GR	583.400	395.000	585.000	475.000	590.000	1050.000	595.000	1100.000	600.000	1250.000
NC	.030	.050	.036	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	5.458	34.000	630.000	853.000	1075.000	875.000	1100.000	-0.000	-0.000	-0.000
GR	600.000	0.000	595.000	40.000	590.000	60.000	585.000	120.000	585.000	400.000
GR	585.900	630.000	580.900	635.000	579.700	640.000	576.700	650.000	573.300	660.000
GR	572.600	670.000	572.900	680.000	572.400	690.000	572.800	700.000	571.600	710.000
GR	571.100	720.000	571.200	730.000	570.600	740.000	570.500	750.000	570.300	760.000
GR	570.600	770.000	569.800	780.000	569.600	790.000	569.700	800.000	569.500	810.000
GR	569.500	820.000	573.400	830.000	578.000	840.000	579.900	847.000	580.900	850.000
GR	582.600	853.000	590.000	980.000	595.000	1020.000	600.000	1050.000	-0.000	-0.000
NC	.030	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	5.665	40.000	980.000	1203.000	900.000	1200.000	1100.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	50.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	590.000	0.000	590.000	0.000	586.000	100.000	585.200	200.000	585.600	300.000
GR	586.000	400.000	584.100	500.000	585.000	600.000	584.900	700.000	584.400	800.000
GR	586.300	900.000	587.500	980.000	582.500	985.000	581.300	990.000	578.300	1000.000
GR	574.900	1010.000	574.200	1020.000	574.500	1030.000	574.000	1040.000	574.400	1050.000
GR	573.200	1060.000	572.700	1070.000	572.800	1080.000	572.200	1090.000	572.100	1100.000
GR	571.900	1110.000	572.200	1120.000	571.400	1130.000	571.200	1140.000	571.300	1150.000
GR	571.100	1160.000	571.100	1170.000	575.000	1180.000	579.600	1190.000	581.500	1197.000
GR	582.500	1200.000	584.200	1203.000	589.700	1250.000	597.500	1300.000	600.600	1337.000
NC	.030	.050	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

X3	-0.000	-0.000	-0.000	950.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	600.000	0.000	590.000	80.000	586.000	600.000	585.200	700.000	585.600	800.000
GR	586.000	900.000	584.100	1000.000	585.000	1100.000	584.900	1200.000	584.400	1300.000
GR	586.300	1400.000	584.900	1480.000	579.900	1485.000	578.700	1490.000	574.700	1500.000
GR	572.300	1510.000	571.600	1520.000	571.900	1530.000	571.400	1540.000	571.800	1550.000
GR	570.600	1560.000	570.100	1570.000	570.200	1580.000	569.600	1590.000	569.500	1600.000
GR	569.300	1610.000	569.600	1620.000	566.800	1630.000	568.600	1640.000	568.700	1650.000
GR	568.500	1660.000	568.500	1670.000	572.400	1680.000	577.000	1690.000	578.900	1697.000
GR	579.900	1700.000	581.600	1703.000	585.000	1780.000	590.000	1860.000	595.000	1900.000
GR	600.000	2070.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.050	.050	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	5.926	43.000	1080.000	1303.000	600.000	425.000	725.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	600.800	0.000	590.000	100.000	586.000	200.000	585.200	300.000	585.600	400.000
GR	586.000	500.000	584.100	600.000	585.000	700.000	584.900	800.000	584.400	900.000
GR	586.300	1000.000	583.400	1080.000	578.400	1083.000	577.400	1090.000	575.500	1100.000
GR	570.900	1110.000	567.000	1120.000	567.000	1130.000	567.200	1140.000	567.100	1150.000
GR	567.300	1160.000	568.100	1170.000	567.800	1180.000	568.000	1190.000	568.100	1200.000
GR	568.600	1210.000	569.100	1220.000	570.300	1230.000	569.900	1240.000	570.400	1250.000
GR	570.100	1260.000	570.800	1270.000	574.200	1280.000	577.200	1290.000	578.400	1300.000
GR	580.100	1303.000	585.600	1350.000	586.400	1450.000	584.200	1650.000	584.600	1850.000
GR	586.700	1950.000	594.800	2050.000	604.800	2150.000	-0.000	-0.000	-0.000	-0.000
NC	.070	.050	.047	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	6.059	30.000	92.000	225.000	800.000	325.000	700.000	-0.000	-0.000	-0.000
GR	610.200	0.000	603.700	15.000	584.800	63.000	582.300	92.000	580.900	95.000
GR	577.800	100.000	575.900	105.000	570.700	115.000	567.200	125.000	568.000	135.000
GR	565.800	145.000	566.200	155.000	566.400	165.000	565.600	175.000	565.600	185.000
GR	566.000	195.000	573.000	205.000	579.000	210.000	580.900	215.000	586.600	222.000
GR	587.900	225.000	586.200	295.000	587.200	495.000	586.300	695.000	586.400	895.000
GR	584.200	1095.000	584.600	1295.000	586.700	1395.000	594.800	1495.000	604.800	1595.000
NH	5.000	.070	175.000	.047	421.000	.050	1293.000	.040	1428.000	.050
NH	2250.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	6.192	62.000	162.000	421.000	550.000	975.000	700.000	-0.000	-0.000	-0.000
GR	601.800	0.000	594.100	78.000	587.800	162.000	582.800	175.000	580.900	178.000
GR	580.200	183.000	580.000	188.000	579.500	198.000	578.200	208.000	577.700	218.000
GR	576.600	228.000	576.000	238.000	575.600	248.000	575.300	258.000	575.200	268.000
GR	575.100	278.000	575.100	288.000	574.600	298.000	574.200	308.000	574.400	318.000
GR	574.200	328.000	573.300	338.000	572.900	348.000	573.200	358.000	572.200	368.000
GR	573.100	378.000	573.800	388.000	572.900	398.000	575.000	408.000	578.000	413.000
GR	580.900	418.000	588.200	421.000	587.100	478.000	585.900	678.000	586.100	878.000
GR	584.500	1078.000	586.000	1278.000	586.100	1288.000	580.700	1293.000	579.300	1298.000
GR	578.000	1308.000	577.600	1318.000	577.400	1328.000	577.100	1338.000	576.800	1348.000
GR	576.700	1358.000	576.500	1368.000	576.500	1378.000	576.100	1388.000	575.800	1398.000
GR	575.800	1408.000	577.200	1418.000	578.300	1423.000	580.700	1428.000	582.100	1433.000
GR	587.700	1445.000	587.100	1478.000	586.600	1578.000	588.200	1678.000	586.600	1778.000
GR	590.000	2150.000	600.000	2250.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	6.000	.090	502.000	.047	647.000	.050	1800.000	.110	2400.000	.040
NH	2570.000	.110	2725.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	6.367	54.000	502.000	647.000	775.000	2075.000	925.000	-0.000	-0.000	-0.000
GR	600.000	0.000	590.000	200.000	535.000	450.000	581.300	502.000	578.900	510.000
GR	578.400	515.000	576.900	525.000	571.600	535.000	571.400	545.000	568.400	555.000
GR	567.500	565.000	568.000	575.000	567.600	585.000	567.600	595.000	570.500	605.000
GR	571.100	615.000	573.500	625.000	574.900	635.000	576.700	640.000	581.300	645.000
GR	580.500	647.000	585.000	700.000	587.300	900.000	586.800	1100.000	586.100	1300.000
GR	585.900	1500.000	586.700	1700.000	587.400	1900.000	587.400	1900.000	587.500	2100.000
GR	587.500	2100.000	587.000	2200.000	587.200	2300.000	587.700	2377.000	582.200	2397.000
GR	580.800	2400.000	579.200	2410.000	578.100	2420.000	577.700	2430.000	577.300	2440.000
GR	576.100	2500.000	576.100	2510.000	576.200	2520.000	576.200	2530.000	576.300	2540.000
GR	576.700	2550.000	577.600	2560.000	578.600	2565.000	550.800	2570.000	581.500	2575.000
GR	588.100	2600.000	593.500	2650.000	597.900	2700.000	600.900	2725.000	-0.000	-0.000
NH	4.000	.070	40.000	.040	220.000	.110	1415.000	.030	2500.000	-0.000

X1	6.547	35.000	40.000	220.000	600.000	1950.000	950.000	-0.000	-0.000	-0.000
GR	610.400	0.000	607.300	15.000	593.700	40.000	583.000	63.000	580.900	65.000
GR	577.500	70.000	575.000	75.000	574.000	85.000	572.400	95.000	571.000	105.000
GR	571.100	115.000	569.700	125.000	569.200	135.000	572.000	145.000	572.100	155.000
GR	570.700	165.000	573.200	175.000	573.200	185.000	572.700	195.000	576.700	205.000
GR	579.000	210.000	580.900	215.000	587.100	220.000	587.300	415.000	586.800	615.000
GR	586.100	815.000	585.900	1015.000	586.700	1215.000	587.400	1415.000	588.100	1615.000
GR	587.900	1715.000	585.000	2350.000	585.000	2400.000	590.000	2450.000	600.000	2500.000
NC	.070	.030	.043	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	6.854	37.000	50.000	215.000	1775.000	625.000	1625.000	-0.000	-0.000	-0.000
GR	600.000	0.000	589.000	50.000	580.500	58.000	581.300	60.000	576.700	65.000
GR	574.900	70.000	573.500	80.000	571.100	90.000	570.500	100.000	567.600	110.000
GR	567.600	120.000	568.000	130.000	567.500	140.000	568.400	150.000	571.400	160.000
GR	571.600	170.000	576.900	180.000	578.400	190.000	578.900	195.000	581.300	203.000
GR	581.300	205.000	588.700	215.000	590.000	400.000	590.000	550.000	587.300	800.000
GR	586.800	1000.000	586.100	1200.000	585.900	1400.000	586.700	1600.000	587.400	1800.000
GR	588.100	2000.000	587.900	2100.000	587.200	2200.000	585.500	2300.000	587.500	2400.000
GR	592.200	2500.000	601.600	2600.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.110	400.000	.050	1460.000	.043	1625.000	.050	2315.000	-0.000
X1	7.191	46.000	1460.000	1625.000	1025.000	1125.000	1775.000	-0.000	-0.000	-0.000
GR	600.700	0.000	599.000	15.000	595.000	45.000	585.700	65.000	583.900	75.000
GR	584.000	215.000	585.900	225.000	589.900	265.000	590.100	315.000	589.600	340.000
GR	585.800	355.000	583.800	415.000	585.600	545.000	589.200	580.000	589.200	615.000
GR	588.600	815.000	588.500	1015.000	589.500	1215.000	589.200	1415.000	588.700	1460.000
GR	581.300	1470.000	581.300	1472.000	578.900	1480.000	578.400	1485.000	576.900	1495.000
GR	571.600	1505.000	571.400	1515.000	568.400	1525.000	567.500	1535.000	568.000	1545.000
GR	567.600	1555.000	567.600	1565.000	570.500	1575.000	571.100	1585.000	573.500	1595.000
GR	574.900	1605.000	576.700	1610.000	581.300	1615.000	580.500	1617.000	589.000	1625.000
GR	589.600	1715.000	587.200	1915.000	585.500	2015.000	587.500	2115.000	592.200	2215.000
GR	601.600	2315.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.070	287.000	.036	469.000	.050	600.000	1.500	1500.000	.200
NH	2350.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.508	39.000	287.000	469.000	1325.000	1300.000	1675.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	150.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	603.000	0.000	596.500	25.000	589.500	100.000	590.600	200.000	590.900	225.000
GR	586.200	287.000	581.600	297.000	581.200	300.000	579.300	305.000	578.500	310.000
GR	575.300	320.000	573.300	330.000	573.300	340.000	573.300	350.000	573.000	360.000
GR	573.700	370.000	573.200	380.000	573.400	390.000	573.300	400.000	572.800	410.000
GR	572.300	420.000	575.300	430.000	575.800	440.000	577.300	450.000	578.800	455.000
GR	581.200	460.000	581.000	463.000	589.900	469.000	590.900	500.000	592.000	700.000
GR	593.500	900.000	593.600	1100.000	594.300	1300.000	590.300	1500.000	586.000	1700.000
GR	584.800	1800.000	585.000	2200.000	590.000	2250.000	600.000	2350.000	-0.000	-0.000
NC	.070	.050	.043	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.745	35.000	587.000	769.000	1200.000	1550.000	1250.000	-0.000	-0.000	-0.000
GR	600.000	0.000	595.000	50.000	590.000	360.000	585.000	560.000	582.600	587.000
GR	578.000	597.000	577.600	600.000	575.700	605.000	574.900	610.000	571.700	620.000
GR	569.700	630.000	569.700	640.000	569.700	650.000	569.400	660.000	570.100	670.000
GR	569.600	680.000	569.800	690.000	569.700	700.000	569.200	710.000	568.700	720.000
GR	571.700	730.000	572.200	740.000	573.700	750.000	575.200	755.000	577.600	760.000
GR	577.400	763.000	586.300	769.000	590.000	800.000	595.000	1000.000	595.000	1150.000
GR	590.000	1800.000	585.000	1900.000	590.000	2000.000	595.000	2100.000	600.000	2150.000
X1	7.986	36.000	1025.000	1207.000	625.000	950.000	1275.000	-0.000	-0.000	-0.000
GR	608.600	0.000	599.500	50.000	591.500	150.000	591.300	250.000	592.100	350.000
GR	591.300	550.000	591.600	750.000	590.300	950.000	591.100	1025.000	581.600	1047.000
GR	581.500	1050.000	579.800	1055.000	578.600	1060.000	576.600	1070.000	576.100	1080.000
GR	575.900	1090.000	575.400	1100.000	574.600	1110.000	573.600	1120.000	572.100	1130.000
GR	569.600	1140.000	565.300	1150.000	567.600	1160.000	568.400	1170.000	570.600	1180.000
GR	577.600	1190.000	579.600	1195.000	581.500	1200.000	583.600	1204.000	590.800	1207.000
GR	589.400	1250.000	589.500	1350.000	592.000	1450.000	591.600	1530.000	594.000	1550.000
GR	600.200	1585.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

NM	4.000	.050	45.000	.045						
X1	8.204	29.000	46.000	203.000	825.000	750.000	1150.000	-0.000	-0.000	-0.000
GR	600.000	0.000	585.700	46.000	585.600	50.000	581.700	55.000	579.700	60.000
GR	572.700	70.000	570.500	80.000	569.700	90.000	571.400	100.000	571.700	110.000
GR	574.200	120.000	575.700	130.000	576.700	140.000	577.500	150.000	578.000	160.000
GR	578.200	170.000	578.700	180.000	580.700	190.000	581.900	195.000	583.600	200.000
GR	583.700	203.000	590.000	700.000	590.800	1107.000	589.400	1150.000	589.500	1250.000
GR	592.000	1350.000	591.600	1430.000	594.000	1450.000	600.200	1485.000	-0.000	-0.000
NC	.050	.050	.040	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	8.422	32.000	382.000	555.000	1125.000	850.000	1150.000	-0.000	-0.000	-0.000
GR	611.500	0.000	591.900	100.000	588.300	140.000	589.000	200.000	591.200	300.000
GR	590.800	382.000	581.600	398.000	581.900	400.000	578.700	405.000	574.000	410.000
GR	573.500	420.000	572.400	430.000	573.000	440.000	573.000	450.000	572.700	460.000
GR	571.700	470.000	572.200	480.000	574.300	490.000	573.700	500.000	573.500	510.000
GR	575.100	520.000	575.700	530.000	578.700	540.000	581.900	545.000	582.900	547.000
GR	591.200	555.000	588.900	600.000	587.200	800.000	590.900	1000.000	593.100	1170.000
GR	596.100	1200.000	599.800	1235.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	8.540	32.000	382.000	555.000	625.000	600.000	625.000	-0.000	-0.000	-0.000
GR	611.500	0.000	591.900	100.000	590.000	140.000	590.000	200.000	591.200	300.000
GR	590.800	382.000	581.600	398.000	581.900	400.000	578.700	405.000	574.000	410.000
GR	573.500	420.000	572.400	430.000	573.000	440.000	573.000	450.000	572.700	460.000
GR	571.700	470.000	572.200	480.000	574.300	490.000	573.700	500.000	573.500	510.000
GR	575.100	520.000	575.700	530.000	578.700	540.000	581.900	545.000	582.900	547.000
GR	591.200	555.000	590.000	900.000	590.000	1000.000	590.900	1300.000	593.100	1470.000
GR	596.100	1500.000	599.800	1535.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	8.682	30.000	345.000	555.000	750.000	675.000	750.000	-0.000	-0.000	-0.000
GR	630.000	0.000	630.000	200.000	625.000	250.000	600.000	300.000	595.000	320.000
GR	591.500	345.000	583.800	363.000	581.800	365.000	577.900	370.000	571.900	375.000
GR	571.600	380.000	572.600	390.000	573.900	400.000	574.000	410.000	574.000	420.000
GR	574.200	430.000	574.400	440.000	574.400	450.000	574.600	460.000	574.100	470.000
GR	574.600	480.000	574.900	490.000	576.900	500.000	578.900	505.000	581.800	510.000
GR	582.000	513.000	584.900	517.000	592.800	555.000	595.000	1400.000	600.000	1450.000
NC	.050	.070	.040	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.050	.050	.036	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	8.919	34.000	345.000	555.000	1175.000	1200.000	1250.000	.986	-0.000	-0.000
GR	600.900	0.000	599.200	10.000	591.800	110.000	591.500	210.000	591.700	310.000
GR	591.500	345.000	583.800	363.000	581.800	365.000	577.900	370.000	571.900	375.000
GR	571.600	380.000	572.600	390.000	573.900	400.000	574.000	410.000	574.000	420.000
GR	574.200	430.000	574.400	440.000	574.400	450.000	574.600	460.000	574.100	470.000
GR	574.600	480.000	574.900	490.000	576.900	500.000	578.900	505.000	581.800	510.000
GR	582.000	513.000	584.900	517.000	592.800	555.000	594.500	610.000	594.500	710.000
GR	591.400	740.000	594.700	810.000	595.200	910.000	600.000	980.000	-0.000	-0.000
X1	9.397	27.000	45.000	255.000	2450.000	2200.000	2525.000	-0.000	-0.000	-0.000
GR	605.000	0.000	592.100	45.000	584.400	63.000	582.400	65.000	578.500	70.000
GR	572.500	75.000	572.200	80.000	573.200	90.000	574.500	100.000	574.600	110.000
GR	574.600	120.000	574.800	130.000	575.000	140.000	575.000	150.000	575.200	160.000
GR	574.700	170.000	575.200	180.000	575.500	190.000	577.500	200.000	579.500	205.000
GR	582.400	210.000	582.600	213.000	585.500	217.000	593.400	255.000	595.000	450.000
GR	595.000	800.000	605.000	910.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
EJ	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

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HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
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T1      BLACK RIVER  CITY OF PORT HURON, FORT GRATIOT TOWNSHIP  5555-53*20
T2      100 YEAR FLOOD
T3      BLACK RIVER

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

        -0.       4.       -0.       -0. -0.000000    -0.00     -0.0      -0.    530.350   -0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSFCH     ENN       ALLDC     IBW       CHNIM     ITRACE

      3.000    -0.000    -1.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000
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CCHV= .300 CEHV= .500

SECNO	DEPTH	C SEL	CRIWS	WSELK	ES	EV	EL	QLOSS	BANK ELEV
Q	QLOB	VCH	QROB	QLOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

A=ACTUAL FIELD CROSS SECTION

R=REPEATED CROSS SECTION

M=MANUFACTURED CROSS SECTION

I=INTERPOLATED CROSS SECTION

COE=CORPS OF ENGINEERS' SOUNDINGS

LE=ENCROACHMENT IN LEFT OVERBANK FOR---

RE=ENCROACHMENT IN RIGHT OVERBANK FOR---

A MOUTH OF BLACK RIVER---A

.00	21.35	560.35	0.00	580.35	580.98	-.63	-0.00	-0.00	579.90
18450.	0.	18450.	0.	0.	3900.	0.	0.	0.	589.40
0.00	.27	6.36	0.00	.040	.027	.040	0.000	559.00	398.24
.000401	-0.	-0.	-0.	0	0	1	0.00	202.48	600.71

+001 U/S OF OUTH---R.001

.08	22.72	560.62	0.00	0.00	581.15	-.52	.14	-.03	578.60
18450.	4.	18446.	0.	7.	3178.	0.	28.	2.	588.30
.02	.59	5.81	0.00	.040	.027	.040	.027	557.90	392.84
.000300	400.	400.	400.	2	0	1	0.00	210.04	602.88

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 583.70 ELREA= 583.70

1' D/S OF C&O RAILROAD BRIDGE---R.041 SKEW=26

.09	23.33	580.83	0.00	0.00	581.21	.37	-.01	.05	585.00
18450.	0.	18450.	0.	0.	3765.	0.	32.	2.	585.60
.02	0.00	4.90	0.00	.040	.027	.040	.027	557.50	345.40
.000208	74.	49.	24.	2	0	1	0.00	234.33	579.73

NORMAL BRIDGE,NRD=20 MIN ELTRD= 582.50 MAX ELLC= 583.70

U/S FACE OF C&O RAILROAD BRIDGE---R.091 SKEW-26

.09	23.31	580.81	0.00	0.00	581.22	.41	.00	.02	585.60
18450.	0.	18450.	0.	0.	3585.	0.	32.	2.	585.60
.02	0.00	5.15	0.00	.040	.026	.040	.027	557.50	345.60
.000227	1.	1.	1.	1	0	1	-177.69	234.12	579.73

NORMAL BRIDGE,NRD=20 MIN ELTRD= 582.50 MAX ELLC= 583.70

3 U/S FACE OF C&O RAILROAD BRIDGE---A SKE -26

.09	23.32	580.82	0.00	0.00	581.23	.41	.01	.00	585.60
18450.	0.	18450.	0.	0.	3586.	0.	34.	2.	585.60
.02	0.00	5.14	0.00	.040	.026	.040	.027	557.50	345.47
.000227	28.	28.	28.	0	0	1	-177.76	234.26	579.73

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

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 583.70 ELREA= 583.70

1' U/S OF C&O RAILROAD BRIDGE---R.091 SKEW-26

.09	23.37	580.87	0.00	0.00	581.24	.37	.00	.01	585.60
18450.	0.	18450.	0.	0.	3774.	0.	34.	2.	585.60
.02	0.00	4.89	0.00	.030	.027	.020	.027	557.50	344.52
.000208	1.	1.	1.	2	0	1	0.00	235.21	579.73

50' U/S OF C&O RAILROAD BRIDGE---R.091

.10	23.38	580.88	0.00	0.00	581.25	.37	.01	.00	585.60
18450.	0.	18450.	0.	0.	3777.	0.	39.	3.	585.60
.03	0.00	4.89	0.00	.030	.027	.020	.027	557.50	344.28
.000207	24.	49.	74.	0	0	1	0.00	235.44	579.73

250' U/S OF C&O RAILROAD BRIDGE--M,COE

.14	23.46	580.86	0.00	0.00	581.36	.50	.04	.06	583.00
18450.	0.	18450.	0.	0.	3266.	0.	55.	3.	583.00
.04	0.00	5.65	0.00	.030	.027	.020	.027	557.40	32.16
.000229	200.	200.	200.	2	0	1	0.00	157.69	189.84

3470 ENCROACHMENT STATIONS= 1131.9 1262.5 TYPE= 1 TARGET= 119.000

400' U/S OF C&O RAILROAD BRIDGE---I LE---BOAT WELLS

.17	23.42	580.72	0.00	0.00	581.60	.87	.05	.19100000.00	
18450.	0.	18450.	0.	0.	2462.	0.	65.	4.	100000.00
.04	0.00	7.49	0.00	.030	.027	.020	.027	557.30	1131.90
.000484	150.	150.	150.	2	0	1	0.00	130.65	1262.55

3470 ENCROACHMENT STATIONS= 1029.0 1148.0 TYPE= 1 TARGET= 119.000

C 610' U/S OF C&O RAILROAD BRIDGE---A LE---BOAT WELLS

.21	23.55	580.75	0.00	0.00	581.80	1.05	.11	.09100000.00	
18450.	0.	18450.	0.	0.	2243.	0.	76.	5. 100000.00	
.05	0.00	8.23	0.00	.030	.027	.020	.027	557.20	1029.00
.000597	230.	210.	225.	2	0	1	0.00	118.78	1147.78

3470 ENCROACHMENT STATIONS= 449.0 551.0 TYPE= 1 TARGET= 102.000

101' D/S OF MILITARY ST BRIDGE---R.333

.31	24.85	581.04	0.00	0.00	582.10	1.07	.30	.01100000.00	
18450.	0.	18450.	0.	0.	2226.	0.	103.	6. 100000.00	
.07	0.00	8.29	0.00	.020	.027	.020	.027	556.19	449.00
.000536	525.	525.	525.	0	0	1	0.00	102.00	551.00

3470 ENCROACHMENT STATIONS= 454.0 546.0 TYPE= 1 TARGET= 92.000

31' D/S OF MILITARY ST BRIDGE---R.333

.31	24.81	580.96	0.00	0.00	582.20	1.24	.01	.09100000.00	
18450.	0.	18450.	0.	0.	2066.	0.	104.	6. 100000.00	
.07	0.00	8.93	0.00	.020	.027	.020	.027	556.15	454.00
.000646	20.	20.	20.	2	0	1	0.00	92.00	546.00

3470 ENCROACHMENT STATIONS= 459.0 541.0 TYPE= 1 TARGET= 82.000

61' D/S OF MILITARY ST BRIDGE---R.333

.31	24.73	580.64	0.00	0.00	582.35	1.50	.01	.13100000.00	
18450.	0.	18450.	0.	0.	1876.	0.	105.	6. 100000.00	
.07	0.00	9.83	0.00	.020	.027	.020	.027	556.11	459.00
.000833	20.	20.	20.	2	0	1	0.00	82.00	541.00

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

3470 ENCROACHMENT STATIONS= 462.0 538.0 TYPE= 1 TARGET= 75.000

49' D/S OF MILITARY ST BRIDGE---R.333

.32	24.65	580.74	0.00	0.00	582.47	1.72	.61	.11100000.00	
18450.	0.	18450.	0.	0.	1751.	0.	105.	6. 100000.00	
.07	0.00	10.54	0.00	.020	.027	.020	.027	556.09	462.00
.000993	19.	12.	6.	2	0	1	0.00	76.00	538.00

3470 ENCROACHMENT STATIONS= 465.0 535.0 TYPE= 1 TARGET= 70.000

37' D/S OF MILITARY ST BRIDGE---R.333

.32	24.55	580.61	0.00	0.00	582.63	2.01	.01	.14100000.00	
18450.	0.	18450.	0.	0.	1621.	0.	106.	6. 100000.00	
.07	0.00	11.36	0.00	.020	.027	.020	.027	556.06	465.00
.001212	19.	12.	5.	2	0	1	0.00	70.00	535.00

3470 ENCROACHMENT STATIONS= 466.0 534.0 TYPE= 1 TARGET= 64.000

33' D/S OF MILITARY ST BRIDGE---R.333

.32	24.51	580.56	0.00	0.00	582.69	2.13	.01	.06100000.00	
18450.	0.	18450.	0.	0.	1576.	0.	106.	6. 100000.00	
.07	0.00	11.71	0.00	.020	.027	.020	.027	556.05	466.00
.001304	6.	4.	3.	2	0	1	0.00	68.00	534.00

3470 ENCROACHMENT STATIONS= 466.0 532.0 TYPE= 1 TARGET= 64.000
ELENCL= 584.30 ELENCR= 584.30

25' D/S OF MILITARY ST BRIDGE---R.333

.32	24.40	580.44	0.00	0.00	582.93	2.40	.01	.14	590.82
18450.	0.	18450.	0.	0.	1424.	0.	105.	6.	584.30
.07	0.00	12.43	0.00	.020	.024	.020	.027	556.04	468.00
.001207	12.	8.	5.	2	0	1	0.00	64.00	532.00

3470 ENCROACHMENT STATIONS= 468.0 532.0 TYPE= 1 TARGET= 64.000
ELENCL= 594.30 ELENCR= 584.30

.32	24.48	580.48	0.00	0.00	582.87	2.39	.03	.00	590.82
18450.	0.	18450.	0.	0.	1437.	0.	107.	6.	584.30
.07	0.00	12.41	0.00	.020	.024	.020	.027	556.00	468.00
.001201	24.	24.	24.	0	0	1	0.00	64.00	532.00

NORMAL BRIDGE NRO=13 MIN ELTRO= 590.60 MAX ELLC= 589.10

3470 ENCROACHMENT STATIONS= 468.0 532.0 TYPE= 1 TARGET= 64.000
ELENCL= 534.30 ELENCR= 584.30

D/S FACE OF MILITARY ST BRIDGE---R.333

.33	24.48	580.48	0.00	0.00	582.87	2.39	.00	.00	590.82
18450.	0.	18450.	0.	0.	1487.	0.	107.	6.	584.30
.07	0.00	12.40	0.00	.020	.024	.020	.027	556.00	468.00
.001200	1.	1.	1.	1	0	1	0.00	64.00	532.00

NORMAL BRIDGE NRO=13 MIN ELTRO= 590.60 MAX ELLC= 589.10

3470 ENCROACHMENT STATIONS= 468.0 532.0 TYPE= 1 TARGET= 64.000
ELENCL= 584.30 ELENCR= 584.30

D U/S FACE OF MILITARY ST BRIDGE---A

.33	24.56	580.56	0.00	0.00	582.93	2.37	.05	.01	590.82
18450.	0.	18450.	0.	0.	1493.	0.	109.	6.	584.30
.07	0.00	12.36	0.00	.020	.024	.020	.027	556.00	468.00

[illegible]	+0.	+2.	+5.	2	0	1	0.00	64.00	532.00

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

3470 ENCROACHMENT STATIONS= 468.0 532.0 TYPE= 1 TARGET= 64.000
ELENCL= 534.30 ELENCR= 564.30

.33	24.56	580.56	0.00	0.00	552.93	2.37	.00	.00	590.82
18450.	0.	18450.	0.	0.	1493.	0.	109.	6.	584.30
.07	0.00	12.36	0.00	.020	.024	.020	.027	556.00	468.00
.001188	1.	1.	1.	0	0	1	0.00	64.00	532.00

3470 ENCROACHMENT STATIONS= 464.0 532.0 TYPE= 1 TARGET= 64.000
ELENCL= 594.31 ELENCR= 564.31

20' U/S OF MILITARY ST BRIDGE---R.333

.34	24.55	580.58	0.00	0.00	552.95	2.37	.02	.00	590.82
18450.	0.	18450.	0.	0.	1494.	0.	109.	6.	584.30
.07	0.00	12.35	0.00	.020	.024	.020	.027	556.03	468.00
.001186	19.	19.	19.	0	0	1	0.00	64.00	532.00

3470 ENCROACHMENT STATIONS= 467.0 533.0 TYPE= 1 TARGET= 66.000

21' U/S OF MILITARY ST BRIDGE---R.333

.34	24.77	580.81	0.00	0.00	543.00	2.20	.00	.05100000.00	
18450.	0.	18450.	0.	0.	1551.	0.	109.	6. 100000.00	
.07	0.00	11.90	0.00	.020	.027	.021	.026	556.04	467.00
.001358	1.	1.	1.	2	0	1	0.00	66.00	533.00

3470 ENCROACHMENT STATIONS= 465.0 535.0 TYPE= 1 TARGET= 70.000

23' U/S OF MILITARY ST BRIDGE---R.333

.34	25.13	581.17	0.00	0.00	543.09	1.92	.00	.08100000.00	
18450.	0.	18450.	0.	0.	1660.	0.	109.	6. 100000.00	
.07	0.00	11.11	0.00	.020	.027	.020	.026	556.04	465.00
.001133	2.	2.	2.	2	0	1	0.00	70.00	535.00

3470 ENCROACHMENT STATIONS= 462.0 538.0 TYPE= 1 TARGET= 76.000

25' U/S OF MILITARY ST BRIDGE---R.333

.34	25.54	581.59	0.00	0.00	543.19	1.60	.00	.09100000.00	
18450.	0.	18450.	0.	0.	1916.	0.	109.	6. 100000.00	
.07	0.00	10.15	0.00	.020	.027	.020	.026	556.05	462.00
.000897	3.	3.	3.	2	6	1	0.00	75.00	534.00

3470 ENCROACHMENT STATIONS= 457.0 543.0 TYPE= 1 TARGET= 85.000

31 U/S OF MILITARY ST BRIDGE---R.333

.34	25.99	582.05	0.00	0.00	583.30	1.25	.00	.11100000.00	
18450.	0.	18450.	0.	0.	2056.	0.	110.	6. 100000.00	
.07	0.00	5.98	0.00	.020	.027	.020	.026	556.06	457.00
.000647	5.	5.	5.	2	0	1	0.00	86.00	543.00

3470 ENCROACHMENT STATIONS= 451.0 549.0 TYPE= 1 TARGET= 92.000

37' U/S OF MILITARY ST BRIDGE---R.333

.34	26.31	582.38	0.00	0.00	583.38	1.00	.00	.08100000.00	
18450.	0.	18450.	0.	0.	2302.	0.	110.	6. 100000.00	
.07	0.00	8.01	0.00	.020	.027	.020	.026	556.07	451.00
.000481	6.	6.	6.	2	0	1	0.00	98.00	549.00

3470 ENCROACHMENT STATIONS= 441.0 559.0 TYPE= 1 TARGET= 118.000

47' U/S OF MILITARY ST BRIDGE---R.333

.34	26.60	582.66	0.00	0.00	583.45	.77	.00	.07100000.00	
18450.	0.	18450.	0.	0.	2617.	0.	111.	6. 100000.00	
.07	0.00	7.05	0.00	.020	.027	.020	.026	556.08	441.00
.000355	10.	10.	10.	2	0	1	0.00	116.00	559.00

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

E 233' U/S OF MILITARY ST BRIDGE---R

.38	26.59	582.99	0.00	0.00	583.56	.57	.06	.06	564.40
18450.	0.	18450.	0.	0.	3034.	0.	123.	7.	586.00
.08	0.00	6.08	0.00	.040	.027	.060	.026	556.40	299.00
.000254	186.	186.	185.	2	0	1	0.00	133.00	432.00

3470 ENCROACHMENT STATIONS= 442.3 554.3 TYPE= 1 TARGET= 112.500

57.5' D/S OF SEVENTH ST BRIDGE---R.494

.48	27.96	583.09	0.00	0.00	583.73	.64	.14	.03100000.00	
18450.	0.	18450.	0.	0.	2874.	0.	154.	8. 100000.00	
.10	0.00	6.42	0.00	.030	.027	.030	.027	555.13	442.30
.000272	520.	520.	520.	2	0	1	0.00	112.50	554.80

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 450.0 547.0 TYPE= 1 TARGET= 97.000

25.5' D/S OF SEVENTH ST BRIDGE---R.494

.48	27.99	583.02	0.00	0.00	583.82	.81	.01	.04100000.00	
18450.	0.	18450.	0.	0.	2557.	0.	160.	8.	590.20
.10	0.00	7.22	0.00	.030	.022	.030	.027	555.03	450.00
.000148	31.	31.	31.	2	0	1	0.00	97.00	547.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 453.0 547.0 TYPE= 1 TARGET= 94.000
ELENCL= 584.00 ELENCR= 584.00

14.5' D/S OF SEVENTH ST BRIDGE---R.494

.48	28.00	563.00	0.00	0.00	583.85	.85	.00	.02	589.40
18450.	0.	18450.	0.	0.	2494.	0.	161.	8.	590.20
.10	0.00	7.40	0.00	.030	.022	.030	.027	555.00	453.00
.000154	12.	12.	12.	2	0	1	0.00	94.00	547.00

3470 ENCROACHMENT STATIONS= 453.0 547.0 TYPE= 1 TARGET= 94.000
ELENCL= 584.00 ELENCR= 584.00

.49	28.00	583.00	0.00	0.00	583.85	.85	.00	.00	589.40
18450.	0.	18450.	0.	0.	2494.	0.	161.	8.	590.20
.10	0.00	7.40	0.00	.030	.022	.030	.027	555.00	453.00
.000154	14.	14.	14.	0	0	1	0.00	94.00	547.00

NORMAL BRIDGE,NRD=16 MIN ELTRD= 593.20 MAX ELLC= 591.50

3470 ENCROACHMENT STATIONS= 453.0 547.0 TYPE= 1 TARGET= 94.000
ELENCL= 584.00 ELENCR= 584.00

D/S FACE OF SEVENTH ST BRIDGE---R.494

.49	28.00	563.00	0.00	0.00	583.85	.85	.00	.00	589.40
18450.	0.	18450.	0.	0.	2494.	0.	161.	8.	590.20
.10	0.00	7.40	0.00	.030	.022	.030	.027	555.00	453.00
.000154	1.	1.	1.	0	0	1	0.00	94.00	547.00

NORMAL BRIDGE,NRD=16 MIN ELTRD= 593.20 MAX ELLC= 591.50

3470 ENCROACHMENT STATIONS= 453.0 547.0 TYPE= 1 TARGET= 94.000
ELENCL= 584.00 ELENCR= 584.00

F U/S FACE OF SEVENTH ST BRIDGE---A

.49	28.01	563.01	0.00	0.00	583.85	.85	.01	.00	589.40
18450.	0.	18450.	0.	0.	2494.	0.	164.	8.	590.20
.11	0.00	7.40	0.00	.030	.022	.030	.027	555.00	453.00
.000154	40.	40.	40.	0	0	1	0.00	94.00	547.00

SECNO	DEPTH	CWSEL	CRIAS	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= 453.0 547.0 TYPE= 1 TARGET= 94.000
ELENCL= 584.00 ELENCR= 584.00

.50	28.01	583.01	0.00	0.00	563.85	.85	.00	.00	589.40
18450.	0.	18450.	0.	0.	2494.	0.	164.	8.	590.20
.11	0.00	7.40	0.00	.040	.022	.060	.027	555.00	453.00

[illegible]	1.	1.	1.	0	0	1	0.00	94.00	547.00

3470 ENCROACHMENT STATIONS= 454.0 547.0 TYPE= 1 TARGET= 94.000
ELENCL= 584.00 ELENCR= 544.00

14.5' U/S OF SEVENTH ST BRIDGE---P.494

.50	28.01	583.01	0.00	0.00	583.86	.85	.00	.00	589.40
18450.	0.	18450.	0.	0.	2495.	0.	164.	8.	590.20
.11	0.00	7.40	0.00	.040	.022	.060	.025	555.00	453.00
.000258	14.	14.	14.	0	0	1	0.00	94.00	547.00

3470 ENCROACHMENT STATIONS= 437.0 563.0 TYPE= 1 TARGET= 126.000
ELENCL= 594.50 ELENCR= 564.50

30.5' U/S OF SEVENTH ST BRIDGE---P.494

.50	22.29	583.43	0.00	0.00	583.96	.53	.00	.10	597.40
18450.	0.	18450.	0.	0.	3157.	0.	165.	9.	597.70
.11	0.00	5.84	0.00	.040	.027	.060	.026	555.14	437.00
.000216	16.	16.	16.	2	0	1	0.00	126.00	563.00

3470 ENCROACHMENT STATIONS= 139.0 400.0 TYPE= 1 TARGET= 261.000
ELENCL= 594.10 ELENCR= 564.30

G 766' U/S OF SEVENTH ST BRIDGE---A LE---BOAT WELLS

.64	22.02	583.62	0.00	0.00	584.22	.61	.23	.04	594.10
18450.	0.	18450.	0.	0.	2954.	0.	217.	11.	593.20
.14	0.00	6.25	0.00	.040	.027	.060	.027	561.60	139.00
.000476	695.	735.	765.	1	0	1	0.00	220.35	359.35

3470 ENCROACHMENT STATIONS= 239.0 363.0 TYPE= 1 TARGET= 129.000
ELENCL= 593.90 ELENCR= 530.00

H 146' D/S OF TENTH ST BRIDGE---A LE---BOAT WELLS

.90	23.25	584.25	0.00	0.00	584.98	.73	.69	.06	597.50
18450.	0.	18450.	0.	0.	2693.	0.	307.	18.	607.00
.20	0.00	6.85	0.00	.040	.027	.060	.027	561.00	147.62
.000529	1390.	1380.	1360.	2	0	1	0.00	187.09	374.61

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 292.0 415.1 TYPE= 1 TARGET= 174.000
ELENCL= 584.30 ELENCR= 564.50

.93	25.33	584.23	0.00	0.00	585.10	.87	.05	.07	588.90
18450.	0.	18450.	0.	0.	2469.	0.	315.	15.	590.00
.20	0.00	7.47	0.00	.040	.024	.060	.027	558.90	292.03
.000275	270.	145.	50.	2	0	1	0.00	123.04	415.07

1490 NH CARD USED

NORMAL BRIDGE,NRD=17 MIN ELTRD= 597.20 MAX ELLC= 597.60

3470 ENCROACHMENT STATIONS= 292.0 415.1 TYPE= 1 TARGET= 174.000
ELENCL= 584.30 ELENCR= 584.50

D/S FACE OF TENTH ST BRIDGE---3.945 SKEW=45

	.93	25.33	554.23	0.00	0.00	585.10	.87	.00	.00	584.90
	18450.	0.	18450.	0.	0.	2469.	0.	315.	18.	590.00
	.20	0.00	7.47	0.00	.040	.024	.060	.027	558.90	292.03
	.000275	1.	1.	1.	0	0	1	0.00	123.04	415.07

1490 NH CARD USED

NORMAL BRIDGE,NRD=17 MIN ELTRD= 597.20 MAX ELLC= 597.60

3470 ENCROACHMENT STATIONS= 292.0 415.1 TYPE= 1 TARGET= 174.000
ELENCL= 584.30 ELENCR= 584.50

I U/S FACE OF TENTH ST BRIDGE---A SKEW=45

.95	25.36	584.26	0.00	0.00	585.12	.86	.02	.00	588.90
18450.	0.	18450.	0.	0.	2472.	0.	320.	19.	590.00
.20	0.00	7.46	0.00	.040	.022	.060	.027	558.90	292.03
.000233	82.	82.	82.	0	0	1	0.00	123.04	415.07

1490 NH CARD USED

SECNO	DEPTH	CHSEL	CHWS	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= 292.0 415.1 TYPE= 1 TARGET= 174.000
ELENCL= 584.30 ELENCR= 584.50

.95	25.36	584.26	0.00	0.00	585.12	.86	.00	.00	588.90
18450.	0.	18450.	0.	0.	2472.	0.	320.	19.	590.00
.20	0.00	7.46	0.00	.040	.022	.060	.027	558.90	292.03
.000233	1.	1.	1.	0	0	1	0.00	123.04	415.07

3470 ENCROACHMENT STATIONS= 160.0 350.0 TYPE= 1 TARGET= 190.000
ELENCL= 584.30 ELENCR= 597.00

151' U/S OF TENTH ST BRIDGE---M.COE LE---BOAT WELLS

.97	29.95	584.79	0.00	0.00	585.28	.48	.04	.11	596.00
18450.	0.	18450.	0.	0.	3311.	0.	330.	19.	588.00
.21	0.00	5.57	0.00	.030	.027	.070	.027	555.84	115.00
.000303	53.	150.	253.	2	0	1	0.00	211.00	326.00

3470 ENCROACHMENT STATIONS= .0 221.0 TYPE= 1 TARGET= 220.999

J 1339' U/S OF TENTH ST BRIDGE---A RE---BUILDINGS

1.19	28.18	585.16	0.00	0.00	585.59	.41	.29	.02	100000.00
18450.	0.	18450.	0.	0.	3546.	0.	422.	25.	100000.00
.28	0.00	5.14	0.00	.060	.027	.060	.027	557.00	20.27
.000211	1350.	1170.	1110.	2	3	1	0.00	200.73	221.00

3470 ENCROACHMENT STATIONS= .0 210.0 TYPE= 1 TARGET= 209.999

K 150' D/S OF GT&W RAILROAD BRIDGE---A RE---BOAT HOUSE

1.54	31.85	585.55	0.00	0.00	585.97	.41	.37	.00	-593.90
18450.	0.	18450.	0.	0.	3576.	0.	575.	33.	100000.00
.37	0.00	5.16	0.00	.035	.027	.035	.027	554.70	36.09
.000194	1740.	1850.	1920.	2	0	1	0.00	173.91	210.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 300.0 592.5 TYPE= 1 TARGET= 292.500

25' D/S OF GT&W RAILROAD BRIDGE---R1.576 RE---BOAT HOUSE

1.57	31.63	585.58	0.00	0.00	585.99	.41	.02	.00	-586.40
18450.	0.	18450.	0.	0.	3593.	0.	565.	33.	100000.00
.38	0.00	5.13	0.00	.035	.028	.035	.027	553.95	401.09
.000142	125.	125.	125.	0	0	1	0.00	191.41	592.50

1490 NH CARD USED

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 300.0 592.5 TYPE= 1 TARGET= 292.500

15' D/S OF GT&W RAILROAD BRIDGE---R1.576 RE---BOAT HOUSE

1.57	31.66	585.55	0.00	0.00	586.02	.47	.00	.03	597.00
18450.	0.	18450.	0.	0.	3351.	0.	586.	33.	100000.00
.38	0.00	5.51	0.00	.035	.023	.035	.027	553.89	401.14
.000112	10.	10.	10.	2	0	1	0.00	179.36	592.50

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 300.0 592.5 TYPE= 1 TARGET= 292.500

111 D/S OF GT&W RAILROAD BRIDGE---R1.576 RE---BOAT HOUSE

1.57	31.67	585.53	0.00	0.00	586.04	.51	.00	.02	597.00
18450.	0.	18450.	0.	0.	3213.	0.	586.	33.	100000.00
.38	0.00	5.74	0.00	.060	.022	.060	.027	553.86	401.18
.000268	5.	5.	5.	2	0	1	0.00	170.32	592.50

3265 DIVIDED FLOW

SECNO	DEPTH	CHSEL	CHINS	MSEL	ES	HV	HL	OLOSS	BANK ELEV
0	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	MTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IOC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 300.0 592.5 TYPE= 1 TARGET= 292.500

1.57	31.72	585.53	0.00	0.00	585.05	.51	.00	.00	597.00
18450.	0.	18450.	0.	0.	3214.	0.	587.	33.	100000.00
.38	0.00	5.74	0.00	.060	.022	.060	.027	553.81	401.18

.000268	9.	9.	9.	0	0	1	0.00	170.32	592.50

3265 DIVIDED FLOW

NORMAL BRIDGE,NRD=14 MIN ELTRD= 597.00 MAX ELLC= 592.00

3470 ENCROACHMENT STATIONS= 300.0 592.5 TYPE= 1 TARGET= 292.500

D/S FACE OF GT&M RAILROAD BRIDGE---R1.576 RE---BOAT HOUSE

1.57	31.73	585.53	0.00	0.00	546.05	.51	.00	.00	597.00
18450.	0.	18450.	0.	0.	3214.	0.	587.	33.	100000.00
.38	0.00	5.74	0.00	.060	.022	.060	.027	553.80	401.17
.000268	1.	1.	1.	0	0	1	0.00	170.32	592.50

3265 DIVIDED FLOW

NORMAL BRIDGE,NRD=14 MIN ELTRD= 597.00 MAX ELLC= 592.00

3470 ENCROACHMENT STATIONS= 300.0 592.5 TYPE= 1 TARGET= 292.500

L U/S FACE OF GT&M RAILROAD BRIDGE---A RE---BOAT HOUSE

1.58	31.74	585.54	0.00	0.00	546.05	.51	.01	.00	597.00
18450.	0.	18450.	0.	0.	3215.	0.	588.	33.	100000.00
.38	0.00	5.74	0.00	.060	.022	.060	.027	553.80	401.16
.000268	20.	20.	20.	0	0	1	0.00	170.33	592.50

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 300.0 592.5 TYPE= 1 TARGET= 292.500

1.58	31.73	585.54	0.00	0.00	546.05	.51	.00	.00	597.00
18450.	0.	18450.	0.	0.	3215.	0.	588.	33.	100000.00
.38	0.00	5.74	0.00	.060	.022	.060	.027	553.81	401.16
.000268	1.	1.	1.	0	0	1	0.00	170.34	592.50

1490 NH CARD USED

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 300.0 592.5 TYPE= 1 TARGET= 292.500

10' U/S OF GT&M RAILROAD BRIDGE---R1.576 RE---BOAT HOUSE

1.58	31.69	585.55	0.00	0.00	546.05	.51	.00	.00	597.00
18450.	0.	18450.	0.	0.	3226.	0.	559.	33.	100000.00
.38	0.00	5.72	0.00	.060	.022	.060	.027	553.86	401.16
.000116	9.	9.	9.	0	0	1	0.00	170.34	592.50

1490 NH CARD USED

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 300.0 592.5 TYPE= 1 TARGET= 292.500

15' U/S OF GT&; RAILROAD BRIDGE---R1.576 RE---BOAT HOUSE

1.58	31.71	585.60	0.00	0.00	596.07	.47	.00	.01	597.00
18450.	0.	18450.	0.	0.	3359.	0.	589.	33.	100000.00
.38	0.00	5.49	0.00	.060	.023	.060	.027	553.89	401.05
.000110	5.	5.	5.	2	0	1	0.00	179.45	592.50

1490 NH CARD USED

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= 300.0 597.5 TYPE= 1 TARGET= 297.500

20' U/S OF GT&W RAILROAD BRIDGE---R1.575

1.58	31.78	585.70	0.00	0.00	586.09	.39	.00	.02	586.40
18450.	0.	18450.	0.	0.	3696.	0.	590.	34.	100000.00
.38	0.00	4.99	0.00	.060	.028	.060	.027	553.92	400.84
.000136	5.	5.	5.	2	0	1	0.00	196.66	597.50

3470 ENCROACHMENT STATIONS= 90.0 385.0 TYPE= 1 TARGET= 295.000

M 2260' U/S OF GT&; RAILROAD BRIDGE---A

2.00	18.27	586.17	0.00	0.00	586.49	.32	.37	.02	584.10
18450.	4.	18390.	56.	6.	4062.	39.	790.	46.	580.10
.52	.70	4.53	1.44	.030	.028	.035	.027	567.90	93.36
.00208	2240.	2240.	2140.	2	0	1	0.00	291.64	385.00

3470 ENCROACHMENT STATIONS= 310.0 630.0 TYPE= 1 TARGET= 320.000

295' U/S OF GT&; RAILROAD BRIDGE---4.60E

2.14	13.11	586.31	0.00	0.00	586.63	.32	.14	.00	580.00
18450.	126.	18324.	0.	78.	-4031.	0.	055.	51.	100000.00
.56	1.62	4.55	0.00	.030	.028	.035	.027	568.20	332.14
.000207	740.	690.	650.	2	0	1	0.00	296.61	628.75

3470 ENCROACHMENT STATIONS= 320.0 640.0 TYPE= 1 TARGET= 320.000

N 300' D/S OF I-94 BRIDGE---0

2.26	19.18	586.58	0.00	0.00	586.77	.20	.11	.04	100000.00
18450.	0.	18070.	380.	0.	5030.	425.	927.	57.	584.70
.62	1.00	3.59	.90	.035	.028	.035	.027	568.40	320.00
.000135	660.	650.	630.	2	0	1	0.00	520.00	840.00

3470 ENCROACHMENT STATIONS= 298.8 859.8 TYPE= 1 TARGET= 597.000

3 D/S OF I-94 BRIDGE---R2.32H SKEW=20

2.31	18.41	586.64	0.00	0.00	586.82	.14	.04	.00	588.60
18450.	0.	18450.	0.	0.	5334.	0.	958.	60.	100000.00
.64	0.00	3.43	0.00	.035	.028	.035	.027	568.23	301.47
.000206	220.	250.	280.	1	0	-1	0.00	558.35	859.82

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 599.00 ELREA= 599.00

2.31	18.45	586.65	0.00	0.00	586.83	.18	.01	.00	588.60
18450.	0.	18450.	0.	0.	5413.	0.	964.	61.	587.20
.64	0.00	3.41	0.00	.035	.022	.035	.027	568.20	301.45
.000128	49.	49.	49.	1	0	1	0.00	571.34	872.79

NORMAL BRIDGE,NRD=43 MIN ELTRD= 606.88 MAX ELLC= 603.38

D/S FACE OF I-94 BRIDGE---R2.32H SKEW=20

2.32	18.40	586.60	0.00	0.00	586.87	.27	.00	.04	588.60
18450.	0.	18450.	0.	0.	4429.	0.	964.	61.	587.20
.64	0.00	4.17	0.00	.035	.022	.035	.027	568.20	301.50
.000250	1.	1.	1.	2	0	1	-961.70	571.15	872.65

SECNO	DEPTH	CWSEL	CRITS	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	.TN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

NORMAL BRIDGE,NRD=43 MIN ELTRD= 606.88 MAX ELLC= 603.38

0 U/S FACE OF I-94 BRIDGE--- SKEW=20

2.33	18.42	586.62	0.00	0.00	586.89	.27	.02	.00	588.60
18450.	0.	18450.	0.	0.	4435.	0.	972.	62.	587.20
.65	0.00	4.16	0.00	.035	.022	.035	.027	568.20	301.48
.000249	74.	74.	74.	0	0	1	-963.59	571.22	872.70

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 599.00 ELREA= 599.00

2.33	18.54	586.74	0.00	0.00	586.92	.18	.00	.03	588.60
18450.	0.	18450.	0.	0.	5470.	0.	972.	62.	587.20
.65	0.00	3.37	0.00	.035	.022	.035	.027	568.20	301.32
.000124	1.	1.	1.	2	0	1	0.00	571.85	873.16

3470 ENCROACHMENT STATIONS= 298.8 902.1 TYPE= 1 TARGET= 642.000

51' U/S OF I-94 BRIDGE---R2.32H SKEW=20

2.34	18.53	586.75	0.00	0.00	586.9	.17	.01	.00	588.60
18450.	0.	18391.	59.	0.	5429.	54.	978.	62.	564.40
.65	0.00	3.35	.92	.035	.028	.040	.027	568.22	301.30
.000198	49.	49.	49.	0	0	1	0.00	500.80	902.10

3470 ENCROACHMENT STATIONS= 550.0 1160.0 TYPE= 1 TARGET= 610.000

P 1660' U/S OF I-94 BRIDGE---A

2.64	18.34	587.64	0.00	0.00	587.25	.21	.31	.02	581.80
18450.	233.	16490.	1727.	174.	4280.	1197.	1180.	84.	583.10
.77	1.34	3.85	1.44	.035	.030	.040	.027	568.70	550.00
.000186	1850.	1610.	1250.	2	0	1	0.00	610.00	1160.00

3470 ENCROACHMENT STATIONS= .0 420.0 TYPE= 1 TARGET= 419.999

2430' U/S OF I-94 BRIDGE---B,COE

2.79	17.95	587.18	0.00	0.00	587.38	.21	.13	.00	583.00
18450.	92.	18113.	246.	81.	4918.	221.	1279.	93.	583.00
.83	1.15	3.65	1.11	.035	.030	.040	.028	569.23	.00
.000157	686.	770.	934.	1	0	1	0.00	420.00	420.00

3470 ENCROACHMENT STATIONS= .0 675.0 TYPE= 1 TARGET= 674.999

Q 3680' U/S OF I-94 BRIDGE---A

3.03	17.35	597.45	0.00	0.00	587.58	.13	.17	.02	582.70
18450.	103.	17906.	441.	123.	6173.	411.	1451.	108.	580.30
.95	.83	2.90	1.07	.035	.032	.035	.028	570.10	46.64
.000115	1114.	1250.	1516.	2	0	1	0.00	610.17	656.80

4430' U/S OF I-94 BRIDGE---B,COE

3.17	17.53	587.53	0.00	0.00	587.69	.17	.10	.02	583.00
18450.	421.	17267.	762.	326.	5144.	636.	1562.	119.	583.00
1.02	1.29	3.36	1.21	.035	.032	.035	.028	570.00	6.68
.000154	690.	750.	825.	2	0	1	0.00	633.44	640.12

SECNO	DEPTH	C.SEL	CRITS	QSELK	EG	HV	HL	QLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	WSEL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	VTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

4710' U/S OF I-94 BRIDGE---B,COE

3.22	17.56	587.56	0.00	0.00	587.75	.19	.05	.01	583.00
18450.	893.	16745.	612.	614.	4597.	508.	1601.	123.	583.00
1.04	1.46	3.64	1.33	.035	.032	.035	.028	570.00	6.54
.000187	270.	280.	280.	0	0	1	0.00	668.86	675.40

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 200.0 1255.0 TYPE= 1 TARGET= 1055.000

R 5710' U/S OF I-94 BRIDGE---A

3.41	18.57	587.77	0.00	0.00	587.93	.17	.17	.01	583.40
18450.	2323.	14996.	631.	2725.	4178.	573.	1754.	144.	583.60

1.13	1.04	3.59	1.10	.049	.032	.041	.023	559.20	200.00
.000158	940.	1000.	1200.	2	0	1	0.00	1054.93	1254.93

1490 NH CARD USED

S 3765' D/S OF DIVERSION OF BLACK RIVER AND CANAL---A

3.66	20.97	587.97	0.00	0.00	588.13	.16	.19	.00	583.50
18450.	1991.	15934.	525.	2015.	4606.	769.	1973.	173.	582.40
1.25	.99	3.46	.68	.049	.034	.060	.029	567.00	130.33
.000143	1250.	1300.	1350.	2	0	1	0.00	969.90	1100.13

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 20.0 930.0 TYPE= 1 TARGET= 910.000

T 2110' D/S OF DIVERSION OF BLACK RIVER AND CANAL---A

3.97	20.71	588.71	0.00	0.00	588.44	.23	.25	-.03	583.20
18450.	20.	16526.	1904.	57.	4103.	2349.	2231.	206.	583.60
1.37	.30	4.03	.81	.120	.034	.072	.029	567.50	106.14
.000202	1690.	1655.	1440.	0	0	1	0.00	819.41	925.56

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 45.0 1120.0 TYPE= 1 TARGET= 1075.000

1150' D/S OF DIVERSION OF BLACK RIVER AND CANAL---M.COE

4.15	19.90	588.40	0.00	0.00	588.73	.33	.24	.05	581.00
18450.	35.	16202.	2213.	49.	3287.	2293.	2360.	225.	584.90
1.43	.72	4.93	.97	.080	.036	.053	.029	568.50	56.79
.000315	990.	960.	870.	2	0	1	0.00	1059.44	1116.23

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 49.0 1035.0 TYPE= 1 TARGET= 936.000

D 150' D/S OF CDIVERSION OF BLACK RIVER AND CANAL---A

4.34	22.46	586.65	0.00	0.00	586.26	.60	.40	.13	582.20
18450.	37.	17531.	882.	33.	2754.	942.	2462.	245.	586.30
1.47	1.12	6.36	.94	.060	.037	.046	.029	566.20	86.34
.000534	1050.	1000.	850.	1	0	1	0.00	944.23	1031.08

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 450.0 1400.0 TYPE= 1 TARGET= 950.000

DIVERSION OF BLACK RIVER AND CANAL---R4.340

4.37	22.66	586.76	0.00	0.00	589.34	.50	.03	.00	562.20
18450.	37.	17451.	962.	33.	2772.	1113.	2474.	247.	586.30
1.48	1.11	6.29	.95	.060	.037	.049	.029	566.10	486.89
.000519	160.	150.	100.	2	0	1	0.00	909.83	1396.72

3280 CROSS SECTION 4.50 EXTENDED .30 FEET

3470 ENCROACHMENT STATIONS= 57.0 410.0 TYPE= 1 TARGET= 753.000

V 1220' U/S OF DIVERSION---A

4.60	24.50	589.60	0.00	0.00	589.92	.32	.50	.08	584.20
20480.	22.	17327.	3130.	27.	3547.	1841.	2590.	265.	585.60
1.56	.83	4.89	1.70	.060	.036	.040	.030	565.10	82.00
.000356	1350.	1220.	810.	2	0	1	0.00	727.99	810.00

3280 CROSS SECTION 4.65 EXTENDED .50 FEET

SECNO	DEPTH	CWSEL	CRWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	VLOB	VCH	VROB	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

3470 ENCROACHMENT STATIONS= 50.0 600.0 TYPE= 1 TARGET= 550.000

1485' U/S OF DIVERSION---B,COE

4.65	24.70	589.80	0.00	0.00	590.02	.22	.07	.03	583.00
20480.	1502.	17549.	1429.	941.	4365.	945.	2622.	268.	583.00
1.58	1.79	4.02	1.51	.040	.036	.050	.030	565.10	50.00
.000222	360.	265.	155.	2	0	1	0.00	550.00	600.00

1490 NH CARD USED
3280 CROSS SECTION 4.97 EXTENDED 5.04 FEET

3470 ENCROACHMENT STATIONS= .0 1060.0 TYPE= 1 TARGET= -1059.999

2645' U/S OF DIVERSION---C,COE

4.87	24.94	590.04	0.00	0.00	590.32	.28	.27	.03	583.00
20480.	2488.	17582.	411.	2439.	3862.	211.	2794.	286.	583.00
1.65	1.02	4.55	1.94	.070	.036	.040	.030	565.10	297.86
.000248	1290.	1150.	1030.	2	0	1	0.00	762.14	1060.00

CCHV= .300 CEHV= .500

W 3545' U/S OF DIVERSION---A

5.04	25.55	590.34	0.00	0.00	590.60	.22	.26	.02	585.50
20480.	7535.	12591.	54.	5710.	2754.	57.	2923.	302.	583.40
1.72	1.32	4.68	.94	.070	.043	.070	.030	564.80	143.18
.000418	620.	900.	950.	2	0	1	0.00	1275.20	1418.38

4645' U/S OF DIVERSION---B,COE

5.25	23.64	590.64	0.00	0.00	591.20	.36	.03	.07	583.90
20480.	1872.	13822.	4785.	1031.	2422.	2455.	3077.	325.	583.40
1.78	1.82	5.71	1.95	.070	.043	.050	.031	567.20	63.28
.000681	825.	1100.	450.	2	0	1	0.00	993.11	1056.40

5745' U/S OF DIVERSION---B,COE

5.46	21.91	591.41	0.00	0.00	591.54	.12	.27	.07	585.90
20480.	6350.	13479.	651.	3402.	4156.	656.	3246.	347.	582.60
1.89	1.87	3.24	.99	.030	.036	.050	.031	569.50	54.38
.000129	1075.	1100.	875.	1	0	1	0.00	936.87	991.24

3470 ENCROACHMENT STATIONS= 50.0 1337.0 TYPE= 1 TARGET= -50.000

X 6845' U/S OF DIVERSION---A

5.67	21.49	591.59	0.00	0.00	591.67	.08	.12	.01	587.50
20480.	9793.	10554.	132.	5738.	3840.	229.	3454.	371.	584.20
2.02	1.71	2.75	.58	.030	.036	.070	.032	571.10	50.00
.000103	900.	1100.	1200.	2	0	1	0.00	1212.09	1262.09

3470 ENCROACHMENT STATIONS= 950.0 2070.0 TYPE= 1 TARGET= -950.000

7495' U/S OF DIVERSION---A5.666

5.79	23.15	591.65	0.00	0.00	591.75	.10	.07	.01	584.90
20480.	6232.	13206.	1040.	3546.	4443.	985.	3607.	389.	581.60
2.10	1.76	2.97	1.06	.030	.036	.050	.032	566.50	950.00
.000100	775.	550.	650.	2	0	1	0.00	923.17	1673.17

3470 ENCROACHMENT STATIONS= 1000.0 2150.0 TYPE= 1 TARGET= -1000.000

8220' U/S OF DIVERSION---A5.666

5.93	24.71	591.71	0.00	0.00	591.83	.12	.07	.01	583.40
20480.	608.	15014.	4359.	548.	4699.	4489.	3738.	401.	580.10
2.17	1.11	3.19	1.08	.050	.036	.050	.032	567.00	1000.00
.000107	600.	725.	425.	0	0	1	0.00	1011.79	2011.79

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	STN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOP ID	ENDST

Y 8920' U/S OF DIVERSION---A

6.06	26.21	591.81	0.00	0.00	591.92	.11	.09	.00	592.30
20480.	361.	9740.	10379.	302.	2798.	7619.	3849.	412.	587.90
2.23	1.20	3.48	1.48	.070	.047	.050	.032	565.60	45.20
.000233	800.	700.	325.	2	0	1	0.00	1412.89	1458.08

1490 NH CARD USED

Z 9620' U/S OF DIVERSION---A

6.19	13.82	592.02	0.00	0.00	592.06	.04	.12	.02	567.80
20480.	41.	8255.	12184.	119.	4136.	10507.	4103.	449.	588.20
2.39	.34	2.00	1.15	.070	.047	.046	.032	572.20	105.72
.000097	550.	700.	975.	2	0	1	0.00	2064.50	2170.21

1490 NH CARD USED

10545' U/S OF DIVERSION---47.191

6.37	24.68	592.18	0.00	0.00	592.21	.04	.15	.00	581.30
20480.	854.	6535.	13091.	1636.	2888.	12672.	4746.	546.	580.50
2.71	.51	2.26	1.03	.090	.047	.053	.032	567.50	156.44
.000093	775.	925.	2075.	2	0	1	0.00	2481.32	2637.76

1490 NH CARD USED

AA 11495' U/S OF DIVERSION---A

6.55	23.13	592.33	0.00	0.00	592.34	.05	.16	.01	593.70
20480.	0.	8251.	12229.	0.	3067.	12454.	5385.	647.	587.10
2.97	0.00	2.69	.98	.090	.040	.050	.032	569.20	42.95
.000108	600.	950.	1950.	2	0	1	0.00	2418.67	2461.63

13120' U/S OF DIVERSION---7.191

6.85	24.94	592.44	0.00	0.00	592.47	.04	.09	.01	589.00
20480.	7.	6248.	14225.	27.	3084.	11078.	5669.	686.	588.70
3.15	.26	2.03	1.28	.070	.043	.030	.033	567.50	34.39
.000076	1775.	1625.	625.	2	0	1	0.00	2464.12	2502.50

1490 NH CARD USED

AB 14895' U/S OF DIVERSION---4

7.19	25.06	592.56	0.00	0.00	592.66	.10	.16	.03	588.70
20480.	6855.	10624.	3001.	6694.	3104.	2621.	6051.	747.	589.00
3.32	1.02	3.42	1.14	.061	.043	.050	.034	567.50	50.26
.000185	1025.	1775.	1125.	0	0	1	0.00	2168.52	2218.78

1490 NH CARD USED

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 150.0 2350.0 TYPE= 1 TARGET= -150.000

AC 16570' U/S OF DIVERSION---A

7.51	22.52	592.82	0.00	0.00	593.22	.40	.41	.15	586.20
20480.	426.	17175.	2880.	441.	3108.	5698.	6403.	804.	589.90
3.41	.97	5.53	.51	.070	.036	.201	.034	572.30	150.00
.000396	1325.	1675.	1300.	2	0	1	0.00	1562.92	2278.17

3265 DIVIDED FLOW

17820' U/S OF DIVERSION---7.308

7.75	24.77	593.47	0.00	0.00	593.67	.20	.40	.06	582.60
20480.	1896.	15752.	2841.	1429.	3843.	2504.	6681.	855.	586.30
3.52	1.03	4.06	1.13	.070	.043	.050	.035	568.70	144.77
.000247	1200.	1750.	1550.	2	0	1	0.00	1514.82	2069.43

TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
AD 19095' U/S OF DIVERSION---A									
7.99	26.21	593.81	0.00	0.00	594.15	.35	.41	.07	591.10
20480.	1929.	16882.	1669.	2181.	3263.	1081.	6853.	884.	590.80
3.59	.88	5.17	1.54	.070	.043	.050	.035	567.60	121.17
.000519	625.	1275.	950.	2	0	1	0.00	1427.22	1548.39
1490 NH CARD USED									
21245' U/S OF DIVERSION---M7.986									
8.20	24.74	594.44	0.00	0.00	594.57	.13	.36	.06	585.70
20480.	149.	10842.	9468.	123.	2649.	6716.	7023.	911.	583.70
3.70	1.22	3.81	1.41	.050	.043	.054	.035	569.70	17.89
.000249	825.	1150.	750.	2	0	1	0.00	1434.60	1452.48
AE 21395' U/S OF DIVERSION---A									
8.42	22.99	594.69	0.00	0.00	594.89	.20	.28	.03	590.80
20480.	1875.	13696.	4909.	1326.	3221.	3132.	7218.	938.	591.20
3.78	1.41	4.25	1.57	.050	.040	.050	.035	571.70	85.79
.000288	1125.	1150.	850.	2	0	1	0.00	1100.07	1185.86
22020' U/S OF DIVERSION---M8.422									
8.54	23.16	594.86	0.00	0.00	595.07	.20	.18	.00	590.80
20480.	1592.	13935.	4954.	1212.	3250.	3778.	7330.	955.	591.20
3.83	1.31	4.29	1.31	.050	.040	.050	.035	571.70	84.91
.000289	625.	625.	600.	1	0	1	0.00	1402.66	1487.57
22770' U/S OF DIVERSION---M8.919									
8.68	23.42	595.02	0.00	0.00	595.51	.49	.30	.14	591.50
20480.	47.	19684.	749.	44.	3432.	946.	7435.	975.	592.80
3.87	1.07	5.74	.79	.050	.040	.050	.036	571.60	319.92
.000611	750.	750.	675.	2	0	1	0.00	1080.27	1400.19
AF 24020' U/S OF DIVERSION---A									
8.92	24.16	595.76	0.00	0.00	596.14	.38	.60	.03	591.50
20480.	1536.	18402.	543.	1063.	3637.	591.	7571.	1002.	592.80
3.94	1.44	5.26	.92	.050	.036	.050	.036	571.60	55.71
.000384	1175.	1250.	1200.	2	0	1	0.00	849.60	905.30
26545' U/S OF DIVERSION---M8.919									
9.40	24.51	596.71	0.00	0.00	597.13	.41	.97	.02	592.10
20480.	37.	19404.	1037.	37.	3661.	1105.	7853.	1046.	593.40
4.08	.99	5.30	.84	.050	.036	.050	.035	572.20	29.91
.000348	2450	2525	2200	2	0	1	0.00	789.91	818.82

SUMMARY PRINTOUT FOR MULTIPLE PROFILES

BLACK RIVER

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	AV	HL	OLOSS	QCH	DEPTH	TOPWID
.00	0.00	0.00	0.00	559.00	12590.00	580.35	.29	0.00	0.00	12589.93	21.35	202.48
.00	0.00	0.00	0.00	559.00	16810.00	580.35	.52	0.00	0.00	16809.90	21.35	202.48
.00	0.00	0.00	0.00	559.00	18450.00	580.35	.63	0.00	0.00	18449.89	21.35	202.48
.00	0.00	0.00	0.00	559.00	22160.00	580.35	.91	0.00	0.00	22159.87	21.35	202.48
.08	400.00	0.00	0.00	557.90	12590.00	580.47	.25	.07	.01	12587.87	22.57	209.20
.08	400.00	0.00	0.00	557.90	16810.00	580.58	.44	.12	.03	16806.71	22.68	209.76
.08	400.00	0.00	0.00	557.90	18450.00	580.62	.52	.14	.03	18446.13	22.72	210.04
.08	400.00	0.00	0.00	557.90	22160.00	580.76	.74	.20	.05	22154.44	22.86	210.79
.09	49.00	0.00	0.00	557.50	12590.00	580.57	.18	.01	.02	12590.00	23.07	228.94
.09	49.00	0.00	0.00	557.50	16810.00	580.75	.31	.01	.04	16810.00	23.25	232.44
.09	49.00	0.00	0.00	557.50	18450.00	580.83	.37	.01	.05	18450.00	23.33	234.33
.09	49.00	0.00	0.00	557.50	22160.00	581.06	.52	.02	.07	22160.00	23.56	239.41
.09	1.00	582.50	583.70	557.50	12590.00	580.56	.20	.00	.01	12590.00	23.06	228.94
.09	1.00	582.50	583.70	557.50	16810.00	580.73	.34	.00	.02	16810.00	23.23	232.27
.09	1.00	582.50	583.70	557.50	18450.00	580.81	.41	.00	.02	18450.00	23.31	234.12
.09	1.00	582.50	583.70	557.50	22160.00	581.04	.58	.00	.03	22160.00	23.54	238.81
.09	28.00	582.50	583.70	557.50	12590.00	580.56	.20	.00	.00	12590.00	23.06	228.96
.09	28.00	582.50	583.70	557.50	16810.00	580.74	.34	.01	.00	16810.00	23.24	232.38
.09	28.00	582.50	583.70	557.50	18450.00	580.82	.41	.01	.00	18450.00	23.32	234.26
.09	28.00	582.50	583.70	557.50	22160.00	581.04	.58	.01	.00	22160.00	23.54	239.00
.09	1.00	0.00	0.00	557.50	12590.00	580.59	.18	.00	.01	12590.00	23.09	229.02
.09	1.00	0.00	0.00	557.50	16810.00	580.78	.31	.00	.01	16810.00	23.28	233.17
.09	1.00	0.00	0.00	557.50	18450.00	580.87	.37	.00	.01	18450.00	23.37	235.21
.09	1.00	0.00	0.00	557.50	22160.00	581.12	.52	.00	.02	22160.00	23.62	240.71
.10	49.00	0.00	0.00	557.50	12590.00	580.59	.18	.00	.00	12590.00	23.09	229.06
.10	49.00	0.00	0.00	557.50	16810.00	580.79	.31	.01	.00	16810.00	23.29	233.36
.10	49.00	0.00	0.00	557.50	18450.00	580.88	.37	.01	.00	18450.00	23.38	235.44
.10	49.00	0.00	0.00	557.50	22160.00	581.14	.52	.01	.00	22160.00	23.64	241.04
.14	200.00	0.00	0.00	557.40	12590.00	580.58	.24	.02	.03	12590.00	23.18	157.64
.14	200.00	0.00	0.00	557.40	16810.00	580.77	.41	.04	.05	16810.00	23.37	157.67
.14	200.00	0.00	0.00	557.40	18450.00	580.86	.50	.04	.06	18450.00	23.46	157.69
.14	200.00	0.00	0.00	557.40	22160.00	581.11	.70	.06	.09	22160.00	23.71	157.72
.17	150.00	0.00	0.00	557.30	12590.00	580.52	.41	.02	.09	12590.00	23.22	130.64
.17	150.00	0.00	0.00	557.30	16810.00	580.66	.73	.04	.16	16810.00	23.36	130.65
.17	150.00	0.00	0.00	557.30	18450.00	580.72	.87	.05	.19	18450.00	23.42	130.65
.17	150.00	0.00	0.00	557.30	22160.00	580.91	1.23	.07	.27	22160.00	23.61	130.67
.21	210.00	0.00	0.00	557.20	12590.00	580.53	.50	.05	.04	12590.00	23.33	118.76
.21	210.00	0.00	0.00	557.20	16810.00	580.68	.88	.09	.07	16810.00	23.48	118.77
.21	210.00	0.00	0.00	557.20	18450.00	580.75	1.05	.11	.09	18450.00	23.55	118.78
.21	210.00	0.00	0.00	557.20	22160.00	580.94	1.49	.16	.13	22160.00	23.74	118.79

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
.31	525.00	0.00	0.00	556.19	12590.00	580.67	.51	.14	.01	12590.00	24.48	102.00
.31	525.00	0.00	0.00	556.19	16810.00	580.92	.89	.25	.01	16810.00	24.73	102.00
.31	525.00	0.00	0.00	556.19	18450.00	581.04	1.07	.30	.01	18450.00	24.85	102.00
.31	525.00	0.00	0.00	556.19	22160.00	581.35	1.50	.41	.01	22160.00	25.16	102.00
.31	20.00	0.00	0.00	556.15	12590.00	580.63	.59	.01	.04	12590.00	24.48	92.00
.31	20.00	0.00	0.00	556.15	16810.00	580.86	1.04	.01	.07	16810.00	24.71	92.00
.31	20.00	0.00	0.00	556.15	18450.00	580.96	1.24	.01	.09	18450.00	24.81	92.00
.31	20.00	0.00	0.00	556.15	22160.00	581.24	1.74	.02	.12	22160.00	25.09	92.00
.31	20.00	0.00	0.00	556.11	12590.00	580.58	.72	.01	.06	12590.00	24.47	82.00
.31	20.00	0.00	0.00	556.11	16810.00	580.76	1.26	.01	.11	16810.00	24.65	82.00
.31	20.00	0.00	0.00	556.11	18450.00	580.84	1.50	.01	.13	18450.00	24.73	82.00
.31	20.00	0.00	0.00	556.11	22160.00	581.07	2.12	.02	.19	22160.00	24.96	82.00
.32	12.00	0.00	0.00	556.09	12590.00	580.53	.82	.01	.05	12590.00	24.44	76.00
.32	12.00	0.00	0.00	556.09	16810.00	580.68	1.44	.01	.09	16810.00	24.59	76.00
.32	12.00	0.00	0.00	556.09	18450.00	580.74	1.72	.01	.11	18450.00	24.65	76.00
.32	12.00	0.00	0.00	556.09	22160.00	580.92	2.45	.02	.16	22160.00	24.83	76.00
.32	12.00	0.00	0.00	556.06	12590.00	580.47	.95	.01	.07	12590.00	24.41	70.00
.32	12.00	0.00	0.00	556.06	16810.00	580.57	1.68	.01	.12	16810.00	24.51	70.00
.32	12.00	0.00	0.00	556.06	18450.00	580.61	2.01	.01	.14	18450.00	24.55	70.00
.32	12.00	0.00	0.00	556.06	22160.00	580.73	2.87	.02	.21	22160.00	24.67	70.00
.32	4.00	0.00	0.00	556.05	12590.00	580.45	1.00	.00	.03	12590.00	24.40	68.00
.32	4.00	0.00	0.00	556.05	16810.00	580.53	1.77	.00	.05	16810.00	24.48	68.00
.32	4.00	0.00	0.00	556.05	18450.00	580.56	2.13	.01	.06	18450.00	24.51	68.00
.32	4.00	0.00	0.00	556.05	22160.00	580.65	3.05	.01	.09	22160.00	24.60	68.00
.32	8.00	0.00	0.00	556.04	12590.00	580.39	1.12	.00	.06	12590.00	24.35	64.00
.32	8.00	0.00	0.00	556.04	16810.00	580.42	1.99	.01	.11	16810.00	24.38	64.00
.32	8.00	0.00	0.00	556.04	18450.00	580.44	2.40	.01	.14	18450.00	24.40	64.00
.32	8.00	0.00	0.00	556.04	22160.00	580.46	3.45	.01	.20	22160.00	24.42	64.00
.32	24.00	0.00	0.00	556.00	12590.00	580.41	1.12	.01	.00	12590.00	24.41	64.00
.32	24.00	0.00	0.00	556.00	16810.00	580.46	1.99	.02	.00	16810.00	24.46	64.00
.32	24.00	0.00	0.00	556.00	18450.00	580.48	2.39	.03	.00	18450.00	24.48	64.00
.32	24.00	0.00	0.00	556.00	22160.00	580.53	3.43	.04	.01	22160.00	24.53	64.00
.33	1.00	590.60	589.10	556.00	12590.00	580.41	1.12	.00	.00	12590.00	24.41	64.00
.33	1.00	590.60	589.10	556.00	16810.00	580.46	1.99	.00	.00	16810.00	24.46	64.00
.33	1.00	590.60	589.10	556.00	18450.00	580.48	2.39	.00	.00	18450.00	24.48	64.00
.33	1.00	590.60	589.10	556.00	22160.00	580.54	3.43	.00	.00	22160.00	24.54	64.00
.33	46.00	590.60	589.10	556.00	12590.00	580.44	1.12	.03	.00	12590.00	24.44	64.00
.33	46.00	590.60	589.10	556.00	16810.00	580.52	1.98	.05	.00	16810.00	24.52	64.00
.33	46.00	590.60	589.10	556.00	18450.00	580.56	2.37	.05	.01	18450.00	24.56	64.00
.33	46.00	590.60	589.10	556.00	22160.00	580.66	3.39	.08	.01	22160.00	24.66	64.00

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
	.33	1.00	0.00	0.00	556.00	12590.00	580.44	1.12	.00	.00	12590.00	24.44	64.00
	.33	1.00	0.00	0.00	556.00	16810.00	580.52	1.98	.00	.00	16810.00	24.52	64.00
	.33	1.00	0.00	0.00	556.00	18450.00	580.56	2.37	.00	.00	18450.00	24.56	64.00
	.33	1.00	0.00	0.00	556.00	22160.00	580.67	3.39	.00	.00	22160.00	24.67	64.00
	.34	19.00	0.00	0.00	556.03	12590.00	580.45	1.12	.01	.00	12590.00	24.42	64.00
	.34	19.00	0.00	0.00	556.03	16810.00	580.54	1.97	.02	.00	16810.00	24.51	64.00
	.34	19.00	0.00	0.00	556.03	18450.00	580.58	2.37	.02	.00	18450.00	24.55	64.00
	.34	19.00	0.00	0.00	556.03	22160.00	580.71	3.38	.03	.00	22160.00	24.68	64.00
	.34	1.00	0.00	0.00	556.04	12590.00	580.54	1.05	.00	.02	12590.00	24.50	66.00
	.34	1.00	0.00	0.00	556.04	16810.00	580.72	1.84	.00	.04	16810.00	24.68	66.00
	.34	1.00	0.00	0.00	556.04	18450.00	580.81	2.20	.00	.05	18450.00	24.77	66.00
	.34	1.00	0.00	0.00	556.04	22160.00	581.08	3.10	.00	.09	22160.00	25.04	66.00
	.34	2.00	0.00	0.00	556.04	12590.00	580.70	.93	.00	.04	12590.00	24.66	70.00
	.34	2.00	0.00	0.00	556.04	16810.00	581.01	1.61	.00	.07	16810.00	24.97	70.00
	.34	2.00	0.00	0.00	556.04	18450.00	581.17	1.92	.00	.08	18450.00	25.13	70.00
	.34	2.00	0.00	0.00	556.04	22160.00	581.66	2.66	.00	.13	22160.00	25.62	70.00
	.34	3.00	0.00	0.00	556.05	12590.00	580.88	.79	.00	.04	12590.00	24.83	76.00
	.34	3.00	0.00	0.00	556.05	16810.00	581.35	1.36	.00	.08	16810.00	25.30	76.00
	.34	3.00	0.00	0.00	556.05	18450.00	581.59	1.60	.00	.09	18450.00	25.54	76.00
	.34	3.00	0.00	0.00	556.05	22160.00	582.27	2.18	.00	.14	22160.00	26.22	76.00
	.34	5.00	0.00	0.00	556.06	12590.00	581.09	.63	.00	.05	12590.00	25.03	86.00
	.34	5.00	0.00	0.00	556.06	16810.00	581.73	1.07	.00	.09	16810.00	25.67	86.00
	.34	5.00	0.00	0.00	556.06	18450.00	582.05	1.25	.00	.11	18450.00	25.99	86.00
	.34	5.00	0.00	0.00	556.06	22160.00	582.94	1.68	.00	.15	22160.00	26.88	86.00
	.34	6.00	0.00	0.00	556.07	12590.00	581.24	.51	.00	.04	12590.00	25.17	98.00
	.34	6.00	0.00	0.00	556.07	16810.00	582.01	.85	.00	.06	16810.00	25.94	98.00
	.34	6.00	0.00	0.00	556.07	18450.00	582.38	1.00	.00	.08	18450.00	26.31	98.00
	.34	6.00	0.00	0.00	556.07	22160.00	583.41	1.32	.00	.11	22160.00	27.34	98.00
	.34	10.00	0.00	0.00	556.08	12590.00	581.39	.41	.00	.03	12590.00	25.31	118.00
	.34	10.00	0.00	0.00	556.08	16810.00	582.26	.67	.00	.06	16810.00	26.18	118.00
	.34	10.00	0.00	0.00	556.08	18450.00	582.68	.77	.00	.07	18450.00	26.60	118.00
	.34	10.00	0.00	0.00	556.08	22160.00	583.82	1.01	.01	.09	22160.00	27.74	118.00
	.38	186.00	0.00	0.00	556.40	12590.00	581.55	.30	.03	.03	12590.00	25.15	133.00
	.38	186.00	0.00	0.00	556.40	16810.00	582.52	.50	.05	.05	16810.00	26.12	133.00
	.38	186.00	0.00	0.00	556.40	18450.00	582.99	.57	.06	.06	18450.00	26.59	133.00
	.38	186.00	0.00	0.00	556.40	22160.00	584.23	.75	.07	.08	22160.00	27.83	133.00
	.48	520.00	0.00	0.00	555.13	12590.00	581.61	.34	.08	.02	12590.00	26.48	112.50
	.48	520.00	0.00	0.00	555.13	16810.00	582.62	.55	.12	.03	16810.00	27.49	112.50
	.48	520.00	0.00	0.00	555.13	18450.00	583.09	.64	.14	.03	18450.00	27.96	112.50
	.48	520.00	0.00	0.00	555.13	22160.00	584.35	.84	.17	.05	22160.00	29.22	112.50

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
.48	30.50	0.00	0.00	555.03	12590.00	581.57	.42	.00	.04	12590.00	26.54	97.00
.48	30.50	0.00	0.00	555.03	16810.00	582.55	.70	.01	.07	16810.00	27.52	97.00
.48	30.50	0.00	0.00	555.03	18450.00	583.02	.81	.01	.08	18450.00	27.99	97.00
.48	30.50	0.00	0.00	555.03	22160.00	584.25	1.06	.01	.11	22160.00	29.22	138.59
.48	12.00	0.00	0.00	555.00	12590.00	581.56	.44	.00	.01	12590.00	26.56	94.00
.48	12.00	0.00	0.00	555.00	16810.00	582.53	.73	.00	.02	16810.00	27.53	94.00
.48	12.00	0.00	0.00	555.00	18450.00	583.00	.85	.00	.02	18450.00	28.00	94.00
.48	12.00	0.00	0.00	555.00	22160.00	584.23	1.11	.00	.02	22160.00	29.23	170.35
.49	13.50	0.00	0.00	555.00	12590.00	581.56	.44	.00	.00	12590.00	26.56	94.00
.49	13.50	0.00	0.00	555.00	16810.00	582.54	.73	.00	.00	16810.00	27.54	94.00
.49	13.50	0.00	0.00	555.00	18450.00	583.00	.85	.00	.00	18450.00	28.00	94.00
.49	13.50	0.00	0.00	555.00	22160.00	584.23	1.11	.00	.00	22160.00	29.23	170.41
.49	1.00	593.20	591.50	555.00	12590.00	581.56	.44	.00	.00	12590.00	26.56	94.00
.49	1.00	593.20	591.50	555.00	16810.00	582.54	.73	.00	.00	16810.00	27.54	94.00
.49	1.00	593.20	591.50	555.00	18450.00	583.00	.85	.00	.00	18450.00	28.00	94.00
.49	1.00	593.20	591.50	555.00	22160.00	584.23	1.12	.00	.01	22160.00	29.23	170.42
.49	40.00	593.20	591.50	555.00	12590.00	581.56	.44	.00	.00	12590.00	26.56	94.00
.49	40.00	593.20	591.50	555.00	16810.00	582.54	.73	.01	.00	16810.00	27.54	94.00
.49	40.00	593.20	591.50	555.00	18450.00	583.01	.85	.01	.00	18450.00	28.01	94.00
.49	40.00	593.20	591.50	555.00	22160.00	584.23	1.12	.01	.00	22160.00	29.23	170.60
.50	1.00	0.00	0.00	555.00	12590.00	581.56	.44	.00	.00	12590.00	26.56	94.00
.50	1.00	0.00	0.00	555.00	16810.00	582.54	.73	.00	.00	16810.00	27.54	94.00
.50	1.00	0.00	0.00	555.00	18450.00	583.01	.85	.00	.00	18450.00	28.01	94.00
.50	1.00	0.00	0.00	555.00	22160.00	584.25	1.10	.00	.00	22160.00	29.25	170.73
.50	13.50	0.00	0.00	555.00	12590.00	581.57	.44	.00	.00	12590.00	26.57	94.00
.50	13.50	0.00	0.00	555.00	16810.00	582.55	.73	.00	.00	16810.00	27.55	94.00
.50	13.50	0.00	0.00	555.00	18450.00	583.01	.85	.00	.00	18450.00	28.01	94.00
.50	13.50	0.00	0.00	555.00	22160.00	584.26	1.10	.01	.00	22160.00	29.26	170.97
.50	16.00	0.00	0.00	555.14	12590.00	581.77	.28	.00	.05	12590.00	26.63	126.00
.50	16.00	0.00	0.00	555.14	16810.00	582.90	.46	.00	.08	16810.00	27.76	126.00
.50	16.00	0.00	0.00	555.14	18450.00	583.43	.53	.00	.10	18450.00	28.29	126.00
.50	16.00	0.00	0.00	555.14	22160.00	584.82	.68	.01	.13	22160.00	29.68	182.04
.64	735.00	0.00	0.00	561.60	12590.00	581.86	.35	.11	.03	12590.00	20.26	151.67
.64	735.00	0.00	0.00	561.60	16810.00	583.05	.54	.19	.04	16810.00	21.45	187.65
.64	735.00	0.00	0.00	561.60	18450.00	583.62	.61	.23	.04	18450.00	22.02	220.35
.64	735.00	0.00	0.00	561.60	22160.00	585.21	.66	.36	.01	22160.00	23.61	314.49
.90	1380.00	0.00	0.00	561.00	12590.00	582.12	.43	.31	.04	12590.00	21.12	132.30
.90	1380.00	0.00	0.00	561.00	16810.00	583.49	.66	.50	.06	16810.00	22.49	134.42
.90	1380.00	0.00	0.00	561.00	18450.00	584.25	.73	.69	.06	18450.00	23.25	187.09
.90	1380.00	0.00	0.00	561.00	22160.00	586.06	.80	.92	.07	22160.00	25.06	249.76

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
.93	145.00	0.00	0.00	558.90	12590.00	582.12	.50	.03	.04	12590.00	23.22	123.04
.93	145.00	0.00	0.00	558.90	16810.00	583.47	.78	.04	.06	16810.00	24.57	123.04
.93	145.00	0.00	0.00	558.90	18450.00	584.23	.87	.05	.07	18450.00	25.33	123.04
.93	145.00	0.00	0.00	558.90	22160.00	586.03	.99	.06	.09	22160.00	27.13	199.55
.93	1.00	597.20	597.60	558.90	12590.00	582.12	.50	.00	.00	12590.00	23.22	123.04
.93	1.00	597.20	597.60	558.90	16810.00	583.47	.78	.00	.00	16810.00	24.57	123.04
.93	1.00	597.20	597.60	558.90	18450.00	584.23	.87	.00	.00	18450.00	25.33	123.04
.93	1.00	597.20	597.60	558.90	22160.00	586.02	1.01	.00	.01	22160.00	27.12	199.56
.95	82.00	597.20	597.60	558.90	12590.00	582.13	.50	.01	.00	12590.00	23.23	123.04
.95	82.00	597.20	597.60	558.90	16810.00	583.49	.78	.02	.00	16810.00	24.59	123.04
.95	82.00	597.20	597.60	558.90	18450.00	584.26	.86	.02	.00	18450.00	25.36	123.04
.95	82.00	597.20	597.60	558.90	22160.00	586.05	1.00	.02	.00	22160.00	27.15	200.06
.95	1.00	0.00	0.00	558.90	12590.00	582.13	.50	.00	.00	12590.00	23.23	123.04
.95	1.00	0.00	0.00	558.90	16810.00	583.49	.78	.00	.00	16810.00	24.59	123.04
.95	1.00	0.00	0.00	558.90	18450.00	584.26	.86	.00	.00	18450.00	25.36	123.04
.95	1.00	0.00	0.00	558.90	22160.00	586.07	.98	.00	.01	22160.00	27.17	200.23
.97	150.00	0.00	0.00	555.84	12590.00	582.43	.29	.02	.06	12590.00	26.59	163.04
.97	150.00	0.00	0.00	555.84	16810.00	583.96	.44	.03	.10	16810.00	28.12	164.95
.97	150.00	0.00	0.00	555.84	18450.00	584.79	.46	.04	.11	18450.00	28.95	211.00
.97	150.00	0.00	0.00	555.84	22160.00	586.68	.55	.04	.13	22160.00	30.84	232.18
1.19	1170.00	0.00	0.00	557.00	12590.00	582.66	.26	.18	.01	12590.00	25.66	196.44
1.19	1170.00	0.00	0.00	557.00	16810.00	584.29	.38	.25	.02	16810.00	27.29	199.22
1.19	1170.00	0.00	0.00	557.00	18450.00	585.18	.41	.29	.02	18450.00	28.18	200.73
1.19	1170.00	0.00	0.00	557.00	22160.00	587.08	.48	.32	.02	22160.00	30.08	203.96
1.54	1850.00	0.00	0.00	554.70	12590.00	582.93	.25	.27	.00	12590.00	28.23	170.44
1.54	1850.00	0.00	0.00	554.70	16810.00	584.66	.37	.36	.00	16810.00	29.96	172.72
1.54	1850.00	0.00	0.00	554.70	18450.00	585.55	.41	.37	.00	18450.00	30.85	173.91
1.54	1850.00	0.00	0.00	554.70	22160.00	587.48	.50	.41	.01	22160.00	32.78	176.47
1.57	125.00	0.00	0.00	553.95	12590.00	582.95	.26	.01	.00	12590.00	29.00	186.34
1.57	125.00	0.00	0.00	553.95	16810.00	584.68	.37	.02	.00	16810.00	30.73	189.68
1.57	125.00	0.00	0.00	553.95	18450.00	585.58	.41	.02	.00	18450.00	31.63	191.41
1.57	125.00	0.00	0.00	553.95	22160.00	587.52	.48	.02	.00	22158.74	33.57	203.78
1.57	10.00	0.00	0.00	553.89	12590.00	582.93	.30	.00	.02	12590.00	29.04	174.29
1.57	10.00	0.00	0.00	553.89	16810.00	584.65	.43	.00	.03	16810.00	30.76	177.62
1.57	10.00	0.00	0.00	553.89	18450.00	585.55	.47	.00	.03	18450.00	31.66	179.36
1.57	10.00	0.00	0.00	553.89	22160.00	587.49	.56	.00	.04	22160.00	33.60	181.00
1.57	5.00	0.00	0.00	553.86	12590.00	582.92	.32	.00	.01	12590.00	29.06	165.28
1.57	5.00	0.00	0.00	553.86	16810.00	584.63	.47	.00	.02	16810.00	30.77	168.60
1.57	5.00	0.00	0.00	553.66	18450.00	585.53	.51	.00	.02	18450.00	31.67	170.32
1.57	5.00	0.00	0.00	553.86	22160.00	587.46	.61	.00	.03	22160.00	33.60	172.00

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
	1.57	9.00	0.00	0.00	553.81	12590.00	582.92	.32	.00	.00	12590.00	29.11	165.28
	1.57	9.00	0.00	0.00	553.81	16810.00	584.63	.47	.00	.00	16810.00	30.82	168.60
	1.57	9.00	0.00	0.00	553.81	18450.00	585.53	.51	.00	.00	18450.00	31.72	170.32
	1.57	9.00	0.00	0.00	553.81	22160.00	587.47	.61	.00	.00	22160.00	33.66	172.00
	1.57	1.00	597.00	592.00	553.80	12590.00	582.92	.32	.00	.00	12590.00	29.12	165.28
	1.57	1.00	597.00	592.00	553.80	16810.00	584.64	.47	.00	.00	16810.00	30.84	168.61
	1.57	1.00	597.00	592.00	553.80	18450.00	585.53	.51	.00	.00	18450.00	31.73	170.32
	1.57	1.00	597.00	592.00	553.80	22160.00	587.47	.61	.00	.00	22160.00	33.67	172.00
	1.58	20.00	597.00	592.00	553.80	12590.00	582.92	.32	.00	.00	12590.00	29.12	165.29
	1.58	20.00	597.00	592.00	553.80	16810.00	584.64	.47	.01	.00	16810.00	30.84	168.62
	1.58	20.00	597.00	592.00	553.80	18450.00	585.54	.51	.01	.00	18450.00	31.74	170.33
	1.58	20.00	597.00	592.00	553.80	22160.00	587.47	.61	.01	.00	22160.00	33.67	172.00
	1.58	1.00	0.00	0.00	553.81	12590.00	582.92	.32	.00	.00	12590.00	29.11	165.29
	1.58	1.00	0.00	0.00	553.81	16810.00	584.64	.47	.00	.00	16810.00	30.83	168.62
	1.58	1.00	0.00	0.00	553.81	18450.00	585.54	.51	.00	.00	18450.00	31.73	170.34
	1.58	1.00	0.00	0.00	553.81	22160.00	587.47	.61	.00	.00	22160.00	33.66	172.00
	1.58	9.00	0.00	0.00	553.86	12590.00	582.93	.32	.00	.00	12590.00	29.07	165.29
	1.58	9.00	0.00	0.00	553.86	16810.00	584.65	.46	.00	.00	16810.00	30.79	168.62
	1.58	9.00	0.00	0.00	553.86	18450.00	585.55	.51	.00	.00	18450.00	31.69	170.34
	1.58	9.00	0.00	0.00	553.86	22160.00	587.48	.60	.00	.00	22160.00	33.62	172.00
	1.58	5.00	0.00	0.00	553.89	12590.00	582.96	.29	.00	.01	12590.00	29.07	174.35
	1.58	5.00	0.00	0.00	553.89	16810.00	584.69	.43	.00	.01	16810.00	30.80	177.70
	1.58	5.00	0.00	0.00	553.89	18450.00	585.60	.47	.00	.01	18450.00	31.71	179.45
	1.58	5.00	0.00	0.00	553.89	22160.00	587.54	.55	.00	.01	22160.00	33.65	181.00
	1.58	5.00	0.00	0.00	553.92	12590.00	583.02	.24	.00	.02	12590.00	29.10	191.47
	1.58	5.00	0.00	0.00	553.92	16810.00	584.79	.35	.00	.02	16810.00	30.87	194.89
	1.58	5.00	0.00	0.00	553.92	18450.00	585.70	.39	.00	.02	18450.00	31.78	196.66
	1.58	5.00	0.00	0.00	553.92	22160.00	587.67	.46	.00	.03	22158.26	33.75	210.27
	2.00	2240.00	0.00	0.00	567.90	12590.00	583.34	.23	.30	.00	12580.52	15.44	283.39
	2.00	2240.00	0.00	0.00	567.90	16810.00	585.23	.30	.37	.02	16772.88	17.33	289.07
	2.00	2240.00	0.00	0.00	567.90	18450.00	586.17	.32	.37	.02	18389.56	18.27	291.64
	2.00	2240.00	0.00	0.00	567.90	22160.00	588.19	.35	.38	.03	22024.74	20.29	295.00
	2.14	690.00	0.00	0.00	568.20	12590.00	583.47	.23	.13	.00	12567.76	15.27	280.39
	2.14	690.00	0.00	0.00	568.20	16810.00	585.37	.30	.15	.00	16731.86	17.17	290.14
	2.14	690.00	0.00	0.00	568.20	18450.00	586.31	.32	.14	.00	18324.05	18.11	296.61
	2.14	690.00	0.00	0.00	568.20	22160.00	588.32	.35	.13	.00	21885.59	20.12	309.89
	2.26	650.00	0.00	0.00	568.40	12590.00	583.68	.15	.10	.02	12590.00	15.28	343.37
	2.26	650.00	0.00	0.00	568.40	16810.00	585.63	.19	.11	.03	16637.49	17.23	520.00
	2.26	650.00	0.00	0.00	568.40	18450.00	586.58	.20	.11	.04	18069.69	18.18	520.00
	2.26	650.00	0.00	0.00	568.40	22160.00	588.61	.20	.10	.04	21169.56	20.21	520.00

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
2.31	250.00	0.00	0.00	568.23	12590.00	583.71	.17	.05	.01	12590.00	15.48	535.22
2.31	250.00	0.00	0.00	568.23	16810.00	585.68	.19	.05	.00	16810.00	17.45	557.07
2.31	250.00	0.00	0.00	568.23	18450.00	586.64	.18	.04	.00	18450.00	18.41	558.35
2.31	250.00	0.00	0.00	568.23	22160.00	588.68	.18	.03	.01	22160.00	20.45	560.99
2.31	49.00	0.00	0.00	568.20	12590.00	583.73	.17	.01	.00	12590.00	15.53	535.53
2.31	49.00	0.00	0.00	568.20	16810.00	585.69	.18	.01	.00	16810.00	17.49	566.54
2.31	49.00	0.00	0.00	568.20	18450.00	586.65	.18	.01	.00	18450.00	18.45	571.34
2.31	49.00	0.00	0.00	568.20	22160.00	588.69	.18	.01	.00	22160.00	20.49	576.03
2.32	1.00	606.88	603.38	568.20	12590.00	583.69	.24	.00	.03	12590.00	15.49	534.45
2.32	1.00	606.88	603.38	568.20	16810.00	585.65	.27	.00	.04	16810.00	17.45	566.35
2.32	1.00	606.88	603.38	568.20	18450.00	586.60	.27	.00	.04	18450.00	18.40	571.15
2.32	1.00	606.88	603.38	568.20	22160.00	588.64	.27	.00	.05	22153.09	20.44	621.51
2.33	74.00	606.88	603.38	568.20	12590.00	583.72	.24	.02	.00	12590.00	15.52	534.99
2.33	74.00	606.88	603.38	568.20	16810.00	585.67	.27	.02	.00	16810.00	17.47	566.43
2.33	74.00	606.88	603.38	568.20	18450.00	586.62	.27	.02	.00	18450.00	18.42	571.22
2.33	74.00	606.88	603.38	568.20	22160.00	588.66	.27	.01	.00	22152.97	20.46	622.44
2.33	1.00	0.00	0.00	568.20	12590.00	583.81	.17	.00	.02	12590.00	15.61	537.96
2.33	1.00	0.00	0.00	568.20	16810.00	585.79	.18	.00	.03	16810.00	17.59	567.06
2.33	1.00	0.00	0.00	568.20	18450.00	586.74	.18	.00	.03	18450.00	18.54	571.85
2.33	1.00	0.00	0.00	568.20	22160.00	588.78	.17	.00	.03	22160.00	20.58	576.03
2.34	49.00	0.00	0.00	568.22	12590.00	583.82	.17	.01	.00	12590.00	15.60	538.32
2.34	49.00	0.00	0.00	568.22	16810.00	585.80	.18	.01	.00	16782.93	17.58	599.52
2.34	49.00	0.00	0.00	568.22	18450.00	586.75	.17	.01	.00	18390.84	18.53	600.80
2.34	49.00	0.00	0.00	568.22	22160.00	588.80	.17	.01	.00	22014.24	20.58	603.28
2.64	1610.00	0.00	0.00	568.70	12590.00	584.21	.19	.40	.01	12138.11	15.51	595.69
2.64	1610.00	0.00	0.00	568.70	16810.00	586.13	.21	.35	.02	15388.65	17.43	610.00
2.64	1610.00	0.00	0.00	568.70	18450.00	587.04	.21	.31	.02	16489.73	18.34	610.00
2.64	1610.00	0.00	0.00	568.70	22160.00	589.02	.20	.24	.02	18898.23	20.32	610.00
2.79	770.00	0.00	0.00	569.23	12590.00	584.40	.15	.14	.01	12561.82	15.17	412.51
2.79	770.00	0.00	0.00	569.23	16810.00	586.29	.20	.14	.00	16597.91	17.06	420.00
2.79	770.00	0.00	0.00	569.23	18450.00	587.18	.21	.13	.00	18112.52	17.95	420.00
2.79	770.00	0.00	0.00	569.23	22160.00	589.13	.22	.12	.01	21483.71	19.90	420.00
3.03	1250.00	0.00	0.00	570.10	12590.00	584.63	.10	.17	.02	12512.29	14.53	536.37
3.03	1250.00	0.00	0.00	570.10	16810.00	586.56	.12	.17	.02	16457.32	16.46	586.47
3.03	1250.00	0.00	0.00	570.10	18450.00	587.45	.13	.17	.02	17906.36	17.35	610.17
3.03	1250.00	0.00	0.00	570.10	22160.00	589.40	.13	.15	.03	21016.52	19.30	654.73
3.17	750.00	0.00	0.00	570.00	12590.00	584.72	.14	.10	.02	12468.87	14.72	587.90
3.17	750.00	0.00	0.00	570.00	16810.00	586.65	.16	.11	.02	16039.88	16.65	626.59
3.17	750.00	0.00	0.00	570.00	18450.00	587.53	.17	.10	.02	17266.70	17.53	633.44
3.17	750.00	0.00	0.00	570.00	22160.00	589.47	.17	.09	.02	19889.69	19.47	647.89

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
3.22	280.00	0.00	0.00	570.00	12590.00	584.75	.17	.05	.02	12384.09	14.75	622.70
3.22	280.00	0.00	0.00	570.00	16810.00	586.69	.19	.05	.01	15668.88	16.69	660.27
3.22	280.00	0.00	0.00	570.00	18450.00	587.56	.19	.05	.01	16744.96	17.56	668.86
3.22	280.00	0.00	0.00	570.00	22160.00	589.50	.18	.04	.01	19013.63	19.50	687.03
3.41	1000.00	0.00	0.00	569.20	12590.00	584.95	.18	.21	.00	11893.80	15.75	1017.90
3.41	1000.00	0.00	0.00	569.20	16810.00	586.89	.18	.19	.00	14315.40	17.69	1046.55
3.41	1000.00	0.00	0.00	569.20	18450.00	587.77	.17	.17	.01	14996.31	18.57	1054.93
3.41	1000.00	0.00	0.00	569.20	22160.00	589.69	.14	.14	.01	16418.34	20.49	1055.00
3.66	1300.00	0.00	0.00	567.00	12590.00	585.22	.15	.22	.01	12092.80	18.22	908.83
3.66	1300.00	0.00	0.00	567.00	16810.00	587.12	.16	.21	.00	15012.96	20.12	951.14
3.66	1300.00	0.00	0.00	567.00	18450.00	587.97	.16	.19	.00	15933.68	20.97	969.80
3.66	1300.00	0.00	0.00	567.00	22160.00	589.85	.15	.16	.00	17798.22	22.85	1011.74
3.97	1655.00	0.00	0.00	567.50	12590.00	585.48	.19	.28	.02	12163.96	17.98	783.74
3.97	1655.00	0.00	0.00	567.50	16810.00	587.38	.22	.29	.03	15406.27	19.88	808.71
3.97	1655.00	0.00	0.00	567.50	18450.00	588.21	.23	.28	.03	16525.65	20.71	819.41
3.97	1655.00	0.00	0.00	567.50	22160.00	590.06	.23	.25	.04	18894.40	22.56	840.49
4.15	960.00	0.00	0.00	568.50	12590.00	585.65	.32	.24	.06	12566.42	17.15	647.61
4.15	960.00	0.00	0.00	568.50	16810.00	587.56	.35	.25	.07	15515.60	19.06	1054.43
4.15	960.00	0.00	0.00	568.50	18450.00	588.40	.33	.24	.05	16201.86	19.90	1059.44
4.15	960.00	0.00	0.00	568.50	22160.00	590.24	.28	.21	.03	17389.34	21.74	1066.50
4.34	1000.00	0.00	0.00	566.20	12590.00	585.97	.45	.38	.06	12581.96	19.77	163.64
4.34	1000.00	0.00	0.00	566.20	16810.00	587.86	.59	.42	.12	16429.86	21.66	596.96
4.34	1000.00	0.00	0.00	566.20	18450.00	588.66	.60	.40	.13	17531.18	22.46	944.23
4.34	1000.00	0.00	0.00	566.20	22160.00	590.45	.55	.34	.13	19283.20	24.25	950.99
4.37	150.00	0.00	0.00	566.10	12590.00	586.04	.45	.07	.00	12581.80	19.94	171.05
4.37	150.00	0.00	0.00	566.10	16810.00	587.96	.58	.08	.00	16397.86	21.86	629.66
4.37	150.00	0.00	0.00	566.10	18450.00	588.76	.58	.08	.00	17450.92	22.66	909.83
4.37	150.00	0.00	0.00	566.10	22160.00	590.53	.54	.07	.00	19197.27	24.43	915.84
4.60	1220.00	0.00	0.00	565.10	13760.00	586.73	.32	.52	.04	13385.66	21.63	650.19
4.60	1220.00	0.00	0.00	565.10	18580.00	583.81	.33	.52	.08	16388.31	23.71	726.54
4.60	1220.00	0.00	0.00	565.10	20480.00	589.60	.32	.50	.08	17327.38	24.50	727.99
4.60	1220.00	0.00	0.00	565.10	24780.00	591.26	.31	.43	.07	19271.82	26.16	731.08
4.65	265.00	0.00	0.00	565.10	13760.00	586.99	.18	.08	.04	12748.51	21.89	550.00
4.65	265.00	0.00	0.00	565.10	18580.00	589.04	.21	.07	.03	16242.57	23.94	550.00
4.65	265.00	0.00	0.00	565.10	20480.00	589.80	.22	.07	.03	17549.15	24.70	550.00
4.65	265.00	0.00	0.00	565.10	24780.00	591.41	.24	.07	.02	20422.80	26.31	550.00
4.87	1160.00	0.00	0.00	565.10	13760.00	587.22	.23	.26	.03	12849.30	22.12	662.60
4.87	1160.00	0.00	0.00	565.10	18580.00	589.28	.27	.27	.03	16319.68	24.18	734.75
4.87	1160.00	0.00	0.00	565.10	20480.00	590.04	.28	.27	.03	17581.75	24.94	762.14
4.87	1160.00	0.00	0.00	565.10	24780.00	591.66	.30	.27	.03	20232.95	26.56	844.70

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
5.04	900.00	0.00	0.00	564.80	13760.00	587.48	.31	.30	.04	11326.21	22.68	1226.94
5.04	900.00	0.00	0.00	564.30	18580.00	589.59	.24	.28	.01	12515.59	24.79	1262.03
5.04	900.00	0.00	0.00	564.80	20480.00	590.38	.22	.26	.02	12891.11	25.58	1275.20
5.04	900.00	0.00	0.00	564.80	24780.00	592.03	.19	.24	.03	13745.35	27.23	1302.77
5.25	1100.00	0.00	0.00	567.20	13760.00	588.15	.43	.74	.06	11591.50	20.95	752.70
5.25	1100.00	0.00	0.00	567.20	18580.00	590.10	.39	.59	.07	13451.50	22.90	981.79
5.25	1100.00	0.00	0.00	567.20	20480.00	590.84	.36	.53	.07	13822.20	23.64	995.11
5.25	1100.00	0.00	0.00	567.20	24780.00	592.41	.31	.43	.06	14583.89	25.21	1023.46
5.46	1100.00	0.00	0.00	569.50	13760.00	588.86	.12	.30	.09	10855.90	19.36	886.82
5.46	1100.00	0.00	0.00	569.50	18580.00	590.73	.12	.28	.08	12808.08	21.23	928.67
5.46	1100.00	0.00	0.00	569.50	20480.00	591.41	.12	.27	.07	13478.59	21.91	936.87
5.46	1100.00	0.00	0.00	569.50	24780.00	592.88	.13	.24	.05	14889.79	23.38	954.56
5.67	1100.00	0.00	0.00	571.10	13760.00	589.04	.09	.14	.01	9104.42	17.94	1194.36
5.67	1100.00	0.00	0.00	571.10	18580.00	590.91	.08	.12	.01	10158.10	19.81	1207.74
5.67	1100.00	0.00	0.00	571.10	20480.00	591.59	.08	.12	.01	10554.06	20.49	1212.09
5.67	1100.00	0.00	0.00	571.10	24780.00	593.05	.08	.11	.01	11419.20	21.95	1221.49
5.79	650.00	0.00	0.00	568.50	13760.00	589.12	.09	.08	.00	10451.70	20.62	895.99
5.79	650.00	0.00	0.00	568.50	18580.00	590.97	.10	.07	.01	12481.88	22.47	917.77
5.79	650.00	0.00	0.00	568.50	20480.00	591.65	.10	.07	.01	13208.23	23.15	923.17
5.79	650.00	0.00	0.00	568.50	24780.00	593.10	.11	.07	.01	14745.87	24.60	934.83
5.93	725.00	0.00	0.00	567.00	13760.00	589.18	.10	.07	.00	11412.79	22.18	980.67
5.93	725.00	0.00	0.00	567.00	18580.00	591.03	.12	.07	.01	14055.22	24.03	1003.49
5.93	725.00	0.00	0.00	567.00	20480.00	591.71	.12	.07	.01	15013.54	24.71	1011.79
5.93	725.00	0.00	0.00	567.00	24780.00	593.16	.13	.07	.01	17046.39	26.16	1029.75
6.06	700.00	0.00	0.00	565.60	13760.00	589.25	.14	.09	.02	8935.96	23.65	1374.67
6.06	700.00	0.00	0.00	565.60	18580.00	591.12	.11	.09	.00	9529.05	25.52	1402.66
6.06	700.00	0.00	0.00	565.60	20480.00	591.81	.11	.09	.00	9739.77	26.21	1412.88
6.06	700.00	0.00	0.00	565.60	24780.00	593.29	.10	.08	.01	10201.54	27.69	1434.85
6.19	700.00	0.00	0.00	572.20	13760.00	589.53	.04	.15	.03	6941.87	17.33	1959.32
6.19	700.00	0.00	0.00	572.20	18580.00	591.35	.04	.13	.02	7921.05	19.15	2048.81
6.19	700.00	0.00	0.00	572.20	20480.00	592.02	.04	.12	.02	8255.34	19.82	2064.50
6.19	700.00	0.00	0.00	572.20	24780.00	593.47	.04	.11	.02	8965.81	21.27	2098.38
6.37	925.00	0.00	0.00	567.50	13760.00	589.70	.04	.17	.00	5679.54	22.20	2399.75
6.37	925.00	0.00	0.00	567.50	18580.00	591.51	.04	.16	.00	6317.10	24.01	2461.79
6.37	925.00	0.00	0.00	567.50	20480.00	592.18	.04	.15	.00	6534.99	24.68	2481.32
6.37	925.00	0.00	0.00	567.50	24780.00	593.62	.03	.14	.00	6993.56	26.12	2523.74
6.55	950.00	0.00	0.00	569.20	13760.00	589.86	.09	.19	.02	8033.62	20.66	2400.39
6.55	950.00	0.00	0.00	569.20	18580.00	591.66	.06	.16	.01	8169.10	22.46	2413.94
6.55	950.00	0.00	0.00	569.20	20480.00	592.33	.05	.16	.01	8251.24	23.13	2418.67
6.55	950.00	0.00	0.00	569.20	24780.00	593.75	.05	.14	.01	8485.85	24.55	2428.87

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
6.85	1625.00	0.00	0.00	567.50	13760.00	590.07	.06	.17	.01	6712.37	22.57	2409.66
6.85	1625.00	0.00	0.00	567.50	18580.00	591.79	.04	.10	.01	6329.79	24.29	2454.24
6.85	1625.00	0.00	0.00	567.50	20480.00	592.44	.04	.09	.01	6247.83	24.94	2468.12
6.85	1625.00	0.00	0.00	567.50	24780.00	593.84	.03	.07	.00	6137.96	26.34	2489.38
7.19	1775.00	0.00	0.00	567.50	13760.00	590.29	.14	.26	.04	9606.72	22.79	2119.34
7.19	1775.00	0.00	0.00	567.50	18580.00	591.93	.11	.18	.04	10420.08	24.43	2157.79
7.19	1775.00	0.00	0.00	567.50	20480.00	592.56	.10	.16	.03	10623.79	25.06	2168.52
7.19	1775.00	0.00	0.00	567.50	24780.00	593.93	.09	.12	.03	10978.13	26.43	2186.13
7.51	1675.00	0.00	0.00	572.30	13760.00	590.64	.29	.42	.07	12325.69	18.34	1090.71
7.51	1675.00	0.00	0.00	572.30	18580.00	592.22	.37	.42	.13	15871.73	19.92	1447.83
7.51	1675.00	0.00	0.00	572.30	20480.00	592.82	.40	.41	.15	17174.72	20.52	1562.92
7.51	1675.00	0.00	0.00	572.30	24780.00	594.12	.45	.38	.18	19971.58	21.82	2061.54
7.75	1250.00	0.00	0.00	568.70	13760.00	591.12	.17	.33	.04	12121.62	22.42	923.37
7.75	1250.00	0.00	0.00	568.70	18580.00	592.83	.20	.39	.05	14896.95	24.13	1354.14
7.75	1250.00	0.00	0.00	568.70	20480.00	593.47	.20	.40	.06	15752.42	24.77	1514.82
7.75	1250.00	0.00	0.00	568.70	24780.00	594.86	.19	.41	.08	17257.25	26.16	1864.12
7.99	1275.00	0.00	0.00	567.60	13760.00	591.44	.34	.40	.08	13392.20	23.84	865.00
7.99	1275.00	0.00	0.00	567.60	18580.00	593.17	.36	.42	.08	16173.46	25.57	1413.98
7.99	1275.00	0.00	0.00	567.60	20480.00	593.81	.35	.41	.07	16881.65	26.21	1427.22
7.99	1275.00	0.00	0.00	567.60	24780.00	595.17	.31	.37	.06	18139.14	27.57	1452.52
8.20	1150.00	0.00	0.00	569.70	13760.00	592.09	.15	.40	.06	9149.99	22.39	1408.59
8.20	1150.00	0.00	0.00	569.70	18580.00	593.83	.14	.37	.07	10389.21	24.13	1428.77
8.20	1150.00	0.00	0.00	569.70	20480.00	594.44	.13	.36	.06	10842.35	24.74	1434.60
8.20	1150.00	0.00	0.00	569.70	24780.00	595.73	.13	.32	.05	11802.25	26.03	1446.04
8.42	1150.00	0.00	0.00	571.70	13760.00	592.37	.20	.31	.02	11089.02	20.67	1015.84
8.42	1150.00	0.00	0.00	571.70	18580.00	594.09	.20	.29	.03	13023.57	22.39	1091.03
8.42	1150.00	0.00	0.00	571.70	20480.00	594.69	.20	.28	.03	13695.89	22.99	1100.07
8.42	1150.00	0.00	0.00	571.70	24780.00	595.96	.20	.26	.04	15089.36	24.26	1119.32
8.54	625.00	0.00	0.00	571.70	13760.00	592.54	.24	.19	.02	11889.56	20.84	1330.35
8.54	625.00	0.00	0.00	571.70	18580.00	594.26	.21	.18	.01	13437.88	22.56	1393.57
8.54	625.00	0.00	0.00	571.70	20480.00	594.86	.20	.18	.00	13934.72	23.16	1402.66
8.54	625.00	0.00	0.00	571.70	24780.00	596.15	.19	.17	.00	14927.16	24.45	1422.10
8.68	750.00	0.00	0.00	571.60	13760.00	592.79	.34	.29	.05	13757.18	21.19	219.02
8.68	750.00	0.00	0.00	571.60	18580.00	594.44	.46	.30	.13	18223.35	22.84	861.78
8.68	750.00	0.00	0.00	571.60	20480.00	595.02	.49	.30	.14	19683.88	23.42	1080.27
8.68	750.00	0.00	0.00	571.60	24780.00	596.27	.50	.28	.15	22062.14	24.67	1097.83
8.92	1250.00	0.00	0.00	571.60	13760.00	593.34	.30	.50	.01	13407.15	21.74	535.80
8.92	1250.00	0.00	0.00	571.60	18580.00	595.15	.36	.58	.03	17132.95	23.55	823.70
8.92	1250.00	0.00	0.00	571.60	20480.00	595.76	.38	.60	.03	18401.51	24.16	849.60
8.92	1250.00	0.00	0.00	571.60	24780.00	596.98	.41	.60	.03	21030.97	25.38	883.53

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
9.40	2525.00	0.00	0.00	572.20	13760.00	594.18	.30	.84	.00	13745.25	21.98	312.43
9.40	2525.00	0.00	0.00	572.20	18580.00	596.08	.39	.95	.01	17998.99	23.88	780.81
9.40	2525.00	0.00	0.00	572.20	20480.00	596.71	.41	.97	.02	19403.91	24.51	789.91
9.40	2525.00	0.00	0.00	572.20	24780.00	597.97	.45	1.01	.02	22318.66	25.77	808.11

SECTION NUMBER	DISCHARGE CFS	CWSEL	CWSEL DIFF EACH Q	CWSEL DIFF EACH SECTION	CWSEL-WSELK	TOPWID	T.W. DIFF	LENGTH
.001	12590.000	580.350	0.000	0.000	0.000	202.475	0.000	-0.000
.001	16810.000	580.350	0.000	0.000	0.000	202.475	0.000	-0.000
.001	18450.000	580.350	0.000	0.000	0.000	202.475	0.000	-0.000
.001	22160.000	580.350	0.000	0.000	0.000	202.475	0.000	-0.000
.076	12590.000	580.473	0.000	.123	0.000	209.201	0.000	400.000
.076	16810.000	580.575	.102	.225	0.000	209.765	-.563	400.000
.076	18450.000	580.625	.050	.275	0.000	210.038	-.837	400.000
.076	22160.000	580.761	.136	.411	0.000	210.785	-1.584	400.000
.085	12590.000	580.568	0.000	.096	0.000	228.939	0.000	49.000
.085	16810.000	580.747	.178	.172	0.000	232.439	-3.500	49.000
.085	18450.000	580.832	.086	.207	0.000	234.329	-5.391	49.000
.085	22160.000	581.062	.230	.302	0.000	239.414	-10.476	49.000
.086	12590.000	580.559	0.000	-.009	0.000	228.940	0.000	1.000
.086	16810.000	580.731	.172	-.016	0.000	232.267	-3.328	1.000
.086	18450.000	580.813	.082	-.019	0.000	234.125	-5.185	1.000
.086	22160.000	581.035	.222	-.027	0.000	238.808	-9.869	1.000
.091	12590.000	580.562	0.000	.003	0.000	228.963	0.000	28.000
.091	16810.000	580.737	.174	.006	0.000	232.380	-3.417	28.000
.091	18450.000	580.820	.084	.007	0.000	234.259	-5.296	28.000
.091	22160.000	581.045	.225	.010	0.000	238.999	-10.036	28.000
.092	12590.000	580.586	0.000	.024	0.000	229.023	0.000	1.000
.092	16810.000	580.780	.193	.043	0.000	233.168	-4.144	1.000
.092	18450.000	580.872	.092	.052	0.000	235.209	-6.186	1.000
.092	22160.000	581.121	.249	.076	0.000	240.707	-11.684	1.000
.100	12590.000	580.591	0.000	.005	0.000	229.064	0.000	49.000
.100	16810.000	580.789	.197	.009	0.000	233.364	-4.300	49.000
.100	18450.000	580.883	.094	.011	0.000	235.444	-6.380	49.000
.100	22160.000	581.137	.254	.016	0.000	241.040	-11.976	49.000
.138	12590.000	580.583	0.000	-.008	0.000	157.645	0.000	200.000
.138	16810.000	580.774	.190	-.015	0.000	157.673	-.028	200.000
.138	18450.000	580.864	.091	-.019	0.000	157.686	-.041	200.000
.138	22160.000	581.108	.243	-.029	0.000	157.722	-.077	200.000
.166	12590.000	580.518	0.000	-.066	0.000	130.637	0.000	150.000
.166	16810.000	580.657	.139	-.116	0.000	130.649	-.012	150.000
.166	18450.000	580.724	.067	-.140	0.000	130.655	-.018	150.000
.166	22160.000	580.907	.183	-.200	0.000	130.671	-.034	150.000
.206	12590.000	580.529	0.000	.011	0.000	118.762	0.000	210.000
.206	16810.000	580.677	.148	.020	0.000	118.773	-.012	210.000
.206	18450.000	580.747	.071	.023	0.000	118.779	-.017	210.000
.206	22160.000	580.939	.192	.032	0.000	118.794	-.033	210.000
.305	12590.000	580.667	0.000	.133	0.000	101.999	0.000	525.000
.305	16810.000	580.918	.251	.242	0.000	101.999	-.000	525.000
.305	18450.000	581.036	.118	.289	0.000	101.999	-.000	525.000
.305	22160.000	581.347	.311	.408	0.000	101.999	-.000	525.000

.309	12590.000	580.632	0.000	-.035	0.000	91.999	0.000	20.000
.309	16810.000	580.857	.224	-.062	0.000	91.999	-.000	20.000
.309	18450.000	580.962	.105	-.074	0.000	91.999	-.000	20.000
.309	22160.000	581.239	.277	-.108	0.000	91.999	-.000	20.000
.313	12590.000	580.578	0.000	-.054	0.000	81.999	0.000	20.000
.313	16810.000	580.760	.181	-.097	0.000	81.999	-.000	20.000
.313	18450.000	580.845	.085	-.117	0.000	81.999	-.000	20.000
.313	22160.000	581.069	.224	-.170	0.000	81.999	-.000	20.000
.315	12590.000	580.533	0.000	-.046	0.000	75.999	0.000	12.000
.315	16810.000	580.677	.144	-.083	0.000	75.999	-.000	12.000
.315	18450.000	580.745	.068	-.100	0.000	75.999	-.000	12.000
.315	22160.000	580.922	.178	-.147	0.000	75.999	-.000	12.000
.318	12590.000	580.474	0.000	-.059	0.000	69.999	0.000	12.000
.318	16810.000	580.569	.096	-.108	0.000	69.999	-.000	12.000
.318	18450.000	580.614	.044	-.131	0.000	69.999	-.000	12.000
.318	22160.000	580.728	.115	-.194	0.000	69.999	-.000	12.000
.319	12590.000	580.450	0.000	-.024	0.000	67.999	0.000	4.000
.319	16810.000	580.526	.076	-.043	0.000	67.999	-.000	4.000
.319	18450.000	580.561	.035	-.053	0.000	67.999	-.000	4.000
.319	22160.000	580.649	.088	-.079	0.000	67.999	-.000	4.000
.320	12590.000	580.394	0.000	-.056	0.000	64.001	0.000	8.000
.320	16810.000	580.424	.029	-.102	0.000	64.001	-.000	8.000
.320	18450.000	580.435	.012	-.125	0.000	64.001	-.000	8.000
.320	22160.000	580.460	.025	-.189	0.000	64.001	-.000	8.000
.324	12590.000	580.411	0.000	.017	0.000	64.001	0.000	24.000
.324	16810.000	580.456	.045	.032	0.000	64.001	-.000	24.000
.324	18450.000	580.476	.020	.040	0.000	64.001	-.000	24.000
.324	22160.000	580.535	.059	.074	0.000	64.001	-.000	24.000
.325	12590.000	580.412	0.000	.001	0.000	64.001	0.000	1.000
.325	16810.000	580.457	.045	.001	0.000	64.001	-.000	1.000
.325	18450.000	580.478	.021	.003	0.000	64.001	-.000	1.000
.325	22160.000	580.537	.059	.002	0.000	64.001	-.000	1.000
.333	12590.000	580.441	0.000	-.029	0.000	64.001	0.000	46.000
.333	16810.000	580.519	.077	.061	0.000	64.001	-.000	46.000
.333	18450.000	580.556	.038	.077	0.000	64.001	-.000	46.000
.333	22160.000	580.664	.108	.127	0.000	64.001	-.000	46.000
.334	12590.000	580.442	0.000	.001	0.000	64.001	0.000	1.000
.334	16810.000	580.519	.078	.001	0.000	64.001	-.000	1.000
.334	18450.000	580.557	.038	.002	0.000	64.001	-.000	1.000
.334	22160.000	580.666	.109	.002	0.000	64.001	-.000	1.000
.337	12590.000	580.453	0.000	.011	0.000	64.001	0.000	19.000
.337	16810.000	580.540	.088	.021	0.000	64.001	-.000	19.000
.337	18450.000	580.583	.043	.026	0.000	64.001	-.000	19.000
.337	22160.000	580.707	.124	.041	0.000	64.001	-.000	19.000
.338	12590.000	580.543	0.000	.090	0.000	65.999	0.000	1.000
.338	16810.000	580.717	.174	.176	0.000	65.999	-.000	1.000
.338	18450.000	580.807	.090	.224	0.000	65.999	-.000	1.000
.338	22160.000	581.080	.273	.372	0.000	65.999	-.000	1.000
.339	12590.000	580.696	0.000	.153	0.000	69.999	0.000	2.000
.339	16810.000	581.011	.315	.294	0.000	69.999	-.000	2.000
.339	18450.000	581.174	.163	.367	0.000	69.999	-.000	2.000
.339	22160.000	581.657	.483	.578	0.000	69.999	-.000	2.000

.340	12590.000	580.875	0.000	.180	0.000	75.999	-.000	3.000
.340	16810.000	581.346	.471	.335	0.000	75.999	-.000	3.000
.340	18450.000	581.585	.239	.411	0.000	75.999	-.000	3.000
.340	22160.000	582.274	.689	.617	0.000	75.999	-.000	3.000
.341	12590.000	581.086	0.000	.211	0.000	85.999	0.000	5.000
.341	16810.000	581.728	.642	.382	0.000	85.999	-.000	5.000
.341	18450.000	582.047	.319	.462	0.000	85.999	-.000	5.000
.341	22160.000	582.940	.892	.665	0.000	85.999	-.000	5.000
.342	12590.000	581.243	0.000	.157	0.000	97.999	0.000	6.000
.342	16810.000	582.006	.763	.278	0.000	97.999	-.000	6.000
.342	18450.000	582.380	.374	.333	0.000	97.999	-.000	6.000
.342	22160.000	583.407	1.026	.467	0.000	97.999	-.000	6.000
.343	12590.000	581.386	0.000	.142	0.000	117.999	0.000	10.000
.343	16810.000	582.256	.870	.250	0.000	117.999	-.000	10.000
.343	18450.000	582.678	.422	.298	0.000	117.999	-.000	10.000
.343	22160.000	583.820	1.142	.413	0.000	117.999	-.000	10.000
.377	12590.000	581.547	0.000	.162	0.000	133.000	0.000	186.000
.377	16810.000	582.524	.977	.268	0.000	133.000	0.000	186.000
.377	18450.000	582.990	.465	.312	0.000	133.000	0.000	186.000
.377	22160.000	584.229	1.239	.409	0.000	133.000	0.000	186.000
.476	12590.000	581.608	0.000	.061	0.000	112.499	0.000	520.000
.476	16810.000	582.617	1.009	.093	0.000	112.499	-.000	520.000
.476	18450.000	583.093	.476	.104	0.000	112.499	-.000	520.000
.476	22160.000	584.352	1.258	.123	0.000	112.499	-.000	520.000
.482	12590.000	581.569	0.000	-.039	0.000	97.000	0.000	30.500
.482	16810.000	582.550	.982	-.067	0.000	97.000	-.000	30.500
.482	18450.000	583.015	.465	-.078	0.000	97.000	-.000	30.500
.482	22160.000	584.251	1.235	-.101	0.000	138.587	-41.587	30.500
.484	12590.000	581.559	0.000	-.009	0.000	94.001	0.000	12.000
.484	16810.000	582.534	.975	-.016	0.000	94.001	-.000	12.000
.484	18450.000	582.996	.462	-.019	0.000	94.001	-.000	12.000
.484	22160.000	584.228	1.232	-.022	0.000	170.355	-76.354	12.000
.487	12590.000	581.560	0.000	.001	0.000	94.001	0.000	13.500
.487	16810.000	582.536	.976	.002	0.000	94.001	-.000	13.500
.487	18450.000	582.998	.462	.002	0.000	94.001	-.000	13.500
.487	22160.000	584.231	1.233	.003	0.000	170.414	-76.413	13.500
.488	12590.000	581.561	0.000	.000	0.000	94.001	0.000	1.000
.488	16810.000	582.537	.976	.000	0.000	94.001	-.000	1.000
.488	18450.000	582.999	.462	.000	0.000	94.001	-.000	1.000
.488	22160.000	584.226	1.227	-.005	0.000	170.418	-76.418	1.000
.494	12590.000	581.564	0.000	.004	0.000	94.001	0.000	40.000
.494	16810.000	582.542	.978	.006	0.000	94.001	-.000	40.000
.494	18450.000	583.005	.463	.007	0.000	94.001	-.000	40.000
.494	22160.000	584.234	1.229	.009	0.000	170.597	-76.597	40.000
.495	12590.000	581.564	0.000	.000	0.000	94.001	0.000	1.000
.495	16810.000	582.543	.978	.000	0.000	94.001	-.000	1.000
.495	18450.000	583.006	.463	.000	0.000	94.001	-.000	1.000
.495	22160.000	584.251	1.245	.017	0.000	170.734	-76.733	1.000
.497	12590.000	581.566	0.000	.002	0.000	94.001	0.000	13.500
.497	16810.000	582.546	.980	.003	0.000	94.001	-.000	13.500
.497	18450.000	583.009	.463	.004	0.000	94.001	-.000	13.500
.497	22160.000	584.260	1.251	.010	0.000	170.973	-76.972	13.500
.500	12590.000	581.775	0.000	.209	0.000	126.001	0.000	16.000

.500	16810.000	582.901	1.126	.355	0.000	126.001	-.000	16.000
.500	18450.000	583.428	.527	.418	0.000	126.001	-.000	16.000
.500	22160.000	584.816	1.388	.555	0.000	182.035	-56.035	16.000
.639	12590.000	581.856	0.000	.081	0.000	151.675	0.000	735.000
.639	16810.000	583.049	1.193	.149	0.000	187.648	-35.973	735.000
.639	18450.000	583.617	.568	.189	0.000	220.354	-68.679	735.000
.639	22160.000	585.211	1.594	.395	0.000	314.488	-162.813	735.000
.901	12590.000	582.123	0.000	.268	0.000	132.304	0.000	1380.000
.901	16810.000	583.487	1.363	.438	0.000	134.425	-2.121	1380.000
.901	18450.000	584.248	.761	.631	0.000	187.086	-54.782	1380.000
.901	22160.000	586.061	1.814	.851	0.000	249.758	-117.455	1380.000
.928	12590.000	582.116	0.000	-.007	0.000	123.035	0.000	145.000
.928	16810.000	583.472	1.356	-.014	0.000	123.035	-.000	145.000
.928	18450.000	584.233	.760	-.015	0.000	123.035	-.000	145.000
.928	22160.000	586.030	1.798	-.031	0.000	199.550	-76.514	145.000
.929	12590.000	582.117	0.000	.000	0.000	123.035	0.000	1.000
.929	16810.000	583.473	1.356	.000	0.000	123.035	-.000	1.000
.929	18450.000	584.233	.760	.000	0.000	123.035	-.000	1.000
.929	22160.000	586.021	1.789	-.009	0.000	199.559	-76.524	1.000
.945	12590.000	582.132	0.000	.015	0.000	123.035	0.000	82.000
.945	16810.000	583.494	1.363	.022	0.000	123.035	-.000	82.000
.945	18450.000	584.256	.762	.023	0.000	123.035	-.000	82.000
.945	22160.000	586.048	1.792	.027	0.000	200.058	-77.023	82.000
.946	12590.000	582.132	0.000	.000	0.000	123.035	0.000	1.000
.946	16810.000	583.494	1.363	.000	0.000	123.035	-.000	1.000
.946	18450.000	584.256	.762	.000	0.000	123.035	-.000	1.000
.946	22160.000	586.074	1.817	.026	0.000	200.232	-77.197	1.000
.973	12590.000	582.429	0.000	.298	0.000	163.038	0.000	150.000
.973	16810.000	583.961	1.532	.467	0.000	164.953	-1.915	150.000
.973	18450.000	584.794	.832	.537	0.000	210.998	-47.961	150.000
.973	22160.000	586.681	1.888	.608	0.000	232.178	-69.141	150.000
1.194	12590.000	582.658	0.000	.228	0.000	196.437	0.000	1170.000
1.194	16810.000	584.294	1.636	.333	0.000	199.220	-2.783	1170.000
1.194	18450.000	585.180	.886	.387	0.000	200.727	-4.290	1170.000
1.194	22160.000	587.082	1.902	.401	0.000	203.962	-7.525	1170.000
1.543	12590.000	582.934	0.000	.277	0.000	170.443	-0.000	1850.000
1.543	16810.000	584.656	1.722	.362	0.000	172.722	-2.279	1850.000
1.543	18450.000	585.554	.898	.374	0.000	173.912	-3.469	1850.000
1.543	22160.000	587.481	1.928	.399	0.000	176.474	-6.031	1850.000
1.567	12590.000	582.947	0.000	.012	0.000	186.339	0.000	125.000
1.567	16810.000	584.677	1.731	.021	0.000	189.677	-3.338	125.000
1.567	18450.000	585.581	.904	.027	0.000	191.411	-5.071	125.000
1.567	22160.000	587.523	1.942	.041	0.000	203.775	-17.436	125.000
1.569	12590.000	582.928	0.000	-.019	0.000	174.291	0.000	10.000
1.569	16810.000	584.650	1.722	-.028	0.000	177.618	-3.327	10.000
1.569	18450.000	585.551	.901	-.030	0.000	179.359	-5.068	10.000
1.569	22160.000	587.487	1.936	-.035	0.000	180.999	-6.708	10.000
1.570	12590.000	582.916	0.000	-.012	0.000	165.280	0.000	5.000
1.570	16810.000	584.632	1.716	-.018	0.000	168.602	-3.321	5.000
1.570	18450.000	585.531	.899	-.020	0.000	170.321	-5.040	5.000
1.570	22160.000	587.463	1.932	-.024	0.000	171.999	-6.719	5.000
1.572	12590.000	582.918	0.000	.002	0.000	165.283	0.000	9.000
1.572	16810.000	584.635	1.717	.003	0.000	168.605	-3.322	9.000

1.572	22160.000	587.466	1.932	.003	0.000	171.999	-6.716	9.000
1.573	12590.000	582.918	0.000	.000	0.000	165.283	0.000	1.000
1.573	16810.000	584.635	1.717	.000	0.000	168.605	-3.322	1.000
1.573	18450.000	585.534	.899	.000	0.000	170.324	-5.041	1.000
1.573	22160.000	587.467	1.932	.000	0.000	171.999	-6.716	1.000
1.576	12590.000	582.922	0.000	.004	0.000	165.290	0.000	20.000
1.576	16810.000	584.641	1.718	.005	0.000	168.615	-3.325	20.000
1.576	18450.000	585.540	.899	.006	0.000	170.335	-5.045	20.000
1.576	22160.000	587.473	1.933	.006	0.000	171.999	-6.709	20.000
1.577	12590.000	582.922	0.000	.000	0.000	165.291	0.000	1.000
1.577	16810.000	584.641	1.719	.000	0.000	168.616	-3.325	1.000
1.577	18450.000	585.540	.899	.000	0.000	170.335	-5.045	1.000
1.577	22160.000	587.473	1.933	.000	0.000	171.999	-6.708	1.000
1.578	12590.000	582.926	0.000	.004	0.000	165.294	0.000	9.000
1.578	16810.000	584.646	1.720	.006	0.000	168.620	-3.326	9.000
1.578	18450.000	585.546	.900	.006	0.000	170.340	-5.046	9.000
1.578	22160.000	587.480	1.934	.007	0.000	171.999	-6.705	9.000
1.579	12590.000	582.956	0.000	.030	0.000	174.346	0.000	5.000
1.579	16810.000	584.692	1.736	.046	0.000	177.700	-3.354	5.000
1.579	18450.000	585.598	.906	.052	0.000	179.450	-5.104	5.000
1.579	22160.000	587.544	1.946	.064	0.000	180.999	-6.653	5.000
1.580	12590.000	583.022	0.000	.066	0.000	191.473	0.000	5.000
1.580	16810.000	584.790	1.768	.097	0.000	194.888	-3.415	5.000
1.580	18450.000	585.705	.915	.107	0.000	196.656	-5.183	5.000
1.580	22160.000	587.671	1.966	.127	0.000	210.274	-18.801	5.000
2.004	12590.000	583.338	0.000	.316	0.000	283.394	0.000	2240.000
2.004	16810.000	585.226	1.888	.436	0.000	289.071	-5.677	2240.000
2.004	18450.000	586.168	.942	.463	0.000	291.639	-8.245	2240.000
2.004	22160.000	588.188	2.021	.516	0.000	294.999	-11.605	2240.000
2.135	12590.000	583.472	0.000	.134	0.000	280.386	0.000	690.000
2.135	16810.000	585.373	1.901	.147	0.000	290.144	-9.758	690.000
2.135	18450.000	586.310	.937	.143	0.000	296.610	-16.224	690.000
2.135	22160.000	588.323	2.012	.134	0.000	309.891	-29.505	690.000
2.257	12590.000	583.677	0.000	.205	0.000	343.373	0.000	650.000
2.257	16810.000	585.630	1.953	.256	0.000	519.999	-176.626	650.000
2.257	18450.000	586.577	.947	.267	0.000	519.999	-176.626	650.000
2.257	22160.000	588.615	2.037	.292	0.000	519.999	-176.626	650.000
2.305	12590.000	583.714	0.000	.037	0.000	535.222	0.000	250.000
2.305	16810.000	585.683	1.969	.053	0.000	557.067	-21.845	250.000
2.305	18450.000	586.637	.954	.060	0.000	558.347	-23.125	250.000
2.305	22160.000	588.681	2.044	.067	0.000	560.994	-25.772	250.000
2.314	12590.000	583.726	0.000	.012	0.000	535.533	0.000	49.000
2.314	16810.000	585.694	1.968	.011	0.000	566.544	-31.011	49.000
2.314	18450.000	586.647	.953	.010	0.000	571.341	-35.808	49.000
2.314	22160.000	588.691	2.044	.010	0.000	576.030	-40.497	49.000
2.315	12590.000	583.692	0.000	-.034	0.000	534.445	0.000	1.000
2.315	16810.000	585.651	1.959	-.043	0.000	566.352	-31.907	1.000
2.315	18450.000	586.603	.952	-.044	0.000	571.145	-36.700	1.000
2.315	22160.000	588.645	2.042	-.046	0.000	621.509	-87.064	1.000
2.328	12590.000	583.717	0.000	.025	0.000	534.989	0.000	74.000
2.328	16810.000	585.673	1.956	.022	0.000	566.433	-31.444	74.000
2.328	18450.000	586.622	.949	.019	0.000	571.215	-36.226	74.000

2.329	22160.000	586.660	2.038	.015	0.000	622.439	-87.450	14.000
2.329	12590.000	583.811	0.000	.094	0.000	537.961	0.000	1.000
2.329	16810.000	585.791	1.980	.118	0.000	567.057	-29.097	1.000
2.329	18450.000	586.742	.951	.120	0.000	571.847	-33.886	1.000
2.329	22160.000	588.784	2.042	.124	0.000	576.030	-38.069	1.000
2.338	12590.000	583.822	0.000	.011	0.000	538.315	0.000	49.000
2.338	16810.000	585.802	1.980	.011	0.000	599.523	-61.208	49.000
2.338	18450.000	586.754	.951	.011	0.000	600.799	-62.483	49.000
2.338	22160.000	588.795	2.042	.011	0.000	603.280	-64.965	49.000
2.643	12590.000	584.207	0.000	.384	0.000	595.685	0.000	1610.000
2.643	16810.000	586.132	1.925	.330	0.000	609.999	-14.314	1610.000
2.643	18450.000	587.041	.909	.288	0.000	609.999	-14.314	1610.000
2.643	22160.000	589.021	1.979	.225	0.000	609.999	-14.314	1610.000
2.789	12590.000	584.395	0.000	.188	0.000	412.507	0.000	770.000
2.789	16810.000	586.292	1.897	.160	0.000	419.998	-7.491	770.000
2.789	18450.000	587.177	.885	.136	0.000	419.998	-7.491	770.000
2.789	22160.000	589.128	1.951	.107	0.000	419.998	-7.491	770.000
3.026	12590.000	584.634	0.000	.239	0.000	536.369	0.000	1250.000
3.026	16810.000	586.564	1.930	.272	0.000	586.474	-50.105	1250.000
3.026	18450.000	587.449	.885	.272	0.000	610.166	-73.797	1250.000
3.026	22160.000	589.400	1.951	.272	0.000	654.733	-118.363	1250.000
3.168	12590.000	584.717	0.000	.083	0.000	587.900	0.000	750.000
3.168	16810.000	586.649	1.932	.084	0.000	626.589	-38.689	750.000
3.168	18450.000	587.530	.881	.081	0.000	533.438	-45.538	750.000
3.168	22160.000	589.473	1.943	.072	0.000	647.891	-59.991	750.000
3.221	12590.000	584.753	0.000	.036	0.000	622.699	0.000	280.000
3.221	16810.000	586.685	1.933	.037	0.000	660.271	-37.572	280.000
3.221	18450.000	587.565	.879	.035	0.000	668.861	-46.162	280.000
3.221	22160.000	589.505	1.940	.032	0.000	687.033	-64.334	280.000
3.410	12590.000	584.954	0.000	.202	0.000	1017.902	0.000	1000.000
3.410	16810.000	586.894	1.940	.209	0.000	1046.545	-28.643	1000.000
3.410	18450.000	587.768	.874	.203	0.000	1054.932	-37.030	1000.000
3.410	22160.000	589.694	1.926	.190	0.000	1054.999	-37.097	1000.000
3.656	12590.000	585.217	0.000	.263	0.000	908.830	0.000	1300.000
3.656	16810.000	587.121	1.904	.227	0.000	951.138	-42.307	1300.000
3.656	18450.000	587.967	.846	.199	0.000	969.798	-60.968	1300.000
3.656	22160.000	589.853	1.886	.159	0.000	1011.744	-102.914	1300.000
3.970	12590.000	585.475	0.000	.258	0.000	783.739	0.000	1655.000
3.970	16810.000	587.380	1.905	.259	0.000	808.706	-24.968	1655.000
3.970	18450.000	588.212	.832	.245	0.000	819.414	-35.675	1655.000
3.970	22160.000	590.064	1.853	.211	0.000	840.493	-56.754	1655.000
4.151	12590.000	585.652	0.000	.177	0.000	647.614	0.000	960.000
4.151	16810.000	587.564	1.912	.184	0.000	1054.434	-406.821	960.000
4.151	18450.000	588.395	.831	.184	0.000	1059.436	-411.822	960.000
4.151	22160.000	590.243	1.848	.179	0.000	1066.505	-418.891	960.000
4.340	12590.000	585.970	0.000	.318	0.000	163.638	0.000	1000.000
4.340	16810.000	587.863	1.894	.299	0.000	596.961	-433.323	1000.000
4.340	18450.000	588.661	.797	.266	0.000	944.235	-780.597	1000.000
4.340	22160.000	590.449	1.788	.206	0.000	950.990	-787.352	1000.000
4.369	12590.000	586.044	0.000	.074	0.000	171.055	0.000	150.000
4.369	16810.000	587.957	1.913	.093	0.000	629.661	-458.606	150.000
4.369	18450.000	588.759	.802	.098	0.000	909.828	-738.773	150.000
4.369	22160.000	590.533	1.774	.083	0.000	915.839	-744.784	150.000

4.600	13760.000	586.728	0.000	.684	0.000	650.194	0.000	1220.000
4.600	18580.000	588.811	2.083	.854	0.000	726.539	-76.345	1220.000
4.600	20480.000	589.597	.786	.838	0.000	727.995	-77.801	1220.000
4.600	24780.000	591.263	1.666	.731	0.000	731.079	-80.886	1220.000
4.651	13760.000	586.986	0.000	.258	0.000	549.999	0.000	265.000
4.651	18580.000	589.036	2.050	.225	0.000	549.999	-.000	265.000
4.651	20480.000	589.798	.762	.200	0.000	549.999	-.000	265.000
4.651	24780.000	591.412	1.615	.149	0.000	549.999	-.000	265.000
4.870	13760.000	587.217	0.000	.231	0.000	662.598	-0.000	1160.000
4.870	18580.000	589.279	2.061	.243	0.000	734.748	-72.150	1160.000
4.870	20480.000	590.042	.763	.244	0.000	762.143	-99.544	1160.000
4.870	24780.000	591.661	1.619	.248	0.000	844.695	-182.097	1160.000
5.041	13760.000	587.476	0.000	.259	0.000	1226.945	0.000	900.000
5.041	18580.000	589.586	2.109	.307	0.000	1262.029	-35.084	900.000
5.041	20480.000	590.377	.792	.335	0.000	1275.200	-48.256	900.000
5.041	24780.000	592.035	1.657	.374	0.000	1302.767	-75.822	900.000
5.249	13760.000	588.152	0.000	.675	0.000	752.704	0.000	1100.000
5.249	18580.000	590.099	1.948	.514	0.000	981.793	-229.089	1100.000
5.249	20480.000	590.839	.740	.462	0.000	995.113	-242.409	1100.000
5.249	24780.000	592.414	1.575	.379	0.000	1023.457	-270.753	1100.000
5.458	13760.000	588.862	0.000	.711	0.000	886.822	0.000	1100.000
5.458	18580.000	590.732	1.869	.632	0.000	928.674	-41.852	1100.000
5.458	20480.000	591.413	.681	.573	0.000	936.867	-50.045	1100.000
5.458	24780.000	592.885	1.472	.471	0.000	954.565	-67.743	1100.000
5.666	13760.000	589.040	0.000	.177	0.000	1194.361	0.000	1100.000
5.666	18580.000	590.908	1.868	.176	0.000	1207.743	-13.382	1100.000
5.666	20480.000	591.586	.678	.173	0.000	1212.090	-17.728	1100.000
5.666	24780.000	593.052	1.466	.167	0.000	1221.486	-27.124	1100.000
5.789	13760.000	589.116	0.000	.076	0.000	895.988	0.000	650.000
5.789	18580.000	590.971	1.856	.064	0.000	917.772	-21.783	650.000
5.789	20480.000	591.646	.674	.060	0.000	923.166	-27.178	650.000
5.789	24780.000	593.104	1.459	.053	0.000	934.834	-38.846	650.000
5.926	13760.000	589.177	0.000	.061	0.000	980.668	0.000	725.000
5.926	18580.000	591.032	1.855	.060	0.000	1003.487	-22.819	725.000
5.926	20480.000	591.705	.674	.060	0.000	1011.789	-31.121	725.000
5.926	24780.000	593.162	1.457	.058	0.000	1029.750	-49.082	725.000
6.059	13760.000	589.251	0.000	.074	0.000	1374.673	0.000	700.000
6.059	18580.000	591.123	1.872	.091	0.000	1402.663	-27.990	700.000
6.059	20480.000	591.809	.686	.104	0.000	1412.876	-38.203	700.000
6.059	24780.000	593.285	1.476	.123	0.000	1434.848	-60.175	700.000
6.192	13760.000	589.527	0.000	.276	0.000	1959.324	0.000	700.000
6.192	18580.000	591.349	1.822	.226	0.000	2048.814	-89.490	700.000
6.192	20480.000	592.021	.672	.212	0.000	2064.498	-105.174	700.000
6.192	24780.000	593.473	1.452	.188	0.000	2098.378	-139.054	700.000
6.367	13760.000	589.699	0.000	.172	0.000	2399.748	0.000	925.000
6.367	18580.000	591.511	1.811	.161	0.000	2461.793	-62.044	925.000
6.367	20480.000	592.178	.667	.157	0.000	2481.316	-81.568	925.000
6.367	24780.000	593.619	1.441	.146	0.000	2523.743	-123.995	925.000
6.547	13760.000	589.863	0.000	.164	0.000	2400.387	0.000	950.000
6.547	18580.000	591.664	1.801	.153	0.000	2413.943	-13.556	950.000
6.547	20480.000	592.325	.661	.147	0.000	2418.672	-18.284	950.000
6.547	24780.000	593.754	1.429	.135	0.000	2428.868	-28.481	950.000

6.854	13760.000	590.075	0.000	.211	0.000	2409.661	0.000	1625.000
6.854	18580.000	591.792	1.718	.129	0.000	2454.236	-44.575	1625.000
6.854	20480.000	592.435	.643	.110	0.000	2468.118	-58.457	1625.000
6.854	24780.000	593.836	1.400	.082	0.000	2489.381	-79.720	1625.000
7.191	13760.000	590.294	0.000	.220	0.000	2119.336	0.000	1775.000
7.191	18580.000	591.933	1.639	.141	0.000	2157.786	-38.450	1775.000
7.191	20480.000	592.558	.624	.122	0.000	2168.524	-49.188	1775.000
7.191	24780.000	593.928	1.371	.093	0.000	2186.126	-66.790	1775.000
7.508	13760.000	590.642	0.000	.348	0.000	1090.712	0.000	1675.000
7.508	18580.000	592.222	1.579	.288	0.000	1447.826	-357.114	1675.000
7.508	20480.000	592.817	.595	.259	0.000	1562.917	-472.205	1675.000
7.508	24780.000	594.123	1.306	.195	0.000	2061.540	-970.828	1675.000
7.745	13760.000	591.124	0.000	.482	0.000	923.369	0.000	1250.000
7.745	18580.000	592.834	1.709	.612	0.000	1354.145	-430.776	1250.000
7.745	20480.000	593.471	.638	.654	0.000	1514.822	-591.453	1250.000
7.745	24780.000	594.857	1.386	.734	0.000	1864.123	-940.754	1250.000
7.986	13760.000	591.438	0.000	.313	0.000	865.005	0.000	1275.000
7.986	18580.000	593.171	1.733	.337	0.000	1413.978	-548.973	1275.000
7.986	20480.000	593.806	.635	.335	0.000	1427.215	-562.210	1275.000
7.986	24780.000	595.171	1.364	.314	0.000	1452.524	-587.519	1275.000
8.204	13760.000	592.085	0.000	.648	0.000	1408.591	0.000	1150.000
8.204	18580.000	593.833	1.747	.662	0.000	1428.773	-20.181	1150.000
8.204	20480.000	594.440	.607	.633	0.000	1434.599	-26.007	1150.000
8.204	24780.000	595.731	1.291	.560	0.000	1446.037	-37.446	1150.000
8.422	13760.000	592.368	0.000	.283	0.000	1015.843	0.000	1150.000
8.422	18580.000	594.087	1.719	.254	0.000	1091.030	-75.186	1150.000
8.422	20480.000	594.686	.599	.246	0.000	1100.072	-84.229	1150.000
8.422	24780.000	595.960	1.274	.230	0.000	1119.317	-103.473	1150.000
8.540	13760.000	592.542	0.000	.174	0.000	1330.346	0.000	625.000
8.540	18580.000	594.264	1.722	.177	0.000	1393.570	-63.225	625.000
8.540	20480.000	594.863	.599	.177	0.000	1402.661	-72.315	625.000
8.540	24780.000	596.146	1.283	.186	0.000	1422.099	-91.753	625.000
8.682	13760.000	592.787	0.000	.245	0.000	219.023	0.000	750.000
8.682	18580.000	594.442	1.655	.178	0.000	861.781	-642.758	750.000
8.682	20480.000	595.019	.577	.156	0.000	1080.268	-861.245	750.000
8.682	24780.000	596.273	1.254	.127	0.000	1097.826	-878.803	750.000
8.919	13760.000	593.343	0.000	.556	0.000	535.803	0.000	1250.000
8.919	18580.000	595.150	1.808	.708	0.000	823.695	-287.893	1250.000
8.919	20480.000	595.759	.609	.740	0.000	849.595	-313.793	1250.000
8.919	24780.000	596.984	1.225	.711	0.000	883.529	-347.726	1250.000
9.397	13760.000	594.183	0.000	.840	0.000	312.429	0.000	2525.000
9.397	18580.000	596.083	1.901	.933	0.000	780.811	-468.383	2525.000
9.397	20480.000	596.711	.628	.952	0.000	789.907	-477.479	2525.000
9.397	24780.000	597.968	1.257	.984	0.000	808.112	-495.684	2525.000

DATA FOR LAST CROSS SECTION

PROFILE	TYPE ENC	TARGET	TOP WIDTH AREA-ACRES	TOP WIDTH AREA-DIFF
1	0.000	0.000	899.507	0.000
2	0.000	0.000	1016.087	116.580
3	0.000	0.000	1045.684	146.177
4	0.000	0.000	1091.861	192.354

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**** 7000 SCOPE 2.1 LVL  221  02/05/77  12.00.12  03/09/77      77068

SYS DEVICES 819/ 4/PF FLS=200K FLL=764K MXS=160K MXL=457K MXB=4573

HH.MM.SS CPU SECOND ORIGIN
         08.42.34.MFA. ::    20PPU CBR73 B+W LYN ECS-2CPUS R.P 05.16
08.43.03 00000.019 MFZ.     =PTHJ053,T20,CP70.  PT HURON FIS
08.43.03 00000.020 JOB.     -CHARGE,810-0037-45-78-5553,JANDA,001,D,JANDA.
08.43.04 00000.062 JOB.     -ATTACH(HEC2,HEC2PROD,ID=MULLAN)
08.43.04 00000.067 MFZ.      PE254 - CYCLE   1 ATTACHED FROM SN=SYSTEM
08.43.04 00000.068 LOD.     -HEC2(PL=99999).
08.43.06 00000.486 MFZ.       LD610 - FLS REQUIRED TO LOAD - 0025222 OU.COG
08.43.06 00000.496 MFZ.       LD603 - EXECUTION INITIATED OS.EXP
08.43.06 00000.497 USR.       FORTRAN LIBRARY 217-MODIFIED 03/16/76
08.43.13 00006.035 USR.          STOP
08.43.13 00006.035 USR.           5.537 CP SECONDS EXECUTION TIME
08.43.13 00006.038 MFZ.       RM770 - MAXIMUM ACTIVE FILES                    3
08.43.13 00006.038 MFZ.       RM771 - OPEN/CLOSE CALLS                       22
08.43.13 00006.039 MFZ.       RM772 - DATA TRANSFER CALLS                12,963
08.43.13 00006.039 MFZ.       RM773 - CONTROL/POSITIONING CALLS              26
08.43.13 00006.039 MFZ.       RM774 - BM DATA TRANSFER CALLS                578
08.43.13 00006.039 MFZ.       RM775 - BM CONTROL/POSITIONING CALLS           54
08.43.13 00006.039 MFZ.       RM776 - QUEUE MANAGER CALLS                   112
08.43.13 00006.040 MFZ.       RM777 - RECALL CALLS                           61
08.43.13 00006.040 MFZ.       BWMSG - NUMBER OF TAPES MOUNTED
08.43.13 00006.040 MFZ.       SRU                 7.206  SRU
08.43.13 00006.041 MFZ.       SCM               300,547  KWS
08.43.13 00006.041 MFZ.       I/O                 0.131  MIN
08.43.13 00006.041 MFZ.       PMS                 0.269  MINS
08.43.13 00006.041 MFZ.       USER                4.553  SEC
08.43.13 00006.041 MFZ.       JOB                 6.043  SEC
08.43.13 00006.042 MFZ.       SC050 - 000054 SC/LC SWAPS
08.43.13 00006.042 MFZ.     PTHJ07S   PTHJ07S
```

00BREAK00

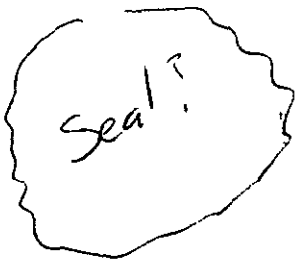
1) COUNTY: St. Clair

2) STUDY NAME: Cottrellville Twp

3) WATERCOURSE: Beaubien Creek

4) DOCUMENT TYPE: Report

00BREAK00



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WATER MANAGEMENT

HYDRAULIC ANALYSIS

Introduction

The stream being studied is the Beaubien Creek in the Township of Cottrellville, St. Clair County, Michigan. The hydraulic investigations include a reach that extends from approximately 2600 feet upstream of M-29 Bridge over the Beaubien Creek up to approximately 2150 feet upstream of the Starville Road Bridge in Cottrellville Township. This is a distance of approximately 2.33 miles.

The 10-, 50-, 100- and 500-year flood frequency flows used in this study have been approved by Michigan's Department of Natural Resources. These discharges were computed by the SCS method.

Method of Analysis

The water-surface profiles were computed by the HEC-2 computer program developed by the U.S. Army Corps of Engineers.[1]

All bridges have been modeled according to the HEC Training document No. 6, Application of the HEC-2 Bridge Routines.[2] Both the "Special" and "Normal" bridge routines were used.

The hydraulic model of the floodway was developed mainly for the 100-year flow. The 10-, 50- and 500-year flows were also taken into consideration whenever it was possible.

The guidelines set forth on pages 18 through 21 in the HEC Training Document No. 6[3] were used to locate valley sections upstream and downstream of the bridges. If additional sections were found necessary within this distance, the intermediate sections were encroached as appropriate. These same guidelines were used in modeling natural constrictions in the floodway.

The cross-sections used in the hydraulic analysis were developed from field surveys (Spring, 1976).

Variables and Coefficients

The roughness factor (Manning's "n") were chosen after considering photographs taken during field surveys, observation made in field inspection trips to the studied area, and descriptions given in Chow[4] and in Water-Supply Paper No. 1849.[5] In general, the following range of values was used:

Description	Manning's "n"
1. Channel	
a. Muck bottom with medium to heavy weeds and light brush on banks	0.05 - 0.06
b. Muck bottom with debris, some fallen trees, heavy brush or trees on banks	0.07 - 0.08
2. Overbanks	
a. Medium to dense brush and trees	0.12 - 0.14

The coefficients of expansion and contraction chosen were 0.3, 0.6 and 0.5, 0.8 respectively, as suggested on Exhibit 2 of the HEC-2 Water Surface Profiles.

Orifice discharge coefficients XKOR for pressure flow used in special brodge routines were calculated according to the equation XKOR - $[1 + Ke + \frac{29.1\bar{n}L}{R^{4/3}}]$ where

$\bar{n}$ = Composite roughness factor

L = Length of constrictions

R = Hydraulic radius

Ke = Entrance loss factor

For Starville Road Bridge, XKOR = 1.48. Weir flow discharge coefficient COFQ = 3.02 for Starville Road Bridge was chosen from charts published by Bureau of Public Roads based on headwater depth of constrictions.

Starting Elevation

The mean-lake-elevation (575.47) of Lake St. Clair was chosen as starting water-surface elevation for the 10-, 50-, 100- and 500-year flows of Beaubien Creek. This elevation was obtained from a Johnson & Anderson analysis of gages on Lake Huron, St. Clair River, Lake St. Clair and Detroit River.

Remarks

The starting cross-section in this study was chosen at a point approximately 2,400 feet downstream of the southwest corner of Cottrellville Township. Aerial photos show that at this section Beaubien Creek drains suddenly into a vast, swampy area located just east of Bouvier Bay and Perch Point in Clay Township. Since this section is not far from the bay and the swamp is connected to the bay by several bridges and culverts under M-29, it was assumed that the water-surface elevation at this section is the same as Lake St. Clair.

The lower reach of Beaubien Creek downstream of sec. 0.455 is not included in the flood insurance study for Cottrellville Township. However, preliminary indications were that the levels in Lake St. Clair affected the expected flood profile on Beaubien Creek. In order to determine the extent of their influence, this hydraulic model has included this lower reach.

A high-water mark el. 584.4 (USGS) was obtained at sec. 1.902 for a flood which occurred April 1956. Analysis of gages of nearby streams indicated that this flood had a recurrence interval of less than 10 years.

Township of Cottrellville
St. Clair County
Job No. 5555-13

Beaubien Creek

Cross Section	S E C N O Miles	Feet	Location
A	0.455	2400	5000' u/s M-29 Bridge
B	1.136	6000	8600' u/s M-29 Bridge
C'	1.297	6858	9458' u/s M-29 Bridge, Private Footbridge
C	1.479	7808	10408' u/s M-29 Bridge
D	1.918	10126	Starville Road Bridge
E	1.927	10176	50' u/s Starville Road Bridge
F	2.325	12276	2150' u/s Starville Road Bridge

References

[1]U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, Users Manual, 1973.

[2]U.S. Army Corps of Engineers, Hydrologic Engineering Center, Application of HEC-2 Bridge Routines, 1974.

[3]Ibid.

[4]Chow, V. T., Open-Channel Hydraulics, pp. 101-123, McGraw-Hill, 1959.

[5]Geological Survey Water-Supply Paper No. 1849, Roughness Characteristics of Natural Channels, pp. 139-141, U.S. Government Printing.

COTJOLU JA DA 03/28/77 11.31.12 7100 JO

BEAUBIEN CREEK

COTTRELLVILLE TOWNSHIP

J&A FILE NO. 5555-13

10-50-100 & 500-YEAR FLOWS

DNR SUBMITTAL

S C O P E 2 L O A D M A P LOADER VERSION 1.0 03/23/77 11.31.14 PAGE 1

PROGRAM WILL BE ENTERED AT HEC2 (373) SCM LENGTH 146657 LCM LENGTH 0

BLOCK	ADDRESS	LENGTH
/ALPHA/	100	101
HEC2	201	11606
CARD	12007	1673
SUPO	13702	1043
CHIMP	14765	1645
DC	16632	703
FLODIS	17535	444
BLFLO	20201	1003
ADDPTS	21204	334
BWEIR	21540	1356
YCRIT	23110	122
SLARA	23247	256
SCALE	23516	246
XSEC	23764	1264
PROF	25251	1142
EXP	26412	102
/FCL.C./	26514	23
/Q8.IO./	26537	137
/HEADING/	26676	16
OUTC=	26714	1017
Q8NTRY=	27733	1
CO IO=	27734	44
ENDFIL=	30000	45
FECMSG=	30045	41
FLTIN=	30106	154
FLTOUT=	30262	314
FMTAP=	30576	372
FORSYS=	31170	556
FORUTL=	31746	16
GETFIT=	31764	43
INCOM=	32027	257
INPC=	32306	173
KODER=	32501	467
KRAKER=	33170	454
OUTCOM=	33644	203
REWIND=	34047	35
GOTOER=	34104	14
ALOG	34120	77
ITOJ*	34217	52
SYSAID=	34271	1
SYS=1ST	34272	42
XTOY*	34354	55
//	34431	112226

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*****************************************
HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
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C
1      BEAUBIEN CREEK, COTTRELLVILLE TOWNSHIP  5555-13  PM: GILBERTO M. FONT
T2      10 YEAR FLOW
T3      BEAUBIEN CREEK

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   WINS     Q        WSEL     FQ

     -0.       2.       -0.      -0. -0.000000   -0.00    -0.0     -0.   575.[illegible]   -0.000

J2  NPROF     IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IB       CHNIM    ITRACE

     1.000   -0.000   -1.000   -0.000   -0.000   -0.000   -0.000   -0.000   -0.000   -0.000

J3      1.000    10.000    11.000    12.000    14.000     [illegible].000     4.000    -0.000    -0.000    -0.000
NC       .130      .130      .070      .300      .500    -0.000    -0.000    -0.000    -0.000    -0.000
QT      4.000   860.000  1270.000  1460.000  2010.000    -0.000    -0.000    -0.000    -0.000    -0.000
NH      5.000      .100   700.000      .000  1500.000      .035  1520.000      .030  1600.000      .110
NH   3000.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

X1      0.000    20.000  1500.000  1520.000     0.000     0.000     0.000    -0.000    -0.000    -0.000
X3     -0.000    -0.000    -0.000  1100.000    -0.000  2150.000    -0.000    -0.000    -0.000    -0.000
GR    574.400     0.000   574.400   500.000   574.400   700.000   574.400  1500.000   574.200  1510.000
GR    574.300  1520.000   573.600  1530.000   573.400  1540.000   572.900  1550.000   572.300  1560.000
GR    571.800  1570.000   571.400  1580.000   571.800  1590.000   572.600  1600.000   573.400  1610.000
GR    574.400  1620.000   575.200  1700.000   575.200  1800.000   575.400  2000.000   576.200  3000.000

X1       .265    20.000  1500.000  1620.000  1550.000  1400.000  1250.000    -0.000    -0.000    -0.000
X3     -0.000    -0.000    -0.000  1350.000    -0.000  1350.000    -0.000    -0.000    -0.000    -0.000
GR    574.400     0.000   574.400   500.000   574.400   700.000   574.400  1500.000   574.200  1510.000
GR    574.300  1520.000   573.600  1530.000   573.400  1540.000   572.900  1550.000   572.300  1560.000
GR    571.800  1570.000   571.400  1530.000   571.800  1590.000   572.600  1600.000   573.400  1610.000
GR    574.400  1620.000   575.200  1700.000   575.200  1800.000   575.400  2000.000   576.200  3000.000
NC       .130      .130      .070    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

X1 SEC. A  .455    30.000   925.000  1000.000  1000.000  1000.000  1000.000    -0.000    -0.000    -0.000
X3     -0.000    -0.000    -0.000   750.000    -0.000  1250.000    -0.000    -0.000    -0.000    -0.000
GR    578.000     0.000   577.900   200.000   577.500   400.000   576.800   600.000   576.400   800.000
GR    576.900   860.000   574.900   865.000   574.900   870.000   578.100   900.000   579.200   925.000
GR    576.800   930.000   574.500   940.000   573.600   950.000   571.600   960.000   572.000   970.000
GR    571.800   980.000   573.500   988.000   576.800   995.000   578.100  1000.000   577.400  1085.000
GR    573.500  1087.000   573.000  1090.000   573.500  1095.000   577.500  1100.000   577.400  1120.000
GR    577.200  1200.000   577.200  1300.000   577.000  1500.000   576.800  1700.000   576.500  2000.000
QT      4.000   720.000  1060.000  1220.000  1690.000    -0.000    -0.000    -0.000    -0.000    -0.000

X1       .540    90.000   996.900  1065.600   450.000   450.000   450.000    -0.000    -0.000    -0.000
X3     -0.000    -0.000    -0.000   800.000    -0.000  1550.000    -0.000    -0.000    -0.000    -0.000
GR    578.200     0.000   578.100    34.300   578.100    68.700   578.200   103.100   578.200   137.400
GR    578.200   171.800   578.200   206.200   578.100   240.600   578.000   274.900   578.100   309.300
GR    578.000   343.700   578.000   378.100   578.000   412.400   577.900   446.800   577.800   481.200
GR    577.700   515.600   577.600   549.900   577.500   584.300   577.300   618.700   577.200   653.100
GR    577.300   687.400   577.300   721.800   577.200   756.200   577.200   790.600   577.000   824.900
GR    576.800   859.300   576.900   893.700   577.000   928.100   577.900   962.400   579.200   996.800
GR    577.900   999.100   576.700  1001.400   576.200  1003.700   575.600  1006.000   575.000  1008.300
GR    574.500  1010.500   574.200  1012.800   574.000  1015.100   573.800  1017.400   573.600  1019.700
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GR	572.000	1033.500	572.100	1035.800	572.100	1038.000	572.100	1040.300	572.100	1042.600
GR	572.000	1044.900	572.100	1047.200	572.500	1049.500	573.000	1051.800	573.500	1054.100
GR	574.500	1056.400	575.700	1058.700	576.800	1061.000	577.500	1063.300	578.200	1065.600
GR	577.900	1100.900	577.700	1136.200	577.600	1171.500	577.500	1206.800	577.600	1242.100
GR	577.700	1277.400	577.800	1312.700	577.800	1348.100	577.300	1383.400	577.700	1418.700
GR	577.700	1454.000	577.600	1489.300	577.600	1524.600	577.500	1559.900	577.600	1595.200
GR	577.500	1630.600	577.500	1666.900	577.500	1701.200	577.500	1736.500	577.500	1771.800
GR	577.500	1807.100	577.400	1842.400	577.500	1877.800	577.500	1913.100	577.400	1948.400
GR	577.500	1983.700	577.400	2019.000	577.300	2054.300	577.200	2089.600	577.200	2125.000
NC	.130	.130	.050	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.625	90.000	1068.700	1131.200	450.000	450.000	450.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	750.000	-0.000	1500.000	-0.000	-0.000	-0.000	-0.000
GR	578.400	0.000	578.400	36.800	578.400	73.700	578.300	110.500	578.500	147.400
GR	578.500	184.200	578.500	221.100	578.500	257.900	578.400	294.800	578.500	331.600
GR	578.500	368.500	578.500	405.300	578.500	442.200	578.400	479.000	578.300	515.900
GR	578.200	552.800	578.100	589.600	578.000	626.500	577.800	663.300	577.800	700.200
GR	578.000	737.000	578.000	773.900	577.900	810.700	577.800	847.600	577.600	884.400
GR	577.300	921.300	577.200	958.100	577.200	995.000	578.000	1031.800	579.300	1068.700
GR	577.800	1070.800	578.700	1107.900	578.200	1145.000	579.600	1177.000	579.100	1179.100
GR	574.600	1081.200	574.300	1083.300	574.100	1085.400	573.900	1087.400	573.700	1089.500
GR	573.300	1091.600	572.900	1093.700	572.500	1095.800	572.100	1097.900	572.100	1099.900
GR	572.200	1102.000	572.300	1104.100	572.400	1106.200	572.300	1108.300	572.400	1110.400
GR	572.300	1112.400	572.400	1114.500	572.800	1116.600	573.200	1118.700	573.800	1120.800
GR	574.700	1122.900	575.800	1124.900	576.900	1127.000	577.600	1129.100	578.400	1131.200
GR	578.100	1168.500	577.900	1205.500	577.800	1243.100	577.900	1280.400	578.100	1317.700
GR	578.400	1355.000	578.400	1392.200	578.400	1429.500	578.400	1466.800	578.400	1504.100
GR	578.300	1541.400	578.200	1578.700	578.200	1616.000	578.200	1653.300	578.200	1690.600
GR	578.200	1727.900	578.200	1765.200	578.200	1802.400	578.200	1839.700	578.200	1877.000
GR	578.300	1914.300	578.200	1951.600	578.300	1988.900	578.300	2026.200	578.300	2063.500
GR	578.400	2100.800	578.200	2138.100	578.100	2175.400	578.000	2212.700	578.000	2250.000
X1	.795	90.000	1212.500	1252.500	900.000	900.000	900.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	850.000	-0.000	1750.000	-0.000	-0.000	-0.000	-0.000
GR	578.900	0.000	579.000	41.800	579.000	83.600	579.100	125.400	579.100	167.200
GR	579.200	209.000	579.200	250.800	579.200	292.600	579.200	334.400	579.300	376.200
GR	579.400	418.100	579.500	459.900	579.500	501.700	579.500	543.500	579.300	585.300
GR	579.200	627.100	579.100	668.900	579.000	710.700	578.900	752.500	578.900	794.300
GR	579.300	836.200	579.400	878.000	579.300	919.800	579.400	961.600	578.900	1003.400
GR	578.300	1045.200	577.900	1087.000	577.600	1128.800	578.300	1170.600	579.400	1212.500
GR	577.700	1214.100	576.700	1215.600	576.200	1217.500	575.700	1219.100	575.200	1220.800
GR	574.700	1222.500	574.500	1224.100	574.300	1225.500	574.100	1227.400	574.000	1229.100
GR	573.700	1230.800	573.400	1232.400	573.000	1234.100	572.600	1235.800	572.600	1237.400
GR	572.600	1239.100	572.700	1240.800	572.800	1242.400	572.800	1244.100	572.900	1245.800
GR	572.900	1247.400	573.000	1249.100	573.300	1250.800	573.600	1252.400	574.300	1254.100
GR	575.100	1255.800	576.100	1257.400	577.100	1259.100	577.900	1260.800	578.700	1262.500
GR	578.500	1303.700	578.300	1345.000	578.100	1386.200	578.300	1427.400	579.100	1468.700
GR	579.600	1509.900	579.600	1551.200	579.700	1592.400	579.700	1633.700	579.700	1674.900
GR	579.600	1716.200	579.500	1757.400	579.400	1798.700	579.400	1839.900	579.400	1881.200
GR	579.500	1922.400	579.600	1963.700	579.600	2004.900	579.700	2046.200	579.700	2087.400
GR	579.800	2128.700	579.800	2169.900	579.900	2211.200	580.000	2252.400	580.100	2293.700
GR	580.200	2334.900	580.000	2376.200	579.800	2417.400	579.600	2458.700	579.500	2500.000
NC	.130	.130	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.966	90.000	1356.200	1393.700	900.000	900.000	900.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	980.000	-0.000	1700.000	-0.000	-0.000	-0.000	-0.000
GR	579.400	0.000	579.500	46.700	579.500	93.500	579.600	140.300	579.700	187.000
GR	579.800	233.800	579.800	280.600	579.900	327.300	579.900	374.100	580.100	420.900
GR	580.300	467.600	580.500	514.400	580.500	561.200	580.500	607.900	580.300	654.700
GR	580.200	701.500	580.100	748.200	580.000	795.000	580.000	841.800	579.900	888.500
GR	580.500	935.300	580.700	982.100	580.700	1028.800	580.700	1075.600	580.100	1122.400
GR	579.300	1169.100	578.600	1215.900	577.900	1262.700	578.500	1309.400	579.500	1356.200
GR	577.500	1357.500	576.700	1358.700	576.200	1359.900	575.700	1361.200	575.200	1362.400
GR	574.800	1363.700	574.600	1364.900	574.400	1366.200	574.300	1367.400	574.200	1368.700
GR	574.000	1369.900	573.700	1371.200	573.400	1372.400	573.100	1373.700	573.000	1374.900

GR	573.500	1382.400	573.600	1383.700	573.800	1384.900	574.000	1386.200	574.700	1387.400
GR	575.500	1388.700	576.400	1389.900	577.300	1391.200	578.100	1392.400	579.000	1393.700
GR	578.800	1438.900	578.600	1484.100	578.400	1529.300	578.300	1574.500	580.000	1619.700
GR	580.800	1664.900	580.800	1710.200	580.900	1755.400	581.000	1800.600	581.000	1845.800
GR	580.900	1891.000	580.700	1936.200	580.600	1981.400	580.500	2026.600	580.600	2071.800
GR	580.800	2117.000	580.900	2162.200	581.000	2207.400	581.100	2252.700	581.200	2297.900
GR	581.300	2343.100	581.400	2388.300	581.500	2433.500	581.700	2478.700	581.800	2523.900
GR	582.000	2569.100	581.700	2614.300	581.400	2659.500	581.200	2704.700	581.000	2750.000
NC	.130	.130	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.136	26.000	1500.000	1525.000	900.000	900.000	900.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1200.000	-0.000	1100.000	-0.000	-0.000	-0.000	-0.000
GR	579.900	0.000	580.400	200.000	580.700	400.000	581.700	600.000	581.300	800.000
GR	581.000	1000.000	582.200	1047.000	582.200	1200.000	578.200	1400.000	579.600	1500.000
GR	577.100	1501.000	574.900	1505.000	574.200	1510.000	573.400	1513.000	574.500	1520.000
GR	577.100	1523.000	579.400	1525.000	579.200	1600.000	578.700	1700.000	582.000	1800.000
GR	582.400	2000.000	581.800	2200.000	582.400	2400.000	583.000	2600.000	583.900	2800.000
GR	582.500	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.288	90.000	1300.000	1332.500	800.000	800.000	800.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1050.000	-0.000	1560.000	-0.000	-0.000	-0.000	-0.000
GR	585.900	0.000	584.900	44.800	584.600	89.600	584.400	134.400	584.200	179.300
GR	583.900	224.100	583.800	268.900	583.700	313.700	583.700	358.600	583.700	403.400
GR	583.700	448.200	583.700	493.100	583.600	537.900	583.500	582.700	583.300	627.500
GR	583.100	672.400	582.900	717.200	582.800	762.000	582.600	806.800	582.500	851.700
GR	582.800	896.500	582.900	941.300	582.800	986.200	582.400	1031.000	582.300	1075.800
GR	581.700	1120.600	581.200	1165.500	580.400	1210.300	580.200	1255.100	580.200	1300.000
GR	578.800	1301.000	578.200	1302.100	577.700	1303.200	577.200	1304.300	576.700	1305.400
GR	576.200	1306.400	575.900	1307.500	575.600	1308.600	575.200	1309.700	574.900	1310.800
GR	574.600	1311.900	574.500	1312.900	574.400	1314.000	574.300	1315.100	573.840	1316.200
GR	573.900	1317.300	574.400	1318.400	574.500	1319.400	574.700	1320.500	574.900	1321.600
GR	575.100	1322.700	575.400	1323.600	575.700	1324.900	576.100	1325.900	576.800	1327.000
GR	577.500	1328.100	578.200	1329.200	579.000	1330.300	579.800	1331.400	580.600	1332.500
GR	580.100	1381.400	580.400	1430.300	580.800	1479.200	581.300	1528.100	582.200	1577.000
GR	582.700	1625.900	582.700	1674.900	582.800	1723.800	582.800	1772.700	582.800	1821.600
GR	582.800	1870.500	582.800	1919.400	582.700	1968.400	582.700	2017.300	582.800	2066.200
GR	583.000	2115.100	583.100	2164.000	583.200	2212.900	583.300	2261.900	583.500	2310.800
GR	583.600	2359.700	583.800	2408.600	583.800	2457.500	583.900	2506.400	584.000	2555.400
GR	584.100	2604.300	583.900	2653.200	583.800	2702.100	583.600	2751.000	583.500	2800.000
NC	.110	.110	.080	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.296	23.000	601.000	624.000	49.000	49.000	49.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	340.000	-0.000	460.000	-0.000	580.000	580.000	-0.000
GR	584.500	0.000	585.600	100.000	586.000	200.000	584.700	300.000	583.000	340.000
GR	579.700	500.000	581.700	600.000	581.400	601.000	575.500	606.000	574.300	610.000
GR	574.100	615.000	573.900	620.000	575.600	625.000	581.400	629.000	581.700	630.000
GR	581.700	643.000	579.500	730.000	578.000	780.000	579.800	800.000	580.500	860.000
GR	581.600	1000.000	582.000	1100.000	583.000	1200.000	-0.000	-0.000	-0.000	-0.000
NC	.110	.110	.040	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.297	-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	340.000	-0.000	860.000	-0.000	581.700	581.700	-0.000
BT	12.000	340.000	583.000	0.000	500.000	579.700	0.000	600.000	581.700	0.000
BT	601.000	581.700	0.000	601.000	581.700	581.400	629.000	581.700	581.400	629.000
BT	581.700	0.000	643.000	581.700	0.000	730.000	579.500	0.000	780.000	578.000
BT	0.000	800.000	579.800	0.000	860.000	5 0.500	0.000	-0.000	-0.000	-0.000
X1	1.298	-0.000	-0.000	-0.000	8.000	8.000	8.000	-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	340.000	-0.000	860.000	-0.000	-0.000	-0.000	-0.000
NC	.110	.110	.080	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.299	-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	340.000	-0.000	860.000	-0.000	-0.000	-0.000	-0.000
NC	.130	.130	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

X1	1.308	23.000	600.000	630.000	49.000	49.000	49.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	340.000	-0.000	340.000	-0.000	-0.000	-0.000	-0.000
GR	584.500	0.000	585.600	100.000	586.000	200.000	584.700	300.000	583.000	340.000
GR	579.700	500.000	581.700	600.000	581.400	601.000	575.500	606.000	574.300	610.000
GR	574.200	615.000	574.100	620.000	575.600	625.000	581.400	629.000	581.700	630.000
GR	581.700	643.000	579.500	730.000	578.000	780.000	579.800	900.000	580.500	900.000
GR	581.600	1000.000	582.000	1100.000	583.000	1200.000	-0.000	-0.000	-0.000	-0.000
NC	.130	.130	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.479	23.000	1100.000	1140.000	900.000	900.000	900.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	900.000	-0.000	1340.000	-0.000	-0.000	-0.000	-0.000
GR	591.900	0.000	589.600	4[illegible].000	587.300	200.000	586.100	400.000	584.700	600.000
GR	583.700	800.000	583.100	1000.000	580.800	1100.000	576.800	1110.000	574.800	1115.000
GR	575.000	1120.000	575.500	1125.000	576.800	1130.000	581.900	1140.000	580.800	1200.000
GR	583.300	1300.000	583.500	1400.000	583.400	1600.000	583.700	1800.000	584.000	2000.000
GR	584.600	2200.000	584.400	2400.000	584.600	2600.000	-0.000	-0.000	-0.000	-0.000
NC	.130	.130	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.690	90.000	1300.000	1335.000	1116.000	1116.000	1116.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1200.000	-0.000	1740.000	-0.000	-0.000	-0.000	-0.000
GR	589.200	0.000	588.300	44.800	588.100	89.600	588.000	134.400	587.800	179.300
GR	587.500	224.100	587.200	268.900	587.000	313.700	586.900	358.600	586.400	403.400
GR	586.700	448.200	586.600	493.100	586.500	537.900	586.400	582.700	586.300	627.500
GR	586.200	672.400	586.000	717.200	585.800	762.000	585.700	806.800	585.500	851.700
GR	585.200	896.500	584.900	941.300	584.600	986.200	584.300	1031.000	583.900	1075.800
GR	583.500	1120.600	583.100	1165.500	582.400	1210.300	582.100	1255.100	581.900	1300.000
GR	581.300	1301.100	580.800	1302.300	580.300	1303.500	579.800	1304.700	579.300	1305.900
GR	578.800	1307.000	578.300	1308.200	577.700	1309.400	576.600	1310.600	575.800	1311.800
GR	575.500	1313.000	575.500	1314.100	575.500	1315.300	575.500	1316.500	575.500	1317.700
GR	575.500	1318.900	575.500	1320.100	575.600	1321.200	575.700	1322.400	575.800	1323.600
GR	576.000	1324.800	576.200	1325.000	576.500	1327.200	576.900	1328.300	577.200	1329.500
GR	577.600	1330.700	578.000	1331.900	578.900	1333.100	580.000	1334.300	581.000	1335.500
GR	584.500	1384.300	584.400	1433.100	584.000	1481.900	582.900	1530.700	583.700	1579.500
GR	584.100	1628.300	584.300	1677.200	584.400	1726.000	584.600	1774.800	584.700	1823.600
GR	584.900	1872.400	585.000	1921.200	585.200	1970.100	585.400	2018.900	585.500	2067.700
GR	585.600	2116.500	585.800	2165.300	586.000	2214.100	586.200	2263.000	586.500	2311.800
GR	586.700	2360.600	587.000	2409.400	587.000	2458.200	587.000	2507.000	587.000	2555.900
GR	587.100	2604.700	587.200	2653.500	587.300	2702.300	587.400	2751.100	587.500	2800.000
NC	.130	.130	.070	.600	.800	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.902	25.000	1500.000	1531.000	1116.000	1116.000	1116.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1264.000	587.000	1584.000	587.000	-0.000	-0.000	-0.000
GR	586.600	0.000	587.800	200.000	587.100	400.000	587.400	600.000	587.600	800.000
GR	586.900	1000.000	586.100	1200.000	585.300	1400.000	583.000	1500.000	579.300	1508.000
GR	576.300	1510.000	575.800	1520.000	576.200	1528.000	580.200	1531.000	583.000	1552.000
GR	585.300	1600.000	585.600	1680.000	586.100	1708.000	586.900	1800.000	587.600	2000.000
GR	587.400	2200.000	587.100	2400.000	587.800	2600.000	589.800	2800.000	590.500	3000.000
X1	1.911	33.000	1500.000	1522.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	1360.000	587.000	1661.000	587.000	586.600	586.600	-0.000
GR	587.700	0.000	588.100	200.000	587.900	400.000	588.200	600.000	588.100	800.000
GR	587.600	1000.000	587.200	1200.000	586.500	1400.000	586.100	1492.000	585.000	1493.000
GR	584.000	1494.000	582.000	1496.000	580.000	1497.000	578.000	1498.000	576.500	1500.000
GR	576.600	1505.000	575.900	1512.000	576.300	1518.000	577.000	1522.000	578.000	1523.000
GR	580.000	1524.000	582.000	1526.000	584.500	1527.000	585.500	1528.000	586.000	1529.000
GR	586.500	1600.000	586.600	1800.000	587.100	2000.000	587.700	2200.000	588.500	2400.000
GR	590.500	2600.000	591.100	2800.000	591.900	3000.000	-0.000	-0.000	-0.000	-0.000
SB	0.000	1.484	3.020	0.000	22.000	0.000	177.100	0.000	575.900	575.900
X1	1.918	33.000	1500.000	1522.000	36.000	36.000	36.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	1359.000	587.250	1661.000	587.250	586.900	586.900	-0.000
X2	-0.000	-0.000	1.000	594.400	586.800	-0.000	-0.000	-0.000	-0.000	-0.000
BT	10.000	1360.000	586.900	0.000	1400.000	586.900	0.000	1492.000	587.000	0.000
BT	1500.000	587.000	576.500	1500.000	587.300	564.400	1522.000	587.300	584.400	1522.000
BT	587.000	577.000	1529.000	587.000	0.000	1600.000	586.800	0.000	1560.000	586.800

GR	587.700	0.000	588.100	200.000	587.900	400.000	588.200	600.000	588.100	800.000
GR	587.600	1000.000	587.200	1200.000	586.900	1360.000	586.700	1400.000	586.400	1492.000
GR	586.000	1493.000	584.000	1494.000	582.000	1496.000	580.000	1497.000	578.000	1498.000
GR	576.500	1500.000	576.600	1505.000	575.900	1512.000	576.300	1518.000	577.000	1522.000
GR	578.000	1523.000	580.000	1524.000	582.000	1526.000	584.500	1527.000	586.200	1528.000
GR	586.700	1529.000	586.800	1600.000	586.800	1660.000	586.700	1800.000	587.100	2000.000
GR	587.700	2200.000	588.500	2400.000	590.500	2600.000	591.100	2 00.000	591.900	3000.000
NC	.130	.130	.080	.300	.300	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.927	26.000	1500.000	1531.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1300.000	-0.000	1650.000	-0.000	-0.000	-0.000	-0.000
GR	586.600	0.000	587.800	200.000	587.100	400.000	587.400	600.000	587.600	800.000
GR	586.900	1000.000	586.100	1200.000	585.300	1400.000	583.000	1506.000	579.300	1506.000
GR	576.300	1510.000	574.900	1520.000	576.200	1523.000	580.200	1531.000	587.800	1552.000
GR	588.300	1600.000	585.000	1635.000	584.400	1680.000	581.900	1708.000	584.700	1800.000
GR	586.000	2000.000	587.000	2200.000	587.900	2400.000	589.400	2600.000	589.800	2800.000
GR	590.500	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.126	90.000	990.000	1023.500	1050.000	1050.000	1050.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	650.000	588.400	1700.000	588.400	-0.000	-0.000	-0.000
NC	.130	.130	.080	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	589.800	0.000	589.900	34.100	590.000	68.200	590.000	102.400	590.100	136.500
GR	589.900	170.600	589.700	204.800	589.600	238.900	589.400	273.100	589.400	307.200
GR	589.400	341.300	589.300	375.500	589.200	409.600	589.200	443.700	589.100	477.900
GR	589.000	512.000	588.900	546.200	588.700	580.300	588.400	614.400	588.300	648.500
GR	588.000	682.700	587.600	716.800	587.300	751.000	586.900	785.100	586.100	819.300
GR	585.300	853.400	584.500	887.500	583.700	921.700	583.300	955.800	583.100	990.000
GR	582.500	991.100	582.000	992.200	581.400	993.300	580.900	994.400	580.400	995.500
GR	579.800	996.600	579.300	997.800	578.900	998.900	578.000	1000.000	577.400	1001.100
GR	577.200	1002.200	577.100	1003.300	576.900	1004.500	576.800	1005.600	576.800	1006.700
GR	576.700	1007.800	576.700	1008.900	576.700	1010.000	576.600	1011.200	576.700	1012.300
GR	576.800	1013.400	577.300	1014.500	577.700	1015.600	576.100	1016.700	578.600	1017.900
GR	579.000	1019.000	579.400	1020.100	580.400	1021.200	581.500	1022.300	582.500	1023.500
GR	586.400	1070.300	585.100	1117.100	584.500	1163.800	585.000	1210.600	586.700	1257.400
GR	587.300	1304.200	587.600	1351.000	587.800	1397.800	588.000	1444.600	588.300	1491.400
GR	588.500	1538.200	588.700	1585.000	589.000	1631.800	589.200	1678.600	589.400	1725.400
GR	589.600	1772.200	589.700	1819.000	589.800	1865.800	590.000	1912.600	590.300	1959.400
GR	590.500	2006.200	590.600	2053.000	590.900	2099.800	591.000	2146.600	591.000	2193.400
GR	591.000	2240.200	591.000	2287.000	591.000	2333.800	591.500	2380.600	592.300	2427.500
X1	2.325	18.000	450.000	516.000	1050.000	1050.000	1050.000	-0.000	-0.000	-1.000
GR	593.100	0.000	591.400	130.000	583.800	330.000	583.200	480.000	579.200	438.000
GR	578.000	496.000	578.500	505.000	584.900	516.000	544.900	580.000	584.600	630.000
GR	589.400	703.000	589.900	780.000	590.600	930.000	591.700	1180.000	591.800	1380.000
GR	592.600	1580.000	591.800	1730.000	594.100	1355.000	-0.000	-0.000	-0.000	-0.000
EJ	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

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HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
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T1      BEAUBIEN CREEK, COTTRELLVILLE TOWNSHIP  5555-13  PM: GILBERTO M. FONT
T2      100 YEAR FLOW
T3      BEAUBIEN CREEK
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J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	-0.	4.	-0.	-0.	-0.000000	-0.00	-0.0	-0.	575.00	-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

CCHV= .300 CEHV= .500
1490 NH CARD USED

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

3470 ENCROACHMENT STATIONS= 1100.0 2150.0 TYPE= 1 TARGET= 1050.000

2-00 FT U/S M-29 BRIDGE, MANUFACTURED SEC.

0.00	4.39	575.79	0.00	575.79	575.87	.08	0.00	0.00	574.40
1460.	409.	945.	107.	556.	334.	186.	0.	0.	574.40
0.00	.73	2.83	.37	.080	.035	.090	0.000	571.40	1100.00
.001005	0.	0.	0.	0	0	1	0.00	1050.00	2150.00

3280 CROSS SECTION .27 EXTENDED .61 FEET

3470 ENCROACHMENT STATIONS= 1350.0 1850.0 TYPE= 1 TARGET= 500.000

4000 FT U/S M-29 BRIDGE, MANUFACTURED SEC.

.27	5.31	576.71	0.00	0.00	576.77	.06	.88	.01	574.40
1460.	244.	1013.	203.	346.	444.	378.	38.	25.	574.40
.21	.70	2.28	.54	.080	.035	.084	.066	571.40	1350.00
.000471	1550.	1250.	1400.	3	0	1	0.00	500.00	1850.00

3265 DIVIDED FLOW

3280 CROSS SECTION .46 EXTENDED 1.26 FEET

3470 ENCROACHMENT STATIONS= 750.0 1250.0 TYPE= 1 TARGET= 500.000

A 5000 FT U/S M-29 BRIDGE

.46	6.16	577.76	0.00	0.00	577.94	.18	1.11	.16	579.20
1460.	200.	1123.	138.	195.	290.	132.	58.	36.	578.10
.29	1.03	3.87	1.04	.130	.070	.130	.067	371.60	750.00
.005227	1000.	1000.	1000.	2	0	1	0.00	426.75	1250.00

3265 DIVIDED FLOW

3280 CROSS SECTION .54 EXTENDED 1.79 FEET

3470 ENCROACHMENT STATIONS= 800.0 1550.0 TYPE= 1 TARGET= 750.000

5450 FT U/S M-29 BRIDGE, INTERPOLATED SEC.

.54	7.19	578.99	0.00	0.00	579.04	.04	1.05	.04	579.20

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
.38	.61	2.11	.47	.130	.070	.130	.068	571.80	800.00
.001200	450.	450.	450.	2	0	1	0.00	744.19	1550.00

3280 CROSS SECTION .63 EXTENDED 1.41 FEET

SECNO	DEPTH	CSEL	CRINS	USELK	EG	HV	BL	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	TOP ID	ENDST

3470 ENCROACHMENT STATIONS= 750.0 1500.0 TYPE= 1 TARGET= 750.000

5900 FT U/S M-29 BRIDGE, INTERPOLATED SEC.

.63	7.31	579.41	0.00	0.00	579.47	.06	.43	.01	579.40
1220.	248.	799.	173.	534.	328.	460.	82.	50.	576.40
.45	.46	2.44	.38	.130	.050	.130	.065	572.10	750.00
.000773	450.	450.	450.	3	0	1	0.00	750.00	1500.00

3280 CROSS SECTION .80 EXTENDED .64 FEET

3470 ENCROACHMENT STATIONS= 850.0 1750.0 TYPE= 1 TARGET= 900.000

6800 FT U/S M-29 BRIDGE, INTERPOLATED SEC.

.80	7.55	580.15	0.00	0.00	580.22	.07	.74	.00	579.40
1220.	252.	760.	209.	530.	283.	508.	109.	67.	576.70
.59	.47	2.69	.41	.130	.050	.130	.062	572.50	850.00
.000870	900.	900.	900.	2	0	1	0.00	900.00	1750.00

3280 CROSS SECTION .97 EXTENDED .06 FEET

3470 ENCROACHMENT STATIONS= 980.0 1700.0 TYPE= 1 TARGET= 720.000

7700 FT U/S M-29 BRIDGE, INTERPOLATED SEC.

.97	8.06	581.06	0.00	0.00	581.09	.04	.86	.01	579.50
1220.	360.	525.	335.	587.	236.	544.	137.	84.	579.00
.78	.61	2.23	.62	.130	.070	.130	.063	573.00	980.00
.001065	900.	900.	900.	2	0	1	0.00	720.00	1700.00

3470 ENCROACHMENT STATIONS= 1200.0 1500.0 TYPE= 1 TARGET= 600.000

B 8600 FT U/S M-29 BRIDGE

1.14	8.57	581.97	0.00	0.00	582.00	.03	.90	.00	579.60
1220.	420.	362.	438.	663.	171.	665.	166.	97.	579.40
1.01	.63	2.11	.66	.130	.070	.130	.064	573.40	1211.30
.000949	900.	900.	900.	2	0	1	0.00	587.91	1799.21

3470 ENCROACHMENT STATIONS= 1050.0 1560.0 TYPE= 1 TARGET= 510.000

50 FT D/S PRIVATE FOOTBRIDGE, INTERPOLATED SEC.

	1.29	9.02	582.86	0.00	0.00	582.91	.05	.90	.01	580.20
	1220.	300.	568.	352.	439.	218.	490.	191.	107.	580.60
	1.15	.68	2.60	.72	.130	.070	.130	.065	573.84	1050.00
	.001354	800.	800.	800.	2	0	1	0.00	510.00	1560.00

3470 ENCROACHMENT STATIONS= 340.0 860.0 TYPE= 1 TARGET= 520.000

	1.30	9.05	582.95	0.00	0.00	582.97	.02	.05	.01	581.40
	1220.	291.	355.	575.	493.	202.	682.	192.	108.	581.40
	1.16	.60	1.76	.84	.110	.080	.110	.065	573.90	342.26
	.000837	49.	49.	49.	2	0	1	0.00	517.74	860.00

NORMAL BRIDGE,NPD=12 MIN ELTRD= 578.00 MAX ELLC= 581.40

3470 ENCROACHMENT STATIONS= 340.0 860.0 TYPE= 1 TARGET= 520.000

D/S FACE, PRIVATE FOOTBRIDGE

	1.30	9.05	582.95	0.00	0.00	582.97	.02	.00	.00	581.40
	1220.	293.	349.	579.	483.	194.	682.	192.	108.	581.40
	1.16	.61	1.80	.85	.110	.040	.110	.065	573.90	342.21
	.000848	1.	1.	1.	0	0	1	-8.70	517.79	860.00

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

NORMAL BRIDGE,NRD=12 MIN ELTRD= 578.00 MAX ELLC= 581.40

3470 ENCROACHMENT STATIONS= 340.0 860.0 TYPE= 1 TARGET= 520.000

C' U/S FACE, PRIVATE FOOTBRIDGE

	1.30	9.06	582.96	0.00	0.00	582.98	.02	.01	.00	581.40
	1220.	293.	348.	579.	485.	194.	684.	192.	108.	581.40
	1.17	.60	1.80	.85	.110	.040	.110	.065	573.90	341.58
	.000842	8.	8.	8.	0	0	1	-8.70	518.12	860.00

3470 ENCROACHMENT STATIONS= 340.0 860.0 TYPE= 1 TARGET= 520.000

	1.30	9.06	582.96	0.00	0.00	582.98	.02	.00	.00	581.40
	1220.	291.	354.	575.	486.	202.	684.	192.	108.	581.40
	1.17	.60	1.75	.84	.110	.080	.110	.065	573.90	341.84
	.000830	1.	1.	1.	1	0	1	0.00	518.16	860.00

3280 CROSS SECTION 1.31 EXTENDED .00 FEET

3470 ENCROACHMENT STATIONS= 340.0 860.0 TYPE= 1 TARGET= 520.000

50 FT U/S PRIVATE FOOTBRIDGE, A REPEATED SEC. OF C'

1.31	8.90	583.00	0.00	0.00	583.03	.03	.04	.00	581.70
1220.	268.	419.	533.	495.	205.	700.	194.	109.	581.70
1.18	.54	2.05	.76	.130	.070	.130	.065	574.10	340.00
.000922	49.	49.	49.	0	0	1	0.00	520.00	860.00

3470 ENCROACHMENT STATIONS= 900.0 1300.0 TYPE= 1 TARGET= 440.000

C 10408 FT U/S M-29 BRIDGE

1.48	9.22	584.02	0.00	0.00	584.10	.05	1.04	.03	581.70
1220.	177.	754.	289.	284.	269.	408.	218.	119.	581.90
1.30	.62	2.80	.71	.130	.070	.130	.066	574.80	900.00
.001496	900.	900.	900.	2	0	1	0.00	440.00	1340.00

3470 ENCROACHMENT STATIONS= 1200.0 1750.0 TYPE= 1 TARGET= 550.000

11524 FT U/S M-29 BRIDGE, INTERPOLATED SEC.

1.69	9.84	585.34	0.00	0.00	585.39	.05	1.29	.01	581.90
1220.	240.	681.	300.	319.	281.	616.	246.	132.	581.00
1.49	.75	2.42	.49	.130	.070	.130	.066	575.50	1200.00
.000920	1116.	1116.	1116.	1	0	1	0.00	550.00	1750.00

CCHV= .600 CEHV= .800

3470 ENCROACHMENT STATIONS= 1264.0 1584.0 TYPE= 1 TARGET= 320.000
ELENCL= 587.00 ELENCR= 587.00

50 FT D/S STARVILLE RD. BRIDGE. MANUFACTURED SEC.

HMM: EL. 594.47(USGS), APRIL, 1956

1.90	10.72	586.52	0.00	0.00	586.62	.09	1.19	.03	583.00
1220.	222.	807.	191.	367.	274.	192.	273.	143.	580.20
1.63	.60	2.94	1.00	.130	.070	.130	.067	575.90	1264.00
.001255	1116.	1116.	1116.	2	0	1	0.00	320.00	1584.00

3470 ENCROACHMENT STATIONS= 1360.0 1661.0 TYPE= 1 TARGET= 301.000
ELENCL= 587.00 ELENCR= 587.00

D/S FACE STARVILLE RD. BRIDGE

1.91	10.66	586.56	0.00	0.00	586.89	.33	.08	.19	576.50
1220.	70.	1097.	52.	67.	225.	59.	273.	144.	577.00
1.64	1.04	4.89	.88	.130	.070	.130	.067	575.90	1380.13
.002399	50.	50.	50.	1	0	1	0.00	280.87	1661.00

SPECIAL BRIDGE

SE	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHO
	0.00	1.48	3.02	0.00	22.00	0.00	177.10	0.00	575.90	575.90

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	MTN	ELMIN	SSTA

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	Q*WEIR	QBR	BAREA	FLLC	ELTRD	CLASS
587.65	587.02	0.00	214.	1003.	177.	554.49	586.50	50.00

3470 ENCROACHMENT STATIONS= 1359.0 1661.0 TYPE= 1 TARGET= 302.000
ELENCL= 587.25 ELENCR= 587.25

D STARVILLE RD. BRIDGE

1.92	11.10	587.00	0.00	0.00	587.30	.30	.41	0.00	576.50
1220.	79.	1088.	53.	93.	234.	65.	274.	144.	577.00
1.64	.84	4.65	.81	.130	.070	.130	.057	575.90	1359.00
.002058	36.	36.	36.	2	0	3	0.00	302.00	1661.00

CCHV= .300 CEHV= .500

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 1300.0 1650.0 TYPE= 1 TARGET= 350.000

E 50 FT U/S STARVILLE RD. BRIDGE

1.93	12.48	587.38	0.00	0.00	587.44	.06	.07	.07	583.70
1220.	359.	767.	95.	511.	309.	138.	274.	144.	580.20
1.65	.70	2.48	.68	.130	.080	.130	.067	574.90	1300.00
.001002	50.	50.	50.	2	0	1	0.00	291.06	1650.00

3470 ENCROACHMENT STATIONS= 650.0 1200.0 TYPE= 1 TARGET= 550.000
ELENCL= 588.40 ELENCR= 588.40

1100 FT U/S STARVILLE RD. BRIDGE, INTERPOLATED SEC.

2.13	11.50	588.10	0.00	0.00	588.12	.02	.66	.01	583.10
1220.	420.	511.	288.	770.	315.	556.	306.	154.	582.50
1.94	.55	1.62	.52	.130	.080	.130	.068	576.60	672.61
.000433	1050.	1050.	1050.	2	0	1	0.00	527.39	1200.00

F 2150 FT U/S STARVILLE RD. BRIDGE

2.33	10.65	588.65	0.00	0.00	588.68	.03	.56	.01	583.20
1220.	152.	594.	474.	265.	310.	669.	340.	164.	584.90
2.17	.57	1.92	.71	.130	.080	.130	.069	576.00	382.71
.000666	1050.	1050.	1050.	2	0	1	0.00	316.58	698.40

SUMMARY PRINTOUT FOR MULTIPLE PROFILES

BEAUBIEN CREEK

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	AV	HL	OLOSS	ACH	DEPTH	TOPWID
0.00	0.00	0.00	0.00	571.40	860.00	575.58	.04	0.00	0.00	598.93	4.18	1050.00
0.00	0.00	0.00	0.00	571.40	1270.00	575.71	.07	0.00	0.00	845.03	4.31	1050.00
0.00	0.00	0.00	0.00	571.40	1460.00	575.79	.06	0.00	0.00	945.33	4.39	1050.00
0.00	0.00	0.00	0.00	571.40	2010.00	576.04	.11	0.00	0.00	1202.03	4.64	1050.00
.27	1250.00	0.00	0.00	571.40	860.00	576.13	.04	.54	.00	650.09	4.73	500.00
.27	1250.00	0.00	0.00	571.40	1270.00	576.54	.05	.80	.01	902.60	5.14	500.00
.27	1250.00	0.00	0.00	571.40	1460.00	576.71	.06	.86	.01	1013.45	5.31	500.00
.27	1250.00	0.00	0.00	571.40	2010.00	577.15	.08	1.07	.01	1325.24	5.75	500.00
.46	1000.00	0.00	0.00	571.60	860.00	576.90	.12	.82	.06	753.65	5.30	218.11
.46	1000.00	0.00	0.00	571.60	1270.00	577.52	.18	1.05	.06	1023.07	5.92	394.29
.46	1000.00	0.00	0.00	571.60	1460.00	577.76	.18	1.11	.06	1122.81	6.15	425.75
.46	1000.00	0.00	0.00	571.60	2010.00	578.36	.18	1.25	.15	1359.12	6.75	479.25
.54	450.00	0.00	0.00	571.80	720.00	578.12	.09	1.11	.03	587.95	6.32	710.14
.54	450.00	0.00	0.00	571.80	1060.00	578.76	.04	1.06	.04	832.00	6.96	737.65
.54	450.00	0.00	0.00	571.80	1220.00	578.99	.04	1.05	.04	725.40	7.19	744.19
.54	450.00	0.00	0.00	571.80	1690.00	579.56	.04	1.02	.04	851.19	7.76	750.00
.63	450.00	0.00	0.00	572.10	720.00	578.58	.06	.46	.00	602.03	6.48	728.44
.63	450.00	0.00	0.00	572.10	1060.00	579.18	.06	.43	.01	740.65	7.08	746.52
.63	450.00	0.00	0.00	572.10	1220.00	579.41	.06	.43	.01	799.21	7.31	750.00
.63	450.00	0.00	0.00	572.10	1690.00	579.98	.06	.43	.01	963.12	7.88	750.00
.80	900.00	0.00	0.00	572.60	720.00	579.30	.07	.73	.01	578.95	6.70	518.74
.80	900.00	0.00	0.00	572.60	1060.00	579.92	.07	.74	.01	711.54	7.32	900.00
.80	900.00	0.00	0.00	572.60	1220.00	580.15	.07	.74	.00	759.70	7.55	900.00
.80	900.00	0.00	0.00	572.60	1690.00	580.72	.07	.74	.00	884.47	8.12	900.00
.97	900.00	0.00	0.00	573.00	720.00	580.20	.04	.86	.01	409.38	7.20	516.68
.97	900.00	0.00	0.00	573.00	1060.00	580.83	.04	.85	.01	490.73	7.83	720.00
.97	900.00	0.00	0.00	573.00	1220.00	581.06	.04	.86	.01	524.45	8.06	720.00
.97	900.00	0.00	0.00	573.00	1690.00	581.63	.04	.87	.01	614.80	8.63	720.00
1.14	900.00	0.00	0.00	573.40	720.00	581.10	.02	.88	.00	279.80	7.70	516.61
1.14	900.00	0.00	0.00	573.40	1060.00	581.73	.02	.89	.00	336.15	8.33	568.24
1.14	900.00	0.00	0.00	573.40	1220.00	581.97	.03	.90	.00	361.74	8.57	587.91
1.14	900.00	0.00	0.00	573.40	1690.00	582.58	.03	.94	.00	426.57	9.18	600.00
1.29	800.00	0.00	0.00	573.84	720.00	581.96	.06	.88	.02	447.39	8.12	458.54
1.29	800.00	0.00	0.00	573.84	1060.00	582.60	.05	.89	.01	532.53	8.76	510.00
1.29	800.00	0.00	0.00	573.84	1220.00	582.86	.05	.90	.01	567.71	9.02	510.00
1.29	800.00	0.00	0.00	573.84	1690.00	583.50	.05	.93	.01	666.19	9.66	510.00
1.30	49.00	0.00	0.00	573.90	720.00	582.06	.02	.05	.01	277.55	8.16	474.20
1.30	49.00	0.00	0.00	573.90	1060.00	582.70	.02	.05	.01	331.40	8.80	505.34
1.30	49.00	0.00	0.00	573.90	1220.00	582.95	.02	.05	.01	354.70	9.05	517.74
1.30	49.00	0.00	0.00	573.90	1690.00	583.59	.02	.05	.01	415.21	9.69	520.00

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	QLOSS	QCH	DEPTH	TOPWID
1.30	1.00	578.00	581.40	573.90	720.00	582.06	.02	.00	.00	271.75	8.16	474.25
1.30	1.00	578.00	581.40	573.90	1060.00	582.70	.02	.00	.00	325.39	8.80	505.39
1.30	1.00	578.00	581.40	573.90	1220.00	582.95	.02	.00	.00	348.75	9.05	517.79
1.30	1.00	578.00	581.40	573.90	1690.00	583.59	.02	.01	.00	409.63	9.69	520.00
1.30	8.00	578.00	581.40	573.90	720.00	582.06	.02	.01	.00	271.12	8.16	474.56
1.30	8.00	578.00	581.40	573.90	1060.00	582.70	.02	.01	.00	324.77	8.80	505.71
1.30	8.00	578.00	581.40	573.90	1220.00	582.95	.02	.01	.00	347.12	9.06	518.12
1.30	8.00	578.00	581.40	573.90	1690.00	583.60	.02	.01	.00	408.96	9.70	520.00
1.30	1.00	0.00	0.00	573.90	720.00	582.06	.02	.00	.00	276.75	8.16	474.60
1.30	1.00	0.00	0.00	573.90	1060.00	582.71	.02	.00	.00	330.56	8.81	505.75
1.30	1.00	0.00	0.00	573.90	1220.00	582.96	.02	.00	.00	353.66	9.06	518.16
1.30	1.00	0.00	0.00	573.90	1690.00	583.60	.02	.00	.00	414.33	9.70	520.00
1.31	49.00	0.00	0.00	574.10	720.00	582.10	.02	.04	.00	314.74	8.00	476.50
1.31	49.00	0.00	0.00	574.10	1060.00	582.75	.03	.04	.00	387.54	8.65	507.71
1.31	49.00	0.00	0.00	574.10	1220.00	583.00	.03	.04	.00	419.03	8.90	520.00
1.31	49.00	0.00	0.00	574.10	1690.00	583.64	.03	.04	.00	501.33	9.54	520.00
1.48	900.00	0.00	0.00	574.80	720.00	583.04	.07	.96	.02	552.17	8.24	286.57
1.48	900.00	0.00	0.00	574.80	1060.00	583.74	.08	1.02	.03	702.83	8.94	480.00
1.48	900.00	0.00	0.00	574.80	1220.00	584.02	.09	1.04	.03	753.67	9.22	480.00
1.48	900.00	0.00	0.00	574.80	1690.00	584.70	.08	1.03	.02	888.29	9.90	480.00
1.69	1116.00	0.00	0.00	575.50	720.00	584.30	.05	1.24	.01	529.22	8.50	411.31
1.69	1116.00	0.00	0.00	575.50	1060.00	585.06	.05	1.23	.01	637.30	9.56	550.00
1.69	1116.00	0.00	0.00	575.50	1220.00	585.34	.05	1.29	.01	680.57	9.84	550.00
1.69	1116.00	0.00	0.00	575.50	1690.00	586.05	.05	1.32	.01	795.62	10.55	550.00
1.90	1116.00	0.00	0.00	575.80	720.00	585.36	.07	1.07	.01	575.30	9.56	198.71
1.90	1116.00	0.00	0.00	575.80	1060.00	586.21	.09	1.16	.03	741.41	10.41	320.00
1.90	1116.00	0.00	0.00	575.80	1220.00	586.52	.09	1.19	.03	807.47	10.72	320.00
1.90	1116.00	0.00	0.00	575.80	1690.00	587.29	.10	1.25	.03	962.51	11.49	1434.30
1.91	50.00	0.00	0.00	575.90	720.00	585.40	.20	.07	.10	720.00	9.50	22.00
1.91	50.00	0.00	0.00	575.90	1060.00	586.25	.28	.09	.15	964.95	10.35	109.65
1.91	50.00	0.00	0.00	575.90	1220.00	586.56	.33	.03	.19	1097.40	10.66	280.87
1.91	50.00	0.00	0.00	575.90	1690.00	587.33	.39	.11	.24	1355.19	11.43	939.47
1.92	36.00	586.80	584.40	575.90	720.00	585.59	.19	.15	0.00	720.00	9.69	22.00
1.92	36.00	586.80	584.40	575.90	1060.00	586.67	.34	.48	0.00	1060.00	10.77	22.00
1.92	36.00	586.80	584.40	575.90	1220.00	587.00	.30	.41	0.00	1088.43	11.10	302.00
1.92	36.00	586.80	584.40	575.90	1690.00	587.45	.43	.16	0.00	1406.32	11.55	1115.66
1.93	50.00	0.00	0.00	574.90	720.00	585.83	.07	.07	.04	590.40	10.93	270.31
1.93	50.00	0.00	0.00	574.90	1060.00	587.11	.06	.08	.08	695.93	12.21	287.54
1.93	50.00	0.00	0.00	574.90	1220.00	587.38	.06	.07	.07	756.69	12.48	291.06
1.93	50.00	0.00	0.00	574.90	1690.00	588.00	.08	.09	.10	962.55	13.10	318.12

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	OCH	DEPTH	TOPWID
2.13	1050.00	0.00	0.00	576.60	720.00	586.61	.02	.73	.01	412.59	10.01	402.69
2.13	1050.00	0.00	0.00	576.60	1060.00	587.78	.02	.62	.01	472.06	11.18	494.54
2.13	1050.00	0.00	0.00	576.60	1220.00	588.10	.02	.66	.01	511.32	11.50	527.34
2.13	1050.00	0.00	0.00	576.60	1690.00	588.85	.02	.77	.02	606.43	12.25	1052.76
2.33	1050.00	0.00	0.00	578.00	720.00	587.21	.03	.60	.00	438.26	9.21	284.16
2.33	1050.00	0.00	0.00	578.00	1060.00	588.31	.03	.53	.01	541.13	10.31	308.93
2.33	1050.00	0.00	0.00	578.00	1220.00	588.65	.03	.56	.01	594.00	10.65	316.66
2.33	1050.00	0.00	0.00	578.00	1690.00	589.46	.04	.62	.01	737.29	11.46	382.30

SECTION NUMBER	DISCHARGE CFS	CWSEL	CWSEL DIFF EACH Q	CWSEL DIFF EACH SECTION	CWSEL-WSEL	TOPWID	TOPWID DIFF	LENGTH
0.000	860.000	575.580	0.000	0.000	0.000	1049.999	0.000	0.000
0.000	1270.000	575.710	.130	0.000	0.000	1049.999	-.000	0.000
0.000	1460.000	575.790	.080	0.000	0.000	1049.999	-.000	0.000
0.000	2010.000	576.040	.250	0.000	0.000	1049.999	-.000	0.000
.265	860.000	576.127	0.000	.547	0.000	499.999	0.000	1250.000
.265	1270.000	576.536	.409	.826	0.000	499.999	-.000	1250.000
.265	1460.000	576.707	.171	.917	0.000	499.999	-.000	1250.000
.265	2010.000	577.154	.446	1.114	0.000	499.999	-.000	1250.000
.455	860.000	576.896	0.000	.769	0.000	218.105	0.000	1000.000
.455	1270.000	577.522	.626	.986	0.000	394.290	-176.165	1000.000
.455	1460.000	577.760	.238	1.053	0.000	426.747	-208.642	1000.000
.455	2010.000	578.361	.601	1.207	0.000	479.255	-261.150	1000.000
.540	720.000	578.122	0.000	1.226	0.000	710.144	0.000	450.000
.540	1060.000	578.759	.637	1.237	0.000	737.646	-27.503	450.000
.540	1220.000	578.994	.235	1.234	0.000	744.192	-34.048	450.000
.540	1690.000	579.560	.566	1.200	0.000	749.999	-39.855	450.000
.625	720.000	578.575	0.000	.453	0.000	728.436	0.000	450.000
.625	1060.000	579.182	.607	.423	0.000	746.525	-18.088	450.000
.625	1220.000	579.414	.231	.419	0.000	749.999	-21.563	450.000
.625	1690.000	579.979	.566	.419	0.000	749.999	-21.563	450.000
.795	720.000	579.299	0.000	.724	0.000	518.740	0.000	900.000
.795	1060.000	579.915	.616	.733	0.000	899.999	-381.259	900.000
.795	1220.000	580.146	.231	.733	0.000	899.999	-381.259	900.000
.795	1690.000	580.721	.575	.742	0.000	899.999	-381.259	900.000
.966	720.000	580.203	0.000	.903	0.000	516.677	0.000	900.000
.966	1060.000	580.826	.623	.911	0.000	719.999	-203.322	900.000
.966	1220.000	581.055	.230	.909	0.000	719.999	-203.322	900.000
.966	1690.000	581.627	.572	.906	0.000	719.999	-203.322	900.000
1.136	720.000	581.096	0.000	.893	0.000	516.615	0.000	900.000
1.136	1060.000	581.729	.633	.903	0.000	562.238	-51.623	900.000
1.136	1220.000	581.974	.245	.919	0.000	587.909	-71.294	900.000
1.136	1690.000	582.579	.605	.951	0.000	599.999	-83.384	900.000
1.288	720.000	581.956	0.000	.861	0.000	458.542	0.000	800.000
1.288	1060.000	582.602	.646	.873	0.000	509.999	-51.457	800.000
1.288	1220.000	582.860	.257	.886	0.000	509.999	-51.457	800.000
1.288	1690.000	583.496	.636	.917	0.000	509.999	-51.457	800.000
1.296	720.000	582.055	0.000	.099	0.000	474.199	0.000	49.000
1.296	1060.000	582.698	.642	.095	0.000	505.337	-31.141	49.000
1.296	1220.000	582.953	.256	.094	0.000	517.740	-43.545	49.000
1.296	1690.000	583.590	.636	.094	0.000	519.999	-45.803	49.000

1.297	720.000	582.056	0.000	.000	0.000	474.243	0.000	1.000
1.297	1060.000	582.698	.642	.001	0.000	505.330	-31.142	1.000
1.297	1220.000	582.954	.256	.001	0.000	517.793	-43.545	1.000
1.297	1690.000	583.590	.636	.001	0.000	519.999	-45.751	1.000
1.298	720.000	582.063	0.000	.007	0.000	474.562	0.000	8.000
1.298	1060.000	582.705	.642	.007	0.000	505.712	-31.150	8.000
1.298	1220.000	582.961	.256	.007	0.000	518.120	-43.559	8.000
1.298	1690.000	583.597	.636	.007	0.000	519.999	-45.437	8.000
1.299	720.000	582.064	0.000	.002	0.000	474.601	0.000	1.000
1.299	1060.000	582.707	.642	.002	0.000	505.752	-31.151	1.000
1.299	1220.000	582.963	.256	.002	0.000	518.161	-43.560	1.000
1.299	1690.000	583.599	.636	.002	0.000	519.999	-45.398	1.000
1.308	720.000	582.101	0.000	.037	0.000	476.504	0.000	49.000
1.308	1060.000	582.745	.644	.039	0.000	507.709	-31.206	49.000
1.308	1220.000	583.002	.257	.039	0.000	519.999	-43.495	49.000
1.308	1690.000	583.640	.638	.041	0.000	519.999	-43.495	49.000
1.479	720.000	583.035	0.000	.934	0.000	286.575	0.000	900.000
1.479	1060.000	583.744	.709	.999	0.000	479.999	-193.424	900.000
1.479	1220.000	584.018	.274	1.016	0.000	479.999	-193.424	900.000
1.479	1690.000	584.698	.679	1.058	0.000	479.999	-193.424	900.000
1.690	720.000	584.298	0.000	1.262	0.000	411.311	0.000	1116.000
1.690	1060.000	585.060	.762	1.316	0.000	549.999	-138.688	1116.000
1.690	1220.000	585.340	.281	1.322	0.000	549.999	-138.688	1116.000
1.690	1690.000	586.046	.706	1.349	0.000	549.999	-138.688	1116.000
1.902	720.000	585.359	0.000	1.061	0.000	198.709	0.000	1116.000
1.902	1060.000	586.212	.853	1.152	0.000	320.000	-121.291	1116.000
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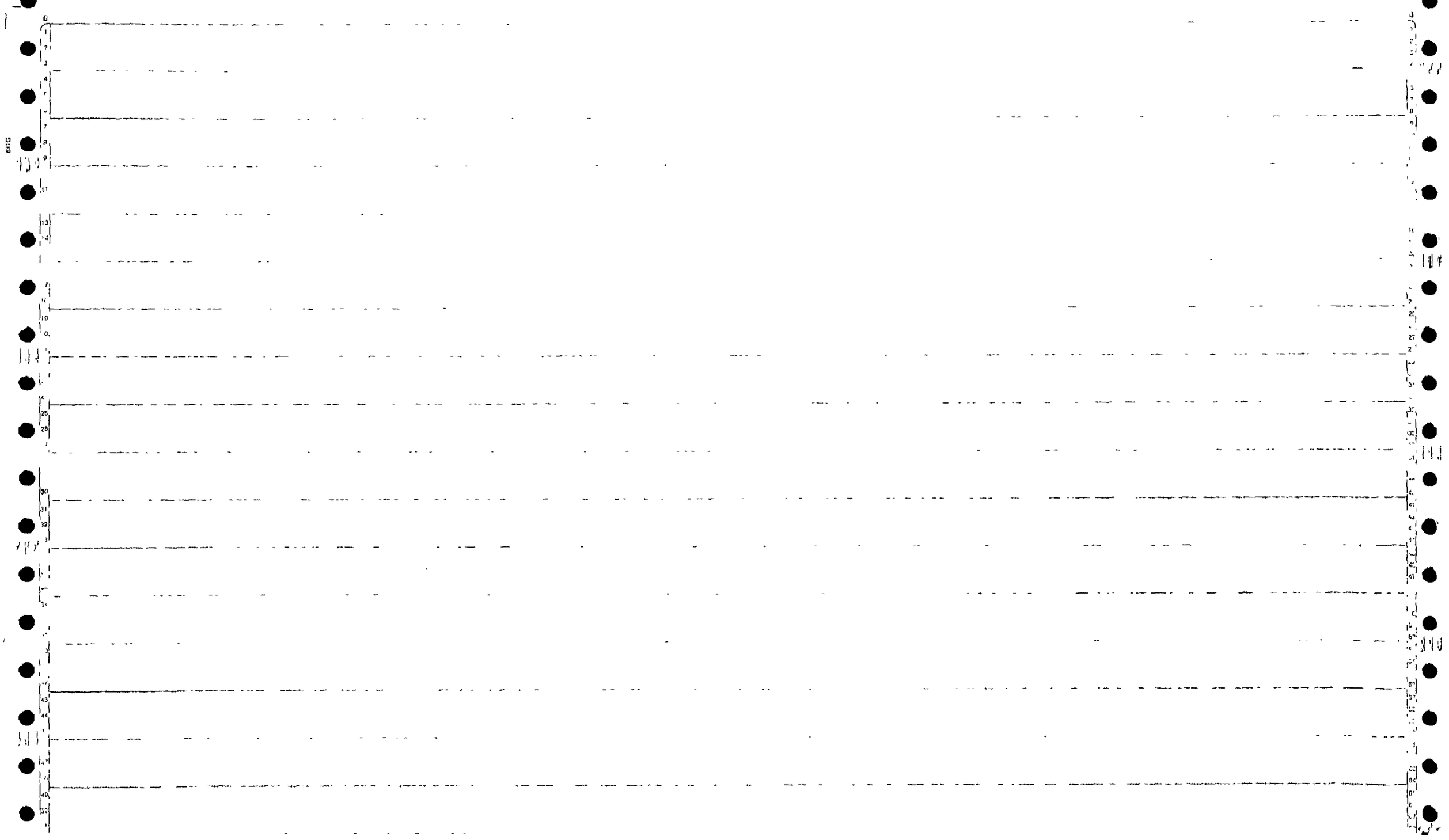
1.902	1690.000	587.292	.767	1.245	0.000	1434.304	-1235.594	1116.000
1.911	720.000	585.403	0.000	.044	0.000	22.000	0.000	50.000
1.911	1060.000	586.250	.847	.039	0.000	109.631	-87.631	50.000
1.911	1220.000	586.561	.310	.036	0.000	280.865	-258.865	50.000
1.911	1690.000	587.327	.767	.036	0.000	939.467	-917.467	50.000
1.918	720.000	585.589	0.000	.186	0.000	22.000	0.000	36.000
1.918	1060.000	586.672	1.083	.422	0.000	22.000	0.000	36.000
1.918	1220.000	587.000	.327	.439	0.000	302.000	-280.000	36.000
1.918	1690.000	587.454	.454	.126	0.000	1015.663	-993.663	36.000
1.927	720.000	585.826	0.000	.237	0.000	270.309	0.000	50.000
1.927	1060.000	587.114	1.288	.442	0.000	287.541	-17.232	50.000
1.927	1220.000	587.378	.263	.378	0.000	291.061	-20.752	50.000
1.927	1690.000	587.999	.622	.546	0.000	318.121	-47.812	50.000
2.126	720.000	586.614	0.000	.788	0.000	402.695	0.000	1050.000
2.126	1060.000	587.781	1.166	.666	0.000	498.639	-95.945	1050.000
2.126	1220.000	588.096	.316	.719	0.000	527.390	-124.695	1050.000
2.126	1690.000	588.847	.750	.847	0.000	1052.756	-650.061	1050.000
2.325	720.000	587.213	0.000	.594	0.000	294.161	0.000	1050.000
2.325	1060.000	588.306	1.093	.525	0.000	319.926	-24.765	1050.000
2.325	1220.000	588.648	.342	.552	0.000	316.682	-32.521	1050.000
2.325	1690.000	589.457	.809	.611	0.000	392.305	-98.144	1050.000

DATA FOR LAST CROSS SECTION

PROFILE	TYPE ENC	TARGET	TOP WIDTH AREA-ACRES	TOP WIDTH AREA-DIFF
1	0.000	0.000	131.627	0.000
2	0.000	0.000	161.661	30.034
3	0.000	0.000	164.133	32.506
4	0.000	0.000	195.371	63.743



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HH.MM.SS CPU SECOND ORIGIN
          11.25.52.MFA. ::    2PPU CBR73 3+M LYN ECS-2CPUS 02/15/77
11.31.11 00000.008 MFZ.     -COTJOL3,T10,CP70.   COTTONELLVILLE FTS
11.31.11 00000.008 JOB.     -CHARGE.810-0037-45-78-5513,JANDA,001,0.JANDA.
11.31.12 00000.051 JOB.     -ATTACH(HEC2,HEC2PROD,ID=MULLAN,CY=1)
11.31.13 00000.056 MFZ.        PF254 - CYCLE    1 ATTACHED FROM SN=SYSTEM
11.31.13 00000.057 LOD.     -HEC2(PL=99999).
11.31.14 00000.475 MFZ.        LD610 - FLS REQUIRED TO LOAD - 0025223 00.003
11.31.14 00000.485 MFZ.        LD603 - EXECUTION INITIATED OS.EXP
11.31.14 00000.485 USR.       FORTRAN LIBRARY 217-MODIFIED 03/16/76
11.31.16 00002.282 USR.          STOP
11.31.16 00002.283 USR.           1.796 CP SECONDS EXECUTION TIME
11.31.16 00002.286 MFZ.        RM770 - MAXIMUM ACTIVE FILES                    4
11.31.16 00002.286 MFZ.        RM771 - OPEN/CLOSE CALLS                       24
11.31.16 00002.286 MFZ.        RM772 - DATA TRANSFER CALLS                 4,164
11.31.16 00002.286 MFZ.        RM773 - CONTROL/POSITIONING CALLS              20
11.31.16 00002.286 MFZ.        RM774 - BM DATA TRANSFER CALLS                378
11.31.16 00002.287 MFZ.        RM775 - BM CONTROL/POSITIONING CALLS           41
11.31.16 00002.287 MFZ.        RM776 - QUEUE MANAGER CALLS                    75
11.31.16 00002.287 MFZ.        RM777 - RECALL CALLS                           49
11.31.16 00002.287 MFZ.        BMMSG - NUMBER OF TAPES MOUNTED
11.31.16 00002.288 MFZ.        SRU                   2.711  SRU
11.31.16 00002.288 MFZ.        SCM                 100.536  KWS
11.31.16 00002.288 MFZ.        I/O                   0.049  SEC
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11.31.16 00002.289 MFZ.      COTJOLU   COTJOLU
```



1) COUNTY: ST. CLAIR

2) STUDY NAME: COTTRELLVILLE TWP

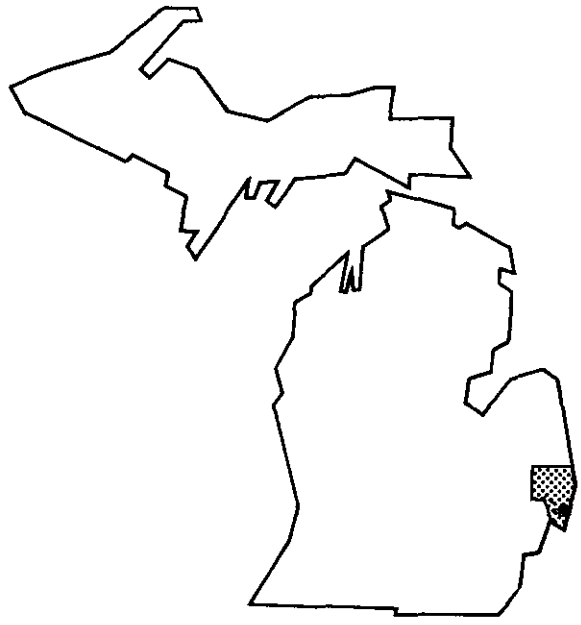
3) WATERCOURSE: LESTER BAMMEL DRAIN
NORTH ROBBINS DRAIN
~~ROBBINS DRAIN~~
ROBBINS DRAIN OUTLET

4) DOCUMENT TYPE: REPORT



FLOOD INSURANCE STUDY





TOWNSHIP OF COTTRELLVILLE, MICHIGAN
ST. CLAIR COUNTY

MARCH 1980

FEDERAL EMERGENCY MANAGEMENT AGENCY
FEDERAL INSURANCE ADMINISTRATION

COTTRELLVILLE, TWP. OF (ST. CLAIR CO.)
COMMUNITY NUMBER - 2)196 COTTRELLVILLE, TWP. OF

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EXHIBITS

Exhibit 1 - Flood Profiles

St. Clair River	Panel 01P
Beaubien Creek	Panel 02P
Marine City Drain (Main Channel)	Panel 03P
Marine City Drain (West Channel)	Panel 04P
Lester Bammel Drain	Panel 05P
Robbins Drain	Panel 06P
Robbins Drain Outlet	Panel 07P

Exhibit 2 - Flood Boundary and Floodway Map

PUBLISHED SEPARATELY:

Flood Insurance Rate Map

1.0 INTRODUCTION

1.1 Purpose of Study

The purpose of this Flood Insurance Study is to investigate the existence and severity of flood hazards in the Township of Cottrellville, St. Clair County, Michigan, and to aid in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. Initial use of this information will be to convert Cottrellville to the regular program of flood insurance by the Federal Insurance Administration. Further use of the information will be made by local and regional planners in their efforts to promote sound land use and flood plain development.

1.2 Coordination

The Township Supervisor identified the streams requiring detailed study. These streams were confirmed at the initial coordination meeting held on December 11, 1975, attended by the study contractor, officials of the Township of Cottrellville, and the Federal Insurance Administration.

The technical aspects of the study were coordinated with and approved by the Bureau of Water Management of the Michigan Department of Natural Resources, the State Coordinating Agency.

The results of this study were reviewed at a final community coordination meeting held on May 31, 1978. Attending the meeting were representatives of the Federal Insurance Administration, the study contractor, and the Township. This study incorporates all appropriate comments, and all problems have been resolved.

1.3 Authority and Acknowledgments

The source of authority for this Flood Insurance Study is the National Flood Insurance Act of 1968, as amended.

The hydrologic and hydraulic analyses for this study were performed by Johnson & Anderson, Inc., for the Federal Insurance Administration, under Contract No. H-3816. This work, which was completed in August 1977, covered all significant flooding sources affecting the Township of Cottrellville.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the incorporated area of the Township of Cottrellville, St. Clair County, Michigan. The area of study is shown on the Vicinity Map (Figure 1).

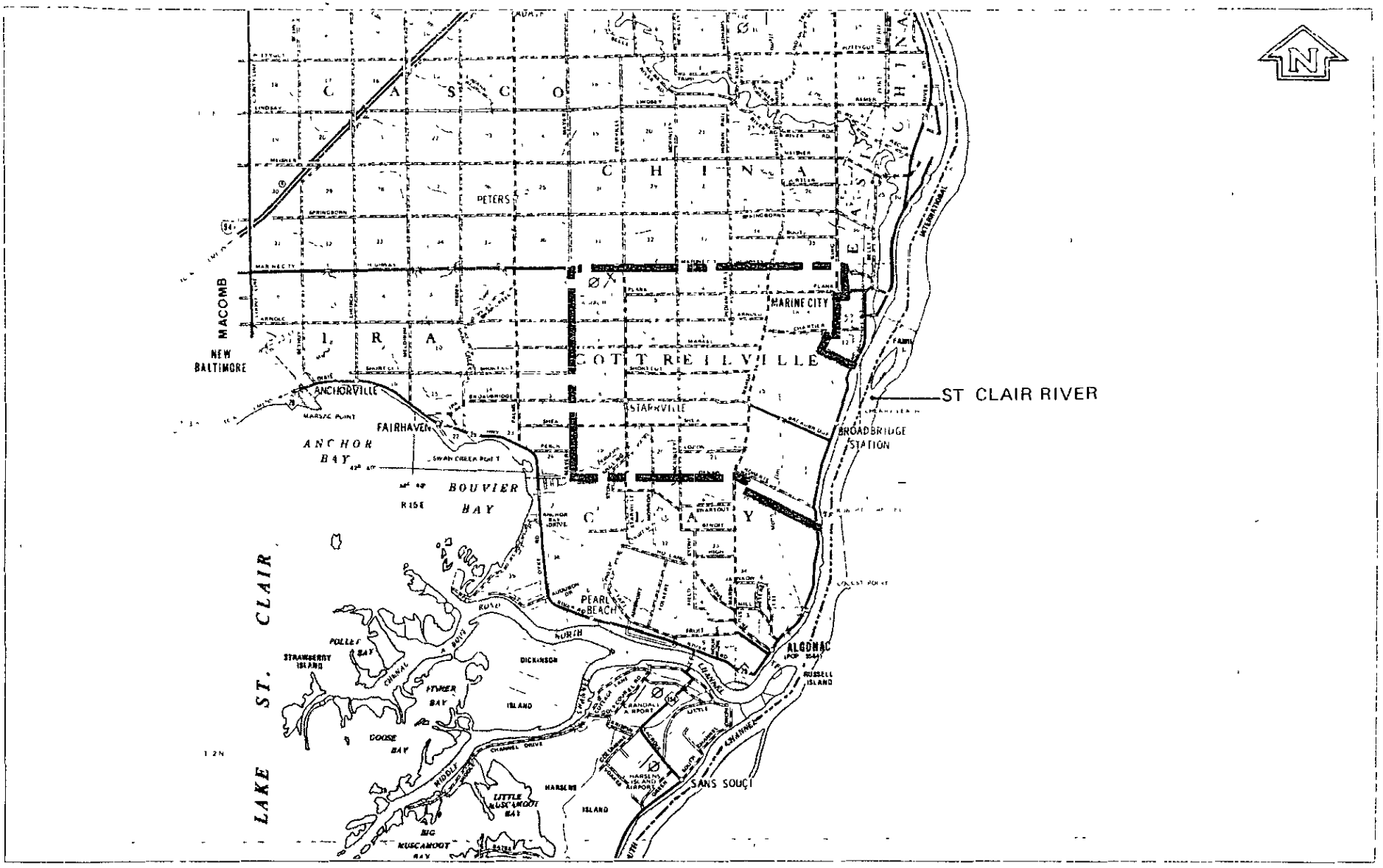


FIGURE 1

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

TOWNSHIP OF COTTRELLVILLE, MI
(ST. CLAIR CO.)

APPROXIMATE SCALE

1 0 1 2 3 4 5 6 7 8 9 10 MILES

VICINITY MAP

The natural watercourses and established drains studied in detail were as follows:

1. St. Clair River, from upstream corporate limits to downstream corporate limits

2. Beaubien Creek, from the corporate limits to just downstream of the confluence with West Marsh Drain

3. Marine City Drain (Main Channel), from Roberts Road to 700 feet upstream of Broadbridge Road

4. Marine City Drain (West Channel), entire length

5. Lester Bammel Drain, from just upstream of Shangri-La Mobile Home Park to Michigan State Highway 29 and the natural watercourse continuing downstream from Michigan State Highway 29 to the St. Clair River. (On the maps, both are referred to as the Lester Bammel Drain.)

6. Robbins Drain and the natural watercourse extending upstream from the St. Clair River to its divergence from Lester Bammel Drain. (On the maps, both are referred to as the Robbins Drain.)

7. Manmade ditch extending from the Robbins Drain natural watercourse to the St. Clair River, (On the maps, the ditch is referred to as the Robbins Drain Outlet).

The limits of detailed and approximate study in the township were determined by the Federal Insurance Administration after consultation with the community and the study contractor.

Those areas studied by detailed methods were chosen with consideration given to all proposed construction and forecasted development through 1982. The remaining areas were studied by approximate methods because they are not expected to experience development within the next five years.

2.2 Community Description

The Township of Cottrellville is located in the southern half of St. Clair County, in southeastern Michigan. The township is approximately 38 miles northeast of Detroit and borders on the Township of China to the north, the Township of Clay to the south, and the Township of Ira to the west. Marine City lies to the northeast, and the St. Clair River, which forms the United States-Canadian border, lies to the east.

In 1970, the Townsip of Cottrellville had a population of 2194; the present population is 2420 (Reference 1).

Cottrellville is composed of farmlands in the western half of the township and residential areas in the eastern half of the township. The area east of Marsh Road and south of Chartier Road is zoned for residential development. At present, most residential and commercial development in the township is confined to main roads, such as Michigan State Highway 29, Marsh, and Shea Roads.

Flood plain development is more extensive in the eastern portion of Cottrellville. A number of residential structures and several commercial establishments have been built along the low-lying banks of the St. Clair River. A trailer park exists in the flood plain of the Lester Bammel Drain, and several residences lie in the flood plains of Marine City and Robbins Drains.

The topography in the Township of Cottrellville is a level to gently rolling plain, sloping gradually from northwest to southeast. This topography is slightly modified by the stream channels and flood plain valleys of Beaubien Creek, Marine City Drain, Lester Bammel Drain, Robbins Drain, and their tributaries.

Mean monthly temperatures range from 26.6°F in January to 72.7°F in July, with an average annual temperature of approximately 48°F. Precipitation, averaging 31.3 inches annually, is generally uniform throughout the year, although there is a slight increase during the summer months.

The soils consist mostly of silty clays and clays that are poorly drained. Vegetation is composed mainly of grasses and hardwood and pine trees.

Drainage in Cottrellville consists primarily of Beaubien Creek, Marine City Drain, Lester Bammel Drain, and Robbins Drain, and their tributaries.

2.3 Principal Flood Problems

Flooding in the Township of Cottrellville can be experienced from high-intensity rainstorms in either the spring or early summer. The more severe flooding, however, occurs in late winter or early spring from rainfall and/or snowmelt in conjunction with ice jams. Ice jams in the St. Clair River, occurring during periods of high lake levels, can cause some flooding along the St. Clair River shoreline of the township. An ice jam was reported in Marine City Drain in 1968.

On Beaubien Creek, Marine City Drain, Lester Bammel Drain, and Robbins Drain, the probability of flooding is increased by constrictive culverts, siltation of culverts, and debris and vegetation in the channels.

2.4 Flood Protection Measures

Flood protection measures in the township have been undertaken by individual owners with property bordering the St. Clair River in the form of sea walls and dikes, while the owners on Robbins and Lester Bammel Drains have periodically cleaned the debris and vegetation from that portion of the drain crossing their properties.

As of July 1977, no flood protection measures have been taken by the Township of Cottrellville.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equalled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for flood plain management and for flood insurance premium rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being equalled or exceeded during any year. Although the recurrence interval represents the long term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (1 percent chance of annual occurrence) in any 50-year period is approximately 40 percent (4 in 10), and, for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported here reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for floods of the selected recurrence intervals for each stream studied in detail in the community.

Floodflow-frequency data for Beaubien Creek, Marine City Drain, Lester Bammel Drain, Robbins Drain, and Robbins Drain Outlet were based on an analysis of the drainage area utilizing the options available in the U.S. Soil Conservation Service TR-20 Hydrology Computer Program (Reference 2), in conjunction with the techniques outlined in the U.S. Soil Conservation Service National Engineering Handbook (Reference 3) and the U.S. Soil Conservation Service Technical Release No. 55 (Reference 4).

This approach considers factors such as the following: (1) the imperviousness of the drainage basin with regard to the effects of urbanization and soil types, (2) vegetal cover of the drainage basin, (3) slope of the terrain, (4) general channel shape and slope, (5) rainfall distribution, (6) storage effects, and (7) reservoir routing.

A division of flows for the main channel and west channel of the Marine City Drain was established by constructing an energy grade line-discharge relationship which assumed that, at the diversion and confluence of both channels, the energy grade lines are equal.

Peak discharge-drainage area relationships for Beaubien Creek, Marine City Drain (Main Channel and West Channel), Lester Bammel Drain, Robbins Drain, and the Robbins Drain Outlet are shown in Table 1.

The analysis of the St. Clair River data is similar to a lake analysis and, therefore, is not included with the discharge data of other flooding sources in Table 1. The drop in discharge for Marine City Drain (Main Channel) moving downstream of Broadbridge Road in Table 1 is due to basin storage upstream of Broadbridge Road. Basin storage also occurs upstream of Michigan State Highway 29 on Lester Bammel Drain, causing a decrease in stream discharge moving downstream from the divergence of Robbins Drain.

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of streams in the community were carried out to provide estimates of the elevations of floods of selected recurrence intervals along each stream studied in detail.

Water-surface profiles were developed through the use of the U.S. Army Corps of Engineers HEC-2 step-backwater computer program (Reference 5).

Valley cross sections were located near bridges and places typical of a stream reach. The cross sections for the detailed studies were field surveyed.

The predicted flood elevations along the St. Clair River were developed by analyzing historical gaging records. Records were obtained through the Lake Survey Center of the National Oceanic and Atmospheric Administration and the Canadian Tides and Water Levels Division. Gaged records from several gages located throughout Lake Huron, St. Clair River, and Lake St. Clair were used (References 6, 7, and 8). The following table describes the gages, locations, and number of years of record used in the analysis for the Township of Cottrellville:

Name	Location	Years of Record
Harbor Beach	Harbor Beach, Michigan	73
Marine City	Marine City, Michigan	4
Port Lambton	Port Lambton, Ontario	44
Grosse Pointe	St. Clair Shores, Michigan	60

Table 1. Summary of Discharges

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (Cubic Feet per Second) 10-Year	50-Year	100-Year	500-Year
Beaubien Creek					
Corporate Limits	13.6	720.0	1060.0	1220.0	1690.0
Marine City Drain (Main Channel)					
At Roberts Road	7.1	375.0	520.0	580.0	770.0
At Confluence With West Channel	5.9	330.0	450.0	500.0	660.0
Upstream From Confluence With West Channel	5.9	185.0	250.0	270.0	340.0
At Diversion of West Channel	5.5	330.0	450.0	500.0	660.0
At Broadbridge Road	5.4	410.0	590.0	675.0	910.0
Marine City Drain (West Channel)	N/A	145.0	200.0	230.0	320.0
Lester Bammel Drain					
At Mouth	1.6	130.0	145.0	155.0	170.0
At Michigan State Highway 29	1.5	130.0	145.0	155.0	170.0
Upstream of Diversion to Robbins Drain	1.3	130.0	200.0	230.0	320.0
Robbins Drain					
Downstream of Confluence With Robbins Drain Outlet	0.6	23.0	53.0	67.0	100.0
Upstream of Confluence With Robbins Drain Outlet	0.6	32.0	50.0	58.0	81.0
At Broadbridge Road	0.3	2.0	3.1	5.7	12.6
Robbins Drain Outlet	N/A	46.3	54.0	57.7	75.0

Both the long-term and short-term lake-level fluctuations were considered in arriving at the final elevations. The long-term lake-level fluctuations were obtained from monthly gaging records representing Lake Huron and Lake St. Clair. Monthly mean levels were adjusted for present diversion and inlet conditions affecting the Great Lake system. These adjusted levels were then extended to each gage point along the St. Clair River through a linear regression analysis.

Maximum monthly lake level records were used to establish the short-term cycles for the St. Clair River. The influence of seiching, wind tides, ice jams, and storm surges were accounted for in the short-term cycles. Effects of individual waves were not included.

By combining both the long-term and short-term components, the elevations for the 10-, 50-, 100-, and 500-year floods were determined. Flood elevations for the gages at Marine City and Port Lambton are shown in Table 2.

Table 2. Summary of Elevations

	Flood Elevations (in Feet NGVD)			
Gage Location	10-Year	50-Year	100-Year	500-Year
Marine City	578.9	579.8	580.1	580.6
Port Lambton	578.6	579.5	579.8	580.4

Robbins Drain downstream of Michigan State Highway 29 flows through a culvert, causing floodflows to back-up upstream of Michigan State Highway 29. Because no flooding from Robbins Drain occurs in the area of the culvert, no profile is presented for it.

Approximate elevations for Lester Bammel, Marine City, and West Marsh Drains, and areas downstream of Starville Road on Beaubien Creek were determined by extrapolating elevations upstream of the limit of detailed study.

The hydraulic analyses of this study are based only on the effects of unobstructed flow. The flood elevations, as shown on the profiles, are considered valid only if hydraulic structures, in general, remain unobstructed, operate properly, and do not fail. The effects of debris and ice were not considered in the creek or drains because recorded data on ice jams in these streams are nonexistent.

Roughness coefficients (Manning's "n") for the streams were estimated by field inspection at each cross section. Roughness coefficients used ranged as follows:

Table 1. Summary of Discharges

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (Cubic Feet per Second) 10-Year	50-Year	100-Year	500-Yea
Beaubien Creek					
Corporate Limits	13.6	720.0	1060.0	1220.0	1690.0
Marine City Drain (Main Channel)					
At Roberts Road	7.1	375.0	520.0	580.0	770.0
At Confluence With West Channel	5.9	330.0	450.0	500.0	660.0
Upstream From Confluence With West Channel	5.9	185.0	250.0	270.0	340.0
At Diversion of West Channel	5.5	330.0	450.0	500.0	660.0
At Broadbridge Road	5.4	410.0	590.0	675.0	910.0
Marine City Drain (West Channel)	N/A	145.0	200.0	230.0	320.0
Lester Bammel Drain					
At Mouth	1.6	130.0	145.0	155.0	170.0
At Michigan State Highway 29	1.5	130.0	145.0	155.0	170.0
Upstream of Diversion to Robbins Drain	1.3	130.0	200.0	230.0	320.0
Robbins Drain					
Downstream of Confluence With Robbins Drain Outlet	0.6	23.0	53.0	67.0	100.0
Upstream of Confluence With Robbins Drain Outlet	0.6	32.0	50.0	58.0	81.0
At Broadbridge Road	0.3	2.0	3.1	5.7	12.6
Robbins Drain Outlet	N/A	46.3	54.0	57.7	75.0

Both the long-term and short-term lake-level fluctuations were considered in arriving at the final elevations. The long-term lake-level fluctuations were obtained from monthly gaging records representing Lake Huron and Lake St. Clair. Monthly mean levels were adjusted for present diversion and inlet conditions affecting the Great Lake system. These adjusted levels were then extended to each gage point along the St. Clair River through a linear regression analysis.

Maximum monthly lake level records were used to establish the short-term cycles for the St. Clair River. The influence of seiching, wind tides, ice jams, and storm surges were accounted for in the short-term cycles. Effects of individual waves were not included.

By combining both the long-term and short-term components, the elevations for the 10-, 50-, 100-, and 500-year floods were determined. Flood elevations for the gages at Marine City and Port Lambton are shown in Table 2.

Table 2. Summary of Elevations

Gage Location	Flood Elevations (in Feet NGVD) 10-Year	50-Year	100-Year	500-Year
Marine City	578.9	579.8	580.1	580.6
Port Lambton	578.6	579.5	579.8	580.4

Robbins Drain downstream of Michigan State Highway 29 flows through a culvert, causing floodflows to back-up upstream of Michigan State Highway 29. Because no flooding from Robbins Drain occurs in the area of the culvert, no profile is presented for it.

Approximate elevations for Lester Bammel, Marine City, and West Marsh Drains, and areas downstream of Starville Road on Beaubien Creek were determined by extrapolating elevations upstream of the limit of detailed study.

The hydraulic analyses of this study are based only on the effects of unobstructed flow. The flood elevations, as shown on the profiles, are considered valid only if hydraulic structures, in general, remain unobstructed, operate properly, and do not fail. The effects of debris and ice were not considered in the creek or drains because recorded data on ice jams in these streams are nonexistent.

Roughness coefficients (Manning's "n") for the streams were estimated by field inspection at each cross section. Roughness coefficients used ranged as follows:

Stream Name	Channel	Overbank
Beaubien Creek	0.035-0.080	0.080-0.130
Marine City Drain	0.060-0.085	0.080-0.160
Lester Bammel Drain	0.024-0.040	0.038-0.072
Robbins Drain	0.027-0.052	0.040-0.130
Robbins Drain Outlet	0.070-0.080	0.075-0.120

The starting water-surface elevation for Beaubien Creek was developed through the flow-routing techniques of the U.S. Soil Conservation Service TR-20 Hydrology Computer Program (Reference 2), assuming mean (50 percent chance of occurrence in any year) lake levels in Lake St. Clair. The starting water-surface elevations for Marine City, Lester Bammel, and Robbins Drains and Robbins Drain Outlet were developed from the analyses of gaging records on the St. Clair River (Reference 8), utilizing the mean flood levels of the St. Clair River at the mouths of the Marine City, Lester Bammel, and Robbins Drains and Robbins Drain Outlet, respectively.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). The profile for the St. Clair River was determined by linear interpolation between the gage elevations for these selected recurrence intervals (Exhibit 1). For stream segments for which a floodway is computed (Section 4.2), selected cross section locations are also shown on the Flood Boundary and Floodway Map (Exhibit 2).

Flood profiles were drawn showing computed water-surface elevations to an accuracy of 0.5 foot for floods of the selected recurrence intervals (Exhibit 1). All elevations are referenced to the National Geodetic Vertical Datum of 1929 (NGVD). All gage elevations were converted from International Great Lakes Datum of 1955 to National Geodetic Vertical Datum of 1929 (NGVD) by adding 1.32 feet. Elevation reference marks used in the study are shown on the maps.

4.0 FLOOD PLAIN MANAGEMENT APPLICATIONS

A prime purpose of the National Flood Insurance Program is to encourage State and local governments to adopt sound flood plain management programs. Each Flood Insurance Study, therefore, includes a flood boundary map designed to assist communities in developing sound flood plain management measures.

4.1 Flood Boundaries

In order to provide a national standard without regional discrimination, the 100-year flood has been adopted by the Federal Insurance Administration as the base flood for purposes of flood plain management measures. The 500-year flood is employed to indicate additional areas of flood risk in the community. For each stream studied in detail, the boundaries of the 100- and 500-year floods have been

delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated photogrammetrically, using aerial photographs at a scale of 1:30,000 (Reference 9). In cases where the 100-and 500-year flood boundaries are close together, only the 100-year boundary has been shown.

Flood boundaries for the 100- and 500-year floods are shown on the Flood Boundary and Floodway Map (Exhibit 2).

Approximate zone boundaries for Lester Bammel, Marine City, West Marsh Drains and areas downstream of Starville Road on Beaubien Creek were delineated on a U.S. Geological Survery topographic map at a scale of 1:24,000, with a contour interval of 5 feet (Reference 10), using extrapolated elevations upstream of the limit of detailed study. Approximate flood boundaries for Beaubien Creek upstream of Starville Road were taken from Federal Insurance Administration preliminary Flood Hazard Boundary Maps for the Township of Cottrellville (Reference 11).

Small areas within the flood boundaries may lie above the flood elevations and, therefore, not be subject to flooding; owing to limitations of the map scale, such areas are not shown.

4.2 Floodways

Encroachment on flood plains, such as artificial fill, reduces the flood-carrying capacity and increases flood heights, thus increasing flood hazards in areas beyond the encroachment itself. One aspect of flood plain management involves balancing the economic gain from flood plain development against the resulting increase in flood hazard. For purposes of the Flood Insurance Program, the concept of a floodway is used as a tool to assist local communities in this aspect of flood plain management. Under this concept, the area of the 100-year flood is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent flood plain areas, that must be kept free of encroachment in order that the 100-year flood be carried without substantial increases in flood heights. As minimum standards, the Federal Insurance Administration limits such increases in flood heights to 1.0 foot, provided that hazardous velocities are not produced. The Michigan Flood Plain Act (Act 167, P.A. 1968), however, limits flood plain encroachment to that which will cause no significant rise in flood stages. This has been interpreted by the Michigan Department of Natural Resources, Water Management Division, as no more than 0.1 foot increases in water-surface elevations.

The technique used to define the floodways in this study involves describing the sweep and extent of moving floodwater by applying engineering judgment and basic rules of hydraulics to the flooded outline maps. The areas in the floodway fringe are areas of ponded water. Only areas with no conveyance (water-carrying ability) are included in the floodway fringe. The results of these computations

are tabulated at selected cross sections for each stream segment for which a floodway is computed (Table 3).

As shown on the Flood Boundary and Floodway Map (Exhibit 2), the floodway boundaries were determined at cross sections; between cross sections, the boundaries were interpolated. In cases where the floodway and 100-year flood boundaries coincide, only the floodway boundary has been shown.

The area between the floodway and the boundary of the 100-year flood is termed the floodway fringe. The floodway fringe thus encompasses the portion of the flood plain that could be completely obstructed without increasing the water-surface elevations of the 100-year flood at any point. Typical relationships between the floodway and the floodway fringe and their significance to flood plain development are shown in Figure 2.

A floodway generally is not appropriate in areas such as those that may be inundated by floodwaters from lakes. Thus, no floodway was prepared for the St. Clair River.

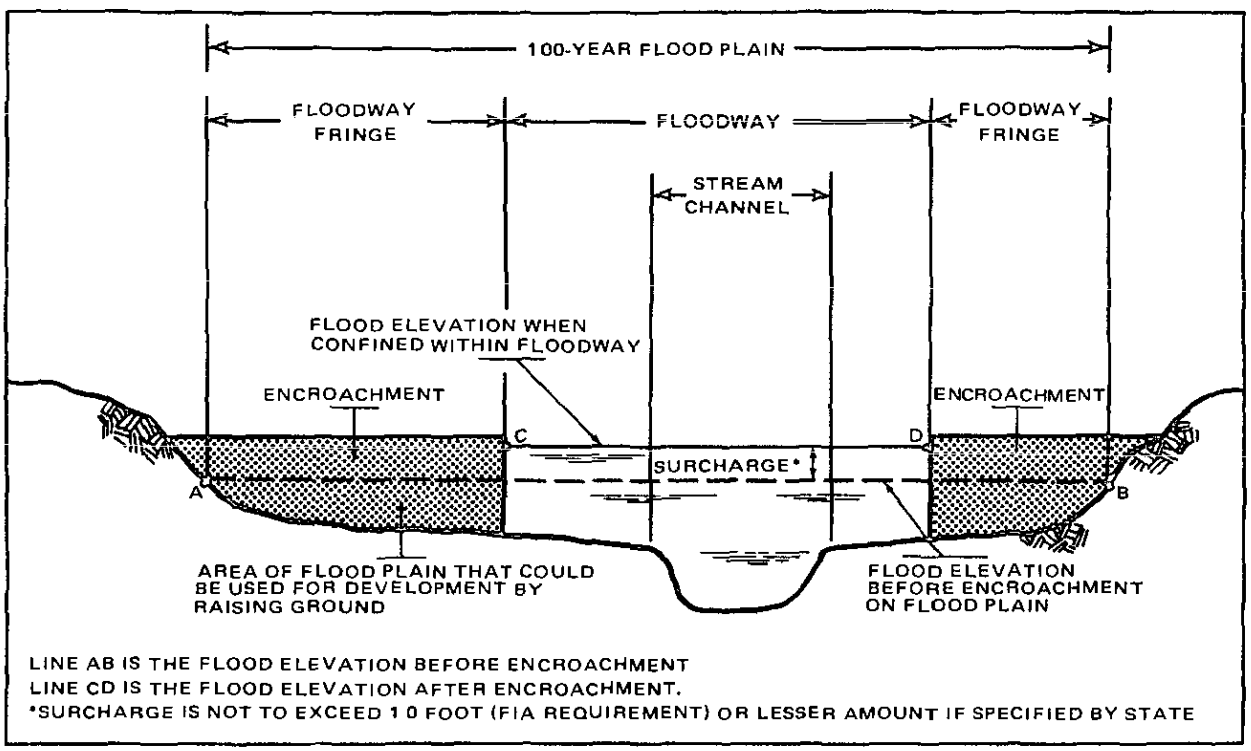


Figure 2. Floodway Schematic

FLOODING SOURCE		FLOODWAY			BASE FLOOD[1] WATER SURFACE ELEVATION		
CROSS SECTION	DISTANCE[2]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	WITH FLOODWAY	WITHOUT FLOODWAY (FEET NGVD)	DIFFERENCE
Beaubien Creek							
A	0.455	500[3]	617	2.4	577.8[4]	577.8[4]	0.0
B	1.136	588	1499	0.8	582.0	582.0	0.0
C	1.297	518	1363	0.9	583.0	583.0	0.0
D	1.479	480	961	1.3	584.0	584.0	0.0
E	1.918	302	392	3.1	587.0	587.0	0.0
F	1.927	350	958	1.3	587.4	587.4	0.0
G	2.325	315	1244	1.0	588.7	588.7	0.0

[1]Water-Surface Elevation Without Considering Ice-Jam Effects [2]Miles Above Mouth
[3]This Width Extends Beyond Corporate Limits [4]Elevation Computed Without Considering Backwater Effects From St. Clair River

TABLE 3

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

TOWNSHIP OF COTTRELLVILLE, MI
(ST. CLAIR CO.)

FLOODWAY DATA

BEAUBIEN CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD[1] WATER SURFACE ELEVATION		
CROSS SECTION	DISTANCE[2]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	WITH FLOODWAY	WITHOUT FLOODWAY (FEET NGVD)	DIFFERENCE
Lester Bammel Drain							
A	65	11	30	5.2	577.5[3]	577.5[3]	0.0
B	449	18	40	3.9	579.1[3]	579.1[3]	0.0
C	546	18	51	3.0	579.7	579.7	0.0
D	688	20	66	2.3	580.2	580.2	0.0
E	778	10	44	3.5	580.5	580.5	0.0
F	1180	150	387	0.4	580.8	580.8	0.0
G	1630	150	290	0.7	580.8	580.8	0.0
H	1704	150	230	0.8	580.9	580.8	0.1
I	2124	295	418	0.5	581.5	581.5	0.0
J	2624	110	147	1.3	581.7	581.6	0.1

[1]Water-Surface Elevation Without Considering Ice-Jam Effects [2]Feet Above Mouth
[3]Elevation Computed Without Considering Backwater Effects From St. Clair River

TABLE 3

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

TOWNSHIP OF COTTRELLVILLE, MI
(ST. CLAIR CO.)

FLOODWAY DATA

LESTER BAMMEL DRAIN

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION		
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	WITH FLOODWAY	WITHOUT FLOODWAY (FEET NGVD)	DIFFERENCE
Marine City Drain (Main Channel)							
A	2.425	443	772	0.8	581.4	581.4	0.0
B	2.557	500	1487	0.4	581.4	581.4	0.0
C	2.882	300	435	0.6	581.6	581.5	0.1
D	2.974	300	873	0.3	581.7	581.6	0.1
E	3.429	300	749	0.4	581.8	581.8	0.0
F	3.845	1151	2904	0.2	582.0	581.9	0.1
G	3.860	1151	823	0.6	582.0	581.9	0.1
H	3.992	1450	4079	0.2	582.0	581.9	0.1
Marine City Drain (West Channel)							
A	0.598	490	543	0.4	581.7	581.7	0.0
B	1.049	1250	2958	0.1	581.9	581.8	0.1

[1] Miles Above Mouth

TABLE 3

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

TOWNSHIP OF COTTRELLVILLE, MI
(ST. CLAIR CO.)

FLOODWAY DATA

MARINE CITY DRAIN (MAIN CHANNEL)-MARINE CITY DRAIN (WEST CHANNEL)

FLOODING SOURCE		FLOODWAY			BASE FLOOD[1] WATER SURFACE ELEVATION		
CROSS SECTION	DISTANCE[2]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	WITH FLOODWAY	WITHOUT FLOODWAY (FEET NGVD)	DIFFERENCE
Robbins Drain							
A	751	10	40	1.7	579.3[3]	579.3[3]	0.0
B	2,034	120	175	0.4	579.7[3]	579.6[3]	0.1
C	2,124	120	76	0.9	579.8[3]	579.7[3]	0.1
D	2,874	150	119	0.6	579.8	579.7	0.1
E	3,566	200	326	0.2	579.8	579.8	0.0
F	4,466	100	129	0.4	579.9	579.8	0.1
G	4,528	100	107	0.5	579.9	579.8	0.1
H	4,908	100	154	0.4	580.0	579.9	0.1
I	4,979	152	89	0.7	580.0	579.9	0.1
J	5,451	160	249	0.1	580.1	580.0	0.1
K	5,511	160	211	0.2	580.1	580.0	0.1
L	6,795	10	23	0.3	580.2	580.1	0.1
M	6,845	19	36	0.2	580.2	580.1	0.1
N	7,795	17	14	0.4	580.2	580.1	0.1
O	8,019	15	31	0.2	580.5	580.4	0.1
P	9,769	110	81	0.5	580.9	580.8	0.1
Q	10,089	150	133	0.3	580.9	580.8	0.1
R	10,160	150	165	0.2	580.9	580.8	0.1
S	11,260	250	438	0.1	581.0	580.9	0.1
Robbins Drain Outlet							
A	370	16	42	1.4	579.5[3]	579.5[3]	0.0
B	462	12	39	1.5	579.7[3]	579.7[3]	0.0
C	512	112	180	0.3	579.8	579.8	0.0

[1]Water-Surface Elevation Without Considering Ice-Jam Effects [2]Feet Above Mouth
[3]Elevation Computed Without Considering Backwater Effects From St. Clair River

TABLE 3

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

TOWNSHIP OF COTTRELLVILLE, MI
(ST. CLAIR CO.)

FLOODWAY DATA

ROBBINS DRAIN-ROBBINS DRAIN OUTLET

5.0 INSURANCE APPLICATION

In order to establish acturial insurance rates, the Federal Insurance Administration has developed a process to transform the data from the engineering study into flood insurance criteria. This process includes zone designations for each flooding source studied in detail affecting the Township of Cottrellville.

5.1 Reach Determinations

Reaches are defined as lengths of watercourses having relatively the same flood hazard, based on the average weighted difference in water-surface elevations between the 10- and 100-year floods. This difference does not have a variation greater than that indicated in the following table for more than 20 percent of the reach.

Average Difference Between 10- and 100-year Floods	Variation
Less than 2 feet	0.5 foot

Eight reaches meeting the above criterion were required for the flooding sources of the Township of Cottrellville. These included one each on the St. Clair River, the Marine City Drains (West and Main Channels), Lester Bammel Drain, Robbins Drain, and Robbins Drain Outlet; and two on Beaubien Creek. The locations of the reaches are shown on the Flood Profiles (Exhibit 1).

5.2 Flood Hazard Factors

The Flood Hazard Factor (FHF) is the Federal Insurance Administration device used to correlate flood information with insurance rate tables. Correlations between property damage from floods and their FHF are used to set actuarial insurance premium rate tables based on FHFs from 005 to 200.

The FHF for a reach is the average weighted difference between the 10- and 100-year flood water-surface elevations expressed to the nearest one-half foot, and shown as a three-digit code. For example, if the difference between water-surface elevations of the 10- and 100-year floods is 0.7 foot, the FHF is 005; if the difference is 1.4 feet, the FHF is 015; if the difference is 5.0 feet, the FHF is 050. When the difference between the 10- and 100-year water-surface elevations is greater than 10.0 feet, accuracy for the FHF is to the nearest foot.

5.3 Flood Insurance Zones

After the determination of reaches and their respective Flood Hazard Factors, the entire incorporated area of the Township of Cottrellville was divided into zones, each having a specific flood potential or hazard. Each zone was assigned one of the following flood insurance zone designations:

Zone A:	Special Flood Hazard Areas inundated by the 100-year flood, determined by approximate methods; no base flood elevations shown or Flood Hazard Factors determined.
Zones A1, A2, and A3:	Special Flood Hazard Areas inundated by the 100-year flood, determined by detailed methods; base flood elevations shown, and zones subdivided according to Flood Hazard Factors.
Zone B:	Areas between the Special Flood Hazard Areas and the limits of the 500-year flood, including areas of the 500-year flood plain that are protected from the 100-year flood by dike, levee, or other water control structure; also areas subject to certain types of 100-year shallow flooding where depths are less than 1.0 foot; and areas subject to 100-year flooding from sources with drainage areas less than 1 square mile. Zone B is not subdivided.
Zone C:	Areas of minimal flooding.

The flood elevation differences, Flood Hazard Factors, flood insurance zones, and base flood elevations for each flooding source studied in detail in the community are summarized in Table 4.

5.4 Flood Insurance Rate Map Description

The Flood Insurance Rate Map for the Township of Cottrellville is, for insurance purposes, the principal result of the Flood Insurance Study. This map (published separately) contains the official delineation of flood insurance zones and base flood elevation lines. Base flood elevation lines show the locations of the expected whole-foot water-surface elevations of the base (100-year) flood. This map is developed in accordance with the latest flood insurance map preparation guidelines published by the Federal Insurance Administration.

6.0 OTHER STUDIES

This study is compatible with the study for the adjoining community of the Township of Clay (Reference 12). No other study pertaining to flooding has been done for the Township of Cottrellville.

This study is authoritative for the purposes of the Flood Insurance Program; data presented herein either supersede or are compatible with all previous determinations.

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION (FEET NGVD)[3]
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
St. Clair River							
Reach 1	0001	-1.2	-0.3	0.6	010	A2	580
Beaubien Creek							
Reach 1	0001	-0.9	-0.3	0.6	010	A2	Varies - See Map
Reach 2	0001	-1.5	-0.3	0.7	015	A3	Varies - See Map
Marine City Drain (Main Channel)							
Reach 1	0001	-0.6	-0.2	0.5	005	A1	Varies - See Map
Marine City Drain (West Channel)							
Reach 1	0001	-0.6	-0.2	0.5	005	A1	Varies - See Map
Lester Bammel Drain							
Reach 1	0001	-0.5	-0.2	0.2	005	A1	Varies - See Map
Robbins Drain							
Reach 1	0001	-0.5	-0.2	0.4	005	A1	Varies - See Map
Robbins Drain Outlet							
Reach 1	0001	-0.3	-0.1	0.3	005	A1	580

[1] Flood Insurance Rate Map Panel [2] Weighted Average [3] Rounded to Nearest Foot

TABLE 4

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

TOWNSHIP OF COTTRELLVILLE, MI
(ST CLAIR CO.)

FLOOD INSURANCE ZONE DATA

ST. CLAIR RIVER-BEAUBIEN CREEK MARINE CITY DRAIN (MAIN CHANNEL)-MARINE CITY DRAIN (WEST CHANNEL)-LESTER BAMMEL DRAIN-ROBBINS DRAIN ROBBINS DRAIN OUTLET

7.0 LOCATION OF DATA

Survey, hydrologic, hydraulic, and other pertinent data used in this study can be obtained by contacting the office of the Federal Emergency Management Agency, Director, Insurance and Mitigation, 1 North Dearborn Street, Chicago, Illinois 60602.

8.0 BIBLIOGRAPHY AND REFERENCES

1. Southeast Michigan Council of Governments, Population and Occupied Dwelling Units in Southeastern Michigan, 1975

2. U.S. Department of Agriculture, Soil Conservation Service, Technical Release No. 20, Computer Program for Project Formulation, Hydrology, May 1965

3. U.S. Department of Agriculture, Soil Conservation Service, "Hydrology," National Engineering Handbook, Section 4, August 1972

4. ----------, Technical Release No. 55, Urban Hydrology for Small Watersheds, January 1975

5. U.S. Department of the Army, Corps of Engineers, Hydrological Engineering Center, HEC-2 Water-Surface Profile Users Manual, 1973

6. Canadian Department of the Environment, Marine Sciences Directorate, Tides and Water Levels Division, "Daily Mean/Max Water Levels," Years of Record 1926-1975, Gage Records: Pte. Edward & Port Lambton, Ontario, publisned annually

7. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Survey, Lake Survey Center, Great Lakes Water Levels, 1860-1970, Detroit, Michigan, 1971

8. ----------, Great Lakes Water Levels, Years of Record, 1970, 1971, 1972, 1973, 1974, Detroit, Michigan, published annually

9. Metropolitan Planning Commission, County of St. Clair, Michigan, Aerial Photography, Scale 1:30,000, April 1973

10. U.S. Department of the Interior, Geological Survey, 7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 5 Feet: Marine City, Michigan (1968), Photorevised (1973)

11. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Maps, Scale 1:12,000, Township of Cottrellville, Michigan, December 31, 1976

12. ----------, Preliminary Flood Insurance Study, Township of Clay, St. Clair County, Michigan, February 1977

Herrin, Gary D., "Review of Approach for Predicting Flood Levels on the Great Lakes," (Unpublished report for Johnson & Anderson, Inc.) University of Michigan, Ann Arbor, Michigan, 1976

U.S. Department of the Army, Corps of Engineers, Detroit District, Personal Communication with Leonard Schutze, Hydraulics Engineer, Subject: Regulation of Great Lakes Water Levels Report, 1975

ELEVATION (FEET NGVD)

572 574 576 578 580 582

14.0 14.5 15.0 15.5 16.0 16.5 17.0 17.5 18.0

STREAM DISTANCE IN MILES ABOVE CONFLUENCE WITH LAKE ST CLAIR

CORPORATE LIMITS

ROBERTS LANDING

CONFLUENCE WITH ROBBINS DRAIN

CONFLUENCE WITH ROBBINS DRAIN OUTLET

BROADBRIDGE STATION

REACH 1 ZONE A2

CHERRY BEACH

MARTINDALE BEACH

CONFLUENCE WITH LESTER BAMMEL DRAIN

CORPORATE LIMITS

LEGEND

500 YEAR FLOOD

100 YEAR FLOOD

50 YEAR FLOOD

10 YEAR FLOOD

LOW WATER DATUM

01P

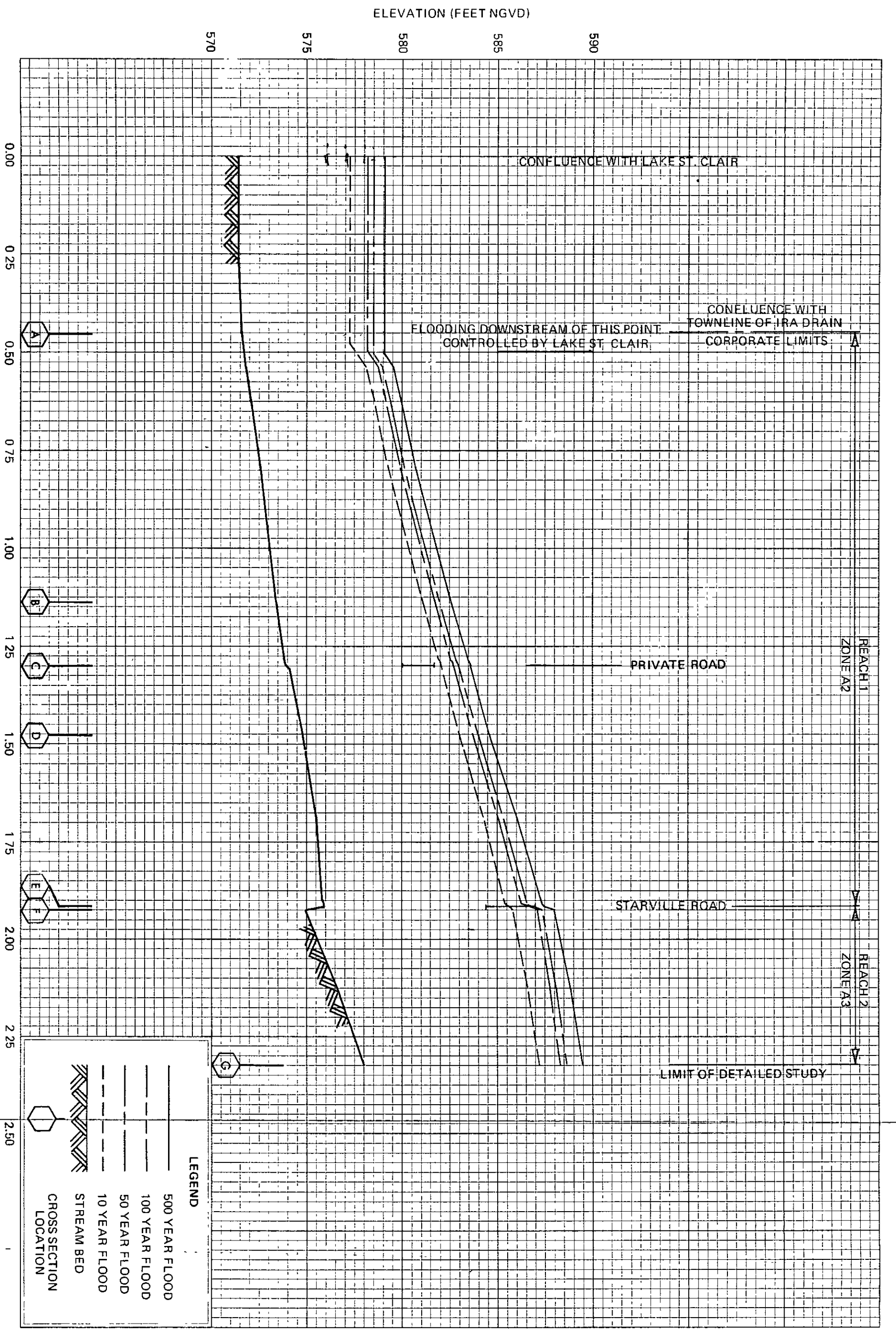
DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

TOWNSHIP OF COTTRELLVILLE, MI

(ST. CLAIR CO.)

FLOOD PROFILES

ST. CLAIR RIVER



02P

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

TOWNSHIP OF COTTRELLVILLE, MI
(ST. CLAIR CO.)

FLOOD PROFILES

BEAUBIEN CREEK

ELEVATION (FEET NGVD)

570 575 580 585

2.25 2.50 2.75 3.00 3.25 3.50 3.75 4.00

STREAM DISTANCE IN MILES ABOVE MOUTH

A B C D E F G H

ROBERTS ROAD

CONFLUENCE WITH
MARINE CITY DRAIN
(WEST CHANNEL)

PRIVATE DRIVE

REACH 1
ZONE A1

DIVERSION OF MARINE CITY DRAIN
(WEST CHANNEL)

BROADBRIDGE ROAD

LIMIT OF DETAILED STUDY

LEGEND

500 YEAR FLOOD

100 YEAR FLOOD

50 YEAR FLOOD

10 YEAR FLOOD

STREAM BED

CROSS SECTION LOCATION

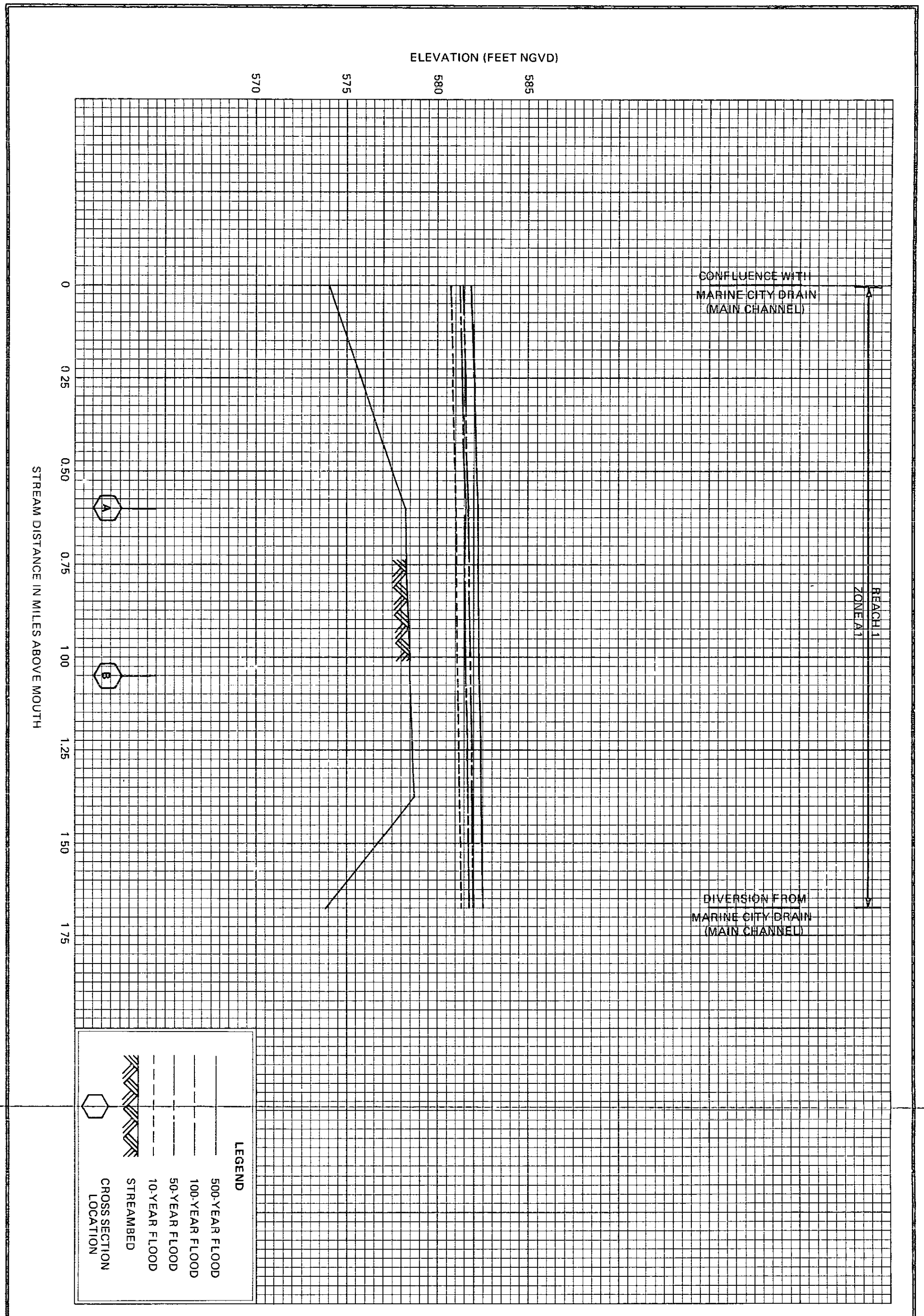
03P

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

TOWNSHIP OF COTTRELLVILLE, MI
(ST. CLAIR CO.)

FLOOD PROFILES

MARINE CITY DRAIN (MAIN CHANNEL)



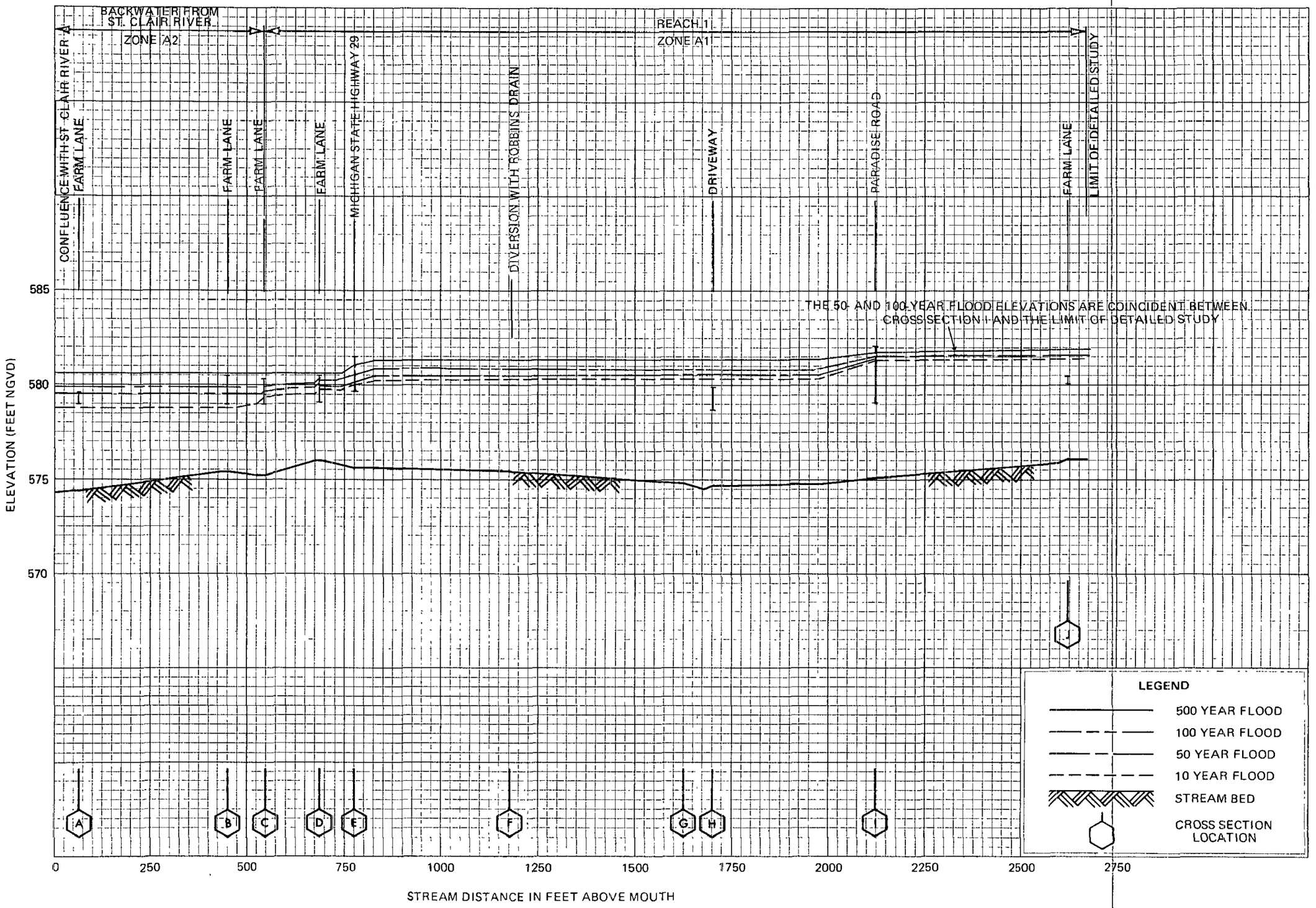
DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

TOWNSHIP OF COTTRELLVILLE, MI
(ST. CLAIR CO.)

FLOOD PROFILES

MARINE CITY DRAIN (WEST CHANNEL)

04P



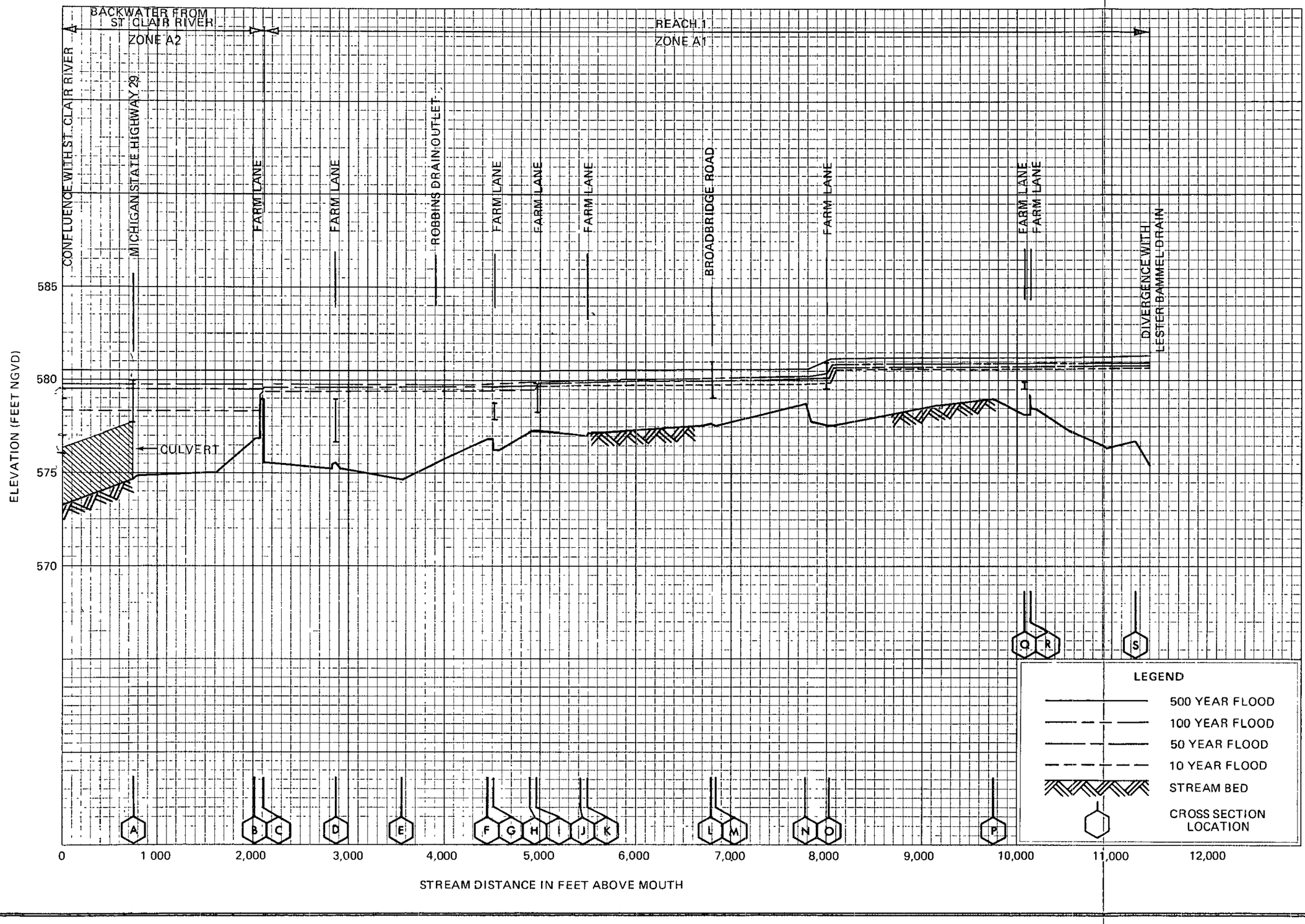
FLOOD PROFILES

LESTER BAMMEL DRAIN

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

TOWNSHIP OF COTTRELLVILLE, MI
(ST. CLAIR CO.)

05P



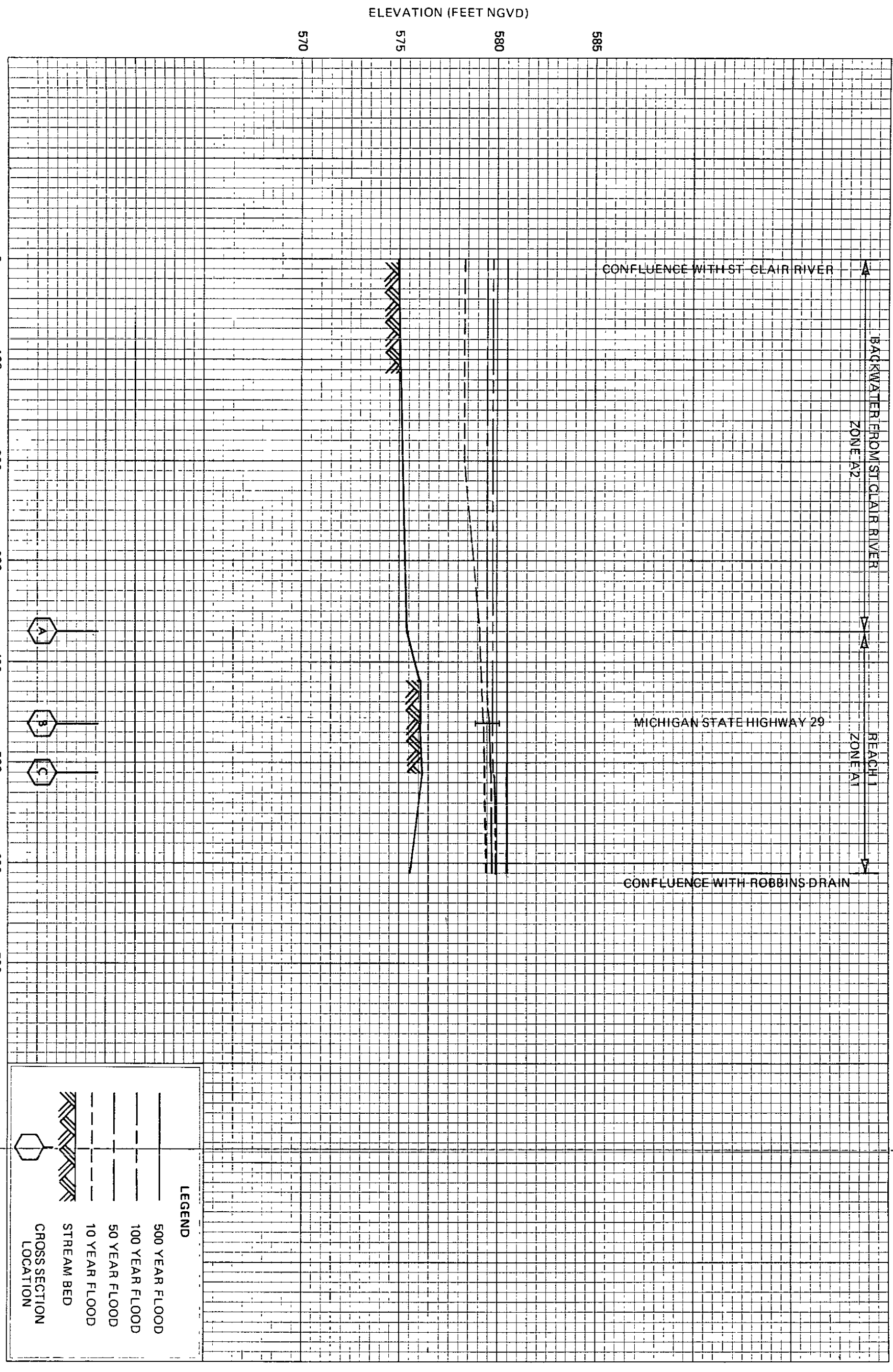
FLOOD PROFILES

ROBBINS DRAIN

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

TOWNSHIP OF COTTRELLVILLE, MI
(ST. CLAIR CO.)

06P



07P

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

TOWNSHIP OF COTTRELLVILLE, MI
(ST. CLAIR CO.)

FLOOD PROFILES

ROBBINS DRAIN OUTLET

RECEIVED
MAR 1 1977
WATER MANAGEMENT

LESTER BAMMEL DRAIN

AND

NORTH ROBBINS DRAIN

Cottrellville Township, Michigan

Hydraulic Analysis

Bibliography

SECNO Chart

Bridge Data

Project Manager - Gilbert M. Font, P.E.

HYDRAULIC ANALYSIS

Introduction

The streams being studied are the Lester Bammel Drain and the North Robbins Drain in the Township of Cottrellville, St. Clair County, Michigan. The hydraulic investigation includes a reach that extends from its confluence with the St. Clair River up to approximately 100 feet upstream of the northern limits of the Shangrila Trailer Park at Martindale Beach, and the North Robbins Drain that extends approximately 1741 feet southward from about 400 feet upstream of M-29 at its confluence with the Lester Bammel Drain, to its junction with the Robbins Drain west of Cherry Beach. This is a total distance of approximately 0.80 miles.

The 10-, 50-, 100-, and 500-year flood frequency flows used in this study have been approved by Michigan's Department of Natural Resources. These discharges were computed by the SCS method.

Method of Analysis

The water-surface profiles were computed by the HEC-2 computer program developed by the U.S. Army Corps of Engineers.[1]

All bridges and culverts have been modeled according to the HEC Training Document No. 6, Application of the HEC-2 Bridge Routines.[2] Depending on the condition of flow crossing bridges, either "normal bridge" or "special bridge" routines were used. The guidelines set forth on pages 18 through 21 in the HEC Training Document No. 6[3] were used to locate valley sections

upstream and downstream of the bridges. The same guidelines were used in modeling natural constrictions in the floodway.

The hydraulic model of the floodway was developed for the 100-year flow. The 10-, 50-, and 500-year flows were also taken into consideration whenever possible.

The cross sections used in this hydraulic model were field surveyed in the spring and fall of 1976.

Variables and Coefficients

1. The roughness factors (Manning's "n") were chosen after considering photographs taken during field surveys, observation made in field inspection trips to the studied area, and descriptions given in Chow[4] and in Water-Supply Paper No. 1849.[5] In general, the following range of values, indicative of summer conditions, was used:

Description	Manning's "n"
Channel	
a. Clear clay soil bottom	0.03 - 0.035
b. Muck bottom with medium weeds, or with some debris	0.04 - 0.05
Overbanks	
a. Grass-covered ground	0.04 - 0.05
b. Field with short to medium grass with some scattered brush or trees	0.05 - 0.08

2. Orifice discharge coefficients XKOR for pressure flow used in special bridge routines were calculated according to the equation:

$$XKOR = (1 + Ke + \frac{29.1\,\bar{n}^2 L}{R^{4/3}})$$

Where

$\bar{n}$ = composite roughness factor

L = length of constriction

R = hydraulic radius

Ke = entrance loss factor

3. Weir flow discharge coefficients COFQ were chosen from charts published by the Bureau of Public Roads based on headwater depth of constrictions. The coefficient COFQ was properly corrected if weir flow was found to be submerged.

4. Summary of XKOR and COFQ used in "special bridge" routines:

Crossing	Sec. No.	Roughness Factor	XKOR	COFQ
Private Bridge No. 1	380	0.024	1.73	2.98
Private Bridge No. 2	549	0.024	1.71	3.03
M-29 Bridge	613	0.023	1.98	2.97
Paradise Road 142' x 4' ϕ culvert	1979	0.024	4.31	3.05

5. The expansion and contraction coefficients used in this study were 0.5 and 0.3, as suggested by the HEC-2 manual.

Starting Elevations

The starting water-surface elevation at the mouth of the Lester Bammel Drain is the mean flood elevation 577.44 (USGS), based on a Johnson & Anderson, Inc., study of flood levels on the St. Clair River which was approved by the Department of Natural Resources.

The starting water-surface elevations for the North Robbins Drain are flood levels of the 10-, 50-, 100-, and 500-year flows of the Lester Bammel Drain at their confluence. This is because the flood peaks of the two drains reach the confluence at approximately the same time.

Remarks

1. Normal bridge routines were used to model the floodway at sections 1553, and 2697 of the Lester Bammel Drain, and at section 2374 of the North Robbins Drain due to high submergence. The CMP at section 2303 was treated as a natural valley section because of severe sedimentation.

2. Residents in this area were unable to recall any major floods; therefore, no reliable high-water marks were obtained.

Michigan Dept of Public Health, Trailer Park Section indicates past flooding several years ago which appeared to result from a large sand bar 50 yds up stream from St Clair River and Ice jams below the trailer park. Was this considered minor?

References

[1]U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, Users Manual, 1973.

[2]U.S. Army Corps of Engineers, Hydrologic Engineering Center, Application of HEC-2 Bridge Routines, 1974.

[3]Ibid.

[4]Chow, V. T., Open-Channel Hydraulics, pp. 101-123, McGraw-Hill, 1959.

[5]Geological Survey Water-Supply Paper No. 1849, Roughness Characteristics of Natural Channels, pp. 139-141, U.S. Government Printing Office.

Cottrellville Township
St. Clair County, MI
5555-13

Lester Bammel Drain

Cross Section	SECNO	Location
A	330	50' d/s of Private Bridge No. 1
B	397	u/s face, Private Bridge No. 1
C	561	u/s face, Private Bridge No. 2
D	651	u/s face, M-29 Bridge
E	1053	400' u/s of M-29 Bridge, at confluence
F	1503	50' d/s of 24' of 4' CMP
G	1577	u/s face, 24' of 4' CMP
H	2121	u/s face, 142' of 4' CMP
I	2697	u/s face, 24' of 4' CMP

North Robbins Drain

J	1203	150' u/s of the confluence
K	2313	u/s face, 10' of 1' CMP
L	2394	u/s face, 20' of 1' CMP
M	2794	Junction with Robbins Drain, 1000' west of M-29

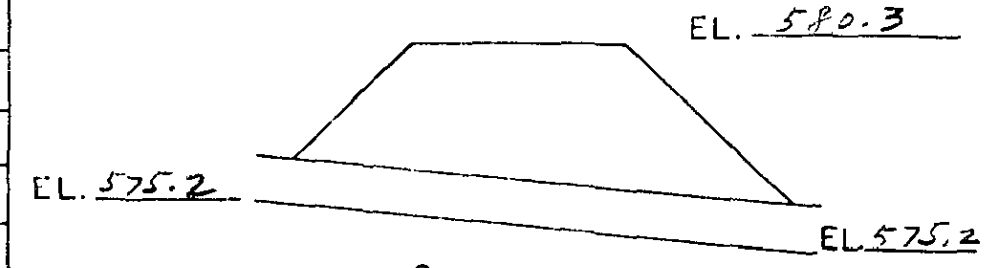
JOB NAME: Cottrellville Twp. FIS | JOB NO. 5355 | 13

WATERCOURSE: Lester Bammel Drain | CULVERT LOCATION: about 200' D/S of M-29

CULVERT DESCRIPTION: Private driveway bridge, concrete slab, 18' span 17' width

BY Wu | DATE 1/27 77

WEIR DESCRIPTION: paved, clean on both side.



A = 33.25 D = 3.7

WP = 27.72 Ke = 0.5

$\frac{29.1}{R^{4/3}}$ = 22.8328 n = 0.0243

So = 0

L = 17

Sta. 397 | Sta. 380

CALCULATIONS AND COMMENTS:

$$K_f = \frac{29.1\,(0.0243)^2\,17}{R^{4/3}} = 0.23$$

$$\Sigma KOR = 1 + Ke + K_f = 1 + 0.5 + 0.23 = 1.73$$

☆ Field sheet with sketch was not available

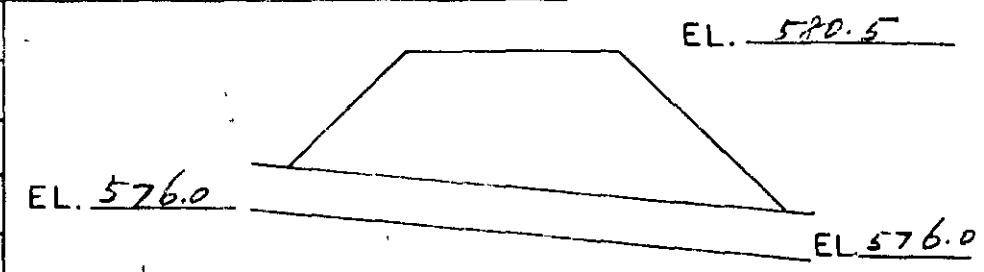
☆ Cross-section area A, wet perimeter WP, hydraulic radius R were calculated from cross-sectional plot on graph paper. This is also applied to other bridges and culverts

JOB NAME: COTTRELLVILLE TWP. FIS | JOB NO. 5535 | 13

WATERCOURSE: Lester Bammel Drain | CULVERT LOCATION: 50' D/S of M-29

CULVERT DESCRIPTION: private driveway bridge, concrete slab, 20' span 12' width | BY WW | DATE 1/27 77

WEIR DESCRIPTION: paved, concrete



A = 43.3 D = 3.1

WP = 40.39 Ke = 0.5

$\frac{29.1}{R^{4/3}}$ = 26.524 n = 0.024

So = 0

L = 12'

Sta. 561

Sta. 549

CALCULATIONS AND COMMENTS:

$K_f = \frac{29.1\,(0.024)^2/2}{R^{4/3}} = 0.21$

$\Sigma K OR = 1 + K_e + K_f = 1 + 0.5 + 0.21 = 1.71$

* Field notes with sketch was not available

Johnson & Anderson, Inc.
Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

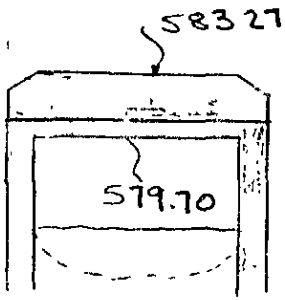
HYDRAULIC STRUCTURAL DATA BS 8

Code No. 5555-13-08

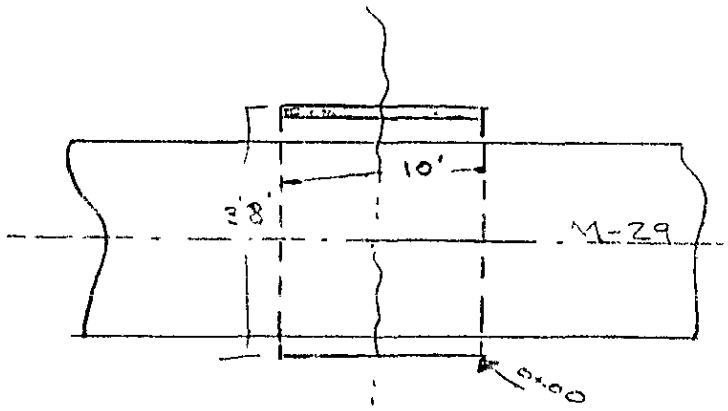
Job Name: COTTERVILLE TWP. FIS		By: J. KAPELCZAK
Date: 3-22-76	Feature: CONC. BOX CULV.	Water Course: ~~ROBERTS~~ Lester Bassmaid DRAIN
Remarks: AT DRAIN X-ING M-29 50'± SOUTH OF PARADISE ROAD		
PHOTO LOG / U31 / D32 / R33 / L34 / DSF35 / USF /		
Width of Piers:	Pier Shape:	No. of Piers: / Area:
Water Elevation: 577.5	Length:	Width of Deck: / Skew: N A

FIELD SKETCH

Profile View



Plan View



JOB NAME: Cottrellville Township EIS JOB NO. 5555 13

WATERCOURSE: Lester Bammel Drain CULVERT LOCATION: under M-29

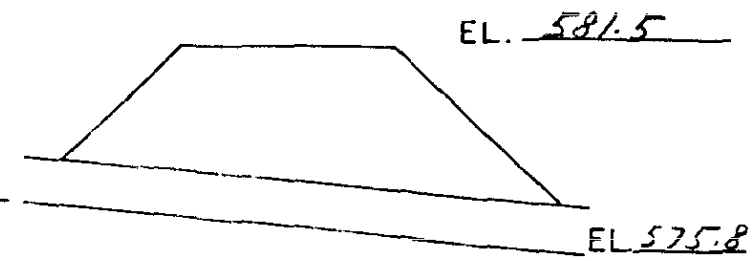
CULVERT DESCRIPTION: BY WH DATE 1/27 77

10'x38' concrete Box culvert.

Muck bottom

WEIR DESCRIPTION: paved, M-29, higher

headwall within the span



A = 35.75 D = 4.1

WP = 26.36 Ke = 0.4

$\frac{29.1}{R^{4/3}}$ = 1.50088 n = 0.023 ($\frac{\text{compos. to}}{n}$)

So = −0.00526

L = 38

Sta. 651 Sta. 613

CALCULATIONS AND COMMENTS:

$$K_f = \frac{29.1(.023)^2 38}{R^{4/3}} = 0.58$$

$$XKOR = 1 + K_e + K_f = 1 + 0.4 + 0.58$$
$$= 1.98$$

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Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

BS #9-A

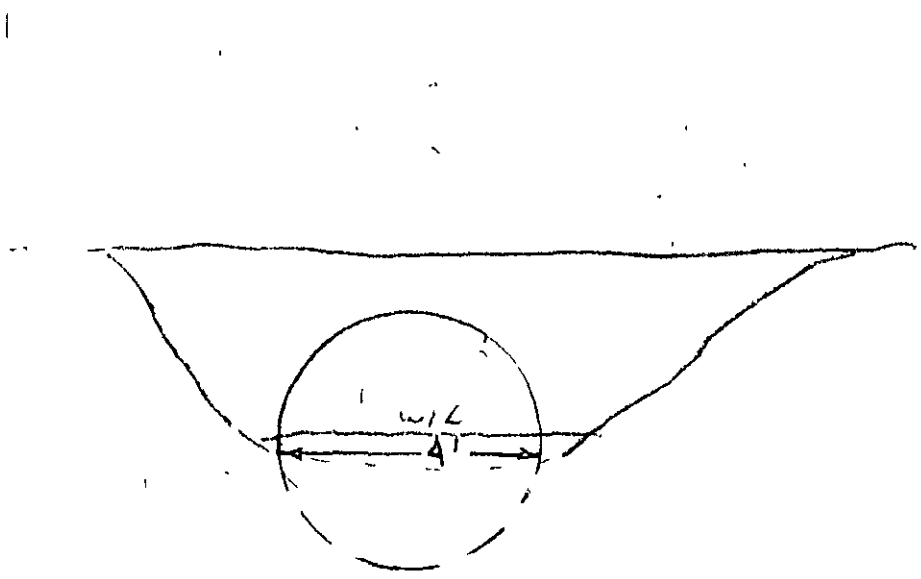
Code No. 5555 13

Job Name: COTTERVILLE TWP		By: R. MOSES
Date: 11-12-76	Feature: 4.0 CMP	Water Course: [illegible]
Remarks: [illegible] Up Dn [illegible] Right [illegible] SMALL THORN APPLES & WEEDS — LEFT OVER BANK. CUT LAWN & MOBILE HOMES		

Width of Piers: —	Pier Shape:	No. of Piers: —	Area: —
Water Elevation: 576.6	Length: 24	Width of Deck: 4	Skew: —

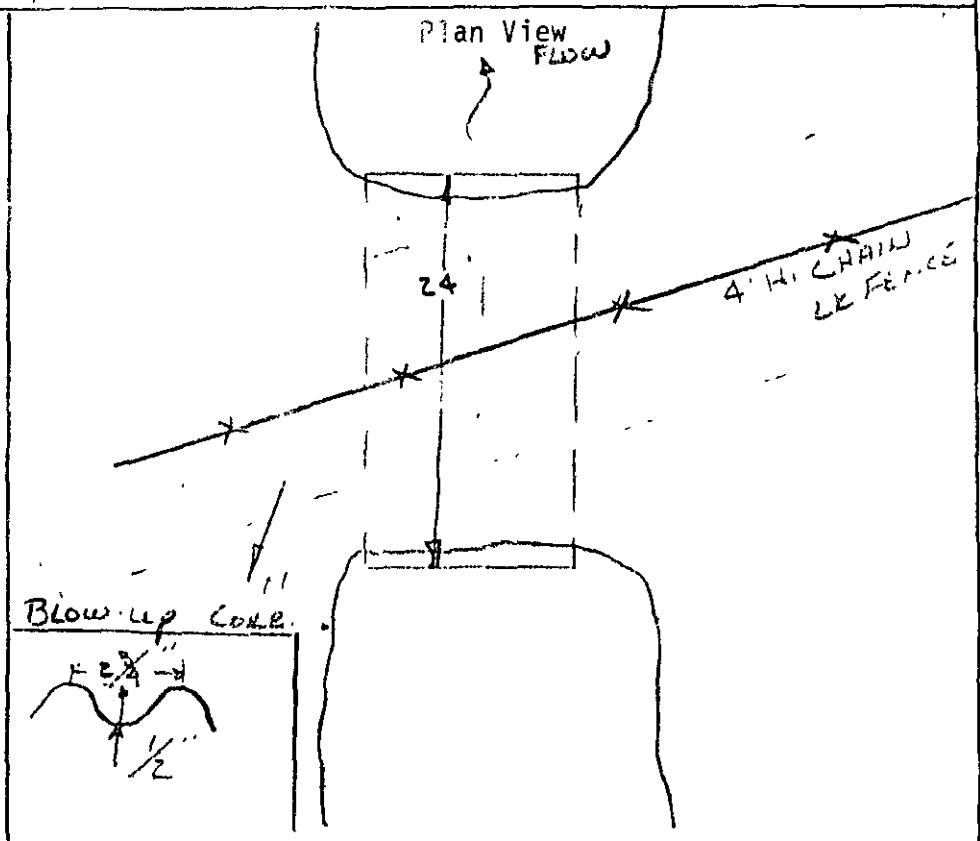
FIELD SKETCH

Profile View



coded as normal bridge
- high submergence

Plan View



Bridge Sec #9

Johnson & Anderson, Inc.
Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

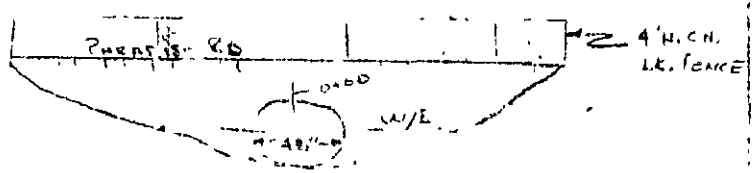
Code No. 5555-13

Job Name: Cotterville Twp F.I.S. Robert		By: J. Kapelczak
Date: Mar 23-76	Feature: 48" C.M.P	Water Course: Lester Bammel ~~Roberts~~ Drain
Remarks: Culvert under Paradise Rd in Trailer Park west of M-29		
About 04 of muck in invert		
Photo Log Roll 2 / U 2 / D 3 / R 4 / L 5 / USF 6 / DSF 7 /		

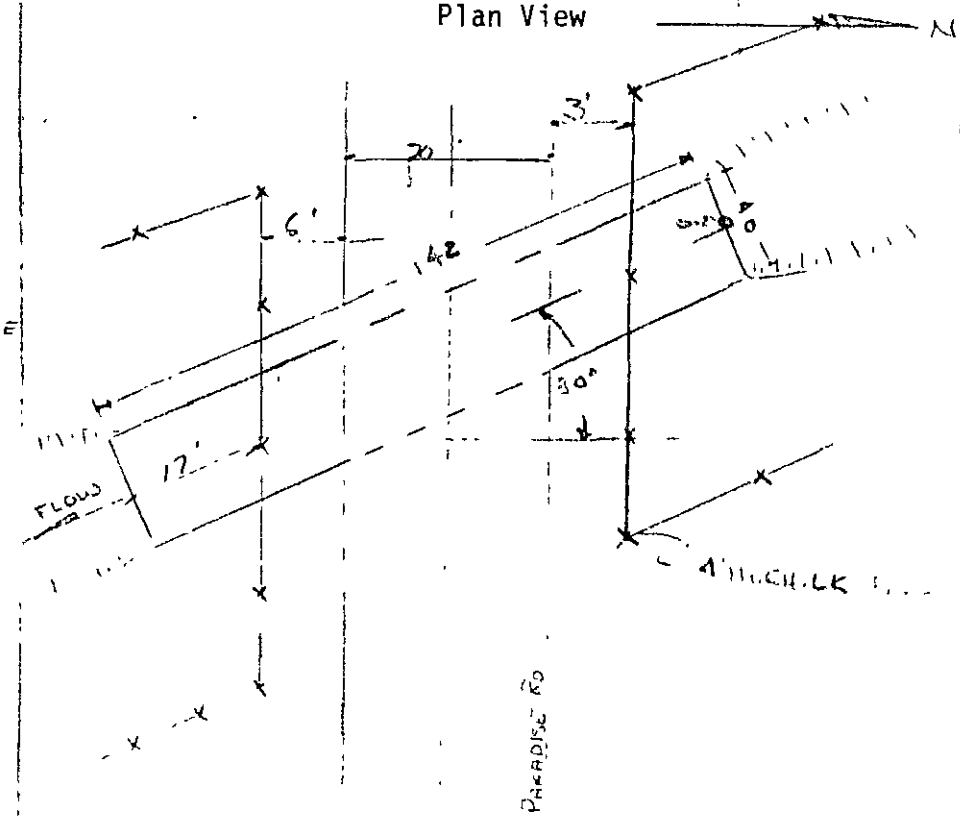
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation: 577.6	Length: 142'	Width of Deck:	Skew:

FIELD SKETCH

Profile View



Plan View



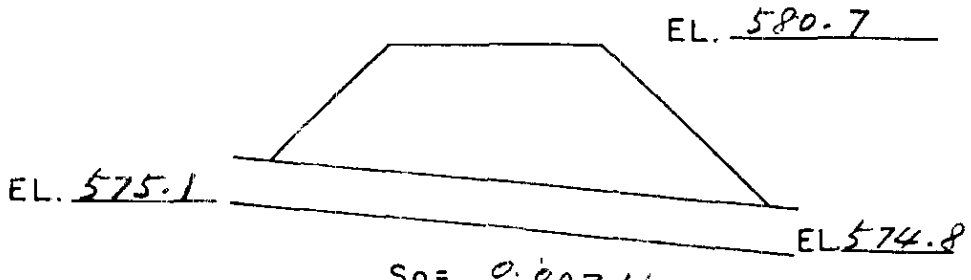
JOB NAME: COTTRELLVILLE TWP FIS JOB NO. 5555 13

WATERCOURSE: LESTER BAMMEL DRAIN CULVERT LOCATION: under Paradise Rd. Shangrila Trailer Park

CULVERT DESCRIPTION: BY WU DATE 2/22 77

142' long 4'ϕ CMP, 0.4' sediment

WEIR DESCRIPTION: paved road



A = 12.57 D = 4

WP = 12.57 Ke = 0.9

$\frac{29.1}{R^{4/3}}$ = 29.1 n = 0.024

So = 0.00211

L = 142

Sta. 2121 Sta. 1979

CALCULATIONS AND COMMENTS:

$$K_f = \frac{29.1\,(0.024)^2 \times 142}{R^{4/3}} = 2.414$$

$$XKOR = 1 + Ke + K_f = 1 + 0.9 + 2.414$$

$$= 4.314$$

★ Sedimentation was not considered, since we modeled mainly for 100-yr flow. In 100-yr flow, less than 5% of flow was carried through the culvert.

Johnson & Anderson, Inc.
Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

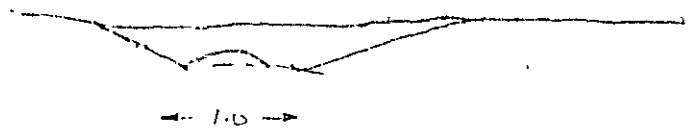
B. G. A

Code No. [illegible]

Job Name: [illegible]		By: R. Moses	
Date: 11-12-76	Feature: 12" x 12" cmp	Water Course: North Rubbin [illegible]	
Remarks: There is a [illegible] Pipe A			
Left Door Bank - Apple Trees / Bottom Grass [illegible]			
[illegible] Cut Lawns [illegible] / No Water			
Width of Piers: —	Pier Shape: -	No. of Piers: —	Area: —
Water Elevation: N/A	Length: See Sketch	Width of Deck: See Sketch	Skew:

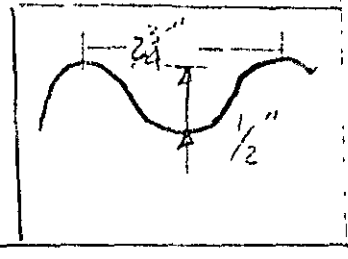
FIELD SKETCH

Profile View

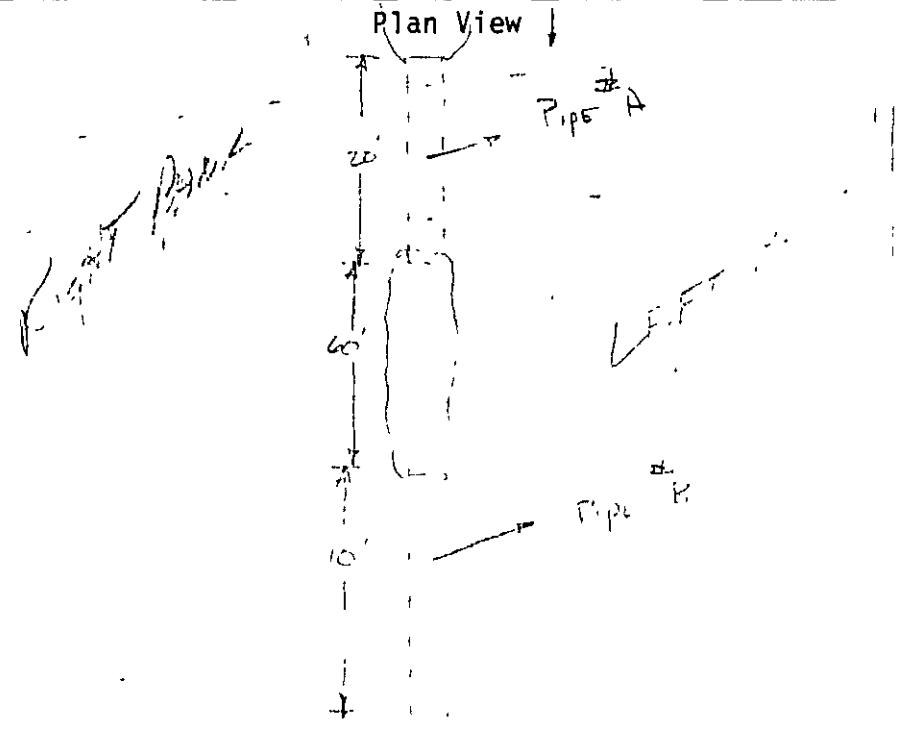


coded as normal bridge
- high submergence

coded as natural valley - severe sedimentation



Plan View



HYDRAULIC ANALYSIS

Introduction

The streams being studied are the Robbin Drain (also called Roberts Drain) and Robbin Drain Outlet in the Township of Cottrellville, St. Clair County, Michigan. For the Robbin Drain, the hydraulic investigation includes a reach that extends from its confluence with the St. Clair River up to its junction (about 3050 feet upstream of Broadbridge Road) with a tributary of the Lester Bammel Drain. This is a distance of approximately 1.86 miles. For the Robbin Drain Outlet, the investigation starts at its confluence with the St. Clair River up to its junction with the Robbin Drain, a reach of about 500 feet.

The 10-, 50-, 100-, and 500-year flood frequency flows used in this study have been approved by Michigan's Department of Natural Resources. These discharges were computed by the SCS method.

Method of Analysis

The water profiles were computed by the HEC-2 computer program developed by the U.S. Army Corps of Engineers.[1]

All bridges and culverts have been modeled according to the HEC Training Document No. 6, Application of the HEC-2 Bridge Routines.[2] Depending on the condition of flow crossing bridges, either "normal bridge" or "special bridge" routines were used. The guidelines set forth on pages 18 through 21 in the HEC Training Document No. 6[3] were used to locate valley sections

upstream and downstream of the bridges. The same guidelines were used in modeling natural constrictions in the floodway.

The hydraulic model of the floodway was developed for the 100-year flow. The 10-, 50-, and 500-year flows were also taken into consideration whenever it was possible.

The cross sections used in this hydraulic model were field surveyed in the Spring and Fall of 1976.

Variables and Coefficients

1. The roughness factors (Manning's "n") were chosen after considering photographs taken during field surveys, observations made in field inspection trips to the studied area, and descriptions given in Chow[4] and in Water-Supply Paper No. 1849.[5] In general, the following range of values, indicative of summer conditions, was used:

Description	Manning's "n"
Channel	
a. Silty clay soil bottom	0.03 - 0.035
b. Muck bottom with medium weeds, or with some debris	0.04 - 0.05
c. Muck bottom with dense weeds or clay soil bottom with tree roots	0.05 - 0.09
Overbanks	
a. Grass-covered ground	0.04 - 0.05
b. Field with short to medium grass, some brush or scattered trees	0.05 - 0.08
c. Cultivated farmland	0.04 - 0.05
d. Heavy, high weeds, brush and some trees	0.1 - 0.13

2. Orifice discharge coefficients XKOR for pressure flow used in special bridge routines were calculated according to the equation

$$XKOR = (1 + Ke + \frac{29.1\,\bar{n}^2\,L}{R^{4/3}})$$

Where

$\bar{n}$ = composite roughness factor

L = length of constriction

R = hydraulic radius

Ke = entrance loss factor

3. Weir flow discharge coefficients COFQ were chosen from charts published by the Bureau of Public Roads based on headwater depth of constrictions. The coefficient COFQ was properly corrected if weir flow was found to be submerged.

4. Summary of XKOR and COFQ used in "Special bridge" routines:

Crossing	Sec. No.	Roughness Factors	XKOR	COFQ
M-29 Bridge	01	0.0257	20.52	3.04
12' x 19' Private Bridge	5080	0.026	2.764	3.91
Broadbridge Rd. Bridge	6763	0.0224	2.51	2.98
172' of 2' comb. CMP & VIT Pipe	7845	0.027, 0.013	5.02	2.69
M-29 Bridge	400	0.0396	3.26	3.02

Starting Elevation

The starting water-surface elevation at the mouth of the Robbin Drain is the mean annual water-surface elevation 577.23 (USGS), based on a Johnson & Anderson, Inc., study of flood levels on the St. Clair River which was approved by the Department of Natural Resources. Similarly, the starting water-surface elevation of the mouth of the Robbin Drain Outlet is 577.42.

Remarks

1. The channel of Robbin Drain between sec. 0 and sec. 751 is composed of a 590 ft. long, 4 ft. x 6 ft. elliptical CMP connected to a 55 ft. long 10 ft. span bridge under the M-29 bridge making two 90 degree bends. To model the floodway, equivalent length was used for low flow and equivalent XKOR for pressure flow.

2. Normal bridge routines were used to model the floodway at sections 2836, 4516 and 5501 due to high submergence. The twin RCP at sec. 2124 was treated as a natural channel because of severe sedimentation. see schematic in this report

3. Residents in this area were unable to recall any major floods; therefore, no reliable high-water marks were obtained. ?

4.* Preliminary analysis and field trip inspection indicates that an intermittent stream (at sec. 3916, called Robbin Drain Outlet) would divert parts of the flow from Robbin Drain into the St. Clair River during flood stages.

*. . . diversion flow .) checked and approved by our Hyd. Studies Unit

References

[1]U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, Users Manual, 1973.

[2]U.S. Army Corps of Engineers, Hydrologic Engineering Center, Application of HEC-2 Bridge Routines, 1974.

[3]Ibid.

[4]Chow, V. T., Open-Channel Hydrualics, pp. 101-123, McGraw-Hill, 1959.

[5]Geological Survey Water-Supply Paper No. 1849, Roughness Characteristics of Natural Channels, pp. 139-141, U.S. Government Printing Office.

ROBBIN DRAIN

Cross Section	SECNO	Location
A	751	u/s face, M-29 10'-span bridge
B	2034	50' d/s 37' of 2' RCP culvert
C	2124	u/s face, 37' of 2' RCP twin culvert
D	2874	u/s face, 1' CMP culvert
E	3566	690' u/s 1' CMP culvert
F	4466	50' d/s 6' x 14' bridge
G	4528	u/s face, 6' x 14' bridge
H	5030	50' d/s 12' x 19' bridge
I	5101	u/s face, 12' x 19' bridge
J	5451	50' d/s 6' x 10' bridge
K	5511	u/s face, 6' x 10' bridge
L	6795	u/s face, Broadbridge Road bridge
M	6845	50' u/s Broadbridge Road bridge
N	7795	50' d/s 172' of 2' CMP & Vit clay pipe culvert
O	8019	u/s face, 172' of 2' CMP & Vit clay pipe culvert
P	9769	1750' u/s 172' of 2' CMP & Vit clay pipe culvert

Cottrellville Township
St. Clair County, MI
5555-13

ROBBIN DRAIN OUTLET

Cross Section	SECNO	Location
A	370	50' d/s M-29 bridge
B	462	u/s face, M-29 bridge
C	512	50' u/s M-29 bridge

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HYDRAULIC STRUCTURAL DATA

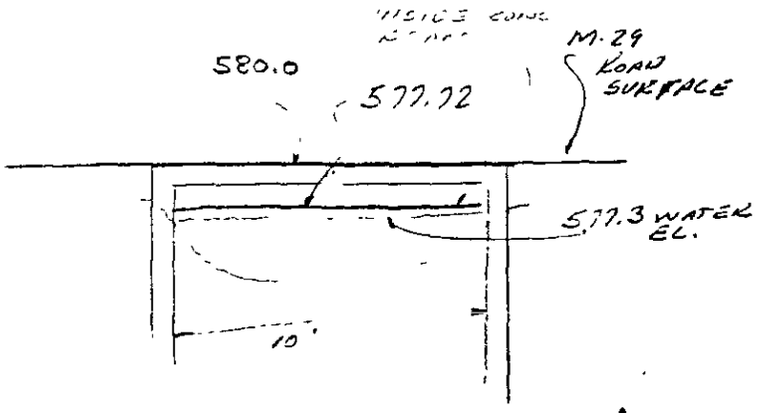
35 = 2

Code No. 5555-13-02

Job Name: CATTERVILLE TWP FIS (ROBERTS DRAIN)			By: J. KAPELCZAK
Date: 5-22-76	Feature: CONC BOX CULV		Water Course: ROBERTS DRAIN
Remarks: 1200' ± NORTH OF ROBERTS RD ON M-29 P. MARK LOCATION			
PHOTO 1 W/S 1 L 10 1 R 11 USF 12 1			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation: 577.3	Length:	Width of Deck:	Skew:

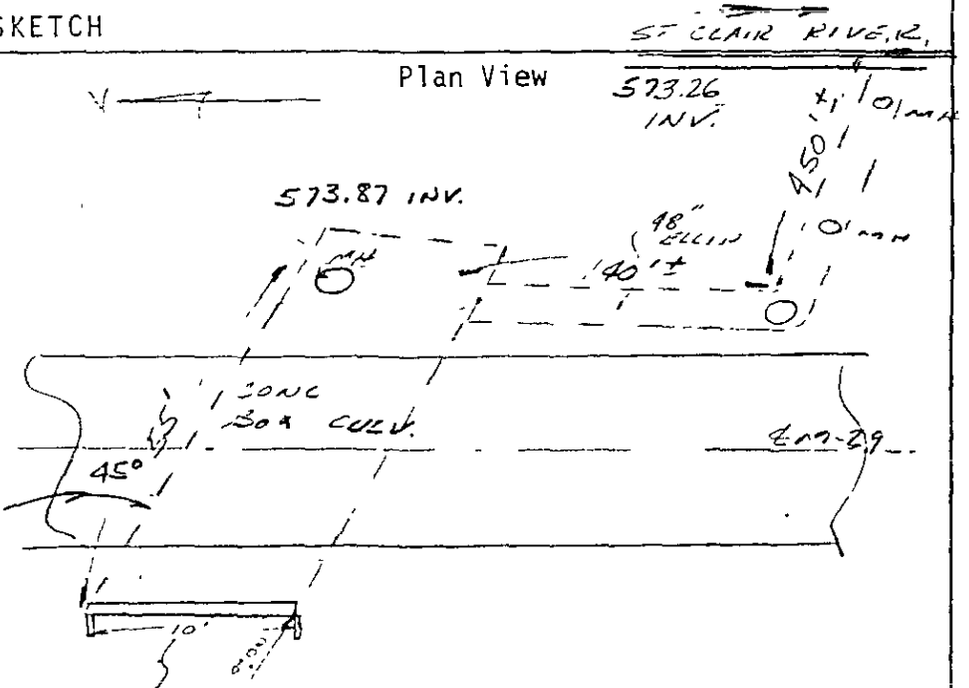
FIELD SKETCH

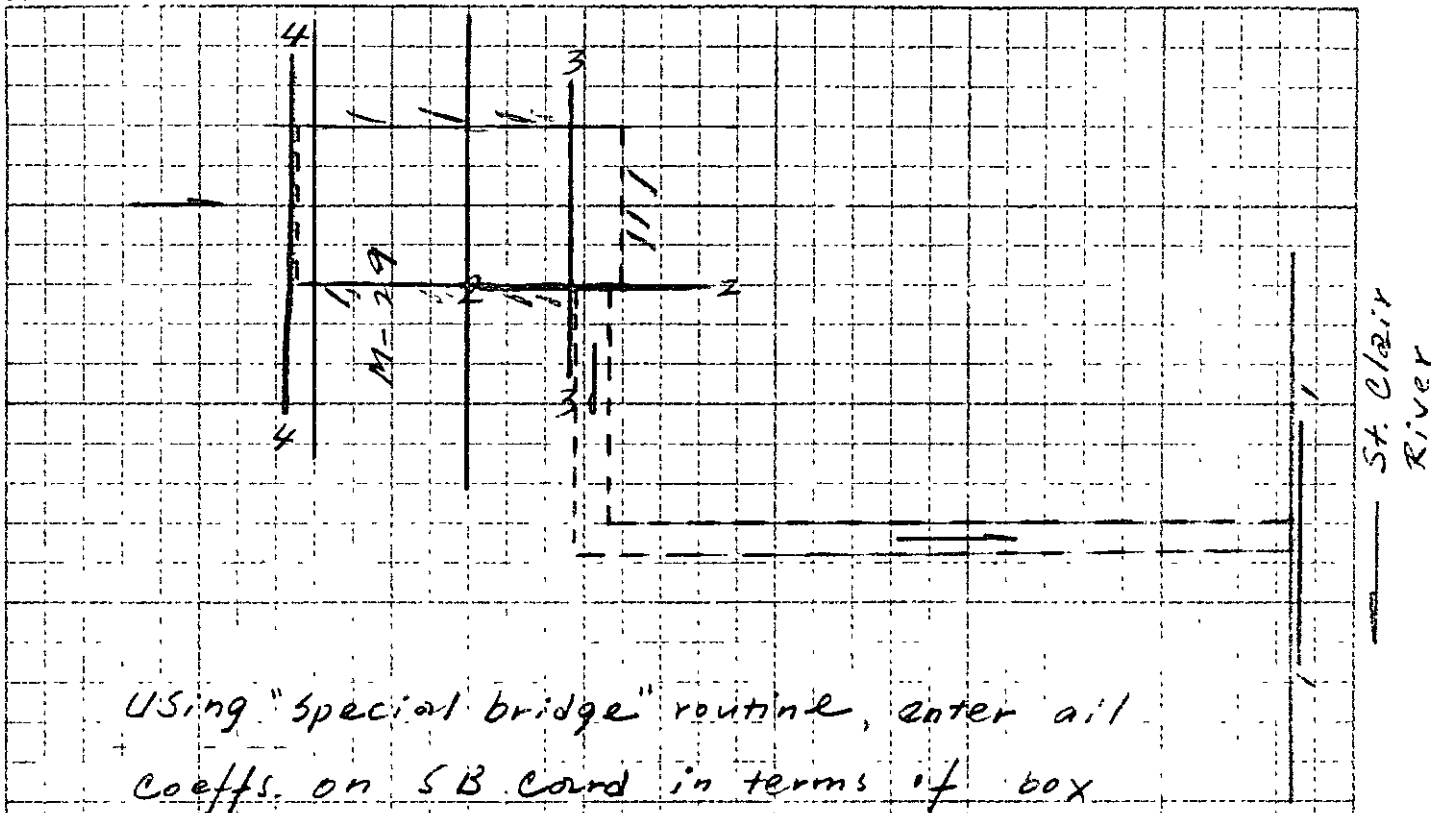
Profile View



coded as special bridge!

Plan View





Using "special bridge" routine, enter all coeffs. on SB Card in terms of box culvert geometries.

$$HL_{1-2}\ (\text{Head loss}) = XKOR_1 \times \left(\frac{V^2}{2g}\right) = XKOR_1 \frac{Q^2}{2gA^2}$$

$$HL'_{1-2} = XKOR'_1 \frac{Q^2}{2gA'^2}$$

$$\therefore HL_{1-2} = HL'_{1-2}$$

$$\text{or} \quad \frac{XKOR_1}{XKOR'_1} = \left(\frac{A}{A'}\right)^2$$

$$\therefore XKOR' = XKOR \left(\frac{A'}{A}\right)^2 \qquad A_1 = A_2$$

$$XKOR'_1 = \underset{11.557}{11.307} \left(\frac{\underset{25.825}{25.825}}{\underset{20.5}{20.5}}\right)^2 = \underset{18.54}{17.944}$$

$18.54 - 11.94 = .4$

$$\text{Total } XKOR = XKOR_2 + K_{b\,2-3} + XKOR'_1$$

$$= 17.944 + 0.1 + 2.4778$$

$$= 20.5218$$

$$20.52 + .4 \Rightarrow 20.92$$

JOHNSON & ANDERSON, INC.
CONSULTING ENGINEERS

BY WU DATE _____ JOB DESCRIPTION _____ SHEET _____ OF _____

SUBJECT _____ JOB NO. _____

ROBBIN DRAIN

M-29 10'x5.5' BOX CULVERT & 4'x6' ELLIPTICAL METAL PIPE (Between Sec. 0 and Sec. 706)

1) 4'x6' Elliptical metal pipe, 590' long, Plus 90 degree bend

a) Cross-section area = 20.5 ft², A_1

b) Hydraulic radius = 1.729 ft, $R^{4/3} = 1.316$

c) $n = 0.024$, $K_b = 0.1$, $K_e = 0.7$

d) $$K_f = \frac{29.1 \times (0.027)^2 \times 590}{R^{4/3}} = 9.507$$

$$\star \quad XKOR_1 = 1 + K_e + K_b + K_f = [1 + 0.1 + 0.7 + 9.507] = 11.307$$

2) 10'x5.5' Box Culvert

a) Cross-section area = 25.625 A_2

b) Wet perimeter = 24.358

c) Hydraulic radius = 1.060226

d) Composite $n = 0.0257$ ($n = 0.016$ for concrete, $n = 0.035$ earth, mich)

$$K_f = \frac{29.1 (.0257)^2 \times 55}{1.06023^{4/3}} = 0.9778$$

$$XKOR_2 = K_e + K_f + 1 = 1 + 0.9778 + 0.5 = 2.4778$$

3) Equivalent length of 4'x6' elliptical metal pipe

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

$$\therefore S = \left(\frac{Qn}{1.49\,AR^{2/3}}\right)^2$$

Head loss $= S \times l = S \times l'$

$$\therefore \left(\frac{Qn}{1.49\,AR^{2/3}}\right)^2 l = \left(\frac{Qn'}{1.49\,A'R'^{2/3}}\right)^2 l'$$

$$l' = l\left(\frac{n}{n'}\right)^2\left(\frac{A'R'^{2/3}}{AR^{2/3}}\right)^2$$

$$l' = 590\left(\frac{0.027}{0.0257}\right)^2\left(\frac{27.919}{26.987}\right)^2 =$$

$$= 590 \times 1.1037 \times 1.0708$$

$$= 696 \qquad 696.95$$

total length $= 696 + 55 = 751$

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Consulting Engineers
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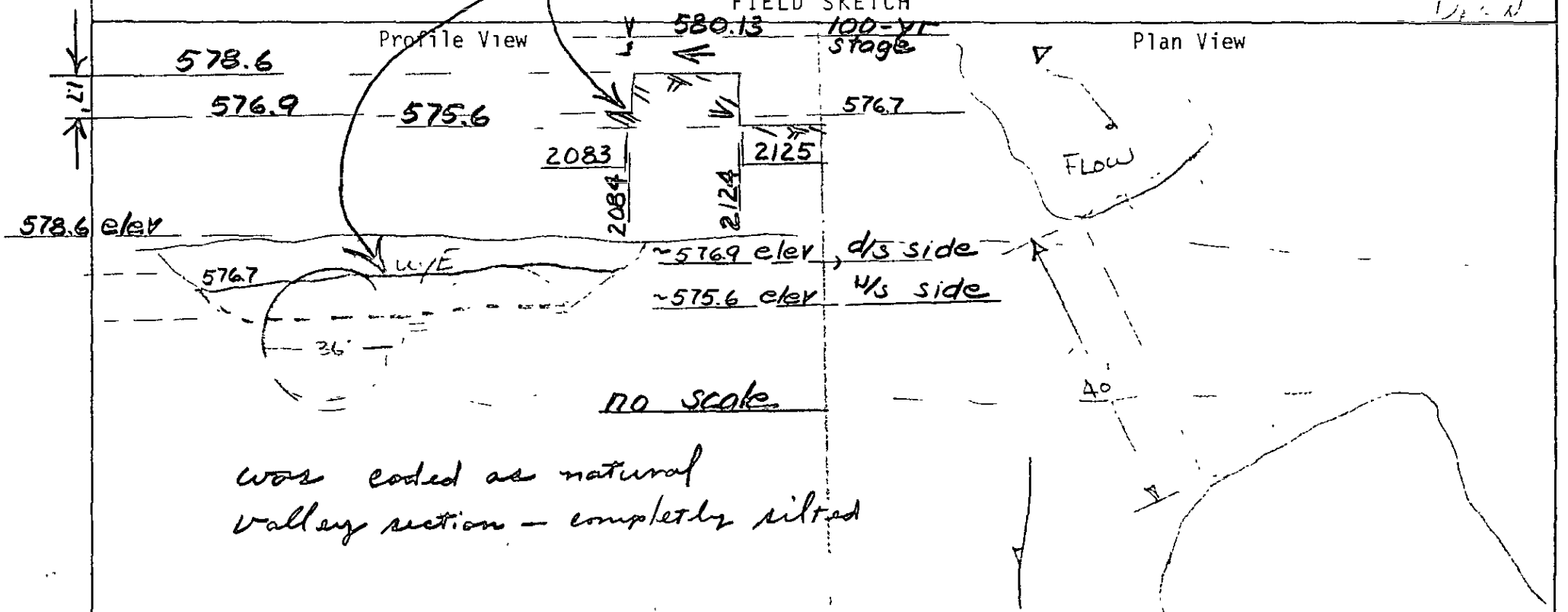
HYDRAULIC STRUCTURAL DATA

B3 #2B

Code No. 5555-13

Job Name: Cottrell Twp. F.I.S		By: R. Moses	
Date: 1-28-76	Feature: Conc Culverts (36")	Water Course:	
Remarks: Right Bank - Open Field		(Channel is not	
Left Bank - Farm Out Buildings		Skew To Culverts)	
Upstream Ends of Pipe Ice Dry *			
Width of Piers: —	Pier Shape: —	No. of Piers: —	Area: —
Water Elevation: 576.7	Length: 40	Width of Deck: 2-36"	Skew: No Skew To

FIELD SKETCH



was coded as natural valley section - completely silted

* structure treated as sill, invert taken as top rdway (culverts are neglected)

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5-A

HYDRAULIC STRUCTURAL DATA

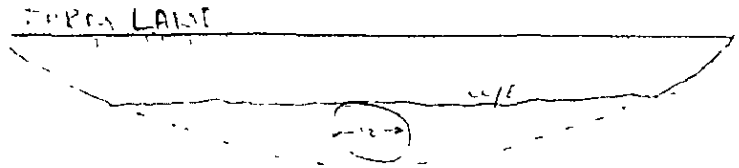
Code No. [illegible]

Job Name: [illegible]		By: J Kap[illegible]
Date: May 24-76	Feature: 12' culvert	Water Course: Roberts Drain
Remarks: Farm Land out to [illegible] (Plant)		
3000' [illegible] of [illegible] Rd [illegible] of M-29		
PHOTO LOG / U 22 / D 23 / R 24 / L 25 / USF 26 / DSF 27 / /		

Width of Piers: —	Pier Shape: —	No. of Piers: —	Area: —
Water Elevation: 577.4	Length: 38'	Width of Deck: —	Skew: —

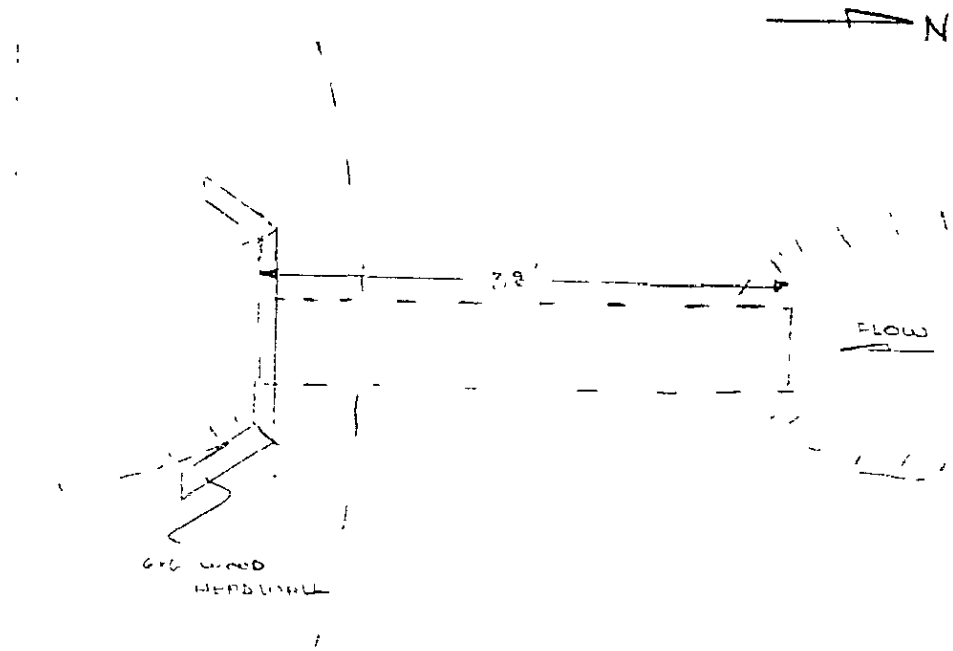
FIELD SKETCH

Profile View



Coded as normal bridge

Plan View



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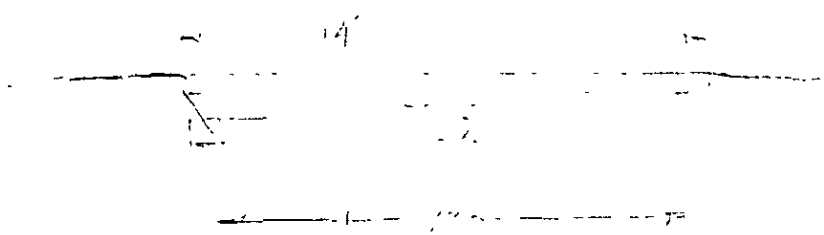
HYDRAULIC STRUCTURAL DATA

Code No. _____

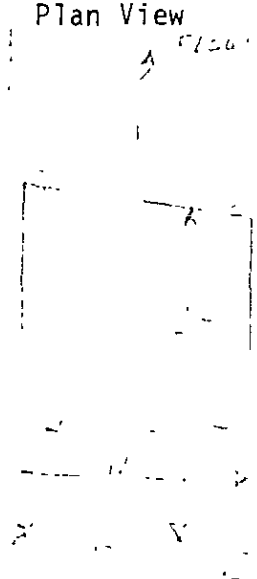
Job Name:			By:
Date:	Feature:		Water Course:
Remarks:			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View



Plan View



coded as special bridge

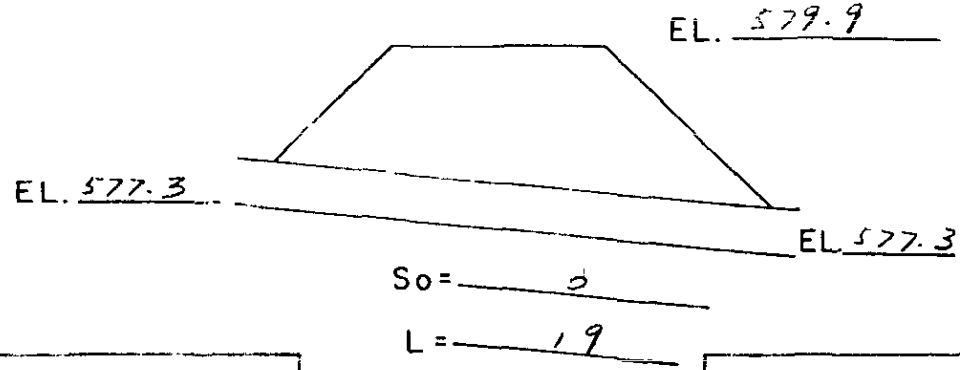
JOB NAME: Cottnellville Twp FIS JOB NO. 5535 13

WATERCOURSE: Kribbs Drain CULVERT LOCATION:

CULVERT DESCRIPTION: BY WW DATE Jan 28 77

14' x 19' concrete slab on steel bridge

WEIR DESCRIPTION: unpaved



A = 10.2 ft² D = 1

WP = 25.42 Ke = 0.5

$\frac{29.1}{R^{4/3}}$ = 98.408 n = 0.026 (composite)

So = 0

L = 19

Sta. 5101 Sta. 5080

CALCULATIONS AND COMMENTS:

composite n = .026

$$K_f = \frac{29.1\,(.026)^2 \times 19}{R^{4/3}} = \frac{(.026)^2 \times 19}{98.408} = 1.2639$$

$$\Sigma K_0 R = 1 + 0.5 + 1.2639 = 1 + K_e + K_f = 2.764$$

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HYDRAULIC STRUCTURAL DATA BS#4

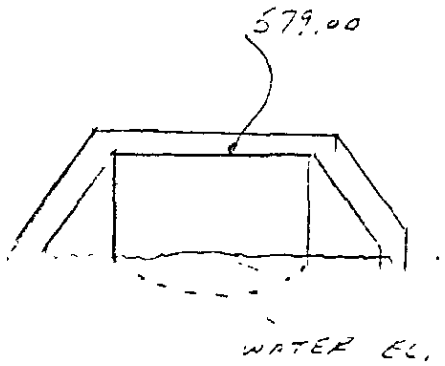
Code No. 5555-13-04

Job Name: COTTERVILLE TWP FIS		By: KAPELCZAK
Date: 3-22-76	Feature: CONC BOX - 1 V	Water Course: ROBERTS DRAIN
Remarks: ON BRIDGEPORT ROAD 540' WEST OF M-21		
PHOTO LOG / 17 U / 18 D / 19 R / 20 L / 21 U.S.F. / 22 D.S.F. /		

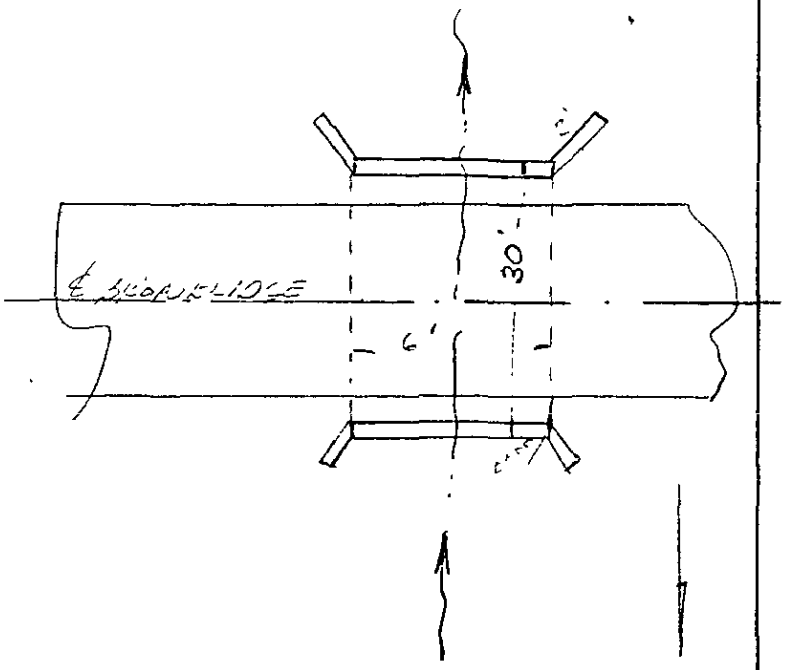
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation: 5 ±	Length:	Width of Deck:	Skew: N.A.

FIELD SKETCH

Profile View



Plan View



Coded as special bridge

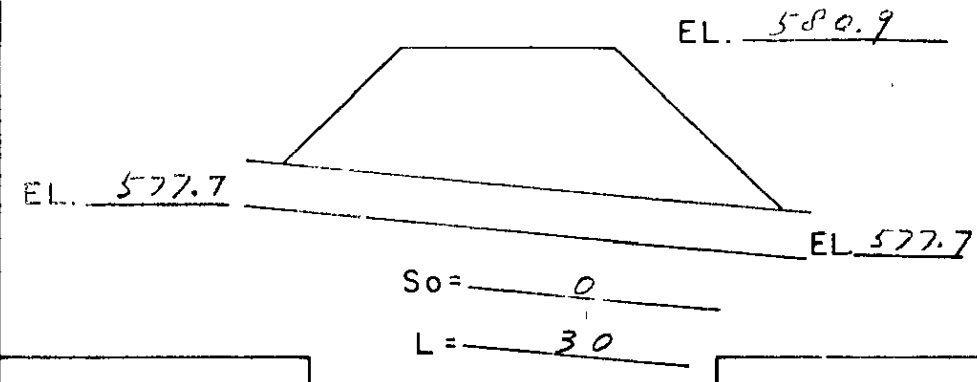
JOB NAME: Cottrellville Twp FIS | JOB NO. 55535 | 13

WATERCOURSE: Robbins Drain | CULVERT LOCATION: Broadbridge Rd.

CULVERT DESCRIPTION: | BY | DATE

Concrete 6' x 30' Box culvert

WEIR DESCRIPTION: paved



A = 7.8 D = 2.6

WP = 14.6 Ke = 0.4 (-headwall)

$\frac{29.1}{R^{4/3}}$ = 65.689 n = 0.018

So = 0

L = 30

Sta. 6795 | Sta. 6763

CALCULATIONS AND COMMENTS:

$$K_f = \frac{29.1\,(0.018)^2\,30}{R^{4/3}} = 0.638$$

$$\Sigma K_0 R = 1 + K_e + K_f = 1 + 0.4 + 0.638$$

$$= 2.038$$

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HYDRAULIC STRUCTURAL DATA

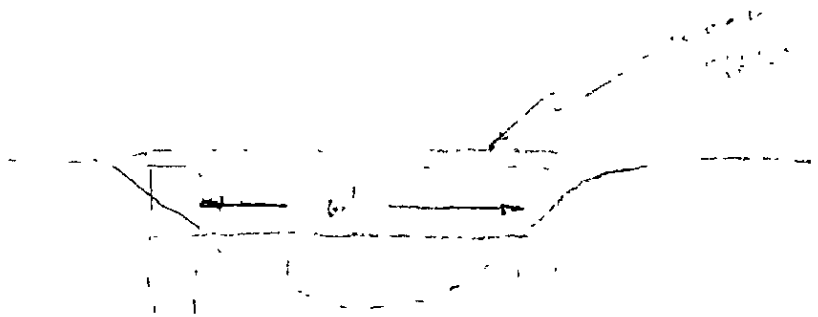
BS. #3C-A

Code No. [illegible]

Job Name: [illegible]			By: [illegible]
Date: [illegible]	Feature: [illegible]		Water Course:
Remarks: [illegible]			
Width of Piers: [illegible]	Pier Shape:	No. of Piers: [illegible]	Area: [illegible]
Water Elevation: 576.9	Length: 12'	Width of Deck: 6'	Skew: [illegible]

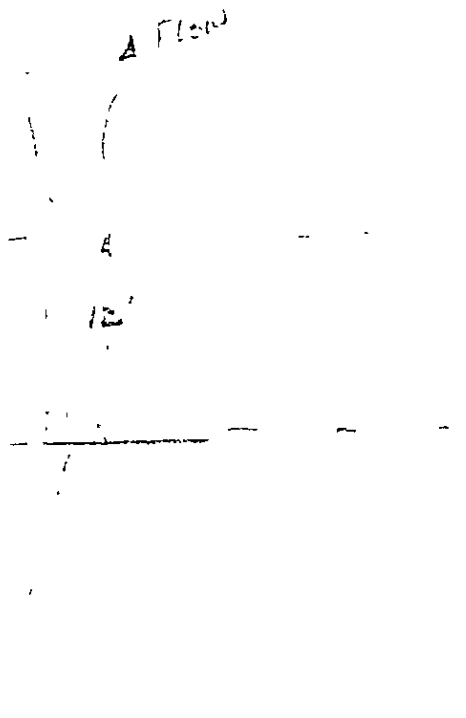
FIELD SKETCH

Profile View



coded as normal bridge.

Plan View



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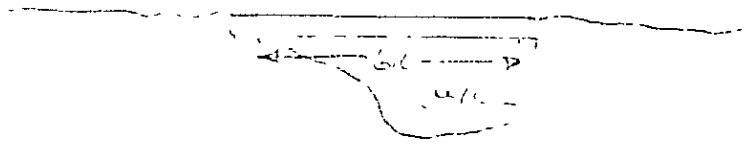
HYDRAULIC STRUCTURAL DATA

Code No. _____

Job Name:			By:
Date:	Feature:		Water Course:
Remarks:			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

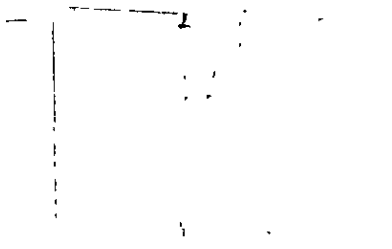
FIELD SKETCH

Profile View



coded as normal bridge

Plan View



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HYDRAULIC STRUCTURAL DATA

B.S.5A

Code No. [illegible]

Job Name: COTTERVILLE TWP. F.I.S.		By: R. MOSES
Date: 11-23-76	Feature: UPSTREAM - 24" CMP PIPE DNSTREAM - 24" VIT. PIPE	Water Course:

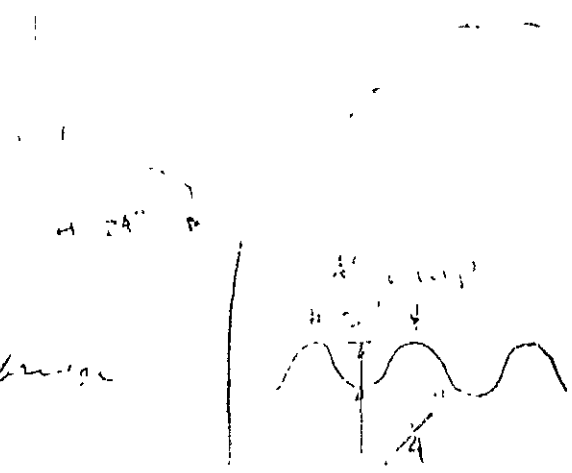
Remarks: MANY FENCE BETWEEN RD & DNSTREAM FACE FARM OUT BUILDING IN RIGHT & LEFT BANKS - CHANNEL UP & DNSTREAM HAS LOTS OF SWAMP GRASS IN IT

Width of Piers: —	Pier Shape: —	No. of Piers: —	Area:
Water Elevation: 578.8	Length: 172'	Width of Deck: 24" & 24"	Skew: 15° TO RD

FIELD SKETCH

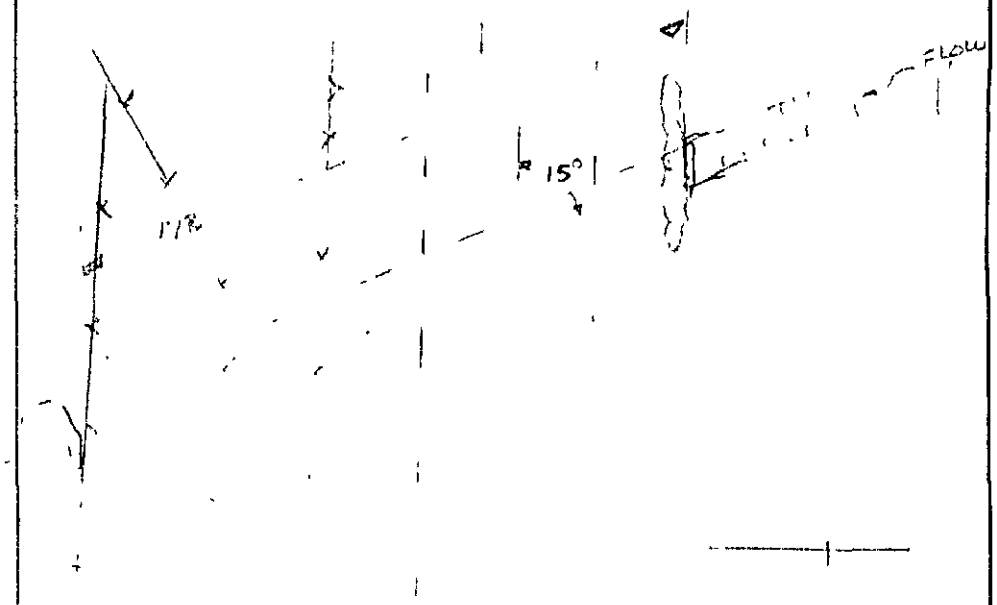
Profile View

UPSTREAM FACE



Coded as special bridge

Plan View



JOB NAME: Cottrellville TWP FIS | JOB NO. 5555 | 13

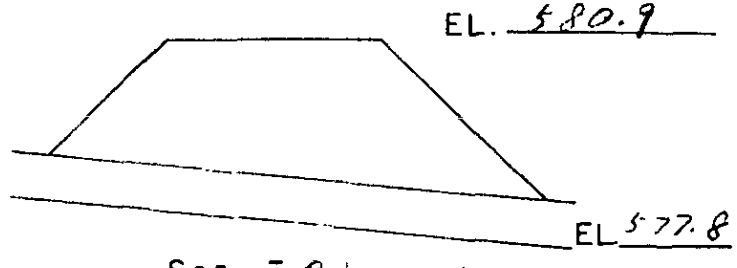
WATERCOURSE: Robbins Drain | CULVERT LOCATION: 1050' U/S Broadbridge Rd.

CULVERT DESCRIPTION: 15° skew | BY WW | DATE

24' of 2' CMP 3" x 1" corrugation

148' of 2' VIT pipe

WEIR DESCRIPTION: unpaved, Wire fence



A = 3.14 | D = 2

WP = 6.28 | Ke = 0.9

$\frac{29.1}{R^{4/3}}$ = 73.327 | n = 0.027 / 0.013

So = -0.00116

L = 172

Sta. 8019 | Sta. 7845

CALCULATIONS AND COMMENTS:

For CMP

$$K_{f_1} = \frac{29.1 (0.027)^2 \times 24}{R^{4/3}} = 1.283$$

For VIT pipe

$$K_{f_1} = \frac{29.1 (0.013)^2 \times 148}{R^{4/3}} = 1.834$$

$$\text{XHOR} = 1 + K_e + K_{f_1} + K_{f_2}$$

$$= 1 + 0.9 + 1.283 + 1.834$$

$$= 5.017$$

```
HH        HH EEEEEEEEEEEE   CCCCCCCC                22222222
HH        HH EEEEEEEEEEEE  CCCCCCCCCC              2222222222
HH        HH EE           CCC      CC            22       222
HH        HH EE           CC                                22
HH        HH EE           CC                                22
HH        HH EE           CC                                22
HH        HH EE           CC                                22
HHHHHHHHHHHH EEEEEEEEEE   CC          ----------            222
HHHHHHHHHHHH EEEEEEEEEE   CC          ----------      222222222
HH        HH EE           CC                        222222222
HH        HH EE           CC                      222
HH        HH EE           CC                      22
HH        HH EE           CC                      22
HH        HH EE           CCC      CC             22
HH        HH EEEEEEEEEEEE  CCCCCCCCCC              222222222222
HH        HH EEEEEEEEEEEE   CCCCCCCC               222222222222

IIIIIIII   NN        NN PPPPPPPPP    UU        UU TTTTTTTTTTTT
IIIIIIII   NN        NN PPPPPPPPPP   UU        UU TTTTTTTTTTTT
  II       NNN       NN PP       PPP UU        UU     TT
  II       NNN       NN PP        PP UU        UU     TT
  II       NNNN      NN PP        PP UU        UU     TT
  II       NN NN     NN PP        PP UU        UU     TT
  II       NN  NN    NN PP       PPP UU        UU     TT
  II       NN   NN   NN PPPPPPPPPP   UU        UU     TT
  II       NN    NN  NN PPPPPPPPP    UU        UU     TT
  II       NN     NN NN PP           UU        UU     TT
  II       NN      NNN PP           UU        UU     TT
  II       NN      NNN PP           UU        UU     TT
  II       NN       NN PP           UUU      UUU     TT
IIIIIIII   NN       NN PP            UUUUUUUUUU     TT
IIIIIIII   NN       NN PP             UUUUUUUU      TT

EEEEEEEEEEEE   CCCCCCCC   HH        HH   00000000
EEEEEEEEEEEE  CCCCCCCCCC  HH        HH  0000000000
EE            CCC      CC HH        HH 000      000
EE            CC         HH        HH 00        00
EE            CC         HH        HH 00        00
EE            CC         HH        HH 00        00
EE            CC         HH        HH 00        00
EEEEEEEEEE    CC         HHHHHHHHHHHH 00        00
EEEEEEEEEE    CC         HHHHHHHHHHHH 00        00
EE            CC         HH        HH 00        00
EE            CC         HH        HH 00        00
EE            CC         HH        HH 00        00
EE            CCC      CC HH        HH 000      000
EEEEEEEEEEEE  CCCCCCCCCC  HH        HH  0000000000
EEEEEEEEEEEE   CCCCCCCC   HH        HH   00000000
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FIS: Cottrellville Township

5850-13-1

Roberts Drain

4 Flows Encroached Floodway

as send to DNR 6/28/79

RECEIVED
JUN 29 1979
WATER MANAGEMENT

FORM 1411 80-PRINTED BY HOLAIT MANIFOLD FORM

```
C
C     47
C      0                    D/S FACE 4@X6@ ELLIPTICAL STEEL PIPE
C    751     A              U/S FACE, M-29 10@ SPAN BRIDGE
C    801             50FT   U/S M-29 BRIDGE, MANUFACTURED SEC.
C   1634            883FT   U/S M-29 BRIDGE, MANUFACTURED SEC.
C   2034     B      50FT   D/S RCP TWIN CULVERT
C   2084                    D/S FACE, 38@ OF 3@ RCP TWIN CULVERT, COMPLETELY SILTED
C   2124     C              U/S FACE, 37@ OF 2@ RCP TWIN CULVERT, COMPLETELY SILTED
C   2175             50FT   U/S RCP TWIN CULVERT, MANUFACTURED SEC.
C   2786             50FT   D/S 12" CMP CULVERT, MANUFACTURED SEC.
C   2836                    D/S FACE, 12" CMP CULVERT
C   2874     D              U/S FACE, 12" CMP CULVERT
C   2924             50FT   U/S 12" CMP CULVERT, MANUFACTURED SEC.
C   3566     E     690FT   U/S 12" CMP CULVERT
C   3916           1190FT   U/S 12" CMP CULVERT, (DIVERSION 1), MANUFACTURED SEC.
C   4466     F      50FT   D/S  6@ X 14@ BRIDGE
C   4516                    D/S FACE,  6@ X 14@ BRIDGE
C   4528     G              U/S FACE,  6@ X 14@ BRIDGE
C   4578             50FT   U/S  6@ X 14@ BRIDGE, MANUFACTURED SEC.
C   4908     H      50FT   D/S 12@ X 19@ BRIDGE
C   4958                    D/S FACE, 12@ X 19@ BRIDGE
C   4979     I              U/S FACE, 12@ X 19@ BRIDGE
C   5029             50FT   U/S 12@ X 19@ BRIDGE, MANUFACTURED SEC.
C   5451     J      50FT    D/S 6@ SPAN BRIDGE
C   5501                     D/S FACE, 6@ SPAN BRIDGE
C   5511     K               U/S FACE, 6@ SPAN BRIDGE
C   5561             50FT    U/S 6@ SPAN BRIDGE, MANUFACTURED SEC.
C   6713             50FT   D/S BROADBRIDGE RD. BRIDGE, MANUFACTURED SEC.
C   6763                    D/S FACE, BROADBRIDGE RD. 10@ X 30@ BRIDGE
C   6795     L              U/S FACE, BROADBRIDGE RD. 10@ X 30@ BRIDGE
C   6845     M      50FT   U/S BROADBRIDGE RD. BRIDGE
C   7795     N      50FT   D/S 172@ OF 2@ CMP AND VITEROUS CLAY PIPE
C   7845                    D/S FACE, 24@ OF 2@ CMP AND 148@ OF 2@ VIT. CLAY PIPE
C   8019     O              U/S FACE, 24@ OF 2@ CMP AND 148@ OF 2@ VIT. CLAY PIPE
C   8019                    15 DEGREES SKEW FOR PRESSURE AND WEIR FLOW
C   8069             50FT   U/S 172@ OF 2@ CMP AND VIT. CLAY PIPE, MANUFACTURED SEC.
C   9169           1150FT   U/S 172@ OF 2@ CMP AND VIT. CLAY PIPE, MANUFACTURED SEC.
C   9769     P     1750FT   U/S 172@ OF CMP AND VIT. CLAY PIPE
C  10019                    50 FT D/S 20@ OF 1@ CMP, MANUFACTURED SEC
C  10069                    D/S FACE, 20@ OF 1@ CMP
C  10089     Q              U/S FACE, 20@ OF 1@ CMP
C  10150                    D/S FACE, 10@ OF 1@ CMP
C  10160     R              U/S FACE, 10@ OF 1@ CMP
C  10210                    50 FT U/S 10@ OF 1@ CMP MANUFACTURED SEC.
C  10560                         MANUFACTURED SEC.
C  10960                    MANUFACTURED SEC.
C  11260     S              150 FT D/S THE CONFLUENCE
C  11410     T              400 FT U/S M-29 BRIDGE, (AT DIVERSION 2)
T1      COTTRELLVILLE TOWNSHIP,  FIS  J?A FILE: 5858-13  PM = OLE ANDERSON
T2      10 YEAR FLOW - ENCROACHED RUN
T3      ROBBINS DRAIN
J1            2                                                  577.23
J2     1             -1
J3    38      39      40      41      42      43       1      10      11      12
J3    25       8       4
NC 0.045   0.045  0.0270     0.6     0.8
QT     4      23      53      67     100
X1     0      11     100   106.0       0       0       0
X3    10                                                 577.3   577.3
GR 579.6       0   579.4      50   575.6     100  574.42     100  573.26   101.0
GR573.26     103  573.26   105.0   574.4   106.0   575.6     106   579.0     160
GR 579.5     200
SB     0   20.52    3.04       0      10       0   25.83       0   574.7  573.26
X1   751      2.    1090    1100     751     751     751
```

	AC				577.2	580.					
	X3	10			1090	580.5	1100	580.5	580.0	580.0	
	BT	5	1000	580.2	0	1090	580.0	577.7	1095	580.0	577.8
	BT	1100	580.0	577.9	1200	580.0	0				
	GR	582.2	0	582.0	100	581.8	200	581.5	300	581.2	400
	GR	581.2	500	580.9	600	580.7	700	580.4	800	580.4	900
1	GR	580.2	1000	577.7	1090	575.7	1090	574.7	1095	576.1	1100
2	GR	577.9	1100	580.0	1200	580.2	1300	580.4	1400	580.7	1500
3	GR	581.3	1600	581.5	1700	581.9	1800	582.5	1900		
4	NC	0.07	0.04	0.045							
5	X1	801	24	1089	1110	47	55	50			
6	X3				1089		1110				
7	GR	582.2	0	582.0	100	581.8	200	581.5	300	581.2	400
8	GR	581.2	500	580.9	600	580.7	700	580.4	800	580.4	900
9	GR	580.2	1000	578.9	1089	576.7	1090	574.9	1095	576.2	1098
10	GR	579.0	1110	580.0	1150	580.0	1300	580.4	1400	580.7	1500
11	GR	581.3	1600	581.5	1700	581.9	1800	582.5	1900		
12	NC	0.065	0.055	0.045							
13	X1	1634	17	495	515	833	833	833			
14	X3				450		550				
15	GR	581.9	0	581.5	100	581.0	200	580.0	350	579.3	450
16	GR	578.5	495	577.1	498	576.2	501	575.1	506	576.4	512
17	GR	578.2	515	579.0	550	580.5	600	580.0	650	578.9	700
18	GR	580.0	780	580.5	900						
19	NC	0.06	0.055	0.045							
20	X1	2034	20	593	624	400	400	400			
21	X3				550		670				
22	GR	582.0	0	581.8	100	581.7	200	581.1	300	580.5	400
23	GR	580.1	480	578.6	500	578.3	593	577.2	600	576.9	613
24	GR	576.9	620	578.4	624	579.2	700	580.3	750	580.8	800
25	GR	581.3	900	579.3	1000	580.5	1100	581.5	1200	582.5	1300
26	NC	0.065	0.050	0.045							
27	X1	2083				49	49	49			
28	X3	10	577.7		550		670				
29	X1	2084	17	593	624	1	1	1			
30	X3				550		670				
31	GR	582.0	0	581.8	100	581.7	200	581.1	300	580.5	400
32	GR	580.1	480	579.2	500	579.0	593	579.1	608	579.0	624
33	GR	580.3	750	580.8	800	581.3	900	579.3	1000	580.5	1100
34	GR	581.5	1200	582.0	1300						
35	X1	2124				40	40	40			
36	X3				550		670				
37	NC	0.070	0.060	0.045							
38	X1	2125	22	587	629	1	1	1			
39	X3				550		670				
40	GR	582.0	0	581.8	100	581.7	200	581.1	300	580.5	400
41	GR	580.1	480	578.6	500	578.2	587	576.7	597	575.7	605
42	GR	575.6	615	576.1	619	576.7	624	578.9	629	579.2	700
43	GR	580.3	750	580.8	800	581.3	900	579.3	1000	580.5	1100
44	GR	581.5	1200	582.0	1300						
45	X1	2175				50	50	50			
46	X3				550		670				
47	NC	0.07	0.07	0.038							
48	X1	2786	17	483	522	611	611	611			
49	X3				430		530				
50	GR	582.6	0	582.0	100	581.7	200	580.5	300	579.3	400
51	GR	578.5	483	576.2	487	575.5	494	575.3	500	576.1	508
52	GR	576.2	518	578.3	522	578.9	600	579.5	700	580.2	800
53	GR	580.4	900	580.7	1000						
54	NC	0.05	0.045	0.030							
55	X1	2835				49	49	49			
56	X3				430		580				
57	X1	2836	21	499.5	500.5	1	1	1			
	X3	10			430		580		577.6	577.60	
	BT	9	380	579.4	0	400	579.3	0	487	579.0	0
	BT	99.5	579.0	576.2	500	579.0	576.5	500.5	579.0	576 2	522

FORM 1411-CO PRINTED IN U.S.A.

FORM 1411-CO PRINTED IN ROTARY MANIFOLD FORMS

	BT	579.0	0	600	578.9	0	630	579.2	0		
	GR	582.6	0	582.0	100	581.7	200	580.0	300	579.4	380
	GR	579.3	400	578.5	483	576.7	487	576.2	499.5	575.8	499.5
	GR	575.5	500	575.8	500.5	576.2	500.5	576.7	518	578.5	522
	GR	578.9	600	579.2	630	579.9	700	580.0	800	580.4	900
	GR	580.7	1000								
1	X1	2874	21	499.5	500.5	38	38	38			
2	X3	10			430		580		579.3	578.9	
3	BT	9	380	579.5	0	400	579.3	0	487	579.0	0
4	BT	499.5	579.0	576.3	500	579.0	576.7	500.5	579.0	576.3	522
5	BT	579.0	0	600	578.9	0	670	579.6	0		
6	GR	582.6	0	582.0	100	581.7	200	580.0	300	579.5	380
7	GR	579.3	400	578.5	483	576.7	487	576.3	499.5	575.9	499.5
8	GR	575.6	500	575.9	500.5	576.2	500.5	576.7	518	578.5	522
9	GR	578.9	600	579.6	670	579.9	700	580.0	800	580.4	900
10	GR	580.7	1000								
11	X1	2875				1	1	1			
12	X3				430		580				
13	NC	0.075	0.07	0.04							
14	X1	2924	17	483	522	49	49	49			
15	X3				400		620				
16	GR	582.6	0	582.0	100	581.7	200	580.6	300	579.3	400
17	GR	578.5	483	576.2	487	575.3	494	575.6	500	576.1	508
18	GR	576.2	518	578.5	522	578.9	600	579.6	700	580.0	800
19	GR	580.4	900	580.7	1000						
20	NC	0.08	0.09	0.040							
21	X1	3566	18	360	380	642	642	642			
22	X3				300		500				
23	GR	581.8	0	580.0	60	579.7	160	579.6	260	578.3	360
24	GR	577.1	363	576.2	366	574.7	371	576.4	377	578.0	380
25	GR	578.3	460	580.4	660	580.5	860	581.0	1060	581.1	1260
26	GR	582.2	1460	583.3	1660	584.1	1860				
27	NC	0.10	0.09	0.04							
28	X1	3916	16	220	240	350	350	350			
29	X3				120		350				
30	GR	581.0	0	579.5	60	578.6	160	578.3	220	577.1	223
31	GR	576.2	226	575.6	231	576.4	237	578.0	240	578.3	300
32	GR	579.5	400	580.5	500	580.8	600	581.1	800	582.2	1000
33	GR	583.3	1200								
34	NC	0.06	0.065	0.045							
35	OT	4	32	50	58	81					
36	X1	4466	18	288	319	550	550	550			
37	X3				258		358				
38	GR	582.0	0	580.1	160	579.7	200	578.8	288	577.0	300
39	GR	576.9	309	577.0	313	579.1	319	579.2	400	579.5	500
40	GR	580.5	600	580.9	700	581.1	800	581.3	900	581.5	1000
41	GR	581.7	1100	582.0	1200	583.0	1300				
42	NC	0.065	0.062	0.042							
43	X1	4515				49	49	49			
44	X3				245		345				
45	X1	4516	21	305	311	1	1	1			
46	X3	10			245		345		577.9	577.9	
47	BT	7	200	579.7	0	260	579.0	0	305	578.8	577.0
48	BT	305	578.8	577.9	311	578.8	577.9	311	578.8	576.3	350
49	BT	579.0	0								
50	GR	582.0	0	580.1	160	579.7	200	579.0	260	578.5	303
51	GR	577.0	305	576.5	307	576.5	309	576.3	311	578.4	315
52	GR	579.0	350	579.2	400	579.5	500	580.5	600	580.9	700
53	GR	581.1	800	581.3	900	581.5	1000	581.7	1100	582.0	1200
54	GR	583.0	1300								
55	X1	4528				12	12	12			
56	X2							1			
57	X3	10			245		345		578.8	578.8	
	NC	0.068	0.065	0.050							
	X1	4529				1	1	1			
	X3				215		315				

FORM 1411-GO PRINTED BY ROTARY MANIFOLD FORMS

	X3				245		345				
	NC	0.068	0.065	0.050							
	X1	4908	15	330	375	320	340	330			
	X3				330		430				
	GR	582.3	0	581.5	100	580.7	250	579.4	330	577.7	341
1	GR	577.3	346	577.4	348	577.5	350	578.0	360	578.5	375
2	GR	579.4	500	580.0	600	580.7	800	581.5	1000	582.5	1200
3	X1	4958	13	345	357	50	50	50			
4	X3	10			250		460		579.0	579.0	
5	GR	582.3	0	581.5	100	580.9	230	579.6	340	577.8	345
6	GR	577.3	351	577.4	357	579.7	365	579.5	460	579.4	500
7	GR	580.0	600	580.7	800	581.5	1100				
8	SB		2.764	3.906		8.4		10.2	0.9	577.3	577.3
9	X1	4979				21	21	21			
10	X2			1	578.3	579.5					
11	X3				230		460		579.5	579.5	
12	BT	7	230	580.9	0	340	579.6	0	345	579.9	577.8
13	BT	345	579.9	578.3	357	579.9	578.3	357	579.9	577.4	460
14	BT	579.5	0								
15	NC	0.13	0.13	0.05							
16	X1	5029				50	50	50			
17	X3				345		450				
18	QT	4	17	26	32	47					
19	X1	5451	15	440	460	432	410	422			
20	X3				440		600				
21	GR	582.5	0	581.4	100	580.7	250	580.3	320	578.9	440
22	GR	577.4	443	577.1	448	577.6	454	578.5	460	578.5	520
23	GR	579.3	620	580.5	720	581.5	820	582.5	920	583.0	1020
24	NC	0.11	0.11	0.052							
25	X1	5500				49	49	49			
26	X3				440		600				
27	X1	5501	18	446	453	1	1	1			
28	X3	10			440		600		578.8	578.8	
29	BT	9	250	580.7	0	320	580.3	0	446	579.1	0
30	BT	447	579.1	578.8	453	579.2	578.8	453	579.2	577.4	540
31	BT	578.5	0	640	579.3	0	720	580.5	0		
32	GR	582.5	0	581.4	100	580.7	250	580.3	320	579.1	446
33	GR	578.8	447	578.0	449	577.4	450	577.2	451	577.3	452
34	GR	577.4	453	578.8	453	578.5	540	579.3	640	580.5	720
35	GR	581.5	820	582.5	920	583.0	1020				
36	X1	5511				10	10	10			
37	X2							1			
38	X3	10			440		600		579.2	579.2	
39	X1	5512	18	440	460	1	1	1			
40	X3				440		600				
41	GR	582.5	0	581.4	100	580.7	250	580.3	320	579.1	440
42	GR	578.8	447	578.0	449	577.4	450	577.2	451	577.3	452
43	GR	577.4	453	578.5	460	578.7	540	579.3	640	580.5	720
44	GR	581.5	820	582.5	920	583.0	1020				
45	X1	5561				49	49	49			
46	X3				440		600				
47	QT	4	2.0	3.1	5.7	12.6					
48	X1	6713	17	530	549	1150	1150	1150			
49	X3				530		549				
50	GR	582.8	0	581.9	30	581.8	230	582.2	430	579.5	530
51	GR	578.4	534	577.6	539	578.0	543	579.1	549	579.0	630
52	GR	580.3	830	580.8	1030	581.0	1230	581.0	1430	581.6	1630
53	GR	582.8	1830	583.2	2030						
54	NC	0.11	0.11	0.050							
55	X1	6763	19	532	542	50	50	50			
56	X3	10			500		625		580.9	580.9	
57	GR	582.7	0	582.5	40	582.0	240	581.4	440	581.1	500
	GR	579.0	525	578.4	532	577.7	534	577.7	537	577.7	540
	GR	578.3	542	579.0	549	580.0	600	580.6	625	580.9	640
	GR	581.	8.0	581.7	10.0	581.9	12.0	582.1	1 40		

FORM 1411-00 PRINTED BY ROTARY MANIFOLD FORMS

		0	2.053	2.98	0	6.0	0	766	0	577.7	577.7
	X1	6795				32	32	32			
	X2			1	579.0	580.9					
	X3	10			499.9		625.1		580.9	580.9	
	BT	8	500	581.1	0	534	581.0	0	534	581.0	577.7
	BT	534	581.0	579.0	540	581.0	579.0	540	581.0	578.3	540
1	BT	581.0	0	625	580.6	0					
2	NC	0.045	0.043	0.040							
3	X1	6845	17	530	549	50	50	50			
4	X3				530		549				
5	GR	582.8	0	581.9	30	581.8	230	582.2	430	579.5	530
6	GR	578.1	534	577.6	539	578.0	543	579.1	549	579.0	600
7	GR	580.3	830	580.8	1030	581.0	1230	581.0	1430	581.6	1630
8	GR	582.8	1830	583.2	2030						
9	NC	0.050	0.050	0.045							
10	X1	7795	15	577	594	950	950	950			
11	X3				577		594				
12	GR	584.5	0	583.5	100	582.7	200	582.5	300	582.3	385
13	GR	581.5	485	579.5	577	579.4	583	578.8	585	579.5	588
14	GR	579.6	594	581.6	700	581.1	800	582.5	900	583.5	1000
15	NC	0.050	0.050	0.040							
16	X1	7845	15	575	597	50	50	50	0.966		
17	X3	10			500		650		580.3	580.3	
18	GR	584.5	0	583.5	100	582.7	200	582.5	300	582.3	385
19	GR	581.5	485	579.0	575	578.2	579	577.8	585	578.1	592
20	GR	579.3	597	581.6	700	581.1	800	582.5	900	583.5	1000
21	SB		5.02	2.69		1.52		3.03		579.1	578.5
22	X1	8019	18	579	595	174	174	174	0.966		
23	X2			1	579.6	580.9				0.966	
24	X3	10			499.1		650.1		580.9	580.9	
25	BT	7	500	581.4	0	584	580.9	578.0	584	580.9	579.2
26	BT	585	580.9	579.6	586	580.9	579.2	586	580.9	578.0	650
27	BT	581.2	0								
28	GR	584.5	0	583.5	100	582.7	200	582.5	300	582.3	385
29	GR	581.4	500	579.4	579	578.4	582	578.0	584	577.6	585
30	GR	578.0	586	578.0	590	579.8	595	581.2	650	581.6	700
31	GR	581.1	800	582.5	800	583.5	1000				
32	NC	0.050	0.050	0.045							
33	X1	8069				50	50	50			
34	X3				579		595				
35	QT	4	20	30	37	60					
36	X1	9169	19	995	1005	1100	1100	1100			
37	X3				990		1100				
38	GR	584.7	0	583.7	95	583.6	295	582.9	495	582.4	695
39	GR	581.3	895	579.6	995	579.0	998	578.7	1000	578.7	1002
40	GR	579.6	1005	580.5	1095	581.2	1295	581.5	1495	581.8	1695
41	GR	581.7	1895	582.4	2095	582.7	2295	582.8	2495		
42	X1	9769	19	995	1005	650	650	650			
43	X3				990		1100				
44	GR	585.0	0	584.0	95	583.9	295	583.2	495	582.7	695
45	GR	581.6	895	579.9	995	579.3	998	579.0	1000	579.0	1002
46	GR	579.9	1005	580.5	1095	581.2	1295	581.5	1495	581.8	1695
47	GR	582.0	1895	582.7	2095	583.0	2295	583.1	2495		
48	X1	10019	18	690	709	250	250	250			
49	X3				650		800				
50	GR	585.1	0	584.2	200	582.7	400	581.3	600	579.9	690
51	GR	578.8	695	578.3	700	578.3	704	579.6	709	580.4	800
52	GR	581.3	900	581.4	1000	581.6	1200	581.8	1400	582.0	1600
53	GR	582.7	1800	583.0	2000	583.1	2200				
54	NC	0.060	0.063	0.040							
55	X1	10068	20	690	709	49	49	49			
56	X3				650		800				
57	GR	585.1	0	584.2	200	582.7	400	581.3	600	579.9	690
	GR	578.9	695	578.8	699.5	578.2	700	578.8	700.5	578.9	704
	GR	579.6	709	580.4	800	581.3	900	581.4	1000	581.6	1200
	GR	581.8	1400	58[illegible]	1600	582.7	1800	583.0	2000	583.1	2200

FORM 1411 GO PRINTED BY ROTARY MANIFOLD FORMS.

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                                                  1         1         1
X3    10                      650                 800                 579.6     579.6
BT    12        600     581.3       0     690     579.9       0     699.5     579.7         0
BT 699.5      579.7     578.8   699.5     579.7     579.3     700     579.7     579.5     700.5
BT 579.7      579.3     700.5   579.7     578.8     700.5   579.7       0       709     579.6
BT     0        800     580.4       0     900     581.4       0
X1 10089                                  20        20        20
X2                                                  1
X3    10                      650                 800                 579.6     579.6
X1 10090                                   1         1         1
X3                            650                 800
X1 10149      18      690     709      59       59        59
X3                            650                 800
GR 585.1       0      584.2   200     582.7     400     581.3     600     579.9     690
GR 578.8     695      578.5   700     578.5     704     579.6     709     580.4     800
GR 581.3     900      581.4  1000     581.6    1200     581.8    1400     582.0    1600
GR 582.7    1800      583.0  2000     583.1    2200
X1 10150      18      694     707         1         1         1
X3                            650                 800
GR 585.2       0      584.2   200     582.7     400     581.8     600     579.3     694
GR 579.2     697      579.2   700     579.2     703     579.3     707     580.4     800
GR 580.5     900      581.2  1000     581.5    1200     581.8    1400     582.0    1600
GR 582.6    1800      583.0  2000     583.1    2200
X1 10160                                  10        10        10
X3                            650                 800
X1 10161      18      694     707         1         1         1
X3    10  579.2               650                 800
GR 585.2       0      584.0   200     582.7     400     581.8     600     579.1     694
GR 578.7     697      578.5   700     578.7     703     579.2     707     580.4     800
GR 580.5     900      581.2  1000     581.2    1200     581.8    1400     582.0    1600
GR 582.6    1800      582.9  2000     583.1    2200
X1 10210                                  49        49        49
X3                            650                 800
X1 10560      17      700     712      350       350       350
X3                            650                 800
GR 585.0       0      584.0   200     583.4     400     582.0     600     579.8     700
GR 577.6     703      577.9   705     577.3     707     579.8     712     580.5     800
GR 581.2    1000      581.5  1200     581.8    1400     582.0    1600     582.6    1800
GR 582.9    2000      583.1  2200
NC 0.060  0.060     0.045
X1 10960      18      530     545      400       400       400
X3                            500                 650
GR 585.0       0      584.0   130     583.0     230     581.8     430     579.5     530
GR 576.7     533      576.4   535     577.3     537     579.0     540     579.5     545
GR 580.3     630      581.1   830     581.4    1030     581.7    1230     581.9    1430
GR 582.6    1630      582.9  1830     583.0    2030
X1 11260      15      389     415      200       300       300
X3                            350                 600
GR 583.8       0      583.5   100     582.8     200     581.3     300     578.4     389
GR 577.1     392      576.8   400     577.1     411     579.4     415     579.6     500
GR 579.5     600      579.2   700     579.1     800     580.2     900     580.6    1000
NC 0.045  0.045     0.040
X1 11410      16      350     380      250       120       150
X3                            300                 500
GR 584.8       0      580.5   200     579.7     250     578.4     350     577.1     352
GR 576.4     356      575.9   360     575.4     364     575.7     370     576.1     374
GR 577.0     377      578.1   380     579.0     430     579.5     530     580.0     680
GR 581.8     800
EJ
T1      COTTRELLVILLE TOWNSHIP,  FIS  J?A FILE: 5858-13  PM = OLE ANDERSON
T2      50 YEAR FLOW
T3      ROBBINS DRAIN
J1            3                                                          577.23
J2    2             -1
T1      COTTRELLVILLE TOWNSHIP,  FIS  J?A FILE: 5858-13  PM = OLE ANDERSON
T2      100 YEAR FLO
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T3      ROBBINS DRAIN
J1              4                                                   577.23
J2     3                -1
T1      COTTRELLVILLE TOWNSHIP,  FIS  J?A FILE: 5858-13  PM = OLE ANDERSON
T2      500 YEAR FLOW
T3      ROBBINS DRAIN
J1              5                                                   577.23
J2    15                -1


ER
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FORM 1411-GD PRINTED BY ROTARY MANIFOLD FORMS, PRINTED IN U.S.A.

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
**************************************************

C
T1      COTTRELLVILLE TOWNSHIP, FIS  J?A FILE: 5858-13  PM = OLE ANDERSON
T2      10 YEAR FLOW   ENCROACHED RUN
T3      ROBBINS DRAIN

J1  ICHECK     INQ        NINV       IDIR       STRT       METRIC     HVINS      Q          WSEL       FQ
         0.         2.         0.         0.  0.000000       0.00       0.0        0.    577.230      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     39.000     40.000     41.000     42.000     43.000      1.000     10.000     11.000     12.000

      25.000      8.000      4.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000

NC       .045       .045       .027       .600       .800      0.000      0.000      0.000      0.000      0.000
QT      4.000     23.000     53.000     67.000    100.000      0.000      0.000      0.000      0.000      0.000

                        O/S FACE 4@X6@ ELLIPTICAL STEEL PIPE

X1      0.000     11.000    100.000    106.000      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    577.300    577.300      0.000
GR    579.600      0.000    579.400     50.000    575.600    100.000    574.420    100.000    573.260    101.000
GR    573.260    103.000    573.260    105.000    574.400    106.000    575.600    106.000    579.000    160.000
GR    579.500    200.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
SB      0.000     20.520      3.040      0.000     10.000      0.000     25.830      0.000    574.700    573.260

                  A          U/S FACE, M-29 10@ SPAN BRIDGE

X1    751.000     24.000   1090.000   1100.000    751.000    751.000    751.000      0.000      0.000      0.000
X2      0.000      0.000      1.000    577.720    580.000      0.000      0.000      0.000      0.000      0.000
X3     10.000      0.000      0.000   1090.000    580.500   1100.000    580.500    580.000    580.000      0.000
BT      5.000   1000.000    580.200      0.000   1090.000    580.000    577.700   1095.000    580.000    577.800
BT   1100.000    580.000    577.900   1200.000    580.000      0.000      0.000      0.000      0.000      0.000
GR    582.200      0.000    582.000    100.000    581.800    200.000    581.500    300.000    581.200    400.000
GR    581.200    500.000    580.900    600.000    580.700    700.000    580.400    800.000    580.400    900.000
GR    580.200   1000.000    577.700   1090.000    575.700   1090.000    574.700   1095.000    576.100   1100.000
GR    577.900   1100.000    580.000   1200.000    580.200   1300.000    580.400   1400.000    580.700   1500.000
GR    581.300   1600.000    581.500   1700.000    581.900   1800.000    582.500   1900.000      0.000      0.000
NC       .070       .040       .045      0.000      0.000      0.000      0.000      0.000      0.000      0.000

                  50FT  U/S M-29 BRIDGE, MANUFACTURED SEC.

X1    801.000     24.000   1089.000   1110.000     47.000     55.000     50.000      0.000      0.000      0.000
X3      0.000      0.000      0.000   1089.000      0.000   1110.000      0.000      0.000      0.000      0.000
GR    582.200      0.000    582.000    100.000    581.800    200.000    581.500    300.000    581.200    400.000
GR    581.200    500.000    580.900    600.000    580.700    700.000    581.400    800.000    580.400    900.000
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GR	580.200	1000.000	578.900	1089.000	576.700	1090.000	574.900	1095.000	576.200	1098.000
GR	579.000	1110.000	580.000	1150.000	580.000	1300.000	580.400	1400.000	580.700	1500.000
GR	581.300	1600.000	581.500	1700.000	581.900	1800.000	582.500	1900.000	0.000	0.000
NC	.065	.055	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000

883FT U/S M-29 BRIDGE, MANUFACTURED SEC.

X1	1634.000	17.000	495.000	515.000	833.000	833.000	833.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	450.000	0.000	550.000	0.000	0.000	0.000	0.000
GR	581.900	0.000	581.500	100.000	581.000	200.000	580.000	350.000	579.300	450.000
GR	578.500	495.000	577.100	498.000	576.200	501.000	575.100	506.000	576.400	512.000
GR	578.200	515.000	579.000	550.000	580.500	600.000	580.000	650.000	578.900	700.000
GR	580.000	780.000	580.500	900.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.060	.055	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000

B 50FT D/S RCP TWIN CULVERT

X1	2034.000	20.000	593.000	624.000	400.000	400.000	400.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	550.000	0.000	670.000	0.000	0.000	0.000	0.000
GR	582.000	0.000	581.800	100.000	581.700	200.000	581.100	300.000	580.500	400.000
GR	580.100	480.000	578.600	500.000	578.300	593.000	577.200	600.000	576.900	613.000
GR	576.900	620.000	578.400	624.000	579.200	700.000	580.300	750.000	580.800	800.000
GR	581.300	900.000	579.300	1000.000	580.500	1100.000	581.500	1200.000	582.500	1300.000
NC	.065	.050	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	2083.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	10.000	577.700	0.000	550.000	0.000	670.000	0.000	0.000	0.000	0.000

D/S FACE, 38@ OF 3@ RCP TWIN CULVERT, COMPLETELY SILTE

X1	2084.000	17.000	593.000	624.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	550.000	0.000	670.000	0.000	0.000	0.000	0.000
GR	582.000	0.000	581.800	100.000	581.700	200.000	581.100	300.000	580.500	400.000
GR	580.100	480.000	579.200	500.000	579.000	593.000	579.100	608.000	579.000	624.000
GR	580.300	750.000	580.800	800.000	581.300	900.000	579.300	1000.000	580.500	1100.000
GR	581.500	1200.000	582.000	1300.000	0.000	0.000	0.000	0.000	0.000	0.000

C U/S FACE, 37@ OF 2@ RCP TWIN CULVERT, COMPLETELY SILTE

X1	2124.000	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	550.000	0.000	670.000	0.000	0.000	0.000	0.000
NC	.070	.060	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	2125.000	22.000	587.000	629.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	550.000	0.000	670.000	0.000	0.000	0.000	0.000
GR	582.000	0.000	581.800	100.000	581.700	200.000	581.100	300.000	580.500	400.000
GR	580.100	480.000	578.600	500.000	578.200	587.000	576.700	597.000	575.700	605.000
GR	575.600	615.000	576.100	619.000	576.700	624.000	578.900	629.000	579.200	700.000
GR	580.300	750.000	580.800	800.000	581.300	900.000	579.300	1000.000	580.500	1100.000
GR	581.500	1200.000	582.000	1300.000	0.000	0.000	0.000	0.000	0.000	0.000

50FT U/S RCP TWIN CULVERT, MANUFACTURED SEC.

X1	2175.000	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	550.000	0.000	670.000	0.000	0.000	0.000	0.000
NC	.070	.070	.038	0.000	0.000	0.000	0.000	0.000	0.000	0.000

50FT D/S 12" CMP CULVERT, MANUFACTURED SEC.

X1	2786.000	17.000	483.000	522.000	611.000	611.000	611.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	430.000	0.000	530.000	0.000	0.000	0.000	0.000
GR	582.600	0.000	582.000	100.000	581.700	200.000	580.500	300.000	579.300	400.000
GR	578.500	483.000	576.200	487.000	575.500	494.000	575.300	500.000	576.100	508.000
GR	576.200	518.000	578.300	522.000	578.900	600.000	579.500	700.000	580.200	800.000
GR	580.400	900.000	580.700	1000.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.050	.045	.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	2835.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	430.000	0.000	580.000	0.000	0.000	0.000	0.000

D/S FACE, 12" CMP CULVERT

X1	2836.000	21.000	499.500	500.500	1.000	1.000	1.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	430.000	0.000	580.000	0.000	577.600	577.600	0.000
BT	9.000	380.000	579.400	0.000	400.000	579.300	0.000	487.000	579.000	0.000
BT	499.500	579.000	576.200	500.000	579.000	576.500	500.500	579.000	576.200	522.000
BT	579.000	0.000	600.000	578.900	0.000	630.000	579.200	0.000	0.000	0.000
GR	582.600	0.000	582.000	100.000	581.700	200.000	580.000	300.000	579.400	380.000
GR	579.300	400.000	578.500	483.000	576.700	487.000	576.200	499.500	575.800	499.500
GR	575.500	500.000	575.800	500.500	576.200	500.500	576.700	518.000	578.500	522.000
GR	578.900	600.000	579.200	630.000	579.900	700.000	580.000	800.000	580.400	900.000
GR	580.700	1000.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D U/S FACE, 12" CMP CULVERT

X1	2874.000	21.000	499.500	500.500	38.000	38.000	38.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	430.000	0.000	580.000	0.000	579.300	578.900	0.000
BT	9.000	380.000	579.500	0.000	400.000	579.300	0.000	487.000	579.000	0.000
BT	499.500	579.000	576.300	500.000	579.000	576.700	500.500	579.000	576.300	522.000
BT	579.000	0.000	600.000	578.900	0.000	670.000	579.600	0.000	0.000	0.000
GR	582.600	0.000	582.000	100.000	581.700	200.000	580.000	300.000	579.500	380.000
GR	579.300	400.000	578.500	483.000	576.700	487.000	576.300	499.500	575.900	499.500
GR	575.600	500.000	575.900	500.500	576.200	500.500	576.700	518.000	578.500	522.000
GR	578.900	600.000	579.600	670.000	579.900	700.000	580.000	800.000	580.400	900.000
GR	580.700	1000.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	2875.000	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	430.000	0.000	580.000	0.000	0.000	0.000	0.000
NC	.075	.070	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

50FT U/S 12" CMP CULVERT, MANUFACTURED SEC.

X1	2924.000	17.000	483.000	522.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	400.000	0.000	620.000	0.000	0.000	0.000	0.000
GR	582.600	0.000	582.000	100.000	581.700	200.000	580.600	300.000	579.300	400.000
GR	578.500	483.000	576.200	487.000	575.300	494.000	575.600	500.000	576.100	508.000
GR	576.200	518.000	578.500	522.000	578.900	600.000	579.600	700.000	580.000	800.000
GR	580.400	900.000	580.700	1000.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.080	.090	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

E 690FT U/S 12" CMP CULVERT

X1	3566.000	18.000	360.000	380.000	642.000	642.000	642.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	300.000	0.000	500.000	0.000	0.000	0.000	0.000
GR	581.800	0.000	580.000	60.000	579.700	160.000	579.600	260.000	578.300	360.000
GR	577.100	363.000	576.200	366.000	574.700	371.000	576.400	377.000	578.000	380.000
GR	578.300	460.000	580.400	660.000	580.500	860.000	581.000	1060.000	581.100	1260.000
GR	582.200	1660.000	583.300	1660.000	583.100	1860.000	0.000	0.000	0.000	0.000

FORM 1411 DO PRINTED BY ROTARY MANIFOLD FORM

NC	.100	.090	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1190FT U/S 12" CMP CULVERT, (DIVERSION 1), MANUFACTURED SEC.

X1	3916.000	16.000	220.000	240.000	350.000	350.000	350.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	120.000	0.000	350.000	0.000	0.000	0.000	0.000
GR	581.000	0.000	579.500	60.000	578.600	160.000	578.300	220.000	577.100	223.000
GR	576.200	226.000	575.600	231.000	576.400	237.000	578.000	240.000	578.300	300.000
GR	579.500	400.000	580.500	500.000	580.800	600.000	581.100	300.000	582.200	1000.000
GR	583.300	1200.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.060	.065	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	4.000	32.000	50.000	58.000	81.000	0.000	0.000	0.000	0.000	0.000

F 50FT D/S 6@ X 14@ BRIDGE

X1	4466.000	18.000	288.000	319.000	550.000	550.000	550.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	258.000	0.000	358.000	0.000	0.000	0.000	0.000
GR	582.000	0.000	580.100	160.000	579.700	200.000	578.800	288.000	577.000	300.000
GR	576.900	309.000	577.000	313.000	579.100	319.000	579.200	400.000	579.500	500.000
GR	580.500	600.000	580.900	700.000	581.100	800.000	581.300	900.000	581.500	1000.000
GR	581.700	1100.000	582.000	1200.000	583.000	1300.000	0.000	0.000	0.000	0.000
NC	.065	.062	.042	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	4515.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	245.000	0.000	345.000	0.000	0.000	0.000	0.000

D/S FACE, 6@ X 14@ BRIDGE

X1	4516.000	21.000	305.000	311.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	245.000	0.000	345.000	0.000	577.900	577.900	0.000
BT	7.000	200.000	579.700	0.000	260.000	579.000	0.000	305.000	578.800	577.000
BT	305.000	578.800	577.900	311.000	578.800	577.900	311.000	578.800	576.300	350.000
BT	579.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	582.000	0.000	580.100	160.000	579.700	200.000	579.000	260.000	578.500	303.000
GR	577.000	305.000	576.500	307.000	576.500	309.000	576.300	311.000	578.400	315.000
GR	579.000	350.000	579.200	400.000	579.500	500.000	580.500	600.000	580.900	700.000
GR	581.100	800.000	581.300	900.000	581.500	1000.000	581.700	1100.000	582.000	1200.000
GR	583.000	1300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

G U/S FACE, 6@ X 14@ BRIDGE

X1	4528.000	0.000	0.000	0.000	12.000	12.000	12.000	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	245.000	0.000	345.000	0.000	578.800	578.800	0.000
NC	.068	.065	.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	4529.000	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	245.000	0.000	345.000	0.000	0.000	0.000	0.000

50FT U/S 6@ X 14@ BRIDGE, MANUFACTURED SEC.

X1	4578.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	245.000	0.000	345.000	0.000	0.000	0.000	0.000
NC	.068	.065	.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000

H 50FT D/S 12@ X 19@ BRIDGE

X1	4908.000	15.000	330.000	375.000	320.000	3 .0.000	330.0 0	0.000	0.000	0.000

FORM 1411 OD PRINTED BY ROTARY MANIFOLD FORM
PRINTED IN U.S.A.

X3	0.000	0.000	0.000	350.000	0.000	450.000	0.000	0.000	0.000	0.000
GR	582.300	0.000	581.500	100.000	580.700	250.000	579.400	330.000	577.700	341.000
GR	577.300	346.000	577.400	348.000	577.500	350.000	578.000	360.000	578.500	375.000
GR	579.400	500.000	580.000	600.000	580.700	800.000	581.500	1000.000	582.500	1200.000

D/S FACE, 12@ X 19@ BRIDGE

X1	4958.000	13.000	345.000	357.000	50.000	50.000	50.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	250.000	0.000	460.000	0.000	579.000	579.000	0.000
GR	582.300	0.000	581.500	100.000	580.900	230.000	579.600	340.000	577.800	345.000
GR	577.300	351.000	577.400	357.000	579.700	365.000	579.500	460.000	579.400	500.000
GR	580.000	600.000	580.700	800.000	581.500	1100.000	0.000	0.000	0.000	0.000
SB	0.000	2.764	3.906	0.000	8.400	0.000	10.200	.900	577.300	577.300

I U/S FACE, 12@ X 19@ BRIDGE

X1	4979.000	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	578.300	579.500	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	230.000	0.000	460.000	0.000	579.500	579.500	0.000
BT	7.000	230.000	580.900	0.000	340.000	579.600	0.000	345.000	579.900	577.800
BT	345.000	579.900	578.300	357.000	579.900	578.300	357.000	579.900	577.400	460.000
BT	579.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.130	.130	.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000

50FT U/S 12@ X 19@ BRIDGE, MANUFACTURED SEC.

X1	5029.000	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	345.000	0.000	450.000	0.000	0.000	0.000	0.000
QT	4.000	17.000	26.000	32.000	47.000	0.000	0.000	0.000	0.000	0.000

J 50FT D/S 6@ SPAN BRIDGE

X1	5451.000	15.000	440.000	460.000	432.000	410.000	422.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	440.000	0.000	600.000	0.000	0.000	0.000	0.000
GR	582.500	0.000	581.400	100.000	580.700	250.000	580.300	320.000	578.900	440.000
GR	577.400	443.000	577.100	448.000	577.600	454.000	578.500	460.000	578.500	520.000
GR	579.300	620.000	580.500	720.000	581.500	820.000	582.500	920.000	583.000	1020.000
NC	.110	.110	.052	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	5500.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	440.000	0.000	600.000	0.000	0.000	0.000	0.000

D/S FACE, 6@ SPAN BRIDGE

X1	5501.000	18.000	446.000	453.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	440.000	0.000	600.000	0.000	578.800	578.800	0.000
BT	9.000	250.000	580.700	0.000	320.000	580.300	0.000	446.000	579.100	0.000
BT	447.000	579.100	578.800	453.000	579.200	578.800	453.000	579.200	577.400	540.000
BT	578.500	0.000	640.000	579.300	0.000	720.000	580.500	0.000	0.000	0.000
GR	582.500	0.000	581.400	100.000	580.700	250.000	580.300	320.000	579.100	446.000
GR	578.800	447.000	578.000	449.000	577.400	450.000	577.200	451.000	577.300	452.000
GR	577.400	453.000	578.800	453.000	578.500	540.000	579.300	640.000	580.500	720.000
GR	581.500	820.000	582.500	920.000	583.000	1020.000	0.000	0.000	0.000	0.000

K U/S FACE, 6@ SPAN BRIDGE

X1	5511.000	0.000	0.000	0.000	10.000	10.000	10.000	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	440.000	0.000	600.000	0.000	579.200	579.200	0.000

X1	5512.000	18.000	440.000	460.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	440.000	0.000	600.000	0.000	0.000	0.000	0.000
GR	582.500	0.000	581.400	100.000	580.700	250.000	580.300	320.000	579.100	440.000
GR	578.800	447.000	578.000	449.000	577.400	450.000	577.200	451.000	577.300	452.000
GR	577.400	453.000	578.500	460.000	578.700	540.000	579.300	640.000	580.500	720.000
GR	581.500	820.000	582.500	920.000	583.000	1020.000	0.000	0.000	0.000	0.000

50FT U/S 6@ SPAN BRIDGE, MANUFACTURED SEC.

X1	5561.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	440.000	0.000	600.000	0.000	0.000	0.000	0.000
QT	4.000	2.000	3.100	5.700	12.600	0.000	0.000	0.000	0.000	0.000

50FT D/S BROADBRIDGE RD. BRIDGE, MANUFACTURED SEC.

X1	6713.000	17.000	530.000	549.000	1150.000	1150.000	1150.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	530.000	0.000	549.000	0.000	0.000	0.000	0.000
GR	582.800	0.000	581.900	30.000	581.800	230.000	582.200	430.000	579.500	530.000
GR	578.400	534.000	577.600	539.000	578.000	543.000	579.100	549.000	579.000	630.000
GR	580.300	830.000	580.800	1030.000	581.000	1230.000	581.000	1430.000	581.600	1630.000
GR	582.800	1830.000	583.200	2030.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.110	.110	.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D/S FACE, BROADBRIDGE RD. 10@ X 30@ BRIDGE

X1	6763.000	19.000	532.000	542.000	50.000	50.000	50.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	500.000	0.000	625.000	0.000	580.900	580.900	0.000
GR	582.700	0.000	582.500	40.000	582.000	240.000	581.400	440.000	581.100	500.000
GR	579.000	525.000	578.400	532.000	577.700	534.000	577.700	537.000	577.700	540.000
GR	578.300	542.000	579.000	549.000	580.000	600.000	580.600	625.000	580.900	640.000
GR	581.400	840.000	581.700	1040.000	581.900	1240.000	582.100	1440.000	0.000	0.000
SB	0.000	2.035	2.980	0.000	6.000	0.000	7.800	0.000	577.700	577.700

L U/S FACE, BROADBRIDGE RD. 10@ X 30@ BRIDGE

X1	6795.000	0.000	0.000	0.000	32.000	32.000	32.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	579.000	580.900	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	499.900	0.000	625.100	0.000	580.900	580.900	0.000
BT	8.000	500.000	581.100	0.000	534.000	581.000	0.000	534.000	581.000	577.700
BT	534.000	581.000	579.000	540.000	581.000	579.000	540.000	581.000	578.300	540.000
BT	581.000	0.000	625.000	580.600	0.000	0.000	0.000	0.000	0.000	0.000
NC	.045	.043	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

M 50FT U/S BROADBRIDGE RD. BRIDGE

X1	6845.000	17.000	530.000	549.000	50.000	50.000	50.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	530.000	0.000	549.000	0.000	0.000	0.000	0.000
GR	582.800	0.000	581.900	30.000	581.800	230.000	582.200	430.000	579.500	530.000
GR	578.100	534.000	577.600	539.000	578.000	543.000	579.100	549.000	579.000	600.000
GR	580.300	830.000	580.800	1030.000	581.000	1230.000	581.000	1430.000	581.600	1630.000
GR	582.800	1830.000	583.200	2030.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.050	.050	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000

N 50FT D/S 172@ OF 2@ CMP AND VITEROUS CLAY PIPE

X1	7795.000	15.000	577.000	594.000	950.000	950.000	950.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	577.000	0.000	594.000	0.000	0.000	0.000	0.000
GR	584.500	0.000	583.500	100.000	582.700	200.000	582.500	300.000	582.300	385.000

GR	581.500	485.000	579.500	577.000	581.400	582.000	581.500	585.000	583.500	1000.000
GR	579.600	594.000	581.600	700.000	581.100	800.000	582.500	900.000	583.500	1000.000
NC	.050	.050	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D/S FACE, 24@ OF 2@ CMP AND 148@ OF 2@ VIT. CLAY PIP

X1	7845.000	15.000	575.000	597.000	50.000	50.000	50.000	.966	0.000	0.000
X3	10.000	0.000	0.000	500.000	0.000	650.000	0.000	580.300	580.300	0.000
GR	584.500	0.000	583.500	100.000	582.700	200.000	582.500	300.000	582.300	385.000
GR	581.500	485.000	579.000	575.000	578.200	579.000	577.800	585.000	578.100	592.000
GR	579.300	597.000	581.600	700.000	581.100	800.000	582.500	900.000	583.500	1000.000
SB	0.000	5.020	2.690	0.000	1.520	0.000	3.030	0.000	579.100	578.500

0 U/S FACE, 24@ OF 2@ CMP AND 148@ OF 2@ VIT. CLAY PIP

15 DEGREES SKEW FOR PRESSURE AND WEIR FLOW

X1	8019.000	18.000	579.000	595.000	174.000	174.000	174.000	.966	0.000	0.000
X2	0.000	0.000	1.000	579.600	580.900	0.000	0.000	0.000	.966	0.000
X3	10.000	0.000	0.000	499.100	0.000	650.100	0.000	580.900	580.900	0.000
BT	7.000	500.000	581.400	0.000	584.000	580.900	578.000	584.000	580.900	579.200
BT	585.000	580.900	579.600	586.000	580.900	579.200	586.000	580.900	578.000	650.000
BT	581.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	584.500	0.000	583.500	100.000	582.700	200.000	582.500	300.000	582.300	385.000
GR	581.400	500.000	579.400	579.000	578.400	582.000	578.000	584.000	577.600	585.000
GR	578.000	586.000	578.000	590.000	579.800	595.000	581.200	650.000	581.600	700.000
GR	581.100	800.000	582.500	800.000	583.500	1000.000	0.000	0.000	0.000	0.000
NC	.050	.050	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000

50FT U/S 172@ OF 2@ CMP AND VIT. CLAY PIPE, MANUFACTURED SE

X1	8069.000	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	579.000	0.000	595.000	0.000	0.000	0.000	0.000
QT	4.000	20.000	30.000	37.000	60.000	0.000	0.000	0.000	0.000	0.000

1150FT U/S 172@ OF 2@ CMP AND VIT. CLAY PIPE, MANUFACTURED SE

X1	9169.000	19.000	995.000	1005.000	1100.000	1100.000	1100.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	990.000	0.000	1100.000	0.000	0.000	0.000	0.000
GR	584.700	0.000	583.700	95.000	583.600	295.000	582.900	495.000	582.400	695.000
GR	581.300	895.000	579.600	995.000	579.000	998.000	578.700	1000.000	578.700	1002.000
GR	579.600	1005.000	580.500	1095.000	581.200	1295.000	581.500	1495.000	581.800	1695.000
GR	581.700	1895.000	582.400	2095.000	582.700	2295.000	582.800	2495.000	0.000	0.000

P 1750FT U/S 172@ OF CMP AND VIT. CLAY PIPE

X1	9769.000	19.000	995.000	1005.000	650.000	650.000	650.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	990.000	0.000	1100.000	0.000	0.000	0.000	0.000
GR	585.000	0.000	584.000	95.000	583.900	295.000	583.200	495.000	582.700	695.000
GR	581.600	895.000	579.900	995.000	579.300	998.000	579.000	1000.000	579.000	1002.000
GR	579.900	1005.000	580.500	1095.000	581.200	1295.000	581.500	1495.000	581.800	1695.000
GR	582.000	1895.000	582.700	2095.000	583.000	2295.000	583.100	2495.000	0.000	0.000

50 FT D/S 20@ OF 1@ CMP, MANUFACTURED SEC

X1	10019.000	18.000	690.000	709.000	250.000	250.000	250.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	650.000	0.000	800.000	0.000	0.000	0.000	0.000
GR	585.100	0.000	584.200	200.000	582.700	400.000	581.300	600.000	579.900	690.000
GR	578.800	695.000	578.300	700.000	578.300	704.000	579.600	709.000	580.400	800.000
GR	581.300	900.000	581.400	100[illegible].000	581.600	1200.000	5[illegible]1.800	1400.000	582.000	1600.000

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	3526.700	1800.000	583.030	2000.000	583.100	2200.000	0.000	0.000	0.000	0.000
NC	.060	.063	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	10068.000	20.000	690.000	709.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	650.000	0.000	800.000	0.000	0.000	0.000	0.000
GR	585.100	0.000	584.200	200.000	582.700	400.000	581.300	600.000	579.900	690.000
GR	578.900	695.000	578.800	699.500	578.200	700.000	578.800	700.500	578.900	704.000
GR	579.600	709.000	580.400	800.000	581.300	900.000	581.400	1000.000	581.600	1200.000
GR	581.800	1400.000	582.000	1600.000	582.700	1800.000	583.000	2000.000	583.100	2200.000

D/S FACE, 20@ OF 1@ CMP

X1	10069.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	650.000	0.000	800.000	0.000	579.600	579.600	0.000
BT	12.000	600.000	581.300	0.000	690.000	579.900	0.000	699.500	579.700	0.000
BT	699.500	579.700	578.800	699.500	579.700	579.300	700.000	579.700	579.500	700.500
BT	579.700	579.300	700.500	579.700	578.800	700.500	579.700	0.000	709.000	579.600
BT	0.000	800.000	580.400	0.000	900.000	581.400	0.000	0.000	0.000	0.000

Q U/S FACE, 20@ OF 1@ CMP

X1	10089.000	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	0.000	0.000	0.000	1.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	650.000	0.000	800.000	0.000	579.600	579.600	0.000
X1	10090.000	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	650.000	0.000	800.000	0.000	0.000	0.000	0.000
X1	10149.000	18.000	690.000	709.000	59.000	59.000	59.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	650.000	0.000	800.000	0.000	0.000	0.000	0.000
GR	585.100	0.000	584.200	200.000	582.700	400.000	581.300	600.000	579.900	690.000
GR	578.800	695.000	578.500	700.000	578.500	704.000	579.600	709.000	580.400	800.000
GR	581.300	900.000	581.400	1000.000	581.600	1200.000	581.800	1400.000	582.000	1600.000
GR	582.700	1800.000	583.000	2000.000	583.100	2200.000	0.000	0.000	0.000	0.000

D/S FACE, 10@ OF 1@ CMP

X1	10150.000	18.000	694.000	707.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	650.000	0.000	800.000	0.000	0.000	0.000	0.000
GR	585.200	0.000	584.200	200.000	582.700	400.000	581.800	600.000	579.300	694.000
GR	579.200	697.000	579.200	700.000	579.200	703.000	579.300	707.000	580.400	800.000
GR	580.500	900.000	581.200	1000.000	581.500	1200.000	581.800	1400.000	582.000	1600.000
GR	582.600	1800.000	583.000	2000.000	583.100	2200.000	0.000	0.000	0.000	0.000

R U/S FACE, 10@ OF 1@ CMP

X1	10160.000	0.000	0.000	0.000	10.000	10.000	10.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	650.000	0.000	800.000	0.000	0.000	0.000	0.000
X1	10161.000	18.000	694.000	707.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	10.000	579.200	0.000	650.000	0.000	800.000	0.000	0.000	0.000	0.000
GR	585.200	0.000	584.000	200.000	582.700	400.000	581.800	600.000	579.100	694.000
GR	578.700	697.000	578.500	700.000	578.700	703.000	579.200	707.000	580.400	800.000
GR	580.500	900.000	581.200	1000.000	581.200	1200.000	581.800	1400.000	582.000	1600.000
GR	582.600	1800.000	582.900	2000.000	583.100	2200.000	0.000	0.000	0.000	0.000

50 FT U/S 10' OF 1' CMP MANUFACTURED SEC.

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X1	10210.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	650.000	0.000	800.000	0.000	0.000	0.000	0.000

MANUFACTURED SEC.

X1	10560.000	17.000	700.000	712.000	350.000	350.000	350.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	650.000	0.000	800.000	0.000	0.000	0.000	0.000
GR	585.000	0.000	584.000	200.000	583.400	400.000	582.000	600.000	579.800	700.000
GR	577.600	703.000	577.900	705.000	577.300	707.000	579.800	712.000	580.500	800.000
GR	581.200	1000.000	581.500	1200.000	581.800	1400.000	582.000	1600.000	582.600	1800.000
GR	582.900	2000.000	583.100	2200.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.060	.060	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000

MANUFACTURED SEC.

X1	10960.000	18.000	530.000	545.000	400.000	400.000	400.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	500.000	0.000	650.000	0.000	0.000	0.000	0.000
GR	585.000	0.000	584.000	130.000	583.000	230.000	581.800	430.000	579.500	530.000
GR	576.700	533.000	576.400	535.000	577.300	537.000	579.000	540.000	579.500	545.000
GR	580.300	630.000	581.100	830.000	581.400	1030.000	581.700	1230.000	581.900	1430.000
GR	582.600	1630.000	582.900	1830.000	583.000	2030.000	0.000	0.000	0.000	0.000

S 150 FT D/S THE CONFLUENCE

X1	11260.000	15.000	389.000	415.000	200.000	300.000	300.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	350.000	0.000	600.000	0.000	0.000	0.000	0.000
GR	583.800	0.000	583.500	100.000	582.800	200.000	581.300	300.000	578.400	389.000
GR	577.100	392.000	576.800	400.000	577.100	411.000	579.400	415.000	579.600	500.000
GR	579.500	600.000	579.200	700.000	579.100	800.000	580.200	900.000	580.600	1000.000
NC	.045	.045	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

T 400 FT U/S M-29 BRIDGE, (AT DIVERSION 2)

X1	11410.000	16.000	350.000	380.000	250.000	120.000	150.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	300.000	0.000	500.000	0.000	0.000	0.000	0.000
GR	584.800	0.000	580.500	200.000	579.700	250.000	578.400	350.000	577.100	352.000
GR	576.400	356.000	575.900	360.000	575.400	364.000	575.700	370.000	576.100	374.000
GR	577.000	377.000	578.100	380.000	579.000	430.000	579.500	530.000	580.000	680.000
GR	581.800	800.000	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  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
**************************************************

T1      COTTRELLVILLE TOWNSHIP, FIS  J?A FILE: 5858-13  PM = OLE ANDERSON
T2      100 YEAR FLOW
T3      ROBBINS DRAIN                                    Encroached Floodway

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.        4.        0.        0.  0.000000      0.00      0.0       0.    577.230     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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*PROF 3

CCHV= .600 CEHV= .800
*SECNO .000

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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 577.30 ELREA= 577.30

D/S FACE 4@X6@ ELLIPTICAL STEEL PIPE

0.00	3.97	577.23	0.00	577.23	577.37	.14	0.00	0.00	575.60
67.	0.	67.	0.	0.	23.	0.	0.	0.	575.60
0.00	0.00	2.96	0.00	.045	.027	.045	0.000	573.26	100.00
.001107	0.	0.	0.	0	0	0	0.00	6.00	106.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHO
	0.00	20.52	3.04	0.00	10.00	0.00	25.83	0.00	574.70	573.26

*SECNO 751.000
PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QFR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
579.37	578.73	0.00	0.	67.	26.	30.	577.72	580.00

3470 ENCROACHMENT STATIONS= 1090.0 1100.0 TYPE= 1 TARGET= 10.000
ELENCL= 580.50 ELENCR= 580.50

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 580.00 ELREA= 580.00

A U/S FACE, M-29 10@ SPAN BRIDGE

751.00	4.63	579.33	0.00	0.00	579.37	.04	2.01	0.00	577.70
67.	0.	67.	0.	0.	40.	0.	1.	0.	580.50
.13	0.00	1.66	0.00	.045	.027	.045	.027	574.70	1090.00
.000292	751.	751.	751.	2	0	0	0.00	10.00	1100.00

*SECNO 801.000

3470 ENCROACHMENT STATIONS= 1089.0 1110.0 TYPE= 1 TARGET= 21.000

50FT U/S M-29 BRIDGE, MANUFACTURED SEC.

801.00	4.48	579.38	0.00	0.00	579.40	.03	.02	.01	578.90
67.	0.	67.	0.	0.	52.	0.	1.	0.	100000.00
.14	0.00	1.28	0.00	.070	.045	.040	.028	574.90	1089.00
.000545	47.	50.	55.	1	0	0	0.00	21.00	1110.00

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*SECNO 1634.000

3470 ENCROACHMENT STATIONS= 450.0 550.0 TYPE= 1 TARGET= 100.000

883FT U/S M-29 BRIDGE, MANUFACTURED SEC.

1634.00	4.50	579.60	0.00	0.00	579.61	.01	.19	.01	578.50
67.	6.	50.	11.	32.	64.	35.	2.	1.	578.20
.49	.20	.78	.30	.065	.045	.055	.037	575.10	450.00
.000128	833.	833.	833.	2	0	0	0.00	100.00	550.00

*SECNO 2034.000

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

3470 ENCROACHMENT STATIONS= 550.0 670.0 TYPE= 1 TARGET= 120.000

B 50FT D/S RCP TWIN CULVERT

2034.00	2.75	579.65	0.00	0.00	579.65	.00	.04	.00	578.30
67.	15.	41.	12.	55.	74.	46.	4.	2.	578.40
.75	.27	.55	.25	.060	.045	.055	.038	576.90	550.00
.000087	400.	400.	400.	2	0	0	0.00	120.00	670.00

*SECNO 2083.000

3470 ENCROACHMENT STATIONS= 550.0 670.0 TYPE= 1 TARGET= 120.000

2083.00	2.75	579.65	0.00	0.00	579.66	.00	.01	.00	578.30
67.	17.	33.	16.	55.	57.	47.	4.	2.	578.40
.78	.31	.58	.35	.065	.045	.050	.038	576.90	550.00
.000139	49.	49.	49.	0	0	0	0.00	120.00	670.00

*SECNO 2084.000

3470 ENCROACHMENT STATIONS= 550.0 670.0 TYPE= 1 TARGET= 120.000

D/S FACE, 38@ OF 3@ RCP TWIN CULVERT, COMPLETELY SILTE

2084.00	.65	579.65	0.00	0.00	579.67	.02	.00	.01	579.00
67.	24.	25.	18.	26.	19.	19.	4.	2.	579.00
.78	.92	1.33	.93	.065	.045	.050	.038	579.00	550.00
.003186	1.	1.	1.	0	0	0	0.00	120.00	670.00

*SECNO 2124.000

3470 ENCROACHMENT STATIONS= 550.0 670.0 TYPE= 1 TARGET= 120.000

C U/S FACE, 37@ OF 2@ RCP TWIN CULVERT, COMPLETELY SILTE

2124.00	.76	579.76	0.00	0.00	579.77	.01	.09	.00	579.00
67.	23.	24.	19.	30.	22.	24.	4.	3.	579.00
.79	.77	1.11	.81	.065	.045	.050	.039	579.00	550.00
.001811	40.	40.	40.	2	0	0	0.00	120.00	670.00

*SECNO 2125.000

3470 ENCROACHMENT STATIONS= 550.0 670.0 TYPE= 1 TARGET= 120.000

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2125.00	4.17	579.77	0.00	0.00	579.77	.00	.00	.01	578.20
67.	8.	55.	4.	55.	135.	32.	4.	3.	578.90
.79	.15	.41	.12	.070	.045	.060	.038	575.60	550.00
.000032	1.	1.	1.	1	0	0	0.00	120.00	670.00

*SECNO 2175.000

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

3470 ENCROACHMENT STATIONS= 550.0 670.0 TYPE= 1 TARGET= 120.000

50FT U/S RCP THIN CULVERT, MANUFACTURED SEC.

2175.00	4.17	579.77	0.00	0.00	579.78	.00	.00	.00	578.20
67.	8.	55.	4.	55.	136.	32.	4.	3.	578.90
.83	.15	.40	.12	.070	.045	.060	.039	575.60	550.00
.000032	50.	50.	50.	2	0	0	0.00	120.00	670.00

*SECNO 2786.000

3470 ENCROACHMENT STATIONS= 430.0 530.0 TYPE= 1 TARGET= 100.000

50FT D/S 12" CMP CULVERT, MANUFACTURED SEC.

2786.00	4.49	579.79	0.00	0.00	579.79	.00	.02	.00	578.50
67.	5.	60.	1.	55.	143.	12.	7.	4.	578.30
1.27	.10	.42	.11	.070	.038	.070	.038	575.30	430.00
.000021	611.	611.	611.	0	0	0	0.00	100.00	530.00

*SECNO 2835.000

3470 ENCROACHMENT STATIONS= 430.0 580.0 TYPE= 1 TARGET= 150.000

2835.00	4.49	579.79	0.00	0.00	579.79	.00	.00	.00	578.50
67.	5.	53.	9.	55.	143.	74.	8.	4.	578.30
1.31	.10	.37	.12	.050	.030	.045	.038	575.30	430.00
.000010	49.	49.	49.	0	0	0	0.00	150.00	580.00

*SECNO 2836.000

3370 NORMAL BRIDGE,NRD= 9 MIN ELTRD= 578.90 MAX ELLC= 576.50

3470 ENCROACHMENT STATIONS= 430.0 580.0 TYPE= 1 TARGET= 150.000

D/S FACE, 12" CMP CULVERT

2836.00	4.29	579.79	0.00	0.00	579.80	.01	.00	.00	576.20
67.	25.	1.	41.	49.	1.	65.	8.	4.	576.20
1.31	.51	.56	.63	.050	.030	.045	.038	575.50	430.00
.000479	1.	1.	1.	0	0	0	-127.13	150.00	580.00

*SECNO 2874.000

3370 NORMAL BRIDGE,NRD= 9 MIN ELTRD= 578.90 MAX ELLC= 576.70

3470 ENCROACHMENT STATIONS= 430.0 580.0 TYPE= 1 TARGET= 150.000

D U/S FACE, 12" CMP CULVERT

2874.00	4.21	579.81	0.00	0.00	579.81	.01	.02	.00	576.30
67.	25.	1.	41.	50.	2.	67.	8.	5.	576.20
1.33	.50	.57	.62	.050	.030	.045	.038	575.60	430.00
.000449	38.	38.	38.	0	0	0	-125.48	150.00	580.00

*SECNO 2875.000

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

3470 ENCROACHMENT STATIONS= 430.0 580.0 TYPE= 1 TARGET= 150.000

2875.00	4.22	579.82	0.00	0.00	579.82	.00	.00	.00	576.30
67.	26.	2.	39.	106.	4.	135.	8.	5.	576.20
1.33	.25	.45	.29	.050	.030	.045	.038	575.60	430.00
.000029	1.	1.	1.	0	0	0	0.00	150.00	580.00

*SECNO 2924.000

3470 ENCROACHMENT STATIONS= 400.0 620.0 TYPE= 1 TARGET= 220.000

50FT U/S 12" CMP CULVERT, MANUFACTURED SEC.

2924.00	4.52	579.82	0.00	0.00	579.82	.00	.00	.00	578.50
67.	6.	51.	10.	77.	143.	105.	8.	5.	578.50
1.38	.08	.36	.09	.075	.040	.070	.038	575.30	400.00
.000017	49.	49.	49.	1	0	0	0.00	220.00	620.00

*SECNO 3566.000

3470 ENCROACHMENT STATIONS= 300.0 500.0 TYPE= 1 TARGET= 200.000

E 690FT U/S 12" CMP CULVERT

3566.00	5.13	579.83	0.00	0.00	579.83	.00	.02	.00	578.30
67.	8.	35.	24.	68.	71.	187.	13.	8.	578.00
1.95	.12	.49	.13	.080	.040	.090	.038	574.70	300.00
.000034	642.	642.	642.	0	0	0	0.00	200.00	500.00

*SECNO 3916.000

3470 ENCROACHMENT STATIONS= 120.0 350.0 TYPE= 1 TARGET= 230.000

1190FT U/S 12" CMP CULVERT, (DIVERSION 1), MANUFACTURED SEC.

3916.00	4.24	579.84	0.00	0.00	579.85	.00	.01	.00	578.30
67.	13.	32.	21.	126.	67.	163.	16.	10.	578.00
2.27	.10	.49	.13	.100	.040	.090	.039	575.60	120.00
.000036	350.	350.	350.	0	0	0	0.00	230.00	350.00

*SECNO 4466.000

3470 ENCROACHMENT STATIONS= 258.0 358.0 TYPE= 1 TARGET= 100.000

F 50FT D/S 6@ X 14@ BRIDGE

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4400.00	2.98	579.88	0.00	0.00	57?.80	.00	.05	.00	57?.00
58.	7.	45.	6.	27.	73.	29.	19.	12.	579.10
2.56	.25	.62	.20	.060	.045	.065	.039	576.90	253.00
.000118	550.	550.	550.	1	0	0	0.00	100.00	358.00

*SECNO 4515.000

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

3470 ENCROACHMENT STATIONS= 245.0 345.0 TYPE= 1 TARGET= 100.000

4515.00	2.98	579.88	0.00	0.00	579.89	.01	.01	.00	578.80
58.	8.	46.	4.	37.	73.	20.	19.	12.	579.10
2.58	.21	.64	.20	.065	.042	.062	.039	576.90	245.00
.000105	49.	49.	49.	0	0	0	0.00	100.00	345.00

*SECNO 4516.000

3370 NORMAL BRIDGE,NRD= 7 MIN ELTRD= 578.80 MAX ELLC= 577.90

3470 ENCROACHMENT STATIONS= 245.0 345.0 TYPE= 1 TARGET= 100.000

D/S FACE, 6@ X 14@ BRIDGE

4516.00	3.58	579.88	0.00	0.00	579.89	.00	.00	.00	577.00
58.	28.	9.	21.	56.	14.	37.	19.	12.	576.30
2.58	.49	.67	.57	.065	.042	.062	.039	576.30	245.00
.000516	1.	1.	1.	0	0	0	-24.90	100.00	345.00

*SECNO 4528.000

3370 NORMAL BRIDGE,NRD= 7 MIN ELTRD= 578.80 MAX ELLC= 577.90

3470 ENCROACHMENT STATIONS= 245.0 345.0 TYPE= 1 TARGET= 100.000

G U/S FACE, 6@ X 14@ BRIDGE

4528.00	3.59	579.89	0.00	0.00	579.89	.00	.01	.00	577.00
58.	28.	9.	21.	56.	14.	37.	19.	12.	576.30
2.59	.49	.66	.57	.065	.042	.062	.039	576.30	245.00
.000509	12.	12.	12.	0	0	0	-24.90	100.00	345.00

*SECNO 4529.000

3470 ENCROACHMENT STATIONS= 245.0 345.0 TYPE= 1 TARGET= 100.000

4529.00	3.59	579.89	0.00	0.00	579.89	.01	.00	.00	577.00
58.	21.	18.	19.	65.	20.	47.	19.	12.	576.30
2.59	.32	.91	.40	.068	.050	.065	.039	576.30	245.00
.000192	1.	1.	1.	0	0	0	0.00	100.00	345.00

*SECNO 4578.000

3470 ENCROACHMENT STATIONS= 245.0 345.0 TYPE= 1 TARGET= 100.000

50FT U/S 6@ X 14@ BRIDGE, MANUFACTURED SEC.

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4918.00	3.60	579.90	0.00	0.00	579.90	.01	.01	.00	577.30	
58.	21.	18.	19.	66.	20.	48.	19.	12.	576.30	
2.62	.32	.90	.39	.068	.050	.065	.039	576.30	245.00	
.000185	49.	49.	49.	0	0	0	0.00	100.00	345.00	

*SECNO 4908.000

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

3470 ENCROACHMENT STATIONS= 330.0 430.0 TYPE= 1 TARGET= 100.000

H 50FT D/S 12@ X 19@ BRIDGE

4908.00	2.65	579.95	0.00	0.00	579.95	.00	.05	.00	579.40
58.	0.	39.	19.	0.	85.	69.	20.	13.	578.50
2.85	0.00	.46	.27	.068	.050	.065	.040	577.30	330.00
.000105	320.	330.	340.	1	0	0	0.00	100.00	430.00

*SECNO 4958.000

3470 ENCROACHMENT STATIONS= 250.0 460.0 TYPE= 1 TARGET= 210.000

D/S FACE, 12@ X 19@ BRIDGE

4958.00	2.65	579.95	0.00	0.00	579.97	.02	.01	.01	577.80
58.	4.	38.	16.	12.	30.	45.	20.	13.	577.40
2.86	.38	1.25	.36	.068	.050	.065	.040	577.30	310.03
.000525	50.	50.	50.	0	0	0	0.00	149.97	460.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	2.76	3.91	0.00	8.40	0.00	10.20	.90	577.30	577.30

*SECNO 4979.000
PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
581.34	579.97	0.00	50.	9.	10.	9.	578.30	579.50

3470 ENCROACHMENT STATIONS= 230.0 460.0 TYPE= 1 TARGET= 230.000

I U/S FACE, 12@ X 19@ BRIDGE

4979.00	2.67	579.97	0.00	0.00	579.98	.02	.01	0.00	577.80
58.	4.	37.	17.	12.	30.	47.	20.	13.	577.40
2.87	.36	1.22	.35	.068	.050	.065	.040	577.30	308.12
.000491	21.	21.	21.	1	0	6	0.00	151.83	460.00

*SECNO 5029.000

3470 ENCROACHMENT STATIONS= 345.0 450.0 TYPE= 1 TARGET= 105.000

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50FT D/S 12@ X 19@ BRIDGES MANUFACTURED SEC@

5029.00	2.70	580.00	0.00	0.00	580.03	.03	.03	.01	577.80
58.	0.	47.	11.	0.	31.	44.	20.	13.	577.40
2.88	0.00	1.53	.25	.130	.050	.130	.040	577.30	345.00
.000968	50.	50.	50.	0	0	0	0.00	105.00	450.00

*SECNO 5451.000

3470 ENCROACHMENT STATIONS= 440.0 600.0 TYPE= 1 TARGET= 160.000

J 50FT D/S 6@ SPAN BRIDGE

5451.00	3.01	580.11	0.00	0.00	580.11	.00	.06	.02	578.90
32.	0.	15.	17.	0.	49.	200.	22.	14.	578.50
3.50	0.00	.30	.09	.130	.050	.130	.041	577.10	440.00
.000035	432.	422.	410.	2	0	0	0.00	160.00	600.00

*SECNO 5500.000

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

3470 ENCROACHMENT STATIONS= 440.0 600.0 TYPE= 1 TARGET= 160.000

5500.00	3.01	580.11	0.00	0.00	580.11	.00	.00	.00	578.90
32.	0.	13.	19.	0.	49.	200.	22.	14.	578.50
3.58	0.00	.27	.09	.110	.052	.110	.041	577.10	440.00
.000030	49.	49.	49.	2	0	0	0.00	160.00	600.00

*SECNO 5501.000

3370 NORMAL BRIDGE,NRD= 9 MIN ELTRD= 578.50 MAX ELLC= 578.80

3470 ENCROACHMENT STATIONS= 440.0 600.0 TYPE= 1 TARGET= 160.000

D/S FACE, 6@ SPAN BRIDGE

5501.00	2.91	580.11	0.00	0.00	580.11	.00	.00	.00	579.10
32.	1.	3.	29.	6.	13.	192.	22.	14.	578.80
3.58	.11	.20	.15	.110	.052	.110	.041	577.20	440.00
.000087	1.	1.	1.	0	0	0	-19.65	160.00	600.00

*SECNO 5511.000

3370 NORMAL BRIDGE,NRD= 9 MIN ELTRD= 578.50 MAX ELLC= 578.80

3470 ENCROACHMENT STATIONS= 440.0 600.0 TYPE= 1 TARGET= 160.000

K U/S FACE, 6@ SPAN BRIDGE

5511.00	2.91	580.11	0.00	0.00	580.11	.00	.00	.00	579.10
32.	1.	3.	29.	6.	13.	192.	22.	14.	578.80
3.60	.11	.20	.15	.110	.052	.110	.041	577.20	440.00
.000087	10.	10.	10.	0	0	0	-19.65	160.00	600.00

*SECNO 5512.000

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3470 ENCROACHMENT STATIONS=			440.0	600.0	TYPE=	1	TARGET=	160.000		
5512.00	2.91	580.11	0.00	0.00	580.11	.00	.00	.00	579.10	
32.	0.	10.	22.	0.	38.	195.	22.	15.	578.50	
3.60	0.00	.27	.11	.110	.052	.110	.041	577.20	440.00	
.000044	1.	1.	1.	0	0	0	0.00	160.00	600.00	

*SECNO 5561.000

3470 ENCROACHMENT STATIONS=			440.0	600.0	TYPE=	1	TARGET=	160.000		

50FT U/S 6@ SPAN BRIDGE, MANUFACTURED SEC.

5561.00	2.91	580.11	0.00	0.00	580.12	.00	.00	.00	579.10	
32.	0.	10.	22.	0.	38.	195.	22.	15.	578.50	
3.69	0.00	.27	.11	.110	.052	.110	.041	577.20	440.00	
.000043	49.	49.	49.	0	0	0	0.00	160.00	600.00	

*SECNO 6713.000

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

3470 ENCROACHMENT STATIONS=			530.0	549.0	TYPE=	1	TARGET=	19.000		

50FT D/S BROADBRIDGE RD. BRIDGE, MANUFACTURED SEC.

6713.00	2.56	580.16	0.00	0.00	580.16	.00	.04	.00	579.50	
6.	0.	6.	0.	0.	35.	0.	26.	17.	100000.00	
5.64	0.00	.16	0.00	.110	.052	.110	.043	577.60	530.00	
.000017	1150.	1150.	1150.	0	0	0	0.00	19.00	549.00	

*SECNO 6763.000

3470 ENCROACHMENT STATIONS=			500.0	625.0	TYPE=	1	TARGET=	125.000		

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 580.90 ELREA= 580.90

D/S FACE, BROADBRIDGE RD. 10@ X 30@ BRIDGE

6763.00	2.46	580.16	0.00	0.00	580.16	.00	.00	.00	578.40	
6.	0.	6.	0.	0.	23.	0.	26.	17.	578.30	
5.70	0.00	.24	0.00	.110	.050	.110	.043	577.70	532.00	
.000026	50.	50.	50.	0	0	0	0.00	10.00	542.00	

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	2.04	2.98	0.00	6.00	0.00	7.80	0.00	577.70	577.70

*SECNO 6795.000

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
580.17	580.16	0.00	0.	6.	8.	8.	579.00	580.90

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3470 ENCROACHMENT STATIONS= 499.9 625.1 TYPE= 1 TARGET= 125.200

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 580.90 ELREA= 580.90

L U/S FACE, BROADBRIDGE RD. 10@ X 30@ BRIDGE

6795.00	2.47	580.17	0.00	0.00	580.17	.00	.02	0.00	578.40
6.	0.	6.	0.	0.	23.	0.	26.	17.	578.30
5.73	0.00	.24	0.00	.110	.050	.110	.043	577.70	532.00
.000025	32.	32.	32.	0	0	0	0.00	10.00	542.00

*SECNO 6845.000

3470 ENCROACHMENT STATIONS= 530.0 549.0 TYPE= 1 TARGET= 19.000

M 50FT U/S BROADBRIDGE RD. BRIDGE

6845.00	2.58	580.18	0.00	0.00	580.18	.00	.00	.00	579.50
6.	0.	6.	0.	0.	36.	0.	26.	17.	100000.00
5.82	0.00	.16	0.00	.045	.040	.043	.043	577.60	530.00
.000009	50.	50.	50.	0	0	0	0.00	19.00	549.00

*SECNO 7795.000

3470 ENCROACHMENT STATIONS= 577.0 594.0 TYPE= 1 TARGET= 17.000

N 50FT D/S 172@ OF 2@ CMP AND VITEROUS CLAY PIPE

7795.00	1.40	580.20	0.00	0.00	580.20	.00	.02	.00	579.50
6.	0.	6.	0.	0.	14.	0.	27.	17.	100000.00
6.45	0.00	.42	0.00	.050	.045	.050	.043	578.80	577.00
.000243	950.	950.	950.	0	0	0	0.00	17.00	594.00

*SECNO 7845.000

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

3470 ENCROACHMENT STATIONS= 483.0 627.9 TYPE= 1 TARGET= 150.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 580.30 ELREA= 580.30

D/S FACE, 24@ OF 2@ CMP AND 148@ OF 2@ VIT. CLAY PIP

7845.00	2.40	580.20	0.00	0.00	580.20	.00	.00	.00	579.00
6.	0.	6.	0.	0.	41.	0.	27.	18.	579.30
6.55	0.00	.14	0.00	.050	.040	.050	.043	577.80	555.45
.000006	50.	50.	50.	0	0	0	0.00	21.25	576.70

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	5.02	2.69	0.00	1.52	.00	3.03	0.00	579.10	578.50

*SECNO 8019.000
PRESS FLOW BECAUSE EGLWC OF 581.50 EXCEEDS 1.5 DEPTH
PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
580.48	581.50	0.00	0.	6.	3.	1.	579.60	580.90

3470 ENCROACHMENT STATIONS= 482.1 628.0 TYPE= 1 TARGET= 151.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 580.90 ELREA= 580.90

0 U/S FACE, 24@ OF 2@ CMP AND 148@ OF 2@ VIT. CLAY PIP

15 DEGREES SKEW FOR PRESSURE AND WEIR FLOW

8019.00	2.88	580.48	0.00	0.00	580.48	.00	.28	0.00	579.40
6.	0.	6.	0.	0.	31.	0.	27.	18.	579.80
6.82	0.00	.18	0.00	.050	.040	.050	.043	577.60	559.31
.000010	174.	174.	174.	0	0	0	0.00	15.46	574.77

*SECNO 8069.000

3470 ENCROACHMENT STATIONS= 579.0 595.0 TYPE= 1 TARGET= 16.000

50FT U/S 172@ OF 2@ CMP AND VIT. CLAY PIPE, MANUFACTURED SE

8069.00	2.88	580.48	0.00	0.00	580.48	.00	.00	.00	579.40
6.	0.	6.	0.	0.	32.	0.	27.	18.	100000.00
6.90	0.00	.18	0.00	.050	.045	.050	.043	577.60	579.00
.000013	50.	50.	50.	0	0	0	0.00	16.00	595.00

*SECNO 9169.000

3470 ENCROACHMENT STATIONS= 990.0 1100.0 TYPE= 1 TARGET= 110.000

1150FT U/S 172@ OF 2@ CMP AND VIT. CLAY PIPE, MANUFACTURED SE.

9169.00	1.94	580.64	0.00	0.00	580.65	.01	.16	.00	579.60
37.	2.	13.	21.	5.	16.	54.	28.	19.	579.60
7.44	.50	.84	.39	.050	.045	.050	.044	578.70	990.00
.000360	1100.	1100.	1100.	2	0	0	0.00	110.00	1100.00

*SECNO 9769.000

3470 ENCROACHMENT STATIONS= 990.0 1100.0 TYPE= 1 TARGET= 110.000

P 1750FT U/S 172@ OF CMP AND VIT. CLAY PIPE

9769.00	1.86	580.86	0.00	0.00	580.86	.00	.22	.00	579.90
37.	2.	11.	24.	5.	15.	61.	29.	21.	579.90
7.80	.44	.75	.39	.050	.045	.050	.044	579.00	990.00
.000306	650.	650.	650.	2	0	0	0.00	110.00	1100.00

*SECNO 10019.000

SECNO	DEPTH	CWSEL	CRIWS	SELK	EG	HV	HL	OLOSS	BANK ELEV

U	ULOB	UCH	UROB	ALOB	ACH	AROB	VOL	TWA	LEFT,RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 650.0 800.0 TYPE= 1 TARGET= 150.000

50 FT D/S 20@ OF 1@ CMP, MANUFACTURED SEC

10019.00	2.59	580.89	0.00	0.00	580.89	.00	.03	.00	579.90
37.	5.	16.	17.	27.	39.	81.	30.	22.	579.60
8.04	.17	.40	.21	.050	.045	.050	.044	578.30	650.00
.000056	250.	250.	250.	2	0	0	0.00	150.00	800.00

*SECNO 10068.000

3470 ENCROACHMENT STATIONS= 650.0 800.0 TYPE= 1 TARGET= 150.000

10068.00	2.69	580.89	0.00	0.00	580.90	.00	.00	.00	579.90
37.	5.	16.	16.	28.	35.	82.	30.	22.	579.60
8.09	.17	.48	.19	.060	.040	.063	.044	578.20	650.00
.000078	49.	49.	49.	0	0	0	0.00	150.00	800.00

*SECNO 10069.000

3370 NORMAL BRIDGE,NRD= 12 MIN ELTRD= 579.60 MAX ELLC= 579.50

3470 ENCROACHMENT STATIONS= 650.0 800.0 TYPE= 1 TARGET= 150.000

D/S FACE, 20@ OF 1@ CMP

10069.00	2.69	580.89	0.00	0.00	580.90	.00	.00	.00	579.90
37.	6.	11.	20.	27.	24.	81.	30.	22.	579.60
8.09	.22	.45	.25	.060	.040	.063	.044	578.20	650.00
.000131	1.	1.	1.	0	0	0	-10.62	150.00	800.00

*SECNO 10089.000

3370 NORMAL BRIDGE,NRD= 12 MIN ELTRD= 579.60 MAX ELLC= 579.50

3470 ENCROACHMENT STATIONS= 650.0 800.0 TYPE= 1 TARGET= 150.000

0 U/S FACE, 20@ OF 1@ CMP

10089.00	2.70	580.90	0.00	0.00	580.90	.00	.00	.00	579.90
37.	6.	11.	20.	27.	24.	82.	30.	22.	579.60
8.11	.22	.45	.25	.060	.040	.063	.044	578.20	650.00
.000130	20.	20.	20.	0	0	0	-10.62	150.00	800.00

*SECNO 10090.000

3470 ENCROACHMENT STATIONS= 650.0 800.0 TYPE= 1 TARGET= 150.000

10090.00	2.70	580.90	0.00	0.00	580.90	.00	.00	.00	579.90
37.	5.	17.	16.	27.	34.	82.	30.	22.	579.60
8.11	.17	.48	.19	.060	.040	.063	.044	578.20	650.00
.000079	1.	1.	1.	0	0	0	0.00	150.00	800.00

*SECNO 10149.000

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV

Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT	
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA	
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST	
3470 ENCROACHMENT STATIONS=			650.0	800.0	TYPE=	1	TARGET=	150.000		
10149.00	2.40	580.90	0.00	0.00	580.90	.00	.00	.00	579.90	
37.	4.	18.	15.	28.	38.	82.	30.	22.	579.60	
8.16	.16	.47	.18	.060	.040	.063	.044	578.50	650.00	
.000066	59.	59.	59.	0	0	0	0.00	150.00	800.00	
*SECNO 10150.000										
3470 ENCROACHMENT STATIONS=			650.0	800.0	TYPE=	1	TARGET=	150.000		
D/S FACE, 10@ OF 1@ CMP										
10150.00	1.70	580.90	0.00	0.00	580.90	.00	.00	.00	579.30	
37.	9.	9.	19.	45.	22.	98.	30.	22.	579.30	
8.16	.20	.42	.19	.060	.040	.063	.044	579.20	650.00	
.000064	1.	1.	1.	0	0	0	0.00	150.00	800.00	
*SECNO 10160.000										
3470 ENCROACHMENT STATIONS=			650.0	800.0	TYPE=	1	TARGET=	150.000		
R U/S FACE, 10@ OF 1@ CMP										
10160.00	1.70	580.90	0.00	0.00	580.90	.00	.00	.00	579.30	
37.	9.	9.	19.	45.	22.	98.	30.	22.	579.30	
8.17	.20	.42	.19	.060	.040	.063	.044	579.20	650.00	
.000064	10.	10.	10.	0	0	0	0.00	150.00	800.00	
*SECNO 10161.000										
3470 ENCROACHMENT STATIONS=			650.0	800.0	TYPE=	1	TARGET=	150.000		
10161.00	1.70	580.90	0.00	0.00	580.90	.00	.00	.00	579.20	
37.	10.	9.	19.	49.	22.	103.	30.	22.	579.20	
8.17	.19	.39	.18	.060	.040	.063	.044	579.20	650.00	
.000054	1.	1.	1.	0	0	0	0.00	150.00	800.00	
*SECNO 10210.000										
3470 ENCROACHMENT STATIONS=			650.0	800.0	TYPE=	1	TARGET=	150.000		
50 FT U/S 10@ OF 1@ CMP MANUFACTURED SEC.										
10210.00	2.41	580.91	0.00	0.00	580.91	.00	.00	.00	579.10	
37.	9.	11.	17.	52.	28.	103.	31.	22.	579.20	
8.23	.18	.40	.16	.060	.040	.063	.044	578.50	650.00	
.000042	49.	49.	49.	0	0	0	0.00	150.00	800.00	
*SECNO 10560.000										
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	

FORM 1411-00 PRINTED BY ROTARY MANIFOLD FORMS.

3470 ENCROACHMENT STATIONS= 650.0 800.0 TYPE= 1 TARGET= 150.00

MANUFACTURED SEC.

10560.00	3.63	580.93	0.00	0.00	580.93	.00	.02	.00	579.80
37.	5.	20.	13.	29.	32.	68.	32.	23.	579.80
8.46	.16	.62	.19	.060	.040	.063	.043	577.30	650.00
.000090	350.	350.	350.	0	0	0	0.00	150.00	800.00

*SECNO 10960.000

3470 ENCROACHMENT STATIONS= 500.0 650.0 TYPE= 1 TARGET= 150.000

MANUFACTURED SEC.

10960.00	4.55	580.95	0.00	0.00	580.95	.00	.02	.00	579.50
37.	5.	16.	16.	33.	42.	102.	33.	25.	579.50
8.90	.16	.38	.15	.060	.045	.060	.043	576.40	500.00
.000038	400.	400.	400.	0	0	0	0.00	150.00	650.00

*SECNO 11260.000

3280 CROSS SECTION 11260.00 EXTENDED .36 FEET

3470 ENCROACHMENT STATIONS= 350.0 600.0 TYPE= 1 TARGET= 250.000

S 150 FT D/S THE CONFLUENCE

11260.00	4.16	580.96	0.00	0.00	580.96	.00	.00	.00	578.40
37.	6.	15.	17.	75.	97.	266.	35.	26.	579.40
9.69	.07	.15	.06	.060	.045	.060	.044	576.80	350.00
.000004	200.	300.	300.	1	0	0	0.00	250.00	600.00

*SECNO 11410.000

3470 ENCROACHMENT STATIONS= 300.0 500.0 TYPE= 1 TARGET= 200.000

T 400 FT U/S M-29 BRIDGE, (AT DIVERSION 2)

11410.00	5.56	580.96	0.00	0.00	580.96	.00	.00	.00	578.40
37.	7.	16.	14.	112.	140.	245.	37.	27.	578.10
10.21	.06	.11	.06	.045	.040	.045	.043	575.40	300.00
.000001	250.	150.	120.	0	0	0	0.00	200.00	500.00

FORM 1411 OD PRINTED BY ROTARY MANIFOLD FORMS.

****
HEC2 RELEASE DATED NOV 76 UPDATED AUG1977
ERROR CORR - 01,02
MODIFICATION - 50,51,52,53
****

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

ROBBINS DRAIN

SUMMARY PRINTOUT

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	AREA	DEPTH	TOPWID
	0.000	0.00	0.00	0.00	573.26	23.00	577.23	.02	0.00	0.00	22.67	3.97	6.00
	0.000	0.00	0.00	0.00	573.26	53.00	577.23	.08	0.00	0.00	22.67	3.97	6.00
	0.000	0.00	0.00	0.00	573.26	67.00	577.23	.14	0.00	0.00	22.67	3.97	6.00
	0.000	0.00	0.00	0.00	573.26	100.00	577.23	.30	0.00	0.00	22.67	3.97	6.00
	751.000	751.00	580.00	577.72	574.70	23.00	577.36	.02	.13	.00	20.55	2.66	10.00
	751.000	751.00	580.00	577.72	574.70	53.00	577.98	.07	.73	.01	25.00	3.28	10.00
	751.000	751.00	580.00	577.72	574.70	67.00	579.33	.04	2.01	0.00	40.31	4.63	10.00
	751.000	751.00	580.00	577.72	574.70	100.00	580.08	.07	2.61	0.00	47.77	5.38	10.00
	801.000	50.00	0.00	0.00	574.90	23.00	577.38	.03	.02	.01	16.37	2.48	13.33
	801.000	50.00	0.00	0.00	574.90	53.00	578.08	.06	.09	.01	27.04	3.18	16.70
	801.000	50.00	0.00	0.00	574.90	67.00	579.38	.03	.02	.01	52.16	4.48	21.00
	801.000	50.00	0.00	0.00	574.90	100.00	580.16	.03	.02	.02	68.50	5.26	21.00
	1634.000	833.00	0.00	0.00	575.10	23.00	577.88	.01	.47	.01	30.10	2.78	18.14
	1634.000	833.00	0.00	0.00	575.10	53.00	578.76	.02	.61	.03	56.16	3.66	59.46
	1634.000	833.00	0.00	0.00	575.10	67.00	579.60	.01	.19	.01	130.53	4.50	100.00
	1634.000	833.00	0.00	0.00	575.10	100.00	580.35	.01	.15	.02	205.52	5.25	100.00
	2034.000	400.00	0.00	0.00	576.90	23.00	578.07	.01	.19	.00	25.66	1.17	28.65
	2034.000	400.00	0.00	0.00	576.90	53.00	578.92	.01	.14	.01	87.12	2.02	120.00
	2034.000	400.00	0.00	0.00	576.90	67.00	579.65	.00	.04	.00	175.71	2.75	120.00
	2034.000	400.00	0.00	0.00	576.90	100.00	580.38	.00	.03	.00	263.95	3.48	120.00
	2083.000	49.00	0.00	0.00	577.70	23.00	578.17	.06	.11	.04	11.27	.47	28.14
	2083.000	49.00	0.00	0.00	576.90	53.00	578.94	.01	.03	.00	72.42	2.04	120.00
	2083.000	49.00	0.00	0.00	576.90	67.00	579.65	.00	.01	.00	158.95	2.75	120.00
	2083.000	49.00	0.00	0.00	576.90	100.00	580.39	.00	.00	.00	246.98	3.49	120.00
*	2084.000	1.00	0.00	0.00	579.00	23.00	579.18	.07	.03	.00	11.68	.18	91.80
*	2084.000	1.00	0.00	0.00	579.00	53.00	579.28	.11	.00	.08	21.26	.28	101.41
	2084.000	1.00	0.00	0.00	579.00	67.00	579.65	.02	.00	.01	64.13	.65	120.00
	2084.000	1.00	0.00	0.00	579.00	100.00	580.39	.01	.00	.00	152.11	1.39	120.00
	2124.000	40.00	0.00	0.00	579.00	23.00	579.47	.01	.19	.04	41.72	.47	119.37
	2124.000	40.00	0.00	0.00	579.00	53.00	579.66	.01	.22	.06	65.19	.66	120.00
	2124.000	40.00	0.00	0.00	579.00	67.00	579.76	.01	.09	.00	76.15	.76	120.00
	2124.000	40.00	0.00	0.00	579.00	100.00	580.40	.01	.02	.00	153.18	1.40	120.00

FORM 1411 OD PRINTED BY ROTARY MANIFOLD FORMS

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	AREA	DEPTH	TOPWID
2125.000	1.00	0.00	0.00	575.60	23.00	579.48	.00	.00	.00	187.08	3.88	120.00
2125.000	1.00	0.00	0.00	575.60	53.00	579.67	.00	.00	.01	211.71	4.07	120.00
2125.000	1.00	0.00	0.00	575.60	67.00	579.77	.00	.00	.01	221.83	4.17	120.00
2125.000	1.00	0.00	0.00	575.60	100.00	580.41	.00	.00	.00	298.48	4.81	120.00
2175.000	50.00	0.00	0.00	575.60	23.00	579.48	.00	.00	.00	187.11	3.88	120.00
2175.000	50.00	0.00	0.00	575.60	53.00	579.67	.00	.00	.00	210.83	4.07	120.00
2175.000	50.00	0.00	0.00	575.60	67.00	579.77	.00	.00	.00	222.93	4.17	120.00
2175.000	50.00	0.00	0.00	575.60	100.00	580.41	.00	.00	.00	300.61	4.81	120.00
2786.000	611.00	0.00	0.00	575.30	23.00	579.48	.00	.00	.00	178.41	4.18	100.00
2786.000	611.00	0.00	0.00	575.30	53.00	579.68	.00	.01	.00	199.22	4.38	100.00
2786.000	611.00	0.00	0.00	575.30	67.00	579.79	.00	.02	.00	209.88	4.49	100.00
2786.000	611.00	0.00	0.00	575.30	100.00	580.43	.00	.02	.00	273.72	5.13	100.00
2835.000	49.00	0.00	0.00	575.30	23.00	579.48	.00	.00	.00	224.61	4.18	150.00
2835.000	49.00	0.00	0.00	575.30	53.00	579.69	.00	.00	.00	255.63	4.39	150.00
2835.000	49.00	0.00	0.00	575.30	67.00	579.79	.00	.00	.00	271.50	4.49	150.00
2835.000	49.00	0.00	0.00	575.30	100.00	580.43	.00	.00	.00	367.42	5.13	150.00
2836.000	1.00	578.90	576.50	575.50	23.00	579.48	.00	.00	.00	69.10	3.98	150.00
2836.000	1.00	578.90	576.50	575.50	53.00	579.69	.00	.00	.00	100.17	4.19	150.00
2836.000	1.00	578.90	576.50	575.50	67.00	579.79	.01	.00	.00	116.08	4.29	150.00
2836.000	1.00	578.90	576.50	575.50	100.00	580.43	.00	.00	.00	212.14	4.93	150.00
2874.000	38.00	578.90	576.70	575.60	23.00	579.49	.00	.01	.00	70.86	3.89	150.00
2874.000	38.00	578.90	576.70	575.60	53.00	579.70	.00	.02	.00	102.40	4.10	150.00
2874.000	38.00	578.90	576.70	575.60	67.00	579.81	.01	.02	.00	118.29	4.21	150.00
2874.000	38.00	578.90	576.70	575.60	100.00	580.44	.00	.01	.00	213.46	4.84	150.00
2875.000	1.00	0.00	0.00	575.60	23.00	579.49	.00	.00	.00	197.21	3.89	150.00
2875.000	1.00	0.00	0.00	575.60	53.00	579.71	.00	.00	.00	229.26	4.11	150.00
2875.000	1.00	0.00	0.00	575.60	67.00	579.82	.00	.00	.00	245.13	4.22	150.00
2875.000	1.00	0.00	0.00	575.60	100.00	580.44	.00	.00	.00	339.35	4.84	150.00
2924.000	49.00	0.00	0.00	575.30	23.00	579.49	.00	.00	.00	253.15	4.19	220.00
2924.000	49.00	0.00	0.00	575.30	53.00	579.71	.00	.00	.00	300.60	4.41	220.00
2924.000	49.00	0.00	0.00	575.30	67.00	579.82	.00	.00	.00	324.10	4.52	220.00
2924.000	49.00	0.00	0.00	575.30	100.00	580.44	.00	.00	.00	461.22	5.14	220.00
3566.000	642.00	0.00	0.00	574.70	23.00	579.50	.00	.00	.00	260.13	4.80	200.00
3566.000	642.00	0.00	0.00	574.70	53.00	579.72	.00	.01	.00	305.18	5.02	200.00
3566.000	642.00	0.00	0.00	574.70	67.00	579.83	.00	.02	.00	327.31	5.13	200.00
3566.000	642.00	0.00	0.00	574.70	100.00	580.46	.00	.01	.00	452.13	5.76	200.00
3916.000	350.00	0.00	0.00	575.60	23.00	579.50	.00	.00	.00	277.07	3.90	230.00
3916.000	350.00	0.00	0.00	575.60	53.00	579.73	.00	.01	.00	330.00	4.13	230.00
3916.000	350.00	0.00	0.00	575.60	67.00	579.84	.00	.01	.00	356.00	4.24	230.00
3916.000	350.00	0.00	0.00	575.60	100.00	580.47	.00	.01	.00	499.56	4.87	230.00
4466.000	550.00	0.00	0.00	576.90	32.00	579.51	.00	.01	.00	92.35	2.61	100.00
4466.000	550.00	0.00	0.00	576.90	50.00	579.76	.00	.03	.00	117.18	2.86	100.00
4466.000	550.00	0.00	0.00	576.90	58.00	579.88	.00	.03	.00	129.05	2.98	100.00
4466.000	550.00	0.00	0.00	576.90	81.00	580.49	.00	.03	.00	190.62	3.59	100.00

FORM 1411.00 PUNCHED BY ROTARY MANIFOLD FORM

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	AREA	DEPTH	TOPWID
4515.000	49.00	0.00	0.00	576.90	32.00	579.51	.00	.00	.00	92.89	2.61	100.00
4515.000	49.00	0.00	0.00	576.90	50.00	579.76	.00	.01	.00	117.65	2.86	100.00
4515.000	49.00	0.00	0.00	576.90	58.00	579.88	.01	.01	.00	129.59	2.98	100.00
4515.000	49.00	0.00	0.00	576.90	81.00	580.50	.00	.00	.00	191.19	3.60	100.00
4516.000	1.00	578.80	577.90	576.30	32.00	579.51	.00	.00	.00	69.99	3.21	100.00
4516.000	1.00	578.80	577.90	576.30	50.00	579.76	.00	.00	.00	94.78	3.46	100.00
4516.000	1.00	578.80	577.90	576.30	58.00	579.88	.00	.00	.00	106.71	3.58	100.00
4516.000	1.00	578.80	577.90	576.30	81.00	580.50	.00	.00	.00	168.24	4.20	100.00
4528.000	12.00	578.80	577.90	576.30	32.00	579.52	.00	.01	.00	70.38	3.22	100.00
4528.000	12.00	578.80	577.90	576.30	50.00	579.77	.00	.01	.00	95.20	3.47	100.00
4528.000	12.00	578.80	577.90	576.30	58.00	579.89	.00	.01	.00	107.15	3.59	100.00
4528.000	12.00	578.80	577.90	576.30	81.00	580.50	.00	.00	.00	168.55	4.20	100.00
4529.000	1.00	0.00	0.00	576.30	32.00	579.52	.00	.00	.00	95.64	3.22	100.00
4529.000	1.00	0.00	0.00	576.30	50.00	579.77	.01	.00	.00	120.43	3.47	100.00
4529.000	1.00	0.00	0.00	576.30	58.00	579.89	.01	.00	.00	132.35	3.59	100.00
4529.000	1.00	0.00	0.00	576.30	81.00	580.50	.00	.00	.00	193.57	4.20	100.00
4578.000	49.00	0.00	0.00	576.30	32.00	579.53	.00	.01	.00	96.83	3.23	100.00
4578.000	49.00	0.00	0.00	576.30	50.00	579.78	.00	.01	.00	122.19	3.48	100.00
4578.000	49.00	0.00	0.00	576.30	58.00	579.90	.01	.01	.00	134.03	3.60	100.00
4578.000	49.00	0.00	0.00	576.30	81.00	580.51	.00	.01	.00	194.42	4.21	100.00
4908.000	330.00	0.00	0.00	577.30	32.00	579.56	.00	.03	.00	116.51	2.26	100.00
4908.000	330.00	0.00	0.00	577.30	50.00	579.83	.00	.04	.00	142.37	2.53	100.00
4908.000	330.00	0.00	0.00	577.30	58.00	579.95	.00	.05	.00	154.52	2.65	100.00
4908.000	330.00	0.00	0.00	577.30	81.00	580.54	.00	.03	.00	213.89	3.24	100.00
4958.000	50.00	0.00	0.00	577.30	32.00	579.57	.01	.01	.01	39.12	2.27	57.51
4958.000	50.00	0.00	0.00	577.30	50.00	579.83	.02	.01	.01	68.90	2.53	139.68
4958.000	50.00	0.00	0.00	577.30	58.00	579.95	.02	.01	.01	86.51	2.65	149.97
4958.000	50.00	0.00	0.00	577.30	81.00	580.54	.01	.01	.00	189.77	3.24	199.91
4979.000	21.00	579.50	578.30	577.30	32.00	579.73	.01	.16	0.00	56.89	2.43	132.20
4979.000	21.00	579.50	578.30	577.30	50.00	579.88	.02	.04	0.00	76.32	2.58	144.11
4979.000	21.00	579.50	578.30	577.30	58.00	579.97	.02	.01	0.00	89.92	2.67	151.88
4979.000	21.00	579.50	578.30	577.30	81.00	580.55	.01	.01	0.00	192.82	3.25	201.20
5029.000	50.00	0.00	0.00	577.30	32.00	579.75	.01	.02	.00	49.37	2.45	105.00
5029.000	50.00	0.00	0.00	577.30	50.00	579.91	.03	.03	.01	65.12	2.61	105.00
5029.000	50.00	0.00	0.00	577.30	58.00	580.00	.03	.03	.01	74.70	2.70	105.00
5029.000	50.00	0.00	0.00	577.30	81.00	580.57	.02	.02	.01	134.50	3.27	105.00
5451.000	422.00	0.00	0.00	577.10	17.00	579.81	.00	.03	.01	200.72	2.71	160.00
5451.000	422.00	0.00	0.00	577.10	26.00	580.00	.00	.06	.02	231.75	2.90	160.00
5451.000	422.00	0.00	0.00	577.10	32.00	580.11	.00	.06	.02	248.68	3.01	160.00
5451.000	422.00	0.00	0.00	577.10	47.00	580.65	.00	.05	.01	334.91	3.55	160.00
5500.000	49.00	0.00	0.00	577.10	17.00	579.81	.00	.00	.00	201.83	2.71	160.00
5500.000	49.00	0.00	0.00	577.10	26.00	580.01	.00	.00	.00	232.14	2.91	160.00
5500.000	49.00	0.00	0.00	577.10	32.00	580.11	.00	.00	.00	249.15	3.01	160.00
5500.000	49.00	0.00	0.00	577.10	47.00	580.65	.00	.00	.00	336.37	3.55	160.00

FORM 1411 GO PRINTED BY ROTARY MANIFOLD FORMS.

SECNO	XLCH	ELTRO	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	AREA	DEPTH	TOPWID
5501.000	1.00	578.50	578.80	577.20	17.00	579.81	.00	.00	.00	162.90	2.61	160.00
5501.000	1.00	578.50	578.80	577.20	26.00	580.01	.00	.00	.00	194.12	2.81	160.00
5501.000	1.00	578.50	578.80	577.20	32.00	580.11	.00	.00	.00	211.14	2.91	160.00
5501.000	1.00	578.50	578.80	577.20	47.00	580.65	.00	.00	.00	297.19	3.45	160.00
5511.000	10.00	578.50	578.80	577.20	17.00	579.81	.00	.00	.00	162.98	2.61	160.00
5511.000	10.00	578.50	578.80	577.20	26.00	580.01	.00	.00	.00	194.24	2.81	160.00
5511.000	10.00	578.50	578.80	577.20	32.00	580.11	.00	.00	.00	211.28	2.91	160.00
5511.000	10.00	578.50	578.80	577.20	47.00	580.65	.00	.00	.00	297.31	3.45	160.00
5512.000	1.00	0.00	0.00	577.20	17.00	579.81	.00	.00	.00	184.24	2.61	160.00
5512.000	1.00	0.00	0.00	577.20	26.00	580.01	.00	.00	.00	215.51	2.81	160.00
5512.000	1.00	0.00	0.00	577.20	32.00	580.11	.00	.00	.00	232.56	2.91	160.00
5512.000	1.00	0.00	0.00	577.20	47.00	580.65	.00	.00	.00	318.57	3.45	160.00
5561.000	49.00	0.00	0.00	577.20	17.00	579.81	.00	.00	.00	184.56	2.61	160.00
5561.000	49.00	0.00	0.00	577.20	26.00	580.01	.00	.00	.00	215.95	2.81	160.00
5561.000	49.00	0.00	0.00	577.20	32.00	580.11	.00	.00	.00	233.06	2.91	160.00
5561.000	49.00	0.00	0.00	577.20	47.00	580.65	.00	.00	.00	318.93	3.45	160.00
6713.000	1150.00	0.00	0.00	577.60	2.00	579.83	.00	.02	.00	28.68	2.23	19.00
6713.000	1150.00	0.00	0.00	577.60	3.10	580.04	.00	.03	.00	32.55	2.44	19.00
6713.000	1150.00	0.00	0.00	577.60	5.70	580.16	.00	.04	.00	34.83	2.56	19.00
6713.000	1150.00	0.00	0.00	577.60	12.60	580.69	.00	.04	.00	44.85	3.09	19.00
6763.000	50.00	0.00	0.00	577.70	2.00	579.83	.00	.00	.00	20.04	2.13	10.00
6763.000	50.00	0.00	0.00	577.70	3.10	580.04	.00	.00	.00	22.11	2.34	10.00
6763.000	50.00	0.00	0.00	577.70	5.70	580.16	.00	.00	.00	23.28	2.46	10.00
6763.000	50.00	0.00	0.00	577.70	12.60	580.69	.00	.00	.00	28.64	2.99	10.00
6795.000	32.00	580.90	579.00	577.70	2.00	579.84	.00	.00	0.00	20.06	2.14	10.00
6795.000	32.00	580.90	579.00	577.70	3.10	580.04	.00	.00	0.00	22.15	2.34	10.00
6795.000	32.00	580.90	579.00	577.70	5.70	580.17	.00	.02	0.00	23.45	2.47	10.00
6795.000	32.00	580.90	579.00	577.70	12.60	580.77	.00	.08	0.00	29.47	3.07	10.00
6845.000	50.00	0.00	0.00	577.60	2.00	579.84	.00	.00	.00	29.94	2.24	19.00
6845.000	50.00	0.00	0.00	577.60	3.10	580.05	.00	.00	.00	33.91	2.45	19.00
6845.000	50.00	0.00	0.00	577.60	5.70	580.18	.00	.00	.00	36.38	2.58	19.00
6845.000	50.00	0.00	0.00	577.60	12.60	580.78	.00	.00	.00	47.82	3.18	19.00
7795.000	950.00	0.00	0.00	578.80	2.00	579.84	.00	.01	.00	7.62	1.04	17.00
7795.000	950.00	0.00	0.00	578.80	3.10	580.05	.00	.01	.00	11.22	1.25	17.00
7795.000	950.00	0.00	0.00	578.80	5.70	580.20	.00	.02	.00	13.60	1.40	17.00
7795.000	950.00	0.00	0.00	578.80	12.60	580.82	.00	.04	.00	24.22	2.02	17.00
7845.000	50.00	0.00	0.00	577.80	2.00	579.84	.00	.00	.00	33.89	2.04	21.25
7845.000	50.00	0.00	0.00	577.80	3.10	580.06	.00	.00	.00	38.37	2.26	21.25
7845.000	50.00	0.00	0.00	577.80	5.70	580.20	.00	.00	.00	41.49	2.40	21.25
7845.000	50.00	0.00	0.00	577.80	12.60	580.83	.00	.00	.00	160.20	3.03	135.87
8019.000	174.00	580.90	579.60	577.60	2.00	579.88	.00	.03	0.00	22.07	2.28	15.46
8019.000	174.00	580.90	579.60	577.60	3.10	580.14	.00	.08	0.00	26.09	2.54	15.46
8019.000	174.00	580.90	579.60	577.60	5.70	580.48	.00	.28	0.00	31.36	2.88	15.46
8019.000	174.00	580.90	579.60	577.60	12.60	581.10	.00	.28	0.00	128.44	3.50	129.82

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	AREA	DEPTH	TOPWID
8069.000	50.00	0.00	0.00	577.60	2.00	579.88	.00	.00	.00	22.85	2.28	16.00
8069.000	50.00	0.00	0.00	577.60	3.10	580.14	.00	.00	.00	27.01	2.54	16.00
8069.000	50.00	0.00	0.00	577.60	5.70	580.48	.00	.00	.00	32.46	2.88	16.00
8069.000	50.00	0.00	0.00	577.60	12.60	581.10	.00	.00	.00	42.43	3.50	16.00
9169.000	1100.00	0.00	0.00	578.70	20.00	580.12	.02	.24	.01	26.57	1.42	66.86
9169.000	1100.00	0.00	0.00	578.70	30.00	580.37	.01	.24	.01	46.66	1.67	92.14
9169.000	1100.00	0.00	0.00	578.70	37.00	580.64	.01	.16	.00	74.51	1.94	110.00
9169.000	1100.00	0.00	0.00	578.70	60.00	581.21	.00	.11	.00	137.46	2.51	110.00
9769.000	650.00	0.00	0.00	579.00	20.00	580.56	.00	.42	.01	47.89	1.56	110.00
9769.000	650.00	0.00	0.00	579.00	30.00	580.72	.00	.33	.00	66.23	1.72	110.00
9769.000	650.00	0.00	0.00	579.00	37.00	580.86	.00	.22	.00	80.58	1.86	110.00
9769.000	650.00	0.00	0.00	579.00	60.00	581.32	.00	.10	.00	130.99	2.32	110.00
10019.000	250.00	0.00	0.00	578.30	20.00	580.59	.00	.03	.00	102.36	2.29	150.00
10019.000	250.00	0.00	0.00	578.30	30.00	580.75	.00	.03	.00	126.98	2.45	150.00
10019.000	250.00	0.00	0.00	578.30	37.00	580.89	.00	.03	.00	147.69	2.59	150.00
10019.000	250.00	0.00	0.00	578.30	60.00	581.34	.00	.02	.00	216.23	3.04	150.00
10068.000	49.00	0.00	0.00	578.20	20.00	580.59	.00	.00	.00	99.07	2.39	150.00
10068.000	49.00	0.00	0.00	578.20	30.00	580.76	.00	.00	.00	123.47	2.56	150.00
10068.000	49.00	0.00	0.00	578.20	37.00	580.89	.00	.00	.00	143.93	2.69	150.00
10068.000	49.00	0.00	0.00	578.20	60.00	581.34	.00	.00	.00	210.73	3.14	150.00
10069.000	1.00	579.60	579.50	578.20	20.00	580.59	.00	.00	.00	87.20	2.39	150.00
10069.000	1.00	579.60	579.50	578.20	30.00	580.76	.00	.00	.00	111.80	2.56	150.00
10069.000	1.00	579.60	579.50	578.20	37.00	580.89	.00	.00	.00	132.46	2.69	150.00
10069.000	1.00	579.60	579.50	578.20	60.00	581.34	.00	.00	.00	199.68	3.14	150.00
10089.000	20.00	579.60	579.50	578.20	20.00	580.60	.00	.00	.00	87.55	2.40	150.00
10089.000	20.00	579.60	579.50	578.20	30.00	580.76	.00	.00	.00	112.21	2.56	150.00
10089.000	20.00	579.60	579.50	578.20	37.00	580.90	.00	.00	.00	132.85	2.70	150.00
10089.000	20.00	579.60	579.50	578.20	60.00	581.34	.00	.00	.00	199.99	3.14	150.00
10090.000	1.00	0.00	0.00	578.20	20.00	580.60	.00	.00	.00	98.31	2.40	150.00
10090.000	1.00	0.00	0.00	578.20	30.00	580.76	.00	.00	.00	122.96	2.56	150.00
10090.000	1.00	0.00	0.00	578.20	37.00	580.90	.00	.00	.00	143.57	2.70	150.00
10090.000	1.00	0.00	0.00	578.20	60.00	581.34	.00	.00	.00	210.67	3.14	150.00
10149.000	59.00	0.00	0.00	578.50	20.00	580.60	.00	.00	.00	102.50	2.10	150.00
10149.000	59.00	0.00	0.00	578.50	30.00	580.76	.00	.00	.00	127.24	2.26	150.00
10149.000	59.00	0.00	0.00	578.50	37.00	580.90	.00	.00	.00	147.78	2.40	150.00
10149.000	59.00	0.00	0.00	578.50	60.00	581.35	.00	.00	.00	214.66	2.85	150.00
10150.000	1.00	0.00	0.00	579.20	20.00	580.60	.00	.00	.00	118.87	1.40	150.00
10150.000	1.00	0.00	0.00	579.20	30.00	580.77	.00	.00	.00	143.65	1.57	150.00
10150.000	1.00	0.00	0.00	579.20	37.00	580.90	.00	.00	.00	164.26	1.70	150.00
10150.000	1.00	0.00	0.00	579.20	60.00	581.35	.00	.00	.00	231.27	2.15	150.00
10160.000	10.00	0.00	0.00	579.20	20.00	580.60	.00	.00	.00	119.11	1.40	150.00
10160.000	10.00	0.00	0.00	579.20	30.00	580.77	.00	.00	.00	143.94	1.57	150.00
10160.000	10.00	0.00	0.00	579.20	37.00	580.90	.00	.00	.00	164.55	1.70	150.00
10160.000	10.00	0.00	0.00	579.20	60.00	581.35	.00	.00	.00	231.52	2.15	150.00

PRINTED IN U.S.A.
FORM 1411 QD 1461 /TED BY ROTARY MANIFOLD FORMS.

SECNO	XLCH	FLTRD	ELLC	ELMIN	Q	CWSEL	4V	4L	OLOSS	AREA	DEPTH	TOPWID
10161.000	1.00	0.00	0.00	579.20	20.00	580.60	.00	.00	.00	128.66	1.40	150.00
10161.000	1.00	0.00	0.00	579.20	30.00	580.77	.00	.00	.00	153.49	1.57	150.00
10161.000	1.00	0.00	0.00	579.20	37.00	580.90	.00	.00	.00	174.10	1.70	150.00
10161.000	1.00	0.00	0.00	579.20	60.00	581.35	.00	.00	.00	241.07	2.15	150.00
10210.000	49.00	0.00	0.00	578.50	20.00	580.60	.00	.00	.00	136.72	2.10	150.00
10210.000	49.00	0.00	0.00	578.50	30.00	580.77	.00	.00	.00	161.66	2.27	150.00
10210.000	49.00	0.00	0.00	578.50	37.00	580.91	.00	.00	.00	182.27	2.41	150.00
10210.000	49.00	0.00	0.00	578.50	60.00	581.35	.00	.00	.00	249.19	2.85	150.00
10560.000	350.00	0.00	0.00	577.30	20.00	580.62	.00	.01	.00	83.78	3.32	137.02
10560.000	350.00	0.00	0.00	577.30	30.00	580.79	.00	.02	.00	107.75	3.49	144.76
10560.000	350.00	0.00	0.00	577.30	37.00	580.93	.00	.02	.00	128.15	3.63	150.00
10560.000	350.00	0.00	0.00	577.30	60.00	581.37	.00	.02	.00	194.99	4.07	150.00
10960.000	400.00	0.00	0.00	576.40	20.00	580.64	.00	.02	.00	129.90	4.24	150.00
10960.000	400.00	0.00	0.00	576.40	30.00	580.81	.00	.02	.00	156.57	4.41	150.00
10960.000	400.00	0.00	0.00	576.40	37.00	580.95	.00	.02	.00	177.44	4.55	150.00
10960.000	400.00	0.00	0.00	576.40	60.00	581.40	.00	.02	.00	243.83	5.00	150.00
11260.000	300.00	0.00	0.00	576.80	20.00	580.64	.00	.00	.00	358.65	3.84	250.00
11260.000	300.00	0.00	0.00	576.80	30.00	580.82	.00	.00	.00	402.53	4.02	250.00
11260.000	300.00	0.00	0.00	576.80	37.00	580.96	.00	.00	.00	437.53	4.16	250.00
11260.000	300.00	0.00	0.00	576.80	60.00	581.40	.00	.00	.00	548.33	4.60	250.00
11410.000	150.00	0.00	0.00	575.40	20.00	580.64	.00	.00	.00	433.09	5.24	200.00
11410.000	150.00	0.00	0.00	575.40	30.00	580.82	.00	.00	.00	469.07	5.42	200.00
11410.000	150.00	0.00	0.00	575.40	37.00	580.96	.00	.00	.00	497.11	5.56	200.00
11410.000	150.00	0.00	0.00	575.40	60.00	581.40	.00	.00	.00	586.03	6.00	200.00

SUMMARY OF ERRORS

CAUTION SECNO= 2084.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 2084.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 2084.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 2084.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 2084.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 2084.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

FORM 1411-SD PRINTED BY ROTARY MANIFOLD FORMS

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C
C     47
C      0                 D/S FACE 4@X6@ ELLIPTICAL STEEL PIPE
C    751    A            U/S FACE, M-29 10@ SPAN BRIDGE
C    801          50FT   U/S M-29 BRIDGE, MANUFACTURED SEC.
C   1634         883FT   U/S M-29 BRIDGE, MANUFACTURED SEC.
C   2034    B     50FT   D/S RCP TWIN CULVERT
C   2084                 D/S FACE, 38@ OF 3@ RCP TWIN CULVERT, COMPLETELY SILTED
C   2124    C            U/S FACE, 37@ OF 2@ RCP TWIN CULVERT, COMPLETELY SILTED
C   2175          50FT   U/S RCP TWIN CULVERT, MANUFACTURED SEC.
C   2786          50FT   D/S 12" CMP CULVERT, MANUFACTURED SEC.
C   2836                 D/S FACE, 12" CMP CULVERT
C   2874    D            U/S FACE, 12" CMP CULVERT
C   2924          50FT   U/S 12" CMP CULVERT, MANUFACTURED SEC.                FIS - Cottrellville Township
C   3566    E    690FT   U/S 12" CMP CULVERT
C   3916        1190FT   U/S 12" CMP CULVERT, (DIVERSION 1), MANUFACTURED SEC.
C   4466    F     50FT   D/S  6@ X 14@ BRIDGE                                 5850 - 13 - 1
C   4516                 D/S FACE,  6@ X 14@ BRIDGE
C   4528    G            U/S FACE,  6@ X 14@ BRIDGE
C   4578          50FT   U/S  6@ X 14@ BRIDGE, MANUFACTURED SEC.              Robins Drain
C   4908    H     50FT   D/S 12@ X 19@ BRIDGE
C   4958                 D/S FACE, 12@ X 19@ BRIDGE
C   4979    I            U/S FACE, 12@ X 19@ BRIDGE                           4 Flows Natural Floodway
C   5029          50FT   U/S 12@ X 19@ BRIDGE, MANUFACTURED SEC.
C   5451    J     50FT    D/S 6@ SPAN BRIDGE
C   5501                  D/S FACE, 6@ SPAN BRIDGE
C   5511    K             U/S FACE, 6@ SPAN BRIDGE
C   5561          50FT    U/S 6@ SPAN BRIDGE, MANUFACTURED SEC.
C   6713          50FT   D/S BROADBRIDGE RD. BRIDGE, MANUFACTURED SEC.        as send to DNR 6/28/79
C   6763                 D/S FACE, BROADBRIDGE RD. 10@ X 30@ BRIDGE
C   6795    L            U/S FACE, BROADBRIDGE RD. 10@ X 30@ BRIDGE
C   6845    M     50FT   U/S BROADBRIDGE RD. BRIDGE
C   7795    N     50FT   D/S 172@ OF 2@ CMP AND VITEROUS CLAY PIPE
C   7845                 D/S FACE, 24@ OF 2@ CMP AND 148@ OF 2@ VIT. CLAY PIPE
C   8019    O            U/S FACE, 24@ OF 2@ CMP AND 148@ OF 2@ VIT. CLAY PIPE
C   8019                 15 DEGREES SKEW FOR PRESSURE AND WEIR FLOW
C   8069          50FT   U/S 172@ OF 2@ CMP AND VIT. CLAY PIPE, MANUFACTURED SEC.
C   9169        1150FT   U/S 172@ OF 2@ CMP AND VIT. CLAY PIPE, MANUFACTURED SEC.
C   9769    P   1750FT   U/S 172@ OF CMP AND VIT. CLAY PIPE
C  10019                 50 FT D/S 20@ OF 1@ CMP, MANUFACTURED SEC
C  10069                 D/S FACE, 20@ OF 1@ CMP
C  10089       Q         U/S FACE, 20@ OF 1@ CMP
C  10150                 D/S FACE, 10@ OF 1@ CMP
C  10160       R         U/S FACE, 10@ OF 1@ CMP
C  10210                 50 FT U/S 10@ OF 1@ CMP MANUFACTURED SEC.
C  10560                       MANUFACTURED SEC.
C  10960                 MANUFACTURED SEC.
C  11260       S         150 FT D/S THE CONFLUENCE
C  11410       T         400 FT U/S M-29 BRIDGE, (AT DIVERSION 2)
T1      ROBBINS DRAIN,   COTTRELLVILLE TOWNSHIP  5555-13 PM:GILBERTO M FONT
T2      10 YEAR FLOW
T3      ROBBINS DRAIN
J1            2                                                  577.23
J2     1            -1
J3    38      39      40      41      42      43       1      10      11      12
J3    25       8       4
NC 0.045   0.045  0.0270     0.6     0.8
QT     4      23      53      67     100
X1     0      11     100   106.0       0       0       0
X3    10                                                 577.3   577.3
GR 579.6       0   579.4      50   575.6     100  574.42     100  573.26   101.0
GR573.26     103  573.26   105.0   574.4   106.0   575.6     106   579.0     160
GR 579.5     200
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577

X2			1	577.72	580.0						
X3	10			1090	580.5	1100	580.5	580.0	580.0		
BT	5	1000	580.2	0	1090	580.0	577.7	1095	580.0	577.8	
BT	1100	580.0	577.9	1200	580.0	0					
GR	582.2	0	582.0	100	581.8	200	581.5	300	581.2	400	
GR	581.2	500	580.9	600	580.7	700	580.4	800	580.4	900	
GR	580.2	1000	577.7	1090	575.7	1090	574.7	1095	576.1	1100	
GR	577.9	1100	580.0	1200	580.2	1300	580.4	1400	580.7	1500	
GR	581.3	1600	581.5	1700	581.9	1800	582.5	1900			
NC	0.07	0.04	0.045								
X1	801	24	1089	1110	47	55	50				
X3				1040		1150					
GR	582.2	0	582.0	100	581.8	200	581.5	300	581.2	400	
GR	581.2	500	580.9	600	580.7	700	580.4	800	580.4	900	
GR	580.2	1000	578.9	1089	576.7	1090	574.9	1095	576.2	1098	
GR	579.0	1110	580.0	1150	580.0	1300	580.4	1400	580.7	1500	
GR	581.3	1600	581.5	1700	581.9	1800	582.5	1900			
NC	0.065	0.055	0.045								
X1	1634	17	495	515	833	833	833				
X3				350		600					
GR	581.9	0	581.5	100	581.0	200	580.0	350	579.3	450	
GR	578.5	495	577.1	498	576.2	501	575.1	506	576.4	512	
GR	578.2	515	579.0	550	580.5	600	580.0	650	578.9	700	
GR	580.0	780	580.5	900							
NC	0.06	0.055	0.045								
X1	2034	20	593	624	400	400	400				
X3				486		720					
GR	582.0	0	581.8	100	581.7	200	581.1	300	580.5	400	
GR	580.1	480	578.6	500	578.3	593	577.2	600	576.9	613	
GR	576.9	620	578.4	624	579.2	700	580.3	750	580.8	800	
GR	581.3	900	579.3	1000	580.5	1100	581.5	1200	582.5	1300	
NC	0.065	0.050	0.045								
X1	2083				49	49	49				
X3	10	577.7		491		686					
X1	2084	17	593	624	1	1	1				
X3				491		686					
GR	582.0	0	581.8	100	581.7	200	581.1	300	580.5	400	
GR	580.1	480	579.2	500	579.0	593	579.1	608	579.0	624	
GR	580.3	750	580.8	800	581.3	900	579.3	1000	580.5	1100	
GR	581.5	1200	582.0	1300							
X1	2124				40	40	40				
X3				488		693					
NC	0.070	0.060	0.045								
X1	2125	22	587	629	1	1	1				
X3				488		694					
GR	582.0	0	581.8	100	581.7	200	581.1	300	580.5	400	
GR	580.1	480	578.6	500	578.2	587	576.7	597	575.7	605	
GR	575.6	615	576.1	619	576.7	624	578.9	629	579.2	700	
GR	580.3	750	580.8	800	581.3	900	579.3	1000	580.5	1100	
GR	581.5	1200	582.0	1300							
X1	2175				50	50	50				
X3				485		724					
NC	0.07	0.07	0.038								
X1	2786	17	483	522	611	611	611				
X3				380		580					
GR	582.6	0	582.0	100	581.7	200	580.5	300	579.3	400	
GR	578.5	483	576.2	487	575.5	494	575.3	500	576.1	508	
GR	576.2	518	578.3	522	578.9	600	579.5	700	580.2	800	
GR	580.4	900	580.7	1000							
NC	0.05	0.045	0.030								
X1	2835				49	49	49				
X3				380		630					
X1	2836	21	499.5	500.5	1	1	1				
X3	10			379.9		630.1		577.6	577.60		

FORM 1411 UD PRINTED BY ROTARY MANIFOLD FORMS

BT	579.0	0	600	578.9	0	630	579.2	0		
GR	582.6	0	582.0	100	581.7	200	580.0	300	579.4	380
GR	579.3	400	578.5	483	576.7	487	576.2	499.5	575.8	499.5
GR	575.5	500	575.8	500.5	576.2	500.5	576.7	518	578.5	522
GR	578.9	600	579.2	630	579.9	700	580.0	800	580.4	900
GR	580.7	1000								
X1	2874	21	499.5	500.5	38	38	38			
X3	10			379.9	580.9	670.1	580.9	579.3	578.9	
BT	9	380	579.5	0	400	579.3	0	487	579.0	0
BT	499.5	579.0	576.3	500	579.0	576.7	500.5	579.0	576.3	522
BT	579.0	0	600	578.9	0	670	579.6	0		
GR	582.6	0	582.0	100	581.7	200	580.0	300	579.5	380
GR	579.3	400	578.5	483	576.7	487	576.3	499.5	575.9	499.5
GR	575.6	500	575.9	500.5	576.2	500.5	576.7	518	578.5	522
GR	578.9	600	579.6	670	579.9	700	580.0	800	580.4	900
GR	580.7	1000								
X1	2875				1	1	1			
X3				379		671				
NC	0.075	0.07	0.04							
X1	2924	17	483	522	49	49	49			
X3				365		720				
GR	582.6	0	582.0	100	581.7	200	580.6	300	579.3	400
GR	578.5	483	576.2	487	575.3	494	575.6	500	576.1	508
GR	576.2	518	578.5	522	578.9	600	579.6	700	580.0	800
GR	580.4	900	580.7	1000						
NC	0.08	0.09	0.040							
X1	3566	18	360	380	642	642	642			
X3				200	581.0	600	581.0			
GR	581.8	0	580.0	60	579.7	160	579.6	260	578.3	360
GR	577.1	363	576.2	366	574.7	371	576.4	377	578.0	380
GR	578.3	460	580.4	660	580.5	860	581.0	1060	581.1	1260
GR	582.2	1460	583.3	1660	584.1	1860				
NC	0.10	0.09	0.04							
X1	3916	16	220	240	350	350	350			
X3				60		467				
GR	581.0	0	579.5	60	578.6	160	578.3	220	577.1	223
GR	576.2	226	575.6	231	576.4	237	578.0	240	578.3	300
GR	579.5	400	580.5	500	580.8	600	581.1	800	582.2	1000
GR	583.3	1200								
NC	0.06	0.065	0.045							
QT	4	32	50	58	81					
X1	4466	18	288	319	550	550	550			
X3				185		358				
GR	582.0	0	580.1	160	579.7	200	578.8	288	577.0	300
GR	576.9	309	577.0	313	579.1	319	579.2	400	579.5	500
GR	580.5	600	580.9	700	581.1	800	581.3	900	581.5	1000
GR	581.7	1100	582.0	1200	583.0	1300				
NC	0.065	0.062	0.042							
X1	4515				49	49	49			
X3				186		345				
X1	4516	21	305	311	1	1	1			
X3	10			190		350.1		577.9	577.9	
BT	7	200	579.7	0	260	579.0	0	305	578.8	577.0
BT	305	578.8	577.9	311	578.8	577.9	311	578.8	576.3	350
BT	579.0	0								
GR	582.0	0	580.1	160	579.7	200	579.0	260	578.5	303
GR	577.0	305	576.5	307	576.5	309	576.3	311	578.4	315
GR	579.0	350	579.2	400	579.5	500	580.5	600	580.9	700
GR	581.1	800	581.3	900	581.5	1000	581.7	1100	582.0	1200
GR	583.0	1300								
X1	4528				12	12	12			
X2							1			
X3	10			190		350		578.8	578.8	
NC	0.068	0.065	0.050							

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X1	4578				49	49	49			
X3				168		360				
NC	0.068	0.065	0.050							
X1	4908	15	330	375	320	340	330			
X3				276		480				
GR	582.3	0	581.5	100	580.7	250	579.4	330	577.7	341
GR	577.3	346	577.4	348	577.5	350	578.0	360	578.5	375
GR	579.4	500	580.0	600	580.7	800	581.5	1000	582.5	1200
X1	4958	13	345	357	50	50	50			
X3	10			250		460		579.0	579.0	
GR	582.3	0	581.5	100	580.9	230	579.6	340	577.8	345
GR	577.3	351	577.4	357	579.7	365	579.5	460	579.4	500
GR	580.0	600	580.7	800	581.5	1100				
SB		2.764	3.906		8.4		10.2	0.9	577.3	577.3
X1	4979				21	21	21			
X2			1	578.3	579.5					
X3	10			229.9		460.1		579.5	579.5	
BT	7	230	580.9	0	340	579.6	0	345	579.9	577.8
BT	345	579.9	578.3	357	579.9	578.3	357	579.9	577.4	460
BT	579.5	0								
NC	0.13	0.13	0.05							
X1	5029				50	50	50			
X3				230		470				
QT	4	17	26	32	47					
X1	5451	15	440	460	432	410	422			
GR	582.5	0	581.4	100	580.7	250	580.3	320	578.9	440
GR	577.4	443	577.1	448	577.6	454	578.5	460	578.5	520
GR	579.3	620	580.5	720	581.5	820	582.5	920	583.0	1020
NC	0.11	0.11	0.052							
X1	5500				49	49	49			
X1	5501	18	446	453	1	1	1			
X3	10							578.8	578.8	
BT	9	250	580.7	0	320	580.3	0	446	579.1	0
BT	447	579.1	578.8	453	579.2	578.8	453	579.2	577.4	540
BT	578.5	0	640	579.3	0	720	580.5	0		
GR	582.5	0	581.4	100	580.7	250	580.3	320	579.1	446
GR	578.8	447	578.0	449	577.4	450	577.2	451	577.3	452
GR	577.4	453	578.8	453	578.5	540	579.3	640	580.5	720
GR	581.5	820	582.5	920	583.0	1020				
X1	5511				10	10	10			
X2							1			
X3	10							579.2	579.2	
X1	5512	18	440	460	1	1	1			
GR	582.5	0	581.4	100	580.7	250	580.3	320	579.1	440
GR	578.8	447	578.0	449	577.4	450	577.2	451	577.3	452
GR	577.4	453	578.5	460	578.7	540	579.3	640	580.5	720
GR	581.5	820	582.5	920	583.0	1020				
X1	5561				49	49	49			
QT	4	2.0	3.1	5.7	12.6					
X1	6713	17	530	549	1150	1150	1150			
X3				522		557				
GR	582.8	0	581.9	30	581.8	230	582.2	430	579.5	530
GR	578.4	534	577.6	539	578.0	543	579.1	549	579.0	630
GR	580.3	830	580.8	1030	581.0	1230	581.0	1430	581.6	1630
GR	582.8	1830	583.2	2030						
NC	0.11	0.11	0.050							
X1	6763	19	532	542	50	50	50			
X3	10			500		625		580.9	580.9	
GR	582.7	0	582.5	40	582.0	240	581.4	440	581.1	500
GR	579.0	525	578.4	532	577.7	534	577.7	537	577.7	540
GR	578.3	542	579.0	549	580.0	600	580.6	625	580.9	640
GR	581.4	840	581.7	1040	581.9	1240	582.1	1440		
SB	0	2.035	2.98	0	6.0	0	7.8	0	577.7	577.7
X1	6795				32	32	32			

FORM 1611 OU-PRINTED BY ROTARY MANIFOLD FORSD.

BT	8	500	581.1	0	534	581.0	0	534	581.0	577.7
BT	534	581.0	579.0	540	581.0	579.0	540	581.0	578.3	540
BT	581.0	0	625	580.6	0					
NC	0.045	0.043	0.040							
X1	6845	17	530	549	50	50	50			
X3				484		600				
GR	582.8	0	581.9	30	581.8	230	582.2	430	579.5	530
GR	578.1	534	577.6	539	578.0	543	579.1	549	579.0	600
GR	580.3	830	580.8	1030	581.0	1230	581.0	1430	581.6	1630
GR	582.8	1830	583.2	2030						
NC	0.050	0.050	0.045							
X1	7795	15	577	594	950	950	950			
X3				502		650				
GR	584.5	0	583.5	100	582.7	200	582.5	300	582.3	385
GR	581.5	485	579.5	577	579.4	583	578.8	585	579.5	588
GR	579.6	594	581.6	700	581.1	800	582.5	900	583.5	1000
NC	0.050	0.050	0.040							
X1	7845	15	575	597	50	50	50	0.966		
X3	10			500		650		580.3	580.3	
GR	584.5	0	583.5	100	582.7	200	582.5	300	582.3	385
GR	581.5	485	579.0	575	578.2	579	577.8	585	578.1	592
GR	579.3	597	581.6	700	581.1	800	582.5	900	583.5	1000
SB		5.02	2.69		1.52		3.03		579.1	578.5
X1	8019	18	579	595	174	174	174	0.966		
X2			1	579.6	580.9				0.966	
X3	10			499.1		650.1		580.9	580.9	
BT	7	500	581.4	0	584	580.9	578.0	584	580.9	579.2
BT	585	580.9	579.6	586	580.9	579.2	586	580.9	578.0	650
BT	581.2	0								
GR	584.5	0	583.5	100	582.7	200	582.5	300	582.3	385
GR	581.4	500	579.4	579	578.4	582	578.0	584	577.6	585
GR	578.0	586	578.0	590	579.8	595	581.2	650	581.6	700
GR	581.1	800	582.5	800	583.5	1000				
NC	0.050	0.050	0.045							
X1	8069				50	50	50			
X3				500		670				
OT	4	20	30	37	60					
X1	9169	19	995	1005	1100	1100	1100			
X3				911		1200				
GR	584.7	0	583.7	95	583.6	295	582.9	495	582.4	695
GR	581.3	895	579.6	995	579.0	998	578.7	1000	578.7	1002
GR	579.6	1005	580.5	1095	581.2	1295	581.5	1495	581.8	1695
GR	581.7	1895	582.4	2095	582.7	2295	582.8	2495		
X1	9769	19	995	1005	650	650	650			
X3				930		1200				
GR	585.0	0	584.0	95	583.9	295	583.2	495	582.7	695
GR	581.6	895	579.9	995	579.3	998	579.0	1000	579.0	1002
GR	579.9	1005	580.5	1095	581.2	1295	581.5	1495	581.8	1695
GR	582.0	1895	582.7	2095	583.0	2295	583.1	2495		
X1	10019	18	690	709	250	250	250			
X3				617		870				
GR	585.1	0	584.2	200	582.7	400	581.3	600	579.9	690
GR	578.8	695	578.3	700	578.3	704	579.6	709	580.4	800
GR	581.3	900	581.4	1000	581.6	1200	581.8	1400	582.0	1600
GR	582.7	1800	583.0	2000	583.1	2200				
NC	0.060	0.063	0.040							
X1	10068	20	690	709	49	49	49			
X3				617		870				
GR	585.1	0	584.2	200	582.7	400	581.3	600	579.9	690
GR	578.9	695	578.8	699.5	578.2	700	578.8	700.5	578.9	704
GR	579.6	709	580.4	800	581.3	900	581.4	1000	581.6	1200
GR	581.8	1400	582.0	1600	582.7	1800	583.0	2000	583.1	2200
X1	10069				1	1	1			
X3				617		870		579.6	579.6	
BT	12	600	581.3	0	690	579.9	0	699.5	579.7	0

FORM 1411-GO POINTED BY ROTARY MANIFOLD FORMS

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BT 579.7   579.3   700.5   579.7   578.8   700.5   579.7       0     709   579.6
BT     0     800   580.4       0     900   581.4       0
X1 10089                              20      20      20
X2                                                     1
X3    10                    617             870           579.6   579.6
X1 10090                              1       1       1
X3                          617             870
X1 10149      18     .690   709      59      59      59
X3                          617             870
GR 585.1       0   584.2    200   582.7     400   581.3     600   579.9     690
GR 578.8     695   578.5    700   578.5     704   579.6     709   580.4     800
GR 581.3     900   581.4   1000   581.6    1200   581.8    1400   582.0    1600
GR 582.7    1800   583.0   2000   583.1    2200
X1 10150      18     694    707       1       1       1
X3                          600             900
GR 585.2       0   584.2    200   582.7     400   581.8     600   579.3     694
GR 579.2     697   579.2    700   579.2     703   579.3     707   580.4     800
GR 580.5     900   581.2   1000   581.5    1200   581.8    1400   582.0    1600
GR 582.6    1800   583.0   2000   583.1    2200
X1 10160                              10      10      10
X3                          600             900
X1 10161      18     694    707       1       1       1
X3    10   579.2            600             900
GR 585.2       0   584.0    200   582.7     400   581.8     600   579.1     694
GR 578.7     697   578.5    700   578.7     703   579.2     707   580.4     800
GR 580.5     900   581.2   1000   581.2    1200   581.8    1400   582.0    1600
GR 582.6    1800   582.9   2000   583.1    2200
X1 10210                              49      49      49
X3                          600             900
X1 10560      17     .700   712     350     350     350
X3                          600             900
GR 585.0       0   584.0    200   583.4     400   582.0     600   579.8     700
GR 577.6     703   577.9    705   577.3     707   579.8     712   580.5     800
GR 581.2    1000   581.5   1200   581.8    1400   582.0    1600   582.6    1800
GR 582.9    2000   583.1   2200
NC 0.060   0.060   0.045
X1 10960      18     530    545     400     400     400
X3                          430             730
GR 585.0       0   584.0    130   583.0     230   581.8     430   579.5     530
GR 576.7     533   576.4    535   577.3     537   579.0     540   579.5     545
GR 580.3     630   581.1    830   581.4    1030   581.7    1230   581.9    1430
GR 582.6    1630   582.9   1830   583.0    2030
X1 11260      15     389    415     200     300     300
X3                          250             800
GR 583.8       0   583.5    100   582.8     200   581.3     300   578.4     389
GR 577.1     392   576.8    400   577.1     411   579.4     415   579.6     500
GR 579.5     600   579.2    700   579.1     800   580.2     900   580.6    1000
NC 0.045   0.045   0.040
X1 11410      16     350    380     250     120     150
X3                          200             600
GR 584.8       0   580.5    200   579.7     250   578.4     350   577.1     352
GR 576.4     356   575.9    360   575.4     364   575.7     370   576.1     374
GR 577.0     377   578.1    380   579.0     430   579.5     530   580.0     680
GR 581.8     800
EJ
T1      ROBBINS DRAIN,  COTTRELLVILLE TOWNSHIP  5555-13 PM:GILBERTO M FONT
T2      50 YEAR FLOW
T3      ROBBINS DRAIN
J1            3                                                 577.23
J2     2              -1
T1      ROBBINS DRAIN,  COTTRELLVILLE TOWNSHIP  5555-13 PM:GILBERTO M FONT
T2      100 YEAR FLOW
T3      ROBBINS DRAIN
J1            4                                                 577.23
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T2 500 YEAR FLOW
T3 ROBBINS DRAIN
J1 5
J2 15 -1

577.23

ER

FORM 1411-60-PRINTED BY ROTARY MANIFOLD FORMS.

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  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
*****************************************************

C
T1      ROBBINS DRAIN,  COTTRELLVILLE TOWNSHIP  5555-13 PM:GILBERTO M FONT
T2      10 YEAR FLOW
T3      ROBBINS DRAIN

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        2.        0.        0.  0.000000      0.00      0.0       0.   577.230     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    39.000    40.000    41.000    42.000    43.000     1.000    10.000    11.000    12.000

    25.000     8.000     4.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

NC      .045      .045      .027      .600      .800     0.000     0.000     0.000     0.000     0.000
QT     4.000    23.000    53.000    67.000   100.000     0.000     0.000     0.000     0.000     0.000

                    D/S FACE 4@X6@ ELLIPTICAL STEEL PIPE

X1     0.000    11.000   100.000   106.000     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   577.300   577.300     0.000
GR   579.600     0.000   579.400    50.000   575.600   100.000   574.420   100.000   573.260   101.000
GR   573.260   103.000   573.260   105.000   574.400   106.000   575.600   106.000   579.000   160.000
GR   579.500   200.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
SB     0.000    20.520     3.040     0.000    10.000     0.000    25.830     0.000   574.700   573.260

          A          U/S FACE, M-29 10@ SPAN BRIDGE

X1   751.000    24.000  1090.000  1100.000   751.000   751.000   751.000     0.000     0.000     0.000
X2     0.000     0.000     1.000   577.720   580.000     0.000     0.000     0.000     0.000     0.000
X3    10.000     0.000     0.000  1090.000   580.500  1100.000   580.500   580.000   580.000     0.000
BT     5.000  1000.000   580.200     0.000  1090.000   580.000   577.700  1095.000   580.000   577.800
BT  1100.000   580.000   577.900  1200.000   580.000     0.000     0.000     0.000     0.000     0.000
GR   582.200     0.000   582.000   100.000   581.300   200.000   581.500   300.000   581.200   400.000
GR   581.200   500.000   580.900   600.000   580.700   700.000   580.400   800.000   580.400   900.000
GR   580.200  1000.000   577.700  1090.000   575.700  1090.000   574.700  1095.000   576.100  1100.000
GR   577.900  1100.000   580.000  1200.000   580.200  1300.000   580.400  1400.000   580.700  1500.000
GR   581.300  1600.000   581.500  1700.000   581.900  1800.000   582.500  1900.000     0.000     0.000
NC      .070      .040      .045     0.000     0.000     0.000     0.000     0.000     0.000     0.000

                50FT  U/S M-29 BRIDGE, MANUFACTURED SEC.

X1   801.000    24.000  1089.000  1110.000    47.000    55.000    50.000     0.000     0.000     0.000
X3     0.000     0.000     0.000  1040.000     0.000  1150.000     0.000     0.000     0.000     0.000
GR   582.200     0.000   582.000   100.000   581.800   200.000   581.500   300.000   581.200   400.000
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GR	580.200	1000.000	578.900	1089.000	576.700	1090.000	574.900	1095.000	576.200	1098.000
GR	579.000	1110.000	580.000	1150.000	580.000	1300.000	580.400	1400.000	580.700	1500.000
GR	581.300	1600.000	581.500	1700.000	581.900	1800.000	582.500	1900.000	0.000	0.000
NC	.065	.055	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000

883FT U/S M-29 BRIDGE, MANUFACTURED SEC.

X1	1634.000	17.000	495.000	515.000	833.000	833.000	833.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	350.000	0.000	600.000	0.000	0.000	0.000	0.000
GR	581.900	0.000	581.500	100.000	581.000	200.000	580.000	350.000	579.300	450.000
GR	578.500	495.000	577.100	498.000	576.200	501.000	575.100	506.000	576.400	512.000
GR	578.200	515.000	579.000	550.000	580.500	600.000	580.000	650.000	578.900	700.000
GR	580.000	780.000	580.500	900.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.060	.055	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000

B 50FT D/S RCP TWIN CULVERT

X1	2034.000	20.000	593.000	624.000	400.000	400.000	400.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	486.000	0.000	720.000	0.000	0.000	0.000	0.000
GR	582.000	0.000	581.800	100.000	581.700	200.000	581.100	300.000	580.500	400.000
GR	580.100	480.000	578.600	500.000	578.300	593.000	577.200	600.000	576.900	613.000
GR	576.900	620.000	578.400	624.000	579.200	700.000	580.300	750.000	580.800	800.000
GR	581.300	900.000	579.300	1000.000	580.500	1100.000	581.500	1200.000	582.500	1300.000
NC	.065	.050	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	2083.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	10.000	577.700	0.000	491.000	0.000	686.000	0.000	0.000	0.000	0.000

D/S FACE, 38@ OF 3@ RCP TWIN CULVERT, COMPLETELY SILTE

X1	2084.000	17.000	593.000	624.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	491.000	0.000	686.000	0.000	0.000	0.000	0.000
GR	582.000	0.000	581.800	100.000	581.700	200.000	581.100	300.000	580.500	400.000
GR	580.100	480.000	579.200	500.000	579.000	593.000	579.100	608.000	579.000	624.000
GR	580.300	750.000	580.800	800.000	581.300	900.000	579.300	1000.000	580.500	1100.000
GR	581.500	1200.000	582.000	1300.000	0.000	0.000	0.000	0.000	0.000	0.000

C U/S FACE, 37@ OF 2@ RCP TWIN CULVERT, COMPLETELY SILTE

X1	2124.000	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	488.000	0.000	693.000	0.000	0.000	0.000	0.000
NC	.070	.060	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	2125.000	22.000	587.000	629.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	488.000	0.000	694.000	0.000	0.000	0.000	0.000
GR	582.000	0.000	581.800	100.000	581.700	200.000	581.100	300.000	580.500	400.000
GR	580.100	480.000	578.600	500.000	578.200	587.000	576.700	597.000	575.700	605.000
GR	575.600	615.000	576.100	619.000	576.700	624.000	578.900	629.000	579.200	700.000
GR	580.300	750.000	580.800	800.000	581.300	900.000	579.300	1000.000	580.500	1100.000
GR	581.500	1200.000	582.000	1300.000	0.000	0.000	0.000	0.000	0.000	0.000

50FT U/S RCP TWIN CULVERT, MANUFACTURED SEC.

X1	2175.000	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	485.000	0.000	724.000	0.000	0.000	0.000	0.000
NC	.070	.070	.038	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	2786.000	17.000	483.000	522.000	611.000	611.000	611.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	380.000	0.000	580.000	0.000	0.000	0.000	0.000
GR	582.600	0.000	582.000	100.000	581.700	200.000	580.500	300.000	579.300	400.000
GR	578.500	483.000	576.200	487.000	575.500	494.000	575.300	500.000	576.100	508.000
GR	576.200	518.000	578.300	522.000	578.900	600.000	579.500	700.000	580.200	800.000
GR	580.400	900.000	580.700	1000.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.050	.045	.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	2835.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	380.000	0.000	630.000	0.000	0.000	0.000	0.000

D/S FACE, 12" CMP CULVERT

X1	2836.000	21.000	499.500	500.500	1.000	1.000	1.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	379.900	0.000	630.100	0.000	577.600	577.600	0.000
BT	9.000	380.000	579.400	0.000	400.000	579.300	0.000	487.000	579.000	0.000
BT	499.500	579.000	576.200	500.000	579.000	576.500	500.500	579.000	576.200	522.000
BT	579.000	0.000	600.000	578.900	0.000	630.000	579.200	0.000	0.000	0.000
GR	582.600	0.000	582.000	100.000	581.700	200.000	580.000	300.000	579.400	380.000
GR	579.300	400.000	578.500	483.000	576.700	487.000	576.200	499.500	575.800	499.500
GR	575.500	500.000	575.800	500.500	576.200	500.500	576.700	518.000	578.500	522.000
GR	578.900	600.000	579.200	630.000	579.900	700.000	580.000	800.000	580.400	900.000
GR	580.700	1000.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D U/S FACE, 12" CMP CULVERT

X1	2874.000	21.000	499.500	500.500	38.000	38.000	38.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	379.900	580.900	670.100	580.900	579.300	578.900	0.000
BT	9.000	380.000	579.500	0.000	400.000	579.300	0.000	487.000	579.000	0.000
BT	499.500	579.000	576.300	500.000	579.000	576.700	500.500	579.000	576.300	522.000
BT	579.000	0.000	600.000	578.900	0.000	670.000	579.600	0.000	0.000	0.000
GR	582.600	0.000	582.000	100.000	581.700	200.000	580.000	300.000	579.500	380.000
GR	579.300	400.000	578.500	483.000	576.700	487.000	576.300	499.500	575.900	499.500
GR	575.600	500.000	575.900	500.500	576.200	500.500	576.700	518.000	578.500	522.000
GR	578.900	600.000	579.600	670.000	579.900	700.000	580.000	800.000	580.400	900.000
GR	580.700	1000.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	2875.000	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	379.000	0.000	671.000	0.000	0.000	0.000	0.000
NC	.075	.070	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

50FT U/S 12" CMP CULVERT, MANUFACTURED SEC.

X1	2924.000	17.000	483.000	522.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	365.000	0.000	720.000	0.000	0.000	0.000	0.000
GR	582.600	0.000	582.000	100.000	581.700	200.000	580.600	300.000	579.300	400.000
GR	578.500	483.000	576.200	487.000	575.300	494.000	575.600	500.000	576.100	508.000
GR	576.200	518.000	578.500	522.000	578.900	600.000	579.600	700.000	580.000	800.000
GR	580.400	900.000	580.700	1000.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.080	.090	.060	0.000	0.000	0.000	0.000	0.000	0.000	0.000

E 590FT U/S 12" CMP CULVERT

X1	3566.000	18.000	360.000	380.000	642.000	642.000	642.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	200.000	581.000	600.000	581.000	0.000	0.000	0.000
GR	581.800	0.000	580.000	60.000	579.700	160.000	579.600	260.000	578.300	360.000
GR	577.100	363.000	576.200	366.000	574.700	371.000	576.400	377.000	578.000	380.000

FORM 1411-GD-PRINTED BY ROTARY MANIFOLD - CRESS.

NC	.100	.090	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1190FT U/S 12" CMP CULVERT, (DIVERSION 1), MANUFACTURED SEC.

X1	3916.000	16.000	220.000	240.000	350.000	350.000	350.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	60.000	0.000	467.000	0.000	0.000	0.000	0.000
GR	581.000	0.000	579.500	60.000	578.600	160.000	578.300	220.000	577.100	223.000
GR	576.200	226.000	575.600	231.000	576.400	237.000	578.000	240.000	578.300	300.000
GR	579.500	400.000	580.500	500.000	580.800	600.000	581.100	800.000	582.200	1000.000
GR	583.300	1200.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.060	.065	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OT	4.000	32.000	50.000	58.000	81.000	0.000	0.000	0.000	0.000	0.000

F 50FT D/S 6@ X 14@ BRIDGE

X1	4466.000	18.000	288.000	319.000	550.000	550.000	550.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	185.000	0.000	358.000	0.000	0.000	0.000	0.000
GR	582.000	0.000	580.100	160.000	579.700	200.000	578.800	288.000	577.000	300.000
GR	576.900	309.000	577.000	313.000	579.100	319.000	579.200	400.000	579.500	500.000
GR	580.500	600.000	580.900	700.000	581.100	800.000	581.300	900.000	581.500	1000.000
GR	581.700	1100.000	582.000	1200.000	583.000	1300.000	0.000	0.000	0.000	0.000
NC	.065	.062	.042	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	4515.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	186.000	0.000	345.000	0.000	0.000	0.000	0.000

D/S FACE, 6@ X 14@ BRIDGE

X1	4516.000	21.000	305.000	311.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	190.000	0.000	350.100	0.000	577.900	577.900	0.000
BT	7.000	200.000	579.700	0.000	260.000	579.000	0.000	305.000	578.800	577.000
BT	305.000	578.800	577.900	311.000	578.800	577.900	311.000	578.800	576.300	350.000
BT	579.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	582.000	0.000	580.100	160.000	579.700	200.000	579.000	260.000	578.500	303.000
GR	577.000	305.000	576.500	307.000	576.500	309.000	576.300	311.000	578.400	315.000
GR	579.000	350.000	579.200	400.000	579.500	500.000	580.500	600.000	580.900	700.000
GR	581.100	800.000	581.300	900.000	581.500	1000.000	581.700	1100.000	582.000	1200.000
GR	583.000	1300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

G U/S FACE, 6@ X 14@ BRIDGE

X1	4528.000	0.000	0.000	0.000	12.000	12.000	12.000	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	190.000	0.000	350.000	0.000	578.800	578.800	0.000
NC	.068	.065	.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	4529.000	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	189.000	0.000	351.000	0.000	0.000	0.000	0.000

50FT U/S 6@ X 14@ BRIDGE, MANUFACTURED SEC.

X1	4578.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	168.000	0.000	360.000	0.000	0.000	0.000	0.000
NC	.068	.065	.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000

H 50FT D/S 12@ X 19@ BRIDGE

X3	0.000	0.000	0.000	276.000	0.000	480.000	0.000	0.000	0.000	0.000
GR	582.300	0.000	581.500	100.000	580.700	250.000	579.400	330.000	577.700	341.000
GR	577.300	346.000	577.400	348.000	577.500	350.000	578.000	360.000	578.500	375.000
GR	579.400	500.000	580.000	600.000	580.700	800.000	581.500	1000.000	582.500	1200.000

D/S FACE, 12@ X 19@ BRIDGE

X1	4958.000	13.000	345.000	357.000	50.000	50.000	50.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	250.000	0.000	460.000	0.000	579.000	579.000	0.000
GR	582.300	0.000	581.500	100.000	580.900	230.000	579.600	340.000	577.800	345.000
GR	577.300	351.000	577.400	357.000	579.700	365.000	579.500	460.000	579.400	500.000
GR	580.000	600.000	580.700	800.000	581.500	1100.000	0.000	0.000	0.000	0.000
SB	0.000	2.764	3.906	0.000	8.400	0.000	10.200	.900	577.300	577.300

I U/S FACE, 12@ X 19@ BRIDGE

X1	4979.000	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	578.300	579.500	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	229.900	0.000	460.100	0.000	579.500	579.500	0.000
BT	7.000	230.000	580.900	0.000	340.000	579.600	0.000	345.000	579.900	577.800
BT	345.000	579.900	578.300	357.000	579.900	578.300	357.000	579.900	577.400	460.000
BT	579.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.130	.130	.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000

50FT U/S 12@ X 19@ BRIDGE, MANUFACTURED SEC.

X1	5029.000	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	230.000	0.000	470.000	0.000	0.000	0.000	0.000
QT	4.000	17.000	26.000	32.000	47.000	0.000	0.000	0.000	0.000	0.000

J 50FT D/S 6@ SPAN BRIDGE

X1	5451.000	15.000	440.000	460.000	432.000	410.000	422.000	0.000	0.000	0.000
GR	582.500	0.000	581.400	100.000	580.700	250.000	580.300	320.000	578.900	440.000
GR	577.400	443.000	577.100	448.000	577.600	454.000	578.500	460.000	578.500	520.000
GR	579.300	620.000	580.500	720.000	581.500	820.000	582.500	920.000	583.000	1020.000
NC	.110	.110	.052	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	5500.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000

D/S FACE, 6@ SPAN BRIDGE

X1	5501.000	18.000	446.000	453.000	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	578.800	578.800	0.000
BT	9.000	250.000	580.700	0.000	320.000	580.300	0.000	446.000	579.100	0.000
BT	447.000	579.100	578.800	453.000	579.200	578.800	453.000	579.200	577.400	540.000
BT	578.500	0.000	640.000	579.300	0.000	720.000	580.500	0.000	0.000	0.000
GR	582.500	0.000	581.400	100.000	580.700	250.000	580.300	320.000	579.100	446.000
GR	578.800	447.000	578.000	449.000	577.400	450.000	577.200	451.000	577.300	452.000
GR	577.400	453.000	578.800	453.000	578.500	540.000	579.300	640.000	580.500	720.000
GR	581.500	820.000	582.500	920.000	583.000	1020.000	0.000	0.000	0.000	0.000

K U/S FACE, 6@ SPAN BRIDGE

X1	5511.000	0.000	0.000	0.000	10.000	10.000	10.000	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	579.200	579.200	0.000

X1	5512.000	18.000	440.000	460.000	1.000	1.000	1.000	0.000	0.000	0.000
GR	582.500	0.000	581.400	100.000	580.700	250.000	580.300	320.000	579.100	440.000
GR	578.800	447.000	578.000	449.000	577.400	450.000	577.200	451.000	577.300	452.000
GR	577.400	453.000	578.500	460.000	578.700	540.000	579.300	640.000	580.500	720.000
GR	581.500	820.000	582.500	920.000	583.000	1020.000	0.000	0.000	0.000	0.000

50FT U/S @ SPAN BRIDGE, MANUFACTURED SEC.

X1	5561.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000
QT	4.000	2.000	3.100	5.700	12.600	0.000	0.000	0.000	0.000	0.000

50FT D/S BROADBRIDGE RD. BRIDGE, MANUFACTURED SEC.

X1	6713.000	17.000	530.000	549.000	1150.000	1150.000	1150.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	522.000	0.000	557.000	0.000	0.000	0.000	0.000
GR	582.800	0.000	581.900	30.000	581.800	230.000	582.200	430.000	579.500	530.000
GR	578.400	534.000	577.600	539.000	578.000	543.000	579.100	549.000	579.000	630.000
GR	580.300	830.000	580.800	1030.000	581.000	1230.000	581.000	1430.000	581.600	1630.000
GR	582.800	1830.000	583.200	2030.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.110	.110	.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D/S FACE, BROADBRIDGE RD. 10@ X 30@ BRIDGE

X1	6763.000	19.000	532.000	542.000	50.000	50.000	50.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	500.000	0.000	625.000	0.000	580.900	580.900	0.000
GR	582.700	0.000	582.500	40.000	582.000	240.000	581.400	440.000	581.100	500.000
GR	579.000	525.000	578.400	532.000	577.700	534.000	577.700	537.000	577.700	540.000
GR	578.300	542.000	579.000	549.000	580.000	600.000	580.600	625.000	580.900	640.000
GR	581.400	840.000	581.700	1040.000	581.900	1240.000	582.100	1440.000	0.000	0.000
SB	0.000	2.035	2.980	0.000	6.000	0.000	7.800	0.000	577.700	577.700

L U/S FACE, BROADBRIDGE RD. 10@ X 30@ BRIDGE

X1	6795.000	0.000	0.000	0.000	32.000	32.000	32.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	579.000	580.900	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	499.900	0.000	625.100	0.000	580.900	580.900	0.000
BT	8.000	500.000	581.100	0.000	534.000	581.000	0.000	534.000	581.000	577.700
BT	534.000	581.000	579.000	540.000	581.000	579.000	540.000	581.000	578.300	540.000
BT	581.000	0.000	625.000	580.600	0.000	0.000	0.000	0.000	0.000	0.000
NC	.045	.043	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

M 50FT U/S BROADBRIDGE RD. BRIDGE

X1	6845.000	17.000	530.000	549.000	50.000	50.000	50.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	484.000	0.000	600.000	0.000	0.000	0.000	0.000
GR	582.800	0.000	581.900	30.000	581.800	230.000	582.200	430.000	579.500	530.000
GR	578.100	534.000	577.600	539.000	578.000	543.000	579.100	549.000	579.000	600.000
GR	580.300	830.000	580.800	1030.000	581.000	1230.000	581.000	1430.000	581.600	1630.000
GR	582.800	1830.000	583.200	2030.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.050	.050	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000

N 50FT D/S 172@ OF 2@ CMP AND VITEROUS CLAY PIPE

X1	7795.000	15.000	577.000	594.000	950.000	950.000	950.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	502.000	0.000	650.000	0.000	0.000	0.000	0.000
GR	584.500	0.000	583.500	100.000	582.700	200.000	582.500	300.000	582.300	385.000
GR	581.500	485.000	579.500	577.000	579.400	583.000	578.800	585.000	579.500	588.000
GR	579.600	594.000	581.600	700.000	581.100	800.000	582.500	900.000	583.500	1000.000
NC	.050	.050	.040	0.000						

D/S FACE, 24@ OF 2@ CMP AND 148@ OF 2@ VIT. CLAY PIP

X1	7845.000	15.000	575.000	597.000	50.000	50.000	50.000	.966	0.000	0.000
X3	10.000	0.000	0.000	500.000	0.000	650.000	0.000	580.300	580.300	0.000
GR	584.500	0.000	583.500	100.000	582.700	200.000	582.500	300.000	582.300	385.000
GR	581.500	485.000	579.000	575.000	578.200	579.000	577.800	585.000	578.100	592.000
GR	579.300	597.000	581.600	700.000	581.100	800.000	582.500	900.000	583.500	1000.000
SB	0.000	5.020	2.690	0.000	1.520	0.000	3.030	0.000	579.100	578.500

O U/S FACE, 24@ OF 2@ CMP AND 148@ OF 2@ VIT. CLAY PIP

15 DEGREES SKEW FOR PRESSURE AND WEIR FLOW

X1	8019.000	18.000	579.000	595.000	174.000	174.000	174.000	.966	0.000	0.000
X2	0.000	0.000	1.000	579.600	580.900	0.000	0.000	0.000	.966	0.000
X3	10.000	0.000	0.000	499.100	0.000	650.100	0.000	580.900	580.900	0.000
BT	7.000	500.000	581.400	0.000	584.000	580.900	578.000	584.000	580.900	579.200
BT	585.000	580.900	579.600	586.000	580.900	579.200	586.000	580.900	578.000	650.000
BT	581.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	584.500	0.000	583.500	100.000	582.700	200.000	582.500	300.000	582.300	385.000
GR	581.400	500.000	579.400	579.000	578.400	582.000	578.000	584.000	577.600	585.000
GR	578.000	586.000	578.000	590.000	579.800	595.000	581.200	650.000	581.600	700.000
GR	581.100	800.000	582.500	800.000	583.500	1000.000	0.000	0.000	0.000	0.000
NC	.050	.050	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000

50FT U/S 172@ OF 2@ CMP AND VIT. CLAY PIPE, MANUFACTURED SE

X1	8069.000	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	500.000	0.000	670.000	0.000	0.000	0.000	0.000
QT	4.000	20.000	30.000	37.000	60.000	0.000	0.000	0.000	0.000	0.000

1150FT U/S 172@ OF 2@ CMP AND VIT. CLAY PIPE, MANUFACTURED SE

X1	9169.000	19.000	995.000	1005.000	1100.000	1100.000	1100.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	911.000	0.000	1200.000	0.000	0.000	0.000	0.000
GR	584.700	0.000	583.700	95.000	583.600	295.000	582.900	495.000	582.400	695.000
GR	581.300	895.000	579.600	995.000	579.000	998.000	578.700	1000.000	578.700	1002.000
GR	579.600	1005.000	580.500	1095.000	581.200	1295.000	581.500	1495.000	581.800	1695.000
GR	581.700	1895.000	582.400	2095.000	582.700	2295.000	582.800	2495.000	0.000	0.000

P 1750FT U/S 172@ OF CMP AND VIT. CLAY PIPE

X1	9769.000	19.000	995.000	1005.000	650.000	650.000	650.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	930.000	0.000	1200.000	0.000	0.000	0.000	0.000
GR	585.000	0.000	584.000	95.000	583.900	295.000	583.200	495.000	582.700	695.000
GR	581.600	895.000	579.900	995.000	579.300	998.000	579.000	1000.000	579.000	1002.000
GR	579.900	1005.000	580.500	1095.000	581.200	1295.000	581.500	1495.000	581.800	1695.000
GR	582.000	1895.000	582.700	2095.000	583.000	2295.000	583.100	2495.000	0.000	0.000

50 FT D/S 20@ OF 1@ CMP, MANUFACTURED SEC

X1	10019.000	18.000	690.000	709.000	250.000	250.000	250.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	617.000	0.000	870.000	0.000	0.000	0.000	0.000
GR	585.100	0.000	584.200	200.000	582.700	400.000	581.300	600.000	579.900	690.000
GR	578.800	695.000	578.300	700.000	578.300	704.000	579.600	709.000	580.400	800.000
GR	581.300	900.000	581.400	1000.000	581.600	1200.000	581.800	1400.000	582.000	1600.000
GR	582.700	1800.000	583.000	2000.000	583.100	2200.000	0.000	0.000	0.000	0.000
NC	.060	.063	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

FORM 1611 CONTINUED BY ROTATE MANIFOLD FORESG

X1	10068.000	20.000	690.000	709.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	617.000	0.000	870.000	0.000	0.000	0.000	0.000
GR	585.100	0.000	584.200	200.000	582.700	400.000	581.300	600.000	579.900	690.000
GR	578.900	695.000	578.800	699.500	578.200	700.000	578.800	700.500	578.900	704.000
GR	579.600	709.000	580.400	800.000	581.300	900.000	581.400	1000.000	581.600	1200.000
GR	581.800	1400.000	582.000	1600.000	582.700	1800.000	583.000	2000.000	583.100	2200.000

D/S FACE, 20@ OF 1@ CMP

X1	10069.000	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	617.000	0.000	870.000	0.000	579.600	579.600	0.000
BT	12.000	600.000	581.300	0.000	690.000	579.900	0.000	699.500	579.700	0.000
BT	699.500	579.700	578.800	699.500	579.700	579.300	700.000	579.700	579.500	700.500
BT	579.700	579.300	700.500	579.700	578.800	700.500	579.700	0.000	709.000	579.600
BT	0.000	800.000	580.400	0.000	900.000	581.400	0.000	0.000	0.000	0.000

Q U/S FACE, 20@ OF 1@ CMP

X1	10089.000	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	0.000	0.000	0.000	1.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	617.000	0.000	870.000	0.000	579.600	579.600	0.000

X1	10090.000	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	617.000	0.000	870.000	0.000	0.000	0.000	0.000

X1	10149.000	18.000	690.000	709.000	59.000	59.000	59.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	617.000	0.000	870.000	0.000	0.000	0.000	0.000
GR	585.100	0.000	584.200	200.000	582.700	400.000	581.300	600.000	579.900	690.000
GR	578.800	695.000	578.500	700.000	578.500	704.000	579.600	709.000	580.400	800.000
GR	581.300	900.000	581.400	1000.000	581.600	1200.000	581.800	1400.000	582.000	1600.000
GR	582.700	1800.000	583.000	2000.000	583.100	2200.000	0.000	0.000	0.000	0.000

D/S FACE, 10@ OF 1@ CMP

X1	10150.000	18.000	694.000	707.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	600.000	0.000	900.000	0.000	0.000	0.000	0.000
GR	585.200	0.000	584.200	200.000	582.700	400.000	581.800	600.000	579.300	694.000
GR	579.200	697.000	579.200	700.000	579.200	703.000	579.300	707.000	580.400	800.000
GR	580.500	900.000	581.200	1000.000	581.500	1200.000	581.800	1400.000	582.000	1600.000
GR	582.600	1800.000	583.000	2000.000	583.100	2200.000	0.000	0.000	0.000	0.000

R U/S FACE, 10@ OF 1@ CMP

X1	10160.000	0.000	0.000	0.000	10.000	10.000	10.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	600.000	0.000	900.000	0.000	0.000	0.000	0.000

X1	10161.000	18.000	694.000	707.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	10.000	579.200	0.000	600.000	0.000	900.000	0.000	0.000	0.000	0.000
GR	585.200	0.000	584.000	200.000	582.700	400.000	581.800	600.000	579.100	694.000
GR	578.700	697.000	578.500	700.000	578.700	703.000	579.200	707.000	580.400	800.000
GR	580.500	900.000	581.200	1000.000	581.200	1200.000	581.800	1400.000	582.000	1600.000
GR	582.600	1800.000	582.900	2000.000	583.100	2200.000	0.000	0.000	0.000	0.000

50 FT U/S 10@ OF 1@ CMP MANUFACTURED SFC.

X1	10210.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	600.000						

FORM 1411.00 PRINTED BY ROTARY MANIFOLD FORMS.

MANUFACTURED SEC.

X1	10560.000	17.000	700.000	712.000	350.000	350.000	350.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	600.000	0.000	900.000	0.000	0.000	0.000	0.000
GR	585.000	0.000	584.000	200.000	583.400	400.000	582.000	600.000	579.800	700.000
GR	577.600	703.000	577.900	795.000	577.300	707.000	579.800	712.000	580.500	800.000
GR	581.200	1000.000	581.500	1200.000	581.800	1400.000	582.000	1600.000	582.600	1800.000
GR	582.900	2000.000	583.100	2200.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.060	.060	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000

MANUFACTURED SEC.

X1	10960.000	18.000	530.000	565.000	400.000	400.000	400.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	430.000	0.000	730.000	0.000	0.000	0.000	0.000
GR	585.000	0.000	584.000	130.000	583.000	230.000	581.800	430.000	579.500	530.000
GR	576.700	533.000	576.400	535.000	577.300	537.000	579.000	540.000	579.500	545.000
GR	580.300	630.000	581.100	830.000	581.400	1030.000	581.700	1230.000	581.900	1430.000
GR	582.600	1630.000	582.900	1830.000	583.000	2030.000	0.000	0.000	0.000	0.000

S 150 FT D/S THE CONFLUENCE

X1	11260.000	15.000	389.000	415.000	200.000	300.000	300.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	250.000	0.000	800.000	0.000	0.000	0.000	0.000
GR	583.800	0.000	583.500	100.000	582.800	200.000	581.300	300.000	578.400	389.000
GR	577.100	392.000	576.800	400.000	577.100	411.000	579.400	415.000	579.600	500.000
GR	579.500	600.000	579.200	700.000	579.100	800.000	580.200	900.000	580.600	1000.000
NC	.045	.045	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

T 400 FT U/S M-29 BRIDGE. (AT DIVERSION 2)

X1	11410.000	16.000	350.000	380.000	250.000	120.000	150.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	200.000	0.000	600.000	0.000	0.000	0.000	0.000
GR	584.800	0.000	580.500	200.000	579.700	250.000	578.400	350.000	577.100	352.000
GR	576.400	356.000	575.900	360.000	575.400	364.000	575.700	370.000	576.100	374.000
GR	577.000	377.000	578.100	380.000	579.000	430.000	579.500	530.000	580.000	680.000
GR	581.800	800.000	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

FORM 1411 (01) PRINTED BY ROTARY MANIFOLD FORMS.

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
**************************************************

T1      ROBBINS DRAIN,  COTTRELLVILLE TOWNSHIP  5555-13 PM:GILBERTO M FONT
T2      100 YEAR FLOW
T3      ROBBINS DRAIN

J1  ICHECK     INQ        NINV       IDIR       STRT       METRIC     HVINS      Q          WSEL       FQ
        0.         4.         0.         0.  0.000000       0.00       0.0        0.     577.230      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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Natural Floodway

FORM 1411-80-PRINTED BY ROYARY MANIFOLD FORMS

*PROF 3

CCHV= .600 CEHV= .800

*SECNO .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
0.00	3.97	577.23	0.00	577.23	577.37	.14	0.00	0.00	575.60
67.	0.	67.	0.	0.	23.	0.	0.	0.	575.60
.600	0.00	2.96	0.00	.045	.027	.045	0.000	573.26	100.00
.001107	0.	0.	0.	0	0	0	0.00	6.00	106.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 577.30 ELREA= 577.30

D/S FACE 48X68 ELLIPTICAL STEEL PIPE

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	20.52	3.04	0.00	10.00	0.00	25.83	0.00	574.70	573.26

*SECNO 751.000

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
579.37	578.73	0.00	0.	67.	26.	30.	577.72	580.00

3470 ENCROACHMENT STATIONS= 1090.0 1100.0 TYPE= 1 TARGET= 10.000
ELENCL= 580.50 ELENCR= 580.50

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 580.00 ELREA= 580.00

A U/S FACE, M-29 10@ SPAN BRIDGE

751.00	4.63	579.63	0.00	0.00	579.37	.04	2.01	0.00	577.70
67.	0.	67.	0.	0.	40.	0.	1.	0.	580.50
.13	0.00	1.66	0.00	.045	.027	.045	.027	574.70	1090.00
.000292	751.	751.	751.	2	0	0	0.00	10.00	1100.00

*SECNO 801.000

3470 ENCROACHMENT STATIONS= 1040.0 1150.0 TYPE= 1 TARGET= 110.000

50FT U/S M-29 BRIDGE, MANUFACTURED SEC.

801.00	4.48	579.38	0.00	0.00	579.40	.02	.02	.01	578.90
67.	1.	65.	1.	8.	52.	3.	1.	0.	579.00
.14	.18	1.24	.27	.070	.045	.040	.028	574.90	1056.58
.000484	47.	50.	55.	1	0	0	0.00	68.36	1124.94

*SECNO 1634.000

3470 ENCROACHMENT STATIONS= 350.0 600.0 TYPE= 1 TARGET= 250.000

883FT U/S M-29 BRIDGE, MANUFACTURED SEC.

1634.00	4.49	579.59	0.00	0.00	579.60	.01	.18	.01	578.50
67.	7.	49.	11.	37.	64.	40.	3.	2.	578.20
.50	.18	.77	.28	.065	.045	.055	.037	575.10	408.59
.000125	833.	833.	833.	2	0	0	0.00	161.07	569.66

170

*SECNO 2034.000

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

3470 ENCROACHMENT STATIONS= 486.0 720.0 TYPE= 1 TARGET= 234.000

B 50FT D/S RCP TWIN CULVERT

2034.00	2.73	579.63	0.00	0.00	579.63	.00	.03	.00	578.30
67.	23.	32.	12.	117.	74.	67.	4.	4.	578.40
.87	.20	.43	.17	.060	.045	.055	.038	576.90	486.26
.000055	400.	400.	400.	2	0	0	0.00	233.32	719.58

234

*SECNO 2083.000

3470 ENCROACHMENT STATIONS= 491.0 686.0 TYPE= 1 TARGET= 195.000

2083.00	2.73	579.63	0.00	0.00	579.64	.00	.00	.00	578.30
67.	27.	26.	14.	117.	56.	56.	5.	4.	578.40
.91	.23	.45	.26	.065	.045	.050	.038	576.90	491.00
.000085	49.	49.	49.	0	0	0	0.00	195.00	686.00

195

*SECNO 2084.000

3470 ENCROACHMENT STATIONS= 491.0 686.0 TYPE= 1 TARGET= 195.000

D/S FACE, 38@ OF 3@ RCP TWIN CULVERT, COMPLETELY SILTE-

2084.00	.63	579.63	0.00	0.00	579.64	.01	.00	.01	579.00
67.	35.	19.	12.	52.	18.	19.	5.	4.	579.00
.91	.68	1.06	.64	.065	.045	.050	.038	579.00	491.00
.002126	1.	1.	1.	0	0	0	0.00	194.47	685.47

195

*SECNO 2124.000

3470 ENCROACHMENT STATIONS= 488.0 693.0 TYPE= 1 TARGET= 205.000

C U/S FACE, 37@ OF 2@ RCP TWIN CULVERT, COMPLETELY SILTE

2124.00	.70	579.70	0.00	0.00	579.71	.01	.07	.00	579.00
67.	35.	19.	13.	59.	20.	24.	5.	5.	579.00
.93	.59	.92	.55	.065	.045	.050	.039	579.00	488.79
.001377	40.	40.	40.	2	0	0	0.00	203.48	692.27

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3470 ENCROACHMENT STATIONS=      488.0      694.0  TYPE=      1  TARGET=      206.000
 2125.00      4.11    579.71      0.00      0.00    579.72       .00       .00       .00    578.20
      67.       15.       48.        4.      122.      133.       43.        5.        5.    578.90
     .93       .13       .36       .10       .070      .045      .060      .038    575.60    488.00
 .000026        1.        1.        1.         0         0         0      0.00    206.00    694.00
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206

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*SECNO 2175.000
   SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS    BANK ELEV
   Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        THA    LEFT/RIGHT
   TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        FLMIN      SSTA
   SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

3470 ENCROACHMENT STATIONS=      485.0      724.0  TYPE=      1  TARGET=      239.000

                    50FT  U/S RCP TWIN CULVERT, MANUFACTURED SEC.

 2175.00      4.12    579.72      0.00      0.00    579.72       .00       .00       .00    578.20
      67.       15.       47.        5.      123.      133.       53.        5.        5.    578.90
     .98       .12       .35       .09       .070      .045      .060      .039    575.60    485.13
 .000025       50.       50.       50.         2         0         0      0.00    238.31    723.43
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239

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*SECNO 2786.000

3470 ENCROACHMENT STATIONS=      380.0      580.0  TYPE=      1  TARGET=      200.000

                    50FT  D/S 12" CMP CULVERT, MANUFACTURED SEC.

 2786.00      4.43    579.73      0.00      0.00    579.73       .00       .01       .00    578.50
      67.        6.       54.        7.       75.      141.       70.        9.        8.    578.30
     1.49       .08       .38       .10       .070      .038      .070      .038    575.30    380.00
 .000018      611.      611.      611.         0         0         0      0.00    200.00    580.00
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200

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*SECNO 2835.000

3470 ENCROACHMENT STATIONS=      380.0      630.0  TYPE=      1  TARGET=      250.000
 2835.00      4.43    579.73      0.00      0.00    579.73       .00       .00       .00    578.50
      67.        6.       50.       12.       75.      141.      110.       10.        8.    578.30
     1.54       .08       .35       .10       .050      .030      .045      .038    575.30    380.00
 .000010       49.       49.       49.         0         0         0      0.00    250.00    630.00
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250

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*SECNO 2836.000

3370 NORMAL BRIDGE,NRD=   9 MIN ELTRD=  578.90 MAX ELLC=  576.50

3470 ENCROACHMENT STATIONS=      379.9      630.1  TYPE=      1  TARGET=      250.200

                         D/S FACE, 12" CMP CULVERT

 2836.00      4.23    579.73      0.00      0.00    579.73       .00       .00       .00    576.20
      67.       23.        1.       44.       67.        1.       97.       10.        8.    576.20
     1.54       .34       .41       .45       .050      .030      .045      .038    575.50    379.90
 .000274        1.        1.        1.         0         0         0   -131.20    250.20    630.10
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250

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*SECNO 2874.000

3370 NORMAL BRIDGE,NRD=   9 MIN ELTRD=  578.90 MAX ELLC=  576.70
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ELENCL= 580.90 ELENCR= 580.90

D U/S FACE, 12" CMP CULVERT

2874.00	4.14	579.74	0.00	0.00	579.74	.00	.01	.00	576.30
67.	21.	1.	45.	67.	1.	112.	10.	8.	576.20
1.57	.32	.41	.40	.050	.030	.045	.038	575.60	379.90
.000245	38.	38.	38.	0	0	0	-129.55	290.20	670.10

290

*SECNO 2875.000

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

3470 ENCROACHMENT STATIONS= 379.0 671.0 TYPE= 1 TARGET= 292.000

2875.00	4.14	579.74	0.00	0.00	579.74	.00	.00	.00	576.30
67.	25.	2.	40.	126.	4.	182.	10.	8.	576.20
1.57	.20	.41	.22	.050	.030	.045	.038	575.60	379.00
.000025	1.	1.	1.	0	0	0	0.00	292.00	671.00

*SECNO 2924.000

3470 ENCROACHMENT STATIONS= 365.0 720.0 TYPE= 1 TARGET= 355.000

50FT U/S 12" CMP CULVERT, MANUFACTURED SEC.

2924.00	4.44	579.74	0.00	0.00	579.74	.00	.00	.00	578.50
67.	6.	51.	11.	78.	140.	134.	10.	9.	578.50
1.62	.07	.36	.08	.075	.040	.070	.038	575.30	365.46
.000018	49.	49.	49.	0	0	0	0.00	354.54	720.00

577.403

355

*SECNO 3566.000

3470 ENCROACHMENT STATIONS= 200.0 600.0 TYPE= 1 TARGET= 400.000

ELENCL= 581.00 ELENCR= 581.00

E 690FT U/S 12" CMP CULVERT

3566.00	5.06	579.76	0.00	0.00	579.76	.00	.02	.00	578.30
67.	8.	34.	25.	88.	70.	230.	16.	14.	578.00
2.22	.09	.49	.11	.080	.040	.090	.038	574.70	200.00
.000035	642.	642.	642.	0	0	0	0.00	398.78	598.78

400

*SECNO 3916.000

3470 ENCROACHMENT STATIONS= 60.0 467.0 TYPE= 1 TARGET= 407.000

1190FT U/S 12" CMP CULVERT, (DIVERSION 1), MANUFACTURED SEC.

3916.00	4.17	579.77	0.00	0.00	579.77	.00	.01	.00	578.30
67.	14.	32.	22.	151.	65.	188.	19.	17.	578.00
2.56	.09	.48	.11	.100	.040	.090	.039	575.60	60.00
.000037	350.	350.	350.	0	0	0	0.00	366.82	426.82

369

*SECNO 4466.000

F 50FT D/S 6@ X 14@ BRIDGE

4466.00	2.90	579.80	0.00	0.00	579.81	.00	.03	.00	578.80
58.	9.	44.	5.	49.	70.	26.	22.	21.	579.10
2.85	.18	.63	.19	.060	.045	.065	.039	576.90	190.22
.000123	550.	550.	550.	1	0	0	0.00	167.78	358.00

170

*SECNO 4515.000

SECNO	DEPTH	CWSEL	CRIWS	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	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 186.0 345.0 TYPE= 1 TARGET= 159.000

4515.00	2.91	579.81	0.00	0.00	579.82	.01	.01	.00	578.80
58.	8.	46.	4.	50.	71.	18.	22.	21.	579.10
2.88	.17	.65	.20	.065	.042	.062	.039	576.90	189.21
.000117	49.	49.	49.	0	0	0	0.00	155.78	345.00

157

*SECNO 4516.000

3370 NORMAL BRIDGE,NRD= 7 MIN ELTRD= 578.80 MAX ELLC= 577.90

3470 ENCROACHMENT STATIONS= 190.0 350.1 TYPE= 1 TARGET= 160.100

D/S FACE, 6@ X 14@ BRIDGE

4516.00	3.51	579.81	0.00	0.00	579.82	.00	.00	.00	577.00
58.	28.	9.	21.	69.	13.	39.	22.	21.	576.30
2.88	.41	.65	.55	.065	.042	.062	.039	576.30	190.00
.000509	1.	1.	1.	0	0	0	-25.05	160.10	350.10

160

*SECNO 4528.000

3370 NORMAL BRIDGE,NRD= 7 MIN ELTRD= 578.80 MAX ELLC= 577.90

3470 ENCROACHMENT STATIONS= 190.0 350.0 TYPE= 1 TARGET= 160.000

G U/S FACE, 6@ X 14@ BRIDGE

4528.00	3.52	579.82	0.00	0.00	579.82	.00	.01	.00	577.00
58.	28.	9.	21.	70.	13.	39.	22.	21.	576.30
2.88	.41	.65	.54	.065	.042	.062	.039	576.30	190.00
.000502	12.	12.	12.	0	0	0	-25.05	160.00	350.00

160

*SECNO 4529.000

3470 ENCROACHMENT STATIONS= 189.0 351.0 TYPE= 1 TARGET= 162.000

4529.00	3.52	579.82	0.00	0.00	579.82	.00	.00	.00	577.00
58.	22.	18.	19.	79.	20.	50.	22.	21.	576.30
2.88	.27	.90	.38	.068	.050	.065	.039	576.30	189.00
.000193	1.	1.	1.	0	0	0	0.00	162.00	351.00

162

*SECNO 4578.000

3470 ENCROACHMENT STATIONS= 168.0 [illegible]

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50FT U/S 6@ X 14@ BRIDGE, MANUFACTURED SEC.

4578.00	3.53	579.83	0.00	0.00	579.83	.00	.01	.00	577.00
58.	21.	17.	20.	81.	20.	58.	23.	21.	576.30
2.91	.26	.86	.35	.068	.050	.065	.039	576.30	186.45
.000173	49.	49.	49.	0	0	0	0.00	173.55	360.00

175

*SECNO 4908.000

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

3470 ENCROACHMENT STATIONS= 276.0 480.0 TYPE= 1 TARGET= 204.000

(H) 50FT D/S 12@ X 19@ BRIDGE

4908.00	2.57	579.87	0.00	0.00	579.87	.00	.04	.00	579.40
58.	1.	35.	23.	7.	82.	105.	24.	23.	578.50
3.19	.08	.42	.22	.068	.050	.065	.040	577.30	300.43
.000090	320.	330.	340.	1	0	0	0.00	179.57	480.00

181

*SECNO 4958.000

3470 ENCROACHMENT STATIONS= 250.0 460.0 TYPE= 1 TARGET= 210.000

D/S FACE, 12@ X 19@ BRIDGE

4958.00	2.58	579.88	0.00	0.00	579.90	.02	.01	.02	577.80
58.	4.	40.	14.	9.	29.	37.	24.	23.	577.40
3.20	.44	1.37	.38	.068	.050	.065	.040	577.30	316.37
.000655	50.	50.	50.	0	0	0	0.00	143.63	460.00

176

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	2.76	3.91	0.00	8.40	0.00	10.20	.90	577.30	577.30

*SECNO 4979.000

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
581.27	579.90	0.00	47.	11.	10.	9.	578.30	579.50

3470 ENCROACHMENT STATIONS= 229.9 460.1 TYPE= 1 TARGET= 230.200

I U/S FACE, 12@ X 19@ BRIDGE

4979.00	2.61	579.91	0.00	0.00	579.93	.02	.03	0.00	577.80
58.	4.	39.	15.	10.	30.	41.	24.	23.	577.40
3.20	.40	1.31	.36	.068	.050	.065	.040	577.30	312.95
.000581	21.	21.	21.	1	0	5	0.00	147.14	460.10

178

*SECNO 5038.000

3470 ENCROACHMENT STATIONS= 230.0 470.0 TYPE= 1 TARGET= 240.000

50FT U/S 12@ X 19@ BRIDGE, MANUFACTURED SEC.

5029.00	2.64	579.94	0.00	0.00	579.97	.03	.03	.01	577.80
58.	3.	45.	10.	11.	30.	48.	24.	23.	577.40
3.22	.24	1.51	.21	.130	.050	.130	.040	577.30	311.14
.000769	50.	50.	50.	0	0	0	0.00	158.86	470.00

151

*SECNO 5451.000

J 50FT D/S 6@ SPAN BRIDGE

5451.00	2.94	580.04	0.00	0.00	580.04	.00	.05	.02	578.90
32.	2.	14.	16.	55.	48.	229.	26.	25.	578.50
3.95	.04	.28	.07	.130	.050	.130	.041	577.10	342.51
.000030	432.	422.	410.	2	0	0	0.00	338.94	681.45

346

*SECNO 5500.000

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
5500.00	2.94	580.04	0.00	0.00	580.04	.00	.00	.00	578.90
32.	3.	12.	17.	57.	48.	231.	27.	26.	578.50
4.05	.05	.25	.08	.110	.052	.110	.041	577.10	341.50
.000024	49.	49.	49.	1	0	0	0.00	340.93	682.43

349

*SECNO 5501.000

3370 NORMAL BRIDGE,NRD= 9 MIN ELTRD= 578.50 MAX ELLC= 578.80

D/S FACE, 6@ SPAN BRIDGE

5501.00	2.84	580.04	0.00	0.00	580.04	.00	.00	.00	579.10
32.	3.	2.	27.	46.	13.	236.	27.	26.	578.80
4.05	.07	.16	.11	.110	.052	.110	.041	577.20	347.28
.000063	1.	1.	1.	0	0	0	-19.65	342.06	689.34

352

*SECNO 5511.000

3370 NORMAL BRIDGE,NRD= 9 MIN ELTRD= 578.50 MAX ELLC= 578.80

K U/S FACE, 6@ SPAN BRIDGE

5511.00	2.84	580.04	0.00	0.00	580.04	.00	.00	.00	579.10
32.	3.	2.	27.	46.	13.	236.	27.	26.	578.80
4.07	.06	.16	.11	.110	.052	.110	.041	577.20	347.20
.000063	10.	10.	10.	0	0	0	-19.65	342.20	689.40

354

*SECNO 5512.000

5512.00	2.84	580.04	0.00	0.00	580.04	.00	.00	.00	579.10
32.	2.	9.	21.	44.	36.	238.	27.	26.	578.50
4.08	.05	.25	.09	.110	.052	.110	.041	577.20	345.88
.000035	1.	1.	1.	0	0	0	0.00	343.53	689.41

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*SECNO 5561.000

50FT U/S 6@ SPAN BRIDGE, MANUFACTURED SEC.

5561.00	2.84	580.04	0.00	0.00	580.04	.00	.00	.00	579.10
32.	2.	9.	21.	45.	36.	238.	27.	26.	578.50
4.18	.05	.25	.09	.110	.052	.110	.041	577.20	345.64
.000034	49.	49.	49.	0	0	0	0.00	343.93	689.57

*SECNO 6713.000

SECNO	DEPTH	CHSEL	CRIWS	HSELK	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= 522.0 557.0 TYPE= 1 TARGET= 35.000

50FT D/S BROADBRIDGE RD. BRIDGE, MANUFACTURED SEC.

6713.00	2.48	580.08	0.00	0.00	580.08	.00	.03	.00	579.50
6.	0.	5.	0.	4.	33.	8.	32.	31.	579.10
6.36	.03	.16	.05	.110	.052	.110	.043	577.60	522.00
.000015	1150.	1150.	1150.	0	0	0	0.00	35.00	557.00

*SECNO 6763.000

3470 ENCROACHMENT STATIONS= 500.0 625.0 TYPE= 1 TARGET= 125.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 580.90 ELREA= 580.90

D/S FACE, BROADBRIDGE RD. 10@ X 30@ BRIDGE

6763.00	2.38	580.08	0.00	0.00	580.08	.00	.00	.00	578.40
6.	0.	6.	0.	0.	22.	0.	32.	31.	578.30
6.41	0.00	.25	0.00	.110	.050	.110	.043	577.70	532.00
.000029	50.	50.	50.	0	0	0	0.00	10.00	542.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	2.04	2.98	0.00	6.00	0.00	7.80	0.00	577.70	577.70

*SECNO 6795.000
PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
580.09	580.08	0.00	0.	6.	8.	8.	579.00	580.90

3470 ENCROACHMENT STATIONS= 499.9 625.1 TYPE= 1 TARGET= 125.200

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 580.90 ELREA= 580.90

U/S FACE, BROADBRIDGE RD. 10@ X 30@ BRIDGE

6795.00	2.39	580.09	0.00	0.00	580.09	.00	.02	0.00	578.40
6.	0.	6.	0.	0.	23.	0.	32.	31.	578.30
6.45	0.00	.25	0.00	.110	.050	.110	.043	577.70	532.00
.000028	32.	32.	32.	0	0	0	0.00	10.00	542.00

*SECNO 6845.000

3470 ENCROACHMENT STATIONS= 484.0 600.0 TYPE= 1 TARGET= 116.000

M 50FT U/S BROADBRIDGE RD. BRIDGE

6845.00	2.50	580.10	0.00	0.00	580.10	.00	.00	.00	579.50
6.	0.	3.	3.	7.	35.	53.	32.	31.	579.10
6.66	.02	.08	.05	.045	.040	.043	.043	577.60	507.96
.000002	50.	50.	50.	0	0	0	0.00	92.03	600.00

*SECNO 7795.000

3470 ENCROACHMENT STATIONS= 502.0 650.0 TYPE= 1 TARGET= 148.000

N 50FT D/S 172@ OF 2@ CMP AND VITEROUS CLAY PIPE

7795.00	1.30	580.10	0.00	0.00	580.10	.00	.01	.00	579.50
6.	1.	4.	1.	9.	12.	7.	33.	33.	579.60
7.79	.15	.29	.13	.050	.045	.050	.043	578.80	548.96
.000121	950.	950.	950.	0	0	0	0.00	72.05	621.01

*SECNO 7845.000

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

3470 ENCROACHMENT STATIONS= 483.0 627.9 TYPE= 1 TARGET= 150.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 580.30 ELREA= 580.30

D/S FACE, 24@ OF 2@ CMP AND 148@ OF 2@ VIT. CLAY PIP

7845.00	2.30	580.10	0.00	0.00	580.10	.00	.00	.00	579.00
6.	0.	6.	0.	0.	39.	0.	33.	33.	579.30
7.89	0.00	.14	0.00	.050	.040	.050	.043	577.80	555.45
.000007	50.	50.	50.	0	0	0	0.00	21.25	576.70

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	5.02	2.69	0.00	1.52	0.00	3.03	0.00	579.10	578.50

*SECNO 8019.000

PRESS FLOW BECAUSE EGLWC OF 581.40 EXCEEDS 1.5 DEPTH

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
580.38	581.40	0.00	0	6	3	1	579.40	581.61

3470 ENCROACHMENT STATIONS= 482.1 628.0 TYPE= 1 TARGET= 151.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 580.90 ELREA= 580.90

0 U/S FACE, 24@ OF 2@ CMP AND 148@ OF 2@ VIT. CLAY PIP

15 DEGREES SKEW FOR PRESSURE AND WEIR FLOW

8019.00	2.78	580.38	0.00	0.00	580.38	.00	.28	0.00	579.40
6.	0.	6.	0.	0.	30.	0.	34.	33.	579.80
8.14	0.00	.19	0.00	.050	.040	.050	.043	577.60	559.31
.000012	174.	174.	174.	0	0	0	0.00	15.46	574.77

*SECNO 8069.000

3470 ENCROACHMENT STATIONS= 500.0 670.0 TYPE= 1 TARGET= 170.000

50FT U/S 172@ OF 2@ CMP AND VIT. CLAY PIPE, MANUFACTURED SE

8069.00	2.78	580.38	0.00	0.00	580.38	.00	.00	.00	579.40
6.	1.	4.	0.	19.	31.	7.	34.	33.	579.80
8.25	.05	.14	.04	.050	.045	.050	.043	577.60	540.33
.000008	50.	50.	50.	0	0	0	0.00	77.42	617.75

*SECNO 9169.000

3470 ENCROACHMENT STATIONS= 911.0 1200.0 TYPE= 1 TARGET= 289.000

1150FT U/S 172@ OF 2@ CMP AND VIT. CLAY PIPE, MANUFACTURED SE

9169.00	1.82	580.52	0.00	0.00	580.52	.01	.14	.00	579.60
37.	9.	13.	15.	25.	15.	42.	35.	36.	579.60
8.83	.36	.86	.37	.050	.045	.050	.043	578.70	941.00
.000416	1100.	1100.	91100.	2	0	0	0.00	159.13	1100.14

*SECNO 9769.000

3470 ENCROACHMENT STATIONS= 930.0 1200.0 TYPE= 1 TARGET= 270.000

P 1750FT U/S 172@ OF CMP AND VIT. CLAY PIPE

9769.00	1.76	580.76	0.00	0.00	580.76	.00	.24	.00	579.90
37.	7.	11.	20.	22.	14.	60.	37.	39.	579.90
9.23	.31	.74	.33	.050	.045	.050	.044	579.00	944.42
.000329	650.	650.	650.	2	0	0	0.00	224.83	1169.25

*SECNO 10019.000

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

37.	4.	17.	17.	26.	38.	81.	37.	40.	579.60
9.46	.15	.44	.20	.050	.045	.050	.044	578.30	632.30
.000073	250.	250.	250.	2	0	0	0.00	211.88	844.18

*SECNO 10068.000

3470 ENCROACHMENT STATIONS= 617.0 870.0 TYPE= 1 TARGET= 253.000

10068.00	2.60	580.80	0.00	0.00	580.80	.00	.00	.00	579.90
37.	4.	17.	16.	26.	33.	83.	37.	41.	579.60
9.50	.15	.52	.19	.060	.040	.063	.044	578.20	631.66
.000101	49.	49.	49.	0	0	0	0.00	213.63	845.28

*SECNO 10069.000

3370 NORMAL BRIDGE,NRD= 12 MIN ELTRD= 579.60 MAX ELLC= 579.50

3470 ENCROACHMENT STATIONS= 617.0 870.0 TYPE= 1 TARGET= 253.000

D/S FACE, 20@ OF 1@ CMP

10069.00	2.60	580.80	0.00	0.00	580.80	.00	.00	.00	579.90
37.	5.	11.	21.	26.	22.	82.	38.	41.	579.60
9.50	.19	.50	.25	.060	.040	.063	.044	578.20	632.02
.000179	1.	1.	1.	0	0	0	-10.62	212.63	844.65

*SECNO 10089.000

3370 NORMAL BRIDGE,NRD= 12 MIN ELTRD= 579.60 MAX ELLC= 579.50

3470 ENCROACHMENT STATIONS= 617.0 870.0 TYPE= 1 TARGET= 253.000

0 U/S FACE, 20@ OF 1@ CMP

10089.00	2.61	580.81	0.00	0.00	580.81	.00	.00	.00	579.90
37.	5.	11.	21.	26.	22.	82.	38.	41.	579.60
9.52	.19	.50	.25	.060	.040	.063	.044	578.20	631.79
.000176	20.	20.	20.	0	0	0	-10.62	213.25	845.05

*SECNO 10090.000

3470 ENCROACHMENT STATIONS= 617.0 870.0 TYPE= 1 TARGET= 253.000

10090.00	2.61	580.81	0.00	0.00	580.81	.00	.00	.00	579.90
37.	4.	17.	16.	26.	33.	83.	38.	41.	579.60
9.52	.15	.53	.19	.060	.040	.063	.044	578.20	631.73
.000102	1.	1.	1.	0	0	0	0.00	213.42	845.15

*SECNO 10149.000

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

3470 ENCROACHMENT STATIONS= 617.0 870.0 TYPE= 1 TARGET= 253.000

10149.00	2.31	580.81	0.00	0.00	580.81	.00	.01	.00	579.90
37.	4.	19.	15.	27.	36.	84.	38.	41.	579.60
9.57	.13	.52	.18	.060	.040	.063	.044	578.50	631.21
.000083	59.	59.	59.	0	0	0	0.00	214.33	846.05

*SECNO 10150.000

3470 ENCROACHMENT STATIONS= 600.0 900.0 TYPE= 1 TARGET= 300.000

D/S FACE, 10@ OF 1@ CMP

10150.00	1.61	580.81	0.00	0.00	580.81	.00	.00	.00	579.30
37.	7.	9.	21.	43.	21.	126.	38.	41.	579.30
9.57	.17	.42	.17	.060	.040	.063	.044	579.20	637.16
.000070	1.	1.	1.	0	0	0	0.00	262.84	900.00

271

*SECNO 10160.000

3470 ENCROACHMENT STATIONS= 600.0 900.0 TYPE= 1 TARGET= 300.000

R U/S FACE, 10@ OF 1@ CMP

10160.00	1.61	580.81	0.00	0.00	580.82	.00	.00	.00	579.30
37.	7.	9.	21.	43.	21.	126.	38.	41.	579.30
9.58	.17	.42	.17	.060	.040	.063	.044	579.20	637.05
.000070	10.	10.	10.	0	0	0	0.00	262.95	900.00

271

*SECNO 10161.000

3470 ENCROACHMENT STATIONS= 600.0 900.0 TYPE= 1 TARGET= 300.000

10161.00	1.61	580.81	0.00	0.00	580.82	.00	.00	.00	579.20
37.	8.	8.	21.	47.	21.	131.	38.	41.	579.20
9.58	.17	.40	.16	.060	.040	.063	.044	579.20	635.62
.000060	1.	1.	1.	0	0	0	0.00	264.37	900.00

272

*SECNO 10210.000

3470 ENCROACHMENT STATIONS= 600.0 900.0 TYPE= 1 TARGET= 300.000

50 FT U/S 10@ OF 1@ CMP MANUFACTURED SEC.

10210.00	2.32	580.82	0.00	0.00	580.82	.00	.00	.00	579.10
37.	8.	11.	18.	51.	27.	131.	38.	41.	579.20
9.65	.15	.41	.14	.060	.040	.063	.044	578.50	634.19
.000046	49.	49.	49.	0	0	0	0.00	265.81	900.00

273

*SECNO 10560.000

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

3470 ENCROACHMENT STATIONS= 600.0 900.0 TYPE= 1 TARGET= 300.000

MANUFACTURED SEC.

10560.00	3.54	580.84	0.00	0.00	580.84	.00	.02	.00	579.80
37.	4.	20.	13.	24.	30.	77.	39.	43.	579.80
9.87	.17	.67	.17	.060	.040	.063	.043	577.30	652.91
.000107	350.	350.	350.	0	0	0	0.00	243.10	896.01

*SECNO 10960.000

3470 ENCROACHMENT STATIONS= 430.0 730.0 TYPE= 1 TARGET= 300.000

MANUFACTURED SEC.

10960.00	4.47	580.87	0.00	0.00	580.87	.00	.03	.00	579.50
37.	5.	16.	16.	41.	41.	120.	41.	46.	579.50
10.33	.12	.39	.13	.060	.045	.060	.043	576.40	470.38
.000041	400.	400.	400.	0	0	0	0.00	259.62	730.00

*SECNO 11260.000

3280 CROSS SECTION 11260.00 EXTENDED .28 FEET

3470 ENCROACHMENT STATIONS= 250.0 800.0 TYPE= 1 TARGET= 550.000

S 150 FT D/S THE CONFLUENCE

11260.00	4.07	580.87	0.00	0.00	580.87	.00	.00	.00	578.40
37.	3.	9.	24.	94.	95.	577.	44.	48.	579.40
11.76	.04	.10	.04	.060	.045	.060	.044	576.80	312.84
.000002	200.	300.	300.	1	0	0	0.00	487.16	800.00

*SECNO 11410.000

3470 ENCROACHMENT STATIONS= 200.0 600.0 TYPE= 1 TARGET= 400.000

T 400 FT U/S M-29 BRIDGE, (AT DIVERSION 2)

11410.00	5.47	580.87	0.00	0.00	580.87	.00	.00	.00	578.40
37.	9.	12.	16.	222.	137.	367.	47.	50.	578.10
12.49	.04	.09	.04	.045	.040	.045	.043	575.40	200.00
.000001	250.	150.	120.	0	0	0	0.00	400.00	600.00

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  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
   ERROR CORR -  01,02
   MODIFICATION -  50,51,52,53
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NOTE- ASIERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

ROBBINS DRAIN — Natural Floodway

SUMMARY PRINTOUT

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	AREA	DEPTH	TOPWID
	0.000	0.00	0.00	0.00	573.26	23.00	577.23	.02	0.00	0.00	22.67	3.97	6.00
	0.000	0.00	0.00	0.00	573.26	53.00	577.23	.08	0.00	0.00	22.67	3.97	6.00
	0.000	0.00	0.00	0.00	573.26	67.00	577.23	.14	0.00	0.00	22.67	3.97	6.00
	0.000	0.00	0.00	0.00	573.26	100.00	577.23	.30	0.00	0.00	22.67	3.97	6.00
	751.000	751.00	580.00	577.72	574.70	23.00	577.36	.02	.13	.00	20.55	2.66	10.00
	751.000	751.00	580.00	577.72	574.70	53.00	577.98	.07	.73	.01	25.00	3.28	10.00
	751.000	751.00	580.00	577.72	574.70	67.00	579.33	.04	2.01	0.00	40.31	4.63	10.00
	751.000	751.00	580.00	577.72	574.70	100.00	580.08	.07	2.61	0.00	47.77	5.38	10.00
	801.000	50.00	0.00	0.00	574.90	23.00	577.38	.03	.02	.01	16.37	2.48	13.33
	801.000	50.00	0.00	0.00	574.90	53.00	578.08	.06	.09	.01	27.04	3.18	16.70
	801.000	50.00	0.00	0.00	574.90	67.00	579.38	.02	.02	.01	62.66	4.48	68.36
	801.000	50.00	0.00	0.00	574.90	100.00	580.18	.01	.02	.03	141.51	5.28	110.00
	1634.000	833.00	0.00	0.00	575.10	23.00	577.88	.01	.47	.01	30.10	2.78	18.14
	1634.000	833.00	0.00	0.00	575.10	53.00	578.76	.02	.61	.03	56.16	3.66	59.45
	1634.000	833.00	0.00	0.00	575.10	67.00	579.59	.01	.18	.01	141.29	4.49	161.07
	1634.000	833.00	0.00	0.00	575.10	100.00	580.30	.00	.10	.01	292.40	5.20	243.16
	2034.000	400.00	0.00	0.00	576.90	23.00	578.07	.01	.19	.00	25.66	1.17	28.65
	2034.000	400.00	0.00	0.00	576.90	53.00	578.91	.01	.13	.01	105.95	2.01	175.83
	2034.000	400.00	0.00	0.00	576.90	67.00	579.63	.00	.03	.00	258.01	2.73	233.32
	2034.000	400.00	0.00	0.00	576.90	100.00	580.32	.00	.02	.00	418.73	3.42	234.00
	2083.000	49.00	0.00	0.00	577.70	23.00	578.17	.06	.11	.04	11.27	.47	28.14
	2083.000	49.00	0.00	0.00	576.90	53.00	578.93	.01	.02	.00	92.56	2.03	178.27
	2083.000	49.00	0.00	0.00	576.90	67.00	579.63	.00	.00	.00	229.36	2.73	195.00
	2083.000	49.00	0.00	0.00	576.90	100.00	580.32	.00	.00	.00	362.91	3.42	195.00
*	2084.000	1.00	0.00	0.00	579.00	23.00	579.19	.05	.03	.01	13.86	.19	135.21
*	2084.000	1.00	0.00	0.00	579.00	53.00	579.26	.08	.00	.06	25.39	.26	151.07
	2084.000	1.00	0.00	0.00	579.00	67.00	579.63	.01	.00	.01	89.38	.63	194.47
	2084.000	1.00	0.00	0.00	579.00	100.00	580.32	.00	.00	.00	222.99	1.32	195.00
	2124.000	40.00	0.00	0.00	579.00	23.00	579.43	.00	.16	.03	52.13	.43	170.86
	2124.000	40.00	0.00	0.00	579.00	53.00	579.59	.01	.21	.04	81.16	.59	190.03
	2124.000	40.00	0.00	0.00	579.00	67.00	579.70	.01	.07	.00	103.36	.70	203.48
	2124.000	40.00	0.00	0.00	579.00	100.00	580.33	.00	.01	.00	230.52	1.33	205.00

FORM 1411.00 POINTED BY NOTARY MANIFOLD FORMS.

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	AREA	DEPTH	TOPWID
2125.000	1.00	0.00	0.00	575.60	23.00	579.43	.00	.00	.00	241.61	3.83	205.12
2125.000	1.00	0.00	0.00	575.60	53.00	579.60	.00	.00	.00	276.61	4.00	206.00
2125.000	1.00	0.00	0.00	575.60	67.00	579.71	.00	.00	.00	297.65	4.11	206.00
2125.000	1.00	0.00	0.00	575.60	100.00	580.33	.00	.00	.00	425.94	4.73	206.00
2175.000	50.00	0.00	0.00	575.60	23.00	579.43	.00	.00	.00	244.39	3.83	221.77
2175.000	50.00	0.00	0.00	575.60	53.00	579.61	.00	.00	.00	283.13	4.01	231.81
2175.000	50.00	0.00	0.00	575.60	67.00	579.72	.00	.00	.00	309.09	4.12	238.31
2175.000	50.00	0.00	0.00	575.60	100.00	580.33	.00	.00	.00	457.79	4.73	239.00
2786.000	611.00	0.00	0.00	575.30	23.00	579.44	.00	.00	.00	227.60	4.14	191.44
2786.000	611.00	0.00	0.00	575.30	53.00	579.61	.00	.01	.00	263.07	4.31	200.00
2786.000	611.00	0.00	0.00	575.30	67.00	579.73	.00	.01	.00	285.94	4.43	200.00
2786.000	611.00	0.00	0.00	575.30	100.00	580.34	.00	.01	.00	408.96	5.04	200.00
2835.000	49.00	0.00	0.00	575.30	23.00	579.44	.00	.00	.00	253.21	4.14	241.40
2835.000	49.00	0.00	0.00	575.30	53.00	579.62	.00	.00	.00	297.43	4.32	250.00
2835.000	49.00	0.00	0.00	575.30	67.00	579.73	.00	.00	.00	325.92	4.43	250.00
2835.000	49.00	0.00	0.00	575.30	100.00	580.35	.00	.00	.00	479.96	5.05	250.00
2836.000	1.00	578.90	576.50	575.50	23.00	579.44	.00	.00	.00	92.29	3.94	250.20
2836.000	1.00	578.90	576.50	575.50	53.00	579.62	.00	.00	.00	137.02	4.12	250.20
2836.000	1.00	578.90	576.50	575.50	67.00	579.73	.00	.00	.00	165.57	4.23	250.20
2836.000	1.00	578.90	576.50	575.50	100.00	580.35	.00	.00	.00	319.84	4.85	250.20
2874.000	38.00	578.90	576.70	575.60	23.00	579.44	.00	.01	.00	96.20	3.84	268.13
2874.000	38.00	578.90	576.70	575.60	53.00	579.63	.00	.01	.00	147.22	4.03	290.20
2874.000	38.00	578.90	576.70	575.60	67.00	579.74	.00	.01	.00	180.13	4.14	290.20
2874.000	38.00	578.90	576.70	575.60	100.00	580.35	.00	.00	.00	358.00	4.75	290.20
2875.000	1.00	0.00	0.00	575.60	23.00	579.45	.00	.00	.00	226.83	3.85	268.93
2875.000	1.00	0.00	0.00	575.60	53.00	579.63	.00	.00	.00	278.72	4.03	292.00
2875.000	1.00	0.00	0.00	575.60	67.00	579.74	.00	.00	.00	311.59	4.14	292.00
2875.000	1.00	0.00	0.00	575.60	100.00	580.35	.00	.00	.00	489.42	4.75	292.00
2924.000	49.00	0.00	0.00	575.30	23.00	579.45	.00	.00	.00	255.29	4.15	290.24
2924.000	49.00	0.00	0.00	575.30	53.00	579.63	.00	.00	.00	313.46	4.33	335.34
2924.000	49.00	0.00	0.00	575.30	67.00	579.74	.00	.00	.00	352.30	4.44	354.54
2924.000	49.00	0.00	0.00	575.30	100.00	580.35	.00	.00	.00	566.35	5.05	355.00
3566.000	642.00	0.00	0.00	574.70	23.00	579.45	.00	.00	.00	281.32	4.75	297.80
3566.000	642.00	0.00	0.00	574.70	53.00	579.64	.00	.01	.00	342.66	4.94	369.28
3566.000	642.00	0.00	0.00	574.70	67.00	579.76	.00	.02	.00	387.97	5.06	398.78
3566.000	642.00	0.00	0.00	574.70	100.00	580.36	.00	.01	.00	629.52	5.66	400.00
3916.000	350.00	0.00	0.00	575.60	23.00	579.45	.00	.00	.00	292.44	3.85	330.48
3916.000	350.00	0.00	0.00	575.60	53.00	579.65	.00	.01	.00	360.93	4.05	354.99
3916.000	350.00	0.00	0.00	575.60	67.00	579.77	.00	.01	.00	403.65	4.17	366.82
3916.000	350.00	0.00	0.00	575.60	100.00	580.37	.00	.01	.00	640.55	4.77	407.00
4466.000	550.00	0.00	0.00	576.90	32.00	579.46	.00	.01	.00	93.73	2.56	134.18
4466.000	550.00	0.00	0.00	576.90	50.00	579.68	.00	.03	.00	125.39	2.78	155.56
4466.000	550.00	0.00	0.00	576.90	58.00	579.80	.00	.03	.00	145.25	2.90	167.78
4466.000	550.00	0.00	0.00	576.90	81.00	580.39	.00	.02	.00	246.96	3.49	173.00

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	AREA	DEPTH	TOPWID
4515.000	49.00	0.00	0.00	576.90	32.00	579.47	.00	.00	.00	90.91	2.57	122.23
4515.000	49.00	0.00	0.00	576.90	50.00	579.69	.01	.01	.00	119.88	2.79	143.54
4515.000	49.00	0.00	0.00	576.90	58.00	579.81	.01	.01	.00	138.25	2.91	155.78
4515.000	49.00	0.00	0.00	576.90	81.00	580.40	.00	.00	.00	231.63	3.50	159.00
4516.000	1.00	578.80	577.90	576.30	32.00	579.47	.00	.00	.00	71.66	3.17	130.29
4516.000	1.00	578.80	577.90	576.30	50.00	579.69	.00	.00	.00	102.15	3.39	149.00
4516.000	1.00	578.80	577.90	576.30	58.00	579.81	.00	.00	.00	121.15	3.51	160.10
4516.000	1.00	578.80	577.90	576.30	81.00	580.40	.00	.00	.00	215.06	4.10	160.10
4528.000	12.00	578.80	577.90	576.30	32.00	579.48	.00	.01	.00	72.19	3.18	130.56
4528.000	12.00	578.80	577.90	576.30	50.00	579.70	.00	.01	.00	102.99	3.40	149.42
4528.000	12.00	578.80	577.90	576.30	58.00	579.82	.00	.01	.00	122.06	3.52	160.00
4528.000	12.00	578.80	577.90	576.30	81.00	580.40	.00	.00	.00	215.49	4.10	160.00
4529.000	1.00	0.00	0.00	576.30	32.00	579.48	.00	.00	.00	98.25	3.18	131.92
4529.000	1.00	0.00	0.00	576.30	50.00	579.70	.01	.00	.00	129.28	3.40	150.73
4529.000	1.00	0.00	0.00	576.30	58.00	579.82	.00	.00	.00	148.41	3.52	162.00
4529.000	1.00	0.00	0.00	576.30	81.00	580.40	.00	.00	.00	242.67	4.10	162.00
4578.000	49.00	0.00	0.00	576.30	32.00	579.48	.00	.01	.00	104.21	3.18	142.04
4578.000	49.00	0.00	0.00	576.30	50.00	579.71	.00	.01	.00	138.43	3.41	161.60
4578.000	49.00	0.00	0.00	576.30	58.00	579.83	.00	.01	.00	158.44	3.53	173.55
4578.000	49.00	0.00	0.00	576.30	81.00	580.41	.00	.00	.00	266.55	4.11	192.00
4908.000	330.00	0.00	0.00	577.30	32.00	579.52	.00	.03	.00	134.87	2.22	157.78
4908.000	330.00	0.00	0.00	577.30	50.00	579.75	.00	.04	.00	173.44	2.45	172.17
4908.000	330.00	0.00	0.00	577.30	58.00	579.87	.00	.04	.00	194.58	2.57	179.57
4908.000	330.00	0.00	0.00	577.30	81.00	580.43	.00	.02	.00	303.32	3.13	204.00
4958.000	50.00	0.00	0.00	577.30	32.00	579.53	.01	.01	.01	37.09	2.23	36.75
4958.000	50.00	0.00	0.00	577.30	50.00	579.76	.02	.01	.02	58.84	2.46	133.45
4958.000	50.00	0.00	0.00	577.30	58.00	579.88	.02	.01	.02	75.51	2.58	143.63
4958.000	50.00	0.00	0.00	577.30	81.00	580.43	.01	.01	.01	168.04	3.13	190.49
4979.000	21.00	579.50	578.30	577.30	32.00	579.72	.01	.19	0.00	54.96	2.42	131.05
4979.000	21.00	579.50	578.30	577.30	50.00	579.85	.02	.09	0.00	72.74	2.55	142.07
4979.000	21.00	579.50	578.30	577.30	58.00	579.91	.02	.03	0.00	81.42	2.61	147.14
4979.000	21.00	579.50	578.30	577.30	81.00	580.44	.01	.01	0.00	171.36	3.14	192.02
5029.000	50.00	0.00	0.00	577.30	32.00	579.74	.01	.02	.00	58.72	2.44	141.76
5029.000	50.00	0.00	0.00	577.30	50.00	579.88	.02	.03	.01	79.75	2.58	153.80
5029.000	50.00	0.00	0.00	577.30	58.00	579.94	.03	.03	.01	89.08	2.64	158.86
5029.000	50.00	0.00	0.00	577.30	81.00	580.46	.02	.02	.01	181.99	3.16	202.38
5451.000	422.00	0.00	0.00	577.10	17.00	579.79	.00	.03	.01	251.56	2.69	296.27
5451.000	422.00	0.00	0.00	577.10	26.00	579.96	.00	.05	.01	306.19	2.86	325.95
5451.000	422.00	0.00	0.00	577.10	32.00	580.04	.00	.05	.02	331.74	2.94	338.94
5451.000	422.00	0.00	0.00	577.10	47.00	580.52	.00	.04	.01	517.03	3.42	440.42
5500.000	49.00	0.00	0.00	577.10	17.00	579.79	.00	.00	.00	254.48	2.69	297.93
5500.000	49.00	0.00	0.00	577.10	26.00	579.96	.00	.00	.00	309.40	2.86	327.61
5500.000	49.00	0.00	0.00	577.10	32.00	580.04	.00	.00	.00	335.72	2.94	340.93
5500.000	49.00	0.00	0.00	577.10	47.00	580.52	.00	.00	.00	519.98	3.42	442.26

FORM 1411 80-PRINTED BY ROTARY MANIFOLD FORMS.

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	AREA	DEPTH	TOPWID
5501.000	1.00	578.50	578.80	577.20	17.00	579.79	.00	.00	.00	213.52	2.59	298.43
5501.000	1.00	578.50	578.80	577.20	26.00	579.96	.00	.00	.00	268.91	2.76	328.76
5501.000	1.00	578.50	578.80	577.20	32.00	580.04	.00	.00	.00	294.91	2.84	342.06
5501.000	1.00	578.50	578.80	577.20	47.00	580.52	.00	.00	.00	480.99	3.32	440.80
5511.000	10.00	578.50	578.80	577.20	17.00	579.79	.00	.00	.00	213.65	2.59	298.51
5511.000	10.00	578.50	578.80	577.20	26.00	579.96	.00	.00	.00	269.12	2.76	328.86
5511.000	10.00	578.50	578.80	577.20	32.00	580.04	.00	.00	.00	295.18	2.84	342.20
5511.000	10.00	578.50	578.80	577.20	47.00	580.52	.00	.00	.00	481.23	3.32	440.95
5512.000	1.00	0.00	0.00	577.20	17.00	579.79	.00	.00	.00	236.10	2.59	301.11
5512.000	1.00	0.00	0.00	577.20	26.00	579.96	.00	.00	.00	291.96	2.76	330.59
5512.000	1.00	0.00	0.00	577.20	32.00	580.04	.00	.00	.00	318.15	2.84	343.53
5512.000	1.00	0.00	0.00	577.20	47.00	580.52	.00	.00	.00	504.33	3.32	440.99
5561.000	49.00	0.00	0.00	577.20	17.00	579.79	.00	.00	.00	236.57	2.59	301.37
5561.000	49.00	0.00	0.00	577.20	26.00	579.96	.00	.00	.00	292.62	2.76	330.92
5561.000	49.00	0.00	0.00	577.20	32.00	580.04	.00	.00	.00	318.96	2.84	343.93
5561.000	49.00	0.00	0.00	577.20	47.00	580.52	.00	.00	.00	504.95	3.32	441.37
6713.000	1150.00	0.00	0.00	577.60	2.00	579.81	.00	.02	.00	35.48	2.21	35.00
6713.000	1150.00	0.00	0.00	577.60	3.10	579.99	.00	.02	.00	41.99	2.39	35.00
6713.000	1150.00	0.00	0.00	577.60	5.70	580.08	.00	.03	.00	44.97	2.48	35.00
6713.000	1150.00	0.00	0.00	577.60	12.60	580.55	.00	.03	.00	61.29	2.95	35.00
6763.000	50.00	0.00	0.00	577.70	2.00	579.81	.00	.00	.00	19.76	2.11	10.00
6763.000	50.00	0.00	0.00	577.70	3.10	579.99	.00	.00	.00	21.61	2.29	10.00
6763.000	50.00	0.00	0.00	577.70	5.70	580.08	.00	.00	.00	22.48	2.38	10.00
6763.000	50.00	0.00	0.00	577.70	12.60	580.55	.00	.00	.00	27.22	2.85	10.00
6795.000	32.00	580.90	579.00	577.70	2.00	579.81	.00	.00	0.00	19.78	2.11	10.00
6795.000	32.00	580.90	579.00	577.70	3.10	580.00	.00	.00	0.00	21.65	2.30	10.00
6795.000	32.00	580.90	579.00	577.70	5.70	580.09	.00	.02	0.00	22.65	2.39	10.00
6795.000	32.00	580.90	579.00	577.70	12.60	580.63	.00	.08	0.00	28.05	2.93	10.00
6845.000	50.00	0.00	0.00	577.60	2.00	579.81	.00	.00	.00	69.82	2.21	81.41
6845.000	50.00	0.00	0.00	577.60	3.10	580.00	.00	.00	.00	85.74	2.40	88.35
6845.000	50.00	0.00	0.00	577.60	5.70	580.10	.00	.00	.00	94.70	2.50	92.03
6845.000	50.00	0.00	0.00	577.60	12.60	580.64	.00	.00	.00	149.83	3.04	112.04
7795.000	950.00	0.00	0.00	578.80	2.00	579.81	.00	.00	.00	10.54	1.01	42.48
7795.000	950.00	0.00	0.00	578.80	3.10	580.00	.00	.00	.00	20.38	1.20	61.26
7795.000	950.00	0.00	0.00	578.80	5.70	580.10	.00	.01	.00	27.64	1.30	72.05
7795.000	950.00	0.00	0.00	578.80	12.60	580.64	.00	.01	.00	80.26	1.84	124.94
7845.000	50.00	0.00	0.00	577.80	2.00	579.81	.00	.00	.00	33.19	2.01	21.25
7845.000	50.00	0.00	0.00	577.80	3.10	580.00	.00	.00	.00	37.14	2.20	21.25
7845.000	50.00	0.00	0.00	577.80	5.70	580.10	.00	.00	.00	39.36	2.30	21.25
7845.000	50.00	0.00	0.00	577.80	12.60	580.64	.00	.00	.00	136.45	2.84	129.65
8019.000	174.00	580.90	579.60	577.60	2.00	579.85	.00	.03	0.00	21.57	2.25	15.46
8019.000	174.00	580.90	579.60	577.60	3.10	580.08	.00	.08	0.00	25.20	2.48	15.46
8019.000	174.00	580.90	579.60	577.60	5.70	580.38	.00	.28	0.00	29.82	2.78	15.46
8019.000	174.00	580.90	579.60	577.60	12.60	581.08	.00	.44	0.00	125.99	3.48	128.37

FORM 1411 GO PRINTED BY ROTARY MANIFOLD FORMS

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	AREA	DEPTH	TOPWID
8069.000	50.00	0.00	0.00	577.60	2.00	579.85	.00	.00	.00	26.28	2.25	35.37
8069.000	50.00	0.00	0.00	577.60	3.10	580.08	.00	.00	.00	36.79	2.48	53.92
8069.000	50.00	0.00	0.00	577.60	5.70	580.38	.00	.00	.00	56.39	2.78	77.42
8069.000	50.00	0.00	0.00	577.60	12.60	581.08	.00	.00	.00	130.42	3.48	132.89
9169.000	1100.00	0.00	0.00	578.70	20.00	580.08	.01	.24	.01	28.79	1.38	86.49
9169.000	1100.00	0.00	0.00	578.70	30.00	580.30	.01	.22	.01	50.95	1.60	120.51
9169.000	1100.00	0.00	0.00	578.70	37.00	580.52	.01	.14	.00	81.68	1.82	159.13
9169.000	1100.00	0.00	0.00	578.70	60.00	581.13	.00	.04	.00	232.58	2.43	289.00
9769.000	650.00	0.00	0.00	579.00	20.00	580.53	.00	.43	.01	52.81	1.53	144.35
9769.000	650.00	0.00	0.00	579.00	30.00	580.66	.00	.35	.00	75.60	1.66	191.16
9769.000	650.00	0.00	0.00	579.00	37.00	580.76	.00	.24	.00	95.93	1.76	224.83
9769.000	650.00	0.00	0.00	579.00	60.00	581.19	.00	.06	.00	208.12	2.19	270.00
10019.000	250.00	0.00	0.00	578.30	20.00	580.56	.00	.03	.00	99.00	2.26	169.61
10019.000	250.00	0.00	0.00	578.30	30.00	580.70	.00	.03	.00	124.42	2.40	194.13
10019.000	250.00	0.00	0.00	578.30	37.00	580.80	.00	.03	.00	144.97	2.50	211.88
10019.000	250.00	0.00	0.00	578.30	60.00	581.21	.00	.02	.00	245.01	2.91	253.00
10068.000	49.00	0.00	0.00	578.20	20.00	580.56	.00	.00	.00	96.00	2.36	171.77
10068.000	49.00	0.00	0.00	578.20	30.00	580.70	.00	.00	.00	121.56	2.50	196.14
10068.000	49.00	0.00	0.00	578.20	37.00	580.80	.00	.00	.00	141.98	2.60	213.63
10068.000	49.00	0.00	0.00	578.20	60.00	581.21	.00	.00	.00	239.58	3.01	253.00
10069.000	1.00	579.60	579.50	578.20	20.00	580.56	.00	.00	.00	83.99	2.36	170.35
10069.000	1.00	579.60	579.50	578.20	30.00	580.70	.00	.00	.00	109.55	2.50	194.90
10069.000	1.00	579.60	579.50	578.20	37.00	580.80	.00	.00	.00	130.14	2.60	212.63
10069.000	1.00	579.60	579.50	578.20	60.00	581.21	.00	.00	.00	226.24	3.01	253.00
10089.000	20.00	579.60	579.50	578.20	20.00	580.56	.00	.00	.00	84.46	2.36	170.83
10089.000	20.00	579.60	579.50	578.20	30.00	580.71	.00	.00	.00	110.22	2.51	195.51
10089.000	20.00	579.60	579.50	578.20	37.00	580.81	.00	.00	.00	130.90	2.61	213.25
10089.000	20.00	579.60	579.50	578.20	60.00	581.21	.00	.00	.00	226.85	3.01	253.00
10090.000	1.00	0.00	0.00	578.20	20.00	580.56	.00	.00	.00	95.27	2.36	171.02
10090.000	1.00	0.00	0.00	578.20	30.00	580.71	.00	.00	.00	121.06	2.51	195.69
10090.000	1.00	0.00	0.00	578.20	37.00	580.81	.00	.00	.00	141.73	2.61	213.42
10090.000	1.00	0.00	0.00	578.20	60.00	581.21	.00	.00	.00	240.03	3.01	253.00
10149.000	59.00	0.00	0.00	578.50	20.00	580.57	.00	.00	.00	99.75	2.07	172.23
10149.000	59.00	0.00	0.00	578.50	30.00	580.71	.00	.01	.00	125.94	2.21	197.11
10149.000	59.00	0.00	0.00	578.50	37.00	580.81	.00	.01	.00	146.76	2.31	214.83
10149.000	59.00	0.00	0.00	578.50	60.00	581.22	.00	.00	.00	244.62	2.72	253.00
10150.000	1.00	0.00	0.00	579.20	20.00	580.57	.00	.00	.00	126.36	1.37	253.69
10150.000	1.00	0.00	0.00	579.20	30.00	580.71	.00	.00	.00	162.72	1.51	259.03
10150.000	1.00	0.00	0.00	579.20	37.00	580.81	.00	.00	.00	189.19	1.61	262.84
10150.000	1.00	0.00	0.00	579.20	60.00	581.22	.00	.00	.00	298.67	2.02	278.06
10160.000	10.00	0.00	0.00	579.20	20.00	580.57	.00	.00	.00	126.83	1.37	253.76
10160.000	10.00	0.00	0.00	579.20	30.00	580.71	.00	.00	.00	163.40	1.51	259.13
10160.000	10.00	0.00	0.00	579.20	37.00	580.81	.00	.00	.00	189.94	1.61	262.95
10160.000	10.00	0.00	0.00	579.20	60.00	581.22	.00	.00	.00	299.28	2.02	278.14

FORM 14FT-OB-PRINTED BY ROTARY MANIFOLD FORTO

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	AREA	DEPTH	TOPWID
10161.000	1.00	0.00	0.00	579.20	20.00	580.57	.00	.00	.00	135.45	1.37	255.54
10161.000	1.00	0.00	0.00	579.20	30.00	580.71	.00	.00	.00	172.25	1.51	260.70
10161.000	1.00	0.00	0.00	579.20	37.00	580.81	.00	.00	.00	198.95	1.61	264.37
10161.000	1.00	0.00	0.00	579.20	60.00	581.22	.00	.00	.00	308.73	2.02	278.98
10210.000	49.00	0.00	0.00	578.50	20.00	580.57	.00	.00	.00	145.32	2.07	257.28
10210.000	49.00	0.00	0.00	578.50	30.00	580.72	.00	.00	.00	182.52	2.22	262.27
10210.000	49.00	0.00	0.00	578.50	37.00	580.82	.00	.00	.00	209.39	2.32	265.81
10210.000	49.00	0.00	0.00	578.50	60.00	581.22	.00	.00	.00	319.40	2.72	279.85
10560.000	350.00	0.00	0.00	577.30	20.00	580.59	.00	.02	.00	80.95	3.29	160.30
10560.000	350.00	0.00	0.00	577.30	30.00	580.74	.00	.02	.00	108.12	3.44	209.03
10560.000	350.00	0.00	0.00	577.30	37.00	580.84	.00	.02	.00	131.38	3.54	243.10
10560.000	350.00	0.00	0.00	577.30	60.00	581.24	.00	.02	.00	233.76	3.94	265.26
10960.000	400.00	0.00	0.00	576.40	20.00	580.61	.00	.02	.00	136.24	4.21	225.43
10960.000	400.00	0.00	0.00	576.40	30.00	580.76	.00	.02	.00	174.56	4.36	255.01
10960.000	400.00	0.00	0.00	576.40	37.00	580.87	.00	.03	.00	201.81	4.47	259.62
10960.000	400.00	0.00	0.00	576.40	60.00	581.26	.00	.02	.00	306.95	4.86	276.66
11260.000	300.00	0.00	0.00	576.80	20.00	580.61	.00	.00	.00	637.62	3.81	479.00
11260.000	300.00	0.00	0.00	576.80	30.00	580.77	.00	.00	.00	714.18	3.97	483.88
11260.000	300.00	0.00	0.00	576.80	37.00	580.87	.00	.00	.00	766.04	4.07	487.16
11260.000	300.00	0.00	0.00	576.80	60.00	581.27	.00	.00	.00	958.97	4.47	499.16
11410.000	150.00	0.00	0.00	575.40	20.00	580.61	.00	.00	.00	620.46	5.21	400.00
11410.000	150.00	0.00	0.00	575.40	30.00	580.77	.00	.00	.00	683.60	5.37	400.00
11410.000	150.00	0.00	0.00	575.40	37.00	580.87	.00	.00	.00	726.22	5.47	400.00
11410.000	150.00	0.00	0.00	575.40	60.00	581.27	.00	.00	.00	883.46	5.87	400.00

SUMMARY OF ERRORS

CAUTION SECNO= 2084.000 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 2084.000 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 2084.000 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 2084.000 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 2084.000 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 2084.000 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

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HH        HH EEEEEEEEEEEE   CCCCCCCC                22222222
HH        HH EEEEEEEEEEEE  CCCCCCCCCC              2222222222
HH        HH EE            CCC      CC            22      222
HH        HH EE            CC                             22
HH        HH EE            CC                             22
HH        HH EE            CC                             22
HH        HH EE            CC                             22
HHHHHHHHHHHH EEEEEEEEEE    CC                  ----------  222
HHHHHHHHHHHH EEEEEEEEEE    CC                  ==========  222222222
HH        HH EE            CC                          222222222
HH        HH EE            CC                       222
HH        HH EE            CC                       22
HH        HH EE            CC                       22
HH        HH EE            CCC      CC              22
HH        HH EEEEEEEEEEEE  CCCCCCCCCC               222222222222
HH        HH EEEEEEEEEEEE   CCCCCCCC                222222222222

IIIIIIII   NN        NN PPPPPPPPP    UU        UU TTTTTTTTTTTT
IIIIIIII   NN        NN PPPPPPPPPP   UU        UU TTTTTTTTTTTT
  II       NNN       NN PP       PPP UU        UU     TT
  II       NNN       NN PP        PP UU        UU     TT
  II       NNNN      NN PP        PP UU        UU     TT
  II       NN NN     NN PP        PP UU        UU     TT
  II       NN  NN    NN PP      PPP UU        UU     TT
  II       NN   NN   NN PPPPPPPPPP  UU        UU     TT
  II       NN    NN  NN PPPPPPPPP   UU        UU     TT
  II       NN     NN NN PP          UU        UU     TT
  II       NN      NNNN PP          UU        UU     TT
  II       NN       NNN PP          UU        UU     TT
  II       NN       NNN PP          UU        UU     TT
  II       NN        NN PP          UUU      UUU     TT
IIIIIIII   NN        NN PP           UUUUUUUUUU     TT
IIIIIIII   NN        NN PP            UUUUUUUU      TT

EEEEEEEEEEEE   CCCCCCCC   HH        HH   00000000
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EE           CCC      CC HH        HH 000      000
EE           CC         HH        HH 00        00
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EEEEEEEEEEE  CC         HHHHHHHHHHHH 00        00
EEEEEEEEEEE  CC         HHHHHHHHHHHH 00        00
EE           CC         HH        HH 00        00
EE           CC         HH        HH 00        00
EE           CC         HH        HH 00        00
EE           CC         HH        HH 00        00
EE           CCC      CC HH        HH 000      000
EEEEEEEEEEEE  CCCCCCCCCC  HH        HH  0000000000
EEEEEEEEEEEE   CCCCCCCC   HH        HH   00000000
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FIS : Cottrellville Township

5850-13-1

Lester Bammel Drain

4 Flows Encroached Floodway

as send to DNR 6/28/79

FORM 1411 GUARANTEED BY NOTARY STANDARD FORMS

79/06/21. 15.08.38. NOS 1.3 - L485. FYDE60I EXPRESS MCAUTO - CYBER 175, 1005.

RECEIVED
JUN 29 1979
WATER MANAGEMENT

FORM 1411-80 PRINTED BY ROTARY MANIFOLD FORMS

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C
C     29
C      0                          AT THE MOUTH, MANUFACTURED SEC.
C      0                          BASED ON REAL FIELD CHANNEL CROSS-SECTION
C     50                          D/S FACE, PRIVATE DRIVEWAY BRIDGE NO. 1
C     65        A@                U/S FACE, PRIVATE DRIVEWAY BRIDGE NO. 1
C     65                          45 DEGREE SKEW
C    434                          D/S FACE, PRIVATE DRIVEWAY BRIDGE NO. 2
C    449        A                 U/S FACE, PRIVATE DRIVEWAY BRIDGE NO. 2
C    528                          D/S FACE, PRIVATE BRIDGE NO. 3
C    546        B                 U/S FACE, PRIVATE BRIDGE NO. 3, 10 DEGREES SKEW
C    611                          MANUFACTURED SEC.
C    676                          D/S FACE, PRIVATE BRIDGE NO. 4
C    688        C                 U/S FACE, PRIVATE BRIDGE NO. 4
C    740                          D/S FACE M-29 BRIDGE
C    778        D                 U/S FACE M-29 BRIDGE
C    830                  50 FT U/S M-29 BRIDGE, MANUFACTURED SEC., 10 DEGREE SKEW
C   1180        E         400 FT  U/S M-29 BRIDGE, (AT DIVERSION)
C   1630        F         50 FT D/S 26@ OF 4@ CMP
C   1679                          MANUFACTURED SEC.
C   1680                  D/S FACE, 24@ OF 4@ CMP
C   1704        G         U/S FACE, 24@ OF 4@ CMP
C   1754                  50 FT U/S 24@ OF 4@ CMP, MANUFACTURED SEC.
C   1932                  50 FT D/S 142@ OF 4@ CMP, DUPLICATED FROM SEC. H
C   1982                          D/S FACE, 142@ OF 4@ CMP IN TRAILER PARK
C   2124        H                 U/S FACE, 142@ OF 4@ CMP IN TRAILER PARK
C   2174                  50 FT U/S 142@ OF 4@ CMP, REPEATED SEC.
C   2550                  50 FT D/S 24@ OF 4@ CMP, MANUFACTURED SEC.
C   2600                          D/S FACE, 24@ OF 4@ CMP
C   2624        I                 U/S FACE, 24@ OF 4@ CMP
C   2674                  50 FT U/S 24@ OF 4@ CMP, REPEATED SEC.
T1       COTTRELLVILLE TOWNSHIP,  FIS  J?A FILE: 5858-13  PM = OLE ANDERSON
T2       10 YEAR FLOW   ENCROACHED RUN
T3       LESTER BAMMEL DRAIN
J1              2                                                  577.44
J2     1               -1
J3    38       39       40       41       42       43        1       10       11       12
J3    25        8        4
QT     4      130      145      155      170
NC 0.042    0.042    0.034      0.3      0.5
X1     0        9      300      323        0        0        0
GR 579.5        0    578.1      200    577.9      300    574.7      303    574.3      310
GR 574.6      320    578.1      323    581.4      400    582.5      600
X1    49       13      305      320       49       49       49    0.707
X3                             305               320
GR 579.8        0    579.7      150    579.6      300    579.0      301    574.8      305
GR 574.4      310    574.7      315    574.7      320    579.0      321    579.6      322
GR 580.0      350    581.4      400    582.5      600
X1    50       13      305      320        1        1        1    0.707
X2                                                                      0.707
X3    10                                                        578.9    578.9
BT     8      300    579.6        0      301    579.6    579.0      305    579.6    574.8
BT   305    579.6    578.8      320    579.6    578.8      320    579.6    574.7      321
BT 579.6    579.0      322    579.6        0
GR 579.8        0    579.7      150    579.6      300    579.0      301    574.8      305
GR 574.4      310    574.7      315    574.7      320    579.0      321    579.6      322
GR 580.0      350    581.4      400    582.5      600
X1    65                                 15       15       15
X2                                                        1               0.707
X3    10                                                        579.6    579.6
BT     8      300    579.6        0      301    579.6    579.0      305    579.6    574.8
BT   305    579.6    578.8      320    579.6    578.8      320    579.6    574.7      321
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X1	66	15	303	320	1	1	1	0.707		
GR	579.8	0	579.7	150	579.6	300	579.0	301	574.8	305
GR	574.4	310	574.7	315	574.7	320	579.0	321	579.6	322
GR	580.0	350	581.4	400	582.5	600				
X1	115				49	49	49		0.14	
X1	385	12	400	421	269	269	269	0.985	-.14	
GR	580.5	0	579.4	200	579.0	400	578.2	403	576.5	405
GR	575.4	410	575.5	413	577.6	416	578.4	418	579.7	421
GR	581.5	500	583.0	600						
X1	434				50	50	50		.14	
X3	10							579.6	579.6	
SB		1.722	3.03		6.5		37.97	1.19	575.4	575.4
X1	449	13	400	421	15	15	15	0.985		
X2			1	579.0	580.0				0.985	
X3	10							580.0	580.0	
BT	7	398	579.6	0	400	579.6	0	403	579.6	578.2
BT	403	579.6	579.0	418	579.6	579.0	418	579.6	578.4	421
BT	579.7	0								0
GR	580.5	0	579.4	200	579.6	398	579.6	400	578.2	403
GR	576.5	405	575.4	410	575.5	413	577.6	416	578.4	418
GR	579.7	421	581.5	500	583.0	600				
NC	0.040	0.040	0.032							
X1	528	15	399	417	80	80	80	0.985		
X3	10							579.8	579.8	
GR	580.8	0	581.3	100	580.8	250	579.5	395	579.0	399
GR	577.8	402	576.5	404	575.3	408	575.2	410	576.4	412
GR	577.9	414	579.0	417	579.6	421	581.4	500	582.0	600
SB		1.730	2.98		5.5		33.25	0.855	575.2	575.2
X1	546	15	399	417	17	17	17	0.985		
X2			1	579.0	580.3				0.985	
X3	10							580.3	580.3	
BT	11	260	580.8	0	395	580.3	0	399	580.3	579.0
BT	402	580.3	578.0	402	580.3	579.0	408	580.3	579.0	414
BT	580.3	579.0	414	580.3	578.1	417	580.4	579.0	421	580.4
BT	0	500	581.4	0						
GR	580.8	0	581.3	100	580.8	260	580.3	395	579.0	399
GR	577.5	402	576.5	404	575.2	408	575.3	410	576.4	412
GR	577.6	414	579.0	417	580.4	421	581.4	500	582.0	600
NC	0.038	0.038	0.030							
X1	611	15	400	420	77	77	77	0.966		
X3				400		430				
GR	581.2	0	581.4	100	580.9	240	580.5	300	580.4	380
GR	579.1	400	578.0	402	577.0	405	575.6	410	575.6	415
GR	576.7	418	579.7	420	580.8	450	581.5	500	583.6	600
X1	676	15	400	420	75	75	75			
X3	10			310		430		579.5	579.5	
GR	581.3	0	581.5	100	580.9	260	580.5	300	580.6	400
GR	579.1	400	578.0	402	577.0	405	576.0	410	576.0	415
GR	576.7	418	579.1	420	580.8	420	581.3	440	582.3	500
SB		1.710	3.03		7.94		43.3	1.946	576.0	576.0
X1	688				12	12	12			
X2			1	579.1	580.5					
X3	10			299.9		440.1		580.6	580.6	
BT	6	300	580.5	0	400	580.6	0	400	580.6	579.1
BT	420	580.6	579.1	420	580.8	0	440	581.3	0	
X1	740	18	1306	1316	27	77	52			
X3	10			1190		1320		580.6	580.6	
GR	581.5	0	581.0	200	580.6	400	580.9	600	581.0	800
GR	581.5	1000	580.9	1200	580.1	1305	576.5	1306	575.8	1310
GR	576.3	1316	580.7	1317	582.4	1400	583.6	1600	585.0	1800
GR	584.7	2000	584.7	2200	585.3	2400				
SB		1.98	2.97		7.44		35.75	0.31	575.6	575.6
X1	778	25	1490	1500	38	38	38			
X2			1	579.7	581.5					

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BT 1490      581.8     576.2     1.90      585.5     579.1     1500      585.5     579.1     1500
BT 581.8     577.1     1503      581.6               1550      582.0
GR 581.5     0         581.3     200       581.2     400       581.1     600       581.3     800
GR 581.8     1000      581.8     1200      581.5     1360      581.5     1400      581.5     1486
GR 578.0     1488      576.6     1489      576.2     1490      575.6     1495      577.1     1500
GR 579.0     1502      581.6     1503      582.0     1550      582.3     1600      583.8     1800
GR 584.9     2000      585.1     2400      585.0     2600      585.3     2800      585.1     3000
NC 0.045     0.045     0.040
X1 830       18        1300      1323      52        52        52        0.985
X3                               1234                1347
GR 581.5     0         581.0     200       580.6     400       580.9     600       581.0     800
GR 581.5     1000      580.1     1200      579.6     1300      576.5     1303      575.6     1310
GR 576.3     1320      580.7     1323      582.4     1400      583.6     1600      585.0     1800
GR 584.7     2000      584.7     2200      585.3     2400
X1 1180      16        420       450       350       350       350
X3                               360                 510
GR 581.8     0         580.0     120       579.5     270       579.0     370       578.1     420
GR 577.0     423       576.1     426       575.7     430       575.4     436       575.9     440
GR 576.4     444       577.1     448       578.4     450       579.7     550       580.5     600
GR 584.8     800
QT 4         130       175       195       245
NC 0.072     0.072     0.035
X1 1630      18        490       510       450       450       450
X3                               360                 510
GR 581.6     0         580.4     100       579.5     200       579.0     300       579.0     400
GR 579.9     470       579.4     490       576.6     493       575.1     497       574.8     500
GR 575.2     504       576.4     508       579.8     510       579.2     530       580.2     630
GR 580.6     730       581.2     830       581.6     930
X1 1679      18        490       510       49        49        49
X3                               360                 510
GR 581.6     0         580.4     100       579.5     200       579.0     300       579.0     400
GR 579.9     470       579.4     490       576.6     493       575.1     497       574.5     500
GR 575.2     504       576.4     508       579.8     510       579.2     530       580.2     630
GR 580.6     730       581.2     830       581.6     930
X1 1680      20        498       502       1         1         1
X3 10                            360                 510                 578.5     578.5
BT 10        300       579.0     0         400       579.0     0         470       579.9     0
BT 498       579.9     575.5     498       579.9     577.5     499.5     579.9     578.5     500.5
BT 579.9     578.5     502       579.9     577.5     502       579.9     575.5     530       579.9
BT 0
GR 581.6     0         580.4     100       580.0     150       579.5     200       579.0     300
GR 579.0     400       579.9     470       579.4     490       576.6     493       575.5     498
GR 574.5     499.5     574.5     500.5     575.5     502       576.9     509       579.2     513
GR 579.9     530       580.2     650       580.6     730       581.2     830       581.6     930
X1 1704      20        498       502       24        24        24
X3 10                            360                 510                 579.0     579.2
BT 10        300       579.0     0         400       579.0     0         470       579.9     0
BT 498       579.9     575.7     498       579.9     577.7     499.5     579.9     578.7     500.5
BT 579.9     578.7     502       579.9     577.7     502       579.9     575.7     530       579.9
BT 0
GR 581.6     0         580.4     100       580.0     150       579.5     200       579.0     300
GR 579.0     400       579.9     470       579.4     490       576.6     493       575.7     498
GR 574.7     499.5     574.7     500.5     575.7     502       576.9     509       579.2     513
GR 579.9     530       580.2     650       580.6     730       581.2     830       581.6     930
X1 1705                                    1         1         1
X3                               360                 510
X1 1754      18        488       513       49        49        49
X3                               360                 510
GR 581.6     0         580.4     100       579.5     200       579.0     300       579.0     400
GR 579.9     470       578.7     488       576.8     492       575.2     496       574.7     500
GR 575.4     504       576.9     509       579.1     513       579.2     530       580.2     630
GR 580.6     730       581.2     830       581.6     930
X1 1932      19        996       1014      178       178       178
X3                               850       583.0     1150      583.0
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FORM 1411-GO PRINTED BY ROTARY MANIFOLD FORMS

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GR 582.6    1905   583.0   2105   583.0   2305   583.2   2505
NC  0.06    0.06   0.030
X1  1982      24    1003   1007     50     50     50
X3                        862   583.0   1162   583.0
GR 581.8       0   579.9    105   580.3    305   580.5    505   580.2    705
GR 580.6     800   581.0    905   578.9    996   576.7   1000   575.8   1003
GR 574.8  1004.5   574.8 1005.5   575.8   1007   576.7   1010   578.9   1014
GR 581.2    1105   580.7   1200   580.2   1305   580.7   1505   581.3   1705
GR 582.6    1905   583.0   2105   583.0   2305   583.2   2505
SB        4.314    3.05           3.14          12.57          575.1   574.8
X1  2124      24    1003   1007    142    142    142
X2                    1    579.1   580.7
X3                        905   583.0   1200   583.0
BT    11     905   581.0      0   1000   582.1      0   1003   582.1   576.1
BT  1003   582.1   578.1 1004.5   582.1   579.1 1005.5   582.1   579.1   1007
BT 582.1   578.1    1007  582.1   576.1    1010  582.1      0    1105  581.2
BT     0    1200   580.7      0
GR 581.8       0   579.9    105   580.3    305   580.5    505   580.2    705
GR 580.6     800   581.0    905   578.9    996   576.7   1000   576.1   1003
GR 575.1  1004.5   575.1 1005.5   576.1   1007   576.7   1010   578.9   1014
GR 581.2    1105   580.7   1200   580.2   1305   580.7   1505   581.3   1705
GR 582.6    1905   583.0   2105   583.0   2305   583.2   2505
NC  0.06    0.06   0.04
X1  2174                                  50     50     50             0.1
X3                        905   585.0   1200   585.0
X1  2550      15     300    318    452    452    452
X3                        290            400
GR 581.5       0   581.3    100   580.5    200   580.3    300   578.4    304
GR 577.1     307   575.8 308.5   575.8 309.5   577.1    311   578.4    314
GR 580.3     318   580.4    378   581.3    500   582.0    600   582.5    700
X1  2599                                  49     49     49             0.1
X3                        290            400
NC  0.06    0.06   0.024
X1  2600      16     350    368      1      1      1
X3                        290            400
BT    14     100   581.3      0    150   581.0      0    250   580.4      0
BT   350   580.5       0    357   580.5   576.9    357   580.5   578.6  358.5
BT 580.5   580.1   359.5  580.5   580.1    361  580.5   578.6    361   580.5
BT 576.9     368   580.5      0    428   580.4      0    550   581.3      0
BT   615   582.0       0
GR 581.5       0   581.3    100   581.0    150   580.4    250   580.5    350
GR 578.4     354   576.9    357   575.9  358.5   575.9  359.5   576.9    361
GR 578.4     364   580.5    368   580.4    428   581.3    550   582.0    615
GR 582.3     700
X1  2624      16     350    368     24     24     24
X3                        290            400
BT    14     100   581.3      0    150   581.0      0    250   580.4      0
BT   350   580.5       0    357   580.5   577.1    357   580.5   578.6  358.5
BT 580.5   580.1   359.5  580.5   580.1    361  580.5   578.6    361   580.5
BT 577.1     368   580.5      0    428   580.4      0    550   581.3      0
BT   615   582.0       0
GR 581.5       0   581.3    100   581.0    150   580.4    250   580.5    350
GR 578.4     354   577.1    357   576.1  358.5   576.1  359.5   577.1    361
GR 578.4     364   580.5    368   580.4    428   581.3    550   582.0    615
GR 582.3     700
X1  2625                                   1      1      1
X3                        290            400
NC  0.06    0.06   0.04
X1  2674                                  49     49     49
X3                        290            400
EJ
T1      COTTRELLVILLE TOWNSHIP, FIS  J?A FILE: 5858-13  PM = OLE ANDERSON
T2      50 YEAR FLOW
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J2      [illegible]                 -1
T1      COTTRELLVILLE TOWNSHIP,  FIS  J?A FILE: 5858-13  PM = OLE ANDERSON
T2      100 YR. FLOW
T3      LESTER BAMMEL DRAIN
J1              4                                                  577.44
J2      3                   -1
T1      COTTRELLVILLE TOWNSHIP,  FIS  J?A FILE: 5858-13  PM = OLE ANDERSON
T2      500 YEAR FLOW
T3      LESTER BAMMEL DRAIN
J1              5                                                  577.44
J2     15                   -1

ER
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FORM 1411-00 PRINTED BY ROTARY MANIFOLD FORMS

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
**************************************************

C
T1      COTTRELLVILLE TOWNSHIP,  FIS  J?A FILE: 5858-13  PM = OLE ANDERSON
T2      10 YEAR FLOW   ENCROACHED RUN
T3      LESTER BAMMEL DRAIN

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.        2.        0.        0.  0.000000      0.00      0.0       0.    577.440     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    39.000    40.000    41.000    42.000    43.000     1.000    10.000    11.000    12.000

     25.000     8.000     4.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

QT    4.000   130.000   145.000   155.000   170.000     0.000     0.000     0.000     0.000     0.000
NC     .042      .042      .034      .300      .500     0.000     0.000     0.000     0.000     0.000

                    AT THE MOUTH, MANUFACTURED SEC.

                    BASED ON REAL FIELD CHANNEL CROSS-SECTION

X1      0.000     9.000   300.000   323.000     0.000     0.000     0.000     0.000     0.000     0.000
GR    579.500     0.000   578.100   200.000   577.900   300.000   574.700   303.000   574.300   310.000
GR    574.600   320.000   578.100   323.000   581.400   400.000   582.500   600.000     0.000     0.000

X1     49.000    13.000   305.000   320.000    49.000    49.000    49.000      .707     0.000     0.000
X3      0.000     0.000     0.000   305.000     0.000   320.000     0.000     0.000     0.000     0.000
GR    579.800     0.000   579.700   150.000   579.600   300.000   579.000   301.000   574.800   305.000
GR    574.400   310.000   574.700   315.000   574.700   320.000   579.000   321.000   579.600   322.000
GR    580.000   350.000   581.400   400.000   582.500   600.000     0.000     0.000     0.000     0.000

                    D/S FACE, PRIVATE DRIVEWAY BRIDGE NO. 1

X1     50.000    13.000   305.000   320.000     1.000     1.000     1.000      .707     0.000     0.000
X2      0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000      .707     0.000
X3     10.000     0.000     0.000     0.000     0.000     0.000     0.000   578.900   578.900     0.000
BT      8.000   300.000   579.600     0.000   301.000   579.600   579.000   305.000   579.600   574.800
BT    305.000   579.600   578.800   320.000   579.600   578.800   320.000   579.600   574.700   321.000
BT    579.600   579.000   322.000   579.600     0.000     0.000     0.000     0.000     0.000     0.000
GR    579.800     0.000   579.700   150.000   579.600   300.000   579.000   301.000   574.800   305.000
GR    574.400   310.000   574.700   315.000   574.700   320.000   579.000   321.000   579.600   322.000
GR    580.000   350.000   581.400   400.000   582.500   600.000     0.000     0.000     0.000     0.000

A@                  U/S FACE, PRIVATE DRIVEWAY BRIDGE NO. 1
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X2	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	.707	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	579.600	579.600	0.000
BT	8.000	300.000	579.600	0.000	301.000	579.600	579.000	305.000	579.600	574.800
BT	305.000	579.600	578.800	320.000	579.600	578.800	320.000	579.600	574.700	321.000
BT	579.600	579.000	322.000	579.600	0.000	0.000	0.000	0.000	0.000	0.000
NC	.042	.042	.032	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	66.000	13.000	305.000	320.000	1.000	1.000	1.000	.707	0.000	0.000
GR	579.800	0.000	579.700	150.000	579.600	300.000	579.000	301.000	574.800	305.000
GR	574.400	310.000	574.700	315.000	574.700	320.000	579.000	321.000	579.600	322.000
GR	580.000	350.000	581.400	400.000	582.500	600.000	0.000	0.000	0.000	0.000
X1	115.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	.140	0.000
X1	385.000	12.000	400.000	421.000	269.000	269.000	269.000	.985	-.140	0.000
GR	580.500	0.000	579.400	200.000	579.000	400.000	578.200	403.000	576.500	405.000
GR	575.400	410.000	575.500	413.000	577.600	416.000	578.400	418.000	579.700	421.000
GR	581.500	500.000	583.000	600.000	0.000	0.000	0.000	0.000	0.000	0.000

D/S FACE, PRIVATE DRIVEWAY BRIDGE NO. 2

X1	434.000	0.000	0.000	0.000	50.000	50.000	50.000	0.000	.140	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	579.600	579.600	0.000
SB	0.000	1.722	3.030	0.000	6.500	0.000	37.970	1.190	575.400	575.400

A U/S FACE, PRIVATE DRIVEWAY BRIDGE NO. 2

X1	449.000	13.000	400.000	421.000	15.000	15.000	15.000	.985	0.000	0.000
X2	0.000	0.000	1.000	579.000	580.000	0.000	0.000	0.000	.985	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	580.000	580.000	0.000
BT	7.000	398.000	579.600	0.000	400.000	579.600	0.000	403.000	579.600	578.200
BT	403.000	579.600	579.000	418.000	579.600	579.000	418.000	579.600	578.400	421.000
BT	579.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	580.500	0.000	579.400	200.000	579.600	398.000	579.600	400.000	578.200	403.000
GR	576.500	405.000	575.400	410.000	575.500	413.000	577.600	416.000	578.400	418.000
GR	579.700	421.000	581.500	500.000	583.000	600.000	0.000	0.000	0.000	0.000
NC	.040	.040	.032	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D/S FACE, PRIVATE BRIDGE NO. 3

X1	528.000	15.000	399.000	417.000	80.000	80.000	80.000	.985	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	579.800	579.800	0.000
GR	580.800	0.000	581.300	100.000	580.800	250.000	579.500	395.000	579.000	399.000
GR	577.800	402.000	576.500	404.000	575.300	408.000	575.200	410.000	576.400	412.000
GR	577.900	414.000	579.000	417.000	579.600	421.000	581.400	500.000	582.000	600.000
SB	0.000	1.730	2.980	0.000	5.500	0.000	33.250	.855	575.200	575.200

B U/S FACE, PRIVATE BRIDGE NO. 3, 10 DEGREES SKEW

X1	546.000	15.000	399.000	417.000	17.000	17.000	17.000	.985	0.000	0.000
X2	0.000	0.000	1.000	579.000	580.300	0.000	0.000	0.000	.985	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	580.300	580.300	0.000
BT	11.000	260.000	580.800	0.000	395.000	580.300	0.000	399.000	580.300	579.000
BT	402.000	580.300	578.000	402.000	580.300	579.000	408.000	580.300	579.000	414.000
BT	580.300	579.000	414.000	580.300	578.100	417.000	580.400	579.000	421.000	580.400
BT	0.000	500.000	581.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	580.800	0.000	581.300	100.000	580.800	260.000	580.300	395.000	579.000	399.000
GR	577.500	402.000	576.500	404.000	575.200	408.000	575.300	410.000	576.400	412.000
GR	577.600	414.000	579.000	417.000	580.400					

MANUFACTURED SEC.

X1	611.000	15.000	400.000	420.000	77.000	77.000	77.000	.966	0.000	0.000
X3	0.000	0.000	0.000	400.000	0.000	430.000	0.000	0.000	0.000	0.000
GR	581.200	0.000	581.400	100.000	580.900	240.000	580.500	300.000	580.400	380.000
GR	579.100	400.000	578.000	402.000	577.000	405.000	575.600	410.000	575.600	415.000
GR	576.700	418.000	579.700	420.000	580.800	450.000	581.500	500.000	583.600	600.000

D/S FACE, PRIVATE BRIDGE NO. 4

X1	676.000	15.000	400.000	420.000	75.000	75.000	75.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	310.000	0.000	430.000	0.000	579.500	579.500	0.000
GR	581.300	0.000	581.500	100.000	580.900	260.000	580.500	300.000	580.600	400.000
GR	579.100	400.000	578.000	402.000	577.000	405.000	576.000	410.000	576.000	415.000
GR	576.700	418.000	579.100	420.000	580.800	420.000	581.300	440.000	582.300	500.000
SB	0.000	1.710	3.030	0.000	7.940	0.000	43.300	1.946	576.000	576.000

C U/S FACE, PRIVATE BRIDGE NO. 4

X1	688.000	0.000	0.000	0.000	12.000	12.000	12.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	579.100	580.500	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	299.900	0.000	440.100	0.000	580.600	580.600	0.000
BT	6.000	300.000	580.500	0.000	400.000	580.600	0.000	400.000	580.600	579.100
BT	420.000	580.600	579.100	420.000	580.800	0.000	440.000	581.300	0.000	0.000

D/S FACE M-29 BRIDGE

X1	740.000	18.000	1306.000	1316.000	27.000	77.000	52.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	1190.000	0.000	1320.000	0.000	580.600	580.600	0.000
GR	581.500	0.000	581.000	200.000	580.600	400.000	580.900	600.000	581.000	800.000
GR	581.500	1000.000	580.900	1200.000	580.100	1305.000	576.500	1306.000	575.800	1310.000
GR	576.300	1316.000	580.700	1317.000	582.400	1400.000	583.600	1600.000	585.000	1800.000
GR	584.700	2000.000	584.700	2200.000	585.300	2400.000	0.000	0.000	0.000	0.000
SB	0.000	1.980	2.970	0.000	7.440	0.000	35.750	.310	575.600	575.600

D U/S FACE M-29 BRIDGE

X1	778.000	25.000	1490.000	1500.000	38.000	38.000	38.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	579.700	581.500	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	1360.000	0.000	1550.000	0.000	581.500	581.500	0.000
BT	9.000	1360.000	581.600	0.000	1400.000	581.500	0.000	1486.000	581.500	0.000
BT	1490.000	581.800	576.200	1490.000	583.300	579.700	1500.000	583.300	579.700	1500.000
BT	581.800	577.100	1503.000	581.600	0.000	1550.000	582.000	0.000	0.000	0.000
GR	581.500	0.000	581.300	200.000	581.200	400.000	581.100	600.000	581.300	800.000
GR	581.800	1000.000	581.800	1200.000	581.500	1360.000	581.500	1400.000	581.500	1486.000
GR	578.000	1488.000	576.600	1489.000	576.200	1490.000	575.600	1495.000	577.100	1500.000
GR	579.000	1502.000	581.600	1503.000	582.000	1550.000	582.300	1600.000	583.800	1800.000
GR	584.900	2000.000	585.100	2400.000	585.000	2600.000	585.300	2800.000	585.100	3000.000
NC	.045	.045	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

50 FT U/S M-29 BRIDGE, MANUFACTURED SEC., 10 DEGREE SKEW

X1	830.000	18.000	1300.000	1323.000	52.000	52.000	52.000	.985	0.000	0.000
X3	0.000	0.000	0.000	1234.000	0.000	1347.000	0.000	0.000	0.000	0.000
GR	581.500	0.000	581.000	200.000	580.600	400.000	580.900	600.000	581.000	800.000
GR	581.500	1000.000	580.100	1200.000	579.600	1300.000	576.500	1303.000	575.600	1310.000
GR	576.300	1320.000	580.700	1323.000	582.400	1400.000	583.600	1600.000		
GR	584.700	2001.000								

E 400 FT U/S M=29 BRIDGE, (AT DIVERSION)

X1	1180.000	16.000	420.000	450.000	350.000	350.000	350.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	360.000	0.000	510.000	0.000	0.000	0.000	0.000
GR	581.800	0.000	580.000	120.000	579.500	270.000	579.000	370.000	578.100	420.000
GR	577.000	423.000	576.100	426.000	575.700	430.000	575.400	436.000	575.900	440.000
GR	576.400	444.000	577.100	448.000	578.400	450.000	579.700	550.000	580.500	600.000
GR	584.800	800.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BT	4.000	130.000	175.000	195.000	245.000	0.000	0.000	0.000	0.000	0.000
NC	.072	.072	.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000

F 50 FT D/S 26@ OF 4@ CMP

X1	1630.000	18.000	490.000	510.000	450.000	450.000	450.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	360.000	0.000	510.000	0.000	0.000	0.000	0.000
GR	581.600	0.000	580.400	100.000	579.500	200.000	579.000	300.000	579.000	400.000
GR	579.900	470.000	579.400	490.000	576.600	493.000	575.100	497.000	574.800	500.000
GR	575.200	504.000	576.400	508.000	579.800	510.000	579.200	530.000	580.200	630.000
GR	580.600	730.000	581.200	830.000	581.600	930.000	0.000	0.000	0.000	0.000

MANUFACTURED SEC.

X1	1679.000	18.000	490.000	510.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	360.000	0.000	510.000	0.000	0.000	0.000	0.000
GR	581.600	0.000	580.400	100.000	579.500	200.000	579.000	300.000	579.000	400.000
GR	579.900	470.000	579.400	490.000	576.600	493.000	575.100	497.000	574.500	500.000
GR	575.200	504.000	576.400	508.000	579.800	510.000	579.200	530.000	580.200	630.000
GR	580.600	730.000	581.200	830.000	581.600	930.000	0.000	0.000	0.000	0.000

D/S FACE, 24@ OF 4@ CMP

X1	1680.000	20.000	498.000	502.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	360.000	0.000	510.000	0.000	578.500	578.500	0.000
BT	10.000	300.000	579.000	0.000	400.000	579.000	0.000	470.000	579.900	0.000
BT	498.000	579.900	575.500	498.000	579.900	577.500	499.500	579.900	578.500	500.500
BT	579.900	578.500	502.000	579.900	577.500	502.000	579.900	575.500	530.000	579.900
BT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	581.600	0.000	580.400	100.000	580.000	150.000	579.500	200.000	579.000	300.000
GR	579.000	400.000	579.900	470.000	579.400	490.000	576.600	493.000	575.500	498.000
GR	574.500	499.500	574.500	500.500	575.500	502.000	576.900	509.000	579.200	513.000
GR	579.900	530.000	580.200	650.000	580.600	730.000	581.200	830.000	581.600	930.000

G U/S FACE, 24@ OF 4@ CMP

X1	1704.000	20.000	498.000	502.000	24.000	24.000	24.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	360.000	0.000	510.000	0.000	579.000	579.200	0.000
BT	10.000	300.000	579.000	0.000	400.000	579.000	0.000	470.000	579.900	0.000
BT	498.000	579.900	575.700	498.000	579.900	577.700	499.500	579.900	578.700	500.500
BT	579.900	578.700	502.000	579.900	577.700	502.000	579.900	575.700	530.000	579.900
BT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	581.600	0.000	580.400	100.000	580.000	150.000	579.500	200.000	579.000	300.000
GR	579.000	400.000	579.900	470.000	579.400	490.000	576.600	493.000	575.700	498.000
GR	574.700	499.500	574.700	500.500	575.700	502.000	576.900	509.000	579.200	513.000
GR	579.900	530.000	580.200	650.000	580.600	730.000	581.200	830.000	581.600	930.000

X1	1705.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	0.000	0.000								

FORM 141 GU-PRINTED BY ROTARY MANIFOLD FORMS.

50 FT U/S 24@ OF 4@ CMP, MANUFACTURED SEC.

X1	1754.000	18.000	488.000	513.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	360.000	0.000	510.000	0.000	0.000	0.000	0.000
GR	581.600	0.000	580.400	100.000	579.500	200.000	579.000	300.000	579.000	400.000
GR	579.900	470.000	578.700	488.000	576.800	492.000	575.200	496.000	574.700	500.000
GR	575.400	504.000	576.900	509.000	579.100	513.000	579.200	530.000	580.200	630.000
GR	580.600	730.000	581.200	830.000	581.600	930.000	0.000	0.000	0.000	0.000

50 FT D/S 142@ OF 4@ CMP, DUPLICATED FROM SEC. H

X1	1932.000	19.000	996.000	1014.000	178.000	178.000	178.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	850.000	583.000	1150.000	583.000	0.000	0.000	0.000
GR	581.800	0.000	579.900	105.000	580.300	305.000	580.500	505.000	580.200	705.000
GR	581.000	905.000	578.900	996.000	576.700	1000.000	574.800	1005.000	576.700	1010.000
GR	578.900	1014.000	581.200	1105.000	580.200	1305.000	580.700	1505.000	581.300	1705.000
GR	582.600	1905.000	583.000	2105.000	583.000	2305.000	583.200	2505.000	0.000	0.000
NC	.060	.060	.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D/S FACE, 142@ OF 4@ CMP IN TRAILER PARK

X1	1982.000	24.000	1003.000	1007.000	50.000	50.000	50.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	862.000	583.000	1162.000	583.000	0.000	0.000	0.000
GR	581.800	0.000	579.900	105.000	580.300	305.000	580.500	505.000	580.200	705.000
GR	580.600	800.000	581.000	905.000	578.900	996.000	576.700	1000.000	575.800	1003.000
GR	574.800	1004.500	574.800	1005.500	575.800	1007.000	576.700	1010.000	578.900	1014.000
GR	581.200	1105.000	580.700	1200.000	580.200	1305.000	580.700	1505.000	581.300	1705.000
GR	582.600	1905.000	583.000	2105.000	583.000	2305.000	583.200	2505.000	0.000	0.000
SB	0.000	4.314	3.050	0.000	3.140	0.000	12.570	0.000	575.100	574.800

H U/S FACE, 142@ OF 4@ CMP IN TRAILER PARK

X1	2124.000	24.000	1003.000	1007.000	142.000	142.000	142.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	579.100	580.700	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	905.000	583.000	1200.000	583.000	0.000	0.000	0.000
BT	11.000	905.000	581.000	0.000	1000.000	582.100	0.000	1003.000	582.100	576.100
BT	1003.000	582.100	578.100	1004.500	582.100	579.100	1005.500	582.100	579.100	1007.000
BT	582.100	578.100	1007.000	582.100	576.100	1010.000	582.100	0.000	1105.000	581.200
BT	0.000	1200.000	580.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	581.800	0.000	579.900	105.000	580.300	305.000	580.500	505.000	580.200	705.000
GR	580.600	800.000	581.000	905.000	578.900	996.000	576.700	1000.000	576.100	1003.000
GR	575.100	1004.500	575.100	1005.500	576.100	1007.000	576.700	1010.000	578.900	1014.000
GR	581.200	1105.000	580.700	1200.000	580.200	1305.000	580.700	1505.000	581.300	1705.000
GR	582.600	1905.000	583.000	2105.000	583.000	2305.000	583.200	2505.000	0.000	0.000
NC	.060	.060	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

50 FT U/S 142@ OF 4@ CMP, REPEATED SEC.

X1	2174.000	0.000	0.000	0.000	50.000	50.000	50.000	0.000	.100	0.000
X3	0.000	0.000	0.000	905.000	585.000	1200.000	585.000	0.000	0.000	0.000

50 FT D/S 24@ OF 4@ CMP, MANUFACTURED SEC.

X1	2550.000	15.000	300.000	318.000	452.000	452.000	452.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	290.000	0.000	400.000	0.000	0.000	0.000	0.000
GR	581.500	0.000	581.300	100.000	580.500	200.000	580.300	300.000	578.400	304.000
GR	577.100	307.000	575.000	308.500	575.800	309.500	575.500	310.000	575.500	310.500

X1	2599.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	.100	0.000
X3	0.000	0.000	0.000	290.000	0.000	400.000	0.000	0.000	0.000	0.000
NC	.060	.060	.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D/S FACE, 24@ OF 4@ CMP

X1	2600.000	16.000	350.000	368.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	290.000	0.000	400.000	0.000	0.000	0.000	0.000
BT	14.000	100.000	581.300	0.000	150.000	581.000	0.000	250.000	580.400	0.000
BT	350.000	580.500	0.000	357.000	580.500	576.900	357.000	580.500	578.600	358.500
BT	580.500	580.100	359.500	580.500	580.100	361.000	580.500	578.600	361.000	580.500
BT	576.900	368.000	580.500	0.000	428.000	580.400	0.000	550.000	581.300	0.000
BT	615.000	582.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	581.500	0.000	581.300	100.000	581.000	150.000	580.400	250.000	580.500	350.000
GR	578.400	354.000	576.900	357.000	575.900	358.500	575.900	359.500	576.900	361.000
GR	578.400	364.000	580.500	368.000	580.400	428.000	581.300	550.000	582.000	615.000
GR	582.300	700.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

I

U/S FACE, 24@ OF 4@ CMP

X1	2624.000	16.000	350.000	368.000	24.000	24.000	24.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	290.000	0.000	400.000	0.000	0.000	0.000	0.000
BT	14.000	100.000	581.300	0.000	150.000	581.000	0.000	250.000	580.400	0.000
BT	350.000	580.500	0.000	357.000	580.500	577.100	357.000	580.500	578.600	358.500
BT	580.500	580.100	359.500	580.500	580.100	361.000	580.500	578.600	361.000	580.500
BT	577.100	368.000	580.500	0.000	428.000	580.400	0.000	550.000	581.300	0.000
BT	615.000	582.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	581.500	0.000	581.300	100.000	581.000	150.000	580.400	250.000	580.500	350.000
GR	578.400	354.000	577.100	357.000	576.100	358.500	576.100	359.500	577.100	361.000
GR	578.400	364.000	580.500	368.000	580.400	428.000	581.300	550.000	582.000	615.000
GR	582.300	700.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	2625.000	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	290.000	0.000	400.000	0.000	0.000	0.000	0.000
NC	.060	.060	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

50 FT U/S 24@ OF 4@ CMP, REPEATED SEC.

X1	2674.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	290.000	0.000	400.000	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

FORM 1411.00 PRINTED BY ROTARY MANIFOLD FORMS

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
**************************************************

T1      COTTRELLVILLE TOWNSHIP, FIS  J?A FILE: 5858-13  PM = OLE ANDERSON
T2      100 YR. FLOW
T3      LESTER BAMMEL DRAIN                Encroached Floodway

J1  ICHECK     INQ        NINV       IDIR       STRT       METRIC     HVINS      Q          WSEL       FQ
        0.       4.         0.         0.  0.000000       0.00       0.0        0.   577.440     0.000

J2  NPROF      IPLOT      PRFVS      XSECV      XSECH      FN         ALLOC      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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FORM 1211.0D PRINTED BY ROTARY MANIFOLD FORMS

*PROF 3

CCHV= .300 CEHV= .500

*SECNO .000

SECNO	DEPTH	CWSEL	CRIWS	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	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

AT THE MOUTH, MANUFACTURED SEC.

BASED ON REAL FIELD CHANNEL CROSS-SECTION

0.00	3.14	577.44	0.00	577.44	577.55	.11	0.00	0.00	577.90
155.	0.	155.	0.	0.	57.	0.	0.	0.	578.10
0.00	0.00	2.70	0.00	.042	.034	.042	0.000	574.30	300.43
.001224	0.	0.	0.	0	0	0	0.00	22.00	322.43

*SECNO 49.000

3470 ENCROACHMENT STATIONS= 215.6 226.2 TYPE= 1 TARGET= 15.000

49.00	3.00	577.40	0.00	0.00	577.83	.43	.12	.16	574.80
155.	0.	155.	0.	0.	30.	0.	0.	0.	100000.00
.00	0.00	5.25	0.00	.042	.034	.042	.033	574.40	215.63
.006410	49.	49.	49.	2	0	0	0.00	10.60	226.24

*SECNO 50.000

3370 NORMAL BRIDGE,NRD= 8 MIN ELTRD= 579.60 MAX ELLC= 579.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 578.90 ELREA= 578.90

D/S FACE, PRIVATE DRIVEWAY BRIDGE NO. 1

50.00	3.00	577.40	0.00	0.00	577.83	.43	.01	.00	574.80
155.	0.	155.	0.	0.	30.	0.	0.	0.	574.70
.00	0.00	5.25	0.00	.042	.034	.042	.033	574.40	215.64
.004202	1.	1.	1.	0	0	0	0.00	10.61	226.24

*SECNO 65.000

3370 NORMAL BRIDGE,NRD= 8 MIN ELTRD= 579.60 MAX ELLC= 579.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 579.60 ELREA= 579.60

A@ U/S FACE, PRIVATE DRIVEWAY BRIDGE NO. 1

45 DEGREE SKEW

65.00	3.10	577.50	0.00	0.00	577.90	.40	.08	.01	574.80
155.	0.	155.	0.	0.	30.	0.	0.	0.	574.70
.00	0.00	5.09	0.00	.042	.034	.042	.033	574.40	215.64
.003811	15.	15.	15.	1	0	0	0.00	10.61	226.24

*SECNO 66.000

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
66.00	3.17	577.57	0.00	0.00	577.92	.35	.00	.02	574.80
155.	4.	151.	0.	3.	31.	1.	0.	0.	574.70
.00	1.50	4.81	.68	.042	.032	.042	.032	574.40	213.77
.002547	1.	1.	1.	2	0	0	0.00	12.94	226.71

*SECNO 115.000

115.00	3.15	577.69	0.00	0.00	578.05	.36	.13	.00	574.94
155.	4.	151.	0.	3.	31.	1.	0.	0.	574.84
.01	1.51	4.85	.68	.042	.032	.042	.032	574.54	213.78
.002610	49.	49.	49.	2	0	0	0.00	12.92	226.71

*SECNO 385.000

385.00	3.37	578.63	0.00	0.00	578.93	.30	.86	.02	578.86
155.	0.	155.	0.	0.	35.	0.	0.	0.	579.56
.02	0.00	4.39	0.00	.042	.032	.042	.032	575.26	394.86
.004039	269.	269.	269.	3	0	0	0.00	17.71	412.57

*SECNO 434.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 579.60 ELREA= 579.60

D/S FACE, PRIVATE DRIVEWAY BRIDGE NO. 2

434.00	3.45	578.85	0.00	0.00	579.13	.28	.19	.01	579.00
155.	0.	155.	0.	0.	37.	0.	0.	0.	579.70
.03	0.00	4.21	0.00	.042	.032	.042	.032	575.40	394.55
.003646	50.	50.	50.	2	0	0	0.00	18.20	412.75

SPECIAL BRIDGE

SB	XK	XKOR	COFO	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.72	3.03	0.00	6.50	0.00	37.97	1.19	575.40	575.40

*SECNO 449.000
PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
579.30	579.13	0.00	0.	155.	38.	39.	579.00	580.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 580.00 ELREA= 580.00

A U/S FACE, PRIVATE DRIVEWAY BRIDGE NO. 2

449.00	3.67	579.07	0.00	0.00	579.30	.23	.17	0.00	579.60
155.	0.	155.	0.	0.	40.	0.	0.	0.	579.70

FORM 1411.08 PRINTED BY ROTARY MANIFOLD FORMS

*SECNO 528.000

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 579.80 ELREA= 579.80

U/S FACE, PRIVATE BRIDGE NO. 3

528.00	4.09	579.29	0.00	0.00	579.50	.21	.20	.00	579.00
155.	0.	155.	0.	0.	42.	0.	0.	0.	579.00
.03	0.00	3.72	0.00	.040	.032	.040	.032	575.20	393.02
.002357	80.	80.	80.	2	0	0	0.00	17.73	410.74

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.73	2.98	0.00	5.50	0.00	33.25	.86	575.20	575.20

*SECNO 546.000

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	AREA	TRAPEZOID AREA	ELLC	ELTRD
579.87	579.49	0.00	0.	155.	33.	33.	579.00	580.30

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 580.30 ELREA= 580.30

B U/S FACE, PRIVATE BRIDGE NO. 3, 10 DEGREES SKEW

546.00	4.53	579.73	0.00	0.00	579.87	.14	.37	0.00	579.00
155.	0.	155.	0.	0.	51.	0.	0.	0.	579.00
.04	0.00	3.03	0.00	.040	.032	.040	.032	575.20	393.02
.001211	17.	17.	17.	2	0	0	0.00	17.73	410.74

*SECNO 611.000

3470 ENCROACHMENT STATIONS= 386.4 415.4 TYPE= 1 TARGET= 30.000

MANUFACTURED SEC.

611.00	4.25	579.85	0.00	0.00	579.95	.10	.07	.01	579.10
155.	0.	155.	0.	0.	61.	0.	1.	0.	579.70
.04	0.00	2.54	.19	.038	.030	.038	.031	575.60	386.40
.000699	77.	77.	77.	1	0	0	0.00	23.54	409.94

*SECNO 676.000

U/S FACE, PRIVATE BRIDGE NO. 4

676.00	3.91	579.91	0.00	0.00	580.01	.10	.05	.00	580.60
155.	0.	155.	0.	0.	61.	0.	1.	0.	580.80
.05	0.00	2.52	0.00	.038	.030	.038	.031	576.00	400.00
.000717	75.	75.	75.	1	0	0	0.00	20.00	420.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.71	3.03	0.00	7.94	0.00	43.30	1.95	576.00	576.00

*SECNO 688.000
PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
580.25	580.01	0.00	0.	155.	43.	43.	579.10	580.50

3470 ENCROACHMENT STATIONS= 299.9 440.1 TYPE= 1 TARGET= 140.200

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 580.60 ELREA= 580.60

C U/S FACE, PRIVATE BRIDGE NO. 4

688.00	4.16	580.16	0.00	0.00	580.25	.08	.24	0.00	580.60
155.	0.	155.	0.	0.	66.	0.	1.	0.	580.80
.05	0.00	2.34	0.00	.038	.030	.038	.031	576.00	400.00
.000570	12.	12.	12.	2	0	0	0.00	20.00	420.00

*SECNO 740.000

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

3470 ENCROACHMENT STATIONS= 1190.0 1320.0 TYPE= 1 TARGET= 130.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 580.60 ELREA= 580.60

D/S FACE M-29 BRIDGE

740.00	4.33	580.13	0.00	0.00	580.36	.23	.04	.07	576.50
155.	0.	155.	0.	0.	40.	0.	1.	0.	576.30
.06	0.00	3.83	0.00	.038	.030	.038	.031	575.80	1306.00
.001175	27.	52.	77.	2	0	0	0.00	10.00	1316.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.98	2.97	0.00	7.44	0.00	35.75	.31	575.60	575.60

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
580.71	580.19	0.00	0.	155.	36.	36.	579.70	581.50

3470 ENCROACHMENT STATIONS= 1360.0 1550.0 TYPE= 1 TARGET= 190.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 581.50 ELREA= 581.50

D U/S FACE M-29 BRIDGE

778.00	4.92	580.52	0.00	0.00	580.71	.19	.35	0.00	576.20
155.	0.	155.	0.	0.	44.	0.	1.	0.	577.10
.06	0.00	3.53	0.00	.038	.030	.038	.031	575.60	1490.00
.000922	38.	38.	38.	2	0	0	0.00	10.00	1500.00

*SECNO 830.000

3470 ENCROACHMENT STATIONS= 1215.5 1326.8 TYPE= 1 TARGET= 113.000

50 FT U/S M-29 BRIDGE, MANUFACTURED SEC., 10 DEGREE SKEW

830.00	5.16	580.76	0.00	0.00	580.78	.02	.02	.05	579.60
155.	32.	123.	0.	65.	95.	0.	1.	0.	580.70
.07	.49	1.30	.00	.045	.040	.045	.031	575.60	1215.49
.000224	52.	52.	52.	2	0	0	0.00	90.45	1305.94

*SECNO 1180.000

3470 ENCROACHMENT STATIONS= 360.0 510.0 TYPE= 1 TARGET= 150.000

E 400 FT U/S M-29 BRIDGE, (AT DIVERSION)

1180.00	5.41	580.81	0.00	0.00	580.81	.00	.02	.01	578.10
155.	41.	77.	36.	131.	135.	121.	3.	1.	578.40
.29	.32	.57	.30	.045	.040	.045	.034	575.40	360.00
.000033	350.	350.	350.	2	0	0	0.00	150.00	510.00

*SECNO 1630.000

3470 ENCROACHMENT STATIONS= 360.0 510.0 TYPE= 1 TARGET= 150.000

F 50 FT D/S 26@ OF 4@ CMP

1630.00	6.03	580.83	0.00	0.00	580.85	.02	.03	.01	579.40
195.	67.	128.	0.	194.	95.	0.	7.	3.	100000.00
.42	.35	1.35	0.00	.072	.035	.072	.034	574.80	360.00
.000165	450.	450.	450.	2	0	0	0.00	150.00	510.00

*SECNO 1679.000

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

FORM 1311.60 PRINTED BY ROTARY MANIFOLD FORMS.

MANUFACTURED SEC.

1679.00	6.34	580.84	0.00	0.00	580.86	.02	.01	.00	579.40	
195.	67.	128.	0.	.194.	96.	0.	7.	3.	100000.00	
.43	.34	1.33	0.00	.072	.035	.072	.034	574.50	360.00	
.000161	49.	49.	49.	0	0	0	0.00	150.00	510.00	

*SECNO 1680.000

3370 NORMAL BRIDGE, NRD= 10 MIN ELTRD= 579.00 MAX ELLC= 578.50

3470 ENCROACHMENT STATIONS= 360.0 510.0 TYPE= 1 TARGET= 150.000

D/S FACE, 24@ OF 4@ CMP

1680.00	6.35	580.85	0.00	0.00	580.86	.01	.00	.00	575.50	
195.	159.	22.	13.	197.	15.	15.	7.	3.	575.50	
.43	.81	1.47	.92	.072	.035	.072	.034	574.50	360.00	
.000926	1.	1.	1.	0	0	0	-60.16	150.00	510.00	

*SECNO 1704.000

3370 NORMAL BRIDGE, NRD= 10 MIN ELTRD= 579.00 MAX ELLC= 578.70

3470 ENCROACHMENT STATIONS= 360.0 510.0 TYPE= 1 TARGET= 150.000

G U/S FACE, 24@ OF 4@ CMP

1704.00	6.17	580.87	0.00	0.00	580.88	.01	.02	.00	575.70	
195.	160.	22.	13.	200.	15.	15.	7.	3.	575.70	
.44	.80	1.44	.91	.072	.035	.072	.034	574.70	360.00	
.000887	24.	24.	24.	0	0	0	-58.16	150.00	510.00	

*SECNO 1705.000

3470 ENCROACHMENT STATIONS= 360.0 510.0 TYPE= 1 TARGET= 150.000

1705.00	6.17	580.87	0.00	0.00	580.89	.02	.00	.00	575.70	
195.	117.	48.	31.	231.	23.	36.	7.	3.	575.70	
.44	.51	2.05	.86	.072	.035	.072	.034	574.70	360.00	
.000270	1.	1.	1.	0	0	0	0.00	150.00	510.00	

*SECNO 1754.000

3470 ENCROACHMENT STATIONS= 360.0 510.0 TYPE= 1 TARGET= 150.000

50 FT U/S 24@ OF 4@ CMP, MANUFACTURED SEC.

1754.00	6.18	580.88	0.00	0.00	580.90	.02	.01	.00	578.70	
195.	65.	130.	0.	205.	107.	0.	7.	3.	100000.00	
.46	.32	1.21	0.00	.072	.035	.072	.034	574.70	360.00	
.000129	49.	49.	49.	1	0	0	0.00	150.00	510.00	

*SECNO 1932.000

3265 DIVIDED FLOW

FORM 1211 BJ PRINTED BY ROTARY MANIFOLD FORMS

TIME	VLOB	VLH	VROB	ANL	ANCH	ANR	MIN	ELMIN	UST
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 850.0 1150.0 TYPE= 1 TARGET= 300.000
ELENCL= 583.00 ELENCR= 583.00

50 FT D/S 142@ OF 4@ CMP, DUPLICATED FROM SEC. H

1932.00	6.11	580.91	0.00	0.00	580.94	.03	.03	.01	578.90
195.	31.	136.	28.	90.	77.	80.	9.	4.	578.90
.49	.34	1.77	.35	.072	.035	.072	.034	574.80	850.00
.000289	178.	178.	178.	1	0	0	0.00	217.90	1093.62

*SECNO 1982.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 862.0 1162.0 TYPE= 1 TARGET= 300.000
ELENCL= 583.00 ELENCR= 583.00

D/S FACE, 142@ OF 4@ CMP IN TRAILER PARK

1982.00	6.12	580.92	0.00	0.00	580.96	.04	.02	.00	575.80
195.	69.	61.	65.	115.	23.	107.	9.	4.	575.80
.50	.60	2.66	.61	.060	.030	.060	.034	574.80	862.00
.000338	50.	50.	50.	0	0	0	0.00	209.52	1162.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	4.31	3.05	0.00	3.14	0.00	12.57	0.00	575.10	574.80

*SECNO 2124.000
PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
597.04	581.26	0.00	157.	38.	13.	13.	579.10	580.70

3470 ENCROACHMENT STATIONS= 905.0 1200.0 TYPE= 1 TARGET= 295.000
ELENCL= 583.00 ELENCR= 583.00

H D/S FACE, 142@ OF 4@ CMP IN TRAILER PARK

2124.00	6.43	581.53	0.00	0.00	581.54	.01	.58	0.00	576.10
195.	75.	40.	80.	174.	24.	220.	10.	5.	576.10
.56	.43	1.66	.36	.060	.030	.060	.034	575.10	905.00
.000123	142.	142.	142.	1	0	8	0.00	295.00	1200.00

*SECNO 2174.000

50 FT U/S 142@ OF 4@ CMP, REPEATED SEC.

2174.00	6.34	581.54	0.00	0.00	581.54	.01	.01	.00	576.20
195.	79.	34.	82.	165.	24.	202.	10.	5.	576.20
.59	.48	1.41	.41	.060	.040	.060	.034	575.20	905.00
.000162	50.	50.	50.	0	0	0	0.00	295.00	1200.00

*SECNO 2550.000

3470 ENCROACHMENT STATIONS= 290.0 400.0 TYPE= 1 TARGET= 110.000

50 FT D/S 24@ OF 4@ CMP, MANUFACTURED SEC.

2550.00	5.85	581.65	0.00	0.00	581.68	.03	.12	.01	580.30
195.	9.	117.	70.	13.	63.	103.	13.	8.	580.30
.68	.65	1.85	.67	.060	.040	.060	.035	575.80	290.00
.000548	452.	452.	452.	2	0	0	0.00	110.00	400.00

*SECNO 2599.000

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

3470 ENCROACHMENT STATIONS= 290.0 400.0 TYPE= 1 TARGET= 110.000

2599.00	5.77	581.67	0.00	0.00	581.71	.04	.03	.00	580.40
195.	8.	120.	66.	13.	62.	97.	14.	8.	580.40
.69	.67	1.95	.69	.060	.040	.060	.035	575.90	290.00
.000627	49.	49.	49.	0	0	0	0.00	110.00	400.00

*SECNO 2600.000

3370 NORMAL BRIDGE,NRD= 14 MIN ELTRD= 580.40 MAX ELLC= 580.10

3470 ENCROACHMENT STATIONS= 290.0 400.0 TYPE= 1 TARGET= 110.000

D/S FACE, 24@ OF 4@ CMP

2600.00	5.77	581.67	0.00	0.00	581.72	.05	.00	.01	580.50
195.	70.	89.	37.	72.	35.	38.	14.	8.	580.50
.69	.96	2.51	.95	.060	.024	.060	.035	575.90	290.00
.001218	1.	1.	1.	0	0	0	-28.08	110.00	400.00

*SECNO 2624.000

3370 NORMAL BRIDGE,NRD= 14 MIN ELTRD= 580.40 MAX ELLC= 580.10

3470 ENCROACHMENT STATIONS= 290.0 400.0 TYPE= 1 TARGET= 110.000

I U/S FACE, 24@ OF 4@ CMP

2624.00	5.60	581.70	0.00	0.00	581.75	.05	.03	.00	580.50
195.	71.	86.	37.	73.	35.	39.	14.	8.	580.50

FORM 1411-GD PRINTED BY FOTAMY MANIFOLD FOR IL.

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*SECNO 2625.000

3470 ENCROACHMENT STATIONS=      290.0      400.0  TYPE=      1  TARGET=      110.000
  2625.00      5.59    581.69      0.00      0.00    581.75       .06       .00       .00    580.50
    195.        35.       141.       19.       74.       63.       39.       14.        8.    580.50
     .69       .48      2.25       .47      .060      .024      .060      .035    576.10    290.00
 .000293        1.        1.        1.         0         0         0      0.00    110.00    400.00


*SECNO 2674.000

3470 ENCROACHMENT STATIONS=      290.0      400.0  TYPE=      1  TARGET=      110.000

                    50 FT U/S 24@ OF 4@ CMP, REPEATED SEC.

  2674.00      5.64    581.74      0.00      0.00    581.78       .04       .02       .01    580.50
    195.        51.       118.       27.       76.       63.       40.       14.        8.    580.50
     .70       .67      1.86       .66      .060      .040      .060      .035    576.10    290.00
 .000545        49.       49.       49.         1         0         0      0.00    110.00    400.00
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PRINTED IN U.S.A.

DOT ROTARY MANIFOLD FORM...

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  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

LESTER BAMMEL DRAIN                    Encroached Floodway

SUMMARY PRINTOUT
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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	AREA	DEPTH	TOPWID
0.000	0.00	0.00	0.00	574.30	130.00	577.44	.08	0.00	0.00	57.46	3.14	22.00
0.000	0.00	0.00	0.00	574.30	145.00	577.44	.10	0.00	0.00	57.46	3.14	22.00
0.000	0.00	0.00	0.00	574.30	155.00	577.44	.11	0.00	0.00	57.46	3.14	22.00
0.000	0.00	0.00	0.00	574.30	170.00	577.44	.14	0.00	0.00	57.46	3.14	22.00
49.000	49.00	0.00	0.00	574.40	130.00	577.41	.30	.08	.11	29.64	3.01	10.60
49.000	49.00	0.00	0.00	574.40	145.00	577.40	.37	.10	.14	29.56	3.00	10.60
49.000	49.00	0.00	0.00	574.40	155.00	577.40	.43	.12	.16	29.50	3.00	10.60
49.000	49.00	0.00	0.00	574.40	170.00	577.39	.52	.14	.19	29.40	2.99	10.60
50.000	1.00	579.60	579.00	574.40	130.00	577.42	.30	.00	.00	29.67	3.02	10.61
50.000	1.00	579.60	579.00	574.40	145.00	577.41	.37	.00	.00	29.60	3.01	10.61
50.000	1.00	579.60	579.00	574.40	155.00	577.40	.43	.01	.00	29.54	3.00	10.61
50.000	1.00	579.60	579.00	574.40	170.00	577.40	.52	.01	.00	29.44	3.00	10.61
65.000	15.00	579.60	579.00	574.40	130.00	577.47	.29	.04	.00	30.27	3.07	10.61
65.000	15.00	579.60	579.00	574.40	145.00	577.49	.35	.05	.01	30.35	3.09	10.61
65.000	15.00	579.60	579.00	574.40	155.00	577.50	.40	.06	.01	30.48	3.10	10.61
65.000	15.00	579.60	579.00	574.40	170.00	577.53	.47	.07	.01	30.89	3.13	10.61
66.000	1.00	0.00	0.00	574.40	130.00	577.52	.26	.00	.01	33.88	3.12	12.90
66.000	1.00	0.00	0.00	574.40	145.00	577.54	.31	.00	.01	34.25	3.14	12.92
66.000	1.00	0.00	0.00	574.40	155.00	577.57	.35	.00	.02	34.56	3.17	12.94
66.000	1.00	0.00	0.00	574.40	170.00	577.61	.41	.00	.02	35.16	3.21	12.98
115.000	49.00	0.00	0.00	574.54	130.00	577.61	.27	.10	.00	33.25	3.07	12.86
115.000	49.00	0.00	0.00	574.54	145.00	577.65	.32	.11	.00	33.87	3.11	12.90
115.000	49.00	0.00	0.00	574.54	155.00	577.69	.36	.13	.00	34.29	3.15	12.92
115.000	49.00	0.00	0.00	574.54	170.00	577.76	.41	.14	.00	35.19	3.22	12.98
385.000	269.00	0.00	0.00	575.26	130.00	578.34	.28	.75	.01	30.59	3.08	16.05
385.000	269.00	0.00	0.00	575.26	145.00	578.51	.30	.82	.01	33.21	3.25	16.99
385.000	269.00	0.00	0.00	575.26	155.00	578.63	.30	.86	.02	35.30	3.37	17.71
385.000	269.00	0.00	0.00	575.26	170.00	578.79	.30	.90	.03	38.44	3.53	18.74
434.000	50.00	0.00	0.00	575.40	130.00	578.56	.26	.19	.01	31.81	3.16	16.50
434.000	50.00	0.00	0.00	575.40	145.00	578.74	.27	.19	.01	34.73	3.34	17.52
434.000	50.00	0.00	0.00	575.40	155.00	578.85	.28	.19	.01	36.78	3.45	18.20
434.000	50.00	0.00	0.00	575.40	170.00	579.01	.28	.19	.01	39.73	3.61	19.11

FORM 121.GO PRINTED BY ROTARY MANIFOLD FORED.

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	AREA	DEPTH	TOPWID
449.000	15.00	580.00	579.00	575.40	130.00	578.56	.43	.08	.09	24.58	3.16	15.92
449.000	15.00	580.00	579.00	575.40	145.00	578.89	.24	.12	0.00	37.17	3.49	17.36
449.000	15.00	580.00	579.00	575.40	155.00	579.07	.23	.17	0.00	40.30	3.67	18.13
449.000	15.00	580.00	579.00	575.40	170.00	579.32	.22	.25	0.00	45.10	3.92	19.26
528.000	80.00	0.00	0.00	575.20	130.00	579.19	.16	.28	.08	39.88	3.99	17.73
528.000	80.00	0.00	0.00	575.20	145.00	579.14	.21	.22	.01	39.17	3.94	17.73
528.000	80.00	0.00	0.00	575.20	155.00	579.29	.21	.20	.00	41.70	4.09	17.73
528.000	80.00	0.00	0.00	575.20	170.00	579.51	.22	.18	.00	45.66	4.31	17.73
546.000	17.00	580.30	579.00	575.20	130.00	579.48	.12	.25	0.00	46.61	4.28	17.73
546.000	17.00	580.30	579.00	575.20	145.00	579.50	.15	.30	0.00	47.06	4.30	17.73
546.000	17.00	580.30	579.00	575.20	155.00	579.73	.14	.37	0.00	51.10	4.53	17.73
546.000	17.00	580.30	579.00	575.20	170.00	580.08	.14	.49	0.00	57.26	4.88	17.73
611.000	77.00	0.00	0.00	575.60	130.00	579.59	.08	.06	.01	55.96	3.99	19.25
611.000	77.00	0.00	0.00	575.60	145.00	579.64	.10	.08	.01	56.95	4.04	19.28
611.000	77.00	0.00	0.00	575.60	155.00	579.85	.10	.07	.01	61.44	4.25	23.54
611.000	77.00	0.00	0.00	575.60	170.00	580.19	.10	.06	.01	70.63	4.59	28.98
676.000	75.00	0.00	0.00	576.00	130.00	579.64	.08	.05	.00	55.99	3.64	20.00
676.000	75.00	0.00	0.00	576.00	145.00	579.70	.10	.06	.00	56.99	3.70	20.00
676.000	75.00	0.00	0.00	576.00	155.00	579.91	.10	.05	.00	61.40	3.91	20.00
676.000	75.00	0.00	0.00	576.00	170.00	580.23	.10	.05	.00	67.89	4.23	20.00
688.000	12.00	580.50	579.10	576.00	130.00	579.80	.08	.16	0.00	59.09	3.80	20.00
688.000	12.00	580.50	579.10	576.00	145.00	579.91	.09	.20	0.00	61.20	3.91	20.00
688.000	12.00	580.50	579.10	576.00	155.00	580.16	.08	.24	0.00	66.33	4.16	20.00
688.000	12.00	580.50	579.10	576.00	170.00	580.54	.08	.29	0.00	73.74	4.54	20.00
740.000	52.00	0.00	0.00	575.80	130.00	579.78	.19	.04	.06	36.93	3.98	10.00
740.000	52.00	0.00	0.00	575.80	145.00	579.88	.23	.04	.07	37.92	4.08	10.00
740.000	52.00	0.00	0.00	575.80	155.00	580.13	.23	.04	.07	40.43	4.33	10.00
740.000	52.00	0.00	0.00	575.80	170.00	580.50	.23	.04	.07	44.09	4.70	10.00
778.000	38.00	581.50	579.70	575.60	130.00	580.02	.17	.21	0.00	38.92	4.42	10.00
778.000	38.00	581.50	579.70	575.60	145.00	580.19	.20	.28	0.00	40.66	4.59	10.00
778.000	38.00	581.50	579.70	575.60	155.00	580.52	.19	.35	0.00	43.93	4.92	10.00
778.000	38.00	581.50	579.70	575.60	170.00	581.01	.19	.46	0.00	48.81	5.41	10.00
830.000	52.00	0.00	0.00	575.60	130.00	580.23	.03	.03	.04	112.80	4.63	87.35
830.000	52.00	0.00	0.00	575.60	145.00	580.44	.03	.03	.05	130.96	4.84	87.49
830.000	52.00	0.00	0.00	575.60	155.00	580.76	.02	.02	.05	159.52	5.16	90.45
830.000	52.00	0.00	0.00	575.60	170.00	581.25	.02	.02	.05	208.46	5.65	111.30
1180.000	350.00	0.00	0.00	575.40	130.00	580.30	.00	.03	.01	310.35	4.90	150.00
1180.000	350.00	0.00	0.00	575.40	145.00	580.50	.00	.03	.01	340.92	5.10	150.00
1180.000	350.00	0.00	0.00	575.40	155.00	580.81	.00	.02	.01	387.44	5.41	150.00
1180.000	350.00	0.00	0.00	575.40	170.00	581.28	.00	.02	.00	457.79	5.88	150.00
1630.000	450.00	0.00	0.00	574.80	130.00	580.32	.02	.03	.01	212.25	5.52	150.00
1630.000	450.00	0.00	0.00	574.80	175.00	580.53	.02	.04	.01	243.13	5.73	150.00
1630.000	450.00	0.00	0.00	574.80	195.00	580.83	.02	.03	.01	288.83	6.03	150.00
1630.000	450.00	0.00	0.00	574.80	245.00	581.30	.02	.03	.01	359.97	6.50	150.00

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	AREA	DEPTH	TOPWID
1679.000	49.00	0.00	0.00	574.50	130.00	580.33	.02	.01	.00	213.97	5.83	150.00
1679.000	49.00	0.00	0.00	574.50	175.00	580.54	.02	.01	.00	245.04	6.04	150.00
1679.000	49.00	0.00	0.00	574.50	195.00	580.84	.02	.01	.00	290.60	6.34	150.00
1679.000	49.00	0.00	0.00	574.50	245.00	581.31	.02	.01	.00	360.19	6.81	150.00
1680.000	1.00	579.00	578.50	574.50	130.00	580.33	.02	.00	.00	150.49	5.83	150.00
1680.000	1.00	579.00	578.50	574.50	175.00	580.54	.02	.00	.00	181.78	6.04	150.00
1680.000	1.00	579.00	578.50	574.50	195.00	580.85	.01	.00	.00	227.24	6.35	150.00
1680.000	1.00	579.00	578.50	574.50	245.00	581.31	.01	.00	.00	296.78	6.81	150.00
1704.000	24.00	579.00	578.70	574.70	130.00	580.37	.01	.03	.00	154.60	5.67	150.00
1704.000	24.00	579.00	578.70	574.70	175.00	580.58	.02	.03	.00	186.83	5.88	150.00
1704.000	24.00	579.00	578.70	574.70	195.00	580.87	.01	.02	.00	230.36	6.17	150.00
1704.000	24.00	579.00	578.70	574.70	245.00	581.33	.01	.01	.00	299.50	6.63	150.00
1705.000	1.00	0.00	0.00	574.70	130.00	580.36	.02	.00	.00	214.12	5.66	150.00
1705.000	1.00	0.00	0.00	574.70	175.00	580.58	.02	.00	.00	246.36	5.88	150.00
1705.000	1.00	0.00	0.00	574.70	195.00	580.87	.02	.00	.00	290.04	6.17	150.00
1705.000	1.00	0.00	0.00	574.70	245.00	581.33	.02	.00	.00	358.63	6.63	150.00
1754.000	49.00	0.00	0.00	574.70	130.00	580.38	.01	.01	.00	235.05	5.68	150.00
1754.000	49.00	0.00	0.00	574.70	175.00	580.60	.02	.01	.00	267.54	5.90	150.00
1754.000	49.00	0.00	0.00	574.70	195.00	580.88	.02	.01	.00	311.64	6.18	150.00
1754.000	49.00	0.00	0.00	574.70	245.00	581.34	.02	.01	.00	380.22	6.64	150.00
1932.000	178.00	0.00	0.00	574.80	130.00	580.40	.03	.03	.01	161.23	5.60	142.74
1932.000	178.00	0.00	0.00	574.80	175.00	580.62	.04	.04	.01	195.53	5.82	161.43
1932.000	178.00	0.00	0.00	574.80	195.00	580.91	.03	.03	.01	246.56	6.11	217.90
1932.000	178.00	0.00	0.00	574.80	245.00	581.36	.03	.03	.01	373.21	6.56	300.00
1982.000	50.00	0.00	0.00	574.80	130.00	580.41	.04	.01	.00	160.94	5.61	142.98
1982.000	50.00	0.00	0.00	574.80	175.00	580.64	.05	.02	.00	195.54	5.84	161.80
1982.000	50.00	0.00	0.00	574.80	195.00	580.92	.04	.02	.00	245.37	6.12	209.52
1982.000	50.00	0.00	0.00	574.80	245.00	581.38	.02	.01	.00	371.14	6.58	300.00
2124.000	142.00	580.70	579.10	575.10	130.00	581.35	.01	.91	0.00	367.48	6.25	295.00
2124.000	142.00	580.70	579.10	575.10	175.00	581.47	.01	.79	0.00	403.14	6.37	295.00
2124.000	142.00	580.70	579.10	575.10	195.00	581.53	.01	.58	0.00	418.72	6.43	295.00
2124.000	142.00	580.70	579.10	575.10	245.00	581.66	.01	.27	0.00	457.49	6.56	295.00
2174.000	50.00	0.00	0.00	575.20	130.00	581.36	.01	.00	.00	338.93	6.16	295.00
2174.000	50.00	0.00	0.00	575.20	175.00	581.48	.01	.01	.00	374.67	6.28	295.00
2174.000	50.00	0.00	0.00	575.20	195.00	581.54	.01	.01	.00	391.02	6.34	295.00
2174.000	50.00	0.00	0.00	575.20	245.00	581.67	.01	.01	.00	428.96	6.47	295.00
2550.000	452.00	0.00	0.00	575.80	130.00	581.43	.02	.08	.01	155.74	5.63	110.00
2550.000	452.00	0.00	0.00	575.80	175.00	581.58	.03	.11	.01	172.26	5.78	110.00
2550.000	452.00	0.00	0.00	575.80	195.00	581.65	.03	.12	.01	179.91	5.85	110.00
2550.000	452.00	0.00	0.00	575.80	245.00	581.81	.04	.15	.02	197.42	6.01	110.00
2599.000	49.00	0.00	0.00	575.90	130.00	581.44	.02	.02	.00	145.96	5.54	110.00
2599.000	49.00	0.00	0.00	575.90	175.00	581.60	.04	.03	.00	162.98	5.70	110.00
2599.000	49.00	0.00	0.00	575.90	195.00	581.67	.04	.03	.00	170.82	5.77	110.00
2599.000	49.00	0.00	0.00	575.90	245.00	581.84	.05	.03	.00	189.40	5.94	110.00

SECNO	XLCH	ELTRO	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	AREA	DEPTH	TOPWID
2600.000	1.00	580.40	580.10	575.90	130.00	581.44	.04	.00	.01	120.76	5.54	110.00
2600.000	1.00	580.40	580.10	575.90	175.00	581.59	.05	.00	.01	138.05	5.69	110.00
2600.000	1.00	580.40	580.10	575.90	195.00	581.67	.05	.00	.01	145.99	5.77	110.00
2600.000	1.00	580.40	580.10	575.90	245.00	581.83	.06	.00	.01	164.21	5.93	110.00
2624.000	24.00	580.40	580.10	576.10	130.00	581.46	.04	.02	.00	121.03	5.36	110.00
2624.000	24.00	580.40	580.10	576.10	175.00	581.62	.05	.03	.00	138.71	5.52	110.00
2624.000	24.00	580.40	580.10	576.10	195.00	581.70	.05	.03	.00	146.78	5.60	110.00
2624.000	24.00	580.40	580.10	576.10	245.00	581.87	.06	.03	.00	165.26	5.77	110.00
2625.000	1.00	0.00	0.00	576.10	130.00	581.46	.04	.00	.00	149.62	5.36	110.00
2625.000	1.00	0.00	0.00	576.10	175.00	581.62	.05	.00	.00	167.45	5.52	110.00
2625.000	1.00	0.00	0.00	576.10	195.00	581.69	.06	.00	.00	175.55	5.59	110.00
2625.000	1.00	0.00	0.00	576.10	245.00	581.86	.07	.00	.01	194.08	5.76	110.00
2674.000	49.00	0.00	0.00	576.10	130.00	581.49	.02	.01	.00	152.65	5.39	110.00
2674.000	49.00	0.00	0.00	576.10	175.00	581.67	.03	.02	.01	170.96	5.57	110.00
2674.000	49.00	0.00	0.00	576.10	195.00	581.74	.04	.02	.01	179.79	5.64	110.00
2674.000	49.00	0.00	0.00	576.10	245.00	581.92	.04	.02	.01	200.37	5.82	110.00

SUMMARY OF ERRORS

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 $$$$$$    $$$$$ $   $$$$$$$$  $$$$$$$$   $$$$$ $   $$$$$$$$  $$$$$$$
$$     $$  $$     $      $$        $$      $$     $      $$     $$     $$
$$         $$    $$$     $$        $$      $$    $$$     $$     $$     $$
$$         $$  $ $$      $$        $$      $$  $ $$      $$     $$     $$
$$         $$ $$ $$      $$        $$      $$ $$ $$      $$     $$     $$
$$         $$ $  $$      $$        $$      $$ $  $$      $$     $$$$$$$
$$         $$$   $$      $$        $$      $$$   $$      $$     $$   $$
$$     $$  $     $$      $$     $$ $$      $     $$      $$     $$    $$
 $$$$$$   $ $$$$$       $$      $$$$       $ $$$$$   $$$$$$$$  $$     $$
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COTJOIR JANDA 06/06/79 11.35.54 7600 JO

FIS : Cottrellvill Township

5850 - 13 - 01

Lester Bammel Drain

4 Flows Natural Floodway

as send to DNR 6/28/79

FORM 1011-C-PRINTED IN ROTARY MANIFOLD FORM

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**** 7000 SCOPE 2.1 LVL  221  05/05/79  12.23.22  06/06/79      79157

SYS DEVICES 819/ 4/PF FLS=200K FLL=764K MXS=160K MXL=453K MXB=453B

HH.MM.SS CPU SECOND ORIGIN
          11.34.18.MFA. JO    LV461 NOSBE B+W LYNRELEASE447 02/04/78
11.35.36 00000.008 MFZ.      -COTJO00,T20,STMFZ.   COTTRELLVILLE TOWNSHIP
11.35.53 00000.024 USR.       CHARGE.810-0037-45-78-6261,JANDA,001,D,JANDA.
11.35.54 00000.060 JOB.      -ATTACH,LGO,HEC2N76V2,ID=HEC.
11.35.54 00000.065 MFZ.         PE254 - CYCLE    2 ATTACHED FROM SN=SYSTEM
11.35.54 00000.066 LOD.      -LGO(PL=999999).
11.35.55 00000.086 USR.        FORTRAN LIBRARY 439          08/20/78
11.36.02 00001.606 USR.           STOP
11.36.02 00001.606 USR.            1.518 CP SECONDS EXECUTION TIME
11.36.02 00001.611 MFZ.         RM770 - MAXIMUM ACTIVE FILES                  7
11.36.02 00001.611 MFZ.         RM771 - OPEN/CLOSE CALLS                     28
11.36.02 00001.611 MFZ.         RM772 - DATA TRANSFER CALLS               4,667
11.36.02 00001.611 MFZ.         RM773 - CONTROL/POSITIONING CALLS            66
11.36.02 00001.611 MFZ.         RM774 - BM DATA TRANSFER CALLS              419
11.36.02 00001.612 MFZ.         RM775 - BM CONTROL/POSITIONING CALLS         56
11.36.02 00001.612 MFZ.         RM776 - QUEUE MANAGER CALLS                  85
11.36.02 00001.612 MFZ.         RM777 - RECALL CALLS                         65
11.36.02 00001.612 MFZ.         BWMSG - NUMBER OF TAPES MOUNTED
11.36.02 00001.613 MFZ.         SRU                  1.887  SEC
11.36.02 00001.613 MFZ.         SCM                 43.287  KWS
11.36.02 00001.613 MFZ.         I/O                  0.065  MW
11.36.02 00001.613 MFZ.         RMS                  0.055  MWS
11.36.02 00001.614 MFZ.         USER                 1.116  SEC
11.36.02 00001.614 MFZ.         JOB                  1.615  SEC
11.36.02 00001.614 MFZ.         SC050 - 000052 SC/LC SWAPS
11.36.02 00001.614 MFZ.       COTJOIR   COTJOIR
11.36.02.EJ  END OF JOB
COTJOIR  JANDA                 06/06/79  11.35.54  7600   JO
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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
**************************************************

C
T1      COTTRELLVILLE TOWNSHIP, FIS  J&A FILE: 5555-13,  PM: GILBERTO M. FONT
T2      10 YEAR FLOW
T3      LESTER BAMMEL DRAIN

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.        2.        0.        0.  0.000000      0.00      0.0       0.   577.440     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    39.000    40.000    41.000    42.000    43.000     1.000    10.000    11.000    12.000

      25.000     8.000     4.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

QT     4.000   130.000   145.000   155.000   170.000     0.000     0.000     0.000     0.000     0.000
NC      .042      .042      .034      .300      .500     0.000     0.000     0.000     0.000     0.000

                        AT THE MOUTH, MANUFACTURED SEC.

                        BASED ON REAL FIELD CHANNEL CROSS-SECTION

X1     0.000     9.000   300.000   323.000     0.000     0.000     0.000     0.000     0.000     0.000
GR   579.500     0.000   578.100   200.000   577.900   300.000   574.700   303.000   574.300   310.000
GR   574.600   320.000   578.100   323.000   581.400   400.000   582.500   600.000     0.000     0.000

X1    49.000    13.000   305.000   320.000    49.000    49.000    49.000      .707     0.000     0.000
X3     0.000     0.000     0.000   305.000     0.000   320.000     0.000     0.000     0.000     0.000
GR   579.800     0.000   579.700   150.000   579.600   300.000   579.000   301.000   574.800   305.000
GR   574.400   310.000   574.700   315.000   574.700   320.000   579.000   321.000   579.600   322.000
GR   580.000   350.000   581.400   400.000   582.500   600.000     0.000     0.000     0.000     0.000

                        D/S FACE, PRIVATE DRIVEWAY BRIDGE NO. 1

X1    50.000    13.000   305.000   320.000     1.000     1.000     1.000      .707     0.000     0.000
X2     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000      .707     0.000
X3    10.000     0.000     0.000     0.000     0.000     0.000     0.000   578.900   578.900     0.000
BT     8.000   300.000   579.600     0.000   301.000   579.600   579.000   305.000   579.600   574.800
BT   305.000   579.600   578.800   320.000   579.600   578.800   320.000   579.600   574.700   321.000
BT   579.600   579.000   322.000   579.600     0.000     0.000     0.000     0.000     0.000     0.000
GR   579.800     0.000   579.700   150.000   579.600   300.000   579.000   301.000   574.800   305.000
GR   574.400   310.000   574.700   315.000   574.700   320.000   579.000   321.000   579.600   322.000
GR   580.000   350.000   581.400   400.000   582.500   600.000     0.000     0.000     0.000     0.000
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FORM 1411 80 PRINTED BY ROTARY MANIFOLD FORMS

X1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
X2	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	.707	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	579.600	579.600	0.000
BT	8.000	300.000	579.600	0.000	301.000	579.600	579.000	305.000	579.600	574.800
BT	305.000	579.600	578.800	320.000	579.600	578.800	320.000	579.600	574.700	321.000
BT	579.600	579.000	322.000	579.600	0.000	0.000	0.000	0.000	0.000	0.000
NC	.042	.042	.032	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	66.000	13.000	305.000	320.000	1.000	1.000	1.000	.707	0.000	0.000
GR	579.800	0.000	579.700	150.000	579.600	300.000	579.000	301.000	574.800	305.000
GR	574.400	310.000	574.700	315.000	574.700	320.000	579.000	321.000	579.600	322.000
GR	580.000	350.000	581.400	400.000	582.500	600.000	0.000	0.000	0.000	0.000
X1	115.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	.140	0.000
X1	385.000	12.000	400.000	421.000	269.000	269.000	269.000	.985	-.140	0.000
GR	580.500	0.000	579.400	200.000	579.000	400.000	578.200	403.000	576.500	405.000
GR	575.400	410.000	575.500	413.000	577.600	416.000	578.400	418.000	579.700	421.000
GR	581.500	500.000	583.000	600.000	0.000	0.000	0.000	0.000	0.000	0.000

D/S FACE, PRIVATE DRIVEWAY BRIDGE NO. 2

X1	434.000	0.000	0.000	0.000	50.000	50.000	50.000	0.000	.140	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	579.600	579.600	0.000
SB	0.000	1.722	3.030	0.000	6.500	0.000	37.970	1.190	575.400	575.400

A U/S FACE, PRIVATE DRIVEWAY BRIDGE NO. 2

X1	449.000	13.000	400.000	421.000	15.000	15.000	15.000	.985	0.000	0.000
X2	0.000	0.000	1.000	579.000	580.000	0.000	0.000	0.000	.985	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	580.000	580.000	0.000
BT	7.000	398.000	579.600	0.000	400.000	579.600	0.000	403.000	579.600	578.200
BT	403.000	579.600	579.000	418.000	579.600	579.000	418.000	579.600	578.400	421.000
BT	579.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	580.500	0.000	579.400	200.000	579.600	398.000	579.600	400.000	578.200	403.000
GR	576.500	405.000	575.400	410.000	575.500	413.000	577.600	416.000	578.400	418.000
GR	579.700	421.000	581.500	500.000	583.000	600.000	0.000	0.000	0.000	0.000
NC	.040	.040	.032	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D/S FACE, PRIVATE BRIDGE NO. 3

X1	528.000	15.000	399.000	417.000	80.000	80.000	80.000	.985	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	579.800	579.800	0.000
GR	580.800	0.000	581.300	100.000	580.800	250.000	579.500	395.000	579.000	399.000
GR	577.800	402.000	576.500	404.000	575.300	408.000	575.200	410.000	576.400	412.000
GR	577.900	414.000	579.000	417.000	579.600	421.000	581.400	500.000	582.000	600.000
SB	0.000	1.730	2.980	0.000	5.500	0.000	33.250	.855	575.200	575.200

B U/S FACE, PRIVATE BRIDGE NO. 3, 10 DEGREES SKEW

X1	546.000	15.000	399.000	417.000	17.000	17.000	17.000	.985	0.000	0.000
X2	0.000	0.000	1.000	579.000	580.300	0.000	0.000	0.000	.985	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	580.300	580.300	0.000
BT	11.000	260.000	580.800	0.000	395.000	580.300	0.000	399.000	580.300	579.000
BT	402.000	580.300	578.000	402.000	580.300	579.000	408.000	580.300	579.000	414.000
BT	580.300	579.000	414.000	580.300	578.100	417.000	580.400	579.000	421.000	580.400
BT	0.000	500.000	581.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	580.800	0.000	581.300	100.000	580.800	260.000	580.300	395.000	579.000	399.000
GR	577.500	402.000	576.500	404.000	575.200	408.000	575.300	410.000	576.400	412.000

MANUFACTURED SEC.

X1	611.000	15.000	400.000	420.000	77.000	77.000	77.000	.966	0.000	0.000
X3	0.000	0.000	0.000	320.000	0.000	430.000	0.000	0.000	0.000	0.000
GR	581.200	0.000	581.400	100.000	580.900	240.000	580.500	300.000	580.400	380.000
GR	579.100	400.000	578.000	402.000	577.000	405.000	575.600	410.000	575.600	415.000
GR	576.700	418.000	579.700	420.000	580.800	450.000	581.500	500.000	583.600	600.000

D/S FACE, PRIVATE BRIDGE NO. 4

X1	676.000	15.000	400.000	420.000	75.000	75.000	75.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	310.000	0.000	430.000	0.000	579.500	579.500	0.000
GR	581.300	0.000	581.500	100.000	580.900	260.000	580.500	300.000	580.600	400.000
GR	579.100	400.000	578.000	402.000	577.000	405.000	576.000	410.000	576.000	415.000
GR	576.700	418.000	579.100	420.000	580.800	420.000	581.300	440.000	582.300	500.000
SB	0.000	1.710	3.030	0.000	7.940	0.000	43.300	1.946	576.000	576.000

C U/S FACE, PRIVATE BRIDGE NO. 4

X1	688.000	0.000	0.000	0.000	12.000	12.000	12.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	579.100	580.500	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	299.900	0.000	440.100	0.000	580.600	580.600	0.000
BT	6.000	300.000	580.500	0.000	400.000	580.600	0.000	400.000	580.600	579.100
BT	420.000	580.600	579.100	420.000	580.800	0.000	440.000	581.300	0.000	0.000

D/S FACE M-29 BRIDGE

X1	740.000	18.000	1306.000	1316.000	27.000	77.000	52.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	1190.000	0.000	1320.000	0.000	580.600	580.600	0.000
GR	581.500	0.000	581.000	200.000	580.600	400.000	580.900	600.000	581.000	800.000
GR	581.500	1000.000	580.900	1200.000	580.100	1305.000	576.500	1306.000	575.800	1310.000
GR	576.300	1316.000	580.700	1317.000	582.400	1400.000	583.600	1600.000	585.000	1800.000
GR	584.700	2000.000	584.700	2200.000	585.300	2400.000	0.000	0.000	0.000	0.000
SB	0.000	1.980	2.970	0.000	7.440	0.000	35.750	.310	575.600	575.600

D U/S FACE M-29 BRIDGE

X1	778.000	25.000	1490.000	1500.000	38.000	38.000	38.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	579.700	581.500	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	1360.000	0.000	1550.000	0.000	581.500	581.500	0.000
BT	9.000	1360.000	581.600	0.000	1400.000	581.500	0.000	1486.000	581.500	0.000
BT	1490.000	581.800	576.200	1490.000	583.300	579.700	1500.000	583.300	579.700	1500.000
BT	581.800	577.100	1503.000	581.600	0.000	1550.000	582.000	0.000	0.000	0.000
GR	581.500	0.000	581.300	200.000	581.200	400.000	581.100	600.000	581.300	800.000
GR	581.800	1000.000	581.800	1200.000	581.500	1360.000	581.500	1400.000	581.500	1486.000
GR	578.000	1488.000	576.600	1489.000	576.200	1490.000	575.600	1495.000	577.100	1500.000
GR	579.000	1502.000	581.600	1503.000	582.000	1550.000	582.300	1600.000	583.800	1800.000
GR	584.900	2000.000	585.100	2400.000	585.000	2600.000	585.300	2800.000	585.100	3000.000
NC	.045	.045	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

50 FT U/S M-29 BRIDGE, MANUFACTURED SEC., 10 DEGREE SKEW

X1	830.000	18.000	1300.000	1323.000	52.000	52.000	52.000	.985	0.000	0.000
X3	0.000	0.000	0.000	1234.000	0.000	1347.000	0.000	0.000	0.000	0.000
GR	581.500	0.000	581.000	200.000	580.600	400.000	580.900	600.000	581.000	800.000
GR	581.500	1000.000	580.100	1200.000	579.600	1300.000	576.500	1303.000	575.600	1310.000

FORM 1411.00 PRINTED BY HOTANY MANIFOLD FORMS.

E 400 FT U/S M-29 BRIDGE, (AT DIVERSION)

X1	1180.000	16.000	420.000	450.000	350.000	350.000	350.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	200.000	585.500	600.000	585.500	0.000	0.000	0.000
GR	581.800	0.000	580.000	120.000	579.500	270.000	579.000	370.000	578.100	420.000
GR	577.000	423.000	576.100	426.000	575.700	430.000	575.400	436.000	575.900	440.000
GR	576.400	444.000	577.100	448.000	578.400	450.000	579.700	550.000	580.500	600.000
GR	584.800	800.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	4.000	130.000	175.000	195.000	245.000	0.000	0.000	0.000	0.000	0.000
NC	.072	.072	.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000

F 50 FT D/S 26' OF 4' CMP

X1	1630.000	18.000	490.000	510.000	450.000	450.000	450.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	200.000	0.000	630.000	0.000	0.000	0.000	0.000
GR	581.600	0.000	580.400	100.000	579.500	200.000	579.000	300.000	579.000	400.000
GR	579.900	470.000	579.400	490.000	576.600	493.000	575.100	497.000	574.800	500.000
GR	575.200	504.000	576.400	508.000	579.800	510.000	579.200	530.000	580.200	630.000
GR	580.600	730.000	581.200	830.000	581.600	930.000	0.000	0.000	0.000	0.000

MANUFACTURED SEC.

X1	1679.000	18.000	490.000	510.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	215.000	0.000	620.000	0.000	0.000	0.000	0.000
GR	581.600	0.000	580.400	100.000	579.500	200.000	579.000	300.000	579.000	400.000
GR	579.900	470.000	579.400	490.000	576.600	493.000	575.100	497.000	574.500	500.000
GR	575.200	504.000	576.400	508.000	579.800	510.000	579.200	530.000	580.200	630.000
GR	580.600	730.000	581.200	830.000	581.600	930.000	0.000	0.000	0.000	0.000

D/S FACE, 24' OF 4' CMP

X1	1680.000	20.000	498.000	502.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	215.000	0.000	620.000	0.000	578.500	578.500	0.000
BT	10.000	300.000	579.000	0.000	400.000	579.000	0.000	470.000	579.900	0.000
BT	498.000	579.900	575.500	498.000	579.900	577.500	499.500	579.900	578.500	500.500
BT	579.900	578.500	502.000	579.900	577.500	502.000	579.900	575.500	530.000	579.900
BT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	581.600	0.000	580.400	100.000	580.000	150.000	579.500	200.000	579.000	300.000
GR	579.000	400.000	579.900	470.000	579.400	490.000	576.600	493.000	575.500	498.000
GR	574.500	499.500	574.500	500.500	575.500	502.000	576.900	509.000	579.200	513.000
GR	579.900	530.000	580.200	650.000	580.600	730.000	581.200	830.000	581.600	930.000

G U/S FACE, 24' OF 4' CMP

X1	1704.000	20.000	498.000	502.000	24.000	24.000	24.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	221.000	0.000	614.000	0.000	579.000	579.200	0.000
BT	10.000	300.000	579.000	0.000	400.000	579.000	0.000	470.000	579.900	0.000
BT	498.000	579.900	575.700	498.000	579.900	577.700	499.500	579.900	578.700	500.500
BT	579.900	578.700	502.000	579.900	577.700	502.000	579.900	575.700	530.000	579.900
BT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	581.600	0.000	580.400	100.000	580.000	150.000	579.500	200.000	579.000	300.000
GR	579.000	400.000	579.900	470.000	579.400	490.000	576.600	493.000	575.700	498.000
GR	574.700	499.500	574.700	500.500	575.700	502.000	576.900	509.000	579.200	513.000
GR	579.900	530.000	580.200	650.000	580.600	730.000	581.200	830.000	581.600	930.000

X1	1705.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000

FORM 1411.00 PRINTED BY ROTARY MANIFOLD FORMS.

50 FT U/S 24' OF 4' CMP, MANUFACTURED SEC.

X1	1754.000	18.000	488.000	513.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	233.000	0.000	602.000	0.000	0.000	0.000	0.000
GR	581.600	0.000	580.400	100.000	579.500	200.000	579.000	300.000	579.000	400.000
GR	579.900	470.000	578.700	488.000	576.800	492.000	575.200	496.000	574.700	500.000
GR	575.400	504.000	576.900	509.000	579.100	513.000	579.200	530.000	580.200	630.000
GR	580.600	730.000	581.200	830.000	581.600	930.000	0.000	0.000	0.000	0.000

50 FT D/S 142' OF 4' CMP, DUPLICATED FROM SEC. H

X1	1932.000	19.000	996.000	1014.000	178.000	178.000	178.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	850.000	583.000	1150.000	583.000	0.000	0.000	0.000
GR	581.800	0.000	579.900	105.000	580.300	305.000	580.500	505.000	580.200	705.000
GR	581.000	905.000	578.900	996.000	576.700	1000.000	574.800	1005.000	576.700	1010.000
GR	578.900	1014.000	581.200	1105.000	580.200	1305.000	580.700	1505.000	581.300	1705.000
GR	582.600	1905.000	583.000	2105.000	583.000	2305.000	583.200	2505.000	0.000	0.000
NC	.060	.060	.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D/S FACE, 142' OF 4' CMP IN TRAILER PARK

X1	1982.000	24.000	1003.000	1007.000	50.000	50.000	50.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	862.000	583.000	1162.000	583.000	0.000	0.000	0.000
GR	581.800	0.000	579.900	105.000	580.300	305.000	580.500	505.000	580.200	705.000
GR	580.600	800.000	581.000	905.000	578.900	996.000	576.700	1000.000	575.800	1003.000
GR	574.800	1004.500	574.800	1005.500	575.800	1007.000	576.700	1010.000	578.900	1014.000
GR	581.200	1105.000	580.700	1200.000	580.200	1305.000	580.700	1505.000	581.300	1705.000
GR	582.600	1905.000	583.000	2105.000	583.000	2305.000	583.200	2505.000	0.000	0.000
SB	0.000	4.314	3.050	0.000	3.140	0.000	12.570	0.000	575.100	574.800

H U/S FACE, 142' OF 4' CMP IN TRAILER PARK

X1	2124.000	24.000	1003.000	1007.000	142.000	142.000	142.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	579.100	580.700	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	900.000	583.000	1201.000	583.000	0.000	0.000	0.000
BT	11.000	905.000	581.000	0.000	1000.000	582.100	0.000	1003.000	582.100	576.100
BT	1003.000	582.100	578.100	1004.500	582.100	579.100	1005.500	582.100	579.100	1007.000
BT	582.100	578.100	1007.000	582.100	576.100	1010.000	582.100	0.000	1105.000	581.200
BT	0.000	1200.000	580.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	581.800	0.000	579.900	105.000	580.300	305.000	580.500	505.000	580.200	705.000
GR	580.600	800.000	581.000	905.000	578.900	996.000	576.700	1000.000	576.100	1003.000
GR	575.100	1004.500	575.100	1005.500	576.100	1007.000	576.700	1010.000	578.900	1014.000
GR	581.200	1105.000	580.700	1200.000	580.200	1305.000	580.700	1505.000	581.300	1705.000
GR	582.600	1905.000	583.000	2105.000	583.000	2305.000	583.200	2505.000	0.000	0.000
NC	.060	.060	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

50 FT U/S 142' OF 4' CMP, REPEATED SEC.

X1	2174.000	0.000	0.000	0.000	50.000	50.000	50.000	0.000	.100	0.000
X3	0.000	0.000	0.000	900.000	585.000	1200.000	585.000	0.000	0.000	0.000

50 FT D/S 24' OF 4' CMP, MANUFACTURED SEC.

X1	2550.000	15.000	300.000	318.000	452.000	452.000	452.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	180.000	585.000	550.000	585.000	0.000	0.000	0.000
GR	581.500	0.000	581.300	100.000	580.500	200.000	580.300	300.000	578.400	304.000
GR	577.100	307.000	575.800	308.500	575.800	309.500	577.100	311.000	578.400	314.000
GR	580.300	318.000	580.400	378.000	581.300	500.000	582.000	600.000	582.500	700.000

X1	2599.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	.100	0.000
X3	0.000	0.000	0.000	.200.000	0.000	600.000	0.000	0.000	0.000	0.000
NC	.060	.060	.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D/S FACE, 24' OF 4' CMP

X1	2600.000	16.000	350.000	368.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	200.000	583.000	600.000	583.000	0.000	0.000	0.000
BT	14.000	100.000	581.300	0.000	150.000	581.000	0.000	250.000	580.400	0.000
BT	350.000	580.500	0.000	357.000	580.500	576.900	357.000	580.500	578.600	358.500
BT	580.500	580.100	359.500	580.500	580.100	361.000	580.500	578.600	361.000	580.500
BT	576.900	368.000	580.500	0.000	428.000	580.400	0.000	550.000	581.300	0.000
BT	615.000	582.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	581.500	0.000	581.300	100.000	581.000	150.000	580.400	250.000	580.500	350.000
GR	578.400	354.000	576.900	357.000	575.900	358.500	575.900	359.500	576.900	361.000
GR	578.400	364.000	580.500	368.000	580.400	428.000	581.300	550.000	582.000	615.000
GR	582.300	700.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

U/S FACE, 24' OF 4' CMP

X1	2624.000	16.000	350.000	368.000	24.000	24.000	24.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	200.000	0.000	625.000	0.000	0.000	0.000	0.000
BT	14.000	100.000	581.300	0.000	150.000	581.000	0.000	250.000	580.400	0.000
BT	350.000	580.500	0.000	357.000	580.500	577.100	357.000	580.500	578.600	358.500
BT	580.500	580.100	359.500	580.500	580.100	361.000	580.500	578.600	361.000	580.500
BT	577.100	368.000	580.500	0.000	428.000	580.400	0.000	550.000	581.300	0.000
BT	615.000	582.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	581.500	0.000	581.300	100.000	581.000	150.000	580.400	250.000	580.500	350.000
GR	578.400	354.000	577.100	357.000	576.100	358.500	576.100	359.500	577.100	361.000
GR	578.400	364.000	580.500	368.000	580.400	428.000	581.300	550.000	582.000	615.000
GR	582.300	700.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	2625.000	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	625.000	0.000	0.000	0.000	0.000
NC	.060	.060	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

50 FT U/S 24' OF 4' CMP, REPEATED SEC.

X1	2674.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	150.000	586.000	650.000	586.000	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  AUG1977
  ERROR CORR    01,02
  MODIFICATION -  50,51,52,53
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T1      COTTRELLVILLE TOWNSHIP,  FIS  J&A FILE: 5555-13,  PM: GILBERTO M. FONT
T2      100 YR. FLOW
T3      LESTER BAMMEL DRAIN

J1   ICHECK      INQ       NINV      IDIR      STRT      METRIC    NVINS     O         USEL      FQ
        0.        4.        0.        0.  0.000000      0.00      0.0       0.   577.440    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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Natural Floodway

*PROF 3

CCHV= .300 CEHV= .500

*SECNO .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	

AT THE MOUTH, MANUFACTURED SEC.

BASED ON REAL FIELD CHANNEL CROSS-SECTION

0.00	3.14	577.44	0.00	577.44	577.55	.11	0.00	0.00	577.90
155.	0.	155.	0.	0.	57.	0.	0.	0.	578.10
0.00	0.00	2.70	0.00	.042	.034	.042	0.000	574.30	300.43
.001224	0.	0.	0.	0	0	0	0.00	22.00	322.43

*SECNO 49.000

3470 ENCROACHMENT STATIONS= 215.6 226.2 TYPE= 1 TARGET= 15.000

49.00	3.00	577.40	0.00	0.00	577.83	.43	.12	.16	574.80
155.	0.	155.	0.	0.	30.	0.	0.	0.	100000.00
.00	0.00	5.25	0.00	.042	.034	.042	.033	574.40	215.63
.006410	49.	49.	49.	2	0	0	0.00	10.60	226.24

*SECNO 50.000

3370 NORMAL BRIDGE,NRD= 8 MIN ELTRD= 579.60 MAX ELLC= 579.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 578.90 ELREA= 578.90

D/S FACE, PRIVATE DRIVEWAY BRIDGE NO. 1

50.00	3.00	577.40	0.00	0.00	577.83	.43	.01	.00	574.80
155.	0.	155.	0.	0.	30.	0.	0.	0.	574.70
.00	0.00	5.25	0.00	.042	.034	.042	.033	574.40	215.64
.004202	1.	1.	1.	0	0	0	0.00	10.51	226.24

*SECNO 65.000

3370 NORMAL BRIDGE,NRD= 8 MIN ELTRD= 579.60 MAX ELLC= 579.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 579.60 ELREA= 579.60

A U/S FACE, PRIVATE DRIVEWAY BRIDGE NO. 1

45 DEGREE SKEW

65.00	3.10	577.50	0.00	0.00	577.90	.40	.06	.01	574.80
155.	0.	155.	0.	0.	30.	0.	0.	0.	574.70
.00	0.00	5.09	0.00	.042	.034	.042	.033	574.40	215.64
.003811	15.	15.	15.	1	0	0	0.00	10.61	226.24

*SECNO 66.000

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
66.00	3.17	577.57	0.00	0.00	577.92	.35	.00	.02	574.80
155.	4.	151.	0.	3.	31.	1.	0.	0.	574.70
.00	1.50	4.81	.68	.042	.032	.042	.032	574.40	213.77
.002547	1.	1.	1.	2	0	0	0.00	12.94	226.71

12.95

*SECNO 115.000

115.00	3.15	577.69	0.00	0.00	578.05	.36	.13	.00	574.94
155.	4.	151.	0.	3.	31.	1.	0.	0.	574.84
.01	1.51	4.85	.68	.042	.032	.042	.032	574.54	213.78
.002610	49.	49.	49.	2	0	0	0.00	12.92	226.71

12.95

*SECNO 385.000

385.00	3.37	578.63	0.00	0.00	578.93	.30	.86	.02	578.86
155.	0.	155.	0.	0.	35.	0.	0.	0.	579.56
.02	0.00	4.39	0.00	.042	.032	.042	.032	575.26	394.86
.004039	269.	269.	269.	3	0	0	0.00	17.71	412.57

18

*SECNO 434.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 579.60 ELREA= 579.60

D/S FACE, PRIVATE DRIVEWAY BRIDGE NO. 2

434.00	3.45	578.85	0.00	0.00	579.13	.28	.19	.01	579.00
155.	0.	155.	0.	0.	37.	0.	0.	0.	579.70
.03	0.00	4.21	0.00	.042	.032	.042	.032	575.40	394.55
.003646	50.	50.	50.	2	0	0	0.00	18.20	412.75

18

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.72	3.03	0.00	6.50	0.00	37.97	1.19	575.40	575.40

*SECNO 449.000
PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
579.30	579.13	0.00	0.	155.	38.	39.	579.00	580.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 580.00 ELREA= 580.00

A U/S FACE, PRIVATE DRIVEWAY BRIDGE NO. 2

449.00	3.67	579.07	0.00	0.00	579.30	.23	.17	0.00	579.60
155.	0.	155.	0.	0.	40.	0.	0.	0.	579.70
.03	0.00	3.85	0.00	.042	.032	.042	.032	575.40	395.12
.002703	15.	15.	15.	2	0	0	0.00	18.13	413.25

*SECNO 528.000

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
528.00	4.09	579.29	0.00	0.00	579.50	.21	.20	.00	579.00
155.	0.	155.	0.	0.	42.	0.	0.	0.	579.00
.03	0.00	3.72	0.00	.040	.032	.040	.032	575.20	393.02
.002357	80.	80.	80.	2	0	0	0.00	17.73	410.74

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 579.80 ELREA= 579.80

D/S FACE, PRIVATE BRIDGE NO. 3

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.73	2.98	0.00	5.50	0.00	33.25	.86	575.20	575.20

*SECNO 546.000
PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
579.87	579.49	0.00	0.	155.	33.	33.	579.00	580.30

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 580.30 ELREA= 580.30

B U/S FACE, PRIVATE BRIDGE NO. 3, 10 DEGREES SKEW

546.00	4.53	579.73	0.00	0.00	579.87	.14	.37	0.00	579.00
155.	0.	155.	0.	0.	51.	0.	0.	0.	579.00
.04	0.00	3.03	0.00	.040	.032	.040	.032	575.20	393.02
.001211	17.	17.	17.	2	0	0	0.00	17.73	410.74

*SECNO 611.000

3470 ENCROACHMENT STATIONS= 309.1 415.4 TYPE= 1 TARGET= 110.000

MANUFACTURED SEC.

611.00	4.26	579.86	0.00	0.00	579.95	.10	.07	.01	579.10
155.	2.	153.	0.	4.	61.	0.	1.	0.	579.70
.04	.52	2.49	.19	.038	.030	.038	.031	575.60	375.02
.000640	77.	77.	77.	0	0	0	0.00	35.08	410.09

*SECNO 676.000

3470 ENCROACHMENT STATIONS= 310.0 430.0 TYPE= 1 TARGET= 120.000

D/S FACE, PRIVATE BRIDGE NO. 4

579.00	3.91	579.91	0.00	0.00	580.01	.10	.05	.00	580.60
155.	0.	155.	0.	0.	61.	0.	1.	0.	580.80
.05	0.00	2.53	0.00	.038	.030	.038	.031	576.00	400.00
.000725	75.	75.	75.	2	0	0	0.00	20.00	420.00

20

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.71	3.03	0.00	7.94	0.00	43.30	1.95	576.00	576.00

*SECNO 688.000
PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
580.25	580.01	0.00	0.	155.	43.	43.	579.10	580.50

3470 ENCROACHMENT STATIONS= 299.9 440.1 TYPE= 1 TARGET= 140.200

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 580.60 ELREA= 580.60

C U/S FACE, PRIVATE BRIDGE NO. 4

688.00	4.16	580.16	0.00	0.00	580.25	.08	.24	0.00	580.60
155.	0.	155.	0.	0.	66.	0.	1.	0.	580.80
.05	0.00	2.34	0.00	.038	.030	.038	.031	576.00	400.00
.000571	12.	12.	12.	2	0	0	0.00	20.00	420.00

20

*SECNO 740.000

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

3470 ENCROACHMENT STATIONS= 1190.0 1320.0 TYPE= 1 TARGET= 130.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 580.60 ELREA= 580.60

D/S FACE M-29 BRIDGE

740.00	4.33	580.13	0.00	0.00	580.36	.23	.04	.07	576.50
155.	0.	155.	0.	0.	40.	0.	1.	0.	576.30
.06	0.00	3.84	0.00	.038	.030	.038	.031	575.80	1306.00
.001177	27.	52.	77.	2	0	0	0.00	10.00	1316.00

10

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.98	2.97	0.00	7.44	0.00	35.75	.31	575.60	575.60

*SECNO 778.000
PRESSURE FLOW

ELTRS	EGLWC	HO	QWEIR	QFR	AREA	TRAPEZOID AREA	ELLC	ELTRD
580.71	580.19	0.00	0.	155.	36.	36.	579.70	581.50

3470 ENCROACHMENT STATIONS= 1360.0 1550.0 TYPE= 1 TARGET= 190.000

3495 OVERBANK AREA ASSUMED NON EFFECTIVE, ELLEA= 581.50 ELREA= 581.50

D U/S FACE M-29 BRIDGE

778.00	4.91	580.51	0.00	0.00	580.71	.19	.35	0.00	576.20
155.	0.	155.	0.	0.	44.	0.	1.	0.	577.10
.06	0.00	3.53	0.00	.038	.030	.038	.031	575.60	1490.00
.000924	38.	38.	38.	2	0	0	0.00	10.00	1500.00

10

*SECNO 830.000

3470 ENCROACHMENT STATIONS= 1215.5 1326.8 TYPE= 1 TARGET= 113.000

50 FT U/S M-29 BRIDGE, MANUFACTURED SEC., 10 DEGREE SKEW

29

830.00	5.16	580.76	0.00	0.00	580.78	.02	.02	.05	579.60
155.	32.	123.	0.	65.	95.	0.	1.	0.	580.70
.07	.49	1.30	.00	.045	.040	.045	.031	575.60	1215.49
.000225	52.	52.	52.	2	0	0	0.00	90.32	1305.81

103

*SECNO 1180.000

3470 ENCROACHMENT STATIONS= 200.0 600.0 TYPE= 1 TARGET= 400.000
ELENCL= 585.50 ELENCR= 585.50

E 400 FT U/S M-29 BRIDGE, (AT DIVERSION)

1180.00	5.40	580.80	0.00	0.00	580.80	.00	.01	.01	578.10
155.	65.	53.	37.	350.	135.	210.	4.	2.	578.40
.45	.18	.40	.18	.045	.040	.045	.034	575.40	200.00
.000016	350.	350.	350.	2	0	0	0.00	400.00	600.00

400

*SECNO 1630.000

3470 ENCROACHMENT STATIONS= 200.0 630.0 TYPE= 1 TARGET= 430.000

F 50 FT D/S 26' OF 4' CMP

27

1630.00	6.01	580.81	0.00	0.00	580.82	.00	.01	.00	579.40
195.	96.	76.	23.	456.	95.	137.	11.	7.	579.80
.74	.21	.80	.17	.072	.035	.072	.034	574.80	200.00
.000056	450.	450.	450.	2	0	0	0.00	430.00	630.00

43

*SECNO 1679.000

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

3470 ENCROACHMENT STATIONS= 215.0 620.0 TYPE= 1 TARGET= 405.000

MANUFACTURED SEC.

1679.00	6.31	580.81	0.00	0.00	580.82	.00	.00	.00	579.40
195.	94.	78.	23.	436.	96.	131.	12.	7.	579.80
.77	.21	.82	.18	.072	.035	.072	.034	574.50	215.00
.000058	49.	49.	49.	0	0	0	0.00	405.00	620.00

*SECNO 1680.000

3370 NORMAL BRIDGE,NRD= 10 MIN ELTRD= 579.00 MAX ELLC= 578.50

3470 ENCROACHMENT STATIONS= 215.0 620.0 TYPE= 1 TARGET= 405.000

D/S FACE, 24' OF 4' CMP

1680.00	6.32	580.82	0.00	0.00	580.82	.00	.00	.00	575.50
195.	159.	9.	27.	439.	15.	105.	12.	7.	575.50
.77	.36	.62	.26	.072	.035	.072	.034	574.50	215.00
.000167	1.	1.	1.	0	0	0	70.80	405.00	620.00

*SECNO 1704.000

3370 NORMAL BRIDGE,NRD= 10 MIN ELTRD= 579.00 MAX ELLC= 578.70

3470 ENCROACHMENT STATIONS= 221.0 614.0 TYPE= 1 TARGET= 393.000

G U/S FACE, 24' OF 4' CMP

1704.00	6.12	580.82	0.00	0.00	580.82	.00	.00	.00	575.70
195.	159.	10.	26.	432.	15.	101.	13.	7.	575.70
.79	.37	.63	.26	.072	.035	.072	.034	574.70	221.00
.000172	24.	24.	24.	0	0	0	68.80	393.00	614.00

*SECNO 1705.000

3470 ENCROACHMENT STATIONS= 221.0 614.0 TYPE= 1 TARGET= 393.000

1705.00	6.12	580.82	0.00	0.00	580.82	.00	.00	.00	575.70
195.	131.	27.	37.	462.	23.	133.	13.	7.	575.70
.79	.28	1.17	.28	.072	.035	.072	.034	574.70	221.00
.000090	1.	1.	1.	0	0	0	0.00	393.00	614.00

*SECNO 1754.000

3470 ENCROACHMENT STATIONS= 233.0 602.0 TYPE= 1 TARGET= 369.000

50 FT U/S 24' OF 4' CMP, MANUFACTURED SEC.

1754.00	6.12	580.82	0.00	0.00	580.83	.00	.00	.00	578.70
195.	85.	89.	21.	418.	113.	120.	13.	8.	579.10
.82	.20	.79	.18	.072	.035	.072	.034	574.70	233.00
.000050	49.	49.	49.	0	0	0	0.00	369.00	602.00

*SECNO 1932.000

3265 DIVIDED FLOW

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA

3470 ENCROACHMENT STATIONS= 850.0 1150.0 TYPE= 1 TARGET= 300.000
ELENCL= 583.00 ELENCR= 583.00

50 FT D/S 142' OF 4' CMP, DUPLICATED FROM SEC. H

1932.00	6.02	580.82	0.00	0.00	580.86	.04	.02	.02	578.90
195.	29.	139.	27.	81.	75.	74.	15.	9.	578.90
.85	.36	1.85	.36	.072	.035	.072	.034	574.80	850.00
.000323	178.	178.	178.	1	0	0	0.00	190.56	1090.37

*SECNO 1982.000

3470 ENCROACHMENT STATIONS= 862.0 1162.0 TYPE= 1 TARGET= 300.000
ELENCL= 583.00 ELENCR= 583.00

D/S FACE, 142' OF 4' CMP IN TRAILER PARK

1982.00	6.04	580.84	0.00	0.00	580.88	.04	.02	.00	575.80
195.	67.	63.	64.	107.	23.	100.	15.	9.	575.80
.86	.63	2.80	.64	.060	.030	.060	.034	574.80	912.20
.000382	50.	50.	50.	0	0	0	0.00	178.32	1090.52

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	4.31	3.05	0.00	3.14	0.00	12.57	0.00	575.10	574.80

*SECNO 2124.000
PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
596.96	581.18	0.00	155.	40.	13.	13.	579.10	580.70

3470 ENCROACHMENT STATIONS= 900.0 1201.0 TYPE= 1 TARGET= 301.000
ELENCL= 583.00 ELENCR= 583.00

H U/S FACE, 142' OF 4' CMP IN TRAILER PARK

2124.00	6.42	581.52	0.00	0.00	581.53	.01	.65	0.00	576.10
195.	75.	40.	80.	176.	24.	220.	16.	10.	576.10
.92	.43	1.66	.36	.060	.030	.060	.034	575.10	900.00
.000123	142.	142.	142.	1	0	8	0.00	301.00	1201.00

*SECNO 2174.000

3470 ENCROACHMENT STATIONS= 900.0 1200.0 TYPE= 1 TARGET= 300.000
ELENCL= 585.00 ELENCR= 585.00

50 FT U/S 142' OF 4' CMP, REPEATED SEC.

2174.00	6.33	581.53	0.00	0.00	581.54	.01	.01	.00	576.20
195.	79.	34.	82.	167.	24.	201.	17.	10.	576.20
.95	.48	1.41	.41	.060	.040	.060	.034	575.20	900.00
.000162	50.	50.	50.	0	0	0	0.00	300.00	1200.00

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*SECNO 2550.000

3470 ENCROACHMENT STATIONS=     180.0     550.0  TYPE=     1  TARGET=     370.000
 ELENCL=    585.00  ELENCR=    585.00

                        50 FT D/S 24' OF 4' CMP, MANUFACTURED SEC.

 2550.00      5.82   581.62     0.00     0.00   581.63      .01      .09      .00   580.30
     195.      59.      74.      63.     142.      63.     177.      21.      14.   580.30
    1.13      .41     1.17      .35     .060     .040     .060     .035   575.80   180.00
 .000223      452.     452.     452.        2        0        0     0.00   365.17   545.17
                                                                              370

*SECNO 2599.000
   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    IOC       ICONT     CORAR     TOPWID    ENDST


3470 ENCROACHMENT STATIONS=     200.0     600.0  TYPE=     1  TARGET=     400.000
 2599.00      5.73   581.63     0.00     0.00   581.64      .01      .01      .00   580.40
     195.      52.      82.      61.     113.      61.     157.      21.      14.   580.40
    1.15      .46     1.34      .39     .060     .040     .060     .035   575.90   200.00
 .000301      49.      49.      49.        0        0        0     0.00   332.24   532.24
                                                                              334

*SECNO 2600.000

3370 NORMAL BRIDGE,NRD= 14 MIN ELTRD=  580.40 MAX ELLC=  580.10

3470 ENCROACHMENT STATIONS=     200.0     600.0  TYPE=     1  TARGET=     400.000
 ELENCL=    583.00  ELENCR=    583.00

                        D/S FACE, 24' OF 4' CMP

 2600.00      5.73   581.63     0.00     0.00   581.64      .01      .00      .00   580.50
     195.      82.      43.      70.     172.      35.     170.      21.      14.   580.50
    1.15      .48     1.25      .41     .060     .024     .060     .035   575.90   200.00
 .000311        1.       1.       1.        0        0        0   -28.07   380.38   580.38
                                                                              380

*SECNO 2624.000

3370 NORMAL BRIDGE,NRD= 14 MIN ELTRD=  580.40 MAX ELLC=  580.10

3470 ENCROACHMENT STATIONS=     200.0     625.0  TYPE=     1  TARGET=     425.000

                        U/S FACE, 24' OF 4' CMP

 2624.00      5.54   581.64     0.00     0.00   581.65      .01      .01      .00   580.50
     195.      82.      41.      71.     174.      34.     174.      22.      14.   580.50
    1.16      .47     1.22      .41     .060     .024     .060     .035   576.10   200.00
 .000304      24.      24.      24.        0        0        0   -27.63   381.73   581.73
                                                                              380

*SECNO 2625.000

3470 ENCROACHMENT STATIONS=     200.0     625.0  TYPE=     1  TARGET=     425.000
 2625.00      5.54   581.64     0.00     0.00   581.65      .02      .00      .01   580.50
     195.      55.      93.      47.     174.      62.     174.      22.      14.   580.50
    1.11      .32     1.51      .27     .060     .024     .060     .035   576.10   200.00
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*SECNO 2674.000

3470 ENCROACHMENT STATIONS= 150.0 650.0 TYPE= 1 TARGET= 500.000
ELENCL= 586.00 ELENCR= 586.00

50 FT U/S 24' OF 4' CMP, REPEATED SEC.

2674.00	5.56	581.66	0.00	0.00	581.67	.01	.01	.00	580.50
195.	75.	64.	55.	216.	62.	176.	22.	15.	580.50
1.18	.35	1.04	.31	.060	.040	.060	.035	576.10	150.00
.000177	49.	49.	49.	1	0	0	0.00	432.83	582.83

94

****
HEC2 RELEASE DATED NOV 76 UPDATED AUG1977
ERROR CORR - 01,02
MODIFICATION - 50,51,52,53
****

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

LESTER BAMMEL DRAIN - Natural Floodway

SUMMARY PRINTOUT

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	AREA	DEPTH	TOPWID
0.000	0.00	0.00	0.00	574.30	130.00	577.44	.08	0.00	0.00	57.46	3.14	22.00
0.000	0.00	0.00	0.00	574.30	145.00	577.44	.10	0.00	0.00	57.46	3.14	22.00
0.000	0.00	0.00	0.00	574.30	155.00	577.44	.11	0.00	0.00	57.46	3.14	22.00
0.000	0.00	0.00	0.00	574.30	170.00	577.44	.14	0.00	0.00	57.46	3.14	22.00
49.000	49.00	0.00	0.00	574.40	130.00	577.41	.30	.08	.11	29.64	3.01	10.60
49.000	49.00	0.00	0.00	574.40	145.00	577.40	.37	.10	.14	29.56	3.00	10.60
49.000	49.00	0.00	0.00	574.40	155.00	577.40	.43	.12	.16	29.50	3.00	10.60
49.000	49.00	0.00	0.00	574.40	170.00	577.39	.52	.14	.19	29.40	2.99	10.60
50.000	1.00	579.60	579.00	574.40	130.00	577.42	.30	.00	.00	29.67	3.02	10.61
50.000	1.00	579.60	579.00	574.40	145.00	577.41	.37	.00	.00	29.60	3.01	10.61
50.000	1.00	579.60	579.00	574.40	155.00	577.40	.43	.01	.00	29.54	3.00	10.61
50.000	1.00	579.60	579.00	574.40	170.00	577.40	.52	.01	.00	29.44	3.00	10.61
65.000	15.00	579.60	579.00	574.40	130.00	577.47	.29	.04	.00	30.27	3.07	10.61
65.000	15.00	579.60	579.00	574.40	145.00	577.49	.35	.05	.01	30.35	3.09	10.61
65.000	15.00	579.60	579.00	574.40	155.00	577.50	.40	.06	.01	30.48	3.10	10.61
65.000	15.00	579.60	579.00	574.40	170.00	577.53	.47	.07	.01	30.89	3.13	10.61
66.000	1.00	0.00	0.00	574.40	130.00	577.52	.26	.00	.01	33.88	3.12	12.90
66.000	1.00	0.00	0.00	574.40	145.00	577.54	.31	.00	.01	34.25	3.14	12.92
66.000	1.00	0.00	0.00	574.40	155.00	577.57	.35	.00	.02	34.56	3.17	12.94
66.000	1.00	0.00	0.00	574.40	170.00	577.61	.41	.00	.02	35.16	3.21	12.98
115.000	49.00	0.00	0.00	574.54	130.00	577.61	.27	.10	.00	33.25	3.07	12.86
115.000	49.00	0.00	0.00	574.54	145.00	577.65	.32	.11	.00	33.87	3.11	12.90
115.000	49.00	0.00	0.00	574.54	155.00	577.69	.36	.13	.00	34.29	3.15	12.92
115.000	49.00	0.00	0.00	574.54	170.00	577.76	.41	.14	.00	35.19	3.22	12.98
385.000	269.00	0.00	0.00	575.26	130.00	578.34	.28	.75	.01	30.59	3.08	16.05
385.000	269.00	0.00	0.00	575.26	145.00	578.51	.30	.82	.01	33.21	3.25	16.99
385.000	269.00	0.00	0.00	575.26	155.00	578.63	.30	.86	.02	35.30	3.37	17.71
385.000	269.00	0.00	0.00	575.26	170.00	578.79	.30	.90	.03	38.44	3.53	18.74
434.000	50.00	0.00	0.00	575.40	130.00	578.56	.26	.19	.01	31.81	3.16	16.50
434.000	50.00	0.00	0.00	575.40	145.00	578.74	.27	.19	.01	34.73	3.34	17.52
434.000	50.00	0.00	0.00	575.40	155.00	578.85	.28	.19	.01	36.78	3.45	18.20
434.000	50.00	0.00	0.00	575.40	170.00	579.01	.28	.19	.01	39.73	3.61	19.11

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	AREA	DEPTH	TOPWID
449.000	15.00	580.00	579.00	575.40	130.00	578.56	.43	.08	.09	24.58	3.16	15.92
449.000	15.00	580.00	579.00	575.40	145.00	578.89	.24	.12	0.00	37.17	3.49	17.36
449.000	15.00	580.00	579.00	575.40	155.00	579.07	.23	.17	0.00	40.30	3.67	18.13
449.000	15.00	580.00	579.00	575.40	170.00	579.32	.22	.25	0.00	45.10	3.92	19.26
528.000	80.00	0.00	0.00	575.20	130.00	579.19	.16	.28	.08	39.88	3.99	17.73
528.000	80.00	0.00	0.00	575.20	145.00	579.14	.21	.22	.01	39.17	3.94	17.73
528.000	80.00	0.00	0.00	575.20	155.00	579.29	.21	.20	.00	41.70	4.09	17.73
528.000	80.00	0.00	0.00	575.20	170.00	579.51	.22	.18	.00	45.66	4.31	17.73
546.000	17.00	580.30	579.00	575.20	130.00	579.48	.12	.25	0.00	46.61	4.28	17.73
546.000	17.00	580.30	579.00	575.20	145.00	579.50	.15	.30	0.00	47.06	4.30	17.73
546.000	17.00	580.30	579.00	575.20	155.00	579.73	.14	.37	0.00	51.10	4.53	17.73
546.000	17.00	580.30	579.00	575.20	170.00	580.08	.14	.49	0.00	57.26	4.88	17.73
611.000	77.00	0.00	0.00	575.60	130.00	579.59	.08	.06	.01	57.77	3.99	26.59
611.000	77.00	0.00	0.00	575.60	145.00	579.64	.10	.07	.01	59.16	4.04	27.39
611.000	77.00	0.00	0.00	575.60	155.00	579.86	.10	.07	.01	65.94	4.26	35.08
611.000	77.00	0.00	0.00	575.60	170.00	580.20	.09	.05	.01	79.57	4.60	45.28
676.000	75.00	0.00	0.00	576.00	130.00	579.64	.08	.05	.00	55.96	3.64	20.00
676.000	75.00	0.00	0.00	576.00	145.00	579.69	.10	.06	.00	56.94	3.69	20.00
676.000	75.00	0.00	0.00	576.00	155.00	579.91	.10	.05	.00	61.16	3.91	20.00
676.000	75.00	0.00	0.00	576.00	170.00	580.23	.10	.04	.00	67.93	4.23	20.00
688.000	12.00	580.50	579.10	576.00	130.00	579.80	.08	.16	0.00	59.05	3.80	20.00
688.000	12.00	580.50	579.10	576.00	145.00	579.90	.09	.20	0.00	61.15	3.90	20.00
688.000	12.00	580.50	579.10	576.00	155.00	580.16	.08	.24	0.00	66.27	4.16	20.00
688.000	12.00	580.50	579.10	576.00	170.00	580.54	.08	.29	0.00	73.73	4.54	20.00
740.000	52.00	0.00	0.00	575.80	130.00	579.78	.19	.04	.06	36.91	3.98	10.00
740.000	52.00	0.00	0.00	575.80	145.00	579.88	.23	.05	.07	37.90	4.08	10.00
740.000	52.00	0.00	0.00	575.80	155.00	580.13	.23	.04	.07	40.40	4.33	10.00
740.000	52.00	0.00	0.00	575.80	170.00	580.50	.23	.04	.07	44.08	4.70	10.00
778.000	38.00	581.50	579.70	575.60	130.00	580.01	.17	.21	0.00	38.90	4.41	10.00
778.000	38.00	581.50	579.70	575.60	145.00	580.19	.20	.28	0.00	40.64	4.59	10.00
778.000	38.00	581.50	579.70	575.60	155.00	580.51	.19	.35	0.00	43.90	4.91	10.00
778.000	38.00	581.50	579.70	575.60	170.00	581.01	.19	.46	0.00	48.81	5.41	10.00
830.000	52.00	0.00	0.00	575.60	130.00	580.23	.03	.03	.04	112.63	4.63	87.35
830.000	52.00	0.00	0.00	575.60	145.00	580.43	.03	.03	.05	130.75	4.83	87.49
830.000	52.00	0.00	0.00	575.60	155.00	580.76	.02	.02	.05	159.26	5.16	90.32
830.000	52.00	0.00	0.00	575.60	170.00	581.25	.02	.02	.05	208.42	5.65	111.30
1180.000	350.00	0.00	0.00	575.40	130.00	580.29	.00	.02	.01	491.57	4.89	386.67
1180.000	350.00	0.00	0.00	575.40	145.00	580.49	.00	.02	.01	571.12	5.09	399.32
1180.000	350.00	0.00	0.00	575.40	155.00	580.80	.00	.01	.01	695.26	5.40	400.00
1180.000	350.00	0.00	0.00	575.40	170.00	581.27	.00	.01	.00	884.41	5.87	400.00
1630.000	450.00	0.00	0.00	574.80	130.00	580.30	.01	.02	.00	469.36	5.50	430.00
1630.000	450.00	0.00	0.00	574.80	175.00	580.51	.01	.02	.00	556.36	5.71	430.00
1630.000	450.00	0.00	0.00	574.80	195.00	580.81	.00	.01	.00	687.65	6.01	430.00
1630.000	450.00	0.00	0.00	574.80	245.00	581.28	.00	.01	.00	889.39	6.48	430.00

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	AREA	DEPTH	TOPWID
1679.000	49.00	0.00	0.00	574.50	130.00	580.31	.01	.00	.00	457.16	5.81	405.00
1679.000	49.00	0.00	0.00	574.50	175.00	580.51	.01	.00	.00	539.20	6.01	405.00
1679.000	49.00	0.00	0.00	574.50	195.00	580.81	.00	.00	.00	662.57	6.31	405.00
1679.000	49.00	0.00	0.00	574.50	245.00	581.28	.00	.00	.00	852.39	6.78	405.00
1680.000	1.00	579.00	578.50	574.50	130.00	580.31	.00	.00	.00	352.98	5.81	405.00
1680.000	1.00	579.00	578.50	574.50	175.00	580.51	.00	.00	.00	435.19	6.01	405.00
1680.000	1.00	579.00	578.50	574.50	195.00	580.82	.00	.00	.00	558.43	6.32	405.00
1680.000	1.00	579.00	578.50	574.50	245.00	581.28	.00	.00	.00	748.19	6.78	405.00
1704.000	24.00	579.00	578.70	574.70	130.00	580.32	.00	.01	.00	349.60	5.62	393.00
1704.000	24.00	579.00	578.70	574.70	175.00	580.52	.00	.01	.00	429.78	5.82	393.00
1704.000	24.00	579.00	578.70	574.70	195.00	580.82	.00	.00	.00	548.18	6.12	393.00
1704.000	24.00	579.00	578.70	574.70	245.00	581.29	.00	.00	.00	731.64	6.59	393.00
1705.000	1.00	0.00	0.00	574.70	130.00	580.32	.01	.00	.00	419.58	5.62	393.00
1705.000	1.00	0.00	0.00	574.70	175.00	580.52	.01	.00	.00	499.68	5.82	393.00
1705.000	1.00	0.00	0.00	574.70	195.00	580.82	.00	.00	.00	617.57	6.12	393.00
1705.000	1.00	0.00	0.00	574.70	245.00	581.29	.00	.00	.00	800.76	6.59	393.00
1754.000	49.00	0.00	0.00	574.70	130.00	580.32	.00	.00	.00	465.48	5.62	369.00
1754.000	49.00	0.00	0.00	574.70	175.00	580.52	.01	.00	.00	540.82	5.82	369.00
1754.000	49.00	0.00	0.00	574.70	195.00	580.82	.00	.00	.00	650.33	6.12	369.00
1754.000	49.00	0.00	0.00	574.70	245.00	581.29	.00	.00	.00	821.71	6.59	369.00
1932.000	178.00	0.00	0.00	574.80	130.00	580.32	.03	.02	.01	150.67	5.52	136.47
1932.000	178.00	0.00	0.00	574.80	175.00	580.53	.05	.02	.02	180.41	5.73	153.47
1932.000	178.00	0.00	0.00	574.80	195.00	580.82	.04	.02	.02	229.78	6.02	190.56
1932.000	178.00	0.00	0.00	574.80	245.00	581.29	.03	.02	.01	351.81	6.49	300.00
1982.000	50.00	0.00	0.00	574.80	130.00	580.33	.04	.02	.01	150.42	5.53	136.74
1982.000	50.00	0.00	0.00	574.80	175.00	580.54	.06	.02	.01	180.39	5.74	153.84
1982.000	50.00	0.00	0.00	574.80	195.00	580.84	.04	.02	.00	229.43	6.04	178.32
1982.000	50.00	0.00	0.00	574.80	245.00	581.31	.03	.01	.00	349.63	6.51	300.00
2124.000	142.00	580.70	579.10	575.10	130.00	581.35	.01	.97	0.00	368.49	6.25	301.00
2124.000	142.00	580.70	579.10	575.10	175.00	581.46	.01	.87	0.00	404.77	6.36	301.00
2124.000	142.00	580.70	579.10	575.10	195.00	581.52	.01	.65	0.00	420.84	6.42	301.00
2124.000	142.00	580.70	579.10	575.10	245.00	581.65	.01	.33	0.00	458.97	6.55	301.00
2174.000	50.00	0.00	0.00	575.20	130.00	581.35	.01	.00	.00	339.10	6.15	300.00
2174.000	50.00	0.00	0.00	575.20	175.00	581.47	.01	.01	.00	375.54	6.27	300.00
2174.000	50.00	0.00	0.00	575.20	195.00	581.53	.01	.01	.00	392.17	6.33	300.00
2174.000	50.00	0.00	0.00	575.20	245.00	581.66	.01	.01	.00	429.26	6.46	300.00
2550.000	452.00	0.00	0.00	575.80	130.00	581.41	.01	.06	.00	306.24	5.61	334.40
2550.000	452.00	0.00	0.00	575.80	175.00	581.55	.01	.08	.00	354.48	5.75	354.41
2550.000	452.00	0.00	0.00	575.80	195.00	581.62	.01	.09	.00	381.58	5.82	365.17
2550.000	452.00	0.00	0.00	575.80	245.00	581.76	.01	.10	.00	435.30	5.96	370.00
2599.000	49.00	0.00	0.00	575.90	130.00	581.42	.01	.01	.00	263.63	5.52	302.27
2599.000	49.00	0.00	0.00	575.90	175.00	581.56	.01	.01	.00	308.57	5.66	322.81
2599.000	49.00	0.00	0.00	575.90	195.00	581.63	.01	.01	.00	330.18	5.73	332.24
2599.000	49.00	0.00	0.00	575.90	245.00	581.77	.01	.01	.00	380.62	5.87	353.26

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	AREA	DEPTH	TOPWID
2600.000	1.00	580.40	580.10	575.90	130.00	581.42	.01	.00	.00	298.90	5.52	360.91
2600.000	1.00	580.40	580.10	575.90	175.00	581.57	.01	.00	.00	351.80	5.67	374.28
2600.000	1.00	580.40	580.10	575.90	195.00	581.63	.01	.00	.00	376.62	5.73	380.38
2600.000	1.00	580.40	580.10	575.90	245.00	581.78	.01	.00	.00	433.49	5.88	394.02
2624.000	24.00	580.40	580.10	576.10	130.00	581.43	.01	.01	.00	302.11	5.33	361.98
2624.000	24.00	580.40	580.10	576.10	175.00	581.58	.01	.01	.00	356.09	5.48	375.57
2624.000	24.00	580.40	580.10	576.10	195.00	581.64	.01	.01	.00	381.21	5.54	381.73
2624.000	24.00	580.40	580.10	576.10	245.00	581.79	.01	.01	.00	438.77	5.69	395.49
2625.000	1.00	0.00	0.00	576.10	130.00	581.43	.01	.00	.00	330.16	5.33	362.09
2625.000	1.00	0.00	0.00	576.10	175.00	581.57	.02	.00	.00	384.10	5.47	375.67
2625.000	1.00	0.00	0.00	576.10	195.00	581.64	.02	.00	.01	409.18	5.54	381.82
2625.000	1.00	0.00	0.00	576.10	245.00	581.78	.02	.00	.01	466.66	5.68	395.55
2674.000	49.00	0.00	0.00	576.10	130.00	581.44	.01	.01	.00	361.29	5.34	412.57
2674.000	49.00	0.00	0.00	576.10	175.00	581.59	.01	.01	.00	422.76	5.49	426.18
2674.000	49.00	0.00	0.00	576.10	195.00	581.66	.01	.01	.00	453.52	5.56	432.83
2674.000	49.00	0.00	0.00	576.10	245.00	581.81	.01	.01	.00	519.16	5.71	446.69

SUMMARY OF ERRORS

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**** 7000 SCOPE 2.1 LVL  221  05/05/79  12.23.22  06/06/79      79157

SYS DEVICES 819/ 4/PF FLS=200K FLL=764K MXS=160K MXL=453K MXB=453B

HH.MM.SS CPU SECOND ORIGIN
         11.34.18.MFA. JO    LV461 NOSBE 8+W LYNRELEASE447 02/04/78
11.35.36 00000.008 MFZ.     -COTJ000,T20,STMFZ.   COTTRELLVILLE TOWNSHIP
11.35.53 00000.024 USR.      CHARGE.810-0037-45-78-6261,JANDA,001,D,JANDA.
11.35.54 00000.060 JOB.      ATTACH,LGO,HEC2N76V2,ID=HEC.
11.35.54 00000.065 MFZ.        PF254 - CYCLE    2 ATTACHED FROM SN=SYSTEM
11.35.54 00000.066 LOD.     -LGO(PL=999999).
11.35.55 00000.086 USR.      FORTRAN LIBRARY 439          08/20/78
11.36.02 00001.606 USR.        STOP
11.36.02 00001.606 USR.         1.518 CP SECONDS EXECUTION TIME
11.36.02 00001.611 MFZ.      RM770 - MAXIMUM ACTIVE FILES                  7
11.36.02 00001.611 MFZ.      RM771 - OPEN/CLOSE CALLS                     28
11.36.02 00001.611 MFZ.      RM772 - DATA TRANSFER CALLS                4,667
11.36.02 00001.611 MFZ.      RM773 - CONTROL/POSITIONING CALLS             66
11.36.02 00001.611 MFZ.      RM774 - BM DATA TRANSFER CALLS               419
11.36.02 00001.612 MFZ.      RM775 - BM CONTROL/POSITIONING CALLS          56
11.36.02 00001.612 MFZ.      RM776 - QUEUE MANAGER CALLS                   85
11.36.02 00001.612 MFZ.      RM777 - RECALL CALLS                          65
11.36.02 00001.612 MFZ.      BWMSG - NUMBER OF TAPES MOUNTED
11.36.02 00001.613 MFZ.      SRU                1.887  SEC
11.36.02 00001.613 MFZ.      SCM               43.287  KWS
11.36.02 00001.613 MFZ.      I/O                0.065  MW
11.36.02 00001.613 MFZ.      RMS                0.055  MWS
11.36.02 00001.614 MFZ.      USER               1.116  SEC
11.36.02 00001.614 MFZ.      JOB                1.615  SEC
11.36.02 00001.614 MFZ.      SC050 000052 SC/LC SWAPS
11.36.02 00001.614 MFZ.    COTJOIR   COTJOIR
11.36.02.EJ  END OF JOB
```

00BREAK00

1) COUNTY: St. Clair

2) STUDY NAME: Cottrellville Twp

3) WATERCOURSE: Maring City Drain

4) DOCUMENT TYPE: Report

00BREAK00

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WATER MANAGEMENT

HYDRAULIC ANALYSIS

Introduction

The stream being studied is the Marine City Drain in the Township of Cottrellville, St. Clair County, Michigan. The hydraulic investigations include a reach that extends from its confluence with the St. Clair River up to approximately 700 feet upstream of the Broadbridge Road Bridge in Cottrellville Township. This is a distance of approximately 3.99 miles.

The 10-, 50-, 100- and 500-year flood frequency flows used in this study have been approved by Michigan's Department of Natural Resources. These discharges were computed by SCS method.

Method of Analysis

The water surface profiles were computed by the HEC-2 computer program developed by the U.S. Army Corps of Engineers.[1]

All bridges have been modeled according to the HEC Training Document No. 6, Application of the HEC-2 Bridge Routines.[2] Either the "Normal Bridge" or "Special Bridge" routines were used. The decision was based on flow conditions present at the stream crossing.

The hydraulic model of the floodway was developed mainly for the 100-year flow. The 10-, 50- and 500-year flows were also taken into consideration whenever it was possible.

The guidelines set forth on Pages 18 through 21 in the HEC Training Document No. 6[3] were used to locate valley sections upstream and down-

stream of the bridges. These same guidelines were used in modeling natural constrictions in floodway.

The cross-sections used in the hydraulic analysis were field surveyed in the spring of 1976.

Variables and Coefficients

The roughness factors (Manning's "n") were chosen after considering photographs taken during field surveys, observation made in field inspection trips to the studied area and descriptions given in Chow[4] and in Water-Supply Paper No. 1849.[5] In general, the following range of values was used:

	Description	Manning's "n"
1.	Channel	
	a. Muck bottom, or sand and clay bottom with some rocks	0.035 - 0.05
	b. Muck bottom with medium to heavy weeds and light brush on banks	0.05 - 0.06
	c. Muck bottom with debris, some falled trees, heavy brush or trees on banks	0.07 - 0.08
2.	Overbanks	
	a. Lawn area with shrubs and trees	0.07 - 0.1
	b. Field with light to heavy weeds, some brush	0.06 - 0.08
	c. Medium to dense brush	0.10 - 0.14
	d. Heavy woods, a few downed trees	0.15 - 0.17

The coefficients of expansion and contraction chosen were .03 and .05 as suggested on Exhibit 2 of the HEC-2 Water Surface Profiles.

Orifice discharge coefficients XKOR for pressure flow used in special bridge routines were calculated according to the equation

$$XKOR = \left| 1 + Ke + \frac{29.1\ \bar{n}^2 L}{R^{4/3}} \right|$$

where

$\bar{n}$ Weighted roughness factor

L Length of constrictions

R Hydraulic radius

Ke Entrance loss factor

Weir flow discharge coefficients C were chosen from charts published by Bureau of Public Roads based on assumed headwater depth of constrictions.

Starting Elevation

The starting water-surface elevation at the mouth of the Marine City Drain is the mean annual water-surface elevation - 576.50, based on a Johnson & Anderson study of flood levels on the St. Clair River which was approved by the DNR.

The water-surface elevations of the St. Clair River for 10-, 50-, 100- and 500-year flows were obtained from the flood profile of the City of Algonac Flood Insurance Study done by the Corps of Engineers. These were 578.23,

approved?

579.11, 579.36 and 580.01.

The lower reach of the Marine City Drain below the Algonac State Park is not included in the flood insurance study for Cottrellville Township. However, preliminary indications were that the levels in the St. Clair River affected the expected flood profile on the Marine City Drain. In order to determine the extent of their influence, this hydraulic model has included the whole lower reach.

Remarks

1. The proposed floodway is the natural floodway. No encroachment was imposed except in the vicinity of constrictions.

2. The wood footbridge (sec. 1.882) is perched and "special bridge" routine was used. In the 10-, 50-, and 100-year floods, low flow in the main channel and weir flow on the overbanks occurs, while in the 500-year flood it is pressure flow in the main channel and weir flow on the overbanks. No significant difference was found comparing water-surface elevations obtained by "normal bridge" routine.

3. Preliminary analysis using "special bridge" routines indicated that the flow over Roberts Road and Broadbridge bridges (sec. 2.425, 3.860), and private bridge (sec. 2.883) were highly submerged, therefore, "normal bridge" routines were used. OK

4. There is no flow across Roberts Road in the low, swampy area west of the Marine City Drain.

5. Preliminary analysis indicated that a portion of flow occurred in a ditch and its overbanks (low, swampy area) west of the Marine City Drain between Roberts and Broadbridge Roads. This caused the floodway to be divided in these areas. To effectively delineate the flow, an island problem approach has been used. OK for natural ?

6. A high water mark of 581.64 was obtained at sec. 3.992 Section "O" in the spring of 1968. It was found that this high water mark was caused by an ice jam during a spring thaw and, therefore, not considered. Area residents were unable to provide high water marks caused by flooding due to rainstorm.

7. A sudden increase of discharge upstream of Broadbridge Road (sec. 3.869) indicates storage of flow.

References

1 U. S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, User's Manual, 1973.

2 U. S. Army Corps of Engineers, Hydrologic Engineering Center, Application of HEC-2 Bridge Routines, 1974.

3 Ibid.

4 Chow, V.T., Open Channel Hydraulics, pp. 101-123, McGraw-Hill (1959)

5 Geological Survey Water-Supply Paper No. 1849, Roughness Characteristics of Natural Channels, pp. 139-141, U. S. Government Printing.

Cottrellville Township
St. Clair County
5555-13

Marine City Drain

Cross Section	S E C N O Miles	Feet	Location
A	0.015	78	u/s face M-29 Bridge
B	0.024	128	50' u/s M-29 Bridge
B'	0.038	202	u/s face, private wood footbridge
C	0.270	1428	1350' u/s M-29 Bridge
D	0.715	3777	3700' u/s M-29 Bridge
E	1.123	5927	5850' u/s M-29 Bridge
F	1.881	9935	u/s face wood footbridge in State Park
G	2.100	11088	1150' u/s wood footbridge in State Park
H	2.412	12738	50' d/s Robert Rd. Bridge
I	2.425	12806	u/s face Robert Rd. Bridge
J	2.557	13506	700' u/s Robert Rd. Bridge
J'	2.882	15217	u/s face, private bridge
K	2.974	15706	2900' u/s Robert Rd. Bridge
L	3.429	18106	5300' u/s Robert Rd. Bridge
M	3.845	20306	50' d/s Broadbridge Rd. Bridge
N	3.860	20382	u/s face Broadbridge Rd. Bridge
O	3.992	21082	700' u/s Broadbridge Rd. Bridge

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HH      HH EEEEEEEEEEEE   CCCCCCCC                22222222
HH      HH EEEEEEEEEEEE  CCCCCCCCCC              2222222222
HH      HH EE           CCC      CC            22      222
HH      HH EE           CC                                22
HH      HH EE           CC                                22
HH      HH EE           CC                                22
HH      HH EE           CC                                22
HHHHHHHHHHHH EEEEEEEEEE CC          ----------            222
HHHHHHHHHHHH EEEEEEEEEE CC          ----------      222222222
HH      HH EE           CC                      222222222
HH      HH EE           CC                    222
HH      HH EE           CC                    22
HH      HH EE           CC                    22
HH      HH EE           CCC      CC           22
HH      HH EEEEEEEEEEEE  CCCCCCCCCC           222222222222
HH      HH EEEEEEEEEEEE   CCCCCCCC            222222222222
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FIS : Cottrellville Township

5850-13-1

Marine City Drain

& Flows Encroached Run

as send to DNR 6/28/79

```
IIIIIIII   NN      NN PPPPPPPP      UU      UU TTTTTTTTTTTT
IIIIIIII   NN      NN PPPPPPPPPP    UU      UU TTTTTTTTTTTT
  II       NNN     NN PP      PPP   UU      UU      TT
  II       NNN     NN PP        PP  UU      UU      TT
  II       NNNN    NN PP        PP  UU      UU      TT
  II       NN NN   NN PP        PP  UU      UU      TT
  II       NN  NN  NN PP      PPP   UU      UU      TT
  II       NN   NN NN PPPPPPPPPP    UU      UU      TT
  II       NN    NNNN PPPPPPPPP     UU      UU      TT
  II       NN     NNN PP            UU      UU      TT
  II       NN      NN PP            UU      UU      TT
  II       NN      NN PP            UU      UU      TT
  II       NN      NN PP            UUU    UUU      TT
IIIIIIII   NN      NN PP             UUUUUUUUUU      TT
IIIIIIII   NN      NN PP              UUUUUUUU       TT

EEEEEEEEEEEE   CCCCCCCC   HH      HH   00000000
EEEEEEEEEEEE  CCCCCCCCCC  HH      HH  0000000000
EE            CCC      CC HH      HH 000    000
EE            CC         HH      HH 00      00
EE            CC         HH      HH 00      00
EE            CC         HH      HH 00      00
EE            CC         HH      HH 00      00
EEEEEEEEEEE   CC         HHHHHHHHHHHH 00      00
EEEEEEEEEEE   CC         HHHHHHHHHHHH 00      00
EE            CC         HH      HH 00      00
EE            CC         HH      HH 00      00
EE            CC         HH      HH 00      00
EE            CCC      CC HH      HH 000    000
EEEEEEEEEEEE  CCCCCCCCCC  HH      HH  0000000000
EEEEEEEEEEEE   CCCCCCCC   HH      HH   00000000
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RECEIVED
JUN 29 1979
WATER MANAGEMENT

FORM 1411-SS PRINTED BY ROTARY MANIFOLD FORMS.

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C      50
C       0                          MOUTH OF MARINE CITY DRAIN, MANUFACTURED SEC.
C   0.004                          D/S FACE M-29 BRIDGE
C   0.015        A                 U/S FACE M-29 BRIDGE
C   0.024        B         50 FT   U/S M-29 BRIDGE
C   0.037                          DUPLICATED FROM SEC. B
C  0.0375                          D/S FACE PRIVATE WOOD FOOTBRIDGE
C  0.0383        B@                U/S FACE, PRIVATE WOOD FOOTBRIDGE
C   0.048                          DUPLICATED FROM SEC. B
C   0.147                 700 FT   U/S M-29 BRIDGE, MANUFACTURED FROM SEC. C
C   0.233                1150 FT   U/S M-29 BRIDGE, MANUFACTURED FROM SEC. C
C   0.270        C       1350 FT   U/S M-29 BRIDGE
C   0.460                2350 FT   U/S M-29 BRIDGE, DUPLICATED FROM SEC. D
C   0.715        D       3700 FT   U/S M-29 BRIDGE
C   1.123        E       5850 FT   U/S M-29 BRIDGE
C   1.501                7850 FT   U/S M-29 BRIDGE, MANUFACTURED SEC.
C  1.870                   50 FT   D/S WOOD FOOTBRIDGE IN STATE PARK, DUPLICATED
C   1.870                          FROM SEC. F
C   1.880                          D/S FACE WOOD FOOTBRIDGE IN STATE PARK
C   1.882        F                 U/S FACE WOOD FOOTBRIDGE IN STATE PARK
C   1.891                   50 FT   U/S WOOD FOOTBRIDGE IN STATE PARK, REPEATED SEC.
C   1.891                          OF F.
C   2.100        G       1150 FT   U/S WOOD FOOTBRIDGE IN STATE PARK
C   2.412        H         50 FT   D/S ROBERT RD. BRIDGE, 21 DEGREES SKEW
C   2.422                          D/S FACE ROBERT RD. BRIDGE, 21 DEGREES SKEW
C   2.425        I                 U/S FACE ROBERT RD. BRIDGE, 21 DEGREES SKEW
C   2.434                   50 FT   U/S ROBERT RD. BRIDG, 21 DEGREES SKEW, REPEATED
C   2.434                          SEC.
C   2.557        J        700 FT   U/S ROBERT RD. BRIDGE
C   2.614                1000 FT   U/S ROBERT RD. BRIDGE, AT THE CONFLUENCE
C   2.614                          MANUFACTURED FROM SEC. J
C   2.870                   50 FT   D/S PRIVATE BRIDGE, DUPLICATED FROM SEC. J@
C   2.879                          D/S FACE, PRIVATE BRIDGE
C   2.882        J@                U/S FACE, PRIVATE BRIDGE
C   2.892                   50 FT   U/S PRIVATE BRIDGE, REPEATED SEC.
C   2.974        K       2900 FT   U/S ROBERT RD. BRIDGE
C   3.429        L       5300 FT   U/S ROBERT RD. BRIDGE
C   3.751   END OF ISLAND PROBLEM
C   3.751                          U/S CONFLUENCE, DUPLICATED FROM SEC. M, SKEWED
C   3.845        M         50 FT   D/S BROADBRIDGE RD. BRIDGE, 23 DEGREES SKEW
C   3.855                          D/S FACE BROADBRIDGE RD. BRIDGE, 23 DEGREES SKEW
C   3.860        N                 U/S FACE BROADBRIDGE RD. BRIDGE, 23 DEGREES SKEW
C   3.869                   50 FT   U/S BROADBRIDGE RD. BRIDGE, 23 DEGREES SKEW
C   3.869                          REPEATED SEC.
C   3.992        O        700 FT   U/S BROADBRIDGE RD. BRIDGE
C  -2.614                1000 FT   U/S ROBERT RD. BRIDGE, AT THE CONFLUENCE
C  -2.614                          MANUFACTURED FROM SEC. J
C   3.125        K       2900 FT   U/S ROBERT RD. BRIDGE
C   3.580        L       5300 FT   U/S ROBERT RD. BRIDGE
C   4.025                          U/S CONFLUENCE, DUPLICATED FROM SEC. M, SKEWED
C   4.025   END OF ISLAND PROBLEM
T1       MARINE CITY DRAIN, COTTRELLVILLE TOWNSHIP  5555-13  PM: GILBERTO M. FONT
T2       10 YEAR FLOW
T3       MARINE CITY DRAIN
J1            2                                                    576.62
J2     1             -1
J3    38      39      40      41      42      43       1      10      11      12
J3    14       8       4
NC   .07     .07   0.040      .3      .5
QT     4     385     530     600     785
X1     0      27    1480    1550       0       0       0
X3                          1497   577.0    1533   577.0
GR 579.0       0   579.6     200   579.5     400   579.5     600   579.5    1000
GR 579.3    1200   579.0    1400   578.5    1450   578.0    1460   577.0    1480
GR 571.6    1500   571.4    1505   571.4    1510   571.7    1515   571.9    1520
```

GR	579.0	1600	578.1	1800	578.5	2000	578.5	2200	578.5	2400
GR	578.5	2600	578.5	3000						
NC	.07	.07	0.043							
X1	.003	24	1500	1530	19	19	19			
X3	10									
GR	579.7	0	580.3	200	580.3	400	580.3	600	581.7	1000
GR	580.9	1200	580.3	1400	581.5	1500	571.6	1500	571.4	1505
GR	571.4	1510	571.7	1515	571.9	1520	571.9	1525	572.1	1530
GR	581.5	1530	581.2	1600	580.2	1800	579.8	2000	579.6	2200
GR	579.2	2400	579.2	2600	579.6	2800	579.8	3000		
X1	.004				1	1	1			
X3	10									
BT	11	600	580.3	0	800	580.3	0	1000	581.7	0
BT	1400	580.3	0	1500	581.5	578.5	1530	581.5	578.5	1600
BT	581.2	0	1800	580.2	0	2000	579.8	0	2200	579.6
BT	0	2400	579.2	0						
X1	.015				58	58	58			
X2							1			
X3	10									
X1	.016				1	1	1			
X3	10									
NC	0.08	0.08	0.04							
X1	.024	24	1500	1560	49	49	49			
GR	579.0	0	581.6	200	580.9	400	581.3	600	580.7	800
GR	582.3	1000	581.4	1200	580.3	1400	580.0	1500	578.2	1510
GR	573.2	1510	572.7	1520	573.0	1530	572.4	1547	578.9	1547
GR	580.8	1560	581.0	1600	579.8	1800	580.4	2000	580.5	2200
GR	579.8	2400	579.5	2600	579.6	2800	579.4	3000		
NC	0.10	0.10	0.040							
X1	0.037	29	1500	1560	69	69	69			
X3	10							580.1	580.1	
GR	579.1	0	581.7	200	581.0	400	581.4	600	580.8	800
GR	582.4	1000	581.5	1200	580.4	1400	580.1	1500	578.3	1510
GR	573.3	1510.5	572.8	1520	573.1	1530	572.8	1540	572.34	1547
GR	573.4	1550	574.5	1552	577.0	1554	578.0	1556	579.0	1558
GR	580.2	1560	581.0	1600	579.8	1800	580.4	2000	580.5	2200
GR	579.9	2400	579.6	2600	579.9	2800	579.5	3000		
X10	.0375	43	1500	1560	1	1	1			
BT	10	1500	580.1	579.6	1519.5	580.3	579.8	1520	580.3	579.8
BT	1529.5	580.8	580.3	1530	580.8	580.3	1539.5	580.3	579.8	1540
BT	580.3	579.8	1549.5	580.3	579.8	1550	580.3	579.8	1560	580.2
BT	579.7									
GR	579.1	0	581.7	200	581.0	400	581.4	600	580.8	800
GR	582.4	1000	581.5	1200	580.4	1400	580.1	1500	579.6	1500
GR	578.3	1510	573.3	1510.5	572.8	1519.5	579.8	1519.5	579.8	1520
GR	572.8	1520	573.1	1529.5	580.3	1529.5	580.3	1530	573.1	1530
GR	572.8	1539.5	579.8	1539.5	579.8	1540	572.8	1540	572.34	1547
GR	573.4	1549.5	579.8	1549.5	579.8	1550	573.4	1550	574.5	1552
GR	577.0	1554	578.0	1556	579.0	1558	579.7	1560	580.2	1560
GR	581.0	1600	579.8	1800	580.4	2000	580.5	2200	579.9	2400
GR	579.6	2600	579.9	2800	579.5	3000				
X10	.0383				4	4	4			
X2							1			
X10	.0385				1	1	1			
X3	10							580.1	580.1	
X1	.048	29	1500	1560	49	49	49		0.1	
GR	579.1	0	581.7	200	581.0	400	581.4	600	580.8	800
GR	582.4	1000	581.5	1200	580.4	1400	580.1	1500	578.3	1510
GR	573.3	1510.5	572.8	1520	573.1	1530	572.8	1540	572.2	1547
GR	573.4	1550	574.5	1552	577.0	1554	578.0	1556	579.0	1558
GR	580.2	1560	581.0	1600	579.8	1800	580.4	2000	580.5	2200
GR	579.9	2400	579.6	2600	579.9	2800	579.5	3000		
X1	.147	34	1177	1230	576	526	526	1.132	.55	
X3				778		1321				
GR	578.5	0	578.5	120	577.2	220	577.7	320	577.4	420

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	GR	576.4	1020	575.7	1120	576.3	1177	574.1	1185	572.5	1190
	GR	571.5	1198	571.3	1202	571.3	1210	572.3	1219	574.1	1223
	GR	575.8	1230	576.3	1245	576.5	1260	577.1	1320	577.5	1325
	GR	577.3	1370	576.8	1420	577.0	1720	577.0	1920	577.0	2120
	GR	577.7	2320	578.5	2520	579.2	2720	580.0	2920		
1	NC	0.1	0.1	0.05							
2	X1	.233	33	1177	1220	350	450	450			
3	X3				727		1220				
4	GR	578.5	0	578.5	120	577.2	220	577.7	320	577.4	420
5	GR	577.2	520	577.2	820	576.7	920	576.4	1020	575.7	1120
6	GR	576.3	1177	574.1	1185	572.5	1190	572.4	1198	571.47	1202
7	GR	571.47	1202	572.5	1207	574.3	1215	577.7	1220	577.9	1245
8	GR	578.1	1260	578.2	1320	578.5	1325	578.3	1370	577.8	1420
9	GR	577.6	1720	577.3	1920	577.0	2120	577.7	2320	578.5	2320
10	GR	578.5	2520	579.2	2720	580.0	2920				
11	NC	0.11	0.16	0.05							
12	X1	0.270	35	1177	1220	200	200	200			
13	X3				667		1220				
14	GR	578.5	0	578.5	120	577.2	220	577.7	320	577.4	420
15	GR	577.2	520	577.2	620	577.2	720	577.2	820	576.7	920
16	GR	576.4	1020	575.7	1120	576.3	1177	574.1	1185	572.5	1190
17	GR	571.5	1198	577.5	1198	577.5	1202	571.3	1202	571.3	1210
18	GR	572.3	1219	578.7	1220	577.7	1245	576.1	1260	577.1	1320
19	GR	577.5	1325	577.3	1370	576.8	1420	577.0	1720	577.0	1920
20	GR	577.0	2120	577.7	2320	578.5	2520	579.2	2720	580.0	2920
21	NC	0.09	0.12	0.06							
22	X1	0.460	36	1192	1242	1000	1000	1000			
23	X3				780		1742				
24	GR	580.0	0	578.5	120	577.2	220	577.7	320	577.4	420
25	GR	577.2	520	577.2	620	577.2	720	577.2	820	576.7	920
26	GR	576.4	1020	575.7	1120	576.3	1177	576.9	1187	577.2	1192
27	GR	574.5	1197	573.7	1202	572.11	1212	573.4	1222	574.5	1232
28	GR	575.3	1237	577.2	1242	577.5	1245	577.7	1255	577.7	1280
29	GR	577.1	1320	577.5	1325	577.3	1370	576.8	1420	577.0	1720
30	GR	577.0	1920	577.0	2120	577.7	2320	578.5	2520	579.2	2720
31	GR	580.0	3000								
32	NC	0.15	0.15	0.07							
33	QT	4	380	520	585	780					
34	X1	0.715	36	1192	1242	1349	1349	1349			
35	X3				1060		1588				
36	GR	580.0	0	578.5	120	577.2	220	577.7	320	577.4	420
37	GR	577.2	520	577.2	620	577.2	720	577.2	820	576.7	920
38	GR	576.4	1020	575.7	1120	576.3	1177	579.3	1187	577.2	1192
39	GR	574.5	1197	573.7	1202	573.2	1212	573.4	1222	574.5	1232
40	GR	575.3	1237	577.2	1242	579.3	1245	578.7	1255	577.7	1280
41	GR	577.1	1320	577.5	1325	577.3	1370	576.8	1420	577.0	1720
42	GR	577.0	1920	577.0	2120	577.7	2320	578.5	2520	579.2	2720
43	GR	580.0	3300								
44	NC	0.16	0.16	0.06							
45	X1	1.123	31	800	845	2150	2150	2150			
46	X3						1375				
47	GR	586.9	0	585.9	100	584.1	300	578.3	500	577.6	600
48	GR	577.2	700	577.8	774	582.3	790	580.3	798	577.2	800
49	GR	575.3	805	574.3	810	573.6	820	573.5	830	574.6	840
50	GR	577.2	845	579.2	847	581.1	857	577.7	873	577.8	900
51	GR	578.2	1100	578.3	1300	578.5	1500	579.0	1700	579.0	1900
52	GR	578.9	2100	577.5	2300	577.5	2500	578.3	2700	579.2	2900
53	GR	580.0	3000								
54	NC	0.17	0.16	0.07							
55	X1	1.501	23	800	845	1975	2025	2000			
56	X3				600						
57	GR	582.0	0	580.0	200	579.0	250	578.3	500	577.6	600
	GR	577.2	700	577.8	774	582.3	790	580.3	798	577.2	800
	GR	575.3	805	574.3	810	573.75	820	573.75	830	574.6	840
	GR	577.2	845	579.2	847	581.1	857	577.7	873	577.8	900

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GR	576.2	1100	580.	1200	585.0	1850				
X1	1.870	26	1400	1465	1900	2000	1950			
X3				1099		1901				
GR	582.0	0	581.5	200	581.0	400	581.0	600	580.5	800
GR	580.4	1000	580.5	1100	579.5	1200	578.6	1300	578.5	1350
GR	578.4	1400	576.8	1410	575.1	1420	574.0	1430	574.0	1432.5
GR	574.1	1440	575.3	1450	577.7	1460	578.4	1465	577.6	1500
GR	577.7	1600	578.6	1700	580.4	1900	582.5	2100	584.0	2300
GR	585.5	2600								
NC	0.17	0.17	0.08							
X1	1.880				50	50	50			
X3				1099		1901				
SB	0.9	1.725	3.09	0	16.8	0.01	266	3.71	574.0	574.0
X1	1.882				8	8	8			
X2			1	580.5	577.6					
X3				1099		1901				
BT	18	1100	580.5		1200	579.5		1300	578.6	
BT	1350	578.5		1400	581.2	578.4	1400	581.2	578.7	1410
BT	582.2	579.6	1420	582.8	580.3	1432.5	583.0	580.5	1440	582.9
BT	580.4	1450	582.5	580.0	1460	581.7	579.2	1465	581.2	578.7
BT	1465	581.2	578.4	1500	577.6		1600	577.7		1700
BT	578.6		1900	580.4						
X1	1.891				50	50	50		0.01	
X3				1099		1901				
NC	0.16	0.17	0.08							
X1	2.100	27	1500	1550	1100	1100	1100			
GR	584.2	0	585.2	200	585.6	400	585.6	600	584.6	800
GR	582.9	1000	580.1	1200	578.7	1400	578.6	1500	576.7	1503
GR	575.3	1505	575.0	1510	574.3	1520	574.4	1530	574.4	1535
GR	575.3	1540	575.3	1545	578.4	1550	579.9	1560	577.4	1570
GR	577.6	1700	581.0	1900	584.3	2100	586.3	2300	586.8	2500
GR	586.4	2700	586.7	2800						
NC	0.16	0.16	0.07							
X1	2.412	28	1500	1555	1550	1750	1650	.934		
X3				1250		1775				
GR	586.0	0	586.8	200	586.4	400	586.7	600	584.7	800
GR	584.2	1000	581.3	1200	578.4	1400	579.6	1500	578.3	1503
GR	576.6	1505	575.3	1510	574.1	1520	574.1	1530	574.9	1540
GR	575.2	1550	576.3	1553	578.1	1555	580.2	1560	578.7	1580
GR	578.1	1600	579.5	1800	581.1	2000	581.8	2200	582.4	2400
GR	582.7	2600	582.9	2800	582.8	3000				
QT	4	375	520	580	770					
NC	0.032	0.031	0.090							
X1	2.421	25	1498	1530	50	50	50	.9336		
X3				1275		1750				
GR	585.6	0	586.5	200	586.7	400	586.4	600	584.4	800
GR	583.7	1000	581.2	1200	579.9	1400	579.7	1498	575.0	1500
GR	575.1	1505	575.1	1510	574.4	1515	574.7	1520	575.2	1525
GR	575.8	1528	579.5	1530	579.3	1600	580.3	1800	582.0	2000
GR	582.2	2200	582.9	2400	583.2	2600	583.7	2800	583.6	3000
NC	.025	.025	.025							
X1	2.422	27	1498	1530	1	1	1	0.9336		
X2									0.9336	
X3				1275		1750				
BT	19	0	585.6	0	200	586.5	0	400	586.7	0
BT	600	586.4	0	800	584.4	0	1000	583.7	0	1200
BT	581.2	0	1400	579.9	0	1498	579.7	0	1498	579.7
BT	578.2	1530	579.5	578.2	1530	579.5	0	1600	579.3	0
BT	1800	580.3	0	2000	582.0	0	2200	582.2	0	2400
BT	582.9	0	2600	583.2	0	2800	583.7	0		
GR	585.6	0	586.5	200	586.7	400	586.4	600	584.4	800
GR	583.7	1000	581.2	1200	579.9	1400	579.7	1498	578.2	1498
GR	575.0	1500	575.1	1505	575.1	1510	574.4	1515	574.7	1520
GR	575.2	1525	575.8	1528	578.2	1530	579.5	1530	579.3	1600
GR	580.3	1800	582.0	2000	582.2	2200	582.9	2400	583.2	2600
GR	583.7	2800	583.6	3000						

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X2								0.9336		
X3			1275		1750					
BT 19	0	585.6	0	200	586.5	0	400	586.7	0	
BT 600	586.4	0	800	584.4	0	1000	583.7	0	1200	
BT 581.2	0	1400	579.9	0	1498	579.7	0	1498	579.7	
BT 578.2	1530	579.5	578.2	1530	579.5	0	1600	579.3	0	
BT 1800	580.3	0	2000	582.0	0	2200	582.2	0	2400	
BT 582.9	0	2600	583.2	0	2800	583.7	0			
GR 585.6	0	586.5	200	586.7	400	586.4	600	584.4	800	
GR 583.7	1000	581.2	1200	579.9	1400	579.7	1498	578.2	1500	
GR 575.0	1500	575.1	1505	575.1	1510	574.4	1515	574.7	1520	
GR 575.2	1525	575.8	1528	573.2	1530	579.5	1530	579.3	1600	
GR 580.3	1800	582.0	2000	582.2	2200	582.9	2400	583.2	2600	
GR 583.7	2800	583.6	3000							
NC 0.032	0.031	0.090								
X1 2.426	25	1498	1530	1	1	1	0.9336			
X3			1275		1750					
GR 585.6	0	586.5	200	586.7	400	586.4	600	584.4	800	
GR 583.7	1000	581.2	1200	579.9	1400	579.7	1498	575.0	1500	
GR 575.1	1505	575.1	1510	574.4	1515	574.7	1520	575.2	1525	
GR 575.8	1528	579.5	1530	579.3	1600	580.3	1800	582.0	2000	
GR 582.2	2200	582.9	2400	583.2	2600	583.7	2800	583.6	3000	
NC .025	.025	.090								
X1 2.434	25	1498	1530	50	50	50	0.9336			
X3			1250		1775					
GR 585.6	0	586.5	200	586.7	400	586.4	600	584.4	800	
GR 583.7	1000	581.2	1200	579.9	1400	579.7	1498	575.0	1500	
GR 575.1	1505	575.1	1510	574.37	1515	574.7	1520	575.2	1525	
GR 575.8	1528	579.5	1530	579.3	1600	580.3	1800	582.0	2000	
GR 582.2	2200	582.9	2400	583.2	2600	583.7	2800	583.6	3000	
NC 0.15	0.12	0.06								
X1 2.557	27	1500	1550	725	575	650				
X3			1300		1800					
GR 586.5	0	586.8	200	587.0	400	585.5	600	584.6	800	
GR 584.4	1000	583.4	1200	578.4	1400	578.0	1450	580.5	1490	
GR 578.5	1500	576.9	1503	575.2	1508	574.4	1515	574.0	1520	
GR 574.2	1530	575.4	1540	576.9	1545	578.9	1550	577.8	1600	
GR 579.3	1800	582.8	2000	581.5	2200	582.0	2400	582.6	2600	
GR 583.3	2800	583.5	3000							
NC .08	.08	.065								
OT 4	330	450	500	660						
X1 2.614				300	300	300		0.05		
X3			1300		1800					
NC .08	.08	.07								
OT 4	185	250	270	340						
X1 2.870	19	593	635	1350	1350	1350				
X3			450		750					
GR 586.1	0	584.7	200	580.3	400	579.5	500	581.6	568	
GR 581.7	593	574.4	600	574.29	605	574.29	610	574.6	615	
GR 574.7	620	575.0	625	581.7	635	581.6	660	579.2	700	
GR 579.4	800	581.8	1000	582.7	1200	585.2	1500			
NC .09	.09	.11								
X1 2.878	21	600	625	49	49	49				
X3			450		750					
GR 586.1	0	584.7	200	580.3	400	579.5	500	581.6	568	
GR 581.7	593	574.4	600	574.3	605	574.3	610	574.5	612	
GR 574.6	613	574.7	615	574.7	620	575.0	625	581.7	635	
GR 581.6	660	579.2	700	579.4	800	581.8	1000	582.7	1200	
GR 585.2	1500									
NC .09	.09	.025								
X1 2.879				1	1	1				
X3			450		750					
BT 18	200	584.7	0	400	580.3	0	500	579.5	0	
BT 568	581.6	0	593	581.7	0	600	581.7	574.4	600	
BT 581.7	578.8	612	581.7	578.8	612	581.7	574.5	613	581.7	

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	BT .635	581.7	0	660	581.6	0	700	579.2	0	800	
	BT 579.4	0	1000	581.8	0						
	X1 2.882				13	13	13				
	X2						1				
	X3			450		750					
1	NC .09	.09	.11								
2	X1 2.883				1	1	1				
3	X3			450		750					
4	X1 2.892				49	49	49		-0.03		
5	X3			450		750					
6	NH 9	0.08	1200	0.14	1300	0.070	1352	0.14	1400	0.085	
7	NH 2800	0.15	3023	0.075	3038	0.13	3300	0.12	3500		
8	X1 2.974	63	1300	1352	435	435	435				
9	X3			1050		1350					
10	GR 588.3	0	592.1	200	591.1	400	583.9	600	581.9	800	
11	GR 580.7	1000	579.4	1200	578.1	1300	576.7	1302	575.6	1305	
12	GR 574.6	1310	574.0	1320	574.3	1330	575.3	1340	577.1	1345	
13	GR 581.1	1352	580.6	1400	582.7	1600	588.4	1800	588.3	2000	
14	GR 588.5	2100	588.3	2200	586.9	2300	585.9	2400	584.4	2500	
15	GR 583.4	2600	582.7	2700	581.2	2800	580.4	2900	580.5	3000	
16	GR 579.7	3023	578.7	3027	578.3	3030	578.3	3034	580.5	3038	
17	GR 580.5	3100	580.6	3200	582.5	3300	583.8	3400	584.2	3500	
18	GR 582.1	3600	580.1	3700	579.5	3800	579.5	3827	579.0	3838	
19	GR 578.3	3850	579.2	3872	579.8	3885	579.8	3900	579.8	4000	
20	GR 580.1	4100	583.5	4200	581.8	4300	581.4	4400	581.7	4500	
21	GR 582.1	4600	583.5	4700	583.7	4800	583.8	4900	584.5	5000	
22	GR 584.6	5100	584.7	5200	585.0	5230					
23	NH 8	0.095	1400	0.13	1500	0.081	1552	0.13	1600	0.11	
24	NH 1800	0.14	3338	0.080	3352	0.15	4900				
25	X1 3.429	56	1500	1552	2425	2375	2400				
26	X3			1400		1700					
27	GR 594.2	0	593.3	200	587.6	400	582.9	600	581.7	800	
28	GR 584.3	1000	588.6	1120	586.3	1200	580.6	1400	579.0	1500	
29	GR 577.0	1503	576.4	1505	575.4	1510	575.3	1520	574.7	1530	
30	GR 575.1	1540	576.5	1545	578.5	1552	580.0	1600	583.0	1800	
31	GR 590.4	2000	591.3	2100	591.8	2200	591.6	2300	590.9	2400	
32	GR 590.7	2500	590.5	2600	587.0	2700	582.1	2800	579.8	2860	
33	GR 579.4	2900	579.7	3000	579.5	3100	579.6	3200	579.5	3300	
34	GR 579.7	3338	578.7	3342	578.3	3345	578.7	3349	579.4	3352	
35	GR 579.4	3400	580.0	3500	579.6	3600	579.6	3700	579.5	3800	
36	GR 579.3	3900	579.4	4000	579.6	4100	579.3	4200	579.5	4300	
37	GR 579.5	4400	579.7	4500	581.2	4600	583.7	4700	584.6	4800	
38	GR 586.0	4900									
39	NH 5	0.135	1381	0.091	1420	0.092	2066	0.085	2080	0.15	
40	NH 3362										
41	X1 3.751	35	1500	1540	1600	1800	1700	.921			
42	X3			900		1800					
43	GR 584.3	0	581.7	200	585.5	400	589.3	600	584.4	800	
44	GR 580.6	1000	580.6	1200	580.6	1400	580.6	1455	585.9	1480	
45	GR 578.1	1500	576.3	1503	575.2	1505	574.8	1510	574.3	1520	
46	GR 574.1	1530	577.1	1540	580.0	1547	578.5	1560	579.2	1600	
47	GR 579.0	1800	579.2	2000	579.8	2200	579.9	2243	579.0	2247	
48	GR 578.9	2250	578.7	2254	579.5	2258	579.7	2400	579.5	2600	
49	GR 579.0	2800	579.0	3000	579.5	3200	580.0	3400	585.0	3650	
50	QT 4	330	450	500	660						
51	NH 5	0.09	1381	0.065	1420	0.16	2066	0.150	2080	0.15	
52	NH 3362										
53	X1 3.845	30	1500	1540	500	500	500	0.921			
54	X3			1350		2600					
55	GR 584.3	0	581.7	200	585.5	400	589.3	600	584.4	800	
56	GR 580.6	1000	580.6	1200	580.6	1400	580.6	1455	585.9	1480	
57	GR 578.1	1500	576.3	1503	575.2	1505	574.8	1510	574.3	1520	
	GR 573.9	1530	577.1	1540	583.1	1547	578.5	1560	579.2	1600	
	GR 579.0	1800	579.2	2000	579.8	2200	579.7	2400	579.5	2600	
	GR 579.0	2800	579.0	3000	579.5	3200	580.0	3400	585.0	3650	

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		.016	.03							
X1	3.854	30	1500	1530	49	49	49	0.921		
X3				1350		2600				
GR	587.4	0	586.0	200	587.0	400	587.5	600	585.6	800
GR	582.9	1000	581.7	1200	581.8	1400	582.0	1500	577.1	1500
GR	576.4	1505	575.7	1510	575.0	1515	575.0	1520	575.4	1525
GR	576.4	1527	577.5	1530	581.8	1530	581.7	1600	581.2	1800
GR	581.3	2000	581.3	2200	581.0	2400	580.9	2530	580.9	2600
GR	580.9	2800	581.0	3000	581.5	3200	582.0	3400	585.0	3649
NC	.016	.016	.021							
X1	3.855	30	1500	1530	1	1	1	0.921		
X2									0.921	
X3				1350		2600				
BT	23	0	587.4	0	200	586.0	0	400	587.0	0
BT	600	587.5	0	800	585.6	0	1000	582.9	0	1200
BT	581.7	0	1400	581.8	0	1500	582.0	579.8	1500	582.0
BT	579.8	1530	581.8	579.8	1530	581.8	579.8	1600	581.7	0
BT	1800	581.2	0	2000	581.3	0	2200	581.3	0	2400
BT	581.0	0	2530	580.9	0	2600	580.9	0	2800	580.9
BT	0	3000	581.0	0	3200	581.5	0	3400	582.0	0
GR	587.4	0	586.0	200	587.0	400	587.5	600	585.6	800
GR	582.9	1000	581.7	1200	581.8	1400	582.0	1500	577.1	1500
GR	576.4	1505	575.7	1510	575.0	1515	575.0	1520	575.4	1525
GR	576.4	1527	577.5	1530	581.8	1530	581.7	1600	581.2	1800
GR	581.3	2000	581.3	2200	581.0	2400	580.9	2530	580.9	2600
GR	580.9	2800	581.0	3000	581.5	3200	582.0	3400	585.0	3649
X1	3.860	30	1500	1530	25	25	25	0.921		
X2									0.921	
X3				1350		2600				
BT	23	0	587.4	0	200	586.0	0	400	587.0	0
BT	600	587.5	0	800	585.6	0	1000	582.9	0	1200
BT	581.7	0	1400	581.8	0	1500	582.0	579.8	1500	582.0
BT	579.8	1530	581.8	579.8	1530	581.8	579.8	1600	581.7	0
BT	1800	581.2	0	2000	581.3	0	2200	581.3	0	2400
BT	581.0	0	2530	580.9	0	2600	580.9	0	2800	580.9
BT	0	3000	581.0	0	3200	581.5	0	3400	582.0	0
GR	587.4	0	586.0	200	587.0	400	587.5	600	585.6	800
GR	582.9	1000	581.7	1200	581.8	1400	582.0	1500	577.1	1500
GR	576.4	1505	575.7	1510	575.0	1515	575.0	1520	575.4	1525
GR	576.4	1527	577.5	1530	581.8	1530	581.7	1600	581.2	1800
GR	581.3	2000	581.3	2200	581.0	2400	580.9	2530	580.9	2600
GR	580.9	2800	581.0	3000	581.5	3200	582.0	3400	585.0	3649
NC	.016	.016	.08							
X1	3.861	30	1500	1530	1	1	1	0.921		
X3				1350		2600				
GR	587.4	0	586.0	200	587.0	400	587.5	600	585.6	800
GR	582.9	1000	581.7	1200	581.8	1400	582.0	1500	577.1	1500
GR	576.4	1505	575.7	1510	575.0	1515	575.0	1520	575.4	1525
GR	576.4	1527	577.5	1530	581.8	1530	581.7	1600	581.2	1800
GR	581.3	2000	581.3	2200	581.0	2400	580.9	2530	580.9	2600
GR	580.9	2800	581.0	3000	581.5	3200	582.0	3400	585.0	3649
QT	4	410	590	675	910					
NC	0.15	0.16	0.07							
X1	3.869	30	1500	1530	50	50	50	0.921		
X3				1350		2600				
GR	587.4	0	586.0	200	587.0	400	587.5	600	585.6	800
GR	582.9	1000	581.7	1200	581.8	1400	578.1	1500	577.1	1500
GR	576.4	1505	575.7	1510	574.96	1515	574.96	1520	575.4	1525
GR	576.4	1527	577.5	1530	576.3	1530	581.7	1600	581.2	1800
GR	581.3	2000	581.3	2200	581.0	2400	580.9	2530	580.9	2600
GR	580.9	2800	581.0	3000	581.5	3200	582.0	3400	585.0	3649
NC	0.15	0.14	0.07							
X1	3.992	29	1400	1440	750	300	650			
X3				1200		2650				
GR	593.0	0	586.8	100	581.9	300	583.6	500	585.1	700
GR	582.2	900	584.0	1000	581.0	1100	578.9	1300	578.4	1400

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FORM 1411-GO PRINTED BY ZOTARY MARIFOLD FORMS.

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GR 576.3    1433   581.3   1440   582.3   1447   580.5   1455   578.5   1500
GR 579.4    1700   579.4   1900   579.4   2100   579.3   2145   579.4   2165
GR 579.8    3000   580.0   3200   585.3   3300   590.0   3350
QT     4     330     450     500     660
NC 0.080   0.080   0.065
X1-2.614      27    1500    1550     300     300     300            0.05
X3                          1300            1800
GR 586.5       0   586.8     200   587.0     400   585.5     600   584.6     800
GR 584.4    1000   583.4   1200   578.4   1400   578.0   1450   580.5   1490
GR 578.5    1500   576.9   1503   575.2   1508   574.4   1515   574.0   1520
GR 574.2    1530   575.4   1540   576.9   1545   578.9   1550   577.8   1600
GR 579.3    1800   582.8   2000   581.5   2200   582.0   2400   582.6   2600
GR 583.3    2800   583.5   3000
QT     4     145     200     230     320
NH     9    0.08    1200    0.14    1300   0.070    1352    0.14    1400   0.085
NH  2800    0.15    3023   0.077    3038    0.13    3300    0.12    3500
X1 3.125      63    3023    3038    2400    2800    2700
X3                          2765            3255
GR 588.3       0   592.1     200   591.1     400   583.9     600   581.9     800
GR 580.7    1000   579.4   1200   578.1   1300   576.7   1302   575.6   1305
GR 574.6    1310   574.0   1320   574.3   1330   575.3   1340   577.1   1345
GR 581.1    1352   580.6   1400   582.7   1600   588.4   1800   588.3   2000
GR 588.5    2100   588.3   2200   586.9   2300   585.9   2400   584.4   2500
GR 583.4    2600   582.7   2700   581.2   2800   580.4   2900   580.5   3000
GR 579.7    3023   578.7   3027   578.3   3030   578.3   3034   580.5   3038
GR 580.5    3100   580.6   3200   582.5   3300   583.8   3400   584.2   3500
GR 582.1    3600   580.1   3700   579.5   3800   579.5   3827   579.0   3838
GR 578.3    3850   579.2   3872   579.8   3885   579.8   3900   579.8   4000
GR 580.1    4100   583.5   4200   581.8   4300   581.4   4400   581.7   4500
GR 582.1    4600   583.5   4700   583.7   4800   583.8   4900   584.5   5000
GR 584.6    5100   584.7   5200   585.0   5230
NH     8   0.085    1400    0.14    1500   0.075    1552    0.15    1600    0.11
NH  1800    0.14    3338   0.077    3352    0.15    4900
X1 3.580      56    3338    3352    2400    2400    2400
X3                          3100            4350
GR 594.2       0   593.3     200   587.6     400   582.9     600   581.7     800
GR 584.3    1000   588.6   1120   586.3   1200   580.6   1400   579.0   1500
GR 577.0    1503   576.4   1505   575.4   1510   575.3   1520   574.7   1530
GR 575.1    1540   576.5   1545   578.5   1552   580.0   1600   583.0   1800
GR 590.4    2000   591.3   2100   591.8   2200   591.6   2300   590.9   2400
GR 590.7    2500   590.5   2600   587.0   2700   582.1   2800   579.8   2860
GR 579.4    2900   579.7   3000   579.5   3100   579.6   3200   579.5   3300
GR 579.7    3338   578.7   3342   578.3   3345   578.7   3349   579.4   3352
GR 579.4    3400   580.0   3500   579.6   3600   579.6   3700   579.5   3800
GR 579.3    3900   579.4   4000   579.6   4100   579.3   4200   579.5   4300
GR 579.5    4400   579.7   4500   581.2   4600   583.7   4700   584.6   4800
GR 586.0    4900
NH     5    0.15    1381   0.080    1420    0.15    2066   0.077    2080    0.15
NH  3362
X1 4.025      35    2243    2258    2100    2500    2350    .921
X3                          1950            3000
GR 584.3       0   581.7     200   585.5     400   589.3     600   584.4     800
GR 580.6    1000   580.6   1200   580.6   1400   580.6   1455   585.9   1480
GR 578.1    1500   576.3   1503   575.2   1505   574.8   1510   574.3   1520
GR 574.1    1530   577.1   1540   583.1   1547   578.5   1560   579.2   1600
GR 579.0    1800   579.2   2000   579.8   2200   579.7   2243   579.0   2247
GR 578.9    2250   578.7   2254   579.5   2258   579.7   2400   579.5   2600
GR 579.0    2800   579.0   3000   579.5   3200   580.0   3400   585.0   3650
EJ
T1      MARINE CITY DRAIN, COTTRELLVILLE TOWNSHIP  5555-13  PM: GILBERTO M. FONT
T2      50 YEAR FLOW
T3      MARINE CITY DRAIN
J1          3                                                  576.62
J2      2          -1
T1      MARINE CITY DRAIN, COTTRELLVILLE TOWNSHIP  5555-13  PM: GILBERTO M. FONT
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FORM 1411-D PRINTED BY ROTARY MANIFOLD FORMS. PRINTED IN U.S.A.

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T3      MARINE CITY DRAIN
J1              4                                                  576.62
J2     3                -1
T1      MARINE CITY DRAIN, COTTRELLVILLE TOWNSHIP  5555-13  PM: GILBERTO M. FONT
T2      500 YEAR FLOW
T3      MARINE CITY DRAIN
J1              5                                                  576.62
J2    15                -1
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PRINTED IN U.S.A.
FORM 1411 OR PRINTED BY ROTARY MANIFOLD FORMS

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**********************************************
  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
**********************************************

C
T1       MARINE CITY DRAIN, COTTRELLVILLE TOWNSHIP  5555-13  PM: GILBERTO M. FONT
T2       10 YEAR FLOW
T3       MARINE CITY DRAIN

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.        2.        0.        0.  0.000000      0.00      0.0       0.   576.620     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    39.000    40.000    41.000    42.000    43.000     1.000    10.000    11.000    12.000

      14.000     8.000     4.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

NC      .070      .070      .040      .300      .500     0.000     0.000     0.000     0.000     0.000
OT     4.000   385.000   530.000   600.000   785.000     0.000     0.000     0.000     0.000     0.000

                    MOUTH OF MARINE CITY DRAIN, MANUFACTURED SEC.

X1     0.000    27.000  1480.000  1550.000     0.000     0.000     0.000     0.000     0.000     0.000
X3     0.000     0.000     0.000  1497.000   577.000  1533.000   577.000     0.000     0.000     0.000
GR   579.000     0.000   579.600   200.000   579.500   400.000   579.500   600.000   579.500  1000.000
GR   579.300  1200.000   579.000  1400.000   578.500  1450.000   578.000  1460.000   577.000  1480.000
GR   571.600  1500.000   571.400  1505.000   571.400  1510.000   571.700  1515.000   571.900  1520.000
GR   571.900  1525.000   572.100  1530.000   574.500  1540.000   577.000  1550.000   577.500  1590.000
GR   579.000  1600.000   578.100  1800.000   578.500  2000.000   578.500  2200.000   578.500  2400.000
GR   578.500  2600.000   578.500  3000.000     0.000     0.000     0.000     0.000     0.000     0.000
NC      .070      .070      .043     0.000     0.000     0.000     0.000     0.000     0.000     0.000

X1      .003    24.000  1500.000  1530.000    19.000    19.000    19.000     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   579.700     0.000   580.300   200.000   580.300   400.000   580.300   600.000   581.700  1000.000
GR   580.900  1200.000   580.300  1400.000   581.500  1500.000   571.600  1500.000   571.400  1505.000
GR   571.400  1510.000   571.700  1515.000   571.900  1520.000   571.900  1525.000   572.100  1530.000
GR   581.500  1530.000   581.200  1600.000   580.200  1800.000   579.800  2000.000   579.600  2200.000
GR   579.200  2400.000   579.200  2600.000   579.600  2800.000   579.800  3000.000     0.000     0.000

                          D/S FACE M-29 BRIDGE

X1      .004     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     0.000     0.000     0.000
BT    11.000   600.000   580.300     0.000   800.000   580.300     0.000  1000.000   581.700     0.000
BT  1400.000   580.300     0.000  1500.000   581.500   578.500  1530.000   581.500   578.500  1600.000
BT   581.200     0.000  1800.000   580.200     0.000  2000.000   579.800     0.000  2200.000   579.600
BT     0.000  2400.000   579.200     0.000     0.000     0.000     0.000     0.000     0.000     0.000
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X1	.015	0.000	0.000	0.000	58.000	58.000	58.000	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	0.000	0.000	0.000
X1	.016	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	0.000	0.000	0.000
NC	.080	.080	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

B. 50 FT U/S M-29 BRIDGE

X1	.024	24.000	1500.000	1560.000	49.000	49.000	49.000	0.000	0.000	0.000
GR	579.000	0.000	581.600	200.000	580.900	400.000	581.300	600.000	580.700	800.000
GR	582.300	1000.000	581.400	1200.000	580.300	1400.000	580.000	1500.000	578.200	1510.000
GR	573.200	1510.000	572.700	1520.000	573.000	1530.000	572.400	1547.000	578.900	1547.000
GR	580.800	1560.000	581.000	1600.000	579.800	1800.000	580.400	2000.000	580.500	2200.000
GR	579.800	2400.000	579.500	2600.000	579.600	2800.000	579.400	3000.000	0.000	0.000
NC	.100	.100	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

DUPLICATED FROM SEC. B

X1	.037	29.000	1500.000	1560.000	69.000	69.000	69.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	580.100	580.100	0.000
GR	579.100	0.000	581.700	200.000	581.000	400.000	581.400	600.000	580.800	800.000
GR	582.400	1000.000	581.500	1200.000	580.400	1400.000	580.100	1500.000	578.300	1510.000
GR	573.300	1510.500	572.800	1520.000	573.100	1530.000	572.800	1540.000	572.340	1547.000
GR	573.400	1550.000	574.500	1552.000	577.000	1554.000	578.000	1556.000	579.000	1558.000
GR	580.200	1560.000	581.000	1600.000	579.800	1800.000	580.400	2000.000	580.500	2200.000
GR	579.900	2400.000	579.600	2600.000	579.900	2800.000	579.500	3000.000	0.000	0.000

D/S FACE PRIVATE WOOD FOOTBRIDGE

X1	.038	43.000	1500.000	1560.000	1.000	1.000	1.000	0.000	0.000	0.000
BT	10.000	1500.000	580.100	579.600	1519.500	580.300	579.800	1520.000	580.300	579.800
BT	1529.500	580.800	580.300	1530.000	580.800	580.300	1539.500	580.300	579.800	1540.000
BT	580.300	579.800	1549.500	580.300	579.800	1550.000	580.300	579.800	1560.000	580.200
BT	579.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	579.100	0.000	581.700	200.000	581.000	400.000	581.400	600.000	580.800	800.000
GR	582.400	1000.000	581.500	1200.000	580.400	1400.000	580.100	1500.000	579.600	1500.000
GR	578.300	1510.000	573.300	1510.500	572.800	1519.500	579.800	1519.500	579.800	1520.000
GR	572.800	1520.000	573.100	1529.500	580.300	1529.500	580.300	1530.000	573.100	1530.000
GR	572.800	1539.500	579.800	1539.500	579.800	1540.000	572.800	1540.000	572.340	1547.000
GR	573.400	1549.500	579.800	1549.500	579.800	1550.000	573.400	1550.000	574.500	1552.000
GR	577.000	1554.000	578.000	1556.000	579.000	1558.000	579.700	1560.000	580.200	1560.000
GR	581.000	1600.000	579.800	1800.000	580.400	2000.000	580.500	2200.000	579.900	2400.000
GR	579.600	2600.000	579.900	2800.000	579.500	3000.000	0.000	0.000	0.000	0.000

B@ U/S FACE, PRIVATE WOOD FOOTBRIDGE

X1	.038	0.000	0.000	0.000	4.000	4.000	4.000	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
X1	.039	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	580.100	580.100	0.000

DUPLICATED FROM SEC. B

X1	.048	29.000	1500.000	1560.000	49.000	49.000	49.000	0.000	.100	0.000

	579.100	0.000	581.100	200.000	581.000	.000	581.00	.000	.000	.000
GR	582.400	1000.000	581.500	1200.000	580.400	1400.000	580.100	1500.000	578.300	1510.000
GR	573.300	1510.500	572.800	1520.000	573.100	1530.000	572.800	1540.000	572.200	1547.000
GR	573.400	1550.000	574.500	1552.000	577.000	1554.000	578.000	1556.000	579.000	1558.000
GR	580.200	1560.000	581.000	1600.000	579.800	1800.000	580.400	2000.000	580.500	2200.000
GR	579.900	2400.000	579.600	2600.000	579.900	2800.000	579.500	3000.000	0.000	0.000
				700 FT U/S M-29 BRIDGE, MANUFACTURED FROM SEC. C						
X1	.147	34.000	1177.000	1230.000	576.000	526.000	526.000	1.132	.550	0.000
X3	0.000	0.000	0.000	778.000	0.000	1321.000	0.000	0.000	0.000	0.000
GR	578.500	0.000	578.500	120.000	577.200	220.000	577.700	320.000	577.400	420.000
GR	577.200	520.000	577.200	620.000	577.200	720.000	577.200	820.000	576.700	920.000
GR	576.400	1020.000	575.700	1120.000	576.300	1177.000	574.100	1185.000	572.500	1190.000
GR	571.500	1198.000	571.300	1202.000	571.300	1210.000	572.300	1219.000	574.100	1223.000
GR	575.800	1230.000	576.300	1245.000	576.500	1260.000	577.100	1320.000	577.500	1325.000
GR	577.300	1370.000	576.800	1420.000	577.000	1720.000	577.000	1920.000	577.000	2120.000
GR	577.700	2320.000	578.500	2520.000	579.200	2720.000	580.000	2920.000	0.000	0.000
NC	.100	.100	.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000
				1150 FT U/S M-29 BRIDGE, MANUFACTURED FROM SEC. C						
X1	.233	33.000	1177.000	1220.000	350.000	450.000	450.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	727.000	0.000	1220.000	0.000	0.000	0.000	0.000
GR	578.500	0.000	578.500	120.000	577.200	220.000	577.700	320.000	577.400	420.000
GR	577.200	520.000	577.200	820.000	576.700	920.000	576.400	1020.000	575.700	1120.000
GR	576.300	1177.000	574.100	1185.000	572.500	1190.000	572.400	1198.000	571.470	1202.000
GR	571.470	1202.000	572.500	1207.000	574.300	1215.000	577.700	1220.000	577.900	1245.000
GR	578.100	1260.000	578.200	1320.000	578.500	1325.000	578.300	1370.000	577.800	1420.000
GR	577.600	1720.000	577.300	1920.000	577.000	2120.000	577.700	2320.000	578.500	2320.000
GR	578.500	2520.000	579.200	2720.000	580.000	2920.000	0.000	0.000	0.000	0.000
NC	.110	.160	.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	C		1350 FT U/S M-29 BRIDGE							
X1	.270	35.000	1177.000	1220.000	200.000	200.000	200.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	667.000	0.000	1220.000	0.000	0.000	0.000	0.000
GR	578.500	0.000	578.500	120.000	577.200	220.000	577.700	320.000	577.400	420.000
GR	577.200	520.000	577.200	620.000	577.200	720.000	577.200	820.000	576.700	920.000
GR	576.400	1020.000	575.700	1120.000	576.300	1177.000	574.100	1185.000	572.500	1190.000
GR	571.500	1198.000	577.500	1198.000	577.500	1202.000	571.300	1202.000	571.300	1210.000
GR	572.300	1219.000	578.700	1220.000	577.700	1245.000	576.100	1260.000	577.100	1320.000
GR	577.500	1325.000	577.300	1370.000	576.800	1420.000	577.000	1720.000	577.000	1920.000
GR	577.000	2120.000	577.700	2320.000	578.500	2520.000	579.200	2720.000	580.000	2920.000
NC	.090	.120	.060	0.000	0.000	0.000	0.000	0.000	0.000	0.000
				2350 FT U/S M-29 BRIDGE, DUPLICATED FROM SEC. D						
X1	.460	36.000	1192.000	1242.000	1000.000	1000.000	1000.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	780.000	0.000	1742.000	0.000	0.000	0.000	0.000
GR	580.000	0.000	578.500	120.000	577.200	220.000	577.700	320.000	577.400	420.000
GR	577.200	520.000	577.200	620.000	577.200	720.000	577.200	820.000	576.700	920.000
GR	576.400	1020.000	575.700	1120.000	576.300	1177.000	576.900	1187.000	577.200	1192.000
GR	574.500	1197.000	573.700	1202.000	572.110	1212.000	573.400	1222.000	574.500	1232.000
GR	575.300	1237.000	577.200	1242.000	577.500	1245.000	577.700	1255.000	577.700	1280.000
GR	577.100	1320.000	577.500	1325.000	577.300	1370.000	576.800	1420.000	577.000	1720.000
GR	577.000	1920.000	577.000	2120.000	577.700	2320.000	578.500	2520.000	579.200	2720.000
GR	580.000	3000.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.150	.150	.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	4.000	380.000	520.000	585.000	780.000	0.000	0.000	0.000	0.000	0.000

FORM 1411.00 PRINTED BY ROTARY MANIFOLD FORMS

X1	.715	36.000	1192.000	1242.000	1349.000	1349.000	1349.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1060.000	0.000	1588.000	0.000	0.000	0.000	0.000
GR	580.000	0.000	578.500	120.000	577.200	220.000	577.700	320.000	577.400	420.000
GR	577.200	520.000	577.200	620.000	577.200	720.000	577.200	820.000	576.700	920.000
GR	576.400	1020.000	575.700	1120.000	576.300	1177.000	579.300	1187.000	577.200	1192.000
GR	574.500	1197.000	573.700	1202.000	573.200	1212.000	573.400	1222.000	574.500	1232.000
GR	575.300	1237.000	577.200	1242.000	579.300	1245.000	578.700	1255.000	577.700	1280.000
GR	577.100	1320.000	577.500	1325.000	577.300	1370.000	576.800	1420.000	577.000	1720.000
GR	577.000	1920.000	577.000	2120.000	577.700	2320.000	578.500	2520.000	579.200	2720.000
GR	580.000	3300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.160	.160	.060	0.000	0.000	0.000	0.000	0.000	0.000	0.000

E 5350 FT U/S M-29 BRIDGE

X1	1.123	31.000	800.000	345.000	2150.000	2150.000	2150.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	1375.000	0.000	0.000	0.000	0.000
GR	586.900	0.000	585.900	100.000	584.100	300.000	578.300	500.000	577.600	600.000
GR	577.200	700.000	577.800	774.000	582.300	790.000	580.300	798.000	577.200	800.000
GR	575.300	805.000	574.300	810.000	573.600	820.000	573.500	830.000	574.600	840.000
GR	577.200	845.000	579.200	847.000	581.100	857.000	577.700	873.000	577.800	900.000
GR	578.200	1100.000	578.300	1300.000	578.500	1500.000	579.000	1700.000	579.000	1900.000
GR	578.900	2100.000	577.500	2300.000	577.500	2500.000	578.300	2700.000	579.200	2900.000
GR	580.000	3000.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.170	.160	.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000

7350 FT U/S M-29 BRIDGE, MANUFACTURED SEC.

X1	1.501	23.000	800.000	845.000	1975.000	2025.000	2000.000	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
GR	582.000	0.000	580.000	200.000	579.000	250.000	578.300	500.000	577.600	600.000
GR	577.200	700.000	577.800	774.000	582.300	790.000	580.300	798.000	577.200	800.000
GR	575.300	805.000	574.300	810.000	573.750	820.000	573.750	830.000	574.600	840.000
GR	577.200	845.000	579.200	847.000	581.100	857.000	577.700	873.000	577.800	900.000
GR	578.200	1100.000	580.000	1200.000	585.000	1850.000	0.000	0.000	0.000	0.000

50 FT D/S WOOD FOOTBRIDGE IN STATE PARK, DUPLICATED

FROM SEC. F

X1	1.870	26.000	1400.000	1465.000	1900.000	2000.000	1950.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1099.000	0.000	1901.000	0.000	0.000	0.000	0.000
GR	582.000	0.000	581.500	200.000	581.000	400.000	581.000	600.000	580.500	800.000
GR	580.400	1000.000	580.500	1100.000	579.500	1200.000	578.600	1300.000	578.500	1350.000
GR	578.400	1400.000	576.800	1410.000	575.100	1420.000	574.000	1430.000	574.000	1432.500
GR	574.100	1440.000	575.300	1450.000	577.700	1460.000	578.400	1465.000	577.600	1500.000
GR	577.700	1600.000	578.600	1700.000	580.400	1900.000	582.500	2100.000	584.000	2300.000
GR	585.500	2600.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.170	.170	.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D/S FACE WOOD FOOTBRIDGE IN STATE PARK

X1	1.880	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	1099.000	0.000	1901.000	0.000	0.000	0.000	0.000
SB	.900	1.725	3.090	0.000	16.800	.010	266.000	3.710	574.000	574.000

F U/S FACE WOOD FOOTBRIDGE IN STATE PARK

X1	1.882	0.000	0.000	0.000	8.000	8.000	8.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	580.500	577.600	0.000	0.000	0.000	0.000	0.000

PRINTED IN U.S.A.
FORM 1411-UU PRINTED BY ROTARY MANIFOLD FORMS

	0.000	0.000	0.000	10?.000	0.000	1?01.000	0.000	0.000	0.000	0. 00
BT	18.000	1100.000	580.500	0.000	1200.000	579.500	0.000	1300.000	578.600	0.000
BT	1350.000	578.500	0.000	1400.000	581.200	578.400	1400.000	581.200	578.700	1410.000
BT	582.200	579.600	1420.000	582.300	580.300	1432.500	583.000	580.500	1440.000	582.900
BT	580.400	1450.000	582.500	580.000	1460.000	581.700	579.200	1465.000	581.200	578.700
BT	1465.000	581.200	578.400	1500.000	577.600	0.000	1600.000	577.700	0.000	1700.000
BT	578.600	0.000	1900.000	580.400	0.000	0.000	0.000	0.000	0.000	0.000

50 FT U/S WOOD FOOTBRIDGE IN STATE PARK, REPEATED SEC.

OF F.

X1	1.891	0.000	0.000	0.000	50.000	50.000	50.000	0.000	.010	0.000
X3	0.000	0.000	0.000	1099.000	0.000	1901.000	0.000	0.000	0.000	0.000
NC	.160	.170	.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000

G 1150 FT U/S WOOD FOOTBRIDGE IN STATE PARK

X1	2.100	27.000	1500.000	1550.000	1100.000	1100.000	1100.000	0.000	0.000	0.000
GR	584.200	0.000	585.200	200.000	585.600	400.000	585.600	600.000	584.600	800.000
GR	582.900	1000.000	580.100	1200.000	578.700	1400.000	578.600	1500.000	576.700	1503.000
GR	575.300	1505.000	575.000	1510.000	574.300	1520.000	574.400	1530.000	574.400	1535.000
GR	575.300	1540.000	575.300	1545.000	578.400	1550.000	579.900	1560.000	577.400	1570.000
GR	577.600	1700.000	581.000	1900.000	584.300	2100.000	586.300	2300.000	586.800	2500.000
GR	586.400	2700.000	586.700	2800.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.160	.160	.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000

H 50 FT D/S ROBERT RD. BRIDGE, 21 DEGREES SKEW

X1	2.412	28.000	1500.000	1555.000	1550.000	1750.000	1650.000	.934	0.000	0.000
X3	0.000	0.000	0.000	1250.000	0.000	1775.000	0.000	0.000	0.000	0.000
GR	586.000	0.000	586.800	200.000	586.400	400.000	586.700	600.000	584.700	800.000
GR	584.200	1000.000	581.300	1200.000	578.400	1400.000	579.600	1500.000	578.300	1503.000
GR	576.600	1505.000	575.300	1510.000	574.100	1520.000	574.100	1530.000	574.900	1540.000
GR	575.200	1550.000	576.300	1553.000	578.100	1555.000	580.200	1560.000	578.700	1580.000
GR	578.100	1600.000	579.500	1800.000	581.100	2000.000	581.800	2200.000	582.400	2400.000
GR	582.700	2600.000	582.900	2800.000	582.800	3000.000	0.000	0.000	0.000	0.000
QT	4.000	375.000	520.000	580.000	770.000	0.000	0.000	0.000	0.000	0.000
NC	.032	.031	.090	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	2.421	25.000	1498.000	1530.000	50.000	50.000	50.000	.934	0.000	0.000
X3	0.000	0.000	0.000	1275.000	0.000	1750.000	0.000	0.000	0.000	0.000
GR	585.600	0.000	586.500	200.000	586.700	400.000	586.400	600.000	584.400	800.000
GR	583.700	1000.000	581.200	1200.000	579.900	1400.000	579.700	1498.000	575.000	1500.000
GR	575.100	1505.000	575.100	1510.000	574.400	1515.000	574.700	1520.000	575.200	1525.000
GR	575.800	1528.000	579.500	1530.000	579.300	1600.000	580.300	1800.000	582.000	2000.000
GR	582.200	2200.000	582.900	2400.000	583.200	2600.000	583.700	2800.000	583.600	3000.000
NC	.025	.025	.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D/S FACE ROBERT RD. BRIDGE, 21 DEGREES SKEW

X1	2.422	27.000	1498.000	1530.000	1.000	1.000	1.000	.934	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	.934	0.000
X3	0.000	0.000	0.000	1275.000	0.000	1750.000	0.000	0.000	0.000	0.000
BT	19.000	0.000	585.600	0.000	200.000	586.500	0.000	400.000	586.700	0.000
BT	600.000	586.400	0.000	800.000	584.400	0.000	1000.000	583.700	0.000	1200.000
BT	581.200	0.000	1400.000	579.900	0.000	1498.000	579.700	0.000	1498.000	579.700
BT	578.200	1530.000	579.500	578.200	1530.000	579.500	0.000	1600.000	579.300	0.000
BT	1800.000	580.300	0.000	2000.000	582.000	0.000	2200.000	582.200	0.000	2400.000
BT	582.900	0.000	2600.000	583.200	0.000	2800.000	583.700	0.000	0.000	0.000
GR	585.600	0.000	586.500	200.000	586.700	400.000	586.400	600.000	584.400	800.000

FORM 1611.02 PRINTED BY ROTARY MANIFOLD FORMS.

GR	575.000	1500.000	575.100	1505.000	575.100	1510.000	574.400	1515.000	574.700	1520.000
GR	575.200	1525.000	575.800	1528.000	578.200	1530.000	579.500	1530.000	579.300	1600.000
GR	580.300	1800.000	582.000	2000.000	582.200	2200.000	582.900	2400.000	583.200	2600.000
GR	583.700	2800.000	583.600	3000.000	0.000	0.000	0.000	0.000	0.000	0.000
	I		U/S FACE ROBERT RD. BRIDGE, 21 DEGREES SKEW							
X1	2.425	27.000	1498.000	1530.000	16.000	16.000	16.000	.934	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	.934	0.000
X3	0.000	0.000	0.000	1275.000	0.000	1750.000	0.000	0.000	0.000	0.000
BT	19.000	0.000	585.600	0.000	200.000	586.500	0.000	400.000	586.700	0.000
BT	600.000	586.400	0.000	800.000	584.400	0.000	1000.000	583.700	0.000	1200.000
BT	581.200	0.000	1400.000	579.900	0.000	1498.000	579.700	0.000	1498.000	579.700
BT	578.200	1530.000	579.500	578.200	1530.000	579.500	0.000	1600.000	579.300	0.000
BT	1800.000	580.300	0.000	2000.000	582.000	0.000	2200.000	582.200	0.000	2400.000
BT	582.900	0.000	2600.000	583.200	0.000	2800.000	583.700	0.000	0.000	0.000
GR	585.600	0.000	586.500	200.000	586.700	400.000	586.400	600.000	584.400	800.000
GR	583.700	1000.000	581.200	1200.000	579.900	1400.000	579.700	1498.000	578.200	1500.000
GR	575.000	1500.000	575.100	1505.000	575.100	1510.000	574.400	1515.000	574.700	1520.000
GR	575.200	1525.000	575.800	1528.000	578.200	1530.000	579.500	1530.000	579.300	1600.000
GR	580.300	1800.000	582.000	2000.000	582.200	2200.000	582.900	2400.000	583.200	2600.000
GR	583.700	2800.000	583.600	3000.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.032	.031	.090	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	2.426	25.000	1498.000	1530.000	1.000	1.000	1.000	.934	0.000	0.000
X3	0.000	0.000	0.000	1275.000	0.000	1750.000	0.000	0.000	0.000	0.000
GR	585.600	0.000	586.500	200.000	586.700	400.000	586.400	600.000	584.400	800.000
GR	583.700	1000.000	581.200	1200.000	579.900	1400.000	579.700	1498.000	575.000	1500.000
GR	575.100	1505.000	575.100	1510.000	574.400	1515.000	574.700	1520.000	575.200	1525.000
GR	575.800	1528.000	579.500	1530.000	579.300	1600.000	580.300	1800.000	582.000	2000.000
GR	582.200	2200.000	582.900	2400.000	583.200	2600.000	583.700	2800.000	583.600	3000.000
NC	.025	.025	.090	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		50 FT U/S ROBERT RD. BRIDG, 21 DEGREES SKEW, REPEATED								
		SEC.								
X1	2.434	25.000	1498.000	1530.000	50.000	50.000	50.000	.934	0.000	0.000
X3	0.000	0.000	0.000	1250.000	0.000	1775.000	0.000	0.000	0.000	0.000
GR	585.600	0.000	586.500	200.000	586.700	400.000	586.400	600.000	584.400	800.000
GR	583.700	1000.000	581.200	1200.000	579.900	1400.000	579.700	1498.000	575.000	1500.000
GR	575.100	1505.000	575.100	1510.000	574.370	1515.000	574.700	1520.000	575.200	1525.000
GR	575.800	1528.000	579.500	1530.000	579.300	1600.000	580.300	1800.000	582.000	2000.000
GR	582.200	2200.000	582.900	2400.000	583.200	2600.000	583.700	2800.000	583.600	3000.000
NC	.150	.120	.060	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	J	700 FT U/S ROBERT RD. BRIDGE								
X1	2.557	27.000	1500.000	1550.000	725.000	575.000	650.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1300.000	0.000	1800.000	0.000	0.000	0.000	0.000
GR	586.500	0.000	586.800	200.000	587.000	400.000	585.500	600.000	584.600	800.000
GR	584.400	1000.000	583.400	1200.000	578.400	1400.000	578.000	1450.000	580.500	1490.000
GR	578.500	1500.000	576.900	1503.000	575.200	1508.000	574.400	1515.000	574.000	1520.000
GR	574.200	1530.000	575.400	1540.000	576.900	1545.000	578.900	1550.000	577.800	1600.000
GR	579.300	1800.000	582.800	2000.000	581.500	2200.000	582.000	2400.000	582.600	2600.000
GR	583.300	2800.000	583.500	3000.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.080	.080	.065	0.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	4.000	330.000	450.000	500.000	660.000	0.000	0.000	0.000	0.000	0.000

1000 FT U/S ROBERT RD. BRIDGE, AT THE CONFLUENCE

PRINTED IN U.S.A.
FORM 2411 DIGITIZED BY ROTARY MANIFOLD FORMS

MANUFACTURED FROM SEC. J

X1	2.614	0.000	0.000	0.000	300.000	300.000	300.000	0.000	.050	0.000
X3	0.000	0.000	0.000	1300.000	0.000	1800.000	0.000	0.000	0.000	0.000
NC	.080	.080	.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	4.000	185.000	250.000	270.000	340.000	0.000	0.000	0.000	0.000	0.000

50 FT D/S PRIVATE BRIDGE, DUPLICATED FROM SEC. J@

X1	2.870	19.000	593.000	635.000	1350.000	1350.000	1350.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	450.000	0.000	750.000	0.000	0.000	0.000	0.000
GR	586.100	0.000	584.700	200.000	580.300	400.000	579.500	500.000	581.600	568.000
GR	581.700	593.000	574.400	600.000	574.290	605.000	574.290	610.000	574.600	615.000
GR	574.700	620.000	575.000	625.000	581.700	635.000	581.600	660.000	579.200	700.000
GR	579.400	800.000	581.800	1000.000	582.700	1200.000	585.200	1500.000	0.000	0.000
NC	.090	.090	.110	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	2.878	21.000	600.000	625.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	450.000	0.000	750.000	0.000	0.000	0.000	0.000
GR	586.100	0.000	584.700	200.000	580.300	400.000	579.500	500.000	581.600	568.000
GR	581.700	593.000	574.400	600.000	574.300	605.000	574.300	610.000	574.500	612.000
GR	574.600	613.000	574.700	615.000	574.700	620.000	575.000	625.000	581.700	635.000
GR	581.600	660.000	579.200	700.000	579.400	800.000	581.800	1000.000	582.700	1200.000
GR	585.200	1500.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.090	.090	.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D/S FACE, PRIVATE BRIDGE

X1	2.879	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	450.000	0.000	750.000	0.000	0.000	0.000	0.000
BT	18.000	200.000	584.700	0.000	400.000	580.300	0.000	500.000	579.500	0.000
BT	568.000	581.600	0.000	593.000	581.700	0.000	600.000	581.700	574.400	600.000
BT	581.700	578.800	612.000	581.700	578.800	612.000	581.700	574.500	613.000	581.700
BT	574.600	613.000	581.700	578.800	625.000	581.700	578.800	625.000	581.700	575.000
BT	635.000	581.700	0.000	660.000	581.600	0.000	700.000	579.200	0.000	800.000
BT	579.400	0.000	1000.000	581.800	0.000	0.000	0.000	0.000	0.000	0.000

J@ U/S FACE, PRIVATE BRIDGE

X1	2.882	0.000	0.000	0.000	13.000	13.000	13.000	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	450.000	0.000	750.000	0.000	0.000	0.000	0.000
NC	.090	.090	.110	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	2.883	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	450.000	0.000	750.000	0.000	0.000	0.000	0.000

50 FT U/S PRIVATE BRIDGE, REPEATED SEC.

X1	2.892	0.000	0.000	0.000	49.000	49.000	49.000	0.000	-.030	0.000
X3	0.000	0.000	0.000	450.000	0.000	750.000	0.000	0.000	0.000	0.000
NH	9.000	.080	1200.000	.140	1300.000	.070	1352.000	.140	1400.000	.085
NH	2800.000	.150	3023.000	.075	3038.000	.130	3300.000	.120	3500.000	0.000

K 2900 FT U/S ROBERT RD. BRIDGE.

X1	2.974	63.000	1300.000	1352.000	435.000	435.000	435.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1050.000	0.000	1350.000	0.000	0.000	0.000	0.000

PRINTED IN U.S.A.
FORM 1411-63 PUNCHED BY ROTATY MANIFOLD PUNCHING.

	GR	580.700	1000.000	579.400	1200.000	578.100	1300.000	576.700	1302.000	575.600	1305.000
	GR	574.600	1310.000	574.000	1320.000	574.300	1330.000	575.300	1340.000	577.100	1345.000
	GR	581.100	1352.000	580.600	1400.000	582.700	1600.000	588.400	1800.000	588.300	2000.000
	GR	588.500	2100.000	588.300	2200.000	586.900	2300.000	585.900	2400.000	584.400	2500.000
	GR	583.400	2600.000	582.700	2700.000	581.200	2800.000	580.400	2900.000	580.500	3000.000
1	GR	579.700	3023.000	578.700	3027.000	578.300	3030.000	578.300	3034.000	580.500	3038.000
2	GR	580.500	3100.000	580.600	3200.000	582.500	3300.000	583.800	3400.000	584.200	3500.000
3	GR	582.100	3600.000	580.100	3700.000	579.500	3800.000	579.500	3827.000	579.000	3838.000
4	GR	578.300	3850.000	579.200	3872.000	579.800	3885.000	579.800	3900.000	579.800	4000.000
5	GR	580.100	4100.000	583.500	4200.000	581.800	4300.000	581.400	4400.000	581.700	4500.000
6	GR	582.100	4600.000	583.500	4700.000	583.700	4800.000	583.800	4900.000	584.500	5000.000
7	GR	584.600	5100.000	584.700	5200.000	585.000	5230.000	0.000	0.000	0.000	0.000
8	NH	8.000	.095	1400.000	.130	1500.000	.081	1552.000	.130	1600.000	.110
9	NH	1800.000	.140	3338.000	.080	3352.000	.150	4900.000	0.000	0.000	0.000
10											
11											
12			L	5300 FT U/S ROBERT RD. BRIDGE							
13											
14	X1	3.429	56.000	1500.000	1552.000	2425.000	2375.000	2400.000	0.000	0.000	0.000
15	X3	0.000	0.000	0.000	1400.000	0.000	1700.000	0.000	0.000	0.000	0.000
16	GR	594.200	0.000	593.300	200.000	587.600	400.000	582.900	600.000	581.700	800.000
17	GR	584.300	1000.000	588.600	1120.000	586.300	1200.000	580.600	1400.000	579.000	1500.000
18	GR	577.000	1503.000	576.400	1505.000	575.400	1510.000	575.300	1520.000	574.700	1530.000
19	GR	575.100	1540.000	576.500	1545.000	578.500	1552.000	580.000	1600.000	583.000	1800.000
20	GR	590.400	2000.000	591.300	2100.000	591.800	2200.000	591.600	2300.000	590.900	2400.000
21	GR	590.700	2500.000	590.500	2600.000	587.000	2700.000	582.100	2800.000	579.800	2860.000
22	GR	579.400	2900.000	579.700	3000.000	579.500	3100.000	579.600	3200.000	579.500	3300.000
23	GR	579.700	3338.000	578.700	3342.000	578.300	3345.000	578.700	3349.000	579.400	3352.000
24	GR	579.400	3400.000	580.000	3500.000	579.600	3600.000	579.600	3700.000	579.500	3800.000
25	GR	579.300	3900.000	579.400	4000.000	579.600	4100.000	579.300	4200.000	579.500	4300.000
26	GR	579.500	4400.000	579.700	4500.000	581.200	4600.000	583.700	4700.000	584.600	4800.000
27	GR	586.000	4900.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
28	NH	5.000	.135	1381.000	.091	1420.000	.092	2066.000	.085	2080.000	.150
29	NH	3362.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30											
31											
32				END OF ISLAND PROBLEM							
33											
				U/S CONFLUENCE, DUPLICATED FROM SEC. M, SKEWED							
35											
36	X1	3.751	35.000	1500.000	1540.000	1600.000	1300.000	1700.000	.921	0.000	0.000
37	X3	0.000	0.000	0.000	900.000	0.000	1300.000	0.000	0.000	0.000	0.000
38	GR	584.300	0.000	581.700	200.000	585.500	400.000	589.300	600.000	584.400	800.000
39	GR	580.600	1000.000	580.600	1200.000	580.600	1400.000	580.600	1455.000	585.900	1480.000
40	GR	578.100	1500.000	576.300	1503.000	575.200	1505.000	574.800	1510.000	574.300	1520.000
41	GR	574.100	1530.000	577.100	1540.000	580.000	1547.000	578.500	1560.000	579.200	1600.000
42	GR	579.000	1800.000	579.200	2000.000	579.800	2200.000	579.900	2243.000	579.000	2247.000
43	GR	578.900	2250.000	578.700	2254.000	579.500	2258.000	579.700	2400.000	579.500	2600.000
44	GR	579.000	2800.000	579.000	3000.000	579.500	3200.000	580.000	3400.000	585.000	3650.000
45	QT	4.000	330.000	450.000	500.000	660.000	0.000	0.000	0.000	0.000	0.000
46	NH	5.000	.090	1381.000	.065	1420.000	.160	2066.000	.150	2080.000	.150
47	NH	3362.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
48											
49											
50			M	50 FT D/S BROADBRIDGE RD. BRIDGE, 23 DEGREES SKEW							
51											
52	X1	3.845	30.000	1500.000	1540.000	500.000	500.000	500.000	.921	0.000	0.000
53	X3	0.000	0.000	0.000	1350.000	0.000	2600.000	0.000	0.000	0.000	0.000
54	GR	584.300	0.000	581.700	200.000	585.500	400.000	589.300	600.000	584.400	800.000
55	GR	580.600	1000.000	580.600	1200.000	580.600	1400.000	580.600	1455.000	585.900	1480.000
56	GR	578.100	1500.000	576.300	1503.000	575.200	1505.000	574.800	1510.000	574.300	1520.000
57	GR	573.900	1530.000	577.100	1540.000	583.100	1547.000	578.500	1560.000	579.200	1600.000
58	GR	579.000	1800.000	579.200	2000.000	579.800	2200.000	579.700	2400.000	579.500	2600.000
59	GR	579.000	2800.000	579.000	3000.000	579.500	3200.000	580.000	3400.000	585.000	3650.000
60	NC	.016	.016	.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	3.854	30.000	1500.000	1530.000	49.000	49.000	49.000	.921	0.000	0.000
X3	0.000	0.000	0.000	1350.000	0.000	2600.000	0.000	0.000	0.000	0.000
GR	587.400	0.000	586.000	200.000	587.000	400.000	587.500	600.000	585.600	800.000
GR	582.900	1000.000	581.700	1200.000	581.800	1400.000	582.000	1500.000	577.100	1500.000
GR	576.400	1505.000	575.700	1510.000	575.000	1515.000	575.000	1520.000	575.400	1525.000
GR	576.400	1527.000	577.500	1530.000	581.800	1530.000	581.700	1600.000	581.200	1800.000
GR	581.300	2000.000	581.300	2200.000	581.000	2400.000	580.900	2530.000	580.900	2600.000
GR	580.900	2800.000	581.000	3000.000	581.500	3200.000	582.000	3400.000	585.000	3649.000
NC	.016	.016	.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D/S FACE BROADBRIDGE RD. BRIDGE, 23 DEGREES SKEW

X1	3.855	30.000	1500.000	1530.000	1.000	1.000	1.000	.921	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	.921	0.000
X3	0.000	0.000	0.000	1350.000	0.000	2600.000	0.000	0.000	0.000	0.000
BT	23.000	0.000	587.400	0.000	200.000	586.000	0.000	400.000	587.000	0.000
BT	600.000	587.500	0.000	800.000	585.600	0.000	1000.000	582.900	0.000	1200.000
BT	581.700	0.000	1400.000	581.800	0.000	1500.000	582.000	579.800	1500.000	582.000
BT	579.800	1530.000	581.800	579.800	1530.000	581.800	579.800	1600.000	581.700	0.000
BT	1800.000	581.200	0.000	2000.000	581.300	0.000	2200.000	581.300	0.000	2400.000
BT	581.000	0.000	2530.000	580.900	0.000	2600.000	580.900	0.000	2800.000	580.900
BT	0.000	3000.000	581.000	0.000	3200.000	581.500	0.000	3400.000	582.000	0.000
GR	587.400	0.000	586.000	200.000	587.000	400.000	587.500	600.000	585.600	800.000
GR	582.900	1000.000	581.700	1200.000	581.800	1400.000	582.000	1500.000	577.100	1500.000
GR	576.400	1505.000	575.700	1510.000	575.000	1515.000	575.000	1520.000	575.400	1525.000
GR	576.400	1527.000	577.500	1530.000	581.800	1530.000	581.700	1600.000	581.200	1800.000
GR	581.300	2000.000	581.300	2200.000	581.000	2400.000	580.900	2530.000	580.900	2600.000
GR	580.900	2800.000	581.000	3000.000	581.500	3200.000	582.000	3400.000	585.000	3649.000

N U/S FACE BROADBRIDGE RD. BRIDGE, 23 DEGREES SKEW

X1	3.860	30.000	1500.000	1530.000	25.000	25.000	25.000	.921	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	.921	0.000
X3	0.000	0.000	0.000	1350.000	0.000	2600.000	0.000	0.000	0.000	0.000
BT	23.000	0.000	587.400	0.000	200.000	586.000	0.000	400.000	587.000	0.000
BT	600.000	587.500	0.000	800.000	585.600	0.000	1000.000	582.900	0.000	1200.000
BT	581.700	0.000	1400.000	581.800	0.000	1500.000	582.000	579.800	1500.000	582.000
BT	579.800	1530.000	581.800	579.800	1530.000	581.800	579.800	1600.000	581.700	0.000
BT	1800.000	581.200	0.000	2000.000	581.300	0.000	2200.000	581.300	0.000	2400.000
BT	581.000	0.000	2530.000	580.900	0.000	2600.000	580.900	0.000	2800.000	580.900
BT	0.000	3000.000	581.000	0.000	3200.000	581.500	0.000	3400.000	582.000	0.000
GR	587.400	0.000	586.000	200.000	587.000	400.000	587.500	600.000	585.600	800.000
GR	582.900	1000.000	581.700	1200.000	581.800	1400.000	582.000	1500.000	577.100	1500.000
GR	576.400	1505.000	575.700	1510.000	575.000	1515.000	575.000	1520.000	575.400	1525.000
GR	576.400	1527.000	577.500	1530.000	581.800	1530.000	581.700	1600.000	581.200	1800.000
GR	581.300	2000.000	581.300	2200.000	581.000	2400.000	580.900	2530.000	580.900	2600.000
GR	580.900	2800.000	581.000	3000.000	581.500	3200.000	582.000	3400.000	585.000	3649.000
NC	.016	.016	.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	3.861	30.000	1500.000	1530.000	1.000	1.000	1.000	.921	0.000	0.000
X3	0.000	0.000	0.000	1350.000	0.000	2600.000	0.000	0.000	0.000	0.000
GR	587.400	0.000	586.000	200.000	587.000	400.000	587.500	600.000	585.600	800.000
GR	582.900	1000.000	581.700	1200.000	581.800	1400.000	582.000	1500.000	577.100	1500.000
GR	576.400	1505.000	575.700	1510.000	575.000	1515.000	575.000	1520.000	575.400	1525.000
GR	576.400	1527.000	577.500	1530.000	581.800	1530.000	581.700	1600.000	581.200	1800.000
GR	581.300	2000.000	581.300	2200.000	581.000	2400.000	580.900	2530.000	580.900	2600.000
GR	580.900	2800.000	581.000	3000.000	581.500	3200.000	582.000	3400.000	585.000	3649.000
QT	4.000	410.000	590.000	675.000	910.000	0.000	0.000	0.000	0.000	0.000
NC	.150	.160	.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000

PRINTED IN U.S.A.
FORM 1401HQ-PRINTED BY ROTARY MANIFOLD FORMS

50 FT U/S BROADBRIDGE RD. BRIDGE, 25 DEGREES SKEW

REPEATED SEC.

X1	3.869	30.000	1500.000	1530.000	50.000	50.000	50.000	.921	.0.000	0.000
X3	0.000	0.000	0.000	1350.000	0.000	2600.000	0.000	0.000	0.000	0.000
GR	587.400	0.000	586.000	200.000	587.000	400.000	587.500	600.000	585.600	800.000
GR	582.900	1000.000	581.700	1200.000	581.800	1400.000	578.100	1500.000	577.100	1500.000
GR	576.400	1505.000	575.700	1510.000	574.960	1515.000	574.960	1520.000	575.400	1525.000
GR	576.400	1527.000	577.500	1530.000	578.300	1530.000	581.700	1600.000	581.200	1800.000
GR	581.300	2000.000	581.300	2200.000	581.000	2400.000	580.900	2530.000	580.900	2600.000
GR	580.900	2800.000	581.000	3000.000	581.500	3200.000	582.000	3400.000	585.000	3649.000
NC	.150	.140	.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000

0 700 FT U/S BROADBRIDGE RD. BRIDGE

X1	3.992	29.000	1400.000	1440.000	750.000	300.000	650.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1200.000	0.000	2650.000	0.000	0.000	0.000	0.000
GR	593.000	0.000	586.800	100.000	581.900	300.000	583.600	500.000	585.100	700.000
GR	582.200	900.000	584.000	1000.000	581.000	1100.000	578.900	1300.000	578.400	1400.000
GR	576.900	1401.000	575.700	1405.000	574.700	1410.000	574.400	1420.000	575.200	1430.000
GR	576.300	1433.000	581.300	1440.000	582.300	1447.000	580.500	1455.000	578.500	1500.000
GR	579.400	1700.000	579.400	1900.000	579.400	2100.000	579.300	2145.000	579.400	2165.000
GR	579.800	3000.000	580.000	3200.000	585.300	3300.000	590.000	3350.000	0.000	0.000
QT	4.000	330.000	450.000	500.000	660.000	0.000	0.000	0.000	0.000	0.000
NC	.080	.080	.065	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1000 FT U/S ROBERT RD. BRIDGE, AT THE CONFLUENCE

MANUFACTURED FROM SEC. J

X1	-2.614	27.000	1500.000	1550.000	300.000	300.000	300.000	0.000	.050	0.000
X3	0.000	0.000	0.000	1300.000	0.000	1800.000	0.000	0.000	0.000	0.000
GR	586.500	0.000	586.800	200.000	587.000	400.000	585.500	600.000	584.600	800.000
GR	584.400	1000.000	583.400	1200.000	578.400	1400.000	578.000	1450.000	580.500	1490.000
GR	578.500	1500.000	576.900	1503.000	575.200	1508.000	574.400	1515.000	574.000	1520.000
GR	574.200	1530.000	575.400	1540.000	576.900	1545.000	578.900	1550.000	577.800	1600.000
GR	579.300	1800.000	582.800	2000.000	581.500	2200.000	582.000	2400.000	582.600	2600.000
GR	583.300	2800.000	583.500	3000.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	4.000	145.000	200.000	230.000	320.000	0.000	0.000	0.000	0.000	0.000
NH	9.000	.080	1200.000	.140	1300.000	.070	1352.000	.140	1400.000	.085
NH	2800.000	.150	3023.000	.077	3038.000	.130	3300.000	.120	3500.000	0.000

K 2900 FT U/S ROBERT RD. BRIDGE

X1	3.125	63.000	3023.000	3038.000	2400.000	2800.000	2700.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	2765.000	0.000	3255.000	0.000	0.000	0.000	0.000
GR	588.300	0.000	592.100	200.000	591.100	400.000	583.900	600.000	581.900	800.000
GR	580.700	1000.000	579.400	1200.000	578.100	1300.000	576.700	1302.000	575.600	1305.000
GR	574.600	1310.000	574.000	1320.000	574.300	1330.000	575.300	1340.000	577.100	1345.000
GR	581.100	1352.000	580.600	1400.000	582.700	1600.000	588.400	1800.000	588.300	2000.000
GR	588.500	2100.000	588.300	2200.000	586.900	2300.000	585.900	2400.000	584.400	2500.000
GR	583.400	2600.000	582.700	2700.000	581.200	2800.000	580.400	2900.000	580.500	3000.000
GR	579.700	3023.000	578.700	3027.000	578.300	3030.000	578.300	3034.000	580.500	3038.000
GR	580.500	3100.000	580.600	3200.000	582.500	3300.000	583.800	3400.000	584.200	3500.000
GR	582.100	3600.000	580.100	3700.000	579.500	3800.000	579.500	3827.000	579.000	3838.000
GR	578.300	3850.000	579.200	3872.000	579.800	3885.000	579.800	3900.000	579.800	4000.000
GR	580.100	4100.000	583.500	4200.000	581.800	4300.000	581.400	4400.000	581.700	4500.000
GR	582.100	4600.000	583.500	4700.000	583.700	4800.000	583.800	4900.000	584.500	5000.000
GR	584.600	5100.000	584.700	5200.000	585.000	5230.000	0.000	0.000	0.000	0.000
NH	8.000	.085	1400.000	.140	1500.000	.075	1552.000	.150	1600.000	.110
NH	1800.000	.140	3338.000	.077	3352.000	.150	4900.000	0.000	0.000	0.000

PRINTED IN U.S.A.
FORM 1611 (UPRINTED BY "TOTARY MANIFOLD FORM)

L 5300 FT U/S ROBERT RD. BRIDGE

X1	3.580	56.000	3338.000	3352.000	2400.000	2400.000	2400.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	3100.000	0.000	4350.000	0.000	0.000	0.000	0.000
GR	594.200	0.000	593.300	200.000	587.600	400.000	582.900	600.000	581.700	800.000
GR	584.300	1000.000	588.600	1120.000	536.300	1200.000	580.600	1400.000	579.000	1500.000
GR	577.000	1503.000	576.400	1505.000	575.400	1510.000	575.300	1520.000	574.700	1530.000
GR	575.100	1540.000	576.500	1545.000	578.500	1552.000	580.000	1600.000	583.000	1800.000
GR	590.400	2000.000	591.300	2100.000	591.800	2200.000	591.600	2300.000	590.900	2400.000
GR	590.700	2500.000	590.500	2600.000	587.000	2700.000	582.100	2800.000	579.800	2860.000
GR	579.400	2900.000	579.700	3000.000	579.500	3100.000	579.600	3200.000	579.500	3300.000
GR	579.700	3338.000	578.700	3342.000	578.300	3345.000	578.700	3349.000	579.400	3352.000
GR	579.400	3400.000	580.000	3500.000	579.600	3600.000	579.600	3700.000	579.500	3800.000
GR	579.300	3900.000	579.400	4000.000	579.600	4100.000	579.300	4200.000	579.500	4300.000
GR	579.500	4400.000	579.700	4500.000	581.200	4600.000	583.700	4700.000	584.600	4800.000
GR	586.000	4900.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	.150	1381.000	.080	1420.000	.150	2066.000	.077	2080.000	.150
NH	3362.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

U/S CONFLUENCE, DUPLICATED FROM SEC. M, SKEWED

END OF ISLAND PROBLEM

X1	4.025	35.000	2243.000	2258.000	2100.000	2500.000	2350.000	.921	0.000	0.000
X3	0.000	0.000	0.000	1950.000	0.000	3000.000	0.000	0.000	0.000	0.000
GR	584.300	0.000	581.700	200.000	585.500	400.000	589.300	600.900	584.400	800.000
GR	580.600	1000.000	580.600	1200.000	580.600	1400.000	580.600	1455.000	585.900	1480.000
GR	578.100	1500.000	576.300	1503.000	575.200	1505.000	574.800	1510.000	574.300	1520.000
GR	574.100	1530.000	577.100	1540.000	583.100	1547.000	578.500	1560.000	579.200	1600.000
GR	579.000	1800.000	579.200	2000.000	579.800	2200.000	579.700	2243.000	579.000	2247.000
GR	578.900	2250.000	578.700	2254.000	579.500	2258.000	579.700	2400.000	579.500	2600.000
GR	579.000	2800.000	579.000	3000.000	579.500	3200.000	580.000	3400.000	585.000	3650.000
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  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
**************************************************

T1       MARINE CITY DRAIN, COTTRELLVILLE TOWNSHIP  5555-13  PM: GILBERTO M. FONT
T2       100 YEAR FLOW
T3       MARINE CITY DRAIN.                    Encroached

J1  ICHECK     INQ        NINV       IDIR       STRT       METRIC     HVINS      Q          WSEL       FQ
         0.         4.         0.         0.  0.000000       0.00       0.0        0.   576.620      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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*PROF 3

CCHV=     .300 CEHV=     .500
*SECNO .000
    SECNO      DEPTH     CWSEL     CRIWS     WSELK      EG        HV        HL        OLOSS     BANK ELEV
    Q          QLOB      QCH       QROB      ALOB       ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME       VLOB      VCH       VROB      XNL        XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE      XLOBL     XLCH      XLOBR     ITRIAL     IDC       ICONT     CORAR     TOPWID.     ENDST


 3470 ENCROACHMENT STATIONS=     1497.0     1533.0  TYPE=      1  TARGET=       36.000
  ELENCL=     577.00  ELENCR=     577.00

                              MOUTH OF MARINE CITY DRAIN, MANUFACTURED SEC.

        0.00       5.22     576.62      0.00     576.62     576.80       .18       0.00      0.00     577.00
       600.          0.      600.         0.         0.       174.         0.         0.        0.     577.00
        0.00       0.00       3.44      0.00       .070       .040       .070      0.000    571.40    1497.00
     .001382          0.         0.        0.          0          0          0       0.00     36.00    1533.00


*SECNO .003

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=       581.50 ELREA=       581.50

         .00       5.22     576.62      0.00       0.00     576.87       .26       .03       .04     581.50
       600.          0.      600.         0.         0.       148.         0.         0.        0.     581.50
         .00       0.00       4.06      0.00       .070       .043       .070       .041    571.40    1500.00
     .002380         19.        19.       19.          2          0          0       0.00     30.00    1530.00


*SECNO .004

 3370 NORMAL BRIDGE,NRD=  11 MIN ELTRD=   579.20 MAX ELLC=   578.50

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=       581.50 ELREA=       581.50

                              D/S FACE M-29 BRIDGE

         .00       5.22     576.62      0.00       0.00     576.88       .26       .00       .00     581.50
       600.          0.      600.         0.         0.       145.         0.         0.        0.     581.50
         .00       0.00       4.06      0.00       .070       .043       .070       .039    571.40    1500.00
     .002378          1.         1.        1.          0          0          0       0.00     30.00    1530.00


*SECNO .015

 3370 NORMAL BRIDGE,NRD=  11 MIN ELTRD=   579.20 MAX ELLC=   578.50

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=       581.50 ELREA=       581.50

                                A             U/S FACE M-29 BRIDGE

         .02       5.37     576.77      0.00       0.00     577.01       .24       .13       .00     581.50
       600.          0.      600.         0.         0.       152.         0.         0.        0.     581.50
         .01       0.00       3.94      0.00       .070       .043       .070       .041    571.40    1500.00
     .002180         58.        58.       58.          1          0          0       0.00     30.00    1530.00


*SECNO .016
```

TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IOC	ICONT	CORAR	TOPWID	ENDST
	.02	5.37	576.77	0.00	0.00	577.02	.24	.00	.00	581.50
	600.	0.	600.	0.	0.	152.	0.	0.	0.	581.50
	.01	0.00	3.94	0.00	.070	.043	.070	.041	571.40	1500.00
.002169		1.	1.	1.	0	0	0	0.00	30.00	1530.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 581.50 ELREA= 581.50

*SECNO .024

B 50 FT U/S M-29 BRIDGE

	.02	4.48	576.88	0.00	0.00	577.13	.25	.11	.00	580.00
	600.	0.	600.	0.	0.	151.	0.	0.	0.	580.80
	.01	0.00	3.98	0.00	.080	.040	.080	.040	572.40	1510.00
.002305		49.	49.	49.	0	0	0	0.00	37.00	1547.00

*SECNO .037

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 580.10 ELREA= 580.10

DUPLICATED FROM SEC. B

	.04	4.75	577.09	0.00	0.00	577.28	.18	.13	.02	580.10
	600.	0.	600.	0.	0.	175.	0.	1.	0.	580.20
	.01	0.00	3.42	0.00	.100	.040	.100	.040	572.34	1510.12
.001559		69.	69.	69.	2	0	0	0.00	44.07	1554.19

*SECNO .038

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 10 MIN ELTRD= 580.10 MAX ELLC= 580.30

D/S FACE PRIVATE WOOD FOOTBRIDGE

	.04	4.75	577.09	0.00	0.00	577.29	.20	.00	.01	580.10
	600.	0.	600.	0.	0.	167.	0.	1.	0.	580.20
	.01	0.00	3.59	0.00	.100	.040	.100	.040	572.34	1510.12
.003485		1.	1.	1.	0	0	0	0.00	42.07	1554.19

*SECNO .038

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 10 MIN ELTRD= 580.10 MAX ELLC= 580.30

B@ U/S FACE, PRIVATE WOOD FOOTBRIDGE

	.04	4.76	577.10	0.00	0.00	577.30	.20	.01	.00	580.10
	600.	0.	600.	0.	0.	167.	0.	1.	0.	580.20
	.01	0.00	3.59	0.00	.100	.040	.100	.040	572.34	1510.12
.003482		4.	4.	4	0	0	0			

*SECNO .039

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= 580.10 ELREA= 580.10

.04	4.77	577.11	0.00	0.00	577.31	.20	.00	.00	580.10
600.	0.	600.	0.	0.	168.	0.	1.	0.	580.20
.02	0.00	3.58	0.00	.100	.040	.100	.039	572.34	1510.12
.003465	1.	1.	1.	0	0	0	0.00	42.09	1554.21

*SECNO .048

DUPLICATED FROM SEC. B

.05	4.94	577.24	0.00	0.00	577.42	.18	.11	.01	580.20
600.	0.	600.	0.	0.	178.	0.	1.	0.	580.30
.02	0.00	3.37	0.00	.100	.040	.100	.039	572.30	1510.12
.001487	49.	49.	49.	2	0	0	0.00	44.17	1554.29

*SECNO .147

3470 ENCROACHMENT STATIONS= 880.7 1495.4 TYPE= 1 TARGET= 543.000

700 FT U/S M-29 BRIDGE, MANUFACTURED FROM SEC. C

.15	5.92	577.77	0.00	0.00	577.82	.05	.36	.04	576.85
600.	90.	496.	15.	318.	259.	62.	6.	4.	576.35
.11	.28	1.91	.24	.100	.040	.100	.040	571.85	880.70
.000386	576.	526.	526.	3	0	0	0.00	614.67	1495.37

*SECNO .233

3470 ENCROACHMENT STATIONS= 727.0 1220.0 TYPE= 1 TARGET= 493.000

1150 FT U/S M-29 BRIDGE, MANUFACTURED FROM SEC. C

.23	6.51	577.98	0.00	0.00	578.01	.03	.18	.01	576.30
600.	272.	328.	0.	624.	191.	0.	12.	9.	100000.00
.21	.44	1.72	0.00	.100	.050	.100	.044	571.47	727.00
.000495	350.	450.	450.	2	0	0	0.00	493.00	1220.00

*SECNO .270

3470 ENCROACHMENT STATIONS= 667.0 1220.0 TYPE= 1 TARGET= 553.000

C 1350 FT U/S M-29 BRIDGE

.27	6.79	578.09	0.00	0.00	578.10	.02	.10	.00	576.30
600.	285.	315.	0.	720.	211.	0.	16.	12.	100000.00
.27	.40	1.49	0.00	.110	.050	.160	.045	571.30	667.00
.000479	200.	200.	200.	1	0	0	0.00	552.90	1219.90

*SECNO .460

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= 780.0 1742.0 TYPE= 1 TARGET= 962.000

2350 FT. U/S M-29 BRIDGE, DUPLICATED FROM SEC. D

.46	6.28	578.39	0.00	0.00	578.39	.00	.28	.00	577.20
600.	270.	193.	137.	769.	218.	660.	46.	29.	577.20
.84	.35	.89	.21	.090	.060	.120	.051	572.11	780.00
.000187	1000.	1000.	1000.	2	0	0	0.00	962.00	1742.00

*SECNO .715

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 1060.0 1588.0 TYPE= 1 TARGET= 528.000

D 3700 FT U/S M-29 BRIDGE

.72	5.56	578.76	0.00	0.00	578.77	.01	.38	.00	577.20
585.	141.	278.	166.	341.	225.	544.	89.	52.	577.20
1.32	.41	1.23	.30	.150	.070	.150	.058	573.20	1060.00
.000469	1349.	1349.	1349.	2	0	0	0.00	515.14	1588.00

*SECNO 1.123

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= .0 1375.0 TYPE= 1 TARGET= 1374.999

E 5850 FT U/S M-29 BRIDGE

1.12	6.07	579.57	0.00	0.00	579.58	.01	.81	.00	577.20
585.	141.	293.	152.	567.	230.	730.	154.	86.	577.20
2.12	.25	1.27	.21	.160	.060	.160	.059	573.50	456.26
.000309	2150.	2150.	2150.	2	0	0	0.00	885.29	1375.00

*SECNO 1.501

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 600.0 1850.0 TYPE= 1 TARGET= -600.000

7850 FT U/S M-29 BRIDGE, MANUFACTURED SEC.

1.50	6.43	580.18	0.00	0.00	580.19	.01	.60	.00	577.20
585.	140.	288.	157.	488.	254.	631.	221.	121.	577.20
2.92	.29	1.14	.25	.170	.070	.160	.062	573.75	600.00
.000295	1975.	2000.	2025.	2	0	0	0.00	597.89	1222.75

*SECNO 1.87u

3470 ENCROACHMENT STATIONS= 1099.0 1901.0 TYPE= 1 TARGET= 802.000

50 FT D/S WOOD FOOTBRIDGE IN STATE PARK, DUPLICATED

FROM SEC. F

1.87	6.68	580.68	0.00	0.00	580.68	.01	.49	.00	578.40
585.	83.	289.	212.	448.	320.	884.	289.	152.	578.40
3.89	.19	.90	.24	.170	.070	.160	.063	574.00	1099.00
.000220	1900.	1950.	2000.	2	0	0	0.00	802.00	1901.00

*SECNO 1.880

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
O	QLOB	QCH	QROB	ALOB	ACH	AROB	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= 1099.0 1901.0 TYPE= 1 TARGET= 802.000

D/S FACE WOOD FOOTBRIDGE IN STATE PARK

1.88	6.69	580.69	0.00	0.00	580.69	.01	.01	.00	578.40
585.	91.	275.	218.	452.	321.	890.	290.	153.	578.40
3.91	.20	.86	.25	.170	.080	.170	.063	574.00	1099.00
.000257	50.	50.	50.	0	0	0	0.00	802.00	1901.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.73	3.09	0.00	16.80	.01	266.00	3.71	574.00	574.00

*SECNO 1.882

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
580.71	580.70	.00	372.	212.	266.	266.	580.50	577.60

3470 ENCROACHMENT STATIONS= 1099.0 1901.0 TYPE= 1 TARGET= 802.000

F U/S FACE WOOD FOOTBRIDGE IN STATE PARK

1.88	6.70	580.70	0.00	0.00	580.71	.01	.01	0.00	578.40
585.	92.	274.	219.	457.	322.	897.	291.	153.	578.40
3.92	.20	.85	.24	.170	.080	.170	.063	574.00	1099.00
.000252	8.	8.	8.	0	0	6	0.00	802.00	1901.00

*SECNO 1.891

3470 ENCROACHMENT STATIONS= 1099.0 1901.0 TYPE= 1 TARGET= 802.000

50 FT U/S WOOD FOOTBRIDGE IN STATE PARK, REPEATED SEC.

OF F.

1.89	6.70	580.71	0.00	0.00	580.72	.01	.01	.00	578.41
585.	92.	274.	219.	456.	322.	896.	293.	154.	578.41
3.94	.20	.85	.24	.170	.080	.170	.063	574.01	1099.00
.000253	50.	50.	50.	0	0	0	0.00	802.00	1901.00

*SECNO 2.100

G 1150 FT U/S WOOD FOOTBRIDGE IN STATE PARK

2.10	6.68	580.98	0.00	0.00	580.98	.01	.26	.00	578.60
585.	120.	257.	208.	577.	291.	831.	335.	174.	578.40
4.53	.21	.88	.25	.160	.080	.170	.065	574.30	1136.99
.000226	1100.	1100.	1100.	1	0	0	0.00	761.96	1898.95

*SECNO 2.412

3470 ENCROACHMENT STATIONS= 1167.5 1657.9 TYPE= 1 TARGET= 525.000

H 50 FT D/S ROBERT RD. BRIDGE, 21 DEGREES SKEW

2.41	7.25	581.35	0.00	0.00	581.36	.01	.38	.00	579.60
585.	111.	332.	142.	483.	316.	534.	393.	197.	578.10
5.19	.23	1.05	.27	.160	.070	.160	.066	574.10	1167.50
.000230	1550.	1650.	1750.	1	0	0	0.00	490.35	1657.85

*SECNO 2.421

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= 1190.3 1633.8 TYPE= 1 TARGET= 475.000

2.42	6.96	581.36	0.00	0.00	581.37	.01	.01	.00	579.70
580.	174.	105.	301.	266.	182.	365.	394.	198.	579.50
5.21	.65	.58	.82	.032	.090	.031	.066	574.40	1190.34
.000138	50.	50.	50.	0	0	0	0.00	443.46	1633.80

*SECNO 2.422

3370 NORMAL BRIDGE,NRD= 19 MIN ELTRD= 579.30 MAX ELLC= 578.20

3470 ENCROACHMENT STATIONS= 1190.3 1633.8 TYPE= 1 TARGET= 475.000

D/S FACE ROBERT RD. BRIDGE, 21 DEGREES SKEW

2.42	6.96	581.36	0.00	0.00	581.37	.01	.00	.00	579.70
580.	177.	106.	296.	266.	143.	365.	394.	198.	579.50
5.21	.67	.74	.81	.025	.025	.025	.066	574.40	1190.34
.000087	1.	1.	1.	0	0	0	-41.83	443.46	1633.80

*SECNO 2.425

3370 NORMAL BRIDGE,NRD= 19 MIN ELTRD= 579.30 MAX ELLC= 578.20

3470 ENCROACHMENT STATIONS= 1190.3 1633.8 TYPE= 1 TARGET= 475.000

I U/S FACE ROBERT RD. BRIDGE, 21 DEGREES SKEW

	2.43	6.96	581.36	0.00	0.00	581.37	.01	.00	.00	579.70
	580.	178.	105.	297.	267.	140.	365.	395.	198.	579.50
	5.21	.67	.75	.81	.025	.025	.025	.066	574.40	1190.34
	.000087	16.	16.	16.	0	0	0	-40.42	443.46	1633.80

*SECNO 2.426

3470 ENCROACHMENT STATIONS= 1190.3 1633.8 TYPE= 1 TARGET= 475.000

	2.43	6.97	581.37	0.00	0.00	581.37	.01	.00	.00	579.70
	580.	175.	105.	301.	267.	182.	365.	395.	198.	579.50
	5.21	.65	.58	.82	.032	.090	.031	.066	574.40	1190.34
	.000137	1.	1.	1.	0	0	0	0.00	443.46	1633.80

*SECNO 2.434

3470 ENCROACHMENT STATIONS= 1167.0 1657.1 TYPE= 1 TARGET= 525.000

50 FT U/S ROBERT RD. BRIDG, 21 DEGREES SKEW, REPEATED

SEC.

	2.43	7.00	581.37	0.00	0.00	581.38	.01	.01	.00	579.70
	580.	182.	83.	315.	281.	183.	396.	396.	199.	579.50
	5.23	.65	.46	.80	.025	.090	.025	.066	574.37	1167.00
	.000086	50.	50.	50.	0	0	0	0.00	490.14	1657.14

*SECNO 2.557

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= 1300.0 1800.0 TYPE= 1 TARGET= 500.000

J 700 FT U/S ROBERT RD. BRIDGE

	2.56	7.44	581.44	0.00	0.00	581.45	.01	.07	.00	578.50
	580.	90.	281.	210.	449.	305.	733.	413.	206.	578.90
	5.54	.20	.92	.29	.150	.060	.120	.065	574.00	1300.00
	.000128	725.	650.	575.	0	0	0	0.00	500.00	1800.00

*SECNO 2.614

3470 ENCROACHMENT STATIONS= 1300.0 1800.0 TYPE= 1 TARGET= 500.000

1000 FT U/S ROBERT RD. BRIDGE, AT THE CONFLUENCE

MANUFACTURED FROM SEC. J

	2.61	7.42	581.47	0.00	0.00	581.47	.00	.03	.00	578.55
	500.	113.	176.	212.	444.	304.	728.	423.	209.	578.95
	5.75	.25	.58	.29	.080	.065	.080	.065	574.05	1300.00
	.000060	300.	300.	300.	0	0	0	0.00	500.00	1800.00

*SECNO 2.870

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 450.0 750.0 TYPE= 1 TARGET= 300.000

50 FT D/S PRIVATE BRIDGE, DUPLICATED FROM SEC. J@

2.87	7.28	581.57	0.00	0.00	581.58	.01	.10	.00	581.70
270.	46.	170.	55.	163.	233.	163.	454.	221.	581.70
6.41	.28	.73	.33	.080	.070	.080	.066	574.29	450.00
.000138	1350.	1350.	1350.	2	0	0	0.00	248.34	750.00

*SECNO 2.878

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 450.0 750.0 TYPE= 1 TARGET= 300.000

2.88	7.28	581.58	0.00	0.00	581.59	.01	.01	.00	574.40
270.	63.	130.	77.	188.	176.	196.	455.	221.	575.00
6.43	.33	.74	.39	.090	.110	.090	.066	574.30	450.00
.000222	49.	49.	49.	0	0	0	0.00	248.59	750.00

*SECNO 2.879

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD= 18 MIN ELTRD= 579.20 MAX ELLC= 578.80

3470 ENCROACHMENT STATIONS= 450.0 750.0 TYPE= 1 TARGET= 300.000

D/S FACE, PRIVATE BRIDGE

2.88	7.28	581.58	0.00	0.00	581.59	.02	.00	.01	574.40
270.	59.	133.	77.	164.	89.	183.	455.	221.	575.00
6.43	.36	1.50	.42	.090	.025	.090	.066	574.30	450.00
.000286	1.	1.	1.	0	0	0	-125.24	248.82	750.00

*SECNO 2.882

3265 DIVIDED FLOW

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

3370 NORMAL BRIDGE, NRD= 18 MIN ELTRD= 579.20 MAX ELLC= 578.80

3470 ENCROACHMENT STATIONS= 450.0 750.0 TYPE= 1 TARGET= 300.000

J@ U/S FACE, PRIVATE BRIDGE

2.88	7.28	581.58	0.00	0.00	581.60	.02	.00	.00	574.40
270.	59.	133.	77.	164.	89.	182.	455.	221.	575.00
6.44	.36	1.50	.42	.090	.025	.090	.066	574.30	450.00

*SECNO 2.883

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 450.0 750.0 TYPE= 1 TARGET= 300.000.

2.88	7.30	581.60	0.00	0.00	581.60	.01	.00	.00	574.40	
270.	63.	129.	77.	190.	176.	197.	455.	221.	575.00	
6.44	.33	.73	.39	.090	.110	.090	.066	574.30	450.00	
.000219	1.	1.	1.	1	0	0	0.00	249.14	750.00	

*SECNO 2.892

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 450.0 750.0 TYPE= 1 TARGET= 300.000

50 FT U/S PRIVATE BRIDGE, REPEATED SEC.

2.89	7.34	581.61	0.00	0.00	581.61	.00	.01	.00	574.37	
270.	65.	127.	78.	196.	177.	202.	456.	222.	574.97	
6.46	.33	.72	.39	.090	.110	.090	.066	574.27	450.00	
.000207	49.	49.	49.	0	0	0	0.00	269.40	750.00	

1490 NH CARD USED
*SECNO 2.974

3470 ENCROACHMENT STATIONS= 1050.0 1350.0 TYPE= 1 TARGET= 300.000

K 2900 FT U/S ROBERT RD. BRIDGE

2.97	7.65	581.65	0.00	0.00	581.66	.00	.04	.00	578.10	
270.	102.	168.	0.	555.	318.	0.	463.	225.	100000.00	
6.77	.18	.53	0.00	.108	.070	.090	.067	574.00	1050.00	
.000058	435.	435.	435.	2	0	0	0.00	300.00	1350.00	

1490 NH CARD USED
*SECNO 3.429

3470 ENCROACHMENT STATIONS= 1400.0 1700.0 TYPE= 1 TARGET= 300.000

L 5300 FT U/S ROBERT RD. BRIDGE

3.43	7.13	581.83	0.00	0.00	581.84	.00	.18	.00	579.00	
270.	37.	190.	42.	203.	314.	232.	508.	241.	578.50	
8.16	.18	.60	.18	.130	.081	.123	.073	574.70	1400.00	
.000102	2425.	2400.	2375.	2	0	0	0.00	300.00	1700.00	

1490 NH CARD USED
*SECNO 3.751

3265 DIVIDED FLOW

SECNO	DEPTH	CWSEL	QCRIWS	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= 828.9 1657.8 TYPE= 1 TARGET= 900.000

END OF ISLAND PROBLEM

U/S CONFLUENCE, DUPLICATED FROM SEC. M, SKEWED

3.75	7.83	581.93	0.00	0.00	581.93	.00	.10	.00	578.10
270.	49.	87.	133.	623.	254.	690.	553.	262.	577.10
10.31	.08	.34	.19	.133	.091	.092	.076	574.10	856.34
.000036	1600.	170.0	1800.	2	0	0	0.00	774.87	1657.80

1490 NH CARD USED
*SECNO 3.845

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 1243.4 2394.6 TYPE= 1 TARGET= 1250.000

M 50 FT D/S BROADBRIDGE RD. BRIDGE, 23 DEGREES SKEW

3.85	8.06	581.96	0.00	0.00	581.96	.00	.02	.00	578.10
500.	24.	152.	324.	153.	257.	2494.	579.	273.	577.10
10.82	.16	.59	.13	.086	.065	.157	.077	573.90	1243.35
.000053	500.	500.	500.	1	0	0	0.00	1120.66	2394.60

*SECNO 3.854

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 1243.4 2394.6 TYPE= 1 TARGET= 1250.000

3.85	6.96	581.96	0.00	0.00	581.96	.01	.00	.00	582.00
500.	3.	69.	429.	14.	170.	697.	581.	274.	581.80
10.85	.19	.40	.62	.016	.080	.016	.077	575.00	1243.35
.000063	49.	49.	49.	0	0	0	0.00	1132.16	2394.60

*SECNO 3.855

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 23 MIN ELTRD= 580.90 MAX ELLC= 579.80

3470 ENCROACHMENT STATIONS= 1243.4 2394.6 TYPE= 1 TARGET= 1250.000

D/S FACE BROADBRIDGE RD. BRIDGE, 23 DEGREES SKEW

3.86	6.96	581.96	0.00	0.00	581.96	.01	.00	.00	582.00
500.	3.	73.	424.	14.	112.	696.	581.	274.	581.80
10.85	.19	.65	.61	.016	.021	.016	.077	575.00	1243.35
.000062	1.	1.	1.	0	0	0	-57.88	1131.68	2394.60

*SECNO 3.860

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 1243.4 2394.6 TYPE= 1 TARGET= 1250.000

N U/S FACE BROADBRIDGE RD. BRIDGE, 23 DEGREES SKEW

	3.86	6.96	581.96	0.00	0.00	581.96	.01	.00	.00	582.00
	500.	3.	73.	424.	14.	112.	697.	582.	275.	581.80
	10.86	.19	.65	.61	.016	.021	.016	.077	575.00	1243.35
	.000062	25.	25.	25.	0	0	0	-57.89	1132.29	2394.60

*SECNO 3.861

3265 DIVIDED FLOW

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

3470 ENCROACHMENT STATIONS= 1243.4 2394.6 TYPE= 1 TARGET= 1250.000

3.86	6.96	581.96	0.00	0.00	581.96	.01	.00	.00	582.00
500.	3.	69.	429.	14.	170.	697.	582.	275.	581.80
10.86	.19	.40	.61	.016	.080	.016	.077	575.00	1243.35
.000063	1.	1.	1.	0	0	0	0.00	1132.32	2394.60

*SECNO 3.869

3470 ENCROACHMENT STATIONS= 1243.4 2394.6 TYPE= 1 TARGET= 1250.000

50 FT U/S BROADBRIDGE RD. BRIDGE, 23 DEGREES SKEW

REPEATED SEC.

3.87	6.99	581.95	0.00	0.00	581.99	.04	.01	.02	578.10
675.	92.	358.	225.	193.	170.	814.	583.	276.	578.30
10.87	.48	2.10	.28	.150	.070	.160	.077	574.96	1243.35
.000970	50.	50.	50.	0	0	0	0.00	1151.25	2394.60

*SECNO 3.992

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 1200.0 2650.0 TYPE= 1 TARGET= 1450.000

0 700 FT U/S BROADBRIDGE RD. BRIDGE

3.99	7.66	582.06	0.00	0.00	582.06	.00	.06	.01	578.40
675.	88.	122.	465.	605.	251.	3223.	607.	287.	581.30
11.52	.15	.48	.14	.150	.070	.140	.077	574.40	1200.00
.000049	750.	650.	300.	2	0	0	0.00	1447.29	2650.00

*SECNO -2.614
START TRIB COMP
-2.614 2.614 581.470

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= 1300.0 1800.0 TYPE= 1 TARGET= 500.000

1000 FT U/S ROBERT RD. BRIDGE, AT THE CONFLUENCE

MANUFACTURED FROM SEC. J

-2.61	7.42	581.47	0.00	0.00	581.47	.00	0.00	0.00	578.55
500.	113.	176.	212.	444.	304.	728.	626.	294.	578.95
11.74	.25	.58	.29	.080	.065	.080	.077	574.05	1300.00
.000060	300.	300.	300.	0	0	0	0.00	500.00	1800.00

1490 NH CARD USED
*SECNO 3.125

3470 ENCROACHMENT STATIONS= 2765.0 3255.0 TYPE= 1 TARGET= 490.000

K 2900 FT U/S ROBERT RD. BRIDGE

3.13	3.44	581.74	0.00	0.00	581.75	.01	.27	.00	579.70
230.	93.	50.	87.	270.	43.	230.	687.	323.	580.50
13.11	.34	1.17	.38	.148	.077	.130	.076	578.30	2765.00
.000955	2400.	2700.	2800.	2	0	0	0.00	490.00	3255.00

1490 NH CARD USED
*SECNO 3.580

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= 3100.0 4350.0 TYPE= 1 TARGET= 1250.000

L 5300 FT U/S ROBERT RD. BRIDGE

3.58	3.58	581.88	0.00	0.00	581.88	.00	.14	.00	579.70
230.	44.	7.	178.	554.	43.	2361.	783.	371.	579.40
21.49	.08	.17	.08	.140	.077	.150	.075	578.30	3100.00
.000018	2400.	2400.	2400.	3	0	0	0.00	1250.00	4350.00

1490 NH CARD USED
*SECNO 4.025

3470 ENCROACHMENT STATIONS= 1796.0 2763.0 TYPE= 1 TARGET= 1050.000

U/S CONFLUENCE, DUPLICATED FROM SEC. M, SKEWED

END OF ISLAND PROBLEM

4.03	3.23	581.93	0.00	0.00	581.94	.00	.05	.00	579.70
230.	59.	8.	164.	661.	40.	1768.	933.	433.	579.50
28.54	.09	.19	.09	.150	.077	.150	.074	578.70	1795.95
.000025	2100.	2350.	2500.	2	0	0	0.00	967.05	2763.00

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  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

MARINE CITY DRAIN Encroached

SUMMARY PRINTOUT

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
0.000	0.00	0.00	0.00	571.40	385.00	576.62	.08	0.00	0.00	385.00	5.22	36.00
0.000	0.00	0.00	0.00	571.40	530.00	576.62	.14	0.00	0.00	530.00	5.22	36.00
0.000	0.00	0.00	0.00	571.40	600.00	576.62	.18	0.00	0.00	600.00	5.22	36.00
0.000	0.00	0.00	0.00	571.40	785.00	576.62	.32	0.00	0.00	785.00	5.22	36.00
.003	19.00	0.00	0.00	571.40	385.00	576.62	.11	.01	.01	385.00	5.22	30.00
.003	19.00	0.00	0.00	571.40	530.00	576.62	.20	.03	.03	530.00	5.22	30.00
.003	19.00	0.00	0.00	571.40	600.00	576.62	.26	.03	.04	600.00	5.22	30.00
.003	19.00	0.00	0.00	571.40	785.00	576.62	.44	.06	.06	785.00	5.22	30.00
.004	1.00	579.20	578.50	571.40	385.00	576.62	.11	.00	.00	385.00	5.22	30.00
.004	1.00	579.20	578.50	571.40	530.00	576.62	.20	.00	.00	530.00	5.22	30.00
.004	1.00	579.20	578.50	571.40	600.00	576.62	.26	.00	.00	600.00	5.22	30.00
.004	1.00	579.20	578.50	571.40	785.00	576.62	.44	.00	.00	785.00	5.22	30.00
.015	58.00	579.20	578.50	571.40	385.00	576.68	.10	.06	.00	385.00	5.28	30.00
.015	58.00	579.20	578.50	571.40	530.00	576.74	.19	.10	.00	530.00	5.34	30.00
.015	58.00	579.20	578.50	571.40	600.00	576.77	.24	.13	.00	600.00	5.37	30.00
.015	58.00	579.20	578.50	571.40	785.00	576.90	.39	.22	.01	785.00	5.50	30.00
.016	1.00	0.00	0.00	571.40	385.00	576.68	.10	.00	.00	385.00	5.28	30.00
.016	1.00	0.00	0.00	571.40	530.00	576.74	.19	.00	.00	530.00	5.34	30.00
.016	1.00	0.00	0.00	571.40	600.00	576.77	.24	.00	.00	600.00	5.37	30.00
.016	1.00	0.00	0.00	571.40	785.00	576.90	.39	.00	.00	785.00	5.50	30.00
.024	49.00	0.00	0.00	572.40	385.00	576.73	.11	.05	.00	385.00	4.33	37.00
.024	49.00	0.00	0.00	572.40	530.00	576.82	.20	.09	.00	530.00	4.42	37.00
.024	49.00	0.00	0.00	572.40	600.00	576.88	.25	.11	.00	600.00	4.48	37.00
.024	49.00	0.00	0.00	572.40	785.00	577.08	.38	.17	.00	785.00	4.68	37.00
.037	69.00	0.00	0.00	572.34	385.00	576.82	.09	.06	.01	385.00	4.48	43.71
.037	69.00	0.00	0.00	572.34	530.00	576.99	.15	.11	.01	530.00	4.65	43.86
.037	69.00	0.00	0.00	572.34	600.00	577.09	.18	.13	.02	600.00	4.75	44.07
.037	69.00	0.00	0.00	572.34	785.00	577.42	.27	.18	.04	785.00	5.08	44.75
.038	1.00	580.10	580.30	572.34	385.00	576.82	.10	.00	.00	385.00	4.48	41.71
.038	1.00	580.10	580.30	572.34	530.00	576.99	.16	.00	.01	530.00	4.65	41.87
.038	1.00	580.10	580.30	572.34	600.00	577.09	.20	.00	.01	600.00	4.75	42.07
.038	1.00	580.10	580.30	572.34	785.00	577.41	.29	.00	.01	785.00	5.07	42.74

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
.038	4.00	580.10	580.30	572.34	385.00	576.82	.09	.01	.00	385.00	4.48	41.71
.038	4.00	580.10	580.30	572.34	530.00	577.00	.16	.01	.00	530.00	4.66	41.87
.038	4.00	580.10	580.30	572.34	600.00	577.10	.20	.01	.00	600.00	4.76	42.08
.038	4.00	580.10	580.30	572.34	785.00	577.43	.29	.02	.00	785.00	5.09	42.75
.039	1.00	0.00	0.00	572.34	385.00	576.83	.09	.00	.00	385.00	4.49	41.71
.039	1.00	0.00	0.00	572.34	530.00	577.00	.16	.00	.00	530.00	4.66	41.87
.039	1.00	0.00	0.00	572.34	600.00	577.11	.20	.00	.00	600.00	4.77	42.09
.039	1.00	0.00	0.00	572.34	785.00	577.43	.29	.00	.00	785.00	5.09	42.78
.048	49.00	0.00	0.00	572.30	385.00	576.89	.09	.06	.00	385.00	4.59	43.69
.048	49.00	0.00	0.00	572.30	530.00	577.12	.15	.09	.01	530.00	4.82	43.90
.048	49.00	0.00	0.00	572.30	600.00	577.24	.18	.11	.01	600.00	4.94	44.17
.048	49.00	0.00	0.00	572.30	785.00	577.63	.25	.14	.01	785.00	5.33	44.98
.147	526.00	0.00	0.00	571.85	385.00	577.21	.04	.25	.01	359.72	5.36	387.71
.147	526.00	0.00	0.00	571.85	530.00	577.59	.05	.34	.03	459.00	5.74	518.35
.147	526.00	0.00	0.00	571.85	600.00	577.77	.05	.36	.04	495.51	5.92	614.67
.147	526.00	0.00	0.00	571.85	785.00	578.26	.04	.37	.06	566.60	6.41	614.67
.233	450.00	0.00	0.00	571.47	385.00	577.39	.03	.17	.00	262.50	5.92	492.55
.233	450.00	0.00	0.00	571.47	530.00	577.80	.03	.19	.01	308.78	6.33	493.00
.233	450.00	0.00	0.00	571.47	600.00	577.98	.03	.18	.01	327.74	6.51	493.00
.233	450.00	0.00	0.00	571.47	785.00	578.45	.02	.16	.01	369.87	6.98	493.00
.270	200.00	0.00	0.00	571.30	385.00	577.50	.02	.09	.00	258.84	6.20	548.81
.270	200.00	0.00	0.00	571.30	530.00	577.90	.02	.10	.00	297.97	6.60	552.87
.270	200.00	0.00	0.00	571.30	600.00	578.09	.02	.10	.00	315.12	6.79	552.90
.270	200.00	0.00	0.00	571.30	785.00	578.55	.02	.09	.00	352.91	7.25	552.97
.460	1000.00	0.00	0.00	572.11	385.00	577.81	.01	.30	.00	163.32	5.70	962.00
.460	1000.00	0.00	0.00	572.11	530.00	578.21	.01	.29	.00	183.43	6.10	962.00
.460	1000.00	0.00	0.00	572.11	600.00	578.39	.00	.28	.00	192.75	6.28	962.00
.460	1000.00	0.00	0.00	572.11	785.00	578.83	.00	.26	.00	214.93	6.72	962.00
.715	1349.00	0.00	0.00	573.20	380.00	578.20	.01	.39	.00	208.79	5.00	497.66
.715	1349.00	0.00	0.00	573.20	520.00	578.59	.01	.38	.00	257.51	5.39	510.24
.715	1349.00	0.00	0.00	573.20	585.00	578.76	.01	.38	.00	278.40	5.56	515.14
.715	1349.00	0.00	0.00	573.20	780.00	579.19	.01	.37	.00	339.10	5.99	525.38
1.123	2150.00	0.00	0.00	573.50	380.00	578.97	.01	.77	.00	240.71	5.47	857.12
1.123	2150.00	0.00	0.00	573.50	520.00	579.39	.01	.80	.00	277.26	5.89	876.75
1.123	2150.00	0.00	0.00	573.50	585.00	579.57	.01	.81	.00	292.70	6.07	885.29
1.123	2150.00	0.00	0.00	573.50	780.00	580.03	.01	.84	.00	336.87	6.53	907.77
1.501	2000.00	0.00	0.00	573.75	380.00	579.54	.01	.56	.00	218.44	5.79	540.54
1.501	2000.00	0.00	0.00	573.75	520.00	579.99	.01	.59	.00	267.18	6.24	572.02
1.501	2000.00	0.00	0.00	573.75	585.00	580.18	.01	.60	.00	287.98	6.43	597.89
1.501	2000.00	0.00	0.00	573.75	780.00	580.66	.01	.63	.00	345.95	6.91	669.22
1.870	1950.00	0.00	0.00	574.00	380.00	580.00	.01	.45	.00	222.55	6.00	704.65
1.870	1950.00	0.00	0.00	574.00	520.00	580.48	.01	.48	.00	269.99	6.48	799.03
1.870	1950.00	0.00	0.00	574.00	585.00	580.68	.01	.49	.00	289.50	6.68	802.00
1.870	1950.00	0.00	0.00	574.00	780.00	581.19	.01	.52	.00	344.91	7.19	802.00

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
	1.880	50.00	0.00	0.00	574.00	380.00	580.01	.01	.01	.00	213.73	6.01	707.17
	1.880	50.00	0.00	0.00	574.00	520.00	580.49	.01	.01	.00	257.47	6.49	800.31
	1.880	50.00	0.00	0.00	574.00	585.00	580.69	.01	.01	.00	275.40	6.69	802.00
	1.880	50.00	0.00	0.00	574.00	780.00	581.20	.01	.01	.00	326.43	7.20	802.00
	1.882	8.00	577.60	580.50	574.00	380.00	580.01	.01	.01	0.00	213.02	6.01	709.74
*	1.882	8.00	577.60	580.50	574.00	520.00	580.50	.01	.01	0.00	256.92	6.50	802.00
	1.882	8.00	577.60	580.50	574.00	585.00	580.70	.01	.01	0.00	274.22	6.70	802.00
	1.882	8.00	577.60	580.50	574.00	780.00	581.22	.01	.02	0.00	325.03	7.22	802.00
	1.891	50.00	0.00	0.00	574.01	380.00	580.03	.01	.01	.00	213.18	6.02	709.15
	1.891	50.00	0.00	0.00	574.01	520.00	580.51	.01	.01	.00	256.74	6.50	802.00
	1.891	50.00	0.00	0.00	574.01	585.00	580.71	.01	.01	.00	274.43	6.70	802.00
	1.891	50.00	0.00	0.00	574.01	780.00	581.23	.01	.01	.00	325.24	7.22	802.00
	2.100	1100.00	0.00	0.00	574.30	380.00	580.28	.01	.25	.00	200.19	5.98	670.44
	2.100	1100.00	0.00	0.00	574.30	520.00	580.77	.01	.26	.00	239.77	6.47	736.03
	2.100	1100.00	0.00	0.00	574.30	585.00	580.98	.01	.26	.00	256.98	6.68	761.96
	2.100	1100.00	0.00	0.00	574.30	780.00	581.50	.01	.27	.00	302.18	7.20	830.98
	2.412	1650.00	0.00	0.00	574.10	380.00	580.62	.01	.34	.00	252.36	6.52	490.35
	2.412	1650.00	0.00	0.00	574.10	520.00	581.14	.01	.37	.00	308.07	7.04	490.35
	2.412	1650.00	0.00	0.00	574.10	585.00	581.35	.01	.38	.00	332.11	7.25	490.35
	2.412	1650.00	0.00	0.00	574.10	780.00	581.90	.01	.41	.00	403.34	7.80	490.35
	2.421	50.00	0.00	0.00	574.40	375.00	580.63	.01	.01	.00	123.60	6.23	431.99
	2.421	50.00	0.00	0.00	574.40	520.00	581.15	.01	.01	.00	108.78	6.75	443.46
	2.421	50.00	0.00	0.00	574.40	580.00	581.36	.01	.01	.00	105.00	6.96	443.46
	2.421	50.00	0.00	0.00	574.40	770.00	581.92	.01	.01	.00	103.18	7.52	443.46
	2.422	1.00	579.30	578.20	574.40	375.00	580.63	.01	.00	.00	119.78	6.23	432.22
	2.422	1.00	579.30	578.20	574.40	520.00	581.15	.01	.00	.00	108.80	6.75	443.46
	2.422	1.00	579.30	578.20	574.40	580.00	581.36	.01	.00	.00	106.41	6.96	443.46
	2.422	1.00	579.30	578.20	574.40	770.00	581.92	.01	.00	.00	108.01	7.52	443.46
	2.425	16.00	579.30	578.20	574.40	375.00	580.64	.01	.00	.00	118.09	6.24	432.62
	2.425	16.00	579.30	578.20	574.40	520.00	581.15	.01	.00	.00	107.63	6.75	443.46
	2.425	16.00	579.30	578.20	574.40	580.00	581.36	.01	.00	.00	105.41	6.96	443.46
	2.425	16.00	579.30	578.20	574.40	770.00	581.92	.01	.00	.00	107.34	7.52	443.46
	2.426	1.00	0.00	0.00	574.40	375.00	580.64	.01	.00	.00	123.14	6.24	432.53
	2.426	1.00	0.00	0.00	574.40	520.00	581.16	.01	.00	.00	108.66	6.76	443.46
	2.426	1.00	0.00	0.00	574.40	580.00	581.37	.01	.00	.00	104.94	6.97	443.46
	2.426	1.00	0.00	0.00	574.40	770.00	581.92	.01	.00	.00	103.18	7.52	443.46
	2.434	50.00	0.00	0.00	574.37	375.00	580.65	.01	.01	.00	102.40	6.28	458.01
	2.434	50.00	0.00	0.00	574.37	520.00	581.16	.01	.01	.00	87.36	6.79	490.14
	2.434	50.00	0.00	0.00	574.37	580.00	581.37	.01	.01	.00	83.29	7.00	490.14
	2.434	50.00	0.00	0.00	574.37	770.00	581.92	.01	.00	.00	79.94	7.55	490.14
	2.557	650.00	0.00	0.00	574.00	375.00	580.75	.01	.09	.00	207.75	6.75	493.81
	2.557	650.00	0.00	0.00	574.00	520.00	581.24	.01	.07	.00	260.72	7.24	500.00
	2.557	650.00	0.00	0.00	574.00	580.00	581.44	.01	.07	.00	280.57	7.44	500.00
	2.557	650.00	0.00	0.00	574.00	770.00	581.98	.01	.06	.00	342.68	7.98	500.00

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV					
2.614	300.00	0.00	0.00	574.05	330.00	580.77	.00	.02	.00	138.13	6.72	493.26
2.614	300.00	0.00	0.00	574.05	450.00	581.27	.00	.03	.00	165.47	7.22	500.00
2.614	300.00	0.00	0.00	574.05	500.00	581.47	.00	.03	.00	175.50	7.42	500.00
2.614	300.00	0.00	0.00	574.05	660.00	582.01	.00	.03	.00	207.80	7.96	500.00
2.870	1350.00	0.00	0.00	574.29	185.00	580.87	.01	.10	.00	138.22	6.58	212.40
2.870	1350.00	0.00	0.00	574.29	250.00	581.37	.01	.11	.00	164.91	7.08	237.98
2.870	1350.00	0.00	0.00	574.29	270.00	581.57	.01	.10	.00	169.64	7.28	248.34
2.870	1350.00	0.00	0.00	574.29	340.00	582.12	.01	.10	.00	186.32	7.83	300.00
2.878	49.00	0.00	0.00	574.30	185.00	580.88	.01	.01	.00	110.29	6.58	212.32
2.878	49.00	0.00	0.00	574.30	250.00	581.38	.01	.01	.00	127.42	7.08	238.24
2.878	49.00	0.00	0.00	574.30	270.00	581.58	.01	.01	.00	129.66	7.28	248.59
2.878	49.00	0.00	0.00	574.30	340.00	582.12	.00	.01	.00	136.88	7.82	300.00
2.879	1.00	579.20	578.80	574.30	185.00	580.87	.02	.00	.01	122.67	6.57	212.55
2.879	1.00	579.20	578.80	574.30	250.00	581.37	.02	.00	.01	134.51	7.07	238.49
2.879	1.00	579.20	578.80	574.30	270.00	581.58	.02	.00	.01	133.25	7.28	248.82
2.879	1.00	579.20	578.80	574.30	340.00	582.12	.01	.00	.00	122.05	7.82	300.00
2.882	13.00	579.20	578.80	574.30	185.00	580.87	.02	.00	.00	122.88	6.57	212.33
2.882	13.00	579.20	578.80	574.30	250.00	581.38	.02	.00	.00	134.73	7.08	238.29
2.882	13.00	579.20	578.80	574.30	270.00	581.58	.02	.00	.00	133.44	7.28	248.66
2.882	13.00	579.20	578.80	574.30	340.00	582.13	.01	.00	.00	122.04	7.83	300.00
2.883	1.00	0.00	0.00	574.30	185.00	580.89	.01	.00	.00	109.93	6.59	212.84
2.883	1.00	0.00	0.00	574.30	250.00	581.40	.01	.00	.00	126.99	7.10	238.81
2.883	1.00	0.00	0.00	574.30	270.00	581.60	.01	.00	.00	129.26	7.30	249.14
2.883	1.00	0.00	0.00	574.30	340.00	582.13	.00	.00	.00	136.66	7.83	300.00
2.892	49.00	0.00	0.00	574.27	185.00	580.90	.00	.01	.00	108.15	6.63	215.48
2.892	49.00	0.00	0.00	574.27	250.00	581.41	.01	.01	.00	125.01	7.14	241.52
2.892	49.00	0.00	0.00	574.27	270.00	581.61	.00	.01	.00	127.19	7.34	269.40
2.892	49.00	0.00	0.00	574.27	340.00	582.14	.00	.01	.00	134.60	7.87	300.00
2.974	435.00	0.00	0.00	574.00	185.00	580.95	.00	.04	.00	133.82	6.95	300.00
2.974	435.00	0.00	0.00	574.00	250.00	581.46	.00	.04	.00	161.85	7.46	300.00
2.974	435.00	0.00	0.00	574.00	270.00	581.65	.00	.04	.00	168.02	7.65	300.00
2.974	435.00	0.00	0.00	574.00	340.00	582.19	.00	.04	.00	191.96	8.19	300.00
3.429	2400.00	0.00	0.00	574.70	185.00	581.12	.00	.17	.00	148.68	6.42	274.33
3.429	2400.00	0.00	0.00	574.70	250.00	581.64	.00	.19	.00	182.53	6.94	300.00
3.429	2400.00	0.00	0.00	574.70	270.00	581.83	.00	.18	.00	190.17	7.13	300.00
3.429	2400.00	0.00	0.00	574.70	340.00	582.37	.00	.18	.00	218.40	7.67	300.00
3.751	1700.00	0.00	0.00	574.10	185.00	581.22	.00	.10	.00	78.90	7.12	736.08
3.751	1700.00	0.00	0.00	574.10	250.00	581.75	.00	.10	.00	86.64	7.65	764.56
3.751	1700.00	0.00	0.00	574.10	270.00	581.93	.00	.10	.00	87.47	7.83	774.87
3.751	1700.00	0.00	0.00	574.10	340.00	582.46	.00	.09	.00	93.03	8.36	803.90
3.845	500.00	0.00	0.00	573.90	330.00	581.25	.00	.02	.00	129.02	7.35	1113.27
3.845	500.00	0.00	0.00	573.90	450.00	581.77	.00	.02	.00	145.20	7.87	1118.73
3.845	500.00	0.00	0.00	573.90	500.00	581.96	.00	.02	.00	152.13	8.06	1120.66
3.845	500.00	0.00	0.00	573.90	660.00	582.48	.00	.02	.00	173.68	8.58	1126.11

FORM 1411 GO PRINTED BY ROTARY MANIFOLD FG230

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
3.854	49.00	0.00	0.00	575.00	330.00	581.24	.03	.01	.02	230.00	6.24	455.82
3.854	49.00	0.00	0.00	575.00	450.00	581.77	.01	.00	.00	88.16	6.77	995.34
3.854	49.00	0.00	0.00	575.00	500.00	581.96	.01	.00	.00	68.70	6.96	1132.16
3.854	49.00	0.00	0.00	575.00	660.00	582.48	.00	.00	.00	44.36	7.48	1151.25
3.855	1.00	580.90	579.80	575.00	330.00	581.21	.08	.00	.02	272.27	6.21	376.24
3.855	1.00	580.90	579.80	575.00	450.00	581.77	.01	.00	.00	111.41	6.77	994.64
3.855	1.00	580.90	579.80	575.00	500.00	581.96	.01	.00	.00	73.21	6.96	1131.68
3.855	1.00	580.90	579.80	575.00	660.00	582.48	.00	.00	.00	48.89	7.48	1151.25
3.860	25.00	580.90	579.80	575.00	330.00	581.24	.07	.01	.00	265.38	6.24	435.00
3.860	25.00	580.90	579.80	575.00	450.00	581.77	.01	.00	.00	111.00	6.77	995.76
3.860	25.00	580.90	579.80	575.00	500.00	581.96	.01	.00	.00	73.04	6.96	1132.29
3.860	25.00	580.90	579.80	575.00	660.00	582.48	.00	.00	.00	48.86	7.48	1151.25
3.861	1.00	0.00	0.00	575.00	330.00	581.30	.03	.00	.01	211.35	6.30	801.42
3.861	1.00	0.00	0.00	575.00	450.00	581.78	.01	.00	.00	88.04	6.78	995.76
3.861	1.00	0.00	0.00	575.00	500.00	581.96	.01	.00	.00	68.66	6.96	1132.32
3.861	1.00	0.00	0.00	575.00	660.00	582.48	.00	.00	.00	44.40	7.48	1151.25
3.869	50.00	0.00	0.00	574.96	410.00	581.34	.05	.05	.01	303.59	6.38	952.22
3.869	50.00	0.00	0.00	574.96	590.00	581.77	.04	.01	.02	349.13	6.81	1115.69
3.869	50.00	0.00	0.00	574.96	675.00	581.95	.04	.01	.02	357.64	6.99	1151.25
3.869	50.00	0.00	0.00	574.96	910.00	582.48	.02	.00	.01	360.08	7.52	1151.25
3.992	650.00	0.00	0.00	574.40	410.00	581.45	.00	.06	.01	90.28	7.05	1440.26
3.992	650.00	0.00	0.00	574.40	590.00	581.89	.00	.06	.01	112.01	7.49	1445.28
3.992	650.00	0.00	0.00	574.40	675.00	582.06	.00	.06	.01	121.75	7.66	1447.29
3.992	650.00	0.00	0.00	574.40	910.00	582.57	.00	.06	.01	144.65	8.17	1450.00
-2.614	300.00	0.00	0.00	574.05	330.00	580.77	.00	0.00	0.00	138.49	6.72	492.89
-2.614	300.00	0.00	0.00	574.05	450.00	581.27	.00	0.00	0.00	165.62	7.22	500.00
-2.614	300.00	0.00	0.00	574.05	500.00	581.47	.00	0.00	0.00	175.52	7.42	500.00
-2.614	300.00	0.00	0.00	574.05	660.00	582.01	.00	0.00	0.00	207.63	7.96	500.00
3.125	2700.00	0.00	0.00	578.30	145.00	581.04	.03	.28	.01	62.14	2.74	403.11
3.125	2700.00	0.00	0.00	578.30	200.00	581.54	.01	.27	.00	50.87	3.24	472.02
3.125	2700.00	0.00	0.00	578.30	230.00	581.74	.01	.27	.00	50.16	3.44	490.00
3.125	2700.00	0.00	0.00	578.30	320.00	582.28	.00	.27	.00	51.07	3.98	490.00
3.580	2400.00	0.00	0.00	578.30	145.00	581.24	.00	.17	.01	5.34	2.94	1250.00
3.580	2400.00	0.00	0.00	578.30	200.00	581.69	.00	.14	.00	6.67	3.39	1250.00
3.580	2400.00	0.00	0.00	578.30	230.00	581.88	.00	.14	.00	7.43	3.58	1250.00
3.580	2400.00	0.00	0.00	578.30	320.00	582.41	.00	.13	.00	9.66	4.11	1250.00
4.025	2350.00	0.00	0.00	578.70	145.00	581.30	.00	.05	.00	5.07	2.60	967.05
4.025	2350.00	0.00	0.00	578.70	200.00	581.74	.00	.05	.00	6.72	3.04	967.05
4.025	2350.00	0.00	0.00	578.70	230.00	581.93	.00	.05	.00	7.61	3.23	967.05
4.025	2350.00	0.00	0.00	578.70	320.00	582.47	.00	.05	.00	10.28	3.77	967.05

SUMMARY OF ERRORS

CAUTION SECNO= 1.882 PROFILE= 2 20 TRIALS OF EG NOT ENOUGH

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COBJOKA JANDA 10/17/78 10.26.42 7600 JO

FIS: Cottrellville Township

5850-13-1

Marine City Drain

4 Floor Natural Encroachment.

as sent to DNR 6/28/79

FORM 1411 GO PRINTED BY ROTARY MANIFOLD FORMS.
PRINTED IN U.S.A.

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**** 7000 SCOPE 2.1 LVL  221  09/21/78  22.40.56  10/17/78      78290

SYS DEVICES 819/ 4/PF FLS=200K FLL=764K MXS=160K MXL=453K MXB=453B

HH.MM.SS CPU SECOND ORIGIN
          10.26.59.MFA. JO     LV461 NOSBE B+W LYNRELEASE447 02/04/78
10.26.41 00000.013 MFZ.      -COTJO00,T20,STMFZ. . COTTRELLVILLE TOWNSHIP
10.26.41 00000.029 USR.       CHARGE.810-0037-45-78-6261,JANDA,001,D,JANDA.
10.26.42 00000.065 JOB.      -ATTACH,LGO,HEC2N76V2,ID=HEC.
10.26.42 00000.070 MFZ.        PF254 - CYCLE     1 ATTACHED FROM SN=SYSTEM
10.26.42 00000.071 LOD.      -LGO(PL=999999).
10.27.52 00000.896 MFZ.        LD610 - FLS REQUIRED TO LOAD - 0027777 OU.COG
10.27.52 00000.899 MFZ.        LD603 - EXECUTION INITIATED OS.EXP
10.27.52 00000.900 USR.       FORTRAN LIBRARY 439          08/20/78
10.27.58 00003.654 USR.          STOP
10.27.58 00003.654 USR.           2.753 CP SECONDS EXECUTION TIME
10.27.58 00003.658 MFZ.        RM770 - MAXIMUM ACTIVE FILES                  7
10.27.58 00003.659 MFZ.        RM771 - OPEN/CLOSE CALLS                     30
10.27.58 00003.659 MFZ.        RM772 - DATA TRANSFER CALLS               7,832
10.27.58 00003.659 MFZ.        RM773 - CONTROL/POSITIONING CALLS            66
10.27.58 00003.659 MFZ.        RM774 - BM DATA TRANSFER CALLS              604
10.27.58 00003.660 MFZ.        RM775 - BM CONTROL/POSITIONING CALLS         69
10.27.58 00003.660 MFZ.        RM776 - QUEUE MANAGER CALLS                 122
10.27.58 00003.660 MFZ.        RM777 - RECALL CALLS                         81
10.27.58 00003.660 MFZ.        BWMSG - NUMBER OF TAPES MOUNTED
10.27.58 00003.661 MFZ.        SRU                  3.959  SEC
10.27.58 00003.661 MFZ.        SCM                 86.271  KWS
10.27.58 00003.661 MFZ.        I/O                  0.103  MW
10.27.58 00003.661 MFZ.        RMS                  0.132  MWS
10.27.58 00003.662 MFZ.        USER                 2.123  SEC
10.27.58 00003.662 MFZ.        JOB                  3.663  SEC
10.27.58 00003.662 MFZ.        SC050 - 000144 SC/LC SWAPS
10.27.58 00003.662 MFZ.      COTJOKA   COTJOKA
10.27.58.EJ  END OF JOB
COTJOKA  JANDA                10/17/78  10.26.42  7600   JO
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RECEIVED
JUN 29 1979
WATER MANAGEMENT

PRINTED IN U.S.A.
FORM 1411.00 PRINTED BY ROTARY MANIFOLD FORMS.

PROGRAM WILL BE ENTERED AT MAIN (355) SCM LENGTH 64711 LCM LENGTH 0

BLOCK	ADDRESS	LENGTH
/CONTRL/	100	17
MAIN	117	253
/DOUBLE/	372	10
/NAMES/	402	202
H2MAIN	604	15337
ADDPTS	16143	321
BLFLO	16464	1021
BLOCK	17505	261
BWEIR	17766	1427
CARD	21415	2463
CHIMP	24100	1650
DC	25750	706
DONE	26656	60
FLDHAZ	26736	2220
FLODIS	31156	453
BLKDAT.	31631	0
NEAR	31631	16
PRIAH	31647	251
PROF	32120	1142
SCALE	33262	236
SLARA	33520	243
SUMPO	33763	2744
XSEC	36727	1256
YCRIT	40205	122
MAPIT	40327	50
QVAR	40377	24
SAVEIT	40423	24
/STP.END/	40447	1
/FCL.C./	40450	23
/Q8.IO./	40473	140
Q8NTRY=	40633	1
COMIO=	40634	44
ENDFIL=	40700	45
EOF	40745	20
FECMSK=	40765	41
FLTIN=	41026	156
FLTOUT=	41204	315
FMTAP=	41521	372
FORSYS=	42113	561
FORUTL=	42674	16
GETFIT=	42712	43
INCOM=	42755	256
/IO.BUF./	43233	227
INPB=	43462	324
INPC=	44006	173
KODER=	44201	467
KRAKER=	44670	454
OUTB=	45344	246
/HEADING/	45612	16
/LIN.CNT/	45630	1
OUTC=	45631	1054
OUTCOM=	46705	204

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FORM 1411-SO-PRINTED BY ROTARY MANIFOLD FORMS.

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REWIND=      47111          36
GOTOER=      47147          14
ALOG         47163          77
EXP          47262         102
ITOJ*        47364          52
SQRT         47436          46
SYSAID=      47504           1
SYS=1ST      47505          62
XTOY*        47567          55
 //          47644       15045
```

FORM 1011-80-PRINTED BY ROTARY MANIFOLD FORMS.
PRINTED IN U.S.A.

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
**************************************************

C
T1      MARINE CITY DRAIN, COTTRELLVILLE TOWNSHIP  5555-13  PM: GILBERTO M. FONT
T2      10 YEAR FLOW
T3      MARINE CITY DRAIN

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.        2.        0.        0.  0.000000      0.00      0.0       0.   576.620     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    39.000    40.000    41.000    42.000    43.000     1.000    10.000    11.000    12.000

       14.000     8.000     4.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

NC       .070      .070      .040      .300      .500     0.000     0.000     0.000     0.000     0.000
QT      4.000   385.000   530.000   600.000   785.000     0.000     0.000     0.000     0.000     0.000

                    MOUTH OF MARINE CITY DRAIN, MANUFACTURED SEC.

X1      0.000    27.000  1480.000  1550.000     0.000     0.000     0.000     0.000     0.000     0.000
X3      0.000     0.000     0.000  1497.000   577.000  1533.000   577.000     0.000     0.000     0.000
GR    579.000     0.000   579.600   200.000   579.500   400.000   579.500   600.000   579.500  1000.000
GR    579.300  1200.000   579.000  1400.000   578.500  1450.000   578.000  1460.000   577.000  1480.000
GR    571.600  1500.000   571.400  1505.000   571.400  1510.000   571.700  1515.000   571.900  1520.000
GR    571.900  1525.000   572.100  1530.000   574.500  1540.000   577.000  1550.000   577.500  1590.000
GR    579.000  1600.000   578.100  1800.000   578.500  2000.000   578.500  2200.000   578.500  2400.000
GR    578.500  2600.000   578.500  3000.000     0.000     0.000     0.000     0.000     0.000     0.000
NC       .070      .070      .043     0.000     0.000     0.000     0.000     0.000     0.000     0.000

X1       .003    24.000  1500.000  1530.000    19.000    19.000    19.000     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    579.700     0.000   580.300   200.000   580.300   400.000   580.300   600.000   581.700  1000.000
GR    580.900  1200.000   580.300  1400.000   581.500  1500.000   571.600  1500.000   571.400  1505.000
GR    571.400  1510.000   571.700  1515.000   571.900  1520.000   571.900  1525.000   572.100  1530.000
GR    581.500  1530.000   581.200  1600.000   580.200  1800.000   579.800  2000.000   579.600  2200.000
GR    579.200  2400.000   579.200  2600.000   579.600  2800.000   579.800  3000.000     0.000     0.000

                              D/S FACE M-29 BRIDGE

X1       .004     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     0.000     0.000     0.000
BT    11.000   600.000   580.300     0.000   800.000   580.300     0.000  1000.000   581.700     0.000
BT  1400.000   580.300     0.000  1500.000   581.500   578.500  1530.000   581.500   578.500  1600.000
BT   581.200     0.000  1800.000   580.200     0.000  2000.000   579.800     0.000  2200.000   579.600
BT     0.000  2400.000   579.200     0.000     0.000     0.000     0.000     0.000     0.000     0.000
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A U/S FACE M-29 BRIDGE

X1	.015	0.000	0.000	0.000	58.000	58.000	58.000	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	0.000	0.000	0.000
X1	.016	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	0.000	0.000	0.000
NC	.080	.080	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

B 50 FT U/S M-29 BRIDGE

X1	.024	24.000	1500.000	1560.000	49.000	49.000	49.000	0.000	0.000	0.000
GR	579.000	0.000	581.600	200.000	580.900	400.000	581.300	600.000	580.700	800.000
GR	582.300	1000.000	581.400	1200.000	580.300	1400.000	580.000	1500.000	578.200	1510.000
GR	573.200	1510.000	572.700	1520.000	573.000	1530.000	572.400	1547.000	578.900	1547.000
GR	580.800	1560.000	581.000	1600.000	579.800	1800.000	580.400	2000.000	580.500	2200.000
GR	579.800	2400.000	579.500	2600.000	579.600	2800.000	579.400	3000.000	0.000	0.000
NC	.100	.100	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000

DUPLICATED FROM SEC. B

X1	.037	29.000	1500.000	1560.000	69.000	69.000	69.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	580.100	580.100	0.000
GR	579.100	0.000	581.700	200.000	581.000	400.000	581.400	600.000	580.800	800.000
GR	582.400	1000.000	581.500	1200.000	580.400	1400.000	580.100	1500.000	578.300	1510.000
GR	573.300	1510.500	572.800	1520.000	573.100	1530.000	572.800	1540.000	572.340	1547.000
GR	573.400	1550.000	574.500	1552.000	577.000	1554.000	578.000	1556.000	579.000	1558.000
GR	580.200	1560.000	581.000	1600.000	579.800	1800.000	580.400	2000.000	580.500	2200.000
GR	579.900	2400.000	579.600	2600.000	579.900	2800.000	579.500	3000.000	0.000	0.000

D/S FACE PRIVATE WOOD FOOTBRIDGE

X1	.038	43.000	1500.000	1560.000	1.000	1.000	1.000	0.000	0.000	0.000
BT	10.000	1500.000	580.100	579.600	1519.500	580.300	579.800	1520.000	580.300	579.800
BT	1529.500	580.800	580.300	1530.000	580.800	580.300	1539.500	580.300	579.800	1540.000
BT	580.300	579.800	1549.500	580.300	579.800	1550.000	580.300	579.800	1560.000	580.200
BT	579.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	579.100	0.000	581.700	200.000	581.000	400.000	581.400	600.000	580.800	800.000
GR	582.400	1000.000	581.500	1200.000	580.400	1400.000	580.100	1500.000	579.600	1500.000
GR	578.300	1510.000	573.300	1510.500	572.800	1519.500	579.800	1519.500	579.800	1520.000
GR	572.800	1520.000	573.100	1529.500	580.300	1529.500	580.300	1530.000	573.100	1530.000
GR	572.800	1539.500	579.800	1539.500	579.800	1540.000	572.800	1540.000	572.340	1547.000
GR	573.400	1549.500	579.800	1549.500	579.800	1550.000	573.400	1550.000	574.500	1552.000
GR	577.000	1554.000	578.000	1556.000	579.000	1558.000	579.700	1560.000	580.200	1560.000
GR	581.000	1600.000	579.800	1800.000	580.400	2000.000	580.500	2200.000	579.900	2400.000
GR	579.600	2600.000	579.900	2800.000	579.500	3000.000	0.000	0.000	0.000	0.000

B' U/S FACE, PRIVATE WOOD FOOTBRIDGE

X1	.038	0.000	0.000	0.000	4.000	4.000	4.000	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
X1	.039	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	580.100	580.100	0.000

DUPLICATED FROM SEC. B

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GR	579.100	0.000	581.700	200.000	581.000	400.000	581.400	600.000	580.800	800.000
GR	582.400	1000.000	581.500	1200.000	580.400	1400.000	580.100	1500.000	578.300	1510.000
GR	573.300	1510.500	572.800	1520.000	573.100	1530.000	572.800	1540.000	572.200	1547.000
GR	573.400	1550.000	574.500	1552.000	577.000	1554.000	578.000	1556.000	579.000	1558.000
GR	580.200	1560.000	581.000	1600.000	579.800	1800.000	580.400	2000.000	580.500	2200.000
GR	579.900	2400.000	579.600	2600.000	579.900	2800.000	579.500	3000.000	0.000	0.000

700 FT U/S M-29 BRIDGE, MANUFACTURED FROM SEC. C

X1	.147	34.000	1177.000	1230.000	576.000	526.000	526.000	1.132	.550	0.000
X3	0.000	0.000	0.000	778.000	0.000	1321.000	0.000	0.000	0.000	0.000
GR	578.500	0.000	578.500	120.000	577.200	220.000	577.700	320.000	577.400	420.000
GR	577.200	520.000	577.200	620.000	577.200	720.000	577.200	820.000	576.700	920.000
GR	576.400	1020.000	575.700	1120.000	576.300	1177.000	574.100	1185.000	572.500	1190.000
GR	571.500	1198.000	571.300	1202.000	571.300	1210.000	572.300	1219.000	574.100	1223.000
GR	575.800	1230.000	576.300	1245.000	576.500	1260.000	577.100	1320.000	577.500	1325.000
GR	577.300	1370.000	576.800	1420.000	577.000	1720.000	577.000	1920.000	577.000	2120.000
GR	577.700	2320.000	578.500	2520.000	579.200	2720.000	580.000	2920.000	0.000	0.000
NC	.100	.100	.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1150 FT U/S M-29 BRIDGE, MANUFACTURED FROM SEC. C

X1	.233	33.000	1177.000	1220.000	350.000	450.000	450.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	727.000	0.000	1220.000	0.000	0.000	0.000	0.000
GR	578.500	0.000	578.500	120.000	577.200	220.000	577.700	320.000	577.400	420.000
GR	577.200	520.000	577.200	820.000	576.700	920.000	576.400	1020.000	575.700	1120.000
GR	576.300	1177.000	574.100	1185.000	572.500	1190.000	572.400	1198.000	571.470	1202.000
GR	571.470	1202.000	572.500	1207.000	574.300	1215.000	577.700	1220.000	577.900	1245.000
GR	578.100	1260.000	578.200	1320.000	578.500	1325.000	578.300	1370.000	577.800	1420.000
GR	577.600	1720.000	577.300	1920.000	577.000	2120.000	577.700	2320.000	578.500	2320.000
GR	578.500	2520.000	579.200	2720.000	580.000	2920.000	0.000	0.000	0.000	0.000
NC	.110	.160	.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000

C 1350 FT U/S M-29 BRIDGE

X1	.270	35.000	1177.000	1220.000	200.000	200.000	200.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	667.000	0.000	1220.000	0.000	0.000	0.000	0.000
GR	578.500	0.000	578.500	120.000	577.200	220.000	577.700	320.000	577.400	420.000
GR	577.200	520.000	577.200	620.000	577.200	720.000	577.200	820.000	576.700	920.000
GR	576.400	1020.000	575.700	1120.000	576.300	1177.000	574.100	1185.000	572.500	1190.000
GR	571.500	1198.000	577.500	1198.000	577.500	1202.000	571.300	1202.000	571.300	1210.000
GR	572.300	1219.000	578.700	1220.000	577.700	1245.000	576.100	1260.000	577.100	1320.000
GR	577.500	1325.000	577.300	1370.000	576.800	1420.000	577.000	1720.000	577.000	1920.000
GR	577.000	2120.000	577.700	2320.000	578.500	2520.000	579.200	2720.000	580.000	2920.000
NC	.090	.120	.060	0.000	0.000	0.000	0.000	0.000	0.000	0.000

2350 FT U/S M-29 BRIDGE, DUPLICATED FROM SEC. D

X1	.460	36.000	1192.000	1242.000	1000.000	1000.000	1000.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	780.000	0.000	1742.000	0.000	0.000	0.000	0.000
GR	580.000	0.000	578.500	120.000	577.200	220.000	577.700	320.000	577.400	420.000
GR	577.200	520.000	577.200	620.000	577.200	720.000	577.200	820.000	576.700	920.000
GR	576.400	1020.000	575.700	1120.000	576.300	1177.000	576.900	1187.000	577.200	1192.000
GR	574.500	1197.000	573.700	1202.000	572.110	1212.000	573.400	1222.000	574.500	1232.000
GR	575.300	1237.000	577.200	1242.000	577.500	1245.000	577.700	1255.000	577.700	1280.000
GR	577.100	1320.000	577.500	1325.000	577.300	1370.000	576.800	1420.000	577.000	1720.000
GR	577.000	1920.000	577.000	2120.000	577.700	2320.000	578.500	2520.000	579.200	2720.000
GR	580.000	3000.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.150	.150	.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	4.000	380.000	520.000	585.000	780.000	0.000	0.000	0.000	0.000	0.000

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D 37.00 FT U/S M-29 BRIDGE

X1	.715	36.000	1192.000	1242.000	1349.000	1349.000	1349.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1060.000	0.000	1588.000	0.000	0.000	0.000	0.000
GR	580.000	0.000	578.500	120.000	577.200	220.000	577.700	320.000	577.400	420.000
GR	577.200	520.000	577.200	620.000	577.200	720.000	577.200	820.000	576.700	920.000
GR	576.400	1020.000	575.700	1120.000	576.300	1177.000	579.300	1187.000	577.200	1192.000
GR	574.500	1197.000	573.700	1202.000	573.200	1212.000	573.400	1222.000	574.500	1232.000
GR	575.300	1237.000	577.200	1242.000	579.300	1245.000	578.700	1255.000	577.700	1280.000
GR	577.100	1320.000	577.500	1325.000	577.300	1370.000	576.800	1420.000	577.000	1720.000
GR	577.000	1920.000	577.000	2120.000	577.700	2320.000	578.500	2520.000	579.200	2720.000
GR	580.000	3300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.160	.160	.060	0.000	0.000	0.000	0.000	0.000	0.000	0.000

E 5850 FT U/S M-29 BRIDGE

X1	1.123	31.000	800.000	845.000	2150.000	2150.000	2150.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	1375.000	0.000	0.000	0.000	0.000
GR	586.900	0.000	585.900	100.000	584.100	300.000	578.300	500.000	577.600	600.000
GR	577.200	700.000	577.800	774.000	582.300	790.000	580.300	798.000	577.200	800.000
GR	575.300	805.000	574.300	810.000	573.600	820.000	573.500	830.000	574.600	840.000
GR	577.200	845.000	579.200	847.000	581.100	857.000	577.700	873.000	577.800	900.000
GR	578.200	1100.000	578.300	1300.000	578.500	1500.000	579.000	1700.000	579.000	1900.000
GR	578.900	2100.000	577.500	2300.000	577.500	2500.000	578.300	2700.000	579.200	2900.000
GR	580.000	3000.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	1.70	.160	.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000

7850 FT U/S M-29 BRIDGE, MANUFACTURED SEC.

X1	1.501	23.000	800.000	845.000	1975.000	2025.000	2000.000	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
GR	582.000	0.000	580.000	200.000	579.000	250.000	578.300	500.000	577.600	600.000
GR	577.200	700.000	577.800	774.000	582.300	790.000	580.300	798.000	577.200	800.000
GR	575.300	805.000	574.300	810.000	573.750	820.000	573.750	830.000	574.600	840.000
GR	577.200	845.000	579.200	847.000	581.100	857.000	577.700	873.000	577.800	900.000
GR	578.200	1100.000	580.000	1200.000	585.000	1850.000	0.000	0.000	0.000	0.000

50 FT D/S WOOD FOOTBRIDGE IN STATE PARK, DUPLICATED

FROM SEC. F

X1	1.870	26.000	1400.000	1465.000	1900.000	2000.000	1950.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1099.000	581.500	1901.000	581.500	0.000	0.000	0.000
GR	582.000	0.000	581.500	200.000	581.000	400.000	581.000	600.000	580.500	800.000
GR	580.400	1000.000	580.500	1100.000	579.500	1200.000	578.600	1300.000	578.500	1350.000
GR	578.400	1400.000	576.800	1410.000	575.100	1420.000	574.000	1430.000	574.000	1432.500
GR	574.100	1440.000	575.300	1450.000	577.700	1460.000	578.400	1465.000	577.600	1500.000
GR	577.700	1600.000	578.600	1700.000	580.400	1900.000	582.500	2100.000	584.000	2300.000
GR	585.500	2600.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.170	.170	.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D/S FACE WOOD FOOTBRIDGE IN STATE PARK

X1	1.880	0.000	0.000	0.000	50.000	50.000	50.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	1099.000	581.500	1901.000	581.500	577.600	577.600	0.000
SB	.900	1.725	3.090	0.000	16.800	.010	266.000	3.710	574.000	574.000

F U/S FACE WOOD FOOTBRIDGE IN STATE PARK

X1	1.882	0.000	0.000	0.000	8.000	8.000	8.000	0.000	0.000	0.000

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FORM 1411-QD-PRINTED BY ROTARY MANIFOLD FORMS.

X3	10.000	0.000	0.000	109 .000	581.500	1901.000	581.500	577.600	577.600	0.000
BT	18.000	1100.000	580.500	0.000	1200.000	579.500	0.000	1300.000	578.600	0.000
BT	1350.000	578.500	0.000	1400.000	581.200	578.400	1400.000	581.200	578.700	1410.000
BT	582.200	579.600	1420.000	582.800	580.300	1432.500	583.000	580.500	1440.000	582.900
BT	580.400	1450.000	582.500	580.000	1460.000	581.700	579.200	1465.000	581.200	578.700
BT	1465.000	581.200	578.400	1500.000	577.600	0.000	1600.000	577.700	0.000	1700.000
BT	578.600	0.000	1900.000	580.400	0.000	0.000	0.000	0.000	0.000	0.000

50 FT U/S WOOD FOOTBRIDGE IN STATE PARK, REPEATED SEC.

OF F.

X1	1.891	0.000	0.000	0.000	50.000	50.000	50.000	0.000	.010	0.000
X3	0.000	0.000	0.000	1099.000	581.500	1901.000	581.500	0.000	0.000	0.000
NC	.160	.170	.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000

G 1150 FT U/S WOOD FOOTBRIDGE IN STATE PARK

X1	2.100	27.000	1500.000	1550.000	1100.000	1100.000	1100.000	0.000	0.000	0.000
GR	584.200	0.000	585.200	200.000	585.600	400.000	585.600	600.000	584.600	800.000
GR	582.900	1000.000	580.100	1200.000	578.700	1400.000	578.600	1500.000	576.700	1503.000
GR	575.300	1505.000	575.000	1510.000	574.300	1520.000	574.400	1530.000	574.400	1535.000
GR	575.300	1540.000	575.300	1545.000	578.400	1550.000	579.900	1560.000	577.400	1570.000
GR	577.600	1700.000	581.000	1900.000	584.300	2100.000	586.300	2300.000	586.800	2500.000
GR	586.400	2700.000	586.700	2800.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.160	.160	.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000

H 50 FT D/S ROBERT RD. BRIDGE, 21 DEGREES SKEW

X1	2.412	28.000	1500.000	1555.000	1550.000	1750.000	1650.000	.934	0.000	0.000
X3	0.000	0.000	0.000	1156.600	582.500	1898.400	582.500	0.000	0.000	0.000
GR	586.000	0.000	586.800	200.000	586.400	400.000	586.700	600.000	584.700	800.000
GR	584.200	1000.000	581.300	1200.000	578.400	1400.000	579.600	1500.000	578.300	1503.000
GR	576.600	1505.000	575.300	1510.000	574.100	1520.000	574.100	1530.000	574.900	1540.000
GR	575.200	1550.000	576.300	1553.000	578.100	1555.000	580.200	1560.000	578.700	1580.000
GR	578.100	1600.000	579.500	1800.000	581.100	2000.000	581.800	2200.000	582.400	2400.000
GR	582.700	2600.000	582.900	2800.000	582.800	3000.000	0.000	0.000	0.000	0.000
QT	4.000	375.000	520.000	580.000	770.000	0.000	0.000	0.000	0.000	0.000
NC	.032	.031	.090	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	2.421	25.000	1498.000	1530.000	50.000	50.000	50.000	.934	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	1873.000	0.000	0.000	0.000	0.000
GR	585.600	0.000	586.500	200.000	586.700	400.000	586.400	600.000	584.400	800.000
GR	583.700	1000.000	581.200	1200.000	579.900	1400.000	579.700	1498.000	575.000	1500.000
GR	575.100	1505.000	575.100	1510.000	574.400	1515.000	574.700	1520.000	575.200	1525.000
GR	575.800	1528.000	579.500	1530.000	579.300	1600.000	580.300	1800.000	582.000	2000.000
GR	582.200	2200.000	582.900	2400.000	583.200	2600.000	583.700	2800.000	583.600	3000.000
NC	.025	.025	.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D/S FACE ROBERT RD. BRIDGE, 21 DEGREES SKEW

X1	2.422	27.000	1498.000	1530.000	1.000	1.000	1.000	.934	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	.934	0.000
X3	0.000	0.000	0.000	0.000	0.000	1873.000	0.000	0.000	0.000	0.000
BT	19.000	0.000	585.600	0.000	200.000	586.500	0.000	400.000	586.700	0.000
BT	600.000	586.400	0.000	800.000	584.400	0.000	1000.000	583.700	0.000	1200.000
BT	581.200	0.000	1400.000	579.900	0.000	1498.000	579.700	0.000	1498.000	579.700
BT	578.200	1530.000	579.500	578.200	1530.000	579.500	0.000	1600.000	579.300	0.000
BT	1800.000	580.300	0.000	2000.000	582.000	0.000	2200.000	582.200	0.000	2400.000
BT	582.900	0.000	2600.000	583.200	0.000	2800.000	583.700	0.000	0.000	0.000

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G	585.700	1000.000	581.200	1200.000	579.900	1400.000	579.700	1498.000	578.200	1498.000
GR	575.000	1500.000	575.100	1505.000	575.100	1510.000	574.400	1515.000	574.700	1520.000
GR	575.200	1525.000	575.800	1528.000	578.200	1530.000	579.500	1530.000	579.300	1600.000
GR	580.300	1800.000	582.000	2000.000	582.200	2200.000	582.900	2400.000	583.200	2600.000
GR	583.700	2800.000	583.600	3000.000	0.000	0.000	0.000	0.000	0.000	0.000

I U/S FACE ROBERT RD. BRIDGE, 21 DEGREES SKEW

X1	2.425	27.000	1498.000	1530.000	16.000	16.000	16.000	.934	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	.934	0.000
X3	0.000	0.000	0.000	0.000	0.000	1873.000	0.000	0.000	0.000	0.000
BT	19.000	0.000	585.600	0.000	200.000	586.500	0.000	400.000	586.700	0.000
BT	600.000	586.400	0.000	800.000	584.400	0.000	1000.000	583.700	0.000	1200.000
BT	581.200	0.000	1400.000	579.900	0.000	1498.000	579.700	0.000	1498.000	579.700
BT	578.200	1530.000	579.500	578.200	1530.000	579.500	0.000	1600.000	579.300	0.000
BT	1800.000	580.300	0.000	2000.000	582.000	0.000	2200.000	582.200	0.000	2400.000
BT	582.900	0.000	2600.000	583.200	0.000	2800.000	583.700	0.000	0.000	0.000
GR	585.600	0.000	586.500	200.000	586.700	400.000	586.400	600.000	584.400	800.000
GR	583.700	1000.000	581.200	1200.000	579.900	1400.000	579.700	1498.000	578.200	1500.000
GR	575.000	1500.000	575.100	1505.000	575.100	1510.000	574.400	1515.000	574.700	1520.000
GR	575.200	1525.000	575.800	1528.000	578.200	1530.000	579.500	1530.000	579.300	1600.000
GR	580.300	1800.000	582.000	2000.000	582.200	2200.000	582.900	2400.000	583.200	2600.000
GR	583.700	2800.000	583.600	3000.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.032	.031	.090	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	2.426	25.000	1498.000	1530.000	1.000	1.000	1.000	.934	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	1873.000	0.000	0.000	0.000	0.000
GR	585.600	0.000	586.500	200.000	586.700	400.000	586.400	600.000	584.400	800.000
GR	583.700	1000.000	581.200	1200.000	579.900	1400.000	579.700	1498.000	575.000	1500.000
GR	575.100	1505.000	575.100	1510.000	574.400	1515.000	574.700	1520.000	575.200	1525.000
GR	575.800	1528.000	579.500	1530.000	579.300	1600.000	580.300	1800.000	582.000	2000.000
GR	582.200	2200.000	582.900	2400.000	583.200	2600.000	583.700	2800.000	583.600	3000.000
NC	.025	.025	.090	0.000	0.000	0.000	0.000	0.000	0.000	0.000

50 FT U/S ROBERT RD. BRIDG, 21 DEGREES SKEW, REPEATED

SEC.

X1	2.434	25.000	1498.000	1530.000	50.000	50.000	50.000	.934	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	1873.000	0.000	0.000	0.000	0.000
GR	585.600	0.000	586.500	200.000	586.700	400.000	586.400	600.000	584.400	800.000
GR	583.700	1000.000	581.200	1200.000	579.900	1400.000	579.700	1498.000	575.000	1500.000
GR	575.100	1505.000	575.100	1510.000	574.370	1515.000	574.700	1520.000	575.200	1525.000
GR	575.800	1528.000	579.500	1530.000	579.300	1600.000	580.300	1800.000	582.000	2000.000
GR	582.200	2200.000	582.900	2400.000	583.200	2600.000	583.700	2800.000	583.600	3000.000
NC	.150	.120	.060	0.000	0.000	0.000	0.000	0.000	0.000	0.000

J 700 FT U/S ROBERT RD. BRIDGE

X1	2.557	27.000	1500.000	1550.000	725.000	575.000	650.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1274.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	586.500	0.000	586.800	200.000	587.000	400.000	585.500	600.000	584.600	800.000
GR	584.400	1000.000	583.400	1200.000	578.400	1400.000	578.000	1450.000	580.500	1490.000
GR	578.500	1500.000	576.900	1503.000	575.200	1508.000	574.400	1515.000	574.000	1520.000
GR	574.200	1530.000	575.400	1540.000	576.900	1545.000	578.900	1550.000	577.800	1600.000
GR	579.300	1800.000	582.800	2000.000	581.500	2200.000	582.000	2400.000	582.600	2600.000
GR	583.300	2800.000	583.500	3000.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	4.000	330.000	450.000	500.000	660.000	0.000	0.000	0.000	0.000	0.000
NC	.080	.080	.065	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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FORM 1411 BD PRINTED BY ROTARY MANIFOLD FORMS

MANUFACTURED FROM SEC. J

X1	2.614	0.000	0.000	0.000	300.000	300.000	300.000	0.000	.050	0.000
X3	0.000	0.000	0.000	1200.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.080	.080	.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	4.000	185.000	250.000	270.000	340.000	0.000	0.000	0.000	0.000	0.000

50 FT D/S PRIVATE BRIDGE, DUPLICATED FROM SEC. J'

X1	2.870	19.000	593.000	635.000	1350.000	1350.000	1350.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	300.000	0.000	1000.000	0.000	0.000	0.000	0.000
GR	586.100	0.000	584.700	200.000	580.300	400.000	579.500	500.000	581.600	568.000
GR	581.700	593.000	574.400	600.000	574.290	605.000	574.290	610.000	574.600	615.000
GR	574.700	620.000	575.000	625.000	581.700	635.000	581.600	660.000	579.200	700.000
GR	579.400	800.000	581.800	1000.000	582.700	1200.000	585.200	1500.000	0.000	0.000
NC	.090	.090	.110	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	2.878	21.000	600.000	625.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	578.800	578.800	0.000
GR	586.100	0.000	584.700	200.000	580.300	400.000	579.500	500.000	581.600	568.000
GR	581.700	593.000	574.400	600.000	574.300	605.000	574.300	610.000	574.500	612.000
GR	574.600	613.000	574.700	615.000	574.700	620.000	575.000	625.000	581.700	635.000
GR	581.600	660.000	579.200	700.000	579.400	800.000	581.800	1000.000	582.700	1200.000
GR	585.200	1500.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.090	.090	.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D/S FACE, PRIVATE BRIDGE

X1	2.879	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
BT	18.000	200.000	584.700	0.000	400.000	580.300	0.000	500.000	579.500	0.000
BT	568.000	581.600	0.000	593.000	581.700	0.000	600.000	581.700	574.400	600.000
BT	581.700	578.800	612.000	581.700	578.800	612.000	581.700	574.500	613.000	581.700
BT	574.600	613.000	581.700	578.800	625.000	581.700	578.800	625.000	581.700	575.000
BT	635.000	581.700	0.000	660.000	581.600	0.000	700.000	579.200	0.000	800.000
BT	579.400	0.000	1000.000	581.800	0.000	0.000	0.000	0.000	0.000	0.000

J' U/S FACE, PRIVATE BRIDGE

X1	2.882	0.000	0.000	0.000	13.000	13.000	13.000	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	.090	.090	.110	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	2.883	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	579.500	579.200	0.000

50 FT U/S PRIVATE BRIDGE, REPEATED SEC.

X1	2.892	0.000	0.000	0.000	49.000	49.000	49.000	0.000	-.030	0.000
NH	9.000	.080	1200.000	.140	1300.000	.070	1352.000	.140	1400.000	.085
NH	2800.000	.150	3023.000	.075	3038.000	.130	3300.000	.120	3500.000	0.000

K 2900 FT U/S ROBERT RD. BRIDGE

X1	2.974	63.000	1300.000	1352.000	435.000	435.000	435.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	970.000	583.000	1550.000	583.000	0.000	0.000	0.000
GR	588.300	0.000	592.100	200.000	591.100	400.000	583.900	600.000	581.900	800.000
GR	580.700	1000.000	579.400	1200.000	578.100	1300.000	576.700	1302.000	575.600	1305.000

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FORM 141: GO PRINTED BY ROTARY MANIFOLD FORMS

GR	581.100	1552.000	580.000	1400.000	582.700	1600.000	586.400	1800.000	586.300	2000.000
GR	588.500	2100.000	588.300	2200.000	586.900	2300.000	585.900	2400.000	584.400	2500.000
GR	583.400	2600.000	582.700	2700.000	581.200	2800.000	580.400	2900.000	580.500	3000.000
GR	579.700	3023.000	578.700	3027.000	578.300	3030.000	578.300	3034.000	580.500	3038.000
GR	580.500	3100.000	580.600	3200.000	582.500	3300.000	583.800	3400.000	584.200	3500.000
GR	582.100	3600.000	580.100	3700.000	579.500	3800.000	579.500	3827.000	579.000	3838.000
GR	578.300	3850.000	579.200	3872.000	579.800	3885.000	579.800	3900.000	579.800	4000.000
GR	580.100	4100.000	583.500	4200.000	581.800	4300.000	581.400	4400.000	581.700	4500.000
GR	582.100	4600.000	583.500	4700.000	583.700	4800.000	583.800	4900.000	584.500	5000.000
GR	584.600	5100.000	584.700	5200.000	585.000	5230.000	0.000	0.000	0.000	0.000
NH	8.000	.095	1400.000	.130	1500.000	.081	1552.000	.130	1600.000	.110
NH	1800.000	.140	3338.000	.080	3352.000	.150	4900.000	0.000	0.000	0.000

L 5300 FT U/S ROBERT RD. BRIDGE

X1	3.429	56.000	1500.000	1552.000	2425.000	2375.000	2400.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1300.000	583.500	1800.000	583.500	0.000	0.000	0.000
GR	594.200	0.000	593.300	200.000	587.600	400.000	582.900	600.000	581.700	800.000
GR	584.300	1000.000	588.600	1120.000	586.300	1200.000	580.600	1400.000	579.000	1500.000
GR	577.000	1503.000	576.400	1505.000	575.400	1510.000	575.300	1520.000	574.700	1530.000
GR	575.100	1540.000	576.500	1545.000	578.500	1552.000	580.000	1600.000	583.000	1800.000
GR	590.400	2000.000	591.300	2100.000	591.800	2200.000	591.600	2300.000	590.900	2400.000
GR	590.700	2500.000	590.500	2600.000	587.000	2700.000	582.100	2800.000	579.800	2860.000
GR	579.400	2900.000	579.700	3000.000	579.500	3100.000	579.600	3200.000	579.500	3300.000
GR	579.700	3338.000	578.700	3342.000	578.300	3345.000	578.700	3349.000	579.400	3352.000
GR	579.400	3400.000	580.000	3500.000	579.600	3600.000	579.600	3700.000	579.500	3800.000
GR	579.300	3900.000	579.400	4000.000	579.600	4100.000	579.300	4200.000	579.500	4300.000
GR	579.500	4400.000	579.700	4500.000	581.200	4600.000	583.700	4700.000	584.600	4800.000
GR	586.000	4900.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	.135	1381.000	.091	1420.000	.092	2066.000	.085	2080.000	.150
NH	3362.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

END OF ISLAND PROBLEM

U/S CONFLUENCE, DUPLICATED FROM SEC. M, SKEWED

X1	3.751	35.000	1500.000	1540.000	1600.000	1800.000	1700.000	.921	0.000	0.000
X3	0.000	0.000	0.000	900.000	583.500	1900.000	583.500	0.000	0.000	0.000
GR	584.300	0.000	581.700	200.000	585.500	400.000	589.300	600.000	584.400	800.000
GR	580.600	1000.000	580.600	1200.000	580.600	1400.000	580.600	1455.000	585.900	1480.000
GR	578.100	1500.000	576.300	1503.000	575.200	1505.000	574.800	1510.000	574.300	1520.000
GR	574.100	1530.000	577.100	1540.000	580.000	1547.000	578.500	1560.000	579.200	1600.000
GR	579.000	1800.000	579.200	2000.000	579.800	2200.000	579.900	2243.000	579.000	2247.000
GR	578.900	2250.000	578.700	2254.000	579.500	2258.000	579.700	2400.000	579.500	2600.000
GR	579.000	2800.000	579.000	3000.000	579.500	3200.000	580.000	3400.000	585.000	3650.000
QT	4.000	330.000	450.000	500.000	660.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	.090	1381.000	.065	1420.000	.160	2066.000	.150	2080.000	.150
NH	3362.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

M 50 FT D/S BROADBRIDGE RD. BRIDGE, 23 DEGREES SKEW

X1	3.845	30.000	1500.000	1540.000	500.000	500.000	500.000	.921	0.000	0.000
X3	0.000	0.000	0.000	900.000	583.500	3400.000	583.500	0.000	0.000	0.000
GR	584.300	0.000	581.700	200.000	585.500	400.000	589.300	600.000	584.400	800.000
GR	580.600	1000.000	580.600	1200.000	580.600	1400.000	580.600	1455.000	585.900	1480.000
GR	578.100	1500.000	576.300	1503.000	575.200	1505.000	574.800	1510.000	574.300	1520.000
GR	573.900	1530.000	577.100	1540.000	583.100	1547.000	578.500	1560.000	579.200	1600.000
GR	579.000	1800.000	579.200	2000.000	579.800	2200.000	579.700	2400.000	579.500	2600.000
GR	579.000	2800.000	579.000	3000.000	579.500	3200.000	580.000	3400.000	585.000	3650.000
NC	.016	.016	.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000

PRINTED IN U.S.A.
FORM 1413.00 PRINTED BY ROTARY MANIFOLD FORMS

X3	0.000	0.000	0.000	1000.000	582.500	3500.000	582.500	0.000	0.000	0.000
GR	587.400	0.000	586.000	200.000	587.000	400.000	587.500	600.000	585.600	800.000
GR	582.900	1000.000	581.700	1200.000	581.800	1400.000	582.000	1500.000	577.100	1500.000
GR	576.400	1505.000	575.700	1510.000	575.000	1515.000	575.000	1520.000	575.400	1525.000
GR	576.400	1527.000	577.500	1530.000	581.800	1530.000	581.700	1600.000	581.200	1800.000
GR	581.300	2000.000	581.300	2200.000	581.000	2400.000	580.900	2530.000	580.900	2600.000
GR	580.900	2800.000	581.000	3000.000	581.500	3200.000	582.000	3400.000	585.000	3649.000
NC	.016	.016	.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D/S FACE BROADBRIDGE RD. BRIDGE, 23 DEGREES SKEW

X1	3.855	30.000	1500.000	1530.000	1.000	1.000	1.000	.921	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	.921	0.000
BT	23.000	0.000	587.400	0.000	200.000	586.000	0.000	400.000	587.000	0.000
BT	600.000	587.500	0.000	800.000	585.600	0.000	1000.000	582.900	0.000	1200.000
BT	581.700	0.000	1400.000	581.800	0.000	1500.000	582.000	579.800	1500.000	582.000
BT	579.800	1530.000	581.800	579.800	1530.000	581.800	579.800	1600.000	581.700	0.000
BT	1800.000	581.200	0.000	2000.000	581.300	0.000	2200.000	581.300	0.000	2400.000
BT	581.000	0.000	2530.000	580.900	0.000	2600.000	580.900	0.000	2800.000	580.900
BT	0.000	3000.000	581.000	0.000	3200.000	581.500	0.000	3400.000	582.000	0.000
GR	587.400	0.000	586.000	200.000	587.000	400.000	587.500	600.000	585.600	800.000
GR	582.900	1000.000	581.700	1200.000	581.800	1400.000	582.000	1500.000	577.100	1500.000
GR	576.400	1505.000	575.700	1510.000	575.000	1515.000	575.000	1520.000	575.400	1525.000
GR	576.400	1527.000	577.500	1530.000	581.800	1530.000	581.700	1600.000	581.200	1800.000
GR	581.300	2000.000	581.300	2200.000	581.000	2400.000	580.900	2530.000	580.900	2600.000
GR	580.900	2800.000	581.000	3000.000	581.500	3200.000	582.000	3400.000	585.000	3649.000

N U/S FACE BROADBRIDGE RD. BRIDGE, 23 DEGREES SKEW

X1	3.860	30.000	1500.000	1530.000	25.000	25.000	25.000	.921	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	.921	0.000
BT	23.000	0.000	587.400	0.000	200.000	586.000	0.000	400.000	587.000	0.000
BT	600.000	587.500	0.000	800.000	585.600	0.000	1000.000	582.900	0.000	1200.000
BT	581.700	0.000	1400.000	581.800	0.000	1500.000	582.000	579.800	1500.000	582.000
BT	579.800	1530.000	581.800	579.800	1530.000	581.800	579.800	1600.000	581.700	0.000
BT	1800.000	581.200	0.000	2000.000	581.300	0.000	2200.000	581.300	0.000	2400.000
BT	581.000	0.000	2530.000	580.900	0.000	2600.000	580.900	0.000	2800.000	580.900
BT	0.000	3000.000	581.000	0.000	3200.000	581.500	0.000	3400.000	582.000	0.000
GR	587.400	0.000	586.000	200.000	587.000	400.000	587.500	600.000	585.600	800.000
GR	582.900	1000.000	581.700	1200.000	581.800	1400.000	582.000	1500.000	577.100	1500.000
GR	576.400	1505.000	575.700	1510.000	575.000	1515.000	575.000	1520.000	575.400	1525.000
GR	576.400	1527.000	577.500	1530.000	581.800	1530.000	581.700	1600.000	581.200	1800.000
GR	581.300	2000.000	581.300	2200.000	581.000	2400.000	580.900	2530.000	580.900	2600.000
GR	580.900	2800.000	581.000	3000.000	581.500	3200.000	582.000	3400.000	585.000	3649.000
NC	.016	.016	.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	3.861	30.000	1500.000	1530.000	1.000	1.000	1.000	.921	0.000	0.000
X3	0.000	0.000	0.000	999.000	583.000	3650.000	583.000	0.000	0.000	0.000
GR	587.400	0.000	586.000	200.000	587.000	400.000	587.500	600.000	585.600	800.000
GR	582.900	1000.000	581.700	1200.000	581.800	1400.000	582.000	1500.000	577.100	1500.000
GR	576.400	1505.000	575.700	1510.000	575.000	1515.000	575.000	1520.000	575.400	1525.000
GR	576.400	1527.000	577.500	1530.000	581.800	1530.000	581.700	1600.000	581.200	1800.000
GR	581.300	2000.000	581.300	2200.000	581.000	2400.000	580.900	2530.000	580.900	2600.000
GR	580.900	2800.000	581.000	3000.000	581.500	3200.000	582.000	3400.000	585.000	3649.000
QT	4.000	410.000	590.000	675.000	910.000	0.000	0.000	0.000	0.000	0.000
NC	.150	.160	.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000

50 FT U/S BROADBRIDGE RD. BRIDGE, 23 DEGREES SKEW

REPEATED SEC.

PRINTED IN U.S.A.
FORM 1011.00 PRINTED BY ROTARY MANIFOLD FORMS.

GR	587.400	0.000	586.000	200.000	587.000	400.000	587.300	600.000	585.600	800.000	
GR	582.900	1000.000	581.700	1200.000	581.800	1400.000	578.100	1500.000	577.100	1500.000	
GR	576.400	1505.000	575.700	1510.000	574.960	1515.000	574.960	1520.000	575.400	1525.000	
GR	576.400	1527.000	577.500	1530.000	578.300	1530.000	581.700	1600.000	581.200	1800.000	
GR	581.300	2000.000	581.300	2200.000	581.000	2400.000	580.900	2530.000	580.900	2600.000	
GR	580.900	2800.000	581.000	3000.000	581.500	3200.000	582.000	3400.000	585.000	3649.000	
NC	.150	.140	.070	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

R

O 700 FT U/S BROADBRIDGE RD. BRIDGE

X1	3.992	29.000	1400.000	1440.000	750.000	300.000	650.000	0.000	0.000	0.000	
X3	0.000	0.000	0.000	100.000	0.000	3100.000	0.000	0.000	0.000	0.000	
GR	593.000	0.000	586.800	100.000	581.900	300.000	583.600	500.000	585.100	700.000	
GR	582.200	900.000	584.000	1000.000	581.000	1100.000	578.900	1300.000	578.400	1400.000	
GR	576.900	1401.000	575.700	1405.000	574.700	1410.000	574.400	1420.000	575.200	1430.000	
GR	576.300	1433.000	581.300	1440.000	582.300	1447.000	580.500	1455.000	578.500	1500.000	
GR	579.400	1700.000	579.400	1900.000	579.400	2100.000	579.300	2145.000	579.400	2165.000	
GR	579.800	3000.000	580.000	3200.000	585.300	3300.000	590.000	3350.000	0.000	0.000	
QT	4.000	330.000	450.000	500.000	660.000	0.000	0.000	0.000	0.000	0.000	
NC	.080	.080	.065	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

1000 FT U/S ROBERT RD. BRIDGE, AT THE CONFLUENCE

MANUFACTURED FROM SEC. J

X1	-2.614	27.000	1500.000	1550.000	300.000	300.000	300.000	0.000	.050	0.000	
X3	0.000	0.000	0.000	120.000	0.000	0.000	0.000	0.000	0.000	0.000	
GR	586.500	0.000	586.800	200.000	587.000	400.000	585.500	600.000	584.600	800.000	
GR	584.400	1000.000	583.400	1200.000	578.400	1400.000	578.000	1450.000	580.500	1490.000	
GR	578.500	1500.000	576.900	1503.000	575.200	1508.000	574.400	1515.000	574.000	1520.000	
GR	574.200	1530.000	575.400	1540.000	576.900	1545.000	578.900	1550.000	577.800	1600.000	
GR	579.300	1800.000	582.800	2000.000	581.500	2200.000	582.000	2400.000	582.600	2600.000	
GR	583.300	2800.000	583.500	3000.000	0.000	0.000	0.000	0.000	0.000	0.000	
QT	4.000	145.000	200.000	230.000	320.000	0.000	0.000	0.000	0.000	0.000	
NH	9.000	.080	1200.000	.140	1300.000	.070	1352.000	.140	1400.000	.085	
NH	2800.000	.150	3023.000	.077	3038.000	.130	3300.000	.120	3500.000	0.000	

K 2900 FT U/S ROBERT RD. BRIDGE

X1	3.125	63.000	3023.000	3038.000	2400.000	2800.000	2700.000	0.000	0.000	0.000	
X3	0.000	0.000	0.000	2700.000	583.000	3400.000	583.000	0.000	0.000	0.000	
GR	588.300	0.000	592.100	200.000	591.100	400.000	583.900	600.000	581.900	800.000	
GR	580.700	1000.000	579.400	1200.000	578.100	1300.000	576.700	1302.000	575.600	1305.000	
GR	574.600	1310.000	574.000	1320.000	574.300	1330.000	575.300	1340.000	577.100	1345.000	
GR	581.100	1352.000	580.600	1400.000	582.700	1600.000	588.400	1800.000	588.300	2000.000	
GR	588.500	2100.000	588.300	2200.000	586.900	2300.000	585.900	2400.000	584.400	2500.000	
GR	583.400	2600.000	582.700	2700.000	581.200	2800.000	580.400	2900.000	580.500	3000.000	
GR	579.700	3023.000	578.700	3027.000	578.300	3030.000	578.300	3034.000	580.500	3038.000	
GR	580.500	3100.000	580.600	3200.000	582.500	3300.000	583.800	3400.000	584.200	3500.000	
GR	582.100	3600.000	580.100	3700.000	579.500	3800.000	579.500	3827.000	579.000	3838.000	
GR	578.300	3850.000	579.200	3872.000	579.800	3885.000	579.800	3900.000	579.800	4000.000	
GR	580.100	4100.000	583.500	4200.000	581.800	4300.000	581.400	4400.000	581.700	4500.000	
GR	582.100	4600.000	583.500	4700.000	583.700	4800.000	583.800	4900.000	584.500	5000.000	
GR	584.600	5100.000	584.700	5200.000	585.000	5230.000	0.000	0.000	0.000	0.000	
NH	8.000	.085	1400.000	.140	1500.000	.075	1552.000	.150	1600.000	.110	
NH	1800.000	.140	3338.000	.077	3352.000	.150	4900.000	0.000	0.000	0.000	

L 5300 FT U/S ROBERT RD. BRIDGE

X1	3.580	56.000	3338.000	3352.000	2400.000	2400.000	2400.000	0.000	0.000	0.000	
X3	0.000	0.000	0.000	2750.000	583.500	4500.000	583.500	0.000	0.000	0.000	

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FORM 1411-3D-PRINTED BY ROTARY MANIFOLD FORMS

GR	584.300	1000.000	588.600	1120.000	586.500	1200.000	580.300	1400.000	579.000	1500.000
GR	577.000	1503.000	576.400	1505.000	575.400	1510.000	575.300	1520.000	574.700	1530.000
GR	575.100	1540.000	576.500	1545.000	578.500	1552.000	580.000	1600.000	583.000	1800.000
GR	590.400	2000.000	591.300	2100.000	591.800	2200.000	591.600	2300.000	590.900	2400.000
GR	590.700	2500.000	590.500	2600.000	587.000	2700.000	582.100	2800.000	579.800	2860.000
GR	579.400	2900.000	579.700	3000.000	579.500	3100.000	579.600	3200.000	579.500	3300.000
GR	579.700	3338.000	578.700	3342.000	578.300	3345.000	578.700	3349.000	579.400	3352.000
GR	579.400	3400.000	580.000	3500.000	579.600	3600.000	579.600	3700.000	579.500	3800.000
GR	579.300	3900.000	579.400	4000.000	579.600	4100.000	579.300	4200.000	579.500	4300.000
GR	579.500	4400.000	579.700	4500.000	581.200	4600.000	583.700	4700.000	584.600	4800.000
GR	586.000	4900.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	.150	1381.000	.080	1420.000	.150	2066.000	.077	2080.000	.150
NH	3362.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

U/S CONFLUENCE, DUPLICATED FROM SEC. M, SKEWED

END OF ISLAND PROBLEM

X1	4.025	35.000	2243.000	2258.000	2100.000	2500.000	2350.000	.921	0.000	0.000
X3	0.000	0.000	0.000	1900.000	583.600	3600.000	583.600	0.000	0.000	0.000
GR	584.300	0.000	581.700	200.000	585.500	400.000	589.300	600.000	584.400	800.000
GR	580.600	1000.000	580.600	1200.000	580.600	1400.000	580.600	1455.000	585.900	1480.000
GR	578.100	1500.000	576.300	1503.000	575.200	1505.000	574.800	1510.000	574.300	1520.000
GR	574.100	1530.000	577.100	1540.000	583.100	1547.000	578.500	1560.000	579.200	1600.000
GR	579.000	1800.000	579.200	2000.000	579.800	2200.000	579.700	2243.000	579.000	2247.000
GR	578.900	2250.000	578.700	2254.000	579.500	2258.000	579.700	2400.000	579.500	2600.000
GR	579.000	2800.000	579.000	3000.000	579.500	3200.000	580.000	3400.000	585.000	3650.000
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

PRINTED IN U.S.A.
FORM 1411-30-PRINTED BY ROTARY MANIFOLD FORMS

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED  AUG1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
**************************************************

T1      MARINE CITY DRAIN, COTTRELLVILLE TOWNSHIP  5555-13  PM: GILBERTO M. FONT
T2      100 YEAR FLOW                                        Natural
T3      MARINE CITY DRAIN

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.        4.        0.        0.  0.000000      0.00      0.0       0.   576.620     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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PRINTED IN U.S.A.

FORM 141, 80-PRINTED BY ROTARY MANIFOLD FORMS.

*PROF 3

CCHV= .300 CEHV= .500

*SECNO .000

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
3470 ENCROACHMENT STATIONS=		1497.0	1533.0	TYPE=	1	TARGET=	36.000		
ELENCL=	577.00	ELENCR=	577.00						
			MOUTH OF MARINE CITY DRAIN, MANUFACTURED SEC.						
0.00	5.22	576.62	0.00	576.62	576.80	.18	0.00	0.00	577.00
600.	0.	600.	0.	0.	174.	0.	0.	0.	577.00
0.00	0.00	3.44	0.00	.070	.040	.070	0.000	571.40	1497.00
.001382	0.	0.	0.	0	0	0	0.00	36.00	1533.00

*SECNO .003

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 581.50 ELREA= 581.50

.00	5.22	576.62	0.00	0.00	576.87	.26	.03	.04	581.50
600.	0.	600.	0.	0.	148.	0.	0.	0.	581.50
.00	0.00	4.06	0.00	.070	.043	.070	.041	571.40	1500.00
.002380	19.	19.	19.	2	0	0	0.00	30.00	1530.00

*SECNO .004

3370 NORMAL BRIDGE, NRD= 11 MIN ELTRD= 579.20 MAX ELLC= 578.50

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 581.50 ELREA= 581.50

D/S FACE M-29 BRIDGE

.00	5.22	576.62	0.00	0.00	576.88	.26	.00	.00	581.50
600.	0.	600.	0.	0.	148.	0.	0.	0.	581.50
.00	0.00	4.06	0.00	.070	.043	.070	.039	571.40	1500.00
.002378	1.	1.	1.	0	0	0	0.00	30.00	1530.00

*SECNO .015

3370 NORMAL BRIDGE, NRD= 11 MIN ELTRD= 579.20 MAX ELLC= 578.50

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 581.50 ELREA= 581.50

A U/S FACE M-29 BRIDGE

.02	5.37	576.77	0.00	0.00	577.01	.24	.13	.00	581.50
600.	0.	600.	0.	0.	152.	0.	0.	0.	581.50
.01	0.00	3.94	0.00	.070	.043	.070	.041	571.40	1500.00
.002180	58.	58.	58.	1	0	0	0.00	30.00	1530.00

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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 581.50 ELREA= 581.50

.02	5.37	576.77	0.00	0.00	577.02	.24	.00	.00	581.50
600.	0.	600.	0.	0.	152.	0.	0.	0.	581.50
.01	0.00	3.94	0.00	.070	.043	.070	.041	571.40	1500.00
.002169	1.	1.	1.	0	0	0	0.00	30.00	1530.00

*SECNO .024

B 50 FT U/S M-29 BRIDGE

.02	4.48	576.88	0.00	0.00	577.13	.25	.11	.00	580.00
600.	0.	600.	0.	0.	151.	0.	0.	0.	580.80
.01	0.00	3.98	0.00	.080	.040	.080	.040	572.40	1510.00
.002305	49.	49.	49.	0	0	0	0.00	37.00	1547.00

*SECNO .037

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 580.10 ELREA= 580.10

DUPLICATED FROM SEC. B

.04	4.75	577.09	0.00	0.00	577.28	.18	.13	.02	580.10
600.	0.	600.	0.	0.	175.	0.	1.	0.	580.20
.01	0.00	3.42	0.00	.100	.040	.100	.040	572.34	1510.12
.001559	69.	69.	69.	2	0	0	0.00	44.07	1554.19

*SECNO .038

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 10 MIN ELTRD= 580.10 MAX ELLC= 580.30

D/S FACE PRIVATE WOOD FOOTBRIDGE

.04	4.75	577.09	0.00	0.00	577.29	.20	.00	.01	580.10
600.	0.	600.	0.	0.	167.	0.	1.	0.	580.20
.01	0.00	3.59	0.00	.100	.040	.100	.040	572.34	1510.12
.003485	1.	1.	1.	0	0	0	0.00	42.07	1554.19

*SECNO .038

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 10 MIN ELTRD= 580.10 MAX ELLC= 580.30

B' U/S FACE, PRIVATE WOOD FOOTBRIDGE

.04	4.76	577.10	0.00	0.00	577.30	.20	.01	.00	580.10
600.	0.	600.	0.	0.	167.	0.	1.	0.	580.20
.01	0.00	3.59	0.00	.100	.040	.100	.040	572.34	1510.12
.003482	4.	4.	4.	0	0	0	0.00	42.08	1554.20

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*SECNO .039

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= 580.10 ELREA= 580.10

.04	4.77	577.11	0.00	0.00	577.31	.20	.00	.00	580.10
600.	0.	600.	0.	0.	168.	0.	1.	0.	580.20
.02	0.00	3.58	0.00	.100	.040	.100	.039	572.34	1510.12
.003465	1.	1.	1.	0	0	0	0.00	42.09	1554.21

*SECNO .048

DUPLICATED FROM SEC. B

.05	4.94	577.24	0.00	0.00	577.42	.18	.11	.01	580.20
600.	0.	600.	0.	0.	178.	0.	1.	0.	580.30
.02	0.00	3.37	0.00	.100	.040	.100	.039	572.30	1510.12
.001487	49.	49.	49.	2	0	0	0.00	44.17	1554.29

*SECNO .147

3470 ENCROACHMENT STATIONS= 880.7 1495.4 TYPE= 1 TARGET= 543.000

700 FT U/S M-29 BRIDGE, MANUFACTURED FROM SEC. C

.15	5.92	577.77	0.00	0.00	577.82	.05	.36	.04	576.85
600.	90.	496.	15.	318.	259.	62.	6.	4.	576.35
.11	.28	1.91	.24	.100	.040	.100	.040	571.85	880.70
.000386	576.	526.	526.	3	0	0	0.00	614.67	1495.37

*SECNO .233

3470 ENCROACHMENT STATIONS= 727.0 1220.0 TYPE= 1 TARGET= -493.000

1150 FT U/S M-29 BRIDGE, MANUFACTURED FROM SEC. C

.23	6.51	577.98	0.00	0.00	578.01	.03	.18	.01	576.30
600.	272.	328.	0.	624.	191.	0.	12.	9.	100000.00
.21	.44	1.72	0.00	.100	.050	.100	.044	571.47	727.00
.000495	350.	450.	450.	2	0	0	0.00	493.00	1220.00

*SECNO .270

3470 ENCROACHMENT STATIONS= 667.0 1220.0 TYPE= 1 TARGET= 553.000

C 1350 FT U/S M-29 BRIDGE

.27	6.79	578.09	0.00	0.00	578.10	.02	.10	.00	576.30
600.	285.	315.	0.	720.	211.	0.	16.	12.	100000.00
.27	.40	1.49	0.00	.110	.050	.160	.045	571.30	667.00
.000470	200.	200.	200.	1	0	0	0.00	552.90	1219.90

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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= 780.0 1742.0 TYPE= 1 TARGET= 962.000

2350. FT U/S M-29 BRIDGE, DUPLICATED FROM SEC. D

.46	6.28	578.39	0.00	0.00	578.39	.00	.28	.00	577.20
600.	270.	193.	137.	769.	218.	660.	46.	29.	577.20
.84	.35	.89	.21	.090	.060	.120	.051	572.11	780.00
.000187	1000.	1000.	1000.	2	0	0	0.00	962.00	1742.00

*SECNO .715

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 1060.0 1588.0 TYPE= 1 TARGET= 528.000

D 3700 FT U/S M-29 BRIDGE

.72	5.56	578.76	0.00	0.00	578.77	.01	.38	.00	577.20
585.	141.	278.	166.	341.	225.	544.	89.	52.	577.20
1.32	.41	1.23	.30	.150	.070	.150	.058	573.20	1060.00
.000469	1349.	1349.	1349.	2	0	0	0.00	515.14	1588.00

*SECNO 1.123

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= .0 1375.0 TYPE= 1 TARGET= 1374.999

E 5850 FT U/S M-29 BRIDGE

1.12	6.07	579.57	0.00	0.00	579.58	.01	.81	.00	577.20
585.	141.	293.	152.	567.	230.	730.	154.	86.	577.20
2.12	.25	1.27	.21	.160	.060	.160	.059	573.50	456.26
.000309	2150.	2150.	2150.	2	0	0	0.00	885.29	1375.00

*SECNO 1.501

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 600.0 1850.0 TYPE= 1 TARGET= -600.000

7850 FT U/S M-29 BRIDGE, MANUFACTURED SEC.

1.50	6.43	580.18	0.00	0.00	580.19	.01	.60	.00	577.20
585.	140.	288.	157.	488.	254.	631.	221.	121.	577.20
2.92	.29	1.14	.25	.170	.070	.160	.062	573.75	600.00
.000295	1975.	2000.	2025.	2	0	0	0.00	597.89	1222.75

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*SECNO 1.870

3470 ENCROACHMENT STATIONS=     1099.0     1901.0  TYPE=      1  TARGET=      802.000
 ELENCL=     581.50  ELENCR=     581.50

                         50 FT  D/S WOOD FOOTBRIDGE IN STATE PARK, DUPLICATED

                                FROM SEC. F

     1.87      6.68    580.68      0.00      0.00    580.68       .01       .49       .00    578.40
     585.       83.      289.      212.      448.      320.      884.      289.      152.    578.40
     3.89       .19       .90       .24      .170      .070      .160      .063    574.00   1099.00
 .000220     1900.     1950.     2000.         2         0         0      0.00    802.00   1901.00

*SECNO 1.880
  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=     1099.0     1901.0  TYPE=      1  TARGET=      802.000
 ELENCL=     581.50  ELENCR=     581.50

                                D/S FACE WOOD FOOTBRIDGE IN STATE PARK

     1.88      6.69    580.69      0.00      0.00    580.69       .01       .01       .00    578.40
     585.       91.      275.      218.      452.      321.      890.      290.      153.    578.40
     3.91       .20       .86       .25      .170      .080      .170      .063    574.00   1099.00
 .000257       50.       50.       50.         0         0         0      0.00    802.00   1901.00

SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     .90       1.73      3.09      0.00      16.80      .01     266.00     3.71     574.00    574.00

*SECNO 1.882
PRESSURE AND WEIR FLOW

 EGPRS      EGLWC      H3       QWEIR      QPR       BAREA    TRAPEZOID      ELEC      ELTRD
                                                                AREA
  580.71    580.70      .00       372.      212.      266.      266.      580.50    577.60

3470 ENCROACHMENT STATIONS=     1099.0     1901.0  TYPE=      1  TARGET=      802.000
 ELENCL=     581.50  ELENCR=     581.50

                F                D/S FACE WOOD FOOTBRIDGE IN STATE PARK

     1.88      6.70    580.70      0.00      0.00    580.71       .01       .01      0.00    578.40
     585.       92.      274.      219.      457.      322.      897.      291.      153.    578.40
     3.92       .20       .85       .24      .170      .080      .170      .063    574.00   1099.00
 .000252        8.        8.        8.         0         0         6      0.00    802.00   1901.00

*SECNO 1.891

3470 ENCROACHMENT STATIONS=     1099.0     1901.0  TYPE=      1  TARGET=      802.000
 ELENCL=     581.50  ELENCR=     581.50
```

50 FT U/S WOOD FOOTBRIDGE IN STATE PARK, REPEATED SEC.

OF F.

	1.89	6.70	580.71	0.00	0.00	580.72	.01	.01	.00	578.41
	585.	92.	274.	219.	456.	322.	896.	293.	154.	578.41
	3.94	.20	.85	.24	.170	.080	.170	.063	574.01	1099.00
	0.000253	50.	50.	50.	0	0	0	0.00	802.00	1901.00

*SECNO 2.100

G 1150 FT U/S WOOD FOOTBRIDGE IN STATE PARK

2.10	6.68	580.98	0.00	0.00	580.98	.01	.26	.00	578.60
585.	120.	257.	208.	577.	291.	831.	335.	174.	578.40
4.53	.21	.88	.25	.160	.080	.170	.065	574.30	1136.99
0.000226	1100.	1100.	1100.	1	0	0	0.00	761.96	1898.95

*SECNO 2.412

3470 ENCROACHMENT STATIONS= 108063 1773.1 TYPE= 1 TARGET= 741.800
ELENCL= 582.50 ELENCR= 582.50

H 50 FT D/S ROBERT RD. BRIDGE, 21 DEGREES SKEW

2.41	7.24	581.34	0.00	0.00	581.35	.01	.36	.00	579.60
585.	101.	317.	167.	496.	315.	707.	397.	201.	578.10
5.24	.20	1.01	.24	.160	.070	.160	.066	574.10	1118.34
0.000212	1550.	1650.	1750.	2	0	0	0.00	654.77	1773.11

*SECNO 2.421

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= .0 1748.6 TYPE= 1 TARGET= 1872.999

2.42	6.95	581.35	0.00	0.00	581.36	.01	.01	.00	579.70
580.	160.	96.	324.	292.	182.	467.	398.	201.	579.50
5.27	.55	.53	.69	.032	.090	.031	.066	574.40	1109.18
0.000116	50.	50.	50.	0	0	0	0.00	639.45	1748.63

*SECNO 2.422

3370 NORMAL BRIDGE, NRD= 19 MIN ELTRD= 579.30 MAX ELLC= 578.20

3470 ENCROACHMENT STATIONS= .0 1748.6 TYPE= 1 TARGET= 1872.999

D/S FACE ROBERT RD. BRIDGE, 21 DEGREES SKEW

2.42	6.95	581.35	0.00	0.00	581.36	.01	.00	.00	579.70
580.	163.	97.	320.	292.	143.	467.	398.	201.	579.50
5.27	.56	.68	.69	.025	.025	.025	.066	574.40	1109.15
0.000074	1.	1.	1.	0	0	0	-41.83	639.49	1748.63

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3470 ENCROACHMENT STATIONS= .0 1748.6 TYPE= 1 TARGET= 1872.999

I U/S FACE ROBERT RD. BRIDGE, 21 DEGREES SKEW

2.43	6.95	581.35	0.00	0.00	581.36	.01	.00	.00	579.70
580.	163.	97.	321.	292.	140.	468.	399.	202.	579.50
5.27	.56	.69	.69	.025	.025	.025	.066	574.40	1109.05
.000074	16.	16.	16.	0	0	0	-40.42	639.58	1748.63

*SECNO 2.426

3470 ENCROACHMENT STATIONS= .0 1748.6 TYPE= 1 TARGET= 1872.999

2.43	6.95	581.35	0.00	0.00	581.36	.01	.00	.00	579.70
580.	160.	96.	324.	292.	182.	467.	399.	202.	579.50
5.27	.55	.53	.69	.032	.090	.031	.066	574.40	1109.07
.000116	1.	1.	1.	0	0	0	0.00	639.56	1748.63

*SECNO 2.434

3470 ENCROACHMENT STATIONS= .0 1748.6 TYPE= 1 TARGET= 1872.999

50 FT U/S ROBERT RD. BRIDGE, 21 DEGREES SKEW, REPEATED

SEC.

2.43	6.99	581.36	0.00	0.00	581.36	.01	.00	.00	579.70
580.	169.	79.	332.	294.	182.	469.	400.	202.	579.50
5.30	.58	.43	.71	.025	.090	.025	.066	574.37	1108.68
.000078	50.	50.	50.	0	0	0	0.00	639.96	1748.63

*SECNO 2.557

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= 1274.0 3000.0 TYPE= 1 TARGET= -1274.000

J 700 FT U/S ROBERT RD. BRIDGE

2.56	7.42	581.42	0.00	0.00	581.42	.01	.06	.00	578.50
580.	84.	273.	222.	449.	304.	856.	418.	212.	578.90
5.61	.19	.90	.26	.150	.060	.120	.065	574.00	1279.24
.000124	725.	650.	575.	0	0	0	0.00	641.84	1921.08

*SECNO 2.614

3470 ENCROACHMENT STATIONS= 1200.0 3000.0 TYPE= 1 TARGET= -1200.000

1000 FT U/S ROBERT RD. BRIDGE, AT THE CONFLUENCE

MANUFACTURED FROM SEC. J

2.61	7.40	581.45	0.00	0.00	581.45	.00	.02	.00	578.55
500.	106.	170.	224.	444.	303.	847.	429.	216.	578.95
5.85	.24	.56	.26	.080	.065	.080	.065	574.05	1280.11
.000057	300.	300.	300.	0	0	0	0.00	639.73	1919.

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*SECNO 2.870

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 300.0 1000.0 TYPE= 1 TARGET= 700.000

50 FT D/S PRIVATE BRIDGE, DUPLICATED FROM SEC. J

2.87	7.24	581.53	0.00	0.00	581.53	.00	.08	.00	581.70
270.	50.	121.	99.	264.	232.	457.	469.	235.	581.70
6.92	.19	.52	.22	.080	.070	.080	.066	574.29	344.07
0.000072	1350.	1350.	1350.	2	0	0	0.00	579.66	977.54

*SECNO 2.878

3265 DIVIDED FLOW

2.88	7.24	581.54	0.00	0.00	581.54	.00	.00	.00	574.40
270.	62.	89.	118.	289.	175.	490.	470.	236.	575.00
6.96	.22	.51	.24	.090	.110	.090	.066	574.30	343.92
0.000107	49.	49.	49.	0	0	0	0.00	580.23	977.81

*SECNO 2.879

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD= 18 MIN ELTRD= 579.20 MAX ELLC= 578.80

D/S FACE, PRIVATE BRIDGE

2.88	7.23	581.53	0.00	0.00	581.54	.01	.00	.00	574.40
270.	59.	89.	122.	265.	89.	478.	470.	236.	575.00
6.96	.22	1.00	.26	.090	.025	.090	.066	574.30	343.85
0.000127	1.	1.	1.	0	0	0	-123.44	580.53	977.95

*SECNO 2.882

3265 DIVIDED FLOW

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= 18 MIN ELTRD= 579.20 MAX ELLC= 578.80

J' U/S FACE, PRIVATE BRIDGE

2.88	7.24	581.54	0.00	0.00	581.54	.01	.00	.00	574.40
270.	59.	89.	122.	265.	89.	477.	470.	236.	575.00
6.97	.22	1.00	.26	.090	.025	.090	.066	574.30	343.86

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*SECNO 2.883

3265 DIVIDED FLOW

2.88	7.24	581.54	0.00	0.00	581.54	.00	.00	.00	574.40
270.	62.	89.	118.	290.	175.	491.	470.	236.	575.00
6.97	.22	.51	.24	.090	.110	.090	.066	574.30	343.85
.000107	1.	1.	1.	0	0	0	0.00	580.51	977.94

*SECNO 2.892

3265 DIVIDED FLOW

50 FT U/S PRIVATE BRIDGE, REPEATED SEC.

2.89	7.28	581.55	0.00	0.00	581.55	.00	.01	.00	574.37
270.	63.	88.	119.	299.	176.	504.	471.	237.	574.97
7.01	.21	.50	.24	.090	.110	.090	.066	574.27	342.00
.000101	49.	49.	49.	0	0	0	0.00	587.84	981.33

1490 NH CARD USED
*SECNO 2.974

3470 ENCROACHMENT STATIONS= 970.0 1550.0 TYPE= 1 TARGET= 580.000
ELENCL= 583.00 ELENCR= 583.00

K 2900 FT U/S ROBERT RD. BRIDGE

2.97	7.58	581.58	0.00	0.00	581.58	.00	.03	.00	578.10
270.	103.	161.	6.	614.	316.	81.	481.	242.	581.10
7.34	.17	.51	.07	.106	.070	.106	.067	574.00	970.00
.000055	435.	435.	435.	1	0	0	0.00	523.68	1493.67

1490 NH CARD USED
*SECNO 3.429

3470 ENCROACHMENT STATIONS= 1300.0 1800.0 TYPE= 1 TARGET= 500.000
ELENCL= 583.50 ELENCR= 583.50

L 5300 FT U/S ROBERT RD. BRIDGE

3.43	7.05	581.75	0.00	0.00	581.76	.00	.18	.00	579.00
270.	39.	191.	40.	220.	311.	224.	530.	266.	578.50
8.71	.18	.62	.18	.128	.081	.123	.073	574.70	1359.18
.000107	2425.	2400.	2375.	0	0	0	0.00	358.38	1717.56

1490 NH CARD USED
*SECNO 3.751

3265 DIVIDED FLOW

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

3470 ENCROACHMENT STATIONS= 828.0 1749.0 TYPE= 1 TARGET= 1000.000

ELE.CL= 583.50 ELE CR= 583.50

END OF ISLAND PROBLEM

U/S CONFLUENCE, DUPLICATED FROM SEC. M, SKEWED

	3.75	7.74	581.84	0.00	0.00	581.84	.00	.08	.00	578.10
	270.	39.	76.	155.	578.	251.	925.	579.	290.	577.10
	11.21	.07	.30	.17	.133	.091	.092	.076	574.10	860.73
	.000028	1600.	1700.	1800.	2	0	0	0.00	861.96	1749.90

1490 NH, CARD USED
*SECNO 3.845

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 828.9 3131.4 TYPE= 1 TARGET= 2500.000
ELENCL= 583.50 ELENCR= 583.50

M 50 FT D/S BROADBRIDGE RD. BRIDGE, 23 DEGREES SKEW

	3.85	7.96	581.86	0.00	0.00	581.86	.00	.01	.00	578.10
	500.	52.	94.	354.	584.	253.	4263.	619.	308.	577.10
	12.22	.09	.37	.08	.089	.065	.154	.077	573.90	860.15
	.000022	500.	500.	500.	2	0	0	0.00	2239.55	3131.40

*SECNO 3.854

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 921.0 3223.5 TYPE= 1 TARGET= 2500.000
ELENCL= 582.50 ELENCR= 582.50

	3.85	6.86	581.86	0.00	0.00	581.86	.00	.00	.00	582.00
	500.	2.	47.	451.	22.	167.	1075.	622.	310.	581.80
	12.25	.11	.28	.42	.016	.080	.016	.077	575.00	1081.18
	.000031	49.	49.	49.	0	0	0	0.00	1931.25	3078.53

*SECNO 3.855

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 23 MIN ELTRD= 580.90 MAX ELLC= 579.80

D/S FACE BROADBRIDGE RD. BRIDGE, 23 DEGREES SKEW

	3.86	6.86	581.86	0.00	0.00	581.86	.00	.00	.00	582.00
	500.	2.	56.	442.	22.	110.	1073.	622.	310.	581.80
	12.25	.11	.50	.41	.016	.021	.016	.077	575.00	1081.33
	.000030	1.	1.	1.	0	0	0	-56.56	1930.30	3078.17

*SECNO 3.860

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 23 MIN ELTRD= 580.90 MAX ELLC= 579.80

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	N		U/S FACE BROADBRIDGE RD. BRIDGE, 23 DEGREES SKEW						
3.86	6.86	581.86	0.00	0.00	581.86	.00	.00	.00	582.00
50.6	2.	56.	442.	22.	110.	1074.	623.	311.	581.80
12.27	.11	.50	.41	.016	.021	.016	.077	575.00	1081.23
.000030	25.	25.	25.	0	0	0	-56.58	1930.96	3078.42

*SECNO 3.861

3265 DIVIDED FLOW

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

3470 ENCROACHMENT STATIONS= 920.1 3361.7 TYPE= 1 TARGET= 2651.000
ELENCL= 583.00 ELENCR= 583.00

3.86	6.86	581.86	0.00	0.00	581.86	.00	.00	.00	582.00
50.6	2.	47.	451.	22.	167.	1074.	623.	311.	581.80
12.27	.11	.28	.42	.016	.080	.016	.077	575.00	1081.22
.000031	1.	1.	1.	0	0	0	0.00	1930.98	3078.42

*SECNO 3.869

50 FT U/S BROADBRIDGE RD. BRIDGE, 23 DEGREES SKEW

REPEATED SEC.

3.87	6.89	581.85	0.00	0.00	581.88	.03	.01	.01	578.10
675.	78.	318.	279.	198.	167.	1190.	625.	314.	578.30
12.28	.39	1.90	.23	.150	.070	.160	.077	574.96	1080.95
.000813	50.	50.	50.	0	0	0	0.00	1998.12	3079.07

*SECNO 3.992

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 1000.0 3100.0 TYPE= 1 TARGET= 2100.000

0 700 FT U/S BROADBRIDGE RD. BRIDGE

3.99	7.53	581.93	0.00	0.00	581.93	.00	.05	.01	578.40
675.	84.	104.	487.	739.	246.	4048.	654.	331.	581.30
13.06	.11	.42	.12	.150	.070	.140	.077	574.40	1068.94
.000039	750.	650.	300.	2	0	0	0.00	2026.85	3100.00

*SECNO -2.614
START TRIB COMP
-2.614 2.614 581.447

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

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3470 ENCROACHMENT STATIONS= 2750.0 4500.0 TYPE= 1 TARGET= -120.000

1000 FT U/S ROBERT RD. BRIDGE, AT THE CONFLUENCE

MANUFACTURED FROM SEC. J

-2.661	7.40	581.45	0.00	0.00	581.45	.00	0.00	0.00	578.55
500.	106.	170.	224.	444.	303.	847.	677.	340.	578.95
13.29	.24	.56	.26	.080	.065	.080	.077	574.05	1280.11
.000057	300.	300.	300.	0	0	0	0.00	639.73	1919.84

1490 NH CARD USED
*SECNO 3.125

3470 ENCROACHMENT STATIONS= 2700.0 3400.0 TYPE= 1 TARGET= 700.000
ELENCL= 583.00 ELENCR= 583.00

K 2900 FT U/S ROBERT RD. BRIDGE

3.13	3.41	581.71	0.00	0.00	581.71	.01	.26	.00	579.70
230.	92.	51.	86.	262.	43.	223.	741.	374.	580.50
14.61	.35	1.21	.39	.149	.077	.130	.076	578.30	2766.13
.001040	2400.	2700.	2800.	2	0	0	0.00	492.18	3258.32

1490 NH CARD USED
*SECNO 3.580

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= 2750.0 4500.0 TYPE= 1 TARGET= 1750.000
ELENCL= 583.50 ELENCR= 583.50

L 5300 FT U/S ROBERT RD. BRIDGE

3.58	3.51	581.81	0.00	0.00	581.81	.00	.09	.00	579.70
230.	69.	6.	155.	1124.	42.	2622.	860.	435.	579.40
25.40	.08	.14	.06	.140	.077	.150	.075	578.30	2807.55
.000012	2400.	2400.	2400.	3	0	0	0.00	1692.45	4500.00

1490 NH CARD USED
*SECNO 4.025

3470 ENCROACHMENT STATIONS= 1749.9 3315.6 TYPE= 1 TARGET= 1700.000
ELENCL= 583.60 ELENCR= 583.60

U/S CONFLUENCE, DUPLICATED FROM SEC. M, SKEWED

END OF ISLAND PROBLEM

4.03	3.14	581.84	0.00	0.00	581.84	.00	.03	.00	579.70
230.	50.	5.	175.	760.	38.	2642.	1059.	521.	579.50
35.21	.07	.14	.07	.150	.077	.150	.074	578.70	1749.90
.000014	2100.	2350.	2500.	2	0	0	0.00	1466.07	3215.97

3.5 miles, .2 miles

FORM 1411-30 PRINTED BY ROTARY MANIFOLD FORMS.

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****
HEC2 RELEASE DATED NOV 76 UPDATED AUG1977
ERROR CORR - 01.02
MODIFICATION - 50,51,52,53
****

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

MARINE CITY. DRAIN Natural

SUMMARY PRINTOUT

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
0.000	0.00	0.00	0.00	571.40	385.00	576.62	.08	0.00	0.00	385.00	5.22	36.00
0.000	0.00	0.00	0.00	571.40	530.00	576.62	.14	0.00	0.00	530.00	5.22	36.00
0.000	0.00	0.00	0.00	571.40	600.00	576.62	.18	0.00	0.00	600.00	5.22	36.00
0.000	0.00	0.00	0.00	571.40	785.00	576.62	.32	0.00	0.00	785.00	5.22	36.00
.003	19.00	0.00	0.00	571.40	385.00	576.62	.11	.01	.01	385.00	5.22	30.00
.003	19.00	0.00	0.00	571.40	530.00	576.62	.20	.03	.03	530.00	5.22	30.00
.003	19.00	0.00	0.00	571.40	600.00	576.62	.26	.03	.04	600.00	5.22	30.00
.003	19.00	0.00	0.00	571.40	785.00	576.62	.44	.06	.06	785.00	5.22	30.00
.004	1.00	579.20	578.50	571.40	385.00	576.62	.11	.00	.00	385.00	5.22	30.00
.004	1.00	579.20	578.50	571.40	530.00	576.62	.20	.00	.00	530.00	5.22	30.00
.004	1.00	579.20	578.50	571.40	600.00	576.62	.26	.00	.00	600.00	5.22	30.00
.004	1.00	579.20	578.50	571.40	785.00	576.62	.44	.00	.00	785.00	5.22	30.00
.015	58.00	579.20	578.50	571.40	385.00	576.68	.10	.06	.00	385.00	5.28	30.00
.015	58.00	579.20	578.50	571.40	530.00	576.74	.19	.10	.00	530.00	5.34	30.00
.015	58.00	579.20	578.50	571.40	600.00	576.77	.24	.13	.00	600.00	5.37	30.00
.015	58.00	579.20	578.50	571.40	785.00	576.90	.39	.22	.01	785.00	5.50	30.00
.016	1.00	0.00	0.00	571.40	385.00	576.68	.10	.00	.00	385.00	5.28	30.00
.016	1.00	0.00	0.00	571.40	530.00	576.74	.19	.00	.00	530.00	5.34	30.00
.016	1.00	0.00	0.00	571.40	600.00	576.77	.24	.00	.00	600.00	5.37	30.00
.016	1.00	0.00	0.00	571.40	785.00	576.90	.39	.00	.00	785.00	5.50	30.00
.024	49.00	0.00	0.00	572.40	385.00	576.73	.11	.05	.00	385.00	4.33	37.00
.024	49.00	0.00	0.00	572.40	530.00	576.82	.20	.09	.00	530.00	4.42	37.00
.024	49.00	0.00	0.00	572.40	600.00	576.88	.25	.11	.00	600.00	4.48	37.00
.024	49.00	0.00	0.00	572.40	785.00	577.08	.38	.17	.00	785.00	4.68	37.00
.037	69.00	0.00	0.00	572.34	385.00	576.82	.09	.06	.01	385.00	4.48	43.71
.037	69.00	0.00	0.00	572.34	530.00	576.99	.15	.11	.01	530.00	4.65	43.86
.037	69.00	0.00	0.00	572.34	600.00	577.09	.18	.13	.02	600.00	4.75	44.07
.037	69.00	0.00	0.00	572.34	785.00	577.42	.27	.18	.04	785.00	5.08	44.75
.038	1.00	580.10	580.30	572.34	385.00	576.82	.10	.00	.00	385.00	4.48	41.71
.038	1.00	580.10	580.30	572.34	530.00	576.99	.16	.00	.01	530.00	4.65	41.87
.038	1.00	580.10	580.30	572.34	600.00	577.09	.20	.00	.01	600.00	4.75	42.07
.038	1.00	580.10	580.30	572.34	785.00	577.41	.29	.00	.01	785.00	5.07	42.74

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
.038	4.00	580.10	580.30	572.34	385.00	576.82	.09	.01	.00	385.00	4.48	41.71
.038	4.00	580.10	580.30	572.34	530.00	577.00	.16	.01	.00	530.00	4.66	41.87
.038	4.00	580.10	580.30	572.34	600.00	577.10	.20	.01	.00	600.00	4.76	42.08
.038	4.00	580.10	580.30	572.34	785.00	577.43	.29	.02	.00	785.00	5.09	42.75
.039	1.00	0.00	0.00	572.34	385.00	576.83	.09	.00	.00	385.00	4.49	41.71
.039	1.00	0.00	0.00	572.34	530.00	577.00	.16	.00	.00	530.00	4.66	41.87
.039	1.00	0.00	0.00	572.34	600.00	577.11	.20	.00	.00	600.00	4.77	42.09
.039	1.00	0.00	0.00	572.34	785.00	577.43	.29	.00	.00	785.00	5.09	42.78
.048	49.00	0.00	0.00	572.30	385.00	576.89	.09	.06	.00	385.00	4.59	43.69
.048	49.00	0.00	0.00	572.30	530.00	577.12	.15	.09	.01	530.00	4.82	43.90
.048	49.00	0.00	0.00	572.30	600.00	577.24	.18	.11	.01	600.00	4.94	44.17
.048	49.00	0.00	0.00	572.30	785.00	577.63	.25	.14	.01	785.00	5.33	44.98
.147	526.00	0.00	0.00	571.85	385.00	577.21	.04	.25	.01	359.72	5.36	387.71
.147	526.00	0.00	0.00	571.85	530.00	577.59	.05	.34	.03	459.00	5.74	518.35
.147	526.00	0.00	0.00	571.85	600.00	577.77	.05	.36	.04	495.51	5.92	614.67
.147	526.00	0.00	0.00	571.85	785.00	578.26	.04	.37	.06	566.60	6.41	614.67
.233	450.00	0.00	0.00	571.47	385.00	577.39	.03	.17	.00	262.50	5.92	492.55
.233	450.00	0.00	0.00	571.47	530.00	577.80	.03	.19	.01	308.78	6.33	493.00
.233	450.00	0.00	0.00	571.47	600.00	577.98	.03	.18	.01	327.74	6.51	493.00
.233	450.00	0.00	0.00	571.47	785.00	578.45	.02	.16	.01	369.87	6.98	493.00
.270	200.00	0.00	0.00	571.30	385.00	577.50	.02	.09	.00	258.84	6.20	548.81
.270	200.00	0.00	0.00	571.30	530.00	577.90	.02	.10	.00	297.97	6.60	552.87
.270	200.00	0.00	0.00	571.30	600.00	578.09	.02	.10	.00	315.12	6.79	552.90
.270	200.00	0.00	0.00	571.30	785.00	578.55	.02	.09	.00	352.91	7.25	552.97
.460	1000.00	0.00	0.00	572.11	385.00	577.81	.01	.30	.00	163.32	5.70	962.00
.460	1000.00	0.00	0.00	572.11	530.00	578.21	.01	.29	.00	183.43	6.10	962.00
.460	1000.00	0.00	0.00	572.11	600.00	578.39	.00	.28	.00	192.75	6.28	962.00
.460	1000.00	0.00	0.00	572.11	785.00	578.83	.00	.26	.00	214.93	6.72	962.00
.715	1349.00	0.00	0.00	573.20	380.00	578.20	.01	.39	.00	208.79	5.00	497.66
.715	1349.00	0.00	0.00	573.20	520.00	578.59	.01	.38	.00	257.51	5.39	510.24
.715	1349.00	0.00	0.00	573.20	585.00	578.76	.01	.38	.00	278.40	5.56	515.14
.715	1349.00	0.00	0.00	573.20	780.00	579.19	.01	.37	.00	339.10	5.99	525.38
1.123	2150.00	0.00	0.00	573.50	380.00	578.97	.01	.77	.00	240.71	5.47	857.12
1.123	2150.00	0.00	0.00	573.50	520.00	579.39	.01	.80	.00	277.26	5.89	876.75
1.123	2150.00	0.00	0.00	573.50	585.00	579.57	.01	.81	.00	292.70	6.07	885.29
1.123	2150.00	0.00	0.00	573.50	780.00	580.03	.01	.84	.00	336.87	6.53	907.77
1.501	2000.00	0.00	0.00	573.75	380.00	579.54	.01	.56	.00	218.44	5.79	540.54
1.501	2000.00	0.00	0.00	573.75	520.00	579.99	.01	.59	.00	267.18	6.24	572.02
1.501	2000.00	0.00	0.00	573.75	585.00	580.18	.01	.60	.00	287.93	6.43	597.89
1.501	2000.00	0.00	0.00	573.75	780.00	580.66	.01	.63	.00	345.95	6.91	669.22
1.870	1950.00	0.00	0.00	574.00	380.00	580.00	.01	.45	.00	222.55	6.00	704.65
1.870	1950.00	0.00	0.00	574.00	520.00	580.48	.01	.48	.00	269.99	6.48	799.03
1.870	1950.00	0.00	0.00	574.00	585.00	580.68	.01	.49	.00	289.50	6.68	802.00
1.870	1950.00	0.00	0.00	574.00	780.00	581.19	.01	.52	.00	344.91	7.19	802.00

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FORM 1411-OD PRINTED BY ROTARY MANIFOLD FORMS.

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
1.880	50.00	0.00	0.00	574.00	380.00	580.01	.01	.01	.00	213.73	6.01	707.17
1.880	50.00	0.00	0.00	574.00	520.00	580.49	.01	.01	.00	257.47	6.49	800.31
1.880	50.00	0.00	0.00	574.00	585.00	580.69	.01	.01	.00	275.40	6.69	802.00
1.880	50.00	0.00	0.00	574.00	780.00	581.20	.01	.01	.00	326.43	7.20	802.00
1.882	8.00	577.60	580.50	574.00	380.00	580.01	.01	.01	0.00	213.02	6.01	709.74
1.882	8.00	577.60	580.50	574.00	520.00	580.50	.01	.01	0.00	256.92	6.50	802.00
1.882	8.00	577.60	580.50	574.00	585.00	580.70	.01	.01	0.00	274.22	6.70	802.00
1.882	8.00	577.60	580.50	574.00	780.00	581.22	.01	.02	0.00	325.03	7.22	802.00
1.891	50.00	0.00	0.00	574.01	380.00	580.03	.01	.01	.00	213.18	6.02	709.15
1.891	50.00	0.00	0.00	574.01	520.00	580.51	.01	.01	.00	256.74	6.50	802.00
1.891	50.00	0.00	0.00	574.01	585.00	580.71	.01	.01	.00	274.43	6.70	802.00
1.891	50.00	0.00	0.00	574.01	780.00	581.23	.01	.01	.00	325.24	7.22	802.00
2.100	1100.00	0.00	0.00	574.30	380.00	580.28	.01	.25	.00	200.19	5.98	670.44
2.100	1100.00	0.00	0.00	574.30	520.00	580.77	.01	.26	.00	239.77	6.47	736.03
2.100	1100.00	0.00	0.00	574.30	585.00	580.98	.01	.26	.00	256.98	6.68	761.96
2.100	1100.00	0.00	0.00	574.30	780.00	581.50	.01	.27	.00	302.18	7.20	830.98
2.412	1650.00	0.00	0.00	574.10	380.00	580.61	.01	.34	.00	245.86	6.51	608.16
2.412	1650.00	0.00	0.00	574.10	520.00	581.13	.01	.36	.00	295.80	7.03	641.29
2.412	1650.00	0.00	0.00	574.10	585.00	581.34	.01	.36	.00	317.05	7.24	654.77
2.412	1650.00	0.00	0.00	574.10	780.00	581.88	.01	.38	.00	375.00	7.78	689.64
2.421	50.00	0.00	0.00	574.40	375.00	580.63	.01	.01	.00	122.14	6.23	513.23
2.421	50.00	0.00	0.00	574.40	520.00	581.14	.01	.01	.00	102.55	6.74	619.66
2.421	50.00	0.00	0.00	574.40	580.00	581.35	.01	.01	.00	96.18	6.95	639.45
2.421	50.00	0.00	0.00	574.40	770.00	581.89	.01	.01	.00	88.73	7.49	679.92
2.422	1.00	579.30	578.20	574.40	375.00	580.63	.01	.00	.00	118.29	6.23	513.62
2.422	1.00	579.30	578.20	574.40	520.00	581.14	.01	.00	.00	102.53	6.74	619.77
2.422	1.00	579.30	578.20	574.40	580.00	581.35	.01	.00	.00	97.47	6.95	639.49
2.422	1.00	579.30	578.20	574.40	770.00	581.89	.01	.00	.00	92.93	7.49	679.89
2.425	16.00	579.30	578.20	574.40	375.00	580.63	.01	.00	.00	116.57	6.23	514.33
2.425	16.00	579.30	578.20	574.40	520.00	581.14	.01	.00	.00	101.40	6.74	620.00
2.425	16.00	579.30	578.20	574.40	580.00	581.35	.01	.00	.00	96.53	6.95	639.58
2.425	16.00	579.30	578.20	574.40	770.00	581.89	.01	.00	.00	92.33	7.49	679.95
2.426	1.00	0.00	0.00	574.40	375.00	580.63	.01	.00	.00	121.64	6.23	514.17
2.426	1.00	0.00	0.00	574.40	520.00	581.14	.01	.00	.00	102.38	6.74	619.94
2.426	1.00	0.00	0.00	574.40	580.00	581.35	.01	.00	.00	96.08	6.95	639.56
2.426	1.00	0.00	0.00	574.40	770.00	581.89	.01	.00	.00	88.72	7.49	679.94
2.434	50.00	0.00	0.00	574.37	375.00	580.64	.01	.01	.00	102.35	6.27	517.85
2.434	50.00	0.00	0.00	574.37	520.00	581.15	.01	.01	.00	84.69	6.78	620.95
2.434	50.00	0.00	0.00	574.37	580.00	581.36	.01	.00	.00	79.06	6.99	639.96
2.434	50.00	0.00	0.00	574.37	770.00	581.89	.01	.00	.00	72.33	7.52	680.18
2.557	650.00	0.00	0.00	574.00	375.00	580.74	.01	.09	.00	204.66	6.74	575.41
2.557	650.00	0.00	0.00	574.00	520.00	581.22	.01	.07	.00	254.85	7.22	622.90
2.557	650.00	0.00	0.00	574.00	580.00	581.42	.01	.06	.00	273.29	7.42	641.84
2.557	650.00	0.00	0.00	574.00	770.00	581.94	.01	.05	.00	327.55	7.94	917.25

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
2.614	300.00	0.00	0.00	574.05	330.00	580.76	.00	.02	.00	135.73	6.71	574.02
2.614	300.00	0.00	0.00	574.05	450.00	581.25	.00	.02	.00	161.34	7.20	620.73
2.614	300.00	0.00	0.00	574.05	500.00	581.45	.00	.02	.00	170.47	7.40	639.73
2.614	300.00	0.00	0.00	574.05	660.00	581.97	.00	.03	.00	198.56	7.92	923.09
2.870	1350.00	0.00	0.00	574.29	185.00	580.85	.00	.09	.00	112.54	6.56	456.34
2.870	1350.00	0.00	0.00	574.29	250.00	581.33	.00	.09	.00	122.01	7.04	544.32
2.870	1350.00	0.00	0.00	574.29	270.00	581.53	.00	.08	.00	121.16	7.24	579.66
2.870	1350.00	0.00	0.00	574.29	340.00	582.05	.00	.08	.00	122.70	7.76	679.70
2.878	49.00	0.00	0.00	574.30	185.00	580.85	.00	.01	.00	86.95	6.55	456.97
2.878	49.00	0.00	0.00	574.30	250.00	581.34	.00	.00	.00	91.01	7.04	544.93
2.878	49.00	0.00	0.00	574.30	270.00	581.54	.00	.00	.00	89.33	7.24	580.23
2.878	49.00	0.00	0.00	574.30	340.00	582.06	.00	.00	.00	86.92	7.76	736.77
2.879	1.00	579.20	578.80	574.30	185.00	580.85	.01	.00	.00	96.28	6.55	457.45
2.879	1.00	579.20	578.80	574.30	250.00	581.34	.01	.00	.00	93.60	7.04	545.31
2.879	1.00	579.20	578.80	574.30	270.00	581.53	.01	.00	.00	88.66	7.23	580.53
2.879	1.00	579.20	578.80	574.30	340.00	582.06	.00	.00	.00	71.30	7.76	737.01
2.882	13.00	579.20	578.80	574.30	185.00	580.85	.01	.00	.00	96.38	6.55	457.16
2.882	13.00	579.20	578.80	574.30	250.00	581.34	.01	.00	.00	93.64	7.04	545.19
2.882	13.00	579.20	578.80	574.30	270.00	581.54	.01	.00	.00	88.68	7.24	580.47
2.882	13.00	579.20	578.80	574.30	340.00	582.06	.00	.00	.00	71.28	7.76	737.19
2.883	1.00	0.00	0.00	574.30	185.00	580.86	.00	.00	.00	86.89	6.56	457.19
2.883	1.00	0.00	0.00	574.30	250.00	581.35	.00	.00	.00	90.94	7.05	545.23
2.883	1.00	0.00	0.00	574.30	270.00	581.54	.00	.00	.00	89.26	7.24	580.51
2.883	1.00	0.00	0.00	574.30	340.00	582.06	.00	.00	.00	86.85	7.76	737.25
2.892	49.00	0.00	0.00	574.27	185.00	580.87	.00	.01	.00	84.72	6.60	465.58
2.892	49.00	0.00	0.00	574.27	250.00	581.35	.00	.01	.00	89.03	7.08	552.94
2.892	49.00	0.00	0.00	574.27	270.00	581.55	.00	.01	.00	87.55	7.28	587.84
2.892	49.00	0.00	0.00	574.27	340.00	582.06	.00	.00	.00	85.36	7.79	746.83
2.974	435.00	0.00	0.00	574.00	185.00	580.90	.00	.04	.00	134.68	6.90	439.67
2.974	435.00	0.00	0.00	574.00	250.00	581.39	.00	.03	.00	157.39	7.39	505.68
2.974	435.00	0.00	0.00	574.00	270.00	581.58	.00	.03	.00	160.86	7.58	523.68
2.974	435.00	0.00	0.00	574.00	340.00	582.09	.00	.03	.00	175.63	8.09	572.58
3.429	2400.00	0.00	0.00	574.70	185.00	581.08	.00	.18	.00	149.43	6.38	288.63
3.429	2400.00	0.00	0.00	574.70	250.00	581.57	.00	.19	.00	183.75	6.87	338.96
3.429	2400.00	0.00	0.00	574.70	270.00	581.75	.00	.18	.00	191.21	7.05	358.38
3.429	2400.00	0.00	0.00	574.70	340.00	582.26	.00	.17	.00	219.01	7.56	407.80
3.751	1700.00	0.00	0.00	574.10	185.00	581.17	.00	.09	.00	68.10	7.07	824.87
3.751	1700.00	0.00	0.00	574.10	250.00	581.67	.00	.09	.00	74.92	7.57	852.19
3.751	1700.00	0.00	0.00	574.10	270.00	581.84	.00	.08	.00	75.77	7.74	861.96
3.751	1700.00	0.00	0.00	574.10	340.00	582.34	.00	.08	.00	80.98	8.24	889.46
3.845	500.00	0.00	0.00	573.90	330.00	581.18	.00	.01	.00	85.40	7.28	2200.63
3.845	500.00	0.00	0.00	573.90	450.00	581.68	.00	.01	.00	91.64	7.78	2229.15
3.845	500.00	0.00	0.00	573.90	500.00	581.86	.00	.01	.00	94.45	7.96	2239.55
3.845	500.00	0.00	0.00	573.90	660.00	582.35	.00	.01	.00	103.77	8.45	2268.83

FORM 1411-GD-PRINTED BY ROTARY MANIFOLD FORMS.
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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
3.854	49.00	0.00	0.00	575.00	330.00	581.18	.02	.00	.01	182.32	6.18	763.05
3.854	49.00	0.00	0.00	575.00	450.00	581.68	.00	.00	.00	61.07	6.68	1560.09
3.854	49.00	0.00	0.00	575.00	500.00	581.86	.00	.00	.00	46.87	6.86	1931.25
3.854	49.00	0.00	0.00	575.00	660.00	582.35	.00	.00	.00	28.70	7.35	2153.64
3.855	1.00	580.90	579.80	575.00	330.00	581.17	.05	.00	.01	225.16	6.17	750.10
3.855	1.00	580.90	579.80	575.00	450.00	581.68	.00	.00	.00	80.34	6.68	1559.28
3.855	1.00	580.90	579.80	575.00	500.00	581.86	.00	.00	.00	55.70	6.86	1930.30
3.855	1.00	580.90	579.80	575.00	660.00	582.35	.00	.00	.00	31.24	7.35	2153.43
3.860	25.00	580.90	579.80	575.00	330.00	581.18	.04	.01	.00	222.09	6.18	755.97
3.860	25.00	580.90	579.80	575.00	450.00	581.68	.00	.00	.00	80.15	6.68	1560.03
3.860	25.00	580.90	579.80	575.00	500.00	581.86	.00	.00	.00	55.63	6.86	1930.96
3.860	25.00	580.90	579.80	575.00	660.00	582.35	.00	.00	.00	31.24	7.35	2153.48
3.861	1.00	0.00	0.00	575.00	330.00	581.22	.02	.00	.01	166.80	6.22	828.87
3.861	1.00	0.00	0.00	575.00	450.00	581.68	.00	.00	.00	61.08	6.68	1560.04
3.861	1.00	0.00	0.00	575.00	500.00	581.86	.00	.00	.00	46.90	6.86	1930.98
3.861	1.00	0.00	0.00	575.00	660.00	582.35	.00	.00	.00	28.72	7.35	2153.48
3.869	50.00	0.00	0.00	574.96	410.00	581.24	.05	.04	.01	299.84	6.28	1036.17
3.869	50.00	0.00	0.00	574.96	590.00	581.67	.03	.01	.01	320.30	6.71	1716.09
3.869	50.00	0.00	0.00	574.96	675.00	581.85	.03	.01	.01	318.19	6.89	1998.12
3.869	50.00	0.00	0.00	574.96	910.00	582.35	.01	.00	.01	290.93	7.39	2153.59
3.992	650.00	0.00	0.00	574.40	410.00	581.35	.00	.05	.01	79.88	6.95	2000.49
3.992	650.00	0.00	0.00	574.40	590.00	581.77	.00	.05	.01	96.43	7.37	2019.37
3.992	650.00	0.00	0.00	574.40	675.00	581.93	.00	.05	.01	103.95	7.53	2026.85
3.992	650.00	0.00	0.00	574.40	910.00	582.41	.00	.04	.00	121.07	8.01	2046.97
2.614	300.00	0.00	0.00	574.05	330.00	580.76	.00	0.00	0.00	136.13	6.71	573.10
2.614	300.00	0.00	0.00	574.05	450.00	581.25	.00	0.00	0.00	161.48	7.20	620.40
2.614	300.00	0.00	0.00	574.05	500.00	581.45	.00	0.00	0.00	170.47	7.40	639.73
2.614	300.00	0.00	0.00	574.05	660.00	581.97	.00	0.00	0.00	198.34	7.92	926.20
3.125	2700.00	0.00	0.00	578.30	145.00	581.02	.03	.27	.01	63.62	2.72	399.91
3.125	2700.00	0.00	0.00	578.30	200.00	581.51	.01	.27	.00	52.05	3.21	468.73
3.125	2700.00	0.00	0.00	578.30	230.00	581.71	.01	.26	.00	51.39	3.41	492.18
3.125	2700.00	0.00	0.00	578.30	320.00	582.23	.00	.26	.00	52.42	3.93	554.69
3.580	2400.00	0.00	0.00	578.30	145.00	581.18	.00	.12	.01	4.17	2.88	1675.90
3.580	2400.00	0.00	0.00	578.30	200.00	581.62	.00	.10	.00	5.15	3.32	1687.51
3.580	2400.00	0.00	0.00	578.30	230.00	581.81	.00	.09	.00	5.71	3.51	1692.45
3.580	2400.00	0.00	0.00	578.30	320.00	582.32	.00	.09	.00	7.37	4.02	1704.40
4.025	2350.00	0.00	0.00	578.70	145.00	581.21	.00	.03	.00	3.65	2.51	1437.24
4.025	2350.00	0.00	0.00	578.70	200.00	581.65	.00	.03	.00	4.78	2.95	1457.17
4.025	2350.00	0.00	0.00	578.70	230.00	581.84	.00	.03	.00	5.40	3.14	1466.07
4.025	2350.00	0.00	0.00	578.70	320.00	582.36	.00	.03	.00	7.22	3.66	1489.91

29827

SUMMARY OF ERRORS 5.5 miles

CAUTION SECNO= 1.882 PROFILE= 2 20 TRIALS OF EG NOT ENOUGH

PRINTED IN U.S.A.
FORM 1611-00 PRINTED BY ROTARY MANIFOLD FORMS

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SYS,DEVICES 819/ 4/PF FLS=200K FLL=764K MXS=160K MXL=453K MXB=453B

HH.MM.SS CPU SECOND ORIGIN
          10.26.59.MFA. JO    LV461 NOSBE B+W LYNRELEASE447 02/04/78
10.26.41 00000.013 MFZ.     -COTJ000,T20,STMFZ.   COTTRELLVILLE TOWNSHIP
10.26.41 00000.029 USR.      CHARGE.810-0037-45-78-6261,JANDA,001,D,JANDA.
10.26.42 00000.065 JOB.     -ATTACH,LGO,HEC2N76V2,ID=HEC.
10.26.42 00000.070 MFZ.       PF254 - CYCLE     1 ATTACHED FROM SN=SYSTEM
10.26.42 00000.071 LOD.     -LGO(PL=999999).
10.27.52 00000.896 MFZ.       LD610 - FLS REQUIRED TO LOAD - 0027777 OU.COG
10.27.52 00000.899 MFZ.       LD603 - EXECUTION INITIATED OS.EXP
10.27.52 00000.900 USR.      FORTRAN LIBRARY 439          08/20/78
10.27.58 00003.654 USR.        STOP
10.27.58 00003.654 USR.          2.753 CP SECONDS EXECUTION TIME
10.27.58 00003.658 MFZ.       RM770 - MAXIMUM ACTIVE FILES                  7
10.27.58 00003.659 MFZ.       RM771 - OPEN/CLOSE CALLS                     30
10.27.58 00003.659 MFZ.       RM772 - DATA TRANSFER CALLS                7,832
10.27.58 00003.659 MFZ.       RM773 - CONTROL/POSITIONING CALLS             66
10.27.58 00003.659 MFZ.       RM774 - BM DATA TRANSFER CALLS               604
10.27.58 00003.660 MFZ.       RM775 - BM CONTROL/POSITIONING CALLS          69
10.27.58 00003.660 MFZ.       RM776 - QUEUE MANAGER CALLS                  122
10.27.58 00003.660 MFZ.       RM777 - RECALL CALLS                          81
10.27.58 00003.660 MFZ.       SWMSG - NUMBER OF TAPES MOUNTED
10.27.58 00003.661 MFZ.       SRU                  3.959  SEC
10.27.58 00003.661 MFZ.       SCM                 86.271  KWS
10.27.58 00003.661 MFZ.       I/O                  0.103  MW
10.27.58 00003.661 MFZ.       RMS                  0.132  MWS
10.27.58 00003.662 MFZ.       USER                 2.123  SEC
10.27.58 00003.662 MFZ.       JOB                  5.663  SEC
10.27.58 00003.662 MFZ.       SC050 - 000144 SC/LC SWAPS
10.27.58 00003.662 MFZ.     COTJOKA   COTJOKA
10.27.58.EJ   END OF JOB
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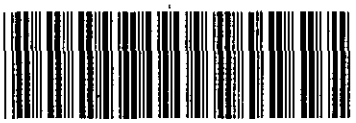

1) COUNTY: ST. CLAIR

2) STUDY NAME: ST. CLAIR CITY & TWP
CHINA & EAST CHINA TWPS

3) WATERCOURSE: BELLE RIVER, PINE RIVER
JORDAN CREEK

4) DOCUMENT TYPE: REPORT



1-17-77

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WATER MANAGEMENT

HYDRAULIC ANALYSIS

Introduction

The stream being studied is the Jordan Creek in the City of St. Clair, St. Clair County, Michigan. The study limit included a reach that extends from its confluence with the Pine River, about 300' upstream of the Port Huron & Detroit Railroad (PH&D RR) bridge over the Pine River, up to 50' upstream of the Brown Street bridge, St. Clair City, a total distance of about 1.78 river miles.

The discharges were computed by the unit hydrograph-infiltration capacity method developed by Dr. Ernest F. Brater. The 10-, 50-, 100-, and 500-year flood frequency flows used in this study have been approved by the Michigan Department of Natural Resources.

Method of Analysis

The flood profiles were calculated by the HEC-2 computer program developed by the U.S. Army Corps of Engineers. All the constrictions, namely bridges and culverts, have been modeled according to the requirements of special bridges routine of the HEC-2 program.

Some of the original field-surveyed cross sections have been physically relocated or adjusted. The adjustment was made by carefully studying the field data and the USGS topographic map. Interpolated sections were also added whenever it was found necessary.

Variables and Coefficients

a. Roughness factors (Manning's "n") were established by comparing the photographs and field observation taken in the Jordan Creek with photographs and descriptions in the books Roughness Characteristics of Natural Channels by Harry H. Barnes, Jr., and Open-Channel Hydraulics by Ven Te Chow. In general, the following range of values was used:

Description	Manning's "n"
(1) Channel	
(a) Corrugated metal	0.024 - 0.027
(b) Concrete	0.012
(c) Gravel bottom with medium to heavy weed and brush on bank slope	0.05
(d) Gravel bottom with medium to heavy weeds, or brush	0.06 - 0.07
(2) Overbanks	
(a) Medium to dense brush	0.1 - 0.13
(b) Heavy stand of timber, a few downed trees	0.15 - 0.17

b. Coefficients of contraction and expansion - no rational method of evaluating those coefficients has so far been established. The coefficients of contraction and expansion used in this study were those suggested by the HEC-2 Users Manual.

c. Orifice discharge coefficients XKOR for pressure flow used in special bridge routines in this study were calculated according to the equation

$$XKOR = [1 + Ke + \frac{29n^2L}{R^{4/3}}]$$

Where

n roughness factor

L length of constrictions

R hydraulic radius

Ke entrance loss coefficient

(Ke's were obtained from tables published by Bureau of Public Roads)

d. Weir discharge coefficients C were obtained from charts published by Bureau of Public Roads based on the assumption of the headwater depth of constrictions.

e. When the channel is composed of more than one material, an equivalent "n" value was computed using the equation (6-18) in Chow.

f. Summary of bridge coefficients:

Crossing	Sec. No.	"n" Value	XKOR	COFQ
PH&D RR spur CMP	74	0.027	2.506	2.76
Standard Oil Property CMP	1762	0.0286	2.802	2.96
Fred Moore Hwy. RCP	2952	0.0159	1.729	2.95
Clinton Rd. Twin RCP	4976	0.012	1.705	3.02
Adam St. Bent RCP& CMP	6785	0.012,0.024	3.032	--
PH&D RR Bridge	7614	0.020	1.504	2.87
Vine St. Bridge	7754	0.02020	1.62	7.29
Brown St. CMP	9392	0.0251	2.341	3.03

Starting Point

The profile computations for the Jordan Creek began at its confluence with the Pine River, and the starting elevations were taken from the Pine River Study which has been submitted to the Michigan Department of Natural Resources. The starting water-surface elevations for 10-, 50-, 100- and 500-year flows were 584.56, 586.88, 587.71 and 589.86, respectively.

Remarks

1. A 26' long, 6' in diameter culvert (CMP), located about 300' upstream of the PH&D RR spur culvert has been found severely sedimented. It is highly submerged during floods. The maximum capacity of the culvert was found to be less than one percent of the total discharge of the 100-year flood. Therefore, flow carried through by the culvert has been neglected and the top of the road has been treated as a natural channel. When the results were compared to the profile obtained by the "special bridge" routine, both profiles were found to be the same.

2. Both the above and the Standard Oil culverts are sedimented due to grading done on the Standard Oil property and the subsequent erosion which occurred.

3. In the Standard Oil, Fred Moore and Brown Street culverts, various sediments were found within the culverts. For low flow condition, this was taken into account by the use of the sedimentation option, while for pressure flow it was incorporated through a slight reduction of the area on the SB card.

4. At the Adam Street culvert, because of the length of the culvert and shallow depth, the flow over top of road has been treated as sheet flow. The water-surface elevations at the upstream face section for all four floods were obtained by hand calculations. Manning's and orifice equations were used in trial and error calculations. The water-surface

elevations at the upstream face were determined when the assumed head matched the sum of the flow depth, velocity head and entrance loss for flow over top of the road (see attached calculations).

5. The 100-year flow in the Jordan Creek produces an unusual flow pattern in the vicinity of the PH&D Railroad and Vine Street bridges. At the PH&D bridge, pressure flow and weir flow (right overbank) occurs. At the Vine Street bridge, pressure flow and weir flow occurs over both left and right banks. The weir flow over right bank crosses the PH&D Railroad line. Ponding occurs on left overbank area of the two sections located between the two bridges (see attached sketch).

The floodway was mainly modeled for the 100-year flow. The 10-, 50-, and 500-year flows were also taken into consideration whenever it was possible.

K&E 10 X 10 TO ½ INCH • 7½ X 10 INCHES
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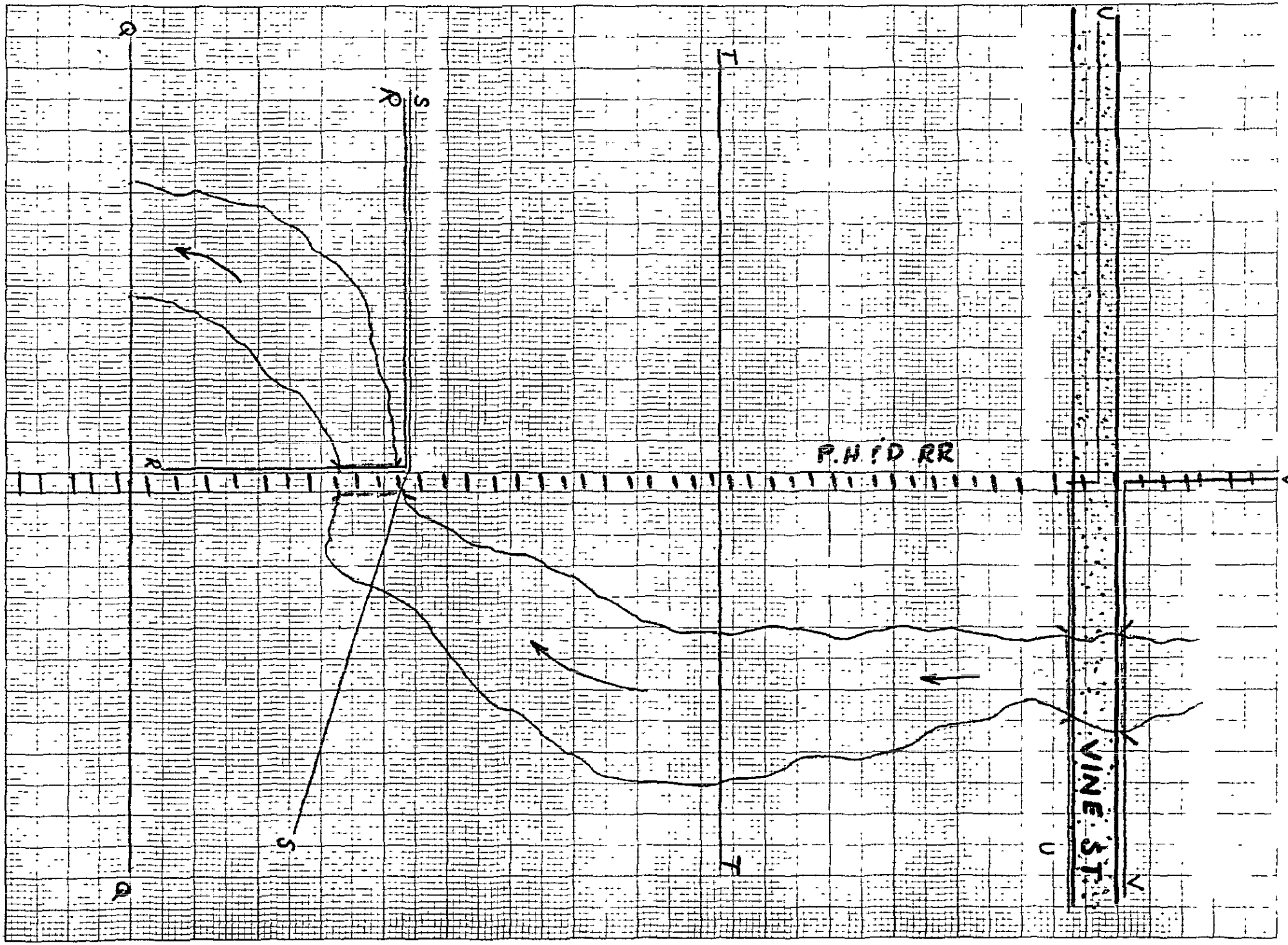

References

1. Barnes, H. H. Jr., 1967, Roughness Characteristics of Natural Channels, U.S. Geological Survey Water Supply Paper 1849.

2. Chow, V. T., 1959, Open-Channel Hydraulics, McGray Hill, New York.

3. Application of the HEC-2 Bridge Routines, Training Document No. 6, June, 1974, the Hydrologic Engineering Center, COE, U.S. Army.

4. HEC-2 Water Surface Profiles, Users Manual, 723-02A, October, 1973, the Hydrologic Engineering Center, COE, U.S. Army.

East China Township and St. Clair City
St. Clair County
5555-17 & 61

Jordan Creek

Cross Section	SECNO	Location
A	0	d/s face, at mouth, 72' of 8' cmp, projected
B	74	d/s face, at mouth, 72' of 8' cmp, projected
B'	374	d/s face, 26' of 6' cmp, projecting
B''	402	u/s face, 26' of 6' cmp, projecting
C	1211	1137' u/s of culvert at mouth
D	1710	d/s face, at Standard Oil Property, 50' of 6' cmp, projected
E	1762	u/s face, at Standard Oil Property, 50' of 6' cmp, projected
F	2810	50' d/s of Fred Moore Highway Culvert
G	2860	d/s face, Fred Moore Highway, 90' of 9' cmp, projected
H	2952	u/s face, Fred Moore Highway, 90' of 9' cmp, projected
I	3951	1000' u/s of Fred Moore Highway Culvert
J	4691	1740' u/s of Fred Moore Highway Culvert
K	4890	d/s face, Clinton Road Twin Culvert, 84' of 6' rcp, headwalled
L	4976	u/s face, Clinton Road Twin Culvert, 84' of 6' rcp, headwalled
M	5775	800' u/s of Clinton Road Twin Culvert
N	6475	50' d/s of Adam Road Bent Culvert
O	6525	d/s face, Adam Street Bent Culvert, 138' of 6' rcp and 120' of 6' cmp, 15 degree bend, projected
P	6785	u/s face, Adam Street Bent Culvert, 138' of 6' rcp and 120' of 6' cmp, 15 degree bend, projected

East China Township and St. Clair City
St. Clair County
5555-15 & 61

Jordan Creek

Cross Section	SECNO	Location
Q	7535	50' d/s of Port Huron-Detroit RR Bridge
R	7593	d/s face, Port Huron-Detroit RR Bridge over Jordan Creek, 10' wide concrete box culvert, wingwall
S	7614	u/s face, Port Huron-Detroit RR Bridge over Jordan Creek, 10' wide concrete box culvert, wingwall
T	7668	50' d/s of Vine Street Culvert
U	7718	d/s face, Vine Street, 10' wide concrete box culvert, wingwall
V	7754	us/ face, Vine Street, 10' wide concrete box culvert, wingwall
W	8454	700' u/s of Vine Street Culvert
X	9304	50' d/s of Brown Street Culvert
Y	9354	d/s face, Brown Street, 36' of 6' cmp, projecting
Z	9392	u/s face, Brown Street, 36' of 6' cmp, projecting

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**********************************************
HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
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C
1       JORDAN CREEK   CITY OF ST. CLAIR    5555-61        PM: GILBERTO M. FONT
T2       10 YEAR FLOW
T3       JORDAN CREEK
J1  ICHECK    INQ      NINV     IDIR      STRT     METRIC    HVINS     Q         WSEL      FQ
        -0.       2.       -0.      -0.  -0.000000    -0.00     -0.0      -0.   581.270   -0.000
J2  NPROF     IPLOT     PRFVS     XSECV     XSECH      FN       ALLDC     IBW       CHNIM     ITRACE
      1.000    -0.000    -1.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000
J3      1.000     10.000     11.000     12.000     14.000      5.000      4.000     -0.000     -0.000     -0.000
NC       .110       .050       .027       .300       .500     -0.000     -0.000     -0.000     -0.000     -0.000
QT      4.000    325.000    485.000    550.000    850.000     -0.000     -0.000     -0.000     -0.000     -0.000

X1      0.000     14.000     96.000    104.000      0.000      0.000      0.000     -0.000     -0.000     -0.000
X3     10.000     -0.000     -0.000     29.500    592.000    180.000    592.000    583.000    583.000     -0.000
GR    592.200      0.000    581.300     75.000    580.200     96.000    578.200     96.000    576.600     97.000
GR    575.700     98.000    575.200     99.000    575.200    101.000    575.700    102.000    576.700    103.000
GR    578.200    104.000    580.200    104.000    581.300    125.000    590.400    200.000     -0.000     -0.000
SB      0.000      2.506      2.760      0.000      6.280      0.000     50.270      0.000    575.100    575.200

X1     72.000     16.000     96.000    104.000     72.000     72.000     72.000     -0.000     -0.000     -0.000
X2     -0.000     -0.000      1.000    583.100    590.550     -0.000     -0.000     -0.000     -0.000     -0.000
X3     10.000     -0.000     -0.000     29.900    592.500    180.100    592.500    590.550    590.550     -0.000
BT     10.000     30.000    591.860      0.000     96.000    591.100    580.100     97.000    591.100    581.600
BT     98.000    591.100    582.600     99.000    591.100    583.100    101.000    591.100    583.100    102.000
BT    591.100    582.600    103.000    591.100    581.600    104.000    591.100    580.100    180.000    590.550
BT      0.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000
GR    592.200      0.000    591.860     30.000    581.300     75.000    580.100     96.000    578.100     96.000
GR    576.600     97.000    575.600     98.000    575.100     99.000    575.100    101.000    575.600    102.000
GR    576.600    103.000    578.100    104.000    580.100    104.000    591.300    125.000    590.550    180.000
GR    590.400    200.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000
NC       .110       .055       .035     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000

X1     73.000     -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     95.000     -0.000    105.000     -0.000     -0.000     -0.000     -0.000
X5      4.000    582.420    585.020    586.280    591.070     -0.000     -0.000     -0.000     -0.000     -0.000

X1     78.000     -0.000     -0.000     -0.000      5.000      5.000      5.000     -0.000     -0.000     -0.000
X3     -0.000     -0.000     -0.000     90.000     -0.000    110.000     -0.000     -0.000     -0.000     -0.000
NC       .110       .060       .045     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000

X1    124.000     17.000    603.000    628.000     45.000     45.000     45.000     -0.000     -0.000     -0.000
X3     -0.000     -0.000     -0.000    561.500     -0.000    671.500     -0.000     -0.000     -0.000     -0.000
GR    592.300      0.000    590.400    100.000    589.500    200.000    586.300    300.000    586.700    400.000
GR    586.600    500.000    585.200    603.000    578.200    607.000    575.400    615.000    576.400    617.000
GR    577.900    619.000    584.200    628.000    584.500    650.000    584.600    700.000    584.700    800.000
GR    585.700    900.000    586.200   1000.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000
NC       .150       .060       .050     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000

X1    324.000     23.000    800.000    825.000    200.000    200.000    200.000     -0.000     -0.000     -0.000
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					0.000	1039.000	-0.000	-0.000	-0.000	-0.000
GR	607.400	0.000	597.800	100.000	592.300	200.000	590.400	300.000	589.500	400.000
GR	586.300	500.000	583.700	600.000	583.600	700.000	582.200	800.000	578.700	805.000
GR	578.200	809.000	578.000	810.000	577.900	811.000	577.200	812.000	578.000	813.000
GR	578.500	814.000	578.200	815.000	579.500	821.000	582.600	825.000	582.900	900.000
GR	584.700	1000.000	585.700	1100.000	586.200	1200.000	-0.000	-0.000	-0.000	-0.000
NC	.160	.060	.055	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	373.000	23.000	809.000	815.000	49.000	49.000	49.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	645.000	-0.000	1088.000	-0.000	-0.000	-0.000	-0.000
GR	607.400	0.000	597.800	100.000	592.300	200.000	590.400	300.000	589.500	400.000
GR	586.300	500.000	583.700	600.000	583.600	700.000	582.200	800.000	578.700	805.000
GR	578.300	809.000	578.100	810.000	578.000	811.000	577.300	812.000	578.100	813.000
GR	578.600	814.000	578.300	815.000	579.500	821.000	582.600	825.000	582.900	900.000
GR	584.700	1000.000	585.700	1100.000	586.200	1200.000	-0.000	-0.000	-0.000	-0.000
NC	.150	.060	.055	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	374.000	-0.000	-0.000	-0.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	644.000	-0.000	1039.000	-0.000	581.300	581.300	-0.000
BT	12.000	700.000	583.600	0.000	800.000	583.200	582.200	805.000	583.100	578.100
BT	809.000	583.000	578.300	810.000	583.000	580.800	811.000	583.000	581.000	813.000
BT	583.000	581.300	814.000	583.000	580.800	815.000	583.000	578.300	821.000	583.000
BT	579.500	825.000	583.000	582.600	900.000	582.900	0.000	-0.000	-0.000	-0.000
X1	400.000	23.000	809.000	815.000	26.000	26.000	26.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	644.000	-0.000	1115.000	-0.000	583.000	583.000	-0.000
BT	12.000	700.000	583.600	0.000	800.000	583.200	582.200	805.000	583.100	578.700
BT	809.000	583.000	578.100	810.000	583.000	580.600	811.000	583.000	581.100	813.000
BT	583.000	581.100	814.000	583.000	580.600	815.000	583.000	578.100	821.000	583.000
BT	579.500	825.000	583.000	582.600	900.000	582.900	-0.000	-0.000	-0.000	-0.000
GR	607.400	0.000	597.800	100.000	592.300	200.000	590.400	300.000	589.500	400.000
GR	586.300	500.000	583.700	600.000	583.600	700.000	582.200	800.000	578.700	805.000
GR	578.100	809.000	578.000	810.000	577.900	811.000	577.200	812.000	578.000	813.000
GR	578.500	814.000	578.100	815.000	579.500	821.000	582.600	825.000	582.900	900.000
GR	584.700	1000.000	585.700	1100.000	586.200	1200.000	-0.000	-0.000	-0.000	-0.000
NC	.160	.060	.050	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	401.000	-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	644.000	-0.000	1116.000	-0.000	-0.000	-0.000	-0.000
X1	450.000	19.000	800.000	833.000	49.000	49.000	49.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	648.000	593.000	1165.000	593.000	-0.000	-0.000	-0.000
GR	607.400	0.000	597.800	100.000	592.300	200.000	590.400	300.000	589.500	400.000
GR	586.300	500.000	583.700	600.000	583.600	700.000	582.200	800.000	579.200	807.000
GR	578.200	815.000	578.000	817.000	578.200	819.000	582.000	833.000	583.000	850.000
GR	582.900	900.000	584.700	1000.000	585.700	1100.000	586.200	1200.000	-0.000	-0.000
NC	.160	.140	.060	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1161.000	10.000	200.000	224.000	711.000	711.000	711.000	-0.000	-0.000	-0.000
GR	597.100	0.000	586.500	100.000	583.600	200.000	582.100	204.000	580.700	211.000
GR	580.400	214.000	581.300	221.000	584.500	224.000	592.400	245.000	595.700	300.000
NC	.160	.160	.060	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1335.000	12.000	100.000	121.000	174.000	174.000	174.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	72.000	-0.000	170.000	-0.000	-0.000	-0.000	-0.000
GR	602.100	0.000	590.500	55.000	585.300	85.000	583.600	100.000	582.100	104.000
GR	580.300	111.000	582.300	114.000	583.300	121.000	584.500	134.000	585.600	150.000
GR	587.300	200.000	594.700	250.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.070	.070	.055	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1385.000	12.000	97.000	103.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	10.000	580.200	-0.000	49.000	592.000	151.000	592.000	-0.000	-0.000	-0.000
GR	597.100	0.000	587.100	57.000	581.300	97.000	580.300	97.000	578.800	98.000
GR	578.300	99.000	578.300	101.000	578.800	102.000	580.300	103.000	581.300	103.000
GR	587.100	120.000	597.100	200.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
SB	-0.000	2.802	2.960	-0.000	5.043	-0.000	21.510	-0.000	578.100	578.300

X1	1437.000	14.000	97.000	103.000	52.000	52.000	52.000	-0.000	-0.000	-0.000
X2	-0.000	-0.000	1.000	584.100	593.700	-0.000	-0.000	-0.000	-0.000	-0.000
X3	10.000	579.600	-0.000	48.900	596.000	151.100	596.000	-0.000	-0.000	-0.000
BT	8.000	49.000	595.400	0.000	97.000	593.700	581.100	98.000	593.700	583.600
BT	99.000	593.700	584.100	101.000	593.700	584.100	102.000	595.700	583.600	103.000
BT	593.700	581.100	151.000	595.400	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	597.100	0.000	595.400	49.000	587.100	57.000	581.100	97.000	580.100	97.000
GR	578.600	98.000	578.100	99.000	578.100	101.000	578.600	102.000	580.100	103.000
GR	581.100	103.000	587.100	120.000	595.400	151.000	597.100	200.000	-0.000	-0.000
NC	.170	.150	.055	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1485.000	14.000	200.000	234.000	48.000	48.000	48.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	150.000	602.000	325.000	602.000	-0.000	-0.000	-0.000
GR	604.800	0.000	600.100	100.000	598.500	135.000	589.600	174.000	589.000	200.000
GR	586.100	206.000	585.800	210.000	586.100	216.000	596.300	234.000	597.400	300.000
GR	599.000	400.000	600.000	500.000	600.300	545.000	603.700	558.000	-0.000	-0.000
QT	4.000	315.000	470.000	540.000	820.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2810.000	14.000	200.000	234.000	1325.000	1325.000	1325.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	190.000	596.000	234.000	596.000	-0.000	-0.000	-0.000
GR	604.800	0.000	600.100	100.000	598.500	135.000	589.600	174.000	589.000	200.000
GR	584.700	206.000	584.400	210.000	584.700	216.000	596.300	234.000	597.400	300.000
GR	599.000	400.000	600.000	500.000	600.300	545.000	603.700	558.000	-0.000	-0.000
NC	.170	.150	.060	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2860.000	12.000	95.500	104.500	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	10.000	584.100	-0.000	-0.000	-0.000	-0.000	-0.000	596.000	596.000	-0.000
GR	601.200	0.000	594.300	48.000	588.100	95.500	587.100	95.500	584.700	96.500
GR	583.100	98.500	583.100	101.500	584.600	103.500	587.100	104.500	588.100	104.500
GR	593.800	152.500	600.500	200.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
SB	-0.000	1.729	2.920	-0.000	7.313	-0.000	62.310	-0.000	583.200	583.100
X1	2952.000	12.000	95.500	104.500	92.000	92.000	92.000	-0.000	-0.000	-0.000
X2	-0.000	-0.000	1.000	592.200	600.300	-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	600.300	600.300	-0.000
BT	8.000	0.000	601.200	0.000	95.500	600.300	588.200	96.500	600.300	590.700
BT	98.500	600.300	592.200	101.500	600.300	592.200	103.500	600.300	590.700	104.500
BT	600.300	588.200	200.000	600.500	0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	601.200	0.000	594.000	48.000	588.200	95.500	587.200	95.500	584.700	96.500
GR	583.200	98.500	583.200	101.500	584.700	103.500	587.200	104.500	588.200	104.500
GR	593.800	152.500	600.500	200.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.150	.150	.050	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3000.000	15.000	300.000	329.000	48.000	48.000	48.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	263.000	598.000	367.000	598.000	-0.000	-0.000	-0.000
GR	605.000	0.000	601.400	100.000	600.100	157.000	598.800	200.000	598.400	240.000
GR	592.500	265.000	592.600	300.000	588.700	307.000	583.500	310.000	589.400	318.000
GR	592.800	329.000	597.200	400.000	599.800	500.000	601.600	600.000	604.700	700.000
X1	3951.000	15.000	300.000	329.000	951.000	951.000	951.000	-0.000	-0.000	-0.000
GR	605.000	0.000	601.400	100.000	600.100	157.000	598.800	200.000	598.400	240.000
GR	592.500	265.000	592.600	300.000	588.700	307.000	588.300	310.000	589.400	318.000
GR	592.800	329.000	597.200	400.000	599.800	500.000	601.600	600.000	604.700	700.000
NC	.090	.160	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4691.000	14.000	300.000	325.000	740.000	740.000	740.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	212.200	601.000	412.800	601.000	-0.000	-0.000	-0.000
GR	605.600	0.000	603.400	100.000	599.000	200.000	593.200	300.000	589.700	306.000
GR	589.000	308.000	589.200	311.000	591.200	313.000	591.600	317.000	595.500	325.000
GR	597.100	400.000	600.000	500.000	604.000	600.000	607.100	700.000	-0.000	-0.000
NC	.060	.160	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4841.000	50.000	296.500	316.000	150.000	150.000	150.000	-0.000	-0.000	-0.000
GR	605.700	0.000	605.100	21.100	604.600	42.300	604.000	63.500	603.500	84.700
GR	602.900	105.800	602.200	127.000	601.400	148.200	600.700	169.400	600.000	190.600

GR	591.800	297.400	591.100	298.400	590.600	299.400	590.200	300.300	589.900	301.300
GR	589.700	302.300	589.800	303.300	590.400	304.200	590.900	305.200	591.500	306.200
GR	591.800	307.200	591.600	308.100	591.100	309.100	591.100	310.100	591.400	311.100
GR	591.700	312.000	592.000	313.000	592.400	314.000	593.100	315.000	593.900	316.000
GR	597.700	341.600	598.000	367.200	598.300	392.700	598.800	418.300	599.400	443.900
GR	599.900	469.500	600.500	495.100	601.300	520.700	602.100	546.300	603.000	571.900
GR	603.800	597.500	604.600	623.100	605.400	648.700	602.200	574.300	607.000	700.000
QT	4.000	295.000	445.000	500.000	780.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.150	.120	.060	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4890.000	23.000	293.000	307.000	49.000	49.000	49.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	245.000	600.000	380.000	600.000	-0.000	-0.000	-0.000
GR	605.800	0.000	602.900	100.000	600.500	200.000	596.400	246.000	592.300	293.000
GR	592.300	293.000	590.800	294.000	590.200	295.000	590.200	297.000	590.300	298.000
GR	592.300	299.000	592.400	301.000	590.900	302.000	590.200	303.000	590.200	305.000
GR	590.900	306.000	592.400	307.000	593.400	307.000	596.400	353.000	599.700	400.000
GR	601.200	500.000	603.900	600.000	607.000	700.000	-0.000	-0.000	-0.000	-0.000
SB	1.250	1.705	3.010	0.000	13.210	3.767	56.549	0.000	590.370	590.170
X1	4976.000	23.000	293.000	307.000	86.000	86.000	86.000	-0.000	-0.000	-0.000
X2	-0.000	-0.000	1.000	596.410	599.500	-0.000	-0.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	248.900	600.000	405.100	600.000	-0.000	-0.000	-0.000
BT	16.000	249.000	600.000	0.000	293.000	599.500	593.300	294.000	599.500	595.400
BT	295.000	599.500	596.300	297.000	599.500	596.300	297.000	599.500	595.400	299.000
BT	599.500	593.300	299.000	599.500	592.300	301.000	599.500	592.400	301.000	599.500
BT	593.400	302.000	599.500	595.900	303.000	599.500	596.400	305.000	599.500	596.400
BT	306.000	599.500	595.900	307.000	599.500	593.400	405.000	600.000	0.000	-0.000
GR	605.800	0.000	602.900	100.000	600.500	200.000	600.000	249.000	593.300	293.000
GR	592.300	293.000	590.800	294.000	590.300	295.000	590.300	297.000	590.800	298.000
GR	592.300	299.000	592.400	301.000	590.900	302.000	590.400	303.000	590.400	305.000
GR	590.900	306.000	592.400	307.000	593.400	307.000	596.400	353.000	600.000	405.000
GR	601.200	500.000	603.900	600.000	607.000	700.000	-0.000	-0.000	-0.000	-0.000
NC	.150	.150	.050	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	5026.000	16.000	316.000	338.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
GR	612.500	0.000	610.600	29.000	608.100	42.000	606.600	116.000	602.500	216.000
GR	596.800	316.000	591.600	322.000	590.400	325.000	591.700	329.000	596.500	336.000
GR	601.300	416.000	600.600	516.000	601.200	616.000	600.900	716.000	602.900	816.000
GR	607.600	916.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.160	.160	.050	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	5775.000	16.000	316.000	338.000	749.000	749.000	749.000	-0.000	-0.000	-0.000
GR	612.500	0.000	610.600	29.000	608.100	42.000	606.600	116.000	602.500	216.000
GR	596.800	316.000	591.600	322.000	591.200	325.000	591.700	329.000	596.500	336.000
GR	601.300	416.000	600.600	516.000	601.200	616.000	600.900	716.000	602.900	816.000
GR	607.600	916.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	6475.000	15.000	251.000	273.000	700.000	700.000	700.000	-0.000	-0.000	-0.000
GR	611.400	0.000	605.700	51.000	604.100	151.000	597.200	251.000	593.400	257.000
GR	593.000	261.000	593.800	264.000	598.900	273.000	600.100	301.000	603.500	317.000
GR	602.800	351.000	603.400	451.000	601.900	551.000	607.200	651.000	610.200	751.000
NC	.160	.160	.070	.300	.500	-0.000	-0.000	-0.000	-0.000	-0.000
QT	4.000	270.000	405.000	465.000	710.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	6525.000	22.000	497.000	503.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	420.000	602.000	560.000	602.000	-0.000	-0.000	-0.000
GR	610.700	0.000	607.600	100.000	606.800	200.000	607.500	260.000	605.600	300.000
GR	602.700	400.000	599.200	450.000	596.900	497.000	595.900	497.000	594.400	498.000
GR	593.900	499.000	593.900	501.000	594.400	502.000	595.900	503.000	596.900	503.000
GR	599.200	550.000	602.800	600.000	603.300	700.000	603.500	800.000	604.400	900.000
GP	608.000	1000.000	611.200	1100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
SB	0.000	3.032	2.850	0.000	4.712	0.000	28.274	0.000	595.110	593.870
X1	6785.000	22.000	497.000	503.000	260.000	260.000	260.000	-0.000	-0.000	-0.000
X2	-0.000	-0.000	1.000	601.110	602.400	-0.000	-0.000	-0.000	-0.000	-0.000

X5	4.000	602.800	603.320	603.480	604.010	-0.000	-0.000	-0.000	-0.000	-0.000
BT	8.000	420.000	602.600	0.000	497.000	602.400	598.100	498.000	602.400	600.600
BT	499.000	602.400	601.100	501.000	602.400	601.100	502.000	602.400	600.600	503.000
BT	602.400	598.100	560.000	602.600	0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	610.700	0.000	607.600	100.000	606.800	200.000	607.600	260.000	605.600	300.000
GR	602.600	420.000	599.800	450.000	598.100	497.000	597.100	447.000	595.600	498.000
GR	595.100	499.000	595.100	501.000	595.600	502.000	597.100	503.000	596.100	503.000
GR	599.800	550.000	602.600	560.000	603.300	700.000	603.600	800.000	604.400	900.000
GR	608.000	1000.000	611.200	1100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.170	.130	.050	.300	.500	-0.000	-0.000	-0.000	-0.000	-0.000
X1	6835.000	20.000	480.000	530.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	400.000	604.000	560.000	604.000	-0.000	-0.000	-0.000
GR	610.700	0.000	607.600	100.000	606.800	200.000	607.600	260.000	605.600	300.000
GR	602.700	400.000	599.800	480.000	597.100	497.000	595.600	498.000	595.100	499.000
GR	595.100	501.000	595.600	502.000	597.100	503.000	599.800	630.000	602.800	600.000
GR	603.300	700.000	603.500	800.000	604.400	900.000	603.000	1000.000	611.200	1100.000
X1	7235.000	20.000	588.000	610.000	400.000	400.000	400.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	470.000	-0.000	750.000	-0.000	-0.000	-0.000	-0.000
GR	612.900	0.000	609.200	100.000	606.100	200.000	604.400	300.000	602.500	400.000
GR	599.700	441.000	605.200	460.000	605.200	470.000	598.900	570.000	598.000	588.000
GR	596.500	591.000	596.600	596.000	598.000	602.000	602.500	610.000	603.100	692.000
GR	605.800	790.000	606.900	890.000	606.300	990.000	610.600	1040.000	612.200	1140.000
NC	.170	.130	.054	.400	.700	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7535.000	20.000	500.000	518.000	300.000	300.000	300.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	470.000	604.500	600.000	604.500	-0.000	-0.000	-0.000
GR	612.900	0.000	609.200	100.000	606.100	200.000	604.400	300.000	602.500	400.000
GR	599.700	441.000	605.200	460.000	605.200	470.000	598.900	482.000	596.300	500.000
GR	596.700	501.000	596.800	506.000	598.100	512.000	602.600	510.000	603.100	500.000
GR	604.600	700.000	603.900	800.000	606.300	900.000	610.600	1000.000	612.200	1040.000
NH	4.000	.150	200.000	.060	210.000	.200	292.000	.500	792.000	-0.000
X1	7593.000	13.000	200.000	210.000	50.000	66.000	58.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	200.000	605.700	210.000	602.600	-0.000	-0.000	-0.000
GR	606.100	0.000	605.900	100.000	602.100	150.000	598.200	200.000	597.900	205.000
GR	598.300	210.000	600.700	241.000	603.100	292.000	604.600	342.000	603.900	492.000
GR	606.300	592.000	610.600	692.000	612.200	792.000	-0.000	-0.000	-0.000	-0.000
SB	-0.000	1.504	2.870	-0.000	10.000	-0.000	45.000	0.000	597.900	597.900
NC	.150	.140	.060	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7614.000	17.000	707.000	721.000	25.000	1.000	21.000	-0.000	-0.000	-0.000
X2	-0.000	-0.000	1.000	602.600	604.200	-0.000	-0.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	706.900	606.000	796.100	606.000	-0.000	-0.000	-0.000
BT	6.000	707.000	605.600	597.900	707.000	605.600	602.600	721.000	605.500	602.600
BT	721.000	605.500	598.300	731.000	605.400	0.000	796.000	604.200	0.000	-0.000
GR	616.700	0.000	610.500	141.000	607.000	282.000	605.700	374.000	605.600	707.000
GR	597.900	707.000	598.000	714.000	598.300	721.000	601.800	726.000	605.400	731.000
GR	604.200	796.000	603.100	834.000	604.600	934.000	603.900	1034.000	606.300	1134.000
GR	610.600	1234.000	612.200	1334.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.130	.100	.060	.300	.500	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7668.000	16.000	500.000	524.000	58.000	50.000	54.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	350.000	606.000	600.500	606.000	-0.000	-0.000	-0.000
GR	616.700	0.000	610.500	100.000	607.000	200.000	605.000	300.000	602.500	400.000
GR	601.200	500.000	598.700	506.000	597.700	515.000	598.300	524.000	605.400	548.000
GR	604.800	600.000	604.900	700.000	605.500	800.000	606.100	900.000	609.700	1000.000
GR	613.900	1100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
QT	4.000	255.000	390.000	440.000	680.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7718.000	18.000	500.000	510.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	360.000	606.000	575.000	606.000	-0.000	-0.000	-0.000
GR	615.000	0.000	610.200	100.000	607.300	200.000	604.900	300.000	604.200	400.000
GR	601.200	450.000	600.100	500.000	598.500	503.000	597.700	507.500	598.300	510.000

GR	607.500	900.000	610.400	1000.000	614.100	1100.000	-0.000	-0.000	-0.000	-0.000
SB	-0.000	1.620	7.290	-0.000	10.000	-0.000	45.100	-0.000	597.600	597.700
X1	7754.000	15.000	500.000	510.000	36.000	27.000	36.000	-0.000	-0.000	-0.000
X2	-0.000	-0.000	1.000	602.400	604.200	-0.000	-0.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	359.900	606.000	575.100	606.000	-0.000	-0.000	-0.000
BT	14.000	0.000	615.000	0.000	100.000	610.300	0.000	200.000	607.300	0.000
BT	300.000	604.500	0.000	360.000	604.500	0.000	400.000	604.200	0.000	300.000
BT	604.800	598.400	500.000	604.800	602.400	510.000	604.800	602.400	510.000	604.800
BT	598.000	535.000	605.400	0.000	575.000	605.600	0.000	635.000	605.900	0.000
BT	1235.000	607.800	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	615.000	0.000	610.300	100.000	607.300	200.000	604.200	300.000	604.200	360.000
GR	604.200	400.000	601.200	450.000	598.100	500.000	597.600	598.000	598.000	510.000
GR	601.900	523.000	605.400	535.000	605.600	575.000	605.900	635.000	607.800	1235.000
NC	.130	.100	.060	.300	.500	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7804.000	19.000	400.000	430.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	260.000	607.000	465.000	607.000	-0.000	-0.000	-0.000
GR	616.000	0.000	609.600	100.000	606.400	200.000	603.700	300.000	603.200	400.000
GR	599.500	408.000	599.000	414.000	598.900	417.000	600.000	422.000	602.600	430.000
GR	603.600	440.000	603.900	450.000	607.800	465.000	606.000	461.000	606.400	560.000
GR	607.500	700.000	606.600	800.000	609.400	900.000	614.500	1000.000	-0.000	-0.000
NC	.100	.130	.060	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	8454.000	19.000	400.000	430.000	650.000	650.000	650.000	-0.000	-0.000	-0.000
GR	616.000	0.000	609.600	100.000	606.400	200.000	603.700	300.000	603.200	400.000
GR	599.500	408.000	599.000	414.000	598.900	417.000	600.000	422.000	602.600	430.000
GR	603.600	500.000	603.900	550.000	607.800	565.000	606.000	561.000	606.400	600.000
GR	607.500	700.000	606.600	800.000	609.400	900.000	614.500	1000.000	-0.000	-0.000
X1	9304.000	19.000	500.000	528.000	850.000	850.000	850.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	457.000	608.600	645.000	606.600	-0.000	-0.000	-0.000
GR	613.000	0.000	611.600	100.000	609.200	200.000	607.900	300.000	607.100	400.000
GR	603.500	500.000	599.900	504.000	598.700	512.000	600.100	519.000	604.700	528.000
GR	604.400	600.000	605.300	675.000	608.600	692.000	607.000	600.000	607.600	900.000
GR	608.200	1000.000	607.600	1100.000	614.100	1200.000	613.900	1300.000	-0.000	-0.000
QT	4.000	230.000	350.000	395.000	610.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.130	.130	.050	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	9354.000	23.000	597.000	603.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	10.000	600.200	-0.000	517.200	-0.000	680.700	-0.000	606.100	606.100	-0.000
GR	613.300	0.000	612.000	100.000	610.500	200.000	609.400	300.000	608.300	400.000
GR	607.300	500.000	604.300	550.000	602.300	597.000	601.300	597.000	599.600	598.000
GR	599.100	599.000	599.100	601.000	599.600	602.000	601.300	603.000	602.300	603.000
GR	604.300	650.000	607.500	700.000	608.800	800.000	608.700	900.000	608.500	1000.000
GR	608.700	1100.000	608.700	1200.000	609.000	1300.000	-0.000	-0.000	-0.000	-0.000
SB	0.000	2.341	3.030	0.000	4.712	0.000	27.373	0.000	599.100	599.100
X1	9392.000	25.000	597.000	603.000	38.000	38.000	38.000	-0.000	-0.000	-0.000
X2	-0.000	-0.000	1.000	606.100	606.900	-0.000	-0.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	515.900	-0.000	692.100	-0.000	606.900	606.900	-0.000
BT	10.000	516.000	607.200	0.000	597.000	606.900	0.000	597.000	606.900	603.100
BT	598.000	606.900	605.600	599.000	606.900	606.100	601.000	606.900	606.100	602.000
BT	606.900	605.600	603.000	606.900	603.100	603.000	606.900	0.000	602.000	607.400
BT	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	613.300	0.000	612.000	100.000	610.500	200.000	609.400	300.000	608.300	400.000
GR	607.300	500.000	607.200	516.000	604.300	550.000	603.100	597.000	601.100	597.000
GR	599.600	598.000	599.100	599.000	599.100	601.000	599.600	602.000	601.100	603.000
GR	603.100	603.000	604.300	650.000	607.400	682.000	607.500	700.000	608.800	800.000
GR	608.700	900.000	608.500	1000.000	608.700	1100.000	608.700	1200.000	609.000	1300.000
NC	.130	.130	.060	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	9442.000	23.000	550.000	650.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
GR	613.300	0.000	612.000	100.000	610.500	200.000	609.400	300.000	608.300	400.000
GR	607.300	500.000	604.300	550.000	603.100	597.000	601.100	597.000	599.600	598.000

641G

GR 604.300 650.000 607.500 700.000 608.800
GR 608.700 1100.000 608.700 1200.000 609.000
EJ -0.000 -0.000 -0.000 -0.000 -0.000

608.700 608.500 1000.000
-0.000 -0.000 -0.000
-0.000 -0.000 -0.000

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HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
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T1       JORDAN CREEK    CITY OF ST. CLAIR     5555-61         PM: GILBERTO M. FONT
T2       100 YEAR FLOW
T3       JORDAN CREEK

J1  ICHECK     INQ        NINV       IDIR       STRT       METRIC     HVINS      Q          WSEL       FQ
        -0.       4.        -0.        -0. -0.000000      -0.00      -0.0       -0.     581.270     -0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
       3.000    -0.000    -1.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000
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CCHV= .300 CEHV= .500

3720 ASSUMED CRITICAL DEPTH

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

3470 ENCROACHMENT STATIONS= 29.5 180.0 TYPE= 1 TARGET= 150.500
ELENCL= 592.00 ELENCR= 592.00

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 583.00 ELREA= 583.00

A D/S FACE, AT MOUTH(PH&D RR SPUR), 72' OF 8' CMP

PROJECTING

0.00	6.13	581.33	581.33	581.27	583.98	2.65	0.00	0.00	580.20
550.	0.	550.	0.	0.	42.	0.	0.	0.	580.20
0.00	0.00	13.06	0.00	.110	.027	.050	0.000	575.20	96.00
.015238	0.	0.	0.	0	4	1	0.00	8.00	104.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHO	ELCHD
	0.00	2.51	2.76	0.00	6.28	0.00	50.27	0.00	575.10	575.20

3301 HV CHANGED MORE THAN HVINS

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
585.99	583.89	0.00	0.	550.	50.	583.10	590.55	10.00

3470 ENCROACHMENT STATIONS= 29.9 180.1 TYPE= 1 TARGET= 150.200
ELENCL= 592.50 ELENCR= 592.50

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 590.55 ELREA= 590.55

B U/S FACE, AT MOUTH(PH&D RR SPUR), 72' OF 8' CMP

PROJECTING

72.00	10.01	585.11	0.00	0.00	585.99	.88	2.01	0.00	580.10
550.	0.	550.	0.	0.	73.	0.	0.	0.	580.10
.00	0.00	7.53	0.00	.110	.027	.050	.027	575.10	96.00
.003255	72.	72.	72.	3	0	1	0.00	8.00	104.00

WATER EL=X5 CARD= 586.280

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= 95.0 105.0 TYPE= 1 TARGET= 10.000

WATER-SURFACE ELS. BY HAND CALCULATION

73.00	11.18	586.28	0.00	0.00	586.85	.57	.00	.09	580.10
550.	13.	511.	26.	6.	82.	6.	0.	0.	580.10
.00	2.09	6.20	4.19	.110	.035	.055	.026	575.10	95.00
.002136	1.	1.	1.	0	0	1	0.00	10.00	105.00

3470 ENCROACHMENT STATIONS= 90.0 110.0 TYPE= 1 TARGET= 20.000

78.00	11.62	586.72	0.00	0.00	586.96	.24	.01	.10	580.10
550.	58.	377.	115.	39.	86.	39.	0.	0.	580.10
.00	1.49	4.39	2.97	.110	.035	.055	.027	575.10	90.00
.001012	5.	5.	5.	2	0	1	0.00	20.00	110.00

3280 CROSS SECTION 124.00 EXTENDED .78 FEET

3470 ENCROACHMENT STATIONS= 561.5 671.5 TYPE= 1 TARGET= 110.000

124.00	11.58	586.98	0.00	0.00	587.04	.06	.03	.05	565.20
550.	21.	428.	100.	62.	198.	111.	0.	0.	584.20
.01	.35	2.17	.90	.110	.045	.060	.033	575.40	561.50
.000384	45.	45.	45.	2	0	1	0.00	110.00	671.50

3280 CROSS SECTION 324.00 EXTENDED .87 FEET

3470 ENCROACHMENT STATIONS= 650.0 1039.0 TYPE= 1 TARGET= 339.000

50FT D/S OF 26' OF 6' CMP

324.00	9.87	587.07	0.00	0.00	587.07	.00	.02	.02	582.20
550.	102.	149.	299.	589.	196.	736.	5.	1.	582.60
.13	.17	.76	.41	.150	.050	.060	.043	577.20	650.00
.000049	200.	200.	200.	2	0	1	0.00	339.00	1039.00

3280 CROSS SECTION 373.00 EXTENDED .88 FEET

3470 ENCROACHMENT STATIONS= 645.0 1088.0 TYPE= 1 TARGET= 443.000

373.00	9.77	587.07	0.00	0.00	587.08	.00	.00	.00	578.30
550.	121.	43.	386.	676.	54.	897.	6.	2.	578.30
.16	.18	.80	.43	.160	.055	.060	.045	577.30	645.00
.000054	49.	49.	49.	0	0	1	0.00	443.00	1088.00

3280 CROSS SECTION 374.00 EXTENDED .88 FEET

NORMAL BRIDGE,NRD=12 MIN ELTRD= 582.90 MAX ELLC= 582.60

3470 ENCROACHMENT STATIONS= 644.0 1089.0 TYPE= 1 TARGET= 445.000

B' D/S FACE, 26' OF 6' CMP, 300' U/S RR SPUR

PROJECTING

374.00	9.77	587.07	0.00	0.00	587.08	.00	.00	.00	578.30
550.	100.	17.	433.	597.	39.	851.	7.	2.	578.30
.17	.17	.44	.51	.150	.055	.060	.045	577.20	644.00
.000090	1.	1.	1.	0	0	1	-143.75	445.00	1089.00

3280 CROSS SECTION 400.00 EXTENDED .88 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	TOP ID	ENDST

NORMAL BRIDGE,NRD=12 MIN ELTRD= 582.90 MAX ELLC= 582.60

3470 ENCROACHMENT STATIONS= 644.0 1115.0 TYPE= 1 TARGET= 471.000

B'' U/S FACE, 26' OF 6' CMP, 328' U/S RR SPUR,

PROJECTING

400.00	9.88	587.08	0.00	0.00	587.08	.00	.00	.00	578.10
550.	97.	17.	436.	598.	39.	888.	7.	2.	578.10
.18	.16	.43	.49	.150	.055	.060	.045	577.20	644.00
.000087	26.	26.	26.	0	0	1	-145.50	471.00	1115.00

3280 CROSS SECTION 401.00 EXTENDED .88 FEET

3470 ENCROACHMENT STATIONS= 644.0 1116.0 TYPE= 1 TARGET= 472.000

401.00	9.88	587.08	0.00	0.00	587.08	.00	.00	.00	578.10
550.	118.	47.	385.	680.	55.	937.	7.	2.	578.10
.18	.17	.86	.41	.160	.050	.060	.045	577.20	644.00
.000051	1.	1.	1.	0	0	1	0.00	472.00	1115.00

3280 CROSS SECTION 450.00 EXTENDED .89 FEET

3470 ENCROACHMENT STATIONS= 648.0 1165.0 TYPE= 1 TARGET= 517.000
ELENCL= 593.00 ELENCR= 593.00

B''' 50FT U/S OF 26' OF 6' CMP

450.00	9.08	587.08	0.00	0.00	587.08	.00	.00	.00	582.20
550.	88.	172.	290.	599.	246.	882.	9.	3.	582.00
.22	.15	.70	.33	.160	.050	.060	.045	578.00	648.00

C 1087FT U/S OF CULVERT AT MOUTH

1161.00	6.71	587.11	0.00	0.00	587.22	.11	.09	.06	583.60
550.	131.	414.	5.	209.	133.	9.	26.	4.	584.50
.29	.63	3.10	.51	.160	.060	.140	.054	580.40	94.16
.001764	711.	711.	711.	0	0	1	0.00	136.80	230.96

3470 ENCROACHMENT STATIONS= 72.0 170.0 TYPE= 1 TARGET= 98.000

MANUFACTURED SEC.

1335.00	7.15	587.45	0.00	0.00	587.60	.15	.35	.02	583.60
550.	48.	404.	97.	58.	113.	115.	28.	8.	583.30
.31	.83	3.56	.85	.160	.060	.160	.055	580.30	72.52
.002375	174.	174.	174.	2	0	1	0.00	97.38	170.00

3470 ENCROACHMENT STATIONS= 49.0 151.0 TYPE= 1 TARGET= 102.000
ELENCL= 592.00 ELENCR= 592.00

D D/S FACE. AT STANDARD OIL PROPERTY, 50' OF 6'

CMP, PROJECTING

1385.00	7.41	587.61	0.00	0.00	587.71	.10	.10	.01	581.30
550.	277.	159.	114.	137.	44.	59.	28.	8.	581.30
.32	2.02	3.59	1.94	.070	.055	.070	.055	580.20	54.09
.001797	50.	50.	50.	2	0	1	0.00	70.00	124.04

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	-0.00	2.80	2.96	-0.00	5.04	-0.00	21.51	-0.00	578.10	578.30

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
616.06	585.92	0.00	265.	288.	22.	584.10	593.70	30.00

3470 ENCROACHMENT STATIONS= 48.9 151.1 TYPE= 1 TARGET= 102.200
ELENCL= 596.00 ELENCR= 596.00

E U/S FACE. AT STANDARD OIL PROPERTY, 50' OF 6'

CMP, PROJECTING

1437.00	15.80	595.40	0.00	0.00	595.41	.01	7.69	0.00	581.10
550.	305.	80.	165.	485.	94.	321.	29.	9.	581.10
.34	.63	.85	.51	.070	.055	.070	.055	579.60	48.90
.000038	52.	52.	52.	0	0	6	0.00	102.20	151.10

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

3470 ENCROACHMENT STATIONS= 150.0 325.0 TYPE= 1 TARGET= 175.000
ELENCL= 602.00 ELENCR= 602.00

DUPLICATED FROM SEC. F, INVERT EL. ADJUSTED

1485.00	15.60	595.40	0.00	0.00	595.41	.01	.00	.00	5[illegible]3.00
550.	138.	348.	64.	532.	421.	395.	30.	9.	590.30
.36	.26	.83	.16	.170	.055	.150	.055	579.80	150.00
.000037	48.	48.	48.	2	0	1	0.00	175.00	325.00

3470 ENCROACHMENT STATIONS= 190.0 224.0 TYPE= 1 TARGET= 34.000
ELENCL= 596.00 ELENCR= 596.00

F 50FT D/S OF FRED MOORE HWY CULVERT

2810.00	11.09	595.49	0.00	0.00	595.56	.07	.12	.03	5[illegible]9.60
540.	43.	497.	0.	64.	227.	0.	55.	12.	596.30
.54	.67	2.19	0.00	.170	.055	.150	.055	584.40	190.00
.000494	1325.	1325.	1325.	2	0	1	0.00	34.00	224.00

OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 596.00 ELREA= 596.00

G D/S FACE, FRED MOORE HWY, 90' OF 9' RCP,

PROJECTING

2860.00	11.24	595.34	0.00	0.00	595.83	.49	.06	.21	589.10
540.	0.	540.	0.	0.	97.	0.	55.	12.	588.10
.54	0.00	5.59	0.00	.170	.060	.150	.055	584.10	95.50
.006965	50.	50.	50.	2	0	1	0.00	9.00	104.50

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHD	ELCHD
	-0.00	1.73	2.92	-0.00	7.31	-0.00	62.31	-0.00	583.20	583.10

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
597.36	594.97	0.00	0.	540.	62.	592.20	600.30	10.00

OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 600.30 ELREA= 600.30

H U/S FACE, FRED MOORE HWY, 90' OF 9' RCP,

PROJECTING

2952.00	13.82	597.02	0.00	0.00	597.36	.34	1.53	0.00	588.20
540.	0.	540.	0.	0.	116.	0.	55.	12.	588.20
.55	0.00	4.66	0.00	.170	.060	.150	.055	583.20	95.50
.004385	92.	92.	92.	2	0	1	0.00	9.00	104.50

3470 ENCROACHMENT STATIONS= 263.0 367.0 TYPE= 1 TARGET= 104.000
ELENCL= 598.00 ELENCR= 598.00

DUPLICATED FROM SEC. I, INVERT EL. ADJUSTED

3000.00	13.95	597.45	0.00	0.00	597.48	.03	.03	.09	592.60
540.	83.	409.	48.	181.	239.	132.	56.	12.	592.80
.56	.46	1.71	.36	.150	.050	.150	.055	583.50	263.00
.000259	48.	48.	48.	2	0	1	0.00	104.00	367.00

I 1000FT U/S OF FRED MOORE HWY CULVERT

3951.00	9.39	597.69	0.00	0.00	597.72	.03	.24	.00	592.60
540.	100.	383.	58.	237.	220.	195.	69.	15.	592.41
.75	.42	1.74	.30	.150	.050	.150	.054	588.30	243.04
.000248	951.	951.	951.	2	0	1	0.00	175.51	418.55

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	JLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TW	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= 212.2 412.8 TYPE= 1 TARGET= 200.600
ELENCL= 601.00 ELENCR= 601.00

J 1740FT U/S OF FRED MOORE HWY CULVERT

4691.00	8.99	597.99	0.00	0.00	598.03	.04	.31	.00	593.20
540.	170.	319.	51.	198.	161.	136.	78.	18.	595.50
.89	.86	1.99	.37	.090	.070	.160	.056	589.00	217.33
.000844	740.	740.	740.	2	0	1	0.00	195.47	412.80

INTERPOLATED FROM SEC. J & K

4841.00	8.45	598.15	0.00	0.00	598.28	.13	.20	.04	596.30
540.	68.	422.	50.	50.	133.	69.	80.	19.	593.90
.91	1.37	3.18	.73	.060	.070	.160	.057	589.70	243.44
.002435	150.	150.	150.	2	0	1	0.00	136.67	380.11

3470 ENCROACHMENT STATIONS= 245.0 380.0 TYPE= 1 TARGET= 135.000
ELENCL= 600.00 ELENCR= 600.00

K D/S FACE, CLINTON RD. TWIN CULVERT, 84' OF 6'

RCP. WINGWALL

						.04	.07	.03	592.30
500.	135.	227.	138.	189.	103.	185.	80.	19.	593.40
.92	.72	2.21	.75	.150	.060	.120	.057	590.20	245.00
.000837	49.	49.	49.	2	0	1	0.00	135.00	380.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHO	ELCHD
	1.25	1.71	3.01	0.00	13.21	3.79	56.55	0.00	590.37	590.17

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
600.40	598.42	.03	54.	442.	57.	596.41	599.50	30.00

3470 ENCROACHMENT STATIONS= 248.9 405.1 TYPE= 1 TARGET= 156.200
ELENCL= 600.00 ELENCR= 600.00

L U/S FACE, CLINTON RD. TWIN CULVERT, 94' OF 6'

RCP, WINGWALL

4976.00	9.63	599.93	0.00	0.00	599.95	.03	1.58	0.00	593.30
500.	67.	222.	212.	144.	124.	321.	81.	19.	593.40
.94	.46	1.79	.66	.150	.060	.120	.057	590.30	249.48
.000447	86.	86.	86.	2	0	0	0.00	154.45	403.93

DUPLICATED FROM SEC. M, INVERT EL. ADJUSTED

5026.00	9.51	599.91	0.00	0.00	600.03	.11	.03	.04	596.80
500.	35.	424.	41.	85.	146.	95.	82.	19.	596.50
.94	.41	2.91	.43	.150	.050	.150	.057	590.40	261.36
.000940	50.	50.	50.	2	0	1	0.00	132.12	393.48

M 800FT U/S OF CLINTON RD. TWIN CULVERT

5775.00	9.33	600.53	0.00	0.00	600.62	.08	.58	.01	596.80
500.	44.	406.	50.	122.	157.	132.	88.	22.	596.50
1.04	.36	2.58	.38	.160	.050	.160	.056	591.20	250.50
.000656	749.	749.	749.	2	0	1	0.00	153.04	403.54

N 50FT D/S OF ADAM RD. BENT CULVERT

6475.00	8.12	601.12	0.00	0.00	601.25	.13	.61	.02	597.20
500.	56.	423.	21.	111.	133.	48.	94.	24.	598.90
1.11	.51	3.19	.43	.160	.050	.160	.055	593.00	194.20
.001215	700.	700.	700.	2	0	1	0.00	111.46	305.66

CCHV= .300 CEHV= .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

3470 ENCROACHMENT STATIONS= 420.0 560.0 TYPE= 1 TARGET= 140.000
ELENCL= 602.00 ELENCR= 602.00

0 D/S FACE, ADAM ST, BENT CULVERT, 138' OF 6' RCP

AND 120' OF 6' CMP, 15 DEGREE BEND, PROJECTING

6525.00	7.42	601.32	0.00	0.00	601.37	.04	.08	.03	596.90
465.	176.	117.	172.	186.	42.	171.	94.	24.	596.90
1.12	.95	2.82	1.00	.160	.070	.160	.055	593.90	420.00
.002582	50.	50.	50.	2	0	1	0.00	140.00	560.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	3.03	2.85	0.00	4.71	0.00	28.27	0.00	595.11	593.97

WATER EL=XS CARD= 603.480

3470 ENCROACHMENT STATIONS= 419.9 560.1 TYPE= 1 TARGET= 140.200
ELENCL= 604.00 ELENCR= 604.00

P U/S FACE, ADAM ST, BENT CULVERT, 138' OF 6' RCP

AND 120' OF 6' CMP, 15 DEGREE BEND, PROJECTING

WATER-SURFACE ELS. BY HAND CALCULATION

6785.00	8.38	603.48	0.00	0.00	603.50	.02	.38	.01	598.10
465.	200.	88.	177.	281.	47.	236.	97.	25.	598.10
1.20	.71	1.86	.75	.160	.070	.160	.056	595.10	419.90
.000944	260.	260.	260.	0	0	1	0.00	140.20	560.10

CCHV= .300 CEHV= .500

3470 ENCROACHMENT STATIONS= 400.0 560.0 TYPE= 1 TARGET= 160.000
ELENCL= 604.00 ELENCR= 604.00

MANUFACTURED SEC.

6835.00	8.40	603.50	0.00	0.00	603.52	.03	.02	.00	599.80
465.	43.	386.	36.	180.	269.	92.	98.	25.	599.80
1.21	.24	1.43	.39	.170	.050	.130	.056	595.10	400.00
.000260	50.	50.	50.	2	0	1	0.00	160.00	560.00

3470 ENCROACHMENT STATIONS= 470.0 750.0 TYPE= 1 TARGET= 280.000

DUPLICATED FROM SEC. Q

7235.00	7.15	603.65	0.00	0.00	603.71	.06	.17	.02	598.00
465.	148.	297.	21.	273.	120.	75.	102.	27.	602.50
1.27	.54	2.47	.28	.170	.050	.130	.055	596.50	494.63
.000796	400.	400.	400.	2	0	1	0.00	217.27	711.90

CCHV= .400 CEHV= .700

3470 ENCROACHMENT STATIONS= 470.0 600.0 TYPE= 1 TARGET= 130.000
ELENCL= 604.50 ELENCR= 604.50

	Q	50FT	D/S OF PH&D RR BRIDGE						
7535.00	7.25	603.95	0.00	0.00	604.05	.10	.31	.03	595.30
465.	111.	313.	41.	121.	103.	90.	105.	28.	602.60
1.31	.92	3.04	.46	.170	.054	.130	.055	596.70	472.38
.001419	300.	300.	300.	.2	0	1	0.00	127.62	600.00

1490 NH CARD USED

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 200.0 210.0 TYPE= 1 TARGET= 10.000
ELENCL= 605.70 ELENCR= 602.60

R D/S FACE, PH&D RR BRIDGE OVER JORDAN CREEK,

10' SPAN, WINGWALL

7593.00	6.06	603.96	602.14	0.00	604.54	.58	.16	.34	593.20
465.	0.	392.	73.	0.	59.	124.	105.	23.	602.60
1.31	.01	6.67	.59	.150	.060	.214	.055	597.90	200.00
.006848	50.	58.	66.	4	11	1	0.00	160.30	494.48

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	-0.00	1.50	2.87	-0.00	10.00	-0.00	45.00	0.00	597.90	597.90

3265 DIVIDED FLOW

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

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
606.45	604.34	0.00	101.	361.	45.	602.60	604.20	30.00

3470 ENCROACHMENT STATIONS= 706.9 796.1 TYPE= 1 TARGET= 89.200
ELENCL= 606.00 ELENCR= 606.00

S U/S FACE, PH&D RR BRIDGE OVER JORDAN CREEK,

10' SPAN, WINGWALL

7614.00	7.34	605.24	0.00	0.00	605.46	.22	.92	0.00	605.60

				0.	101.	64.	105.	28.	598.30
1.31	0.00	4.02	.94	.150	.060	.140	.055	597.90	707.00
.003338	25.	21.	1.	2	0	3	0.00	80.29	796.10

CCHV= .300 CEHV= .500

3470 ENCROACHMENT STATIONS= 350.0 600.5 TYPE= 1 TARGET= 250.500
ELENCL= 606.00 ELENCR= 606.00

T 50FT D/S OF VINE ST. BRIDGE

7668.00	7.84	605.54	0.00	0.00	605.56	.01	.03	.06	601.20
465.	190.	226.	49.	490.	167.	112.	106.	28.	598.30
1.33	.39	1.35	.44	.130	.060	.100	.055	597.70	350.00
.000229	58.	54.	50.	2	0	1	0.00	250.50	600.50

3470 ENCROACHMENT STATIONS= 360.0 575.0 TYPE= 1 TARGET= 215.000
ELENCL= 606.00 ELENCR= 606.00

U D/S FACE, VINE ST., 10' SPAN, CONCRETE BRIDGE.

WINGWALL

7718.00	7.85	605.55	0.00	0.00	605.57	.02	.01	.00	600.10
440.	240.	126.	75.	437.	71.	107.	107.	29.	598.30
1.34	.55	1.77	.69	.130	.060	.100	.055	597.70	360.00
.000399	50.	50.	50.	2	0	1	0.00	215.00	575.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHO	ELCHO
	-0.00	1.62	7.29	-0.00	10.00	-0.00	45.10	-0.00	597.60	597.70

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	Q/WEIR	QPR	BAREA	ELLC	ELTRD	CLASS
607.95	605.47	0.00	397.	46.	45.	602.40	604.20	30.00

3470 ENCROACHMENT STATIONS= 359.9 575.1 TYPE= 1 TARGET= 215.200
ELENCL= 606.00 ELENCR= 606.00

V U/S FACE, VINE ST., 10' SPAN, CONCRETE BRIDGE.

WINGWALL

7754.00	7.97	605.57	0.00	0.00	605.58	.01	.01	0.00	594.10
440.	251.	125.	65.	489.	77.	99.	107.	29.	598.00
1.36	.51	1.61	.65	.130	.060	.100	.055	597.60	359.90
.000279	36.	36.	27.	1	0	6	0.00	209.79	569.69

CCHV= .300 CEHV= .500

3470 ENCROACHMENT STATIONS= 260.0 465.0 TYPE= 1 TARGET= 205.000
ELENCL= 607.00 ELENCR= 607.00

DUPLICATED FROM SEC. W

7804.00	6.68	605.58	0.00	0.00	605.61	.04	.02	.01	603.20
440.	122.	289.	29.	267.	157.	49.	108.	29.	602.60
1.37	.46	1.84	.60	.130	.060	.100	.056	598.90	260.00
.000648	50.	50.	50.	1	0	1	0.00	196.47	456.47

W 700FT U/S OF VINE ST. BRIDGE

8454.00	6.97	605.87	0.00	0.00	605.88	.01	.26	.01	603.20
440.	130.	204.	106.	330.	165.	308.	117.	33.	602.60
1.60	.39	1.23	.35	.100	.060	.130	.056	598.90	219.46
.000270	650.	650.	650.	1	0	1	0.00	338.13	557.59

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	TOP ID	EMDST

3470 ENCROACHMENT STATIONS= 457.0 645.0 TYPE= 1 TARGET= 188.000
ELENCL= 608.60 ELENCR= 608.60

X 50FT D/S OF BROWN ST. CULVERT

9304.00	7.51	606.21	0.00	0.00	606.25	.04	.36	.02	603.50
440.	52.	307.	80.	83.	155.	188.	129.	38.	604.70
1.75	.63	1.98	.43	.100	.060	.130	.056	595.70	457.00
.000738	850.	850.	850.	2	0	1	0.00	188.00	645.00

3470 ENCROACHMENT STATIONS= 517.2 680.7 TYPE= 1 TARGET= 163.500

Y D/S FACE, BROWN ST., 36' OF 6' CMP, PROJECTING

9354.00	6.06	606.26	0.00	0.00	606.30	.04	.05	.00	602.30
395.	146.	105.	145.	171.	35.	169.	130.	38.	602.30
1.76	.85	2.97	.86	.130	.050	.130	.056	600.20	517.37
.001608	50.	50.	50.	2	0	1	0.00	163.22	680.59

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	AREA	SS	ELCHU	ELCHD
	0.00	2.34	3.03	0.00	4.71	0.00	27.37	0.00	599.10	599.10

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	AREA	ELLC	ELTRD	CLASS
613.83	607.34	0.00	227.	171.	27.	606.10	606.90	30.00

3470 ENCROACHMENT STATIONS= 515.9 682.1 TYPE= 1 TARGET= 166.200

Z U/S FACE, BROWN ST., 36' OF 6' CMP, PROJECTING

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.02	1.38	0.00	603.10
395.	155.	88.	152.	252.	48.	245.	130.	39.	603.10
1.78	.62	1.82	.62	.130	.050	.130	.056	599.10	515.90
.000572	38.	38.	38.	1	0	5	0.00	166.29	682.10

DUPLICATED FROM SEC. Z

9442.00	8.59	607.69	0.00	0.00	607.70	.01	.01	.00	504.40
395.	22.	353.	20.	102.	423.	91.	131.	39.	604.30
1.79	.22	.83	.22	.130	.060	.130	.056	599.10	461.44
.000178	50.	50.	50.	2	0	1	0.00	252.83	714.28

SUMMARY PRINTOUT FOR MULTIPLE PROFILES

JORDAN CREEK

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCP	DEPTH	TOP WID
0.00	0.00	0.00	0.00	575.20	325.00	581.27	.95	0.00	0.00	325.00	6.07	8.00
0.00	0.00	0.00	0.00	575.20	485.00	581.27	2.10	0.00	0.00	485.00	6.07	8.00
0.00	0.00	0.00	0.00	575.20	550.00	581.33	2.65	0.00	0.00	550.00	6.13	8.00
0.00	0.00	0.00	0.00	575.20	850.00	583.01	1.05	0.00	0.00	553.67	7.81	75.88
72.00	72.00	590.55	583.10	575.10	325.00	581.83	.82	.40	.04	325.00	6.73	8.00
72.00	72.00	590.55	583.10	575.10	485.00	584.01	.88	1.52	0.00	485.00	8.91	8.00
72.00	72.00	590.55	583.10	575.10	550.00	585.11	.88	2.01	0.00	550.00	10.01	8.00
72.00	72.00	590.55	583.10	575.10	850.00	591.44	.02	7.40	0.00	213.74	16.34	148.35
73.00	1.00	0.00	0.00	575.10	325.00	582.42	.56	.00	.08	314.97	7.32	10.00
73.00	1.00	0.00	0.00	575.10	485.00	585.02	.59	.00	.09	455.80	9.92	10.00
73.00	1.00	0.00	0.00	575.10	550.00	586.28	.57	.00	.09	511.36	11.18	10.00
73.00	1.00	0.00	0.00	575.10	850.00	591.07	.60	.00	.09	769.67	15.97	10.00
78.00	5.00	0.00	0.00	575.10	325.00	582.73	.34	.02	.07	271.00	7.63	20.00
78.00	5.00	0.00	0.00	575.10	485.00	585.45	.26	.01	.10	348.45	10.35	20.00
78.00	5.00	0.00	0.00	575.10	550.00	586.72	.24	.01	.10	377.37	11.62	20.00
78.00	5.00	0.00	0.00	575.10	850.00	591.57	.21	.00	.12	522.70	16.47	20.00
124.00	45.00	0.00	0.00	575.40	325.00	583.05	.16	.09	.05	325.00	7.65	22.14
124.00	45.00	0.00	0.00	575.40	485.00	585.71	.10	.04	.05	440.01	10.31	105.99
124.00	45.00	0.00	0.00	575.40	550.00	586.98	.06	.03	.05	428.43	11.58	110.00
124.00	45.00	0.00	0.00	575.40	850.00	591.83	.02	.01	.06	453.40	16.43	110.00
324.00	200.00	0.00	0.00	577.20	325.00	583.44	.09	.29	.02	271.71	6.24	218.28
324.00	200.00	0.00	0.00	577.20	485.00	585.88	.01	.05	.03	170.49	8.68	389.00
324.00	200.00	0.00	0.00	577.20	550.00	587.07	.00	.02	.02	148.79	9.87	389.00
324.00	200.00	0.00	0.00	577.20	850.00	591.86	.00	.00	.01	142.58	14.66	389.00
373.00	49.00	0.00	0.00	577.30	325.00	583.52	.08	.08	.00	112.39	6.22	228.34
373.00	49.00	0.00	0.00	577.30	485.00	585.88	.01	.01	.00	54.51	8.58	443.00
373.00	49.00	0.00	0.00	577.30	550.00	587.07	.00	.00	.00	43.32	9.77	443.00
373.00	49.00	0.00	0.00	577.30	850.00	591.86	.00	.00	.00	34.90	14.56	443.00
374.00	1.00	582.90	582.60	577.30	325.00	583.60	.24	.01	0.00	99.30	6.30	238.40
374.00	1.00	582.90	582.60	577.30	485.00	585.88	.01	.00	.00	22.26	8.58	445.00
374.00	1.00	582.90	582.60	577.30	550.00	587.07	.00	.00	.00	17.28	9.77	445.00
374.00	1.00	582.90	582.60	577.30	850.00	591.86	.00	.00	.00	15.00	14.56	445.00
400.00	26.00	582.90	582.60	577.20	325.00	584.13	.04	.28	.06	47.27	5.93	324.28
400.00	26.00	582.90	582.60	577.20	485.00	585.89	.01	.01	.00	22.20	8.69	471.00
400.00	26.00	582.90	582.60	577.20	550.00	587.08	.00	.00	.00	16.95	9.88	471.00
400.00	26.00	582.90	582.60	577.20	850.00	591.86	.00	.00	.00	14.25	14.66	471.00
401.00	1.00	0.00	0.00	577.20	325.00	584.15	.03	.00	.00	86.51	6.95	325.44
401.00	1.00	0.00	0.00	577.20	485.00	585.89	.01	.00	.00	60.18	8.69	472.00
401.00	1.00	0.00	0.00	577.20	550.00	587.08	.00	.00	.00	47.28	9.88	472.00
401.00	1.00	0.00	0.00	577.20	850.00	591.86	.00	.00	.00	36.82	14.66	472.00

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
450.00	49.00	0.00	0.00	578.00	325.00	584.17	.03	.02	.00	227.13	6.17	322.72
450.00	49.00	0.00	0.00	578.00	485.00	585.90	.01	.01	.00	202.19	7.90	493.26
450.00	49.00	0.00	0.00	578.00	550.00	587.08	.00	.00	.00	171.72	9.08	517.00
450.00	49.00	0.00	0.00	578.00	850.00	591.86	.00	.00	.00	150.91	13.86	517.00
1161.00	711.00	0.00	0.00	580.40	325.00	584.74	.25	.68	.11	313.43	4.34	63.99
1161.00	711.00	0.00	0.00	580.40	485.00	586.00	.21	.21	.10	419.22	5.60	110.59
1161.00	711.00	0.00	0.00	580.40	550.00	587.11	.11	.09	.06	414.00	6.71	136.80
1161.00	711.00	0.00	0.00	580.40	850.00	591.86	.03	.01	.01	430.06	11.46	194.24
1335.00	174.00	0.00	0.00	580.30	325.00	585.73	.19	.91	.02	284.85	5.43	71.14
1335.00	174.00	0.00	0.00	580.30	485.00	586.67	.20	.65	.00	385.44	6.37	92.84
1335.00	174.00	0.00	0.00	580.30	550.00	587.45	.15	.35	.02	404.32	7.15	97.38
1335.00	174.00	0.00	0.00	580.30	850.00	591.91	.05	.05	.01	484.03	11.61	98.00
1385.00	50.00	0.00	0.00	580.20	325.00	585.99	.11	.16	.02	124.68	5.79	52.13
1385.00	50.00	0.00	0.00	580.20	485.00	586.91	.13	.15	.02	160.40	6.71	61.16
1385.00	50.00	0.00	0.00	580.20	550.00	587.61	.10	.10	.01	159.08	7.41	70.00
1385.00	50.00	0.00	0.00	580.20	850.00	591.95	.03	.02	.01	137.54	11.75	102.00
1437.00	52.00	593.70	584.10	579.60	325.00	594.33	.00	8.23	0.00	50.11	14.73	96.98
1437.00	52.00	593.70	584.10	579.60	485.00	595.18	.01	3.15	0.00	71.35	15.58	100.99
1437.00	52.00	593.70	584.10	579.60	550.00	595.40	.01	7.69	0.00	79.98	15.80	102.20
1437.00	52.00	593.70	584.10	579.60	850.00	596.13	.01	4.16	0.00	118.58	16.53	114.58
1485.00	48.00	0.00	0.00	579.80	325.00	594.33	.00	.00	.00	213.93	14.53	175.00
1485.00	48.00	0.00	0.00	579.80	485.00	595.18	.01	.00	.00	309.61	15.38	175.00
1485.00	48.00	0.00	0.00	579.80	550.00	595.40	.01	.00	.00	348.49	15.60	175.00
1485.00	48.00	0.00	0.00	579.80	850.00	596.14	.01	.00	.00	525.32	16.34	451.15
2810.00	1325.00	0.00	0.00	584.40	315.00	594.38	.03	.06	.01	293.07	9.98	34.00
2810.00	1325.00	0.00	0.00	584.40	470.00	595.26	.06	.10	.02	433.80	10.86	34.00
2810.00	1325.00	0.00	0.00	584.40	540.00	595.49	.07	.12	.03	497.42	11.09	34.00
2810.00	1325.00	0.00	0.00	584.40	820.00	596.31	.13	.23	.06	738.92	11.91	65.71
2860.00	50.00	0.00	0.00	584.10	315.00	594.32	.20	.03	.09	315.00	10.22	9.00
2860.00	50.00	0.00	0.00	584.10	470.00	595.14	.38	.05	.16	470.00	11.04	9.00
2860.00	50.00	0.00	0.00	584.10	540.00	595.34	.49	.06	.21	540.00	11.24	9.00
2860.00	50.00	0.00	0.00	584.10	820.00	596.45	.07	.06	.02	326.68	12.35	138.20
2952.00	92.00	600.30	592.20	583.20	315.00	594.84	.17	.48	0.00	315.00	11.64	9.00
2952.00	92.00	600.30	592.20	583.20	470.00	596.39	.28	1.15	0.00	470.00	13.19	9.00
2952.00	92.00	600.30	592.20	583.20	540.00	597.02	.34	1.53	0.00	540.00	13.82	9.00
2952.00	92.00	600.30	592.20	583.20	820.00	600.63	.01	4.13	0.00	221.67	17.43	196.26
3000.00	48.00	0.00	0.00	583.50	315.00	595.05	.04	.04	.04	274.63	11.55	102.25
3000.00	48.00	0.00	0.00	583.50	470.00	596.74	.04	.03	.07	368.60	13.24	104.00
3000.00	48.00	0.00	0.00	583.50	540.00	597.45	.03	.03	.09	408.95	13.95	104.00
3000.00	48.00	0.00	0.00	583.50	820.00	600.63	.02	.01	.01	501.04	17.13	412.80

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
3951.00	951.00	0.00	0.00	588.30	315.00	595.40	.04	.35	.00	259.80	7.10	118.10
3951.00	951.00	0.00	0.00	588.30	470.00	597.01	.04	.27	.00	348.95	8.71	150.91
3951.00	951.00	0.00	0.00	588.30	540.00	597.69	.03	.24	.00	382.69	9.39	175.51
3951.00	951.00	0.00	0.00	588.30	820.00	600.75	.02	.12	.00	453.76	12.45	424.63
4691.00	740.00	0.00	0.00	589.00	315.00	595.93	.07	.54	.02	256.49	6.93	91.97
4691.00	740.00	0.00	0.00	589.00	470.00	597.37	.05	.37	.01	309.10	8.37	181.37
4691.00	740.00	0.00	0.00	589.00	540.00	597.99	.04	.31	.00	319.24	8.99	195.47
4691.00	740.00	0.00	0.00	589.00	820.00	600.88	.02	.12	.00	319.56	11.88	200.60
4841.00	150.00	0.00	0.00	589.70	315.00	596.28	.15	.40	.04	303.01	6.58	35.55
4841.00	150.00	0.00	0.00	589.70	470.00	597.58	.15	.26	.05	406.92	7.88	80.87
4841.00	150.00	0.00	0.00	589.70	540.00	598.15	.13	.20	.04	422.04	8.45	136.67
4841.00	150.00	0.00	0.00	589.70	820.00	600.92	.02	.05	.00	314.09	11.22	345.28
4890.00	49.00	0.00	0.00	590.20	295.00	596.51	.06	.11	.03	144.04	6.31	109.55
4890.00	49.00	0.00	0.00	590.20	445.00	597.80	.04	.08	.03	218.36	7.60	127.96
4890.00	49.00	0.00	0.00	590.20	500.00	598.33	.04	.07	.03	226.65	8.13	135.00
4890.00	49.00	0.00	0.00	590.20	780.00	600.94	.02	.02	.00	261.28	10.74	296.09
4976.00	86.00	599.50	596.41	590.30	295.00	597.18	.05	.66	0.00	192.11	6.88	96.66
4976.00	86.00	599.50	596.41	590.30	445.00	599.41	.03	1.60	0.00	210.02	9.11	143.69
4976.00	86.00	599.50	596.41	590.30	500.00	599.93	.03	1.58	0.00	221.71	9.63	154.45
4976.00	86.00	599.50	596.41	590.30	780.00	601.14	.03	.21	0.00	268.74	10.84	322.34
5026.00	50.00	0.00	0.00	590.40	295.00	597.20	.19	.08	.06	293.79	6.80	40.26
5026.00	50.00	0.00	0.00	590.40	445.00	599.40	.12	.03	.05	393.91	9.00	114.55
5026.00	50.00	0.00	0.00	590.40	500.00	599.91	.11	.03	.04	424.22	9.51	132.12
5026.00	50.00	0.00	0.00	590.40	780.00	601.12	.14	.03	.05	589.56	10.72	420.58
5775.00	749.00	0.00	0.00	591.20	295.00	598.45	.09	1.14	.03	280.08	7.25	82.51
5775.00	749.00	0.00	0.00	591.20	445.00	600.08	.09	.64	.01	375.12	8.88	137.79
5775.00	749.00	0.00	0.00	591.20	500.00	600.53	.08	.58	.01	405.79	9.33	153.04
5775.00	749.00	0.00	0.00	591.20	780.00	601.79	.08	.60	.02	524.34	10.59	532.25
6475.00	700.00	0.00	0.00	593.00	295.00	599.33	.14	.90	.02	281.49	6.33	62.77
6475.00	700.00	0.00	0.00	593.00	445.00	600.71	.13	.65	.02	388.85	7.71	103.53
6475.00	700.00	0.00	0.00	593.00	500.00	601.12	.13	.61	.02	422.90	8.12	111.46
6475.00	700.00	0.00	0.00	593.00	780.00	602.37	.17	.62	.04	598.30	9.37	175.87
6525.00	50.00	0.00	0.00	593.90	270.00	599.49	.13	.16	.00	124.80	5.59	108.17
6525.00	50.00	0.00	0.00	593.90	405.00	600.92	.05	.09	.03	113.07	7.02	134.52
6525.00	50.00	0.00	0.00	593.90	465.00	601.32	.04	.08	.03	117.04	7.42	140.00
6525.00	50.00	0.00	0.00	593.90	710.00	602.62	.04	.08	.04	137.18	8.72	188.44
6785.00	260.00	100000.00	100000.00	595.10	270.00	602.80	.01	.36	.04	57.63	7.70	140.20
6785.00	260.00	100000.00	100000.00	595.10	405.00	603.32	.01	.36	.01	78.52	8.22	140.20
6785.00	260.00	100000.00	100000.00	595.10	465.00	603.48	.02	.38	.01	87.79	8.38	140.20
6785.00	260.00	100000.00	100000.00	595.10	710.00	604.01	.03	.45	.00	123.81	8.91	383.35

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
6835.00	50.00	0.00	0.00	595.10	270.00	602.81	.01	.01	.00	234.25	7.71	160.00
6835.00	50.00	0.00	0.00	595.10	405.00	603.34	.02	.02	.00	339.45	8.24	160.00
6835.00	50.00	0.00	0.00	595.10	465.00	603.50	.03	.02	.00	385.97	8.40	160.00
6835.00	50.00	0.00	0.00	595.10	710.00	604.04	.05	.04	.01	572.14	8.94	411.47
7235.00	400.00	0.00	0.00	596.50	270.00	602.90	.04	.10	.01	186.25	6.40	158.35
7235.00	400.00	0.00	0.00	596.50	405.00	603.47	.05	.15	.02	264.10	6.97	207.74
7235.00	400.00	0.00	0.00	596.50	465.00	603.65	.06	.17	.02	296.55	7.15	217.27
7235.00	400.00	0.00	0.00	596.50	710.00	604.27	.09	.26	.02	417.34	7.77	249.69
7535.00	300.00	0.00	0.00	596.70	270.00	603.10	.06	.21	.02	199.56	6.40	126.00
7535.00	300.00	0.00	0.00	596.70	405.00	603.74	.09	.28	.02	279.77	7.04	127.21
7535.00	300.00	0.00	0.00	596.70	465.00	603.95	.10	.31	.03	313.09	7.25	127.62
7535.00	300.00	0.00	0.00	596.70	710.00	604.68	.14	.42	.03	435.16	7.98	495.73
7593.00	58.00	0.00	0.00	597.90	270.00	603.11	.41	.11	.24	261.89	5.21	92.39
7593.00	58.00	0.00	0.00	597.90	405.00	603.74	.54	.14	.31	355.53	5.84	134.80
7593.00	58.00	0.00	0.00	597.90	465.00	603.96	.56	.16	.34	392.45	6.06	160.30
7593.00	58.00	0.00	0.00	597.90	710.00	604.71	.68	.20	.38	514.42	6.81	325.80
7614.00	21.00	604.20	602.60	597.90	270.00	603.61	.14	.43	0.00	246.07	5.91	21.79
7614.00	21.00	604.20	602.60	597.90	405.00	604.99	.19	.90	0.00	359.11	7.09	66.29
7614.00	21.00	604.20	602.60	597.90	465.00	605.24	.22	.92	0.00	405.14	7.34	80.29
7614.00	21.00	604.20	602.60	597.90	710.00	605.84	.36	.82	0.00	579.22	7.94	89.20
7668.00	54.00	0.00	0.00	597.70	270.00	604.00	.02	.03	.04	165.96	6.30	193.29
7668.00	54.00	0.00	0.00	597.70	405.00	605.25	.01	.03	.05	205.28	7.55	236.09
7668.00	54.00	0.00	0.00	597.70	465.00	605.54	.01	.03	.06	225.61	7.84	250.50
7668.00	54.00	0.00	0.00	597.70	710.00	606.33	.02	.04	.10	302.76	8.63	639.31
7718.00	50.00	0.00	0.00	597.70	255.00	604.02	.02	.02	.00	94.20	6.32	127.07
7718.00	50.00	0.00	0.00	597.70	390.00	605.26	.02	.01	.00	117.16	7.56	201.49
7718.00	50.00	0.00	0.00	597.70	440.00	605.55	.02	.01	.00	126.81	7.85	215.00
7718.00	50.00	0.00	0.00	597.70	680.00	606.35	.02	.02	.00	166.99	8.65	549.75
7754.00	36.00	604.20	602.40	597.60	255.00	604.52	.01	.49	0.00	82.84	6.92	172.12
7754.00	36.00	604.20	602.40	597.60	390.00	605.27	.01	.01	0.00	114.64	7.67	174.69
7754.00	36.00	604.20	602.40	597.60	440.00	605.57	.01	.01	0.00	124.61	7.97	209.79
7754.00	36.00	604.20	602.40	597.60	680.00	606.35	.02	0.00	0.00	171.96	8.75	477.68
7804.00	50.00	0.00	0.00	598.90	255.00	604.52	.04	.02	.01	208.42	5.62	182.94
7804.00	50.00	0.00	0.00	598.90	390.00	605.28	.04	.02	.01	270.48	6.38	195.35
7804.00	50.00	0.00	0.00	598.90	440.00	605.58	.04	.02	.01	288.74	6.68	196.47
7804.00	50.00	0.00	0.00	598.90	680.00	606.36	.05	.03	.01	393.49	7.46	199.50
8454.00	650.00	0.00	0.00	598.90	255.00	604.85	.01	.30	.01	156.27	5.95	296.24
8454.00	650.00	0.00	0.00	598.90	390.00	605.59	.01	.28	.01	193.37	6.69	326.76
8454.00	650.00	0.00	0.00	598.90	440.00	605.87	.01	.26	.01	204.09	6.97	338.13
8454.00	650.00	0.00	0.00	598.90	680.00	606.69	.01	.29	.01	265.36	7.79	434.28

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
9304.00	850.00	0.00	0.00	598.70	255.00	605.23	.04	.39	.01	222.09	6.53	188.00
9304.00	850.00	0.00	0.00	598.70	390.00	605.95	.04	.37	.02	287.47	7.25	188.00
9304.00	850.00	0.00	0.00	598.70	440.00	606.21	.04	.36	.02	307.48	7.51	188.00
9304.00	850.00	0.00	0.00	598.70	680.00	607.06	.05	.39	.02	409.01	8.36	188.00
9354.00	50.00	0.00	0.00	600.20	230.00	604.75	1.20	.10	.58	230.00	4.55	6.00
9354.00	50.00	0.00	0.00	600.20	350.00	606.28	.03	.05	0.00	92.12	6.08	163.50
9354.00	50.00	0.00	0.00	600.20	395.00	606.26	.04	.05	.00	104.54	6.06	163.22
9354.00	50.00	0.00	0.00	600.20	610.00	607.12	.05	.05	.00	130.77	6.92	163.50
9392.00	38.00	606.90	606.10	599.10	230.00	606.45	.67	1.02	.16	230.00	7.35	6.00
9392.00	38.00	606.90	606.10	599.10	350.00	607.59	.01	1.29	0.00	79.28	8.49	166.20
9392.00	38.00	606.90	606.10	599.10	395.00	607.66	.02	1.38	0.00	88.01	8.56	166.20
9392.00	38.00	606.90	606.10	599.10	610.00	608.02	.03	.89	0.00	126.07	8.92	166.20
9442.00	50.00	0.00	0.00	599.10	230.00	607.33	.00	.02	.20	209.38	8.23	200.85
9442.00	50.00	0.00	0.00	599.10	350.00	607.61	.01	.01	.00	313.85	8.51	239.77
9442.00	50.00	0.00	0.00	599.10	395.00	607.69	.01	.01	.00	352.60	8.59	252.53
9442.00	50.00	0.00	0.00	599.10	610.00	608.06	.02	.03	.00	531.09	8.96	319.27

SECTION NUMBER	DISCHARGE CFS	CWSEL	CWSEL DIFF EACH Q	CWSEL DIFF EACH SECTION	CWSEL-WSEL	TOPWID	T.W. DIFF	LENGTH
0.000	325.000	581.270	0.000	0.000	0.000	8.000	0.000	0.000
0.000	485.000	581.270	0.000	0.000	0.000	8.000	0.000	0.000
0.000	550.000	581.328	.058	0.000	0.000	8.000	0.000	0.000
0.000	850.000	583.011	1.683	0.000	0.000	75.882	-67.882	0.000
72.000	325.000	581.835	0.000	.565	0.000	8.000	0.000	72.000
72.000	485.000	584.008	2.173	2.738	0.000	8.000	0.000	72.000
72.000	550.000	585.106	1.098	3.778	0.000	8.000	0.000	72.000
72.000	850.000	591.440	6.334	8.429	0.000	148.350	-140.350	72.000
73.000	325.000	582.420	0.000	.585	0.000	9.999	0.000	1.000
73.000	485.000	585.020	2.600	1.012	0.000	9.999	-.000	1.000
73.000	550.000	586.280	1.260	1.174	0.000	9.999	-.000	1.000
73.000	850.000	591.070	4.790	-.370	0.000	9.999	-.000	1.000
78.000	325.000	582.732	0.000	.312	0.000	19.999	0.000	5.000
78.000	485.000	585.454	2.722	.434	0.000	19.999	-.000	5.000
78.000	550.000	586.719	1.265	.439	0.000	19.999	-.000	5.000
78.000	850.000	591.573	4.854	.503	0.000	19.999	-.000	5.000
124.000	325.000	583.053	0.000	.321	0.000	22.136	0.000	45.000
124.000	485.000	585.709	2.656	.256	0.000	105.988	-83.852	45.000
124.000	550.000	586.977	1.268	.258	0.000	109.999	-87.863	45.000
124.000	850.000	591.832	4.854	.259	0.000	109.999	-87.863	45.000
324.000	325.000	583.438	0.000	.384	0.000	218.278	0.000	200.000
324.000	485.000	585.875	2.438	.166	0.000	388.999	-170.721	200.000
324.000	550.000	587.071	1.195	.093	0.000	388.999	-170.721	200.000
324.000	850.000	591.861	4.791	.030	0.000	388.999	-170.721	200.000
373.000	325.000	583.524	0.000	.087	0.000	228.340	0.000	49.000
373.000	485.000	585.884	2.359	.008	0.000	442.999	-214.659	49.000
373.000	550.000	587.074	1.191	.004	0.000	442.999	-214.659	49.000
373.000	850.000	591.862	4.788	.001	0.000	442.999	-214.659	49.000
374.000	325.000	583.596	0.000	.072	0.000	238.404	0.000	1.000
374.000	485.000	585.884	2.288	-.000	0.000	444.999	-206.595	1.000
374.000	550.000	587.074	1.191	-.000	0.000	444.999	-206.595	1.000
374.000	850.000	591.862	4.788	-.000	0.000	444.999	-206.595	1.000

400.000	325.000	584.127	0.000	.531	0.000	324.277	0.000	26.000	
400.000	485.000	585.891	1.764	.008	0.000	470.999	-146.722	26.000	
400.000	550.000	587.077	1.185	.003	0.000	470.999	-146.722	26.000	
400.000	850.000	591.863	4.786	.000	0.000	470.999	-146.722	26.000	
401.000	325.000	584.145	0.000	.018	0.000	325.443	0.000	1.000	
401.000	485.000	585.892	1.747	.000	0.000	471.999	-146.556	1.000	
401.000	550.000	587.077	1.185	.000	0.000	471.999	-146.556	1.000	
401.000	850.000	591.863	4.786	.000	0.000	471.999	-146.556	1.000	
450.000	325.000	584.173	0.000	.028	0.000	322.719	0.000	49.000	
450.000	485.000	585.897	1.724	.005	0.000	493.256	-170.537	49.000	
450.000	550.000	587.079	1.183	.002	0.000	517.000	-194.280	49.000	
450.000	850.000	591.863	4.784	.000	0.000	517.001	-194.281	49.000	
1161.000	325.000	584.740	0.000	.567	0.000	63.993	0.000	711.000	
1161.000	485.000	586.004	1.264	.107	0.000	110.594	-46.601	711.000	
1161.000	550.000	587.110	1.106	.030	0.000	136.802	-72.809	711.000	
1161.000	850.000	591.863	4.754	.000	0.000	194.241	-130.248	711.000	
1335.000	325.000	585.730	0.000	.990	0.000	71.140	0.000	174.000	
1335.000	485.000	586.669	.939	.665	0.000	92.843	-21.704	174.000	
1335.000	550.000	587.447	.778	.337	0.000	97.383	-26.243	174.000	
1335.000	850.000	591.907	4.460	.043	0.000	97.999	-26.859	174.000	
1385.000	325.000	585.992	0.000	.262	0.000	52.134	0.000	50.000	
1385.000	485.000	586.913	.921	.244	0.000	61.163	-9.029	50.000	
1385.000	550.000	587.611	.698	.164	0.000	69.998	-17.864	50.000	
1385.000	850.000	591.952	4.341	.045	0.000	102.001	-49.867	50.000	
1437.000	325.000	594.328	0.000	8.336	0.000	96.974	0.000	52.000	
1437.000	485.000	595.181	.852	8.268	0.000	100.994	-4.016	52.000	
1437.000	550.000	595.400	.219	7.789	0.000	102.199	-5.221	52.000	
1437.000	850.000	596.133	.733	4.181	0.000	114.578	-17.600	52.000	
1485.000	325.000	594.329	0.000	.001	0.000	175.000	0.000	48.000	
1485.000	485.000	595.182	.853	.001	0.000	175.001	-.000	48.000	
1485.000	550.000	595.401	.219	.001	0.000	175.001	-.000	48.000	
1485.000	850.000	596.136	.735	.003	0.000	451.147	-276.147	48.000	
2810.000	315.000	594.376	0.000	.047	0.000	34.000	0.000	1325.000	
2810.000	470.000	595.256	.881	.074	0.000	34.001	-.000	1325.000	
2810.000	540.000	595.490	.233	.089	0.000	34.001	-.000	1325.000	
2810.000	820.000	596.313	.823	.177	0.000	65.706	-31.706	1325.000	
2860.000	315.000	594.320	0.000	-.055	0.000	9.000	0.000	50.000	
2860.000	470.000	595.143	.823	-.113	0.000	9.000	0.000	50.000	
2860.000	540.000	595.343	.200	-.147	0.000	9.000	0.000	50.000	
2860.000	820.000	596.447	1.103	.134	0.000	138.196	-129.196	50.000	
2952.000	315.000	594.840	0.000	.520	0.000	9.000	0.000	92.000	
2952.000	470.000	596.388	1.548	1.245	0.000	9.000	0.000	92.000	
2952.000	540.000	597.022	.634	1.679	0.000	9.000	0.000	92.000	
2952.000	820.000	600.632	3.610	4.186	0.000	196.256	-187.256	92.000	
3000.000	315.000	595.047	0.000	.206	0.000	102.254	0.000	48.000	
3000.000	470.000	596.743	1.697	.355	0.000	104.000	-1.746	48.000	
3000.000	540.000	597.447	.704	.425	0.000	104.001	-1.746	48.000	
3000.000	820.000	600.635	3.187	.002	0.000	412.804	-310.550	48.000	
3951.000	315.000	595.401	0.000	.354	0.000	118.099	0.000	951.000	
3951.000	470.000	597.012	1.611	.268	0.000	150.914	-32.815	951.000	
3951.000	540.000	597.689	.678	.242	0.000	175.507	-57.408	951.000	
3951.000	820.000	600.754	3.064	.119	0.000	424.633	-306.534	951.000	

4691.000	470.000	597.373	1.447	.361	0.000	181.369	-99.394	740.000
4691.000	540.000	597.995	.622	.305	0.000	195.469	-103.495	740.000
4691.000	820.000	600.876	2.881	.123	0.000	200.501	-108.627	740.000
4841.000	315.000	596.283	0.000	.357	0.000	85.549	0.000	150.000
4841.000	470.000	597.580	1.297	.207	0.000	80.871	-45.323	150.000
4841.000	540.000	598.152	.572	.157	0.000	136.665	-101.116	150.000
4841.000	820.000	600.920	2.768	.044	0.000	345.280	-309.731	150.000
4890.000	295.000	596.509	0.000	.226	0.000	109.552	0.000	49.000
4890.000	445.000	597.801	1.293	.221	0.000	127.961	-18.408	49.000
4890.000	500.000	598.333	.532	.181	0.000	135.000	-25.447	49.000
4890.000	780.000	600.943	2.609	.023	0.000	256.085	-186.533	49.000
4976.000	295.000	597.176	0.000	.667	0.000	96.664	0.000	86.000
4976.000	445.000	599.414	2.238	1.613	0.000	143.691	-47.027	86.000
4976.000	500.000	599.926	.512	1.593	0.000	154.450	-57.786	86.000
4976.000	780.000	601.144	1.217	.201	0.000	322.344	-225.680	86.000
5026.000	295.000	597.196	0.000	.020	0.000	40.257	0.000	50.000
5026.000	445.000	599.403	2.207	-.011	0.000	114.846	-74.589	50.000
5026.000	500.000	599.914	.511	-.012	0.000	132.116	-91.858	50.000
5026.000	780.000	601.123	1.209	-.020	0.000	420.593	-360.326	50.000
5775.000	295.000	598.447	0.000	1.251	0.000	82.511	0.000	749.000
5775.000	445.000	600.082	1.635	.679	0.000	137.794	-55.283	749.000
5775.000	500.000	600.534	.451	.619	0.000	153.043	-70.531	749.000
5775.000	780.000	601.793	1.260	.670	0.000	532.253	-449.742	749.000
6475.000	295.000	599.326	0.000	.881	0.000	92.771	0.000	700.000
6475.000	445.000	600.709	1.380	.626	0.000	103.531	-40.760	700.000
6475.000	500.000	601.119	.410	.586	0.000	111.460	-48.688	700.000
6475.000	780.000	602.368	1.249	.575	0.000	175.867	-113.096	700.000
6525.000	270.000	599.494	0.000	.166	0.000	108.166	0.000	50.000
6525.000	405.000	600.916	1.422	.207	0.000	134.519	-26.352	50.000
6525.000	465.000	601.323	.407	.204	0.000	140.000	-31.833	50.000
6525.000	710.000	602.616	1.293	.248	0.000	188.441	-80.274	50.000
6785.000	270.000	602.800	0.000	3.306	0.000	140.199	0.000	260.000
6785.000	405.000	603.320	.520	2.404	0.000	140.200	-.001	260.000
6785.000	465.000	603.480	.160	2.157	0.000	140.200	-.001	260.000
6785.000	710.000	604.010	.530	1.394	0.000	383.350	-243.151	260.000
6835.000	270.000	602.811	0.000	.011	0.000	160.000	0.000	50.000
6835.000	405.000	603.335	.524	.015	0.000	160.000	-.001	50.000
6835.000	465.000	603.497	.162	.017	0.000	160.000	-.001	50.000
6835.000	710.000	604.037	.539	.027	0.000	411.465	-251.466	50.000
7235.000	270.000	602.901	0.000	.091	0.000	152.354	0.000	400.000
7235.000	405.000	603.466	.564	.130	0.000	207.739	-49.385	400.000
7235.000	465.000	603.648	.183	.151	0.000	217.272	-58.917	400.000
7235.000	710.000	604.270	.621	.233	0.000	249.695	-91.340	400.000
7535.000	270.000	603.101	0.000	.200	0.000	126.001	0.000	300.000
7535.000	405.000	603.735	.634	.269	0.000	127.209	-1.208	300.000
7535.000	465.000	603.949	.214	.301	0.000	127.617	-1.616	300.000
7535.000	710.000	604.676	.727	.406	0.000	495.732	-369.731	300.000
7593.000	270.000	603.106	0.000	.005	0.000	92.391	0.000	56.000
7593.000	405.000	603.742	.636	.007	0.000	134.804	-42.413	56.000
7593.000	465.000	603.959	.218	.010	0.000	160.300	-67.909	58.000
7593.000	710.000	604.711	.751	.035	0.000	325.796	-233.405	58.000
7614.000	270.000	603.810	0.000	.704	0.000	21.792	0.000	21.000

7614.000	465.000	605.242	.253	1.283	0.000	80.295	-58.503	21.000
7614.000	710.000	605.844	.602	1.133	0.000	89.201	-67.408	21.000
7668.000	270.000	604.000	0.000	.190	0.000	193.292	0.000	54.000
7668.000	405.000	605.247	1.247	.258	0.000	236.093	-42.101	54.000
7668.000	465.000	605.541	.294	.299	0.000	250.500	-57.209	54.000
7668.000	710.000	606.329	.788	.485	0.000	639.313	-446.022	54.000
7718.000	255.000	604.017	0.000	.017	0.000	127.071	0.000	50.000
7718.000	390.000	605.260	1.243	.013	0.000	201.486	-74.415	50.000
7718.000	440.000	605.554	.295	.013	0.000	215.000	-87.929	50.000
7718.000	680.000	606.347	.792	.017	0.000	549.752	-422.661	50.000
7754.000	255.000	604.521	0.000	.503	0.000	172.118	0.000	36.000
7754.000	390.000	605.275	.754	.015	0.000	174.695	-2.577	36.000
7754.000	440.000	605.566	.291	.012	0.000	209.791	-37.673	36.000
7754.000	680.000	606.348	.782	.001	0.000	477.682	-305.564	36.000
7804.000	255.000	604.525	0.000	.004	0.000	12.945	0.000	50.000
7804.000	390.000	605.284	.759	.009	0.000	195.350	-12.405	50.000
7804.000	440.000	605.576	.292	.010	0.000	196.474	-13.529	50.000
7804.000	680.000	606.362	.786	.014	0.000	199.499	-16.555	50.000
8454.000	255.000	604.850	0.000	.325	0.000	296.235	0.000	650.000
8454.000	390.000	605.592	.742	.308	0.000	326.758	-30.522	650.000
8454.000	440.000	605.866	.275	.290	0.000	338.132	-41.896	650.000
8454.000	680.000	606.689	.823	.328	0.000	434.277	-138.041	650.000
9304.000	255.000	605.227	0.000	.377	0.000	187.999	0.000	850.000
9304.000	390.000	605.950	.723	.359	0.000	188.000	-.000	850.000
9304.000	440.000	606.207	.257	.341	0.000	188.000	-.001	850.000
9304.000	680.000	607.055	.849	.366	0.000	188.000	-.001	850.000
9354.000	230.000	604.751	0.000	-.476	0.000	6.000	0.000	50.000
9354.000	350.000	606.280	1.528	.329	0.000	163.499	-157.499	50.000
9354.000	395.000	606.258	-.022	.051	0.000	163.225	-157.225	50.000
9354.000	610.000	607.116	.858	.060	0.000	163.499	-157.499	50.000
9392.000	230.000	606.454	0.000	1.702	0.000	6.000	0.000	38.000
9392.000	350.000	607.592	1.139	1.313	0.000	165.199	-160.199	38.000
9392.000	395.000	607.663	.070	1.405	0.000	165.199	-160.199	38.000
9392.000	610.000	608.021	.358	.905	0.000	165.199	-160.199	38.000
9442.000	230.000	607.335	0.000	.881	0.000	200.859	0.000	50.000
9442.000	350.000	607.612	.277	.019	0.000	239.771	-38.912	50.000
9442.000	395.000	607.686	.074	.023	0.000	252.833	-51.974	50.000
9442.000	610.000	608.061	.376	.040	0.000	319.274	-118.415	50.000

DATA FOR LAST CROSS SECTION

PROFILE	TYPE ENC	TARGET	TOP WIDTH AREA-ACRES	TOP WIDTH AREA-DIFF
1	0.000	0.000	28.199	0.000
2	0.000	0.000	36.646	8.447
3	0.000	0.000	38.807	10.609
4	0.000	0.000	70.876	42.677

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**** 7000 SCOPE 2.1 LVL  221  03/20/77  10.46.23  03/25/77      77084

SYS DEVICES 819/ 4/PF FLS=200K FLL=764K MXS=160K MXL=457K MXH=457K

HH.MM.SS CPU SECOND ORIGIN
         14.08.47.:::. JO    20PPU CBR73 S+M LYN ECS-2CPUS 02/15/77
14.08.52 00000.012 MFZ.     -STCJ062,T10,CP70.   ST. CLAIR TMP FIS
14.08.52 00000.012 JOB.     -CHARGE.810-0037-45-78-5562,JANDA,001,D,JANDA.
14.08.59 00000.055 JOB.     -ATTACH(HEC2,HEC2PROD,ID=MULLAN,CY=1)
14.08.59 00000.060 MFZ.        PF254 - CYCLE    1 ATTACHED FROM SN=SYSTEM
14.08.59 00000.060 LOD.     -HEC2(PL=99999).
14.09.08 00000.477 MFZ.        LD610 - FLS REQUIRED TO LOAD - 0025223 OV.COS
14.09.08 00000.487 MFZ.        LD603 - EXECUTION INITIATED OS.EXP
14.09.08 00000.488 USR.       FORTRAN LIBRARY 217-MODIFIED 03/16/76
14.10.35 00002.834 USR.          STOP
14.10.35 00002.834 USR.           2.345 CP SECONDS EXECUTION TIME
14.10.35 00002.837 MFZ.        RM770 - MAXIMUM ACTIVE FILES                    3
14.10.35 00002.837 MFZ.        RM771 - OPEN/CLOSE CALLS                       22
14.10.35 00002.837 MFZ.        RM772 - DATA TRANSFER CALLS                 6,312
14.10.35 00002.837 MFZ.        RM773 - CONTROL/POSITIONING CALLS              26
14.10.35 00002.837 MFZ.        RM774 - BM DATA TRANSFER CALLS                416
14.10.35 00002.838 MFZ.        RM775 - BM CONTROL/POSITIONING CALLS           54
14.10.35 00002.838 MFZ.        RM776 - QUEUE MANAGER CALLS                    34
14.10.35 00002.838 MFZ.        RM777 - RECALL CALLS                           19
14.10.35 00002.838 MFZ.        BMMSG - NUMBER OF TAPES MOUNTED
14.10.35 00002.839 MFZ.        SRU                   3.380  SRU
14.10.35 00002.839 MFZ.        SCM                 130.107  KWS
14.10.35 00002.839 MFZ.        I/O                   0.062  MIN
14.10.35 00002.839 MFZ.        RMS                   0.069  MIN
14.10.35 00002.840 MFZ.        USER                  1.858  SEC
14.10.35 00002.840 MFZ.        JOB                   2.342  SEC
14.10.35 00002.840 MFZ.        SC050 - 000212 SC/LC SWAPS
14.10.35 00002.840 MFZ.     STCJ021   STCJ021
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RECEIVED
MAY 31 1977
WATER MANAGEMENT

City of St. Clair and China,
East China and St. Clair Townships
St. Clair County
5555-12, 15, 61 and 62

RECEIVED
JAN 13 '77
WATER MANAGEMENT

Pine River

Cross Section	S E C N O Miles	Feet	Location
A	0	0	Mouth of Pine River
B	0.019	100	d/s face of M-29 Bridge
C	0.129	684	500' u/s M-29 Bridge
D	0.357	1884	1700' u/s M-29 Bridge
E	0.636	3359	3175' u/s M-29 Bridge
F	1.152	6084	5900' u/s M-29 Bridge
G	1.635	8634	8450' u/s M-29 Bridge
H	1.967	10384	60' d/s Port Huron-Detroit RR Bridge
I	1.978	10444	d/s face of Port Huron-Detroit RR Bridge
J	2.089	11031	575' u/s Port Huron-Detroit RR Bridge
K	2.383	12581	2125' u/s Port Huron-Detroit RR Bridge
L	2.714	14331	3875' u/s Port Huron-Detroit RR Bridge
M	2.979	15731	5275' u/s Port Huron-Detroit RR Bridge
N	3.339	17631	7175' u/s Port Huron-Detroit RR Bridge
O	3.593	18971	8515' u/s Port Huron-Detroit RR Bridge
P	3.820	20171	9715' u/s Port Huron-Detroit RR Bridge
Q	4.199	22171	11715' u/s M-29 Bridge
R	4.322	22821	50' d/s Old Fred Moore Highway Bridge
S	4.332	22871	d/s face Old Fred Moore Highway Bridge
T	4.355	22994	d/s face New Fred Moore Highway Bridge

Pine River

Cross Section	S E C N O Miles	Feet	Location
U	4.391	23183	150' u/s New Fred Moore Highway Bridge
V	4.902	25883	2850' u/s New Fred Moore Highway Bridge
W	5.129	27083	50' d/s Rattle Run Road Bridge
X	5.137	27123	d/s face Rattle Run Bridge
Y	5.714	30170	3000' u/s Rattle Run Bridge
Z	6.112	32270	5100' u/s Rattle Run Bridge
AA	6.585	34770	7600' u/s Rattle Run Bridge
AB	6.983	36870	9700' u/s Rattle Run Bridge
AC	7.134	37670	10500' u/s Rattle Run Bridge
AD	7.419	39170	12000' u/s Rattle Run Bridge
AE	7.589	40070	50' d/s Vine Road Bridge
AF	7.598	40120	d/s face Vine Road Bridge
AG	7.772	41036	900' u/s Vine Road Bridge
AH	8.245	43536	3400' u/s Vine Road Bridge
AI	8.908	47036	6900' u/s Vine Road Bridge
AJ	9.316	49186	50' d/s Newman Road Bridge
AK	9.325	49236	d/s face Newman Bridge
AL	9.802	51754	2500' u/s Newman Road Bridge
AM	10.219	53954	4700' u/s Newman Road Bridge
AN	10.394	54878	75' d/s I-94 Bridges

Pine River

Cross Section	S E C N O Miles	Feet	Location
AO	10.408	54953	d/s face I-94 East Bound Lanes
AP	10.426	55051	d/s face I-94 West Bound Lanes
AQ	10.973	57939	2840' u/s I-94 Bridges
AR	11.299	59659	50' d/s Wadhams Road Bridge
AS	11.309	59709	d/s face Wadhams Road Bridge
AT	12.015	63437	3700' u/s Wadhams Road Bridge
AU	12.374	65337	5600' u/s Wadhams Road Bridge
AV	12.734	67237	50' d/s Gratiot Road Bridge
AW	12.744	67287	d/s face Gratiot Road Bridge
AX	12.962	68439	1100' u/s Gratiot Road Bridge
AY	13.265	70039	2700' u/s Gratiot Road Bridge
AZ	13.697	72319	50' d/s Firth Road Bridge
BA	13.706	72369	d/s face Firth Road Bridge
BB	14.069	74285	1900' u/s Firth Road Bridge
BC	14.467	76385	4000' u/s Firth Road Bridge
BD	14.940	78885	6500' u/s Firth Road Bridge
BE	15.414	81385	9000' u/s Firth Road Bridge

Seal

HYDRAULIC ANALYSIS

Introduction

The river being studied is the Pine River in the City of St. Clair, and in the Townships of St. Clair, East China, and China, St. Clair County, Michigan. The hydraulic investigations include a reach that extends from its confluence with the St. Clair River to the north limits of St. Clair Township, a distance of approximately 15.4 river miles.

The 10-, 50-, 100-, and 500-year flood frequency flows used in this study have been approved by Michigan's Department of Natural Resources. These discharges were computed from a regional study of drainage area-peak discharge-frequency relationships. The project manager for this analysis is Gilbert Font.

Method of Analysis

The water surface profiles were computed by the HEC-2 computer program developed by the U.S. Army Corps of Engineers.[1]

All bridges have been modeled according to the HEC Training Document No. 6, Application of the HEC-2 Bridge Routines.[2] Either the "Normal Bridge" or the "Special Bridge" routines were used. The decision was based on flow conditions at the river crossing.

The hydraulic model of the floodway was developed for the 100-year flow. The guidelines set forth on pages 18 through 21 in the HEC Training Document No. 6[3] were used to locate valley sections upstream and downstream of the

bridges. If additional sections were found necessary within this distance, the intermediate sections were encroached as appropriate. These same guidelines were used in modeling natural constrictions in the floodway.

The cross sections used in the hydraulic analysis were developed from field surveys (Fall and Winter, 1975) or from a combination of the field data and topographic information on USGS maps. In these composite cross sections (field and topographic map data), the channel segment of the section used was either duplicated from a representative adjacent cross section or interpolated from the adjacent upstream and downstream field cross sections; the overbank portions were delineated from the USGS maps.

Variables and Coefficients

A. The roughness factors (Manning's "n") were chosen after considering: photographs taken during the field surveys, observations made in field inspection trips to the study area, guidelines for determining "n" coefficients given in Chow[4] and descriptions given in Water Supply Paper No. 1849.[5] In general, the following range of values for late spring and early summer were used:

Descriptions	Manning's "n"
1. Channel	
a. Gravel, sand or hard clay	0.056 - 0.067
b. Muddy bottom	0.068 - 0.084
2. Flood Plain	
a. Lawns	.045 - .049
b. Light to medium brush and trees	.084 - 0.12
c. Medium to heavy brush and trees	0.12 - 0.24

B. The coefficients of expansion and contraction chosen were those suggested on Exhibit 2 of the HEC-2 Water Surface Profiles for abrupt transitions in river cross sections.

C. The XKOR coefficients for pressure flow used in the special bridge routines were calculated according to the equation:

$$XKOR = \left| 1 + Ke + \frac{29.1 n^2 L}{R^{4/3}} \right|$$

D. Weir discharge coefficients (COFQ) for the special bridge routine were obtained from charts published by USGS on "Measurement of Peak Discharge at Dams by Indirect Methods."

E. The following is a list of the coefficients used in the special bridge routine:

Crossing	Sec. No.	XKOR	COFQ
Old Fred Moore Hwy. Bridge	4.322	1.71	3.01
Rattle Run Rd. Bridge	5.146	1.73	3.02
Vine Rd. Bridge	7.598	1.58	5.47
Newman Rd. Bridge	9.325	1.65	3.44
I-94 Eastbound Bridge	10.408	1.74	3.01
I-94 Westbound Bridge	10.426	1.74	3.01
Wadhams Rd. Bridge	11.309	1.67	3.00
Gratiot Rd. Bridge	12.744	1.78	2.90

Starting Elevation

The initial water-surface elevation at the mouth of the Pine River is based on a Johnson & Anderson study of 10-, 50-, 100-, and 500-year flood levels on the St. Clair River. This study was approved by the DNR.

Remarks

1. The area underneath the bridge (BAREA) at section 4.332 has been reduced by approximately 25 percent because of two factors: the 15° skew that the bridge has to the channel and the partial obstruction of the left span of the bridge by the protruding left bank immediately upstream of the bridge.

2. Flows in the overbanks of consecutive cross sections sometimes show rapid changes in magnitudes. A typical example is the left overbank from sections 6.983 to 7.419. This fact stems from the river meandering within its flood plain.

3. On this downstream side of the Gratiot Road Bridge crossing the Pine River (section 12.744), there is a USGS crest gage (#04160350) which recorded 23.87 ft. (gage) or 605.14 ft. (USGS) on April 19, 1975. With stage-discharge curves, it has been estimated that the peak flow for that date is approximately 5400 cfs. The analysis of discharge flows recorded on gages located in the region indicated that the April 19, 1975 flood had a recurrence interval of 10 to 20 years. When the recorded high water mark and the estimated flow at the crest gage are compared to the hydraulic model of the Pine River in this location, these show a similar recurrence interval. Both are closer to 10-year flow (4270 cfs) and its computed water surface (604.70 ft. USGS) than to the 50-year flow (6400 cfs) and its computed water surface (608.04 ft. USGS).

4. A high water mark was recorded on the Newman Bridge (section 9.328) on May 12, 1943, when an unusually heavy rain caused flooding throughout the region. During this stage, water rose to the low chord of the bridge (600.08 USGS). Analysis of the stream gage data in the region indicates a recurrence interval of 30 to 50 years for this flood. When it is compared to the computer water-surface elevations at this location, the high water mark is somewhat closer to the computed water-surface elevation for the 50-year flood (601.22 USGS) than to the 10-year flood (597.72 USGS), indicating a similar recurrence interval to that found in the region for the storm.

References

[1]U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, Users Manual, 1973.

[2]U.S. Army Corps of Engineers, Hydrologic Engineering Center, Application of HEC-2 Bridge Routines, 1974.

[3]Ibid.

[4]Chow, V.T., Open-Channel Hydraulics, pp. 101-123, McGraw-Hill (1959).

[5]Geological Survey Water-Supply Paper No. 1849, Roughness Characteristics of Natural Channels, pp. 139-141, U.S. Government Printing Office (1967).

STCJOAQ JA DA 04/19/77 15.1[illegible].48 7[illegible] J

PINE RIVER

CITY OF ST. CLAIR, ST. CLAIR, CHINA, & E. CHINA TWPS

J & A FILE NO. 5555-12, 15, 61 & 62

DNR SUBMITTALS

RECEIVED

MAY 31 1977

WATER MANAGEMENT

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*****************************************
HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
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C
1       CITY OF ST. CLAIR, ST. CLAIR TOWNSHIP  5555-61 62  PW: GILBERTO M. FONT
T2        10 YEAR FLO
T3        PINE RIVER

J1  ICHECK     INO       NINV      IDIR      STRT      METRIC    RWINS     Q         WSEL      FO

      -0.        2.        -0.       -0. -0.000000     -0.00     -0.0      -0.     70.000    -0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IB        CHIN      ITRACE

     1.000    -0.000    -1.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

J3      1.000     10.000     11.000     12.000     14.000      [illegible].000      4.000     -0.000     -0.000     -0.000
NC       .049       .045       .055       .500       .800     -0.000     -0.000     -0.000     -0.000     -0.000
QT      4.000   4820.000   7140.000   8150.000  10000.000     -0.000     -0.000     -0.000     -0.000     -0.000

X1      0.000     25.000    245.000    472.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000
GR    589.500      0.000    589.000    100.000    589.600    200.000    588.000     97.000    587.500    245.000
GR    581.000    288.000    577.000    312.000    574.000    320.000    570.000    330.000    565.000    340.000
GR    566.000    350.000    562.700    350.000    556.000    370.000    557.700    395.000    557.900    400.000
GR    560.000    413.000    561.400    418.000    561.500    428.000    577.000    440.000    580.000    450.000
GR    584.000    462.000    587.500    472.000    587.000    500.000    587.000    540.000    587.600    600.000

X1       .018     30.000    289.000    485.000    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    589.000    589.000     -0.000
GR    589.500      0.000    589.000    100.000    589.600    200.000    591.700    289.000    585.500    289.000
GR    585.500    291.000    583.500    291.000    583.500    296.000    570.000    325.000    570.000    333.000
GR    568.400    340.000    566.800    347.000    565.000    355.000    560.000    364.000    558.000    370.000
GR    558.000    388.000    558.000    405.000    561.200    422.000    564.100    429.000    567.100    436.000
GR    570.000    444.000    570.000    453.000    583.500    478.000    583.500    483.000    585.500    483.000
GR    585.500    485.000    591.700    485.000    591.200    500.000    589.000    600.000    589.100    700.000

X1       .019     -0.000     -0.000     -0.000      1.000      1.000      1.000     -0.000     -0.000     -0.000
BT     13.000    289.000    591.700      0.000    289.000    591.700    586.700    333.000    592.400    587.000
BT    333.000    592.400    570.000    355.000    592.500    565.000    355.000    592.500    587.000    388.000
BT    592.900    588.000    422.000    592.500    587.000    422.000    592.500    551.200    444.000    592.400
BT    570.000    444.000    592.400    587.000    485.000    591.700    586.700    485.000    591.700     -0.000

X1       .034     -0.000     -0.000     -0.000     83.000     83.000     83.000     -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

X1       .035     -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    589.000    589.000     -0.000

X1       .129     32.000   1000.000   1191.000    500.000    500.000    500.000     -0.000     -0.000     -0.000
GR    589.100      0.000    588.500    100.000    588.300    200.000    587.800    300.000    587.300    400.000
GR    586.700    500.000    586.300    600.000    585.800    700.000    585.500    800.000    585.600    900.000
GR    585.700   1000.000    580.500   1024.000    563.400   1029.000    562.800   1040.000    562.800   1060.000
GR    566.000   1080.000    568.000   1100.000    569.300   1120.000    570.400   1140.000    573.000   1160.000
GR    576.600   1180.000    578.500   1190.000    579.800   1191.000    581.400   1300.000    582.900   1400.000
GR    582.600   1500.000    584.300   1600.000    584.700   1700.000    585.100   1800.000    585.300   1900.000
GR    586.300   1992.000    590.700   2006.000     -0.000     -0.000     -0.000     -0.000     -0.000     -0.000
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X3	10.000	563.500	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.300	37.000	1200.000	1525.000	650.000	650.000	650.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1220.000	583.000	1320.000	583.000	-0.000	-0.000	-0.000
GR	585.100	0.000	586.600	100.000	585.900	200.000	583.700	300.000	585.600	400.000
GR	585.600	500.000	585.500	600.000	587.100	700.000	586.000	700.000	585.600	800.000
GR	586.800	1000.000	583.200	1100.000	581.400	1200.000	578.800	1201.000	576.100	1210.000
GR	571.200	1216.000	566.600	1230.000	567.200	1240.000	565.400	1260.000	565.200	1270.000
GR	566.200	1300.000	567.100	1320.000	568.100	1340.000	569.800	1360.000	569.200	1330.000
GR	569.500	1400.000	569.300	1420.000	569.500	1440.000	569.100	1460.000	570.300	1430.000
GR	573.200	1500.000	575.400	1510.000	584.100	1525.000	584.000	1500.000	584.700	1700.000
GR	585.400	1732.000	592.900	1750.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.357	-0.000	-0.000	-0.000	600.000	600.000	600.000	-0.000	-0.000	-0.000
X3	10.000	566.000	-0.000	1230.000	583.700	1320.000	583.700	-0.000	-0.000	-0.000
X1	.452	-0.000	-0.000	-0.000	500.000	500.000	500.000	1.500	-0.000	-0.000
X3	10.000	566.370	-0.000	1345.000	585.000	1470.000	585.000	-0.000	-0.000	-0.000
NH	4.000	.045	1200.000	.054	1200.000	.061	1365.000	.134	1500.000	-0.000
X1	.543	29.000	1200.000	1345.000	500.000	500.000	500.000	-0.000	-0.000	-0.000
X3	10.000	566.730	-0.000	1200.000	585.500	1335.000	585.500	-0.000	-0.000	-0.000
GR	584.300	0.000	583.300	100.000	582.200	200.000	583.200	300.000	583.800	400.000
GR	582.500	500.000	583.900	600.000	586.300	700.000	584.300	800.000	585.200	900.000
GR	585.700	1000.000	585.300	1100.000	581.400	1200.000	577.400	1201.000	575.300	1220.000
GR	571.600	1240.000	569.500	1260.000	567.600	1230.000	567.200	1300.000	567.100	1320.000
GR	567.400	1340.000	572.600	1350.000	576.600	1360.000	578.200	1368.000	589.900	1385.000
GR	589.600	1400.000	589.400	1430.000	591.800	1437.000	594.000	1500.000	-0.000	-0.000
X1	.636	-0.000	-0.000	-0.000	475.000	475.000	475.000	-0.000	-0.000	-0.000
X3	10.000	567.100	-0.000	1100.000	585.600	1335.000	585.500	-0.000	-0.000	-0.000
NH	4.000	.049	150.000	.098	163.000	.085	318.000	.170	447.000	-0.000
X1	.829	16.000	160.000	347.000	1050.000	1020.000	1020.000	-0.000	-0.000	-0.000
GR	586.100	0.000	585.400	40.000	581.600	160.000	577.400	168.000	574.300	180.000
GR	570.600	200.000	568.500	220.000	565.600	240.000	564.200	260.000	564.000	280.000
GR	565.400	300.000	570.600	310.000	575.600	320.000	574.200	328.000	590.000	347.000
GR	591.000	447.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.045	.098	.071	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.152	23.000	1200.000	1323.000	1300.000	1705.000	1705.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	700.000	587.600	1415.000	587.600	-0.000	-0.000	-0.000
GR	589.300	0.000	589.800	100.000	588.200	200.000	584.100	300.000	587.400	400.000
GR	587.800	500.000	583.700	600.000	583.200	700.000	579.700	800.000	580.100	900.000
GR	579.200	1000.000	579.500	1100.000	579.000	1200.000	575.000	1200.000	570.700	1210.000
GR	569.300	1220.000	564.000	1240.000	562.300	1260.000	563.900	1280.000	567.400	1295.000
GR	580.000	1295.000	580.000	1302.000	590.200	1323.000	-0.000	-0.000	-0.000	-0.000
X1	1.436	15.000	200.000	29 .000	1450.000	1520.000	1500.000	-0.000	-0.000	-0.000
GR	587.400	0.000	587.800	100.000	583.700	150.000	579.000	400.000	575.000	203.000
GR	570.700	210.000	569.300	220.000	565.600	240.000	564.900	260.000	565.000	280.000
GR	567.400	295.000	579.700	295.000	580.100	348.000	584.300	423.000	585.700	523.000
NH	5.000	.093	200.000	.140	312.000	.073	468.000	.140	500.000	.056
NH	1500.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.635	27.000	300.000	472.000	1150.000	850.000	1050.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	250.000	589.000	1000.000	589.000	-0.000	-0.000	-0.000
GR	590.200	0.000	589.900	100.000	584.000	162.000	583.500	200.000	582.200	300.000
GR	575.500	312.000	571.500	320.000	566.700	340.000	568.300	360.000	570.300	360.000
GR	572.300	400.000	573.400	420.000	574.100	440.000	577.900	460.000	578.800	468.000
GR	584.400	472.000	584.500	500.000	583.400	600.000	582.500	700.000	582.300	800.000
GR	584.200	900.000	585.300	1000.000	586.200	1100.000	585.400	1200.000	585.800	1300.000
GR	585.500	1400.000	586.900	1500.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.098	800.000	.168	810.000	.073	947.000	.168	953.000	.112
NH	1238.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

X1	1.967	25.000	800.000	953.000	1200.000	1800.000	1750.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	400.000	588.600	943.000	585.000	-0.000	-0.000	-0.000
GR	594.800	0.000	583.900	100.000	539.300	200.000	589.100	300.000	549.600	400.000
GR	587.700	500.000	543.000	600.000	531.200	700.000	581.000	800.000	578.300	803.000
GR	575.700	810.000	571.200	820.000	569.500	840.000	565.900	860.000	565.700	880.000
GR	565.000	900.000	568.400	920.000	570.900	930.000	575.300	940.000	578.500	947.000
GR	587.000	958.000	590.400	1000.000	591.300	1100.000	590.000	1200.000	589.600	1238.000
NC	.112	.112	.072	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.977	22.000	100.000	224.600	69.000	49.000	59.000	.956	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	589.000	589.000	-0.000
GR	596.100	0.000	595.400	100.000	588.100	100.000	576.900	101.000	573.400	110.000
GR	570.100	120.000	571.100	130.000	570.200	140.000	571.200	150.000	575.200	160.000
GR	575.300	162.000	575.400	164.000	575.500	166.000	571.600	175.000	570.100	185.000
GR	569.000	195.000	573.100	205.000	571.900	215.000	576.300	224.000	587.100	224.600
GR	594.400	224.600	593.900	324.600	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.042	.042	.067	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.978	22.000	100.000	224.000	1.000	1.000	1.000	.956	-0.000	-0.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	.956	-0.000
BT	8.000	100.000	595.400	-0.000	100.000	595.400	588.100	160.000	595.000	587.600
BT	160.000	595.000	575.200	166.000	594.900	575.500	166.000	594.900	587.600	224.600
BT	594.400	587.100	324.600	593.900	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	596.100	0.000	595.400	100.000	588.100	100.000	576.900	101.000	573.400	110.000
GR	570.100	120.000	571.100	130.000	570.200	140.000	571.200	150.000	575.200	160.000
GR	575.300	162.000	575.400	164.000	575.500	166.000	571.600	175.000	570.100	185.000
GR	569.000	195.000	573.100	205.000	571.900	215.000	576.300	224.000	587.100	224.600
GR	594.400	224.600	593.900	324.600	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.980	-0.000	-0.000	-0.000	12.000	12.000	12.000	-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	.084	.112	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.981	-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	593.000	593.000	-0.000
X1	1.990	20.000	100.000	224.000	50.000	50.000	50.000	.956	-0.000	-0.000
GR	596.100	0.000	595.400	100.000	588.100	100.000	576.900	101.000	573.400	110.000
GR	570.100	120.000	571.100	130.000	570.200	140.000	571.200	150.000	575.200	160.000
GR	575.500	166.000	571.600	175.000	570.100	185.000	568.900	195.000	573.100	205.000
GR	571.900	215.000	576.300	224.000	587.100	224.600	594.400	224.600	593.900	324.600
NC	.112	.084	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.011	20.000	100.000	224.000	110.000	110.000	110.000	-0.000	-0.000	-0.000
GR	596.100	0.000	595.400	100.000	588.100	100.000	576.900	101.000	573.400	110.000
GR	570.100	120.000	571.100	130.000	570.200	140.000	571.200	150.000	575.200	160.000
GR	575.500	166.000	571.600	175.000	570.100	185.000	568.700	195.000	573.100	205.000
GR	571.900	215.000	576.300	224.000	587.100	224.600	594.400	224.600	593.900	324.600
QT	4.000	4740.000	7030.000	4030.000	10400.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.112	300.000	.154	309.000	.073	380.000	.084	435.000	-0.000
X1	2.089	20.000	300.000	435.000	490.000	340.000	415.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	591.300	435.000	591.300	-0.000	-0.000	-0.000
GR	585.300	0.000	543.500	100.000	582.600	200.000	579.500	270.000	584.100	300.000
GR	577.500	309.000	573.400	320.000	567.900	340.000	569.300	360.000	569.500	380.000
GR	570.700	400.000	573.700	420.000	578.400	430.000	580.900	435.000	581.000	500.000
GR	583.500	600.000	583.100	700.000	583.300	740.000	589.900	740.000	592.200	777.000
NH	4.000	.084	227.000	.098	327.000	.072	434.000	.130	502.000	-0.000
X1	2.393	16.000	327.000	502.000	1400.000	1525.000	1550.000	-0.000	-0.000	-0.000
GR	591.400	0.000	585.400	27.000	553.900	62.000	582.800	127.000	582.700	227.000
GR	582.700	327.000	576.500	331.000	575.400	339.000	569.900	347.000	568.300	367.000
GR	569.600	387.000	570.700	407.000	573.100	427.000	576.500	439.000	579.600	439.000
GR	594.300	502.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	3.000	.170	113.000	.070	219.000	.084	430.000	-0.000	-0.000	-0.000

X1	2.714	15.000	100.000	220.000	1700.000	1750.000	1750.000	-0.000	-0.000	-0.000
GR	590.500	0.000	589.500	100.000	575.100	110.000	573.300	120.000	569.300	140.000
GR	568.700	160.000	568.800	140.000	572.200	200.000	573.100	210.000	576.600	219.000
GR	581.600	220.000	583.500	300.000	585.700	372.000	589.600	400.000	593.300	430.000
NH	3.000	.150	100.000	.070	231.000	.093	480.000	-0.000	-0.000	-0.000
X1	2.979	15.000	100.000	233.000	1150.000	1500.000	1400.000	-0.000	-0.000	-0.000
GR	591.500	0.000	590.300	100.000	578.500	113.000	576.100	120.000	574.100	130.000
GR	573.700	140.000	567.100	160.000	571.200	180.000	573.300	200.000	575.600	220.000
GR	578.300	231.000	581.700	233.000	582.300	300.000	583.300	400.000	593.900	440.000
NH	4.000	.182	23.000	.070	140.000	.084	200.000	.182	755.000	-0.000
X1	3.339	20.000	0.000	144.000	1400.000	1450.000	1400.000	-0.000	-0.000	-0.000
GR	593.600	0.000	580.900	27.000	578.600	28.000	576.300	34.000	574.200	40.000
GR	570.900	60.000	571.800	80.000	572.800	100.000	572.900	120.000	575.500	130.000
GR	579.100	140.000	584.400	144.000	583.500	200.000	583.400	300.000	580.600	400.000
GR	581.200	500.000	581.700	600.000	583.000	640.000	589.100	700.000	594.900	755.000
NH	3.000	.210	35.000	.070	140.000	.195	500.000	-0.000	-0.000	-0.000
X1	3.593	16.000	0.000	144.000	1440.000	1150.000	1240.000	-0.000	-0.000	-0.000
GR	597.500	0.000	581.600	34.000	578.700	45.000	577.400	40.000	571.500	50.000
GR	568.100	60.000	568.400	80.000	570.300	100.000	572.400	120.000	573.500	130.000
GR	578.600	140.000	584.300	144.000	584.500	200.000	586.500	300.000	589.400	360.000
GR	595.000	600.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.168	350.000	.195	356.000	.072	464.000	.210	620.000	-0.000
X1	3.820	15.000	350.000	464.000	1250.000	1100.000	1200.000	-0.000	-0.000	-0.000
GR	597.500	0.000	589.600	250.000	588.500	350.000	580.400	367.000	577.600	368.000
GR	571.600	380.000	570.300	390.000	570.100	410.000	570.300	430.000	573.400	450.000
GR	575.500	456.000	573.500	461.000	581.300	454.000	583.000	456.000	593.400	620.000
NH	3.000	.224	38.000	.077	131.000	.238	250.000	-0.000	-0.000	-0.000
X1	4.199	13.000	0.000	140.000	2000.000	2000.000	2000.000	-0.000	-0.000	-0.000
GR	593.800	0.000	583.200	36.000	577.200	33.000	570.900	50.000	570.900	60.000
GR	571.800	80.000	571.900	100.000	573.000	120.000	577.500	131.000	582.000	133.000
GR	584.700	160.000	592.300	140.000	595.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	3.000	.224	143.000	.075	244.000	.224	282.000	-0.000	-0.000	-0.000
X1	4.322	15.000	130.000	282.000	650.000	650.000	650.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	90.000	596.000	659.000	596.000	-0.000	-0.000	-0.000
GR	601.000	0.000	585.800	73.000	583.300	130.000	576.700	144.000	575.900	150.000
GR	571.300	160.000	569.400	170.000	564.100	190.000	569.100	210.000	569.900	220.000
GR	570.900	230.000	573.100	237.000	578.600	244.000	580.900	245.000	594.000	242.000
NH	6.000	6.300	38.000	.063	47.000	5.600	61.000	.063	98.500	5.600
NH	112.500	.063	150.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.332	26.000	0.000	150.000	49.000	49.000	49.000	.966	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	593.000	593.000	-0.000
GR	597.200	0.000	585.200	0.000	583.400	9.500	581.600	19.000	580.600	23.500
GR	580.200	26.000	579.000	28.000	578.800	28.500	576.200	38.000	575.600	47.000
GR	574.200	52.000	574.700	61.000	573.000	70.500	572.300	75.500	571.600	80.000
GR	571.600	89.500	573.100	98.500	573.700	103.500	573.500	112.500	574.000	122.000
GR	574.000	126.800	574.100	131.500	572.800	141.000	575.600	150.000	597.200	150.000
GR	596.100	200.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
SB	1.000	1.708	3.010	0.000	62.940	19.060	1536.000	2.010	574.100	574.000
X1	4.336	26.000	0.000	150.000	22.000	22.000	22.000	.966	-0.000	-0.000
X2	-0.000	-0.000	1.000	592.000	597.100	-0.000	-0.000	-0.000	.960	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	597.200	597.200	-0.000
BT	27.000	0.000	597.100	0.000	0.000	597.100	589.900	.500	597.100	591.400
BT	19.000	597.100	592.000	23.800	597.100	592.000	28.500	597.100	591.800	36.000
BT	597.100	591.100	47.000	597.100	589.900	47.000	597.100	575.600	52.000	597.100
BT	574.200	52.000	597.100	589.900	61.000	597.100	591.300	70.500	597.100	591.900
BT	75.800	597.100	592.000	80.000	597.100	591.900	89.500	597.100	591.200	98.500
BT	597.100	589.900	98.500	597.100	573.100	103.500	597.100	573.700	103.500	597.100

BT	131.500	597.100	591.900	141.000	597.100	591.300	150.000	597.100	589.900	150.000
BT	597.100	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	597.200	0.000	585.200	0.000	583.400	9.500	581.600	19.000	580.600	23.800
GR	580.200	26.000	579.000	28.000	578.800	28.500	576.200	38.000	575.600	47.000
GR	574.200	52.000	574.700	61.000	573.000	70.500	572.300	75.600	571.600	80.000
GR	571.600	89.500	573.100	98.500	573.700	103.500	573.500	112.500	574.000	122.000
GR	574.000	126.800	574.100	131.500	572.900	141.000	573.600	150.000	597.200	150.000
GR	596.100	200.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.196	.196	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.344	27.000	0.000	175.000	45.000	45.000	45.000	.985	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	598.600	598.600	-0.000
GR	600.900	0.000	593.700	0.000	593.700	0.000	583.400	15.000	583.700	25.000
GR	578.700	35.000	574.700	45.000	574.200	56.000	574.000	57.000	573.700	58.000
GR	573.500	59.000	572.900	70.000	572.100	80.000	570.200	90.000	569.000	100.000
GR	568.800	110.000	571.200	116.000	571.800	117.000	572.500	118.000	573.100	119.000
GR	573.600	130.000	577.500	140.000	582.900	150.000	588.700	160.000	593.900	170.000
GR	594.100	175.000	601.000	175.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.056	.056	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.345	27.000	0.000	175.000	1.000	1.000	1.000	.985	-0.000	-0.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	.985	-0.000
BT	12.000	0.000	600.900	0.000	0.000	600.900	596.300	56.000	600.900	596.300
BT	56.000	600.900	574.200	57.000	600.900	573.500	57.000	600.900	596.300	116.000
BT	600.900	596.300	116.000	600.900	571.200	116.000	600.900	571.100	119.000	600.900
BT	596.300	175.000	600.900	596.300	175.000	600.900	0.000	-0.000	-0.000	-0.000
GR	600.900	0.000	593.700	0.000	593.700	0.000	588.900	15.000	583.700	25.000
GR	578.700	35.000	574.700	45.000	574.200	56.000	574.000	57.000	573.700	58.000
GR	573.500	59.000	572.900	70.000	572.100	80.000	570.200	90.000	569.000	100.000
GR	568.800	110.000	571.200	116.000	571.800	117.000	572.500	118.000	573.100	119.000
GR	573.600	130.000	577.500	140.000	582.900	150.000	588.700	160.000	593.900	170.000
GR	594.100	175.000	601.000	175.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.224	.140	.074	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.353	-0.000	-0.000	-0.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	600.900	600.900	-0.000
NH	3.000	.224	200.000	.070	283.000	.126	400.000	-0.000	-0.000	-0.000
X1	4.381	15.000	190.000	322.000	150.000	150.000	150.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	24.000	596.000	322.000	596.000	-0.000	-0.000	-0.000
GR	600.300	0.000	586.000	75.000	584.300	90.000	584.500	190.000	578.800	195.000
GR	576.100	205.000	573.500	210.000	571.600	230.000	569.200	250.000	571.400	270.000
GR	574.900	276.000	578.000	283.000	581.100	275.000	594.300	322.000	596.500	400.000
NH	4.000	.241	434.000	.072	526.000	.170	528.000	.210	700.000	-0.000
X1	4.898	21.000	431.000	528.000	2750.000	2650.000	2700.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	150.000	547.000	750.000	597.000	-0.000	-0.000	-0.000
GR	595.000	0.000	592.500	150.000	594.000	320.000	591.500	260.000	590.700	400.000
GR	582.500	420.000	582.700	431.000	578.600	434.000	575.100	440.000	572.300	450.000
GR	571.900	460.000	571.000	480.000	573.300	500.000	575.100	510.000	575.900	520.000
GR	578.500	526.000	581.600	528.000	583.800	500.000	594.900	560.000	595.000	700.000
GR	597.000	800.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

X1	5.128	16.000	23.000	119.000	1200.000	1300.000	1200.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	599.400	135.900	599.400	-0.000	-0.000	-0.000
GR	592.400	0.000	581.800	23.000	578.200	24.000	574.300	30.000	571.100	40.000
GR	572.800	60.000	570.800	90.000	571.400	90.000	571.900	100.000	578.200	109.000
GR	586.200	119.000	585.300	300.000	583.200	300.000	592.300	332.000	595.000	365.000
GR	600.000	399.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
QT	4.000	4600.000	4340.000	7520.000	10200.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.067	6.000	.070	57.000	7.000	61.000	.070	109.000	.067
NH	117.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	5.137	17.000	0.000	117.000	49.000	49.000	49.000	.947	-0.000	-0.000
X3	10.000	-0.000	-0.000	0.000	596.000	117.000	596.000	596.000	595.000	-0.000
GR	597.400	0.000	584.500	0.000	584.300	6.000	577.500	13.000	574.400	19.000
GR	574.300	29.000	574.000	39.000	574.500	49.000	573.500	57.000	572.900	61.000
GR	572.900	69.000	573.500	79.000	574.100	89.000	574.500	99.000	576.800	109.000
GR	578.600	117.000	597.400	117.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
SB	1.200	1.732	3.020	0.000	81.800	5.350	1391.450	.760	572.900	572.900
X1	5.146	17.000	0.000	117.000	49.000	49.000	49.000	.947	-0.000	-0.000
X2	-0.000	-0.000	1.000	594.100	597.400	-0.000	-0.000	-0.000	.947	-0.000
X3	10.000	-0.000	-0.000	0.000	597.400	110.900	597.400	597.400	597.400	-0.000
BT	8.000	0.000	597.400	0.000	0.000	597.400	594.100	57.000	597.400	593.100
BT	57.000	597.400	573.500	61.000	597.400	572.900	61.000	597.400	593.100	117.000
BT	597.400	594.100	117.000	597.400	0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	597.400	0.000	584.500	0.000	584.300	6.000	577.600	13.000	574.400	19.000
GR	574.300	29.000	574.000	39.000	574.500	49.000	573.500	57.000	572.900	61.000
GR	572.900	69.000	573.500	79.000	574.100	89.000	574.500	99.000	576.800	109.000
GR	578.600	117.000	597.400	117.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.168	140.000	.210	164.300	.091	254.000	.126	500.000	-0.000
X1	5.155	17.000	140.000	96.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	116.000	597.600	346.800	597.600	-0.000	-0.000	-0.000
GR	597.500	0.000	595.000	100.000	590.400	140.000	592.500	163.000	578.600	164.000
GR	575.000	170.000	571.800	180.000	573.500	200.000	571.500	220.000	571.900	230.000
GR	572.600	240.000	579.200	259.000	586.800	259.000	587.100	350.000	588.200	450.000
GR	591.300	442.000	602.600	500.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.168	.224	.073	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	5.335	28.000	720.000	860.000	950.000	950.000	950.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	700.000	598.000	1400.000	598.000	-0.000	-0.000	-0.000
GR	610.500	0.000	606.700	100.000	603.200	200.000	600.200	300.000	600.600	400.000
GR	598.700	500.000	597.400	600.000	596.400	700.000	597.700	720.000	590.000	750.000
GR	584.000	770.000	578.500	800.000	574.700	810.000	571.300	820.000	571.000	830.000
GR	571.300	840.000	572.400	855.000	577.400	870.000	584.900	880.000	587.000	930.000
GR	590.600	950.000	590.700	1020.000	591.900	1120.000	592.300	1220.000	593.500	1320.000
GR	597.800	1620.000	600.000	1700.000	605.300	1740.000	-0.000	-0.000	-0.000	-0.000
X1	5.487	24.000	545.000	665.000	800.000	700.000	900.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	225.000	599.000	750.000	599.000	-0.000	-0.000	-0.000
GR	614.400	0.000	608.700	100.000	602.300	210.000	592.400	260.000	587.800	300.000
GR	587.500	400.000	585.000	500.000	578.500	545.000	574.700	555.000	571.300	565.000
GR	570.400	575.000	570.500	585.000	573.500	600.000	575.400	615.000	578.900	525.000
GR	580.000	650.000	595.600	665.000	590.000	640.000	591.700	700.000	595.800	800.000
GR	584.300	900.000	595.600	1000.000	600.900	1400.000	595.000	1440.000	-0.000	-0.000
NH	4.000	.196	95.000	.070	163.000	.210	175.000	.126	1150.000	-0.000
X1	5.714	17.000	0.000	175.000	1150.000	1200.000	1200.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	599.000	600.000	599.000	-0.000	-0.000	-0.000
GR	600.000	0.000	583.400	30.000	578.500	95.000	574.700	105.000	571.300	115.000
GR	569.400	125.000	569.400	135.000	572.400	150.000	577.400	165.000	584.900	175.000
GR	584.900	200.000	589.700	240.000	591.300	300.000	593.700	400.000	595.000	500.000
GR	597.500	800.000	600.000	1150.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.120	550.000	.182	559.000	.091	636.000	.210	645.000	.126
NH	700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

X1	6.116	18.000	550.000	645.000	1950.000	2000.000	2100.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	200.000	500.000	607.000	600.000	-0.000	-0.000	-0.000
GR	600.000	0.000	594.000	250.000	590.900	350.000	591.100	700.000	587.600	450.000
GR	588.800	500.000	596.100	550.000	577.300	559.000	575.000	565.600	573.900	580.000
GR	572.600	590.000	571.500	600.000	570.600	614.000	572.600	525.000	577.700	636.000
GR	583.500	645.000	550.300	650.000	603.300	700.000	-0.000	-0.000	-0.000	-0.000
NH	6.000	.224	100.000	.094	200.000	.126	550.000	.196	700.000	.077
NH	900.000	.145	1600.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	6.423	26.000	700.000	400.000	1350.000	1550.000	1550.000	-0.000	-0.000	-0.000
GR	605.300	0.000	597.500	100.000	592.500	150.000	597.500	200.000	601.500	300.000
GR	602.000	350.000	601.000	450.000	597.500	500.000	593.200	360.000	597.500	550.000
GR	592.500	700.000	583.800	750.000	579.200	800.000	576.500	507.000	575.100	811.000
GR	571.500	820.000	573.100	835.000	574.500	840.000	573.500	550.000	590.100	920.000
GR	591.500	950.000	591.000	1040.000	591.000	1120.000	595.000	1220.000	600.000	1400.000
GR	606.700	1600.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.170	64.000	.097	191.000	.264	300.000	.140	1550.000	-0.000
X1	6.560	25.000	600.000	1150.000	650.000	550.000	550.000	-0.000	-0.000	-0.000
GR	606.100	0.000	587.700	300.000	591.500	600.000	577.400	600.000	572.200	650.000
GP	572.700	100.000	573.000	120.000	572.500	150.000	572.000	160.000	575.500	175.000
GR	577.500	191.000	551.500	195.000	594.200	217.000	579.900	572.000	583.300	300.000
GR	586.300	400.000	589.400	500.000	599.000	600.000	592.600	715.000	592.600	900.000
GR	591.100	900.000	585.700	1000.000	599.600	1100.000	600.000	1150.000	605.000	1250.000
NH	4.000	.125	100.000	.152	125.000	.067	150.000	.210	600.000	-0.000
X1	6.962	14.000	100.000	207.000	2100.000	1700.000	2100.000	-0.000	-0.000	-0.000
GR	602.000	0.000	593.800	100.000	577.400	125.000	571.100	135.000	570.600	145.000
GR	572.300	155.000	574.100	165.000	576.200	140.000	595.300	107.000	596.500	225.000
GR	589.100	300.000	599.400	400.000	591.100	300.000	300.000	300.000	-0.000	-0.000
NC	.168	.154	.076	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.040	20.000	740.000	800.000	450.000	330.000	400.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	400.000	600.800	1100.000	600.300	-0.000	-0.000	-0.000
GR	602.100	0.000	595.500	200.000	593.000	400.000	597.500	600.000	595.300	700.000
GR	586.000	720.000	581.000	740.000	578.500	745.000	571.400	750.000	570.100	751.000
GR	569.200	772.000	571.000	732.000	579.400	741.000	592.300	800.000	555.400	540.000
GR	590.200	790.000	591.000	770.000	590.100	1040.000	600.500	1100.000	610.100	1200.000
NH	4.000	.168	312.000	.090	859.000	.112	897.000	.140	940.000	-0.000
X1	7.118	17.000	800.000	853.000	350.000	400.000	400.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	50.000	600.000	900.000	300.000	-0.000	-0.000	-0.000
GR	601.500	0.000	597.500	100.000	596.600	400.000	593.600	400.000	597.500	500.000
GR	587.800	600.000	586.700	700.000	584.800	800.000	575.100	812.000	571.400	820.000
GR	568.700	828.000	567.800	840.000	569.600	850.000	575.000	555.000	582.800	363.000
GR	596.400	897.000	609.000	940.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.168	.182	.076	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.308	16.000	295.000	524.000	900.000	970.000	970.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	150.000	601.500	945.000	601.500	-0.000	-0.000	-0.000
GR	601.500	0.000	597.900	150.000	596.100	250.000	590.000	475.000	585.000	295.000
GR	581.600	320.000	578.900	345.000	573.200	354.000	571.400	466.000	572.300	430.000
GR	575.000	488.000	579.500	502.000	596.200	524.000	591.500	550.000	596.200	535.000
GR	602.500	650.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
QT	4.000	4410.000	6000.000	7550.000	9000.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.120	400.000	.168	900.000	.185	1200.000	.070	1278.000	.185
NH	1445.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.466	25.000	1200.000	1291.000	400.000	530.000	800.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	550.000	601.000	1350.000	601.000	-0.000	-0.000	-0.000
GR	602.300	0.000	600.000	100.000	597.700	200.000	597.100	300.000	596.400	400.000
GR	596.000	500.000	595.700	600.000	594.700	700.000	593.000	500.000	590.500	900.000
GR	589.500	1000.000	587.500	1100.000	587.000	1200.000	587.000	1219.000	576.500	1230.000
GR	573.900	1240.000	573.500	1250.000	574.100	1260.000	575.000	1270.000	576.700	1278.000
GR	587.200	1291.000	585.100	1300.000	585.500	1330.000	591.500	1340.000	611.500	1445.000

X1	7.566	22.000	684.000	736.000	400.000	540.000	530.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	550.000	601.500	460.000	601.500	-0.000	-0.000	-0.000
GR	602.300	0.000	600.000	100.000	593.700	200.000	597.000	300.000	596.400	400.000
GR	596.100	500.000	594.700	600.000	590.000	660.000	595.200	600.000	590.100	707.000
GR	578.900	722.000	575.200	726.000	573.600	735.000	574.100	745.000	573.400	755.000
GR	574.700	765.000	573.400	774.000	567.200	786.000	568.100	793.000	589.500	825.000
GR	591.500	875.000	607.500	1000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	3.000	.210	31.000	.087	80.000	.224	750.000	-0.000	-0.000	-0.000
X1	7.636	15.000	0.000	90.000	370.000	370.000	370.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	603.000	513.000	603.000	-0.000	-0.000	-0.000
GR	599.200	0.000	577.400	31.000	577.500	45.000	577.500	60.000	575.300	75.000
GR	578.200	85.000	594.100	90.000	593.000	100.000	594.100	100.000	594.700	300.000
GR	589.400	400.000	590.600	500.000	596.400	600.000	500.400	650.000	602.300	750.000
NC	.168	.168	.073	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.645	21.000	100.000	247.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	100.000	603.000	700.000	594.000	597.400	597.400	-0.000
GR	599.500	0.000	594.100	100.000	590.600	100.000	600.300	119.000	578.200	123.000
GR	573.200	134.000	570.400	150.000	573.700	165.000	573.400	181.000	582.000	197.000
GR	583.500	212.000	585.900	225.000	586.200	229.000	592.000	247.000	598.100	247.000
GR	596.700	300.000	594.200	400.000	593.200	500.000	594.200	600.000	596.300	700.000
GR	602.200	750.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.210	.224	.074	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.649	-0.000	-0.000	-0.000	17.000	17.000	17.000	-0.000	-0.000	-0.000
X2	-0.000	-0.000	1.000	599.700	598.100	-0.000	-0.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	99.400	594.000	700.100	603.000	-0.000	-0.000	-0.000
BT	15.000	100.000	94.100	545.500	119.300	94.100	545.500	119.000	99.100	0.000
BT	123.000	598.100	578.200	123.000	597.100	146.300	215.000	95.100	596.600	225.000
BT	598.100	565.900	229.000	597.100	216.200	229.000	59 .100	195.200	247.000	552.200
BT	596.600	300.000	596.700	0.000	400.000	594.200	0.000	600.000	593.200	0.000
BT	600.000	594.200	0.000	700.000	596.300	0.000	-0.000	-0.000	-0.000	-0.000
NC	.154	.154	.072	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.653	21.000	100.000	247.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	10.000	570.600	-0.000	100.000	602.500	700.000	602.500	-0.000	-0.000	-0.000
GR	599.500	0.000	596.100	100.000	590.600	100.000	580.300	119.000	578.200	123.000
GR	573.200	134.000	570.400	150.000	573.700	166.000	578.400	181.000	582.000	197.000
GR	583.500	212.000	585.900	226.000	586.200	229.000	592.000	247.000	598.100	247.000
GR	596.700	300.000	594.200	400.000	593.200	500.000	594.200	600.000	596.300	700.000
GR	602.200	750.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	3.000	.240	628.000	.057	590.000	.200	1500.000	-0.000	-0.000	-0.000
X1	7.819	23.000	615.000	717.000	850.000	800.000	350.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	603.500	950.000	603.500	-0.000	-0.000	-0.000
GR	601.900	0.000	582.400	65.000	582.400	115.000	582.200	215.000	581.400	315.000
GR	582.700	415.000	585.600	515.000	582.900	615.000	580.400	628.000	577.500	630.000
GR	574.800	640.000	573.600	650.000	573.100	660.000	574.100	670.000	573.100	680.000
GR	578.200	669.000	580.800	690.000	594.700	717.000	593.400	715.000	593.000	915.000
GR	596.600	1000.000	598.800	1050.000	601.100	1100.000	-0.000	-0.000	-0.000	-0.000
QT	4.000	4410.000	6600.000	7550.000	9450.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.210	.224	.074	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	8.198	20.000	145.000	305.700	2200.000	1570.000	2000.000	-0.000	-0.000	-0.000
GR	605.500	0.000	600.200	100.000	595.400	120.000	569.900	145.000	565.000	165.000
GR	580.100	200.000	577.900	205.000	574.000	408.000	572.200	214.000	571.700	223.000
GR	571.600	238.000	570.100	246.000	569.400	258.000	570.300	268.000	575.700	260.000
GR	588.500	305.000	593.600	333.000	595.600	410.700	600.300	480.000	601.700	580.000
NH	3.000	.224	693.000	.078	776.000	.224	857.000	-0.000	-0.000	-0.000
X1	8.293	21.000	665.000	807.000	300.000	530.000	500.000	-0.000	-0.000	-0.000
GR	605.200	0.000	601.000	50.000	600.700	150.000	596.000	200.000	593.300	265.000
GR	589.900	365.000	590.200	465.000	596.700	555.700	591.900	665.000	577.700	693.000

GR	568.500	755.000	570.100	755.000	575.500	778.000	538.100	507.000	593.600	835.000
GR	605.600	857.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	3.000	.200	250.000	.073	375.000	.200	900.000	-0.000	-0.000	-0.000
X1	8.719	21.000	150.000	450.000	1500.000	2250.000	2250.000	-0.000	-0.000	-0.000
GR	615.500	0.000	600.500	100.000	595.600	150.000	550.700	469.000	579.000	285.000
GR	577.500	305.000	573.600	315.000	573.000	375.000	573.200	438.000	574.500	348.000
GR	575.000	358.000	576.400	368.000	574.400	378.000	542.300	400.000	595.100	425.000
GR	590.500	450.000	592.500	550.000	590.800	700.000	595.400	750.000	602.500	800.000
GR	611.300	900.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.200	115.000	.072	162.000	.200	700.000	.198	950.000	.224
NH	1200.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	9.012	22.000	105.000	147.000	600.000	1300.000	1550.000	-0.000	-0.000	-0.000
GR	605.000	0.000	600.300	50.000	590.900	80.000	587.600	105.000	578.300	115.000
GR	575.500	125.000	575.600	135.000	575.800	145.000	578.000	162.000	591.300	187.000
GR	593.300	205.000	593.500	305.000	594.600	405.000	546.400	505.000	598.700	550.000
GR	599.600	600.000	594.700	650.000	599.700	700.000	591.400	701.000	605.000	900.000
GR	615.400	950.000	616.000	1001.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.231	100.000	.072	163.000	.230	500.000	.211	840.000	.249
NH	800.000	-0.000	-0.000	-1.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	9.173	19.000	100.000	167.000	550.000	1000.000	10.000	-0.000	-0.000	-0.000
GR	610.500	0.000	600.000	50.000	594.200	100.000	578.300	110.000	575.400	120.000
GR	576.000	130.000	576.200	140.000	579.100	190.000	574.500	165.000	595.600	200.000
GR	595.300	250.000	590.100	275.000	596.500	310.000	595.000	501.000	589.700	590.000
GR	587.600	585.000	596.100	640.000	600.000	700.000	615.000	700.000	-0.000	-0.000
NH	5.000	.070	200.000	.125	283.000	.081	322.000	.224	530.000	.126
NH	800.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	9.419	17.000	200.000	355.000	1300.000	1500.000	1300.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	141.000	603.500	450.100	603.200	600.200	600.200	-0.000
GR	602.200	0.000	600.300	50.000	596.000	100.000	591.800	200.000	579.000	283.000
GR	576.400	297.000	576.100	311.000	577.200	322.000	579.000	332.000	586.500	340.000
GR	591.800	365.000	590.800	410.000	594.600	500.000	600.700	530.000	601.600	600.000
GR	603.700	700.000	606.700	800.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.154	.182	.075	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	9.429	21.000	100.000	247.000	49.000	49.000	49.000	.955	-0.000	-0.000
X3	-0.000	-0.000	-0.000	103.000	602.800	400.000	602.400	-0.000	-0.000	-0.000
GR	605.100	0.000	602.400	99.000	602.600	100.000	594.700	100.000	594.000	111.000
GR	594.000	112.000	594.000	113.000	594.000	114.000	585.000	140.000	576.600	165.000
GR	576.200	182.000	576.900	200.000	590.300	233.000	590.300	234.000	590.400	235.000
GR	590.400	236.000	590.800	247.000	602.400	247.000	601.300	300.000	601.700	400.000
GR	601.700	402.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
SB	1.050	1.650	3.440	-0.000	55.980	7.200	2223.300	1.618	576.200	576.200
X1	9.432	21.000	100.000	247.000	16.000	15.000	16.000	.986	-0.000	-0.000
X2	-0.000	-0.000	1.000	500.000	601.300	-0.000	-0.000	-0.000	.986	-0.000
X3	-0.000	-0.000	-0.000	100.000	603.400	400.000	603.400	-0.000	-0.000	-0.000
BT	14.000	100.000	602.400	0.000	100.000	602.400	601.000	111.000	602.400	601.000
BT	111.000	602.400	594.000	114.000	602.400	594.000	114.000	602.400	601.000	233.000
BT	602.400	601.000	233.000	602.400	590.300	236.000	602.400	590.400	236.000	602.400
BT	601.000	247.000	602.400	601.300	247.000	602.400	0.000	300.000	601.300	0.000
BT	400.000	601.700	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	605.100	0.000	602.400	99.000	602.400	100.000	594.700	100.000	594.000	111.000
GR	594.000	112.000	594.000	113.000	594.000	114.000	589.000	130.000	576.600	165.000
GR	576.200	182.000	576.900	200.000	590.300	233.000	590.300	234.000	590.400	235.000
GR	590.400	236.000	590.800	247.000	602.400	247.000	601.300	300.000	601.700	400.000
GR	601.700	402.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	9.442	20.000	600.000	634.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	329.100	604.500	724.900	604.500	-0.000	-0.000	-0.000
GR	611.200	0.000	609.300	100.000	607.600	140.000	605.200	160.000	603.400	180.000
GR	601.100	220.000	598.200	320.000	597.000	420.000	595.600	500.000	591.400	550.000

	GR	576.100	660.000	579.300	677.000	591.100	644.000	601.100	754.000	606.600	774.000
	NC	.168	.169	.073	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	X1	9.508	20.000	600.000	644.000	300.000	350.000	350.000	-0.000	-0.000	-0.000
	GR	610.400	0.000	604.500	100.000	606.200	1400.000	605.400	160.000	602.600	110.000
	GR	600.300	220.000	597.400	350.000	596.200	420.000	594.100	500.000	590.600	550.000
	GR	587.600	600.000	596.400	617.000	593.900	600.000	577.600	535.000	576.500	642.000
	GR	575.300	660.000	579.500	677.000	590.300	644.000	600.400	754.000	605.800	774.000
	X1	9.754	20.000	520.000	540.000	1300.000	1200.000	1300.000	-0.000	-0.000	-0.000
	GR	615.000	0.000	610.000	50.000	603.400	100.000	500.000	100.000	592.600	300.000
	GR	590.400	400.000	599.600	500.000	591.400	520.000	593.400	540.000	570.700	547.000
	GR	575.000	555.000	575.400	560.000	575.500	565.000	575.400	575.000	577.800	565.000
	GR	586.000	590.000	595.500	640.000	600.400	660.000	601.400	740.000	603.700	730.000
	NH	5.000	.119	95.000	.158	940.000	.182	900.000	.071	943.000	.168
	NH	1200.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	X1	9.906	25.000	881.000	945.000	300.000	700.000	800.000	-0.000	-0.000	-0.000
	GR	616.900	0.000	594.300	50.000	594.300	1100.000	593.000	280.000	593.200	300.000
	GR	595.600	410.000	596.600	560.000	596.400	600.000	595.900	750.000	588.500	786.000
	GR	588.600	834.000	592.600	865.000	592.600	840.000	593.900	900.000	580.400	901.000
	GR	576.700	905.000	575.500	910.000	575.400	915.000	575.600	720.000	575.900	945.000
	GR	575.900	930.000	575.900	955.000	577.400	940.000	574.400	945.000	586.600	945.000
	GR	590.000	960.000	598.100	1021.000	600.700	1100.000	654.500	1 00.000	-0.000	-0.000
	NH	3.000	.154	603.000	.075	900.000	.145	-0.000	-0.000	-0.000	-0.000
	X1	10.076	31.000	600.000	670.000	900.000	900.000	900.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	250.000	605.000	765.000	605.000	-0.000	-0.000	-0.000
	GR	625.000	0.000	620.000	40.000	615.000	70.000	610.000	150.000	605.000	210.000
	GR	600.000	250.000	595.000	400.000	599.500	435.000	595.000	460.000	600.200	520.000
	GR	595.000	554.600	590.000	571.000	599.200	500.000	593.000	665.000	560.100	607.000
	GR	579.200	612.000	577.200	617.000	576.000	567.000	575.500	597.600	579.400	647.000
	GR	581.500	652.000	582.600	657.000	583.000	562.000	585.000	667.600	588.100	670.000
	GR	592.300	710.000	595.000	740.000	600.000	765.000	605.000	700.000	610.000	820.000
	GR	615.000	860.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	NH	4.000	.063	600.000	.119	965.000	.076	730.000	.224	1100.000	-0.000
	X1	10.322	27.000	500.000	733.000	1200.000	1300.000	1300.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	600.000	605.000	1070.000	600.000	-0.000	-0.000	-0.000
	GR	607.900	0.000	605.000	100.000	603.300	700.000	603.000	300.000	603.700	400.000
	GR	606.400	500.000	605.000	600.000	591.100	635.000	584.200	665.000	643.000	666.000
	GR	580.100	670.000	579.200	677.000	577.200	650.000	576.000	640.000	575.500	700.000
	GR	579.400	710.000	581.500	715.000	582.600	720.000	583.000	725.000	585.000	730.000
	GR	588.100	733.000	592.300	748.000	593.300	900.000	588.300	760.000	595.100	930.000
	GR	591.100	1000.000	609.200	1100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	NH	4.000	.070	400.000	.126	500.000	.074	550.000	.154	620.000	-0.000
	QT	4.000	4270.000	6400.000	7340.000	4610.000	-0.000	-0.000	-0.000	-0.000	-0.000
	X1	10.497	20.000	495.000	520.000	900.000	874.000	900.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	383.000	604.200	600.000	502.200	-0.000	-0.000	-0.000
	GR	603.100	0.000	595.500	100.000	595.900	200.000	594.200	300.000	597.600	400.000
	GR	596.600	415.000	590.600	495.000	585.400	500.000	579.700	505.000	579.600	510.000
	GR	578.800	515.000	577.900	520.000	577.000	530.000	578.100	540.000	580.200	545.000
	GR	583.800	547.000	585.400	550.000	595.800	570.000	602.200	593.000	608.000	620.000
	NH	5.000	.140	400.000	.112	450.000	.063	553.000	.112	596.000	.168
	NH	1000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	X1	10.512	37.000	400.000	598.000	75.000	75.000	75.000	.905	-0.000	-0.000
	X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	606.300	606.300	-0.000
	GR	609.800	0.000	609.100	100.000	608.700	200.000	607.200	300.000	605.300	400.000
	GR	604.500	400.000	601.700	402.000	601.400	406.000	593.400	445.000	582.600	446.000
	GR	581.700	450.000	580.900	455.000	582.500	452.000	591.700	463.000	580.800	464.000
	GR	580.000	465.000	580.200	470.000	579.800	480.000	578.700	490.000	578.800	500.000
	GR	578.000	510.000	578.300	520.000	578.000	535.000	578.400	536.000	576.900	537.000
	GR	579.300	538.000	579.300	540.000	581.700	550.000	583.000	553.000	580.800	593.000

GR	608.600	900.000	609.100	1001.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
SB	.900	1.740	3.010	1.000	64.100	5.430	2839.300	2.670	578.000	578.000
X1	10.521	37.000	400.000	598.000	48.000	48.000	48.000	.905	-0.000	-0.000
X2	-0.000	-0.000	1.000	604.500	608.200	-0.000	-0.000	-0.000	.905	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	.000	608.200	-0.000
BT	12.000	400.000	608.300	-0.000	400.000	604.300	604.500	482.000	608.300	604.500
BT	462.000	608.300	552.500	465.000	608.300	0.000	465.300	00.000	604.400	535.000
BT	608.200	604.400	535.000	608.200	575.000	538.000	608.200	579.300	538.000	608.200
BT	604.300	598.000	608.200	604.300	598.000	608.200	0.000	-0.000	-0.000	-0.000
GR	609.800	0.000	605.100	100.000	608.700	200.000	604.200	300.000	508.300	400.000
GR	604.500	400.000	601.700	412.000	601.400	406.000	548.400	545.000	582.600	448.000
GR	581.700	450.000	540.900	455.000	562.500	482.000	541.700	483.000	530.400	454.000
GR	580.000	465.000	580.200	470.000	579.800	448.000	578.700	450.000	578.400	500.000
GR	578.000	510.000	578.300	520.000	578.000	535.000	578.400	536.000	576.900	537.000
GR	579.300	538.000	579.300	540.000	581.700	550.000	548.000	553.000	600.300	593.000
GR	601.100	598.000	604.300	598.000	608.200	598.000	608.400	700.000	608.300	600.000
GR	608.500	900.000	609.100	1000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.184	600.000	.077	655.000	.084	710.000	.077	600.000	.084
NH	1400.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.530	39.000	600.000	600.000	48.000	48.000	48.000	.905	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	606.300	-0.000
GR	611.800	0.000	610.400	100.000	610.000	200.000	609.300	300.000	608.800	400.000
GR	608.300	500.000	608.200	600.000	604.500	600.000	601.100	602.000	600.400	507.000
GR	581.900	653.000	580.700	655.000	580.500	667.000	570.300	663.000	580.100	664.000
GR	579.900	665.000	580.100	670.000	578.800	680.000	578.400	650.000	577.600	695.000
GR	577.700	700.000	578.600	710.000	579.300	720.000	579.400	730.000	579.900	735.000
GR	580.000	736.000	580.100	737.000	580.200	738.000	580.400	740.000	582.600	750.000
GR	601.200	793.000	601.300	800.000	608.200	800.000	600.100	900.000	608.100	1000.000
GR	608.300	1100.000	606.600	1200.000	609.100	1300.000	604.700	1400.000	-0.000	-0.000
NC	.154	.154	.070	-1.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.548	-0.000	-0.000	-0.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	10.000	577.560	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.140	.182	.073	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.662	16.000	235.000	300.000	300.000	300.000	300.000	-0.000	-0.000	-0.000
GR	606.500	0.000	600.300	110.000	595.000	150.000	590.100	180.000	587.500	195.000
GR	584.600	200.000	583.200	235.000	579.300	250.000	578.200	260.000	577.400	265.000
GR	579.400	285.000	583.500	300.000	589.200	310.000	595.200	330.000	600.000	370.000
GR	606.100	465.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.210	500.000	.164	510.000	.077	501.000	.112	562.000	.210
NH	1450.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	11.086	29.000	500.000	562.000	2240.000	2050.000	2240.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	60.000	606.500	1150.000	606.500	-0.000	-0.000	-0.000
GR	610.400	0.000	604.500	100.000	601.400	200.000	598.000	650.000	591.200	300.000

GR	581.400	515.000	579.500	521.000	577.200	525.900	575.600	530.000	577.000	535.000
GR	578.700	538.000	584.000	540.000	595.800	552.000	594.900	600.000	594.100	700.000
GR	595.600	600.000	594.000	900.000	591.400	1000.000	591.500	1100.000	591.500	1200.000
GR	591.500	1250.000	597.900	1300.000	600.000	1350.000	624.600	1450.000	-0.000	-0.000
NH	6.000	.034	200.000	.112	942.000	.164	973.000	.084	1013.000	.073
NH	1100.000	.164	1150.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	11.412	36.000	1008.000	1100.000	1720.000	1200.000	1720.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	942.000	607.500	1116.000	607.500	-0.000	-0.000	-0.000
GR	614.800	0.000	610.600	100.000	603.500	200.000	594.500	300.000	596.400	400.000
GR	598.600	500.000	599.100	600.000	601.600	650.000	594.900	700.000	597.900	800.000
GR	596.700	900.000	596.700	948.000	585.500	970.000	587.600	982.000	598.900	1000.000
GR	591.200	1008.000	588.600	1013.000	587.600	1014.000	586.100	1020.000	586.100	1025.000
GR	582.700	1030.000	579.700	1035.600	580.000	1040.000	581.200	1045.000	582.100	1050.000
GR	583.000	1055.000	585.100	1060.000	585.200	1065.000	587.100	1070.000	587.100	1075.000
GR	586.900	1080.000	587.200	1085.000	587.300	1095.000	588.600	1100.000	601.100	1130.000
GR	609.300	1150.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.168	300.000	.084	372.000	.084	440.000	.142	700.000	-0.000
X1	11.421	26.000	300.000	444.000	472.000	494.000	472.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	300.000	607.500	444.000	607.500	604.400	604.400	-0.000
GR	610.000	0.000	606.000	100.000	600.200	200.000	600.200	400.000	593.700	300.000
GR	592.200	310.000	586.700	340.000	587.300	330.000	587.100	340.000	587.500	350.000
GR	587.700	360.000	585.300	370.000	584.500	380.000	583.900	385.000	520.300	395.000
GR	580.300	405.000	510.300	415.000	510.000	425.000	514.500	440.000	529.500	435.000
GR	591.500	440.000	592.100	444.000	605.200	444.000	600.000	600.000	607.300	600.000
GR	610.300	700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
SB	.900	1.470	3.000	-0.000	67.940	4.200	2383.200	1.700	520.300	520.300
X1	11.427	-0.000	-0.000	-0.000	30.000	40.100	30.000	-0.000	-0.000	-0.000
X2	-0.000	-0.000	1.000	600.200	600.400	-0.000	-0.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	299.000	607.500	445.000	507.500	606.400	605.400	-0.000
BT	8.000	300.000	606.200	0.000	300.000	606.200	602.500	372.000	605.400	602.700
BT	372.000	605.900	585.000	376.000	605.900	584.500	376.000	605.500	602.700	444.000
BT	606.200	602.600	444.000	606.200	0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.168	.196	.037	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	11.436	30.000	1008.000	1100.000	50.000	50.100	50.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	934.000	607.600	1174.000	607.600	-0.000	-0.000	-0.000
GR	614.800	0.000	610.600	100.000	603.500	200.000	602.300	300.000	601.200	600.000
GR	599.000	700.000	599.000	800.000	600.000	900.000	594.500	1004.600	588.600	1013.000
GR	587.600	1014.000	586.100	1020.000	585.100	1025.000	582.700	1030.000	579.700	1035.000
GR	580.000	1040.000	581.500	1045.000	582.200	1050.000	583.000	1055.000	585.100	1060.000
GR	585.200	1065.000	587.100	1070.000	587.100	1075.000	586.900	1080.000	587.200	1065.000
GR	587.300	1095.000	588.600	1100.000	600.000	1140.000	605.000	1240.000	610.000	1380.000
X1	11.787	22.000	200.000	293.000	1450.000	1600.000	1450.000	-0.000	-0.000	-0.000
GR	625.000	0.000	620.000	50.000	613.500	100.000	596.400	150.000	600.400	200.000
GR	595.700	220.000	590.600	239.000	595.200	239.000	582.300	245.100	582.700	255.000
GR	582.300	265.000	581.400	275.000	582.600	265.000	585.200	290.000	590.600	293.000
GR	595.600	343.000	601.400	400.000	604.700	600.000	605.300	700.000	609.300	900.000
GR	615.000	950.000	625.000	990.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.098	100.000	.196	600.000	.181	654.000	.224	668.000	-0.000
X1	12.123	31.000	585.000	652.000	1400.000	1500.000	1700.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	609.000	714.000	605.000	-0.000	-0.000	-0.000
GR	608.700	0.000	606.900	80.000	604.200	100.000	600.600	125.000	595.300	200.000
GR	598.800	300.000	598.100	400.000	597.500	500.000	599.200	563.000	594.500	585.000
GR	590.400	596.000	590.400	596.000	585.200	600.000	584.500	601.000	582.600	605.000
GR	582.700	610.000	582.700	615.000	582.600	620.000	582.700	625.000	582.500	630.000
GR	582.200	635.000	582.400	640.000	582.600	650.000	584.300	654.000	585.200	655.000
GR	590.000	658.000	595.300	668.000	597.100	685.000	600.600	700.000	603.200	710.000
GR	625.000	745.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.168	.182	.080	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

GR	610.000	0.000	605.200	340.000	600.200	470.000	595.500	500.000	500.800	700.000
GR	600.500	725.000	600.700	760.000	590.000	765.000	585.400	785.000	584.700	790.000
GR	583.600	794.000	583.000	799.000	582.800	804.000	582.700	809.000	582.600	814.000
GR	582.400	819.000	582.600	824.000	592.600	824.000	583.000	34.000	584.600	838.000
GR	585.400	839.000	590.500	842.000	595.300	852.000	597.100	859.000	600.600	874.000
GR	603.200	864.000	625.000	940.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.154	1400.000	.142	1525.000	.164	1473.700	.077	1400.000	.130
NH	1711.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	12.487	25.000	1526.000	1711.000	850.000	1300.000	1300.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	200.000	610.000	1565.000	610.000	-0.000	-0.000	-0.000
GR	615.600	0.000	604.900	200.000	607.300	300.000	300.000	700.000	604.800	300.000
GR	600.900	900.000	600.900	1000.000	600.400	1100.000	606.700	1135.000	596.300	1200.000
GR	593.700	1245.000	593.600	1300.000	592.900	1400.000	594.000	1300.000	594.500	1526.000
GR	584.900	1573.000	583.600	1575.000	582.900	1580.000	582.800	1585.000	582.900	1590.000
GR	583.400	1595.000	583.900	1598.000	584.900	1600.000	611.500	1570.000	616.500	1711.000
NC	.168	.149	.078	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	12.715	21.000	582.000	900.000	950.000	1200.000	1200.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	400.000	610.500	1197.000	610.500	-0.000	-0.000	-0.000
GR	615.600	0.000	603.400	200.000	607.500	350.000	605.300	750.000	605.200	750.000
GR	600.100	800.000	593.400	850.000	590.800	875.000	586.900	900.000	584.200	890.000
GR	593.700	900.000	583.400	915.000	582.900	923.000	585.200	940.000	583.800	935.000
GR	586.000	940.000	590.500	950.000	595.000	955.000	597.500	1150.000	600.800	1300.000
GR	615.000	1400.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.112	850.000	.210	650.000	.070	700.000	.196	25.000	.163
NH	1125.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	12.847	26.000	690.000	725.000	550.000	700.000	700.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	514.000	511.400	745.000	511.400	-0.000	-0.000	-0.000
GR	608.000	0.000	604.300	25.000	601.400	45.000	600.100	125.000	600.300	225.000
GR	601.000	325.000	601.600	425.000	600.700	525.000	606.200	560.000	593.400	525.000
GR	590.500	683.000	586.000	690.000	584.200	695.000	583.700	700.000	583.400	705.000
GR	583.000	710.000	583.000	715.000	583.600	720.000	586.000	725.000	597.800	755.000
GR	596.600	825.000	593.700	897.000	603.100	907.000	604.400	925.000	609.100	1025.000
GR	613.900	1125.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.146	600.000	.140	650.000	.063	645.000	.100	716.000	.210
NH	1400.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	12.856	29.000	600.000	716.000	49.000	49.000	49.000	.942	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	606.300	606.300	-0.000
GR	613.300	0.000	611.600	100.000	610.700	200.000	610.300	300.000	610.300	400.000
GR	610.300	500.000	610.400	600.000	592.100	500.000	591.000	610.000	589.600	620.000
GR	589.300	630.000	589.200	640.000	585.000	650.000	593.900	654.000	583.700	661.000
GR	583.600	670.000	583.700	680.000	584.600	690.000	585.600	693.000	587.100	695.000
GR	590.200	700.000	592.100	710.000	592.500	716.000	610.600	716.000	610.400	800.000
GR	610.400	900.000	610.300	1000.000	611.900	1100.000	613.300	1200.000	-0.000	-0.000
SB	.900	1.780	2.900	-0.000	77.720	2.530	2050.000	.646	583.500	583.600
X1	12.867	29.000	600.000	716.000	54.000	54.000	54.000	.942	-0.000	-0.000
X2	-0.000	-0.000	1.000	606.200	610.400	-0.000	-0.000	-0.000	.942	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	610.400	610.400	-0.000
BT	8.000	600.000	610.400	0.000	600.000	610.400	606.200	656.000	610.600	606.200
BT	658.000	610.600	583.900	661.000	610.600	583.700	561.000	610.600	606.200	716.000
BT	610.600	606.200	716.000	610.600	0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	613.300	0.000	611.600	100.000	610.700	200.000	610.300	300.000	610.300	400.000
GR	610.300	500.000	610.400	600.000	592.100	500.000	591.000	610.000	589.600	620.000
GR	589.300	630.000	589.200	640.000	585.000	650.000	593.900	654.000	583.700	661.000
GR	583.600	670.000	583.700	680.000	584.600	690.000	585.600	693.000	587.100	695.000
GR	590.200	700.000	592.100	710.000	592.500	716.000	610.600	716.000	610.400	800.000
GR	610.400	900.000	610.300	1000.000	611.900	1100.000	613.300	1200.000	-0.000	-0.000
NC	.182	.182	.077	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	12.876	29.000	550.000	759.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	550.000	612.500	758.000	612.500	-0.000	-0.000	-0.000

GR	610.300	500.000	601.200	550.000	592.100	600.000	591.000	610.000	589.600	620.000
GR	599.300	630.000	599.200	640.000	595.000	650.000	593.900	658.000	593.700	661.000
GR	583.500	670.000	583.700	640.000	594.600	690.000	595.600	693.000	587.100	695.000
GR	590.200	700.000	592.100	710.000	592.500	716.000	591.400	758.000	610.400	800.000
GR	610.400	900.000	611.900	1000.000	611.900	1100.000	613.300	1200.000	-0.000	-0.000
X1	12.962	27.000	430.000	543.000	470.000	430.000	450.000	-0.000	-0.000	-0.000
GR	617.500	0.000	600.400	100.000	600.000	400.000	560.100	400.000	594.000	430.000
GR	588.900	440.000	586.800	483.000	585.200	490.000	583.500	495.000	583.000	500.000
GR	592.600	505.000	592.400	510.000	593.000	515.000	593.300	520.000	594.200	525.000
GR	585.200	530.000	586.200	535.000	584.400	543.000	595.300	555.000	598.400	565.000
GR	602.200	630.000	600.000	670.000	606.400	740.000	604.500	750.000	606.000	900.000
GR	610.400	950.000	613.300	1250.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	3.000	.210	240.000	.181	320.000	.210	1400.000	-0.000	-0.000	-0.000
X1	13.071	33.000	245.000	320.000	580.000	370.000	350.000	-0.000	-0.000	-0.000
GR	625.600	0.000	600.900	100.000	596.700	130.000	592.500	175.000	593.100	200.000
GR	593.200	237.000	587.400	244.000	585.500	245.000	595.000	250.000	582.600	255.000
GR	581.600	260.000	581.100	265.000	580.800	270.000	580.300	270.000	580.800	275.000
GR	580.800	275.000	581.100	280.000	581.500	290.000	582.500	290.000	583.200	295.000
GR	587.400	305.000	585.300	320.000	594.400	400.000	602.200	500.000	601.100	600.000
GR	601.400	700.000	607.600	800.000	609.400	900.000	606.200	1000.000	612.000	1100.000
GR	613.300	1200.000	614.500	1300.000	620.200	1400.000	-0.000	-0.000	-0.000	-0.000
NH	3.000	.224	1020.000	.074	1040.000	.164	1700.000	-0.000	-0.000	-0.000
X1	13.374	24.000	1000.000	1200.000	1600.000	1450.000	1300.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	100.000	612.500	1200.000	612.500	-0.000	-0.000	-0.000
GR	611.500	0.000	610.500	100.000	610.300	600.000	603.000	300.000	602.300	400.000
GR	601.800	500.000	599.700	600.000	600.000	700.000	600.400	600.000	603.000	900.000
GR	597.200	1000.000	590.400	1022.000	585.700	1025.000	585.500	1030.000	584.000	1035.000
GR	584.200	1040.000	584.200	1045.000	584.200	1050.000	586.100	1055.000	586.400	1057.000
GR	588.800	1055.000	591.700	1064.000	600.200	1100.000	614.100	1200.000	-0.000	-0.000
NC	.168	.168	.078	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.568	25.000	980.000	1068.000	600.000	1020.000	1020.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	100.000	602.000	1150.000	602.000	-0.000	-0.000	-0.000
GR	611.500	0.000	610.800	100.000	607.500	250.000	605.500	350.000	605.200	470.000
GR	610.500	550.000	612.200	650.000	610.300	900.000	605.200	935.000	600.000	970.000
GR	597.500	980.000	590.400	987.000	585.700	990.000	585.500	995.000	584.000	1000.000
GR	584.200	1005.000	584.200	1010.000	585.100	1020.000	586.400	1022.000	588.800	1025.000
GR	591.700	1030.000	600.200	1068.000	605.000	1130.000	610.000	1150.000	615.000	1200.000
NH	4.000	.210	180.000	.071	210.000	.224	400.000	.098	850.000	-0.000
QT	4.000	2950.000	4660.000	5420.000	7300.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.806	24.000	173.000	220.000	1260.000	1450.000	1250.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	67.500	613.000	782.500	613.000	-0.000	-0.000	-0.000
GR	610.700	0.000	597.800	102.000	606.400	133.000	592.200	173.000	587.500	181.000
GR	585.700	185.000	585.300	190.000	585.200	195.000	585.400	200.000	585.700	205.000
GR	587.500	210.000	591.300	219.000	595.100	220.000	599.400	244.000	597.400	254.000
GR	597.100	265.000	596.300	271.000	603.300	300.000	602.500	400.000	603.900	500.000
GR	604.200	600.000	604.900	700.000	605.700	800.000	606.800	850.000	-0.000	-0.000
NH	5.000	.182	300.000	.140	350.000	.063	395.000	.154	476.000	.196
NH	850.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.815	40.000	300.000	478.000	49.000	49.000	49.000	.857	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	612.500	350.000	612.500	-0.000	-0.000	-0.000
GR	612.500	0.000	609.800	100.000	607.400	200.000	605.200	300.000	604.300	310.000
GR	600.800	320.000	600.800	324.000	597.100	330.000	593.400	340.000	591.800	345.000
GR	589.300	350.000	586.300	355.000	586.200	360.000	586.000	365.000	585.800	370.000
GR	585.300	375.000	587.000	380.000	586.900	385.000	587.200	390.000	587.400	395.000
GR	589.300	398.000	590.000	400.000	590.900	410.000	594.600	420.000	586.700	430.000
GR	596.700	433.000	596.600	437.000	596.200	440.000	599.600	450.000	599.300	455.000
GR	599.700	457.000	599.400	460.000	600.000	470.000	603.700	478.000	604.100	500.000
GR	604.200	600.000	604.900	700.000	608.200	785.000	609.400	800.000	610.300	850.000

X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	.857	-0.000
X3	-0.000	-0.000	-0.000	0.000	612.600	850.000	612.600	-0.000	-0.000	-0.000
BT	23.000	100.000	609.800	0.000	200.000	607.400	0.000	300.000	606.000	0.000
BT	300.000	606.000	605.200	320.000	606.100	604.800	320.000	606.100	600.800	324.000
BT	606.100	600.800	324.000	606.100	604.800	433.000	605.700	604.400	433.000	605.700
BT	596.700	437.000	605.700	596.600	437.000	605.700	604.400	455.000	605.000	603.800
BT	455.000	605.000	599.300	457.000	605.000	599.700	457.000	505.000	603.800	478.000
BT	604.300	603.700	478.000	604.300	0.000	500.000	604.100	0.000	600.000	604.200
BT	0.000	700.000	604.900	0.000	785.000	608.200	0.000	600.000	609.400	0.000
GR	612.500	0.000	609.800	100.000	607.400	200.000	606.000	300.000	605.200	300.000
GR	604.300	310.000	600.800	320.000	600.800	324.000	597.100	330.000	593.400	340.000
GR	591.800	345.000	539.300	350.000	586.300	355.000	586.200	360.000	586.000	365.000
GR	585.800	370.000	585.300	375.000	587.000	380.000	586.900	385.000	587.200	390.000
GR	587.400	395.000	589.300	39 .000	590.000	400.000	590.900	410.000	594.600	420.000
GR	596.700	430.000	596.700	433.000	596.600	437.000	598.200	440.000	599.600	450.000
GR	599.300	455.000	599.700	457.000	599.400	460.000	600.000	470.000	603.700	478.000
GR	604.100	500.000	604.200	600.000	604.900	700.000	608.200	785.000	609.400	800.000
GR	610.300	850.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.819	41.000	300.000	478.000	16.000	16.000	16.000	.857	-0.000	-0.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	.857	-0.000
X3	-0.000	-0.000	-0.000	0.000	612.600	850.000	612.600	-0.000	-0.000	-0.000
BT	23.000	100.000	609.800	0.000	200.000	607.400	0.000	300.000	606.000	0.000
BT	300.000	606.000	605.200	320.000	606.100	604.800	320.000	606.100	600.800	324.000
BT	606.100	600.800	324.000	606.100	604.800	433.000	605.700	604.400	433.000	605.700
BT	596.700	437.000	605.700	596.600	437.000	605.700	604.400	455.000	605.000	603.800
BT	455.000	605.000	599.300	457.000	605.000	599.700	457.000	505.000	603.800	478.000
BT	604.300	603.700	478.000	604.300	0.000	500.000	604.100	0.000	600.000	604.200
BT	0.000	700.000	604.900	0.000	785.000	608.200	0.000	600.000	609.400	0.000
GR	612.500	0.000	609.800	100.000	607.400	200.000	606.000	300.000	605.200	300.000
GR	604.300	310.000	600.800	320.000	600.800	324.000	597.100	330.000	593.400	340.000
GR	591.800	345.000	539.300	350.000	586.300	355.000	586.200	360.000	586.000	365.000
GR	585.800	370.000	585.300	375.000	587.000	380.000	586.900	385.000	587.200	390.000
GR	587.400	395.000	589.300	395.000	590.000	400.000	590.900	410.000	594.600	420.000
GR	596.700	430.000	596.700	433.000	596.600	437.000	598.200	440.000	599.600	450.000
GR	599.300	455.000	599.700	457.000	599.400	460.000	600.000	470.000	603.700	478.000
GR	604.100	500.000	604.200	600.000	604.900	700.000	608.200	785.000	609.400	800.000
GR	610.300	850.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.168	.154	.076	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.820	40.000	300.000	478.000	1.000	1.000	1.000	.857	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	612.600	850.000	612.600	-0.000	-0.000	-0.000
GR	612.500	0.000	609.800	100.000	607.400	200.000	606.200	300.000	604.300	310.000
GR	600.800	320.000	600.800	324.000	597.100	330.000	593.400	340.000	591.800	345.000
GR	589.300	350.000	586.300	355.000	586.200	360.000	586.000	365.000	585.800	370.000
GR	585.300	375.000	587.000	380.000	586.900	385.000	587.200	390.000	587.400	395.000
GR	589.300	390.000	590.000	400.000	590.900	410.000	594.600	420.000	586.700	430.000
GR	596.700	433.000	596.600	437.000	598.200	440.000	599.600	450.000	599.300	455.000
GR	599.700	457.000	599.400	460.000	600.000	470.000	603.700	478.000	604.100	500.000
GR	604.200	600.000	604.900	700.000	608.200	785.000	609.400	800.000	610.300	850.000
X1	13.828	21.000	160.000	200.000	49.000	49.000	49.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	613.500	677.000	613.500	-0.000	-0.000	-0.000
GR	610.000	0.000	605.000	35.000	610.000	70.000	605.000	40.000	600.000	100.000
GR	597.800	110.000	592.200	160.000	587.500	164.000	582.700	168.000	585.300	173.000
GR	585.200	178.000	585.400	183.000	585.700	188.000	587.500	193.000	591.800	195.000
GR	595.000	200.000	599.400	221.000	603.300	277.000	605.000	577.000	610.000	617.000
GR	615.000	677.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.876	20.000	275.000	310.000	200.000	250.000	250.000	-0.000	-0.000	-0.000
GR	611.700	0.000	612.500	75.000	610.200	150.000	605.000	200.000	600.000	250.000
GR	597.100	256.000	593.400	265.000	591.800	270.000	589.300	275.000	586.300	290.000
GR	585.800	290.000	585.300	295.000	587.000	305.000	589.300	310.000	594.000	325.000
GR	600.100	350.000	605.200	440.000	610.100	480.000	615.300	535.000	620.000	625.000
NH	4.000	.130	700.000	.238	1055.000	.964	1075.000	.224	1262.000	-0.000

XI	14.179	25.000	1044.000	1095.000	1100.003	1690.000	1809.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	179.000	413.000	1175.030	413.000	-0.000	-0.000	-0.000
GH	614.500	0.000	610.300	100.000	311.300	303.030	513.400	400.000	603.400	500.000
GR	606.400	530.000	695.500	650.000	605.300	700.000	515.000	732.000	595.000	752.000
GR	596.300	862.000	997.100	962.000	1004.000	594.000	593.700	1044.000	589.000	1055.000
GR	597.300	1057.000	1052.000	1057.700	483.500	1057.000	457.930	1072.000	589.000	1075.000
GR	594.100	1045.000	692.100	1127.000	1152.000	505.300	1207.000	1207.000	823.300	1282.000
NH	3.000	.244	34.000	.1H2	345.000	.0-4	.232	1122.000	1600.000	-0.000
XI	14.576	25.000	320.000	400.000	1500.000	2100.000	-0.000	-0.000	-0.000	-0.000
GP	613.500	0.000	610.700	100.000	650.450	150.900	604.700	-00.000	603.600	250.000
GR	603.500	300.000	600.000	600.000	599.100	237.900	599.430	744.000	599.300	350.000
GR	588.000	345.100	534.100	345.000	545.400	545.000	545.000	770.100	589.600	375.000
GR	589.600	579.100	549.400	590.400	544.000	500.000	575.400	750.300	512.700	800.000
GR	600.900	575.000	505.200	600.000	607.800	790.900	619.600	730.300	512.700	800.000
NH	4.000	.220	1122.000	.0-6	1144.070	.232	1300.000	.140	1600.000	-0.000
XI	15.145	52.000	1112.000	1135.000	2700.000	2710.000	-0.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GP	616.200	0.000	612.300	100.000	614.400	700.900	611.400	000.000	601.100	370.000
GH	601.500	400.000	503.400	500.000	502.000	500.900	502.100	700.000	501.100	400.000
GR	601.700	400.000	544.400	1000.000	601.300	1065.000	511.700	000.000	592.000	422.000
GR	590.100	1125.000	1170.000	11.900	9.400	5.900	1140.300	000.000	590.000	1145.000
GH	592.000	1144.000	1144.000	1202.200	601.000	11.000	1202.000	000.000	603.000	1215.000
GR	612.100	1244.000	1211.000	1390.000	610.300	1340.000	1375.300	000.000	507.100	1400.000
GR	616.300	1500.000	1204.200	1504.001	-0.000	-0.000	-1.000	-0.000	-0.000	-0.000
NH	3.000	.150	1199.000	.0-2	1230.000	.140	1300.000	-0.000	-0.000	-0.000
QT	4.000	2820.000	4440.000	5179.000	7000.000	-0.000	-0.000	-0.000	-0.000	-0.000
XI	15.616	27.000	1143.000	1390.000	1400.003	2100.700	2700.000	-0.000	-0.000	-0.000
GR	615.800	0.000	613.500	190.000	507.200	504.700	492.000	406.400	506.400	400.000
GR	605.900	500.000	606.000	690.000	604.400	700.900	704.500	000.000	500.900	255.000
GR	601.300	900.000	601.700	1000.000	597.000	1046.000	597.700	1100.000	595.700	1193.000
GR	593.700	1199.000	592.300	1200.000	591.400	1705.000	592.100	1710.000	592.400	1215.000
GR	592.600	1220.000	592.700	1225.000	593.700	1730.000	956.000	1734.000	504.100	1257.000
GR	613.100	1275.000	617.400	1390.000	-0.000	-0.100	-0.000	-0.000	-0.000	-0.000
EJ	-0.000	-0.000	-0.000	-1.000	-0.000	-0.100	-0.000	-0.300	-0.000	-0.000

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HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
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T1      CITY OF ST. CLAIR, ST. CLAIR TO NSHIP  5555-61N62  PM: GILBERTO M. FONT
T2      100 YEAR FLOW
T3      PINE RIVER
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J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	RVINS	Q	WSEL	FQ
	-0.	4.	-0.	-0.	-0.000000	-0.00	-0.0	-0.	578.500	-0.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLOC	IBW	CHNIM	ITRACE
	3.000	-0.000	-1.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

CCHV= .600 CEHV= .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	.TN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOP ID	ENDST
	7		OUTH OF PINE RIVER						
0.00	20.90	578.60	0.00	578.60	578.89	.29	0.00	0.00	587.50
8150.	0.	8150.	0.	0.	1981.	0.	0.	0.	587.50
0.00	0.00	4.33	0.00	.049	.056	.049	0.000	557.70	302.40
.000953	-0.	-0.	-0.	0	0	1	0.00	142.93	445.33
OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=					579.00	ELREA=		588.00	
.02	20.79	578.79	0.00	0.00	579.01	.22	.08	.04	591.70
8150.	0.	8150.	0.	0.	2160.	0.	3.	1.	591.70
.01	0.00	4.77	0.00	.049	.056	.049	.055	55.00	305.11
.000691	100.	100.	100.	2	0	1	0.00	163.17	469.28
NORMAL BRIDGE,NRD=13 MIN ELTRD= 591.70 MAX ELLC= 588.00									
	8		D/S FACE OF M-29 BRIDGE						
.02	20.76	578.76	0.00	0.00	579.16	.40	.00	.14	591.70
8150.	0.	8150.	0.	0.	1610.	0.	5.	0.	591.70
.01	0.00	5.06	0.00	.049	.056	.049	.055	558.00	306.10
.001935	1.	1.	1.	2	0	1	-543.52	163.04	469.22
NORMAL BRIDGE,NRD=13 MIN ELTRD= 591.70 MAX ELLC= 588.00									
			U/S FACE OF M-29 BRIDGE						
.03	20.93	578.93	0.00	0.00	579.32	.39	.16	.01	591.70
8150.	0.	8150.	0.	0.	1631.	0.	3.	1.	591.70
.01	0.00	5.00	0.00	.049	.056	.049	.055	558.00	305.31
.001866	83.	83.	83.	2	0	1	-551.50	163.73	469.54
OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=					589.00	ELREA=		589.00	
.04	21.22	579.22	0.00	0.00	579.43	.21	.09	.11	591.70
8150.	0.	8150.	0.	0.	2230.	0.	8.	1.	591.70
.01	0.00	3.65	0.00	.049	.056	.049	.055	558.00	305.19
.000630	1.	1.	1.	2	0	1	0.00	164.89	470.08

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	.TN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOP ID	ENDST

C 500FT U/S M-29 BRIDGE

.13	16.85	579.65	0.00	0.00	579.98	.33	.45	.10	585.70
8150.	0.	8150.	0.	0.	1771.	0.	31.	3.	579.80
.04	0.00	4.60	0.00	.049	.056	.049	.056	552.00	1024.00
.001425	500.	500.	500.	2	0	1	0.00	151.44	1190.69

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 583.70 ELREA= 579.80

.18	16.55	560.05	0.00	0.00	570.54	.49	.43	.13	585.71
8150.	0.	8149.	1.	0.	1448.	2.	40.	3.	579.80
.05	0.00	5.63	.35	.049	.056	.049	.056	563.50	823.20
.002150	250.	250.	250.	2	0	1	0.00	143.36	965.56

3470 ENCROACHMENT STATIONS= 1220.0 1320.0 TYPE= 1 TARGET= 100.000
ELENCL= 583.00 ELENCR= 583.00

.30	16.10	581.30	0.00	0.00	581.77	.48	1.22	.01	583.00
8150.	0.	8150.	0.	0.	1471.	0.	62.	5.	584.10
.09	0.00	5.54	0.00	.049	.056	.049	.056	565.20	1220.00
.001650	650.	650.	650.	2	0	1	0.00	100.00	1320.00

3470 ENCROACHMENT STATIONS= 1230.0 1320.0 TYPE= 1 TARGET= 40.000
ELENCL= 583.70 ELENCR= 583.70

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 583.70 ELREA= 584.10

D 1700FT U/S M-29 BRIDGE

.36	15.82	581.82	0.00	0.00	582.37	.55	.51	.06	583.70
8150.	0.	8150.	0.	0.	1372.	0.	72.	6.	584.10
.10	0.00	5.94	0.00	.049	.056	.049	.056	566.00	1230.00
.001947	300.	300.	300.	2	0	1	0.00	90.00	1320.00

3470 ENCROACHMENT STATIONS= 1845.0 1980.0 TYPE= 1 TARGET= 135.000
ELENCL= 585.00 ELENCR= 585.00

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 585.00 ELREA= 585.00

.45	16.50	582.67	0.00	0.00	583.09	.22	.52	.20	585.00
8150.	0.	8150.	0.	0.	2183.	0.	92.	7.	585.00
.14	0.00	3.73	0.00	.049	.056	.049	.056	566.37	1845.00
.000643	500.	500.	500.	2	0	1	0.00	135.00	1980.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 1200.0 1345.0 TYPE= 1 TARGET= 145.000
ELENCL= 585.50 ELENCR= 585.50

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 581.40 ELREA= 579.90

.55	16.13	583.23	0.00	0.00	583.46	.23	.37	.01	581.40
8150.	0.	8150.	0.	0.	2097.	0.	117.	9.	589.90
.17	.01	3.89	0.00	.045	.062	.049	.056	567.10	1200.00

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

3470 ENCROACHMENT STATIONS= 1100.0 1385.0 TYPE= 1 TARGET= 245.000
ELENCL= 585.60 ELENCR= 585.60

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 581.41 ELREA= 589.91

E 3175FT U/S M-29 BRIDGE

.64	16.54	583.64	0.00	0.00	583.85	.21	.30	.01	581.60
8150.	63.	8087.	0.	64.	2169.	0.	140.	11.	589.91
.21	.98	3.73	0.00	.045	.062	.049	.055	567.10	1142.56
.000750	475.	475.	475.	2	0	1	0.00	233.34	1375.90

1490 NH CARD USED

MANUFACTURED SEC.

.83	20.35	584.35	0.00	0.00	584.50	.15	.61	.04	581.60
8150.	66.	8084.	0.	80.	2574.	0.	197.	17.	590.00
.30	.83	3.14	0.00	.045	.066	.049	.056	564.00	102.07
.000491	1050.	1020.	1020.	2	0	1	0.00	235.94	337.91

3470 ENCROACHMENT STATIONS= 700.0 1315.0 TYPE= 1 TARGET= 615.000
ELENCL= 587.60 ELENCR= 587.60

F 5900FT U/S M-29 BRIDGE

1.15	22.79	585.09	0.00	0.00	585.14	.05	.58	.06	579.00
8150.	4317.	3833.	0.	2584.	1874.	0.	324.	31.	590.20
.54	1.67	2.04	0.00	.045	.071	.098	.061	562.30	701.00
.000279	1300.	1705.	1705.	2	0	1	0.00	512.47	1312.47

3280 CROSS SECTION ... 1.44 EXTENDED .62 FEET

MANUFACTURED SEC.

1.44	20.82	585.72	0.00	0.00	585.92	.20	.66	.12	579.00
8150.	577.	6871.	702.	244.	1793.	527.	442.	48.	579.70
.66	2.37	3.83	1.12	.045	.071	.098	.063	564.90	125.34
.000826	1450.	1500.	1520.	2	0	1	0.00	397.66	523.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 250.0 1000.0 TYPE= 1 TARGET= 750.000
ELENCL= 589.00 ELENCR= 589.00

G 8450FT U/S M-29 BRIDGE

1.64	19.83	586.53	0.00	0.00	586.62	.09	.63	.07	582.20

.79	.58	2.60	1.13	.140	.074	.062	.064	566.70	250.00
.000471	1150.	1050.	850.	2	0	1	0.00	750.00	1001.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 800.0 [illegible] TYPE= 1 TARGET= 144.000
ELENCL= 588.60 ELENCR= 589.60

H 60FT D/S PH&D RR BRIDGE

1.97	22.39	587.39	0.00	0.00	587.54	.15	.87	.15	591.00
8150.	0.	8150.	0.	0.	2590.	0.	660.	78.	594.40
.94	.00	3.14	0.00	.198	.074	.062	.066	565.00	600.00
.000523	1200.	1750.	1800.	2	0	1	0.00	148.00	943.00

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

1.98	18.41	587.41	0.00	0.00	587.71	.31	.05	.12	595.40
8150.	0.	8150.	0.	0.	1830.	0.	663.	78.	594.40
.94	0.00	4.45	0.00	.112	.072	.112	.066	564.00	96.65
.001595	69.	69.	45.	1	0	1	0.00	120.29	215.94

SECNO	DEPTH	CHSEL	CRIWS	WSELK	EG	HV	HL	QLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	WOL	TW	L-FT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	.TW	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	JCONT	CORER	TOPWID	ENDST

NORMAL BRIDGE,NRD= 8 MIN ELTRD= 593.90 MAX ELLC= 588.10

I D/S FACE OF PORT HURON DETROIT RR BRIDGE, 15 DEGREE

SKEW

1.98	18.40	587.40	0.00	0.00	587.75	.35	.00	.03	595.40
8150.	0.	8150.	0.	0.	1714.	0.	663.	78.	594.40
.94	0.00	4.76	0.00	.042	.067	.042	.066	564.00	96.65
.002334	1.	1.	1.	1	0	1	-115.21	120.29	216.94

NORMAL BRIDGE,NRD= 8 MIN ELTRD= 593.91 MAX ELLC= 588.10

U/S FACE OF PORT HURON DETROIT RR BRIDGE, 15 DEGREE

SKEW

1.98	18.43	587.43	0.00	0.00	587.78	.35	.03	.00	595.40
8150.	0.	8150.	0.	0.	1715.	0.	663.	78.	594.40
.94	0.00	4.75	0.00	.042	.067	.042	.066	569.00	96.65
.002327	12.	12.	12.	0	0	1	-116.21	120.29	215.94

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 593.00 ELREA= 593.00

8150.	0.	8150.	0.	0.	1841.	0.	663.	78.	594.40
.94	0.00	4.43	0.00	.084	.070	.112	.066	569.00	96.64
.001480	1.	1.	1.	2	0	1	0.00	120.30	216.24

MANUFACTURED SEC.

1.99	18.68	587.58	0.00	0.00	587.88	.30	.07	.00	595.40
8150.	0.	8149.	1.	0.	1847.	3.	665.	73.	576.30
.95	0.00	4.41	.22	.084	.070	.112	.066	568.90	96.64
.001316	50.	50.	50.	2	0	1	0.00	120.31	216.24

MOUTH OF JORDAN CREEK, MANUFACTURED SEC.

2.01	19.07	587.77	0.00	0.00	588.04	.27	.14	.02	595.40
8150.	0.	8150.	0.	0.	1941.	0.	670.	79.	594.40
.96	0.00	4.20	0.00	.112	.070	.084	.066	568.70	100.03
.001293	110.	110.	110.	2	0	1	0.00	124.57	224.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= .0 435.0 TYPE= 1 TARGET= 434.999
ELENCL= 591.80 ELENCR= 591.80

J 575FT U/S PH&D RR BRIDGE

2.09	20.47	586.37	0.00	0.00	586.48	.11	.34	.10	594.10
8030.	1623.	6407.	0.	1639.	2195.	0.	599.	83.	591.60
1.00	.99	2.92	0.00	.112	.077	.084	.066	567.90	.00
.000547	490.	415.	340.	2	0	1	0.00	435.00	435.00

1490 NH CARD USED

K 2125FT U/S PH&D RR BRIDGE

2.38	20.84	589.14	0.00	0.00	589.23	.09	.74	.11	582.70
8030.	2065.	5965.	0.	1757.	2188.	0.	934.	97.	594.30
1.18	1.17	2.73	0.00	.089	.073	.084	.066	568.30	20.32
.000443	1400.	1550.	1625.	2	0	1	0.00	459.57	479.89

1490 NH CARD USED

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

L 3875FT U/S PH&D RR BRIDGE

2.71	21.23	589.93	0.00	0.00	590.06	.13	.60	.03	589.50
8030.	1.	6680.	1350.	9.	2119.	1038.	974.	113.	591.60
1.35	.07	3.15	1.30	.170	.070	.084	.067	568.70	57.01
.000470	1700.	1750.	1750.	2	0	1	0.00	345.66	402.67

1490 NH CARD USED

M 5275FT U/S PH&D RR BRIDGE

2.98	23.50	590.60	0.00	0.00	590.70	.10	.62	.02	590.30
8030.	0.	6199.	1831.	4.	2191.	1558.	1088.	124.	581.70
1.51	.05	2.83	1.18	.180	.070	.098	.067	567.10	74.70
.000410	1150.	1400.	1500.	2	0	1	0.00	380.42	455.12

1490 NH CARD USED

7175FT U/S PH&D RR BRIDGE

3.34	20.42	591.32	0.00	0.00	591.37	.05	.64	.03	593.60
8030.	0.	4954.	3076.	0.	2181.	4859.	1327.	149.	584.41
1.84	0.00	2.27	.63	.186	.071	.167	.067	570.90	4.85
.000276	1800.	1900.	1950.	2	0	1	0.00	715.21	721.05

1490 NH CARD USED

8515FT U/S PH&D RR BRIDGE

3.59	23.66	591.76	0.00	0.00	591.90	.14	.43	.07	592.50
8030.	0.	7313.	717.	1.	2296.	1486.	1478.	165.	584.31
1.96	0.00	3.19	.62	.150	.071	.196	.068	569.11	12.24
.000467	1340.	1340.	1150.	2	0	1	0.00	448.75	461.00

1490 NH CARD USED

9715FT U/S PH&D RR BRIDGE

3.82	22.26	592.36	0.00	0.00	592.51	.15	.60	.01	593.50
8030.	170.	7041.	819.	427.	2099.	1173.	1577.	177.	581.31
2.07	.40	3.35	.70	.168	.074	.210	.068	570.10	166.95
.000546	1250.	1200.	1100.	2	0	1	0.00	446.04	612.99

1490 NH CARD USED

11715FT U/S PH&D RR BRIDGE

4.20	22.71	593.61	0.00	0.00	593.76	.15	1.24	.00	593.10
8030.	0.	8026.	4.	0.	2582.	32.	1722.	192.	592.30
2.25	0.00	3.11	.13	.168	.085	.238	.068	570.90	.66
.000711	2000.	2000.	2000.	2	0	1	0.00	227.66	225.33

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 90.0 250.0 TYPE= 1 TARGET= 164.000
ELENCL= 595.00 ELENCR= 595.00

R 50FT D/S OLD FRED MOORE HWY BRIDGE

4.32	25.89	593.99	0.00	0.00	594.12	.13	.35	.01	593.30
8030.	243.	7787.	0.	392.	2663.	0.	1764.	195.	586.00
2.31	.62	2.92	0.00	.224	.079	.238	.068	568.10	90.00
.000417	650.	650.	650.	2	0	1	0.00	169.00	259.00

1490 NH CARD USED

S D/S FACE OLD FRED MOORE HWY BRIDGE, 15 DEGREE SKEW

4.33	22.41	594.01	0.00	0.00	594.15	.14	.03	.01	597.20
8030.	0.	8030.	0.	0.	2675.	0.	1768.	195.	597.20

[illegible]	[illegible]	[illegible]	[illegible]	.224	.097	.238	.068	571.61	0.00
.000825	49.	49.	49.	0	0	1	0.00	144.93	144.[illegible]9

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	[illegible]	BLP	BAREA	SS	ELCHU	ELCHD
	1.00	1.71	3.01	0.00	62.94	19.05	1535.00	2.01	574.10	574.00

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	SST
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOP ID	ENDST

PRESSURE FLOW

EGPRS	EGLWC	HS	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
594.74	594.18	.03	0.	8030.	1536.	592.00	597.10	10.00

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 597.2[illegible] ELREA= 597.2[illegible]

U/S FACE OLD FRED MOORE HWY BRIDGE, 15 DEGREE SKEW

4.34	23.01	594.61	0.00	0.00	594.74	.13	.58	0.00	597.[illegible]
8030.	0.	8030.	0.	0.	2751.	0.	1769.	195.	597.2[illegible]
2.32	0.00	2.91	0.00	.224	.097	.238	.068	571.60	0.00
.000752	22.	22.	22.	2	0	1	0.00	144.88	144.[illegible]9

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 59[illegible].60 ELREA= 59[illegible].6[illegible]

4.34	25.84	594.64	0.00	0.00	594.77	.13	.03	.00	600.[illegible]0
8030.	0.	8030.	0.	0.	2787.	0.	1772.	19[illegible].	601.00
2.32	0.00	2.88	0.00	.196	.070	.196	.068	568.80	0.00
.000494	45.	45.	45.	0	0	1	0.00	172.34	172.34

NORMAL BRIDGE,NRD=12 MIN ELTRD= 600.90 MAX ELLC= 596.30

T D/S FACE NEW FRED MOORE HWY BRIDGE, 10 DEGREE SKEW

4.35	25.83	594.63	0.00	0.00	594.80	.17	.00	.03	600.[illegible]0
8030.	0.	8030.	0.	0.	2449.	0.	1772.	196.	601.00
2.32	0.00	3.28	0.00	.056	.070	.056	.068	568.80	0.00
.000771	1.	1.	1.	1	0	1	-337.31	172.34	172.34

NORMAL BRIDGE,NRD=12 MIN ELTRD= 600.90 MAX ELLC= 596.30

U/S FACE NEW FRED MOORE HWY BRIDGE, 10 DEGREE SKEW

4.35	25.26	594.65	0.00	0.00	594.83	.17	.03	.00	600.90
8030.	0.	8030.	0.	0.	2452.	0.	1774.	196.	601.00
2.33	0.00	3.27	0.00	.056	.070	.056	.068	568.80	0.00

	[illegible]	[illegible]	[illegible]	0	0	1	-337.71	172.34	172.34

OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 600.90 ELREA= 600.90

4.35	25.92	594.72	0.00	0.00	594.85	.13	.00	.02	500.50
8030.	0.	8030.	0.	0.	[illegible]	0.	1774.	196.	601.00
2.33	0.00	2.87	0.00	.224	.074	.140	.068	563.61	0.00
.000546	1.	1.	1.	2	0	1	0.00	172.34	172.34

1490 NH CARD USED

SECNO	DEPTH	CHSEL	CRIWS	HSELK	FG	HV	HL	QLOSS	BAR ELEV
Q	QLOB	VCH	WROB	ALOB	ACH	AROB	VOL	TW	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SST
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 28.0 323.0 TYPE= 1 TARGET= 300.000
ELENCL= 596.00 ELENCR= 596.00

U 150FT U/S NEW FRED MOORE HWY BRIDGE

4.38	25.60	594.80	0.00	0.00	594.93	.13	.01	.01	514.50
8030.	881.	7148.	1.	1388.	2297.	2.	1755.	197.	594.3
2.34	.64	3.11	.14	.224	.074	.126	.068	569.21	23.96
.000467	150.	150.	150.	2	0	1	0.00	299.14	324.10

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 150.0 750.0 TYPE= 1 TARGET= 600.000
ELENCL= 597.00 ELENCR= 597.00

V 2850FT U/S NEW FRED MOORE HWY BRIDGE

4.90	24.90	595.90	0.00	0.00	596.00	.10	1.05	.02	542.70
8030.	615.	6179.	1236.	1627.	2150.	1903.	2076.	224.	581.60
2.66	.38	2.87	.65	.240	.073	.210	.069	571.00	150.00
.000329	2750.	2700.	2650.	2	0	1	0.00	595.21	745.21

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= .0 -135.9 TYPE= 1 TARGET= 135.999
ELENCL= 598.40 ELENCR= 598.40

T 50FT D/S RATTLE RUN RD. BRIDGE

5.13	25.63	596.43	0.00	0.00	596.62	.19	.55	.07	581.80
8030.	142.	7748.	140.	215.	2193.	174.	2194.	235.	586.21
2.76	.66	3.53	.80	.240	.085	.224	.069	570.80	.00
.000658	1200.	1200.	1350.	2	0	1	0.00	135.90	135.90

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= .0 110.9 TYPE= 1 TARGET= 116.999
ELENCL= 596.00 ELENCR= 596.00

X D/S FACE RATTLE RUN BRIDGE, 19.67 DEGREE SKEW

5.14	23.58	596.48	0.00	0.00	596.66	.17	.03	.01	597.40
7820.	0.	7820.	0.	0.	2343.	0.	2196.	235.	597.40

.000460	49.	49.	49.	2	0	1	0.00	110.85	110.85

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	B C	B P	BAREA	SS	ELCHU	ELCHD
	1.20	1.73	3.02	0.00	81.80	5.35	1891.45	.76	572.90	572.90

PRESSURE FLOW

EGPRS	EGLNC	HH	Q EIR	QPR	BAREA	FLLC	ELTRD	CLOSS
596.94	596.69	.02	0.	7820.	1891.	593.10	597.40	10.00

3470 ENCROACHMENT STATIONS= .0 105.1 TYPE= 1 TARGET= 110.099
ELENCL= 597.40 ELENCR= 597.40

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 597.40 ELREA= 597.40

U/S FACE RATTLE RUN BRIDGE, 18.67 DEGREE SKEW

5.15	23.86	596.76	0.00	0.00	596.94	.19	.29	0.00	597.40
7820.	0.	7820.	0.	0.	2264.	0.	2198.	235.	597.40
2.77	0.00	3.45	0.00	.240	.073	.224	.069	572.90	.00
.000484	39.	39.	39.	2	0	1	0.00	105.07	105.07

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 116.0 326.8 TYPE= 1 TARGET= 210.800
ELENCL= 597.60 ELENCR= 597.60

MANUFACTURED SEC.

5.16	25.39	596.89	0.00	0.00	597.01	.11	.02	.04	590.40
7820.	57.	7306.	458.	123.	2621.	577.	2202.	235.	536.80
2.77	.46	2.79	.79	.168	.071	.154	.069	571.50	116.00
.000314	50.	50.	50.	2	0	1	0.00	210.80	326.80

3470 ENCROACHMENT STATIONS= 700.0 1400.0 TYPE= 1 TARGET= 700.000
ELENCL= 598.00 ELENCR= 598.00

MANUFACTURED SEC.

5.34	26.26	597.26	0.00	0.00	597.34	.08	.31	.02	592.70
7820.	23.	6552.	1245.	54.	2714.	2957.	2300.	245.	584.90
2.90	.35	2.41	.42	.168	.073	.224	.069	571.00	700.00
.000339	950.	950.	950.	0	0	1	0.00	700.00	1400.00

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

3470 ENCROACHMENT STATIONS= 225.0 750.0 TYPE= 1 TARGET= 525.000

ELENCL= 599.00

'ANUFACTURED SEC.

5.49	27.10	597.50	0.00	0.00	597.55	.06	.20	.01	573.51
7820.	1962.	5692.	166.	3179.	2609.	517.	2467.	256.	545.68
3.02	.62	2.18	.32	.168	.073	.224	.054	570.40	234.26
.000196	800.	800.	700.	2	0	1	0.00	515.74	751.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= .0 600.0 TYPE= 1 TARGET= 599.999
ELENCL= 599.00 ELENCR= 599.00

Y 3000FT U/S RATTLE RUN BRIDGE

5.71	28.38	597.78	0.00	0.00	597.83	.05	.28	.00	500.06
7820.	0.	6198.	1622.	0.	2999.	2284.	2563.	271.	564.94
3.21	0.00	2.07	.71	.135	.088	.126	.069	569.40	6.76
.000281	1150.	1200.	1200.	2	0	1	0.00	503.30	800.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 200.0 657.0 TYPE= 1 TARG-T= 487.001
ELENCL= 600.00 ELENCR= 600.00

? 5100FT U/S RATTLE RUN BRIDGE

6.12	27.61	598.41	0.00	0.00	598.47	.06	.23	.00	575.10
7820.	2471.	5126.	223.	2653.	2237.	281.	2519.	295.	583.51
3.52	.93	2.29	.79	.120	.096	.126	.070	570.80	200.00
.000335	1950.	2100.	2000.	2	0	1	0.00	485.20	645.20

1490 NH CARD USED

3265 DIVIDED FLOW

'ANUFACTURED SEC.

6.42	27.33	598.83	0.00	0.00	598.87	.05	.40	.01	577.91
7820.	507.	6314.	999.	1154.	3331.	2556.	3018.	321.	590.19
3.79	.44	1.90	.39	.113	.077	.196	.070	571.50	23.30
.000214	1350.	1550.	1550.	2	0	1	0.00	1044.98	1357.82

1490 NH CARD USED

Y AA 7600FT U/S RATTLE RUN BRIDGE

6.56	26.96	598.96	0.00	0.00	598.97	.01	.06	.02	581.50
7820.	219.	3813.	3788.	541.	3342.	9116.	3154.	336.	541.50
4.01	.41	1.14	.42	.170	.058	.155	.070	572.00	12.72
.000079	650.	650.	550.	2	0	1	0.00	1151.65	1164.17

1490 NH CARD USED

AB 9700FT U/S RATTLE RUN BRIDGE

6.96	28.66	599.26	0.00	0.00	599.32	.06	.31	.04	593.80
7820.	92.	5398.	2330.	181.	2235.	3346.	3547.	371.	588.30
4.30	.51	2.42	.70	.126	.103	.210	.071	570.50	33.50

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   [illegible]   [illegible]   2100.   1700.      1       0       1     0.00   55[illegible].11   591.51

3470 ENCROACHMENT STATIONS=      400.0     1100.0  TYPE=      1  TARGET=      700.000
 ELENCL=     600.80  ELENCR=     600.80

                         MANUFACTURED SEC.

     7.04     30.23    599.43      0.00      0.00    599.54       .11       .13       .03    5[illegible]1.00
    7820.      709.     4932.     2179.     1133.     1528.     2300.     3592.      376.     [illegible]82.80
     4.34       .63      3.23       .95      .168      .078      .154      .071    569.20    400.00
  .000449      450.      400.      330.         2         0         1      0.00    685.40   10[illegible]5.[illegible]

1490 NH CARD USED

3470 ENCROACHMENT STATIONS=       50.0      90[illegible].0  TYPE=      1  TARGET=      858.000
 ELENCL=     602.00  ELENCR=     602.00

              AC 10500FT   U/S RATTLE RUN BRIDGE

     7.12     31.85    599.65      0.00      0.00    599.71       .05       .14       .03    584.[illegible]0
    7820.     3416.     4061.      343.     5079.     1651.      360.     3545.      333.     5[illegible]2.80
     4.41       .67      2.46       .95      .16[illegible]      .185      .112      .071    567.[illegible]1    61.[illegible]7
  .000284      350.      400.      420.         2         0         1      0.00    34[illegible].43    9[illegible].[illegible]

   SECNO     DEPTH     CWSEL     CRIWS     WSELK     ES        HV        HL        QLOSS     B[illegible] ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       T[illegible]      LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       [illegible]TN     ELMIN      [illegible]
   SLOPE     XLOBL     XLCH      XLOBR     TTRIAL    IDC       ICONT     CORAR     TOP ID     ENDST

3470 ENCROACHMENT STATIONS=      150.0      645.0  TYPE=      1  TARGET=      495.000
 ELENCL=     601.50  ELENCR=     601.50

                         MANUFACTURED SEC.

     7.31     28.41    599.81      0.00      0.00    599.34       .03       .12       .02    535.00
    7820.      182.     7436.      202.      697.     5487.      776.     3796.      397.     586.20
     4.61       .26      1.36       .26      .168      .076      .182      .071    571.40    150.00
  .000071      900.      970.      970.         2         0         1      0.00    492.93    642.93

1490 NH CARD USED

3470 ENCROACHMENT STATIONS=      550.0     1350.0  TYPE=      1  TARGET=      800.000
 ELENCL=     601.00  ELENCR=     601.00

              AD 12000FT   U/S RATTLE RUN BRIDGE

     7.47     26.40    599.90      0.00      0.00    599.94       .04       .09       .01    587.00
    7550.     3193.     3839.      518.     5404.     1894.      768.     3930.      408.     587.20
     4.78       .59      2.03       .68      .169      .064      .185      .071    573.50    550.00
  .000232      800.      800.      530.         2         0         1      0.00    800.00   1350.00

3470 ENCROACHMENT STATIONS=      550.0      960.0  TYPE=      1  TARGET=      410.000
 ELENCL=     601.50  ELENCR=     601.50

                         MANUFACTURED SEC.

     7.57     26.92    600.02      0.00      0.00    600.11       .09       .13       .04    585.20
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	[illegible]	[illegible]	[illegible]	[illegible]	4221.	1201.	[illegible]	414.	587.20
4.84	.65	2.67	.69	.154	.070	.154	.071	573.10	550.00
.000277	400.	530.	530.	2	0	1	0.00	391.56	941.56

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= .0 613.0 TYPE= 1 TARGET= 612.999
ELENCL= 603.00 ELENCR= 603.00

AE 50FT D/S VINE RD BRIDGE

7.64	27.39	600.13	0.00	0.00	600.26	.06	.13	.02	603.00
7550.	0.	4687.	2863.	0.	1351.	4565.	4043.	419.	574.10
4.89	0.00	2.53	.63	.154	.096	.224	.071	572.80	.00
.000459	370.	370.	370.	2	0	1	0.00	613.00	613.00

3470 ENCROACHMENT STATIONS= 100.0 700.0 TYPE= 1 TARGET= 600.000
ELENCL= 603.00 ELENCR= 603.00

AF D/S FACE VINE RD BRIDGE

7.65	29.81	600.21	0.00	0.00	600.27	.06	.02	.00	598.10
7550.	0.	6464.	1085.	0.	2943.	2423.	4049.	419.	599.10
4.90	0.00	2.20	.45	.168	.073	.168	.071	570.40	100.00
.000260	50.	50.	50.	0	0	1	0.00	600.00	700.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BMC	BMP	BAREA	SS	ELCHO	ELCHO
	1.05	1.58	5.47	-0.00	35.80	7.00	2385.60	2.13	570.40	570.40

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
600.45	600.28	.00	3577.	3953.	2385.	596.70	598.10	30.00

3470 ENCROACHMENT STATIONS= 99.9 700.1 TYPE= 1 TARGET= 600.200
ELENCL= 603.00 ELENCR= 603.00

U/S FACE VINE RD BRIDGE

7.65	29.81	600.21	0.00	0.00	600.25	.06	.00	0.00	598.10
7550.	0.	6471.	1079.	0.	2943.	2424.	4051.	420.	599.10
4.90	.23	2.20	.45	.168	.073	.168	.071	570.40	99.90
.000256	17.	17.	17.	2	0	5	0.00	600.20	700.10

3470 ENCROACHMENT STATIONS= 100.0 700.0 TYPE= 1 TARGET= 600.000
ELENCL= 602.50 ELENCR= 602.50

7.66	29.63	600.23	0.00	0.00	600.29	.06	.01	.00	598.10
7550.	0.	6389.	1161.	0.	2942.	2429.	4058.	420.	599.10
4.91	0.00	2.17	.48	.154	.072	.154	.071	570.60	100.00
.000247	50.	50.	50.	0	0	1	0.00	600.00	700.00

1490 NH CARD USED

Q	QLOB	QCH	QROB	ALOB	ACH	AROB	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= .0 950.0 TYPE= 1 TARGET= 949.999
ELENCL= 603.50 ELENCR= 603.50

AG 900FT U/S VINE RD BRIDGE

7.82	27.32	600.42	0.00	0.00	600.44	.01	.12	.03	582.90
7550.	4012.	3133.	405.	10205.	2193.	1583.	4244.	435.	594.70
5.20	.39	1.43	.26	.240	.078	.200	.071	573.10	4.89
.000092	850.	850.	800.	0	0	1	0.00	945.11	950.00

MANUFACTURED SEC.

8.20	31.27	600.67	0.00	0.00	600.73	.06	.20	.03	534.90
7550.	88.	7186.	276.	261.	3641.	912.	4599.	467.	588.50
5.50	.34	1.97	.30	.210	.080	.224	.071	569.40	91.04
.000186	2200.	2000.	1970.	2	0	1	0.00	403.51	444.55

1490 NH CARD USED

AH 3400FT U/S VINE RD. BRIDGE

8.29	32.29	600.79	0.00	0.00	600.83	.03	.04	.01	591.90
7550.	1609.	5833.	108.	4499.	3473.	321.	4763.	472.	588.10
5.60	.36	1.68	.34	.224	.091	.224	.072	568.50	119.67
.000147	300.	500.	530.	2	0	1	0.00	728.36	848.03

1490 NH CARD USED

MANUFACTURED SEC.

8.72	28.10	601.10	0.00	0.00	601.12	.02	.28	.01	595.60
7550.	25.	6547.	978.	154.	5544.	2872.	5175.	506.	590.50
6.17	.16	1.18	.34	.200	.097	.200	.072	573.00	96.01
.000113	1800.	2250.	2250.	2	0	1	0.00	693.52	789.54

1490 NH CARD USED

AI 6900FT U/S VINE RD. BRIDGE

9.01	25.87	601.37	0.00	0.00	601.44	.07	.28	.04	587.60
7550.	315.	4622.	2613.	482.	1778.	4611.	5423.	529.	591.30
6.39	.65	2.60	.57	.200	.087	.199	.072	575.50	38.61
.000395	800.	1550.	1300.	2	0	1	0.00	833.90	872.51

1490 NH CARD USED

MANUFACTURED SEC.

9.17	25.94	601.74	0.00	0.00	601.86	.12	.34	.04	584.20
7550.	289.	4982.	2279.	489.	1469.	3997.	5563.	546.	589.50
6.50	.59	3.39	.57	.230	.072	.221	.072	575.80	41.73
.000446	850.	850.	1000.	2	0	1	0.00	669.85	711.58

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 140.0 460.8 TYPE= 1 TARGET= 320.800
ELENCL= 603.50 ELENCR= 603.50

AJ 50FT D/S NEIMAN RD BRIDGE

9.42	26.29	602.39	0.00	0.00	602.44	.05	.54	.04	591.60
7550.	1035.	5857.	658.	561.	3136.	1033.	5722.	561.	591.80
6.70	1.85	1.87	.64	.070	.113	.224	.073	576.10	140.00
.000387	1300.	1300.	1300.	2	0	1	0.00	320.80	460.60

3280 CROSS SECTION 9.43 EXTENDED .70 FEET

3470 ENCROACHMENT STATIONS= 98.6 394.4 TYPE= 1 TARGET= 300.000
ELENCL= 602.80 ELENCR= 602.80

AK D/S FACE NEIMAN BRIDGE, 10 DEGREE SKEW FOR WEIR FLOW

9.43	25.19	602.39	0.00	0.00	602.52	.12	.02	.06	602.50
7550.	0.	7531.	19.	0.	2656.	118.	5726.	561.	602.40
6.71	0.00	2.84	.16	.154	.073	.182	.073	576.20	98.60
.000496	49.	49.	49.	1	0	1	0.00	295.20	394.40

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	ROLEN	B/C	B/P	AREA	SS	ELCHO	ELCH
	1.05	1.65	3.44	-0.00	55.98	7.20	2223.00	1.62	576.20	576.20

3280 CROSS SECTION 9.43 EXTENDED .83 FEET

SECNO	DEPTH	CWSEL	CRIWS	WSELK	FR	HV	HL	QLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TMA	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	QBR	BAREA	ELLC	ELTRD	CLASS
602.69	602.53	.01	552.	7723.	2223.	600.80	601.30	30.00

3470 ENCROACHMENT STATIONS= 98.6 394.4 TYPE= 1 TARGET= 300.000
ELENCL= 603.40 ELENCR= 603.40

U/S FACE NEIMAN BRIDGE, 10 DEGREE SKEW FOR WEIR FLOW

MAY 1943: HM4_600.08(USGS)

9.43	26.33	602.53	0.00	0.00	602.65	.12	.13	0.00	602.40
7550.	0.	7527.	23.	0.	2674.	137.	5727.	561.	602.40
6.71	.00	2.81	.17	.154	.073	.182	.073	576.20	98.60
.000485	18.	18.	18.	2	0	4	0.00	295.80	394.40

3470 ENCROACHMENT STATIONS= 329.1 724.9 TYPE= 1 TARGET= 395.800
ELENCL= 604.50 ELENCR= 604.50

MANUFACTURED SEC.

9.44	26.48	602.58	0.00	0.00	602.63	.10	.02	.01	584.50
7550.	1591.	5773.	156.	2149.	1994.	275.	5732.	562.	591.10
6.71	.78	2.90	.68	.154	.073	.182	.073	576.10	329.10
.000379	50.	50.	50.	2	0	1	0.00	395.80	724.90

MANUFACTURED SEC.

9.51	27.42	602.72	0.00	0.00	602.80	.09	.11	.01	587.60
7550.	1689.	5609.	252.	2792.	2083.	456.	5768.	565.	590.30
6.76	.60	2.69	.55	.168	.079	.158	.073	575.30	179.10
.000284	300.	350.	350.	0	0	1	0.00	583.73	762.42

MANUFACTURED SEC.

9.75	28.12	603.12	0.00	0.00	603.18	.06	.30	.02	591.40
7550.	2854.	4144.	552.	4050.	1907.	966.	5944.	584.	595.00
6.97	.76	2.58	.61	.164	.070	.166	.073	575.00	103.36
.000267	1300.	1300.	1250.	2	0	1	0.00	651.73	755.14

1490 NH CARD USED

AL 2500FT U/S NEWMAN RD BRIDGE

9.91	27.94	603.34	0.00	0.00	603.36	.02	.17	.02	592.60
7550.	3824.	2841.	885.	7421.	1487.	1633.	6698.	599.	596.00
7.18	.52	1.91	.54	.167	.079	.168	.073	575.40	51.02
.000169	800.	800.	700.	1	0	1	0.00	1116.54	1167.56

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 250.0 765.0 TYPE= 1 TARGET= 515.000
ELENCL= 605.00 ELENCR= 605.00

MANUFACTURED SEC.

10.08	28.06	603.56	0.00	0.00	603.66	.11	.23	.06	584.20
7550.	1605.	5178.	767.	2497.	1672.	963.	6261.	616.	598.10
7.28	.64	3.10	.78	.196	.080	.196	.073	575.50	250.10
.000433	900.	900.	900.	2	0	1	0.00	515.00	765.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 600.0 1070.0 TYPE= 1 TARGET= 470.000
ELENCL= 605.00 ELENCR= 605.00

AM 4700FT U/S NEWMAN RD BRIDGE

10.32	28.60	604.10	0.00	0.00	604.17	.07	.49	.02	605.00
7550.	0.	5288.	2262.	0.	2153.	3699.	6462.	630.	598.10
7.47	0.00	2.46	.61	.196	.081	.224	.072	575.50	603.55
.000333	1200.	1300.	1300.	2	0	1	0.00	466.45	1070.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 383.0 600.0 TYPE= 1 TARGET= 217.000
ELENCL= 608.20 ELENCR= 608.20

AM 75FT D/S I-94 BRIDGES

10.50	27.49	604.49	0.00	0.00	604.62	.13	.41	.05	541.50
7340.	1586.	5754.	0.	1104.	1601.	0.	6513.	638.	614.20
7.56	1.44	3.19	0.00	.118	.082	.224	.072	577.00	363.00
.000596	924.	924.	874.	2	0	1	0.00	217.00	600.00

1490 NH CARD USED

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	QLOSS	BANK FLEW
Q	QLOB	QCH	QROB	ALOB	ACH	APOB	VOL	TAR	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	FLMIN	WST/
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOP TO	FROST

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 606.30 ELREA= 606.30

AP D/S FACE I-94 EAST BOUND LANES, 25.14 DEGREE SKE

10.51	26.61	604.61	0.00	0.00	604.68	.07	.03	.03	56[illegible].30
7340.	0.	7340.	0.	0.	3365.	0.	6518.	638.	60[illegible].20
7.57	0.00	2.18	0.00	.118	.080	.224	.072	578.00	362.10
.000247	75.	75.	75.	2	0	1	0.00	174.24	541.35

SPECIAL BRIDGE

SB XK	XKOR	COFQ	RDLEN	B-C	B-P	PAREA	SS	ELCHO	ELCHD
.90	1.74	3.01	0.00	64.10	[illegible].43	2889.80	2.67	578.00	[illegible].00

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QBR	BAREA	ELLC	ELTRD	CLASS
604.78	604.68	.00	0.	7340.	2890.	604.50	608.20	10.00

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 608.20 ELREA= 608.20

U/S FACE I-94 EAST BOUND LANES, 25.14 DEGREE SKEW

10.52	26.71	604.71	0.00	0.00	604.78	.07	.10	0.00	608.30
7340.	0.	7340.	0.	0.	3393.	0.	6522.	638.	614.20
7.58	0.00	2.17	0.00	.118	.080	.224	.072	578.00	362.10
.000243	48.	48.	48.	2	0	1	0.00	174.24	541.35

1490 NH CARD USED

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 606.30 ELREA= 606.30

AP D/S FACE I-94 WEST BOUND LANES, 25.14 DEGREE SKEW

7340.	0.	7340.	0.	0.	3311.	0.	6525.	634.	604.20
7.58	0.00	2.22	0.00	.118	.073	.224	.072	577.60	543.16
.000219	48.	48.	48.	0	0	1	0.00	181.05	724.21

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	B C	RMP	BAREA	SS	ELCHI	ELCHO
	.90	1.76	3.01	0.00	43.10	5.43	2737.00	2.67	577.70	577.71

PRESSURE FLOW

EGPRS	EGLWC	HB	QWEIR	QBR	BAREA	ELLC	ELTRD	CLASS
604.92	604.80	.00	0.	7340.	2737.	604.50	603.20	10.00

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 606.20 ELREA= 606.20

U/S FACE I--4 EST ROUND LOSS= 25.14 DEGREE S E

10.54	27.24	604.84	0.00	0.00	604.92	.08	.12	0.00	604.20
7340.	0.	7340.	0.	0.	3333.	0.	6529.	639.	604.20
7.59	0.00	2.20	0.00	.118	.073	.224	.072	577.60	543.16
.000215	48.	48.	48.	2	0	1	0.00	181.05	724.21

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BA	EL 7
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT	
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA	
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOP ID	ENDST	

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 606.20 ELREA= 606.20

10.55	27.25	604.85	0.00	0.00	604.93	.08	.01	.00	604.20
7340.	0.	7340.	0.	0.	3335.	0.	6533.	639.	604.20
7.60	0.00	2.20	0.00	.154	.070	.154	.072	577.60	543.16
.000246	50.	50.	50.	0	0	1	0.00	181.05	724.21

MANUFACTURED SEC.

10.66	27.61	605.01	0.00	0.00	605.10	.09	.16	.01	603.20
7340.	1976.	4806.	558.	1880.	1640.	933.	6587.	643.	583.50
7.67	1.05	2.93	.60	.140	.073	.182	.072	577.40	29.54
.000287	600.	600.	600.	1	0	1	0.00	418.30	447.84

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 60.0 1150.0 TYPE= 1 TARGET= 1090.000
ELENCL= 606.50 ELENCR= 606.50

AD 2640FT U/S I-94 BRIDGES

11.09	28.99	605.59	0.00	0.00	605.60	.01	.45	.05	554.70
7340.	1967.	2095.	3278.	4107.	1352.	7052.	7005.	679.	595.80
8.45	.48	1.55	.46	.210	.090	.210	.073	576.50	81.71

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 948.0 1116.0 TYPE= 1 TARGET= 168.000
ELENCL= 607.50 ELENCR= 607.50

AR 50FT D/S WADHAMS RD BRIDGE

11.41	26.24	605.94	0.00	0.00	606.04	.10	.37	.07	591.20
7340.	1749.	5387.	204.	972.	1915.	224.	7295.	702.	588.60
8.64	1.80	2.81	.91	.098	.073	.168	.073	579.70	943.00
.000349	1720.	1720.	1500.	0	0	1	0.00	168.00	1116.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 300.0 444.0 TYPE= 1 TARGET= 144.000
ELENCL= 607.50 ELENCR= 607.50

AS D/S FACE WADHAMS RD BRIDGE

11.42	25.66	605.96	0.00	0.00	606.06	.10	.02	.00	606.20
7340.	0.	7340.	0.	0.	2886.	0.	7299.	702.	607.50
8.64	0.00	2.54	0.00	.098	.072	.168	.073	580.30	300.00
.000284	49.	49.	49.	0	0	1	0.00	144.00	444.00

SPECIAL BRIDGE

SB XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCBU	ELCBD
.90	1.67	3.00	-0.00	67.94	4.20	2363.20	1.71	580.30	580.30

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
606.21	606.06	.00	28.	7348.	2363.	602.60	605.90	30.00

3470 ENCROACHMENT STATIONS= 299.0 445.0 TYPE= 1 TARGET= 146.000
ELENCL= 607.50 ELENCR= 607.50

OVERBANK AREA ASSUMED NON-EFFECTIVE.ELLEA= 606.20 ELREA= 605.90

U/S FACE WADHAMS RD BRIDGE

11.43	25.81	606.11	0.00	0.00	606.21	.10	.15	0.00	606.20
7340.	0.	7340.	0.	0.	2908.	0.	7301.	703.	606.20
8.65	0.00	2.52	0.00	.168	.071	.152	.073	580.30	300.00
.000279	30.	30.	30.	2	0	4	0.00	144.00	444.00

SECNO	DEPTH	CNSEL	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= 934.0 1174.0 TYPE= 1 TARGET= 240.000

MANUFACTURED SEC.

11.44	26.42	606.12	0.00	0.00	606.26	.14	.02	.04	544.50
7340.	657.	6180.	503.	721.	1922.	652.	7304.	703.	583.60
8.65	.91	3.21	.77	.164	.076	.195	.073	579.70	434.00
.000512	50.	50.	50.	0	0	1	0.00	240.00	1174.00

MANUFACTURED SEC.

11.79	25.71	607.11	0.00	0.00	607.23	.12	.03	.01	500. 0
7340.	92.	5686.	1562.	187.	1805.	2400.	7459.	721.	540.60
8.85	.49	3.15	.65	.163	.076	.196	.073	581.40	144.99
.000553	1850.	1850.	1600.	2	0	1	0.00	692.46	837.40

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= .0 719.0 TYPE= 1 TARGET= 718.999
ELENCL= 609.00 ELENCR= 609.00

AT 3700FT U/S ADHA S RD BRIDGE

12.13	25.77	607.97	0.00	0.00	606.12	.05	.03	.04	544.50
7340.	2854.	4261.	225.	4616.	1851.	415.	7582.	747.	595.31
9.15	.62	2.30	.54	.165	.092	.224	.073	512.20	32.29
.000337	1800.	1800.	1500.	2	0	1	0.00	665.37	717.66

MANUFACTURED SEC.

12.24	25.80	608.20	0.00	0.00	608.30	.10	.03	.04	545.40
7340.	2692.	4185.	463.	3712.	1257.	559.	7768.	757.	585.41
9.23	.73	3.33	.83	.168	.080	.182	.073	532.40	142.39
.000448	600.	600.	600.	2	0	1	0.00	753.94	893.23

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 200.0 1665.0 TYPE= 1 TARGET= 1465.000
ELENCL= 610.00 ELENCR= 610.00

AU 5600FT U/S ADHA IS RD BRIDGE

12.49	25.80	603.60	0.00	0.00	603.61	.01	.03	.06	544.50
7340.	4781.	2559.	0.	3668.	2311.	0.	7950.	773.	616.50
9.63	.55	1.11	0.00	.161	.112	.182	.073	532.80	274.43
.000150	850.	1300.	1300.	2	0	1	0.00	1387.44	1652.37

3470 ENCROACHMENT STATIONS= 300.0 1357.0 TYPE= 1 TARGET= 1057.000
ELENCL= 610.50 ELENCR= 610.50

MANUFACTURED SEC.

12.72	25.91	608.81	0.00	0.00	608.82	.01	.21	.00	566.00
7340.	0.	0.	7340.	0.	0.	8377.	8162.	806.	565.60
9.97	0.00	0.00	.88	.168	.078	.140	.074	582.90	300.00
.000263	850.	1200.	1200.	2	0	1	0.00	1056.42	1356.42

3470 ENCROACHMENT STATIONS= 613.0 744.0 TYPE= 1 TARGET= 135.000
ELENCL= 611.40 ELENCR= 611.40

AV 50FT D/S GRATIOT RD BRIDGE

12.85	26.06	609.06	0.00	0.00	608.37	.32	.30	.24	5[illegible]
7340.	1862.	4822.	656.	1318.	882.	426.	8264.	914.	5[illegible]
10.02	1.41	5.46	1.54	.210	.070	.196	.074	583.00	613.00
.000924	550.	700.	700.	2	0	1	0.00	135.00	748.00

1490 NH CARD USED

A[illegible] D/S FACE GRATIOT RD BRIDGE, 19.65 DEGREE SKEW

APRIL 1975: H[illegible] 6[illegible].14(USGS) AND

ESTIMATED DISCHARGE(GREST GAGE) 6400 CFS

12.86	25.77	609.37	0.00	0.00	609.52	.15	.05	.10	610.40
7340.	0.	7340.	0.	0.	2370.	0.	8271.	914.	610.50
10.02	0.00	3.10	0.00	.210	.121	.196	.074	583.60	565.[illegible]
.001149	49.	49.	49.	2	1	1	0.00	10[illegible].27	674.47

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	HWC	BWP	BAREA	SS	ELCH	ELCH
	.90	1.78	2.90	-0.00	77.72	2.93	2050.00	.85	583.50	583.60

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	CLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	T[illegible]	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SST[illegible]
SLOPE	XLOBL	XLCH	XLOBR	TTRIAL	IDC	ICONT	CORWR	TOPWID	ENDST

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QBR	BAREA	ELLC	ELTRD	CLASS
609.73	609.52	.00	0.	7340.	2050.	606.20	610.40	10.0J

OVERBANK AREA ASSUMED NON-EFFECTIVE.ELLEA= 610.40 ELREA= 610.40

U/S FACE GRATIOT RD BRIDGE, 19.65 DEGREE SKE

12.87	25.98	609.58	0.00	0.00	609.73	.15	.[illegible]1	0.00	610.40
7340.	0.	7340.	0.	0.	2393.	0.	8274.	914.	610.50
10.03	0.00	3.07	0.00	.210	.121	.196	.074	583.60	565.70
.001153	54.	54.	54.	2	0	1	0.00	10[illegible].27	674.47

3470 ENCROACHMENT STATIONS= 550.0 754.0 TYPE= 1 TARGET= 208.000
ELENCL= 612.50 ELENCR= 612.50

MANUFACTURED SEC.

12.88	26.24	609.74	0.00	0.00	609.80	.06	.02	.05	601.20
7340.	0.	7340.	0.	0.	3752.	0.	8277.	813.	612.50
10.03	0.00	1.96	0.00	.182	.077	.182	.074	583.50	550.00
.000248	50.	50.	50.	2	0	1	0.00	208.00	704.00

12.96	27.45	609.85	0.00	0.00	609.91	.06	.10	.00	554.00
7340.	797.	5549.	994.	1422.	2510.	2254.	8331.	829.	536.40
10.10	.44	2.21	.44	.182	.077	.182	.074	532.40	83.16
.000215	470.	450.	430.	2	0	1	0.00	860.58	943.74

1490 NH CARD USED

AX 1100FT U/S GRATIOT RD BRIDGE

13.07	29.18	609.98	0.00	0.00	610.02	.04	.10	.01	580.80
7340.	1258.	3990.	2092.	2406.	1495.	5143.	8420.	836.	546.30
10.22	.52	2.00	.41	.210	.081	.210	.074	580.80	63.26
.000154	530.	580.	470.	1	0	1	0.00	993.94	1057.60

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 100.0 1200.0 TYPE= 1 TARGET= 1100.000
ELENCL= 612.50 ELENCR= 612.50

AY 2700FT U/S GRATIOT RD BRIDGE

13.37	26.35	610.35	0.00	0.00	610.38	.02	.39	.01	567.20
7340.	3689.	3651.	0.	6848.	2186.	0.	5752.	854.	619.10
10.62	.54	1.67	0.00	.224	.110	.210	.074	584.00	189.40
.000352	1600.	1600.	1450.	2	0	1	0.00	964.32	1153.72

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 100.0 1160.0 TYPE= 1 TARGET= 1050.000
ELENCL= 602.00 ELENCR= 602.00

13.57	26.72	610.72	0.00	0.00	610.84	.12	.39	.07	547.50
7340.	1375.	5503.	462.	2347.	1750.	571.	8869.	878.	600.20
10.71	.59	3.14	.81	.168	.078	.168	.074	534.00	103.47
.000579	600.	1020.	1020.	2	0	1	0.00	850.39	1157.24

1490 NH CARD USED
3280 CROSS SECTION 13.41 EXTENDED 4.49 FEET

SECNO	DEPTH	CWSEL	CRINS	WSELK	SG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TMA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	XTN	ELMTN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOP IO	ENDST

3470 ENCROACHMENT STATIONS= 67.5 782.5 TYPE= 1 TARGET= 715.000
ELENCL= 613.00 ELENCR= 613.00

AZ 50FT D/S FIRTH RD BRIDGE

13.81	26.08	611.28	0.00	0.00	611.31	.03	.41	.05	592.20
5420.	514.	2164.	2742.	1154.	1124.	4551.	9046.	902.	595.10

.000170	1260.	1260.	1450.	2	0	1	0.00	715.00	782.50

1490 NH CARD USED
3280 CROSS SECTION 13.82 EXTENDED 1.00 FEET

3470 ENCROACHMENT STATIONS= .0 728.5 TYPE= 1 TARGET= 849.999
ELENCL= 612.50 ELENCR= 612.50

BA D/S FACE FIRTH RD BRIDGE, 31 DEGREE SKE

13.82	25.99	611.29	0.00	0.00	611.32	.04	.01	.01	605.20
5420.	250.	4349.	822.	695.	2610.	1771.	9053.	903.	603.70
11.05	.36	1.67	.46	.182	.106	.191	.074	585.30	38.14
.000313	49.	49.	49.	0	0	1	0.00	690.31	728.45

3280 CROSS SECTION 13.82 EXTENDED 1.00 FEET

NORMAL BRIDGE,NRD=23 MIN ELTRD= 604.10 MAX ELLC= 605.20

3470 ENCROACHMENT STATIONS= .0 728.5 TYPE= 1 TARGET= 849.999
ELENCL= 612.60 ELENCR= 612.60

13.82	26.01	611.31	0.00	0.00	611.33	.03	.00	.01	605.00
5420.	429.	3443.	1548.	661.	2319.	1765.	9053.	905.	603.70
11.05	.65	1.48	.88	.182	.108	.192	.074	585.31	38.13
.001126	1.	1.	1.	0	0	1	-240.86	690.32	728.45

3280 CROSS SECTION 13.82 EXTENDED 1.02 FEET

NORMAL BRIDGE,NRD=23 MIN ELTRD= 604.10 MAX ELLC= 605.20

3470 ENCROACHMENT STATIONS= .0 728.5 TYPE= 1 TARGET= 849.999
ELENCL= 612.60 ELENCR= 612.60

13.82	26.02	611.32	0.00	0.00	611.35	.03	.00	.00	605.00
5420.	432.	3438.	1550.	665.	2322.	1771.	9055.	904.	603.70
11.05	.65	1.48	.88	.182	.108	.192	.074	585.30	37.56
.001119	16.	16.	16.	1	0	1	-240.86	690.89	728.45

3280 CROSS SECTION 13.82 EXTENDED 1.02 FEET

3470 ENCROACHMENT STATIONS= .0 728.5 TYPE= 1 TARGET= 849.999
ELENCL= 612.60 ELENCR= 612.60

U/S FACE FIRTH RD BRIDGE, 31 DEGREE SKEW

13.82	26.02	611.32	0.00	0.00	611.36	.04	.00	.01	605.20
5420.	216.	4392.	812.	710.	2613.	1777.	9055.	904.	603.70
11.05	.31	1.68	.46	.168	.076	.154	.074	585.31	37.52
.000196	1.	1.	1.	0	0	1	0.00	690.93	728.45

				.0	1175.0	TYPE=	1	TARGET=	1025.999	
ELENCL=	613.50	ELENCR=	613.50							
13.83	26.13	611.33	0.00	0.00	611.38	.04	.01	.01	592.20	
5420.	1040.	2343.	2037.	1376.	961.	3178.	9061.	904.	595.00	
11.06	.76	2.44	.64	.168	.076	.154	.074	585.20	.00	
.000275	49.	49.	49.	1	0	1	0.00	633.09	633.09	

SECNO	DEPTH	CHSEL	CRITS	WSELK	EG	HV	HL	QLOSS	BANK FLOW
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TW	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	XTN	ELMIN	SST
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOP ID	ENDST
13.88	26.10	611.40	0.00	0.00	611.50	.10	.05	.05	592.50
5420.	925.	2917.	1578.	1078.	869.	1599.	9085.	907.	589.50
11.09	.86	3.36	.99	.168	.076	.154	.074	585.30	111.01
.000432	200.	250.	250.	0	0	1	0.00	382.14	493.20

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 150.0 1175.0 TYPE= 1 TARGET= 1025.000
ELENCL= 613.00 ELENCR= 613.00

BB 1900FT U/S FIRTH RD BRIDGE

14.18	26.25	611.95	0.00	0.00	611.96	.01	.40	.05	593.70
5420.	3697.	1334.	391.	6953.	932.	814.	9204.	927.	594.10
11.61	.53	1.43	.48	.217	.115	.224	.074	585.70	156.00
.000209	1100.	1600.	1600.	2	0	1	0.00	1022.45	1172.45

1490 NH CARD USED

BC 4000FT U/S FIRTH RD BRIDGE

14.58	24.29	612.39	0.00	0.00	612.41	.02	.44	.01	600.00
5420.	693.	2527.	2210.	1640.	1555.	3347.	9572.	961.	597.50
12.09	.42	1.63	.66	.224	.107	.182	.075	588.10	89.81
.000270	1500.	2100.	2100.	2	0	1	0.00	751.90	751.72

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= .0 1244.0 TYPE= 1 TARGET= 1243.999

BD 6500FT U/S FIRTH RD BRIDGE

15.10	23.61	612.91	0.00	0.00	612.92	.01	.50	.01	596.10
5420.	3942.	1232.	346.	9090.	922.	877.	10055.	1014.	596.50
13.18	.42	1.34	.39	.220	.104	.232	.075	589.30	84.35
.000160	2500.	2740.	2000.	2	0	1	0.00	1159.65	1244.00

1490 NH CARD USED

BE 9000FT U/S FIRTH RD BRIDGE

15.62	21.70	613.10	0.00	0.00	613.11	.00	.18	.00	595.70
5170.	4120.	1050.	0.	9942.	1228.	0.	10450.	1054.	617.50
14.12	.41	.86	0.00	.150	.099	.232	.075	591.40	106.33
.000076	1400.	2750.	2100.	2	0	1	0.00	1164.67	1275.01

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
.55	500.00	0.00	0.00	567.10	4820.00	580.73	.13	.25	.02	4820.00	13.63	170.35
.55	500.00	0.00	0.00	567.10	7140.00	582.46	.21	.33	.02	7140.00	15.36	174.19
.55	500.00	0.00	0.00	567.10	8150.00	583.23	.23	.37	.01	8150.00	16.13	175.31
.55	500.00	0.00	0.00	567.10	10600.00	585.07	.30	.43	.00	10600.00	17.97	177.99
.64	475.00	0.00	0.00	567.10	4820.00	581.01	.12	.27	.00	4820.00	13.91	171.30
.64	475.00	0.00	0.00	567.10	7140.00	582.84	.19	.35	.01	7121.31	15.74	211.59
.64	475.00	0.00	0.00	567.10	8150.00	583.64	.21	.38	.01	8087.27	16.54	233.34
.64	475.00	0.00	0.00	567.10	10600.00	585.55	.28	.43	.03	10256.58	18.45	278.68
.83	1020.00	0.00	0.00	564.00	4820.00	581.49	.08	.42	.02	4820.00	17.49	173.11
.83	1020.00	0.00	0.00	564.00	7140.00	583.50	.13	.57	.03	7116.21	19.50	216.57
.83	1020.00	0.00	0.00	564.00	8150.00	584.35	.15	.61	.04	8083.79	20.35	235.84
.83	1020.00	0.00	0.00	564.00	10600.00	586.31	.19	.69	.04	10252.41	22.31	341.07
1.15	1705.00	0.00	0.00	562.30	4820.00	582.13	.06	.51	.01	3460.93	19.83	575.74
1.15	1705.00	0.00	0.00	562.30	7140.00	584.23	.10	.59	.05	3749.78	21.93	610.70
1.15	1705.00	0.00	0.00	562.30	8150.00	585.09	.12	.64	.06	3832.92	22.79	612.47
1.15	1705.00	0.00	0.00	562.30	10600.00	587.04	.15	.52	.08	4058.76	24.74	615.00
1.44	1500.00	0.00	0.00	564.90	4820.00	582.86	.13	.75	.16	4567.45	17.96	238.31
1.44	1500.00	0.00	0.00	564.90	7140.00	584.90	.19	.79	.11	6263.47	20.00	330.85
1.44	1500.00	0.00	0.00	564.90	8150.00	585.72	.22	.66	.12	6871.21	20.82	397.56
1.44	1500.00	0.00	0.00	564.90	10600.00	587.58	.21	.57	.13	8004.69	22.68	466.16
1.64	1050.00	0.00	0.00	566.70	4820.00	583.55	.09	.52	.03	4612.20	16.85	300.92
1.64	1050.00	0.00	0.00	566.70	7140.00	585.71	.09	.53	.06	5898.08	19.01	750.00
1.64	1050.00	0.00	0.00	566.70	8150.00	586.53	.08	.53	.07	6239.17	19.83	750.00
1.64	1050.00	0.00	0.00	566.70	10600.00	588.36	.08	.56	.08	6932.04	21.66	750.00
1.97	1750.00	0.00	0.00	565.00	4820.00	584.32	.08	.74	.01	4820.00	19.32	148.00
1.97	1750.00	0.00	0.00	565.00	7140.00	586.55	.13	.85	.03	7140.00	21.55	148.00
1.97	1750.00	0.00	0.00	565.00	8150.00	587.39	.15	.87	.05	8150.00	22.39	148.00
1.97	1750.00	0.00	0.00	565.00	10600.00	589.21	.18	.87	.08	10545.27	24.21	605.58
1.98	59.00	0.00	0.00	569.00	4820.00	584.33	.17	.13	.07	4820.00	15.33	119.88
1.98	59.00	0.00	0.00	569.00	7140.00	586.57	.25	.04	.11	7140.00	17.57	120.19
1.98	59.00	0.00	0.00	569.00	8150.00	587.41	.31	.05	.12	8150.00	18.41	120.29
1.98	59.00	0.00	0.00	569.00	10600.00	589.22	.36	.06	.14	10600.00	20.22	120.35
1.98	1.00	593.90	588.10	569.00	4820.00	584.33	.19	.00	.02	4820.00	15.33	119.88
1.98	1.00	593.90	588.10	569.00	7140.00	586.57	.30	.00	.03	7140.00	17.57	120.19
1.98	1.00	593.90	588.10	569.00	8150.00	587.40	.35	.00	.03	8150.00	18.40	120.29
1.98	1.00	593.90	588.10	569.00	10600.00	589.19	.50	.00	.13	10600.00	20.19	120.35
1.98	12.00	593.90	588.10	569.00	4820.00	584.34	.19	.01	.00	4820.00	15.34	119.88
1.98	12.00	593.90	588.10	569.00	7140.00	586.59	.30	.02	.00	7140.00	17.59	120.19
1.98	12.00	593.90	588.10	569.00	8150.00	587.43	.35	.03	.00	8150.00	18.43	120.29
1.98	12.00	593.90	588.10	569.00	10600.00	589.26	.56	.07	.00	10600.00	20.26	120.35

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CHSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
	1.98	1.00	0.00	0.00	569.00	4820.00	584.38	.17	.01	.01	4620.00	15.38	119.88
	1.98	1.00	0.00	0.00	569.00	7140.00	586.65	.20	.01	.02	7140.00	17.65	120.20
	1.98	1.00	0.00	0.00	569.00	8150.00	587.50	.30	.01	.03	8150.00	18.50	120.30
	1.98	1.00	0.00	0.00	569.00	10600.00	589.55	.40	.01	.10	10600.00	20.55	120.35
	1.99	50.00	0.00	0.00	568.90	4820.00	584.43	.17	.05	.00	4819.74	15.53	119.89
	1.99	50.00	0.00	0.00	568.90	7140.00	586.71	.25	.05	.00	7139.43	17.81	120.21
	1.99	50.00	0.00	0.00	568.90	8150.00	587.53	.30	.07	.00	8149.25	18.68	120.31
	1.99	50.00	0.00	0.00	568.90	10600.00	589.61	.40	.07	.00	10599.84	20.73	120.35
	2.01	110.00	0.00	0.00	568.70	4820.00	584.56	.15	.10	.01	4820.00	15.66	124.14
	2.01	110.00	0.00	0.00	568.70	7140.00	586.88	.24	.13	.01	7140.00	18.18	124.46
	2.01	110.00	0.00	0.00	568.70	8150.00	587.77	.27	.14	.02	8150.00	19.07	124.57
	2.01	110.00	0.00	0.00	568.70	10600.00	589.86	.30	.15	.02	10600.00	21.16	124.60
	2.09	415.00	0.00	0.00	567.90	4740.00	584.94	.19	.25	.04	4359.31	17.04	414.50
	2.09	415.00	0.00	0.00	567.90	7030.00	587.42	.18	.33	.08	6531.29	19.52	435.00
	2.09	415.00	0.00	0.00	567.90	8030.00	588.37	.11	.34	.10	7406.30	20.47	435.00
	2.09	415.00	0.00	0.00	567.90	10400.00	590.80	.11	.35	.15	7645.39	22.70	435.00
	2.38	1550.00	0.00	0.00	568.10	4740.00	585.70	.19	.75	.00	4202.79	17.40	417.19
	2.38	1550.00	0.00	0.00	568.30	7030.00	588.20	.19	.75	.01	5466.00	19.90	447.26
	2.38	1550.00	0.00	0.00	568.30	8030.00	589.14	.19	.74	.01	5904.60	20.84	459.57
	2.38	1550.00	0.00	0.00	568.30	10400.00	591.33	.09	.69	.01	7026.35	23.03	488.67
	2.71	1750.00	0.00	0.00	568.70	4740.00	586.45	.10	.74	.01	4395.30	17.75	274.68
	2.71	1750.00	0.00	0.00	568.70	7030.00	588.94	.14	.79	.13	6021.97	20.28	295.07
	2.71	1750.00	0.00	0.00	568.70	8030.00	589.93	.13	.81	.03	6679.72	21.23	345.66
	2.71	1750.00	0.00	0.00	568.70	10400.00	592.09	.15	.77	.05	8069.08	23.39	420.22
	2.98	1400.00	0.00	0.00	567.10	4740.00	587.03	.08	.55	.01	4097.93	19.93	324.49
	2.98	1400.00	0.00	0.00	567.10	7030.00	589.54	.09	.61	.02	5581.75	22.53	347.02
	2.98	1400.00	0.00	0.00	567.10	8030.00	590.60	.10	.62	.02	6194.50	23.50	340.42
	2.98	1400.00	0.00	0.00	567.10	10400.00	592.78	.11	.63	.03	7555.20	25.68	471.54
	3.34	1900.00	0.00	0.00	570.90	4740.00	587.70	.05	.62	.02	3441.68	16.80	673.69
	3.34	1900.00	0.00	0.00	570.90	7030.00	590.33	.05	.63	.03	4509.22	19.43	704.73
	3.34	1900.00	0.00	0.00	570.90	8030.00	591.32	.05	.64	.03	4953.90	20.42	716.21
	3.34	1900.00	0.00	0.00	570.90	10400.00	593.50	.05	.63	.03	5960.43	22.60	741.56
	3.59	1340.00	0.00	0.00	568.10	4740.00	588.11	.09	.41	.04	4594.40	20.01	313.35
	3.59	1340.00	0.00	0.00	568.10	7030.00	590.76	.13	.43	.06	6523.76	22.66	404.11
	3.59	1340.00	0.00	0.00	568.10	8030.00	591.76	.14	.45	.07	7313.20	23.66	448.79
	3.59	1340.00	0.00	0.00	568.10	10400.00	594.95	.17	.47	.09	9057.06	25.85	546.96
	3.82	1200.00	0.00	0.00	570.10	4740.00	588.57	.10	.47	.01	4429.39	18.47	242.99
	3.82	1200.00	0.00	0.00	570.10	7030.00	591.33	.14	.57	.01	6294.48	21.23	405.73
	3.82	1200.00	0.00	0.00	570.10	8030.00	592.36	.15	.60	.01	7041.16	22.26	446.04
	3.82	1200.00	0.00	0.00	570.10	10400.00	594.59	.18	.65	.01	8656.72	24.49	525.62

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	EV	HL	QLOSS	QCH	DEPTH	TOPWID
4.20	2000.00	0.00	0.00	570.90	4740.00	589.53	.10	.96	.00	4740.00	18.63	158.22
4.20	2000.00	0.00	0.00	570.90	7030.00	592.51	.13	1.17	.00	7029.97	21.61	183.27
4.20	2000.00	0.00	0.00	570.90	8030.00	593.61	.15	1.24	.00	8026.05	22.71	227.06
4.20	2000.00	0.00	0.00	570.90	10400.00	595.95	.17	1.40	.00	10368.95	25.05	290.00
4.32	650.00	0.00	0.00	568.10	4740.00	589.82	.07	.25	.01	4358.95	21.72	169.00
4.32	650.00	0.00	0.00	568.10	7030.00	592.85	.11	.32	.01	6340.12	24.76	169.00
4.32	650.00	0.00	0.00	568.10	8030.00	593.99	.13	.35	.01	7786.67	25.89	169.00
4.32	650.00	0.00	0.00	568.10	10400.00	596.34	.17	.49	.01	10018.32	28.28	214.50
4.33	49.00	0.00	0.00	571.60	4740.00	589.84	.08	.02	.01	4740.00	18.24	144.86
4.33	49.00	0.00	0.00	571.60	7030.00	592.89	.12	.03	.01	7030.00	21.29	144.86
4.33	49.00	0.00	0.00	571.60	8030.00	594.01	.14	.05	.01	8030.00	22.41	144.88
4.33	49.00	0.00	0.00	571.60	10400.00	596.41	.14	.04	.01	10399.56	24.81	158.45
4.34	22.00	597.10	592.00	571.60	4740.00	589.86	.08	.02	0.00	4740.00	18.26	144.88
4.34	22.00	597.10	592.00	571.60	7030.00	593.33	.12	.43	0.00	7030.00	21.73	144.88
4.34	22.00	597.10	592.00	571.60	8030.00	594.61	.13	.54	0.00	8030.00	23.01	144.88
4.34	22.00	597.10	592.00	571.60	10400.00	597.42	.17	1.00	0.00	10373.72	25.82	193.18
4.34	45.00	0.00	0.00	568.40	4740.00	589.83	.08	.02	.00	4740.00	21.08	147.05
4.34	45.00	0.00	0.00	568.40	7030.00	593.35	.12	.03	.00	7030.00	24.55	160.77
4.34	45.00	0.00	0.00	568.40	8030.00	594.64	.13	.03	.00	8030.00	25.84	172.34
4.34	45.00	0.00	0.00	568.40	10400.00	597.46	.17	.03	.01	10400.00	28.66	172.34
4.35	1.00	600.90	596.30	568.90	4740.00	589.87	.11	.00	.02	4740.00	21.07	147.03
4.35	1.00	600.90	596.30	568.90	7030.00	593.35	.15	.00	.03	7030.00	24.55	160.75
4.35	1.00	600.90	596.30	568.90	8030.00	594.64	.17	.00	.03	8030.00	25.83	172.34
4.35	1.00	600.90	596.30	568.90	10400.00	597.45	.23	.00	.06	10400.00	28.65	172.34
4.35	39.00	600.90	596.30	568.80	4740.00	589.90	.11	.02	.00	4740.00	21.10	147.11
4.35	39.00	600.90	596.30	568.80	7030.00	593.37	.15	.03	.00	7030.00	24.57	160.83
4.35	39.00	600.90	596.30	568.80	8030.00	594.66	.17	.03	.00	8030.00	25.86	172.34
4.35	39.00	600.90	596.30	568.80	10400.00	597.54	.23	.04	.00	10400.00	28.74	172.34
4.35	1.00	0.00	0.00	568.80	4740.00	589.94	.08	.00	.02	4740.00	21.14	147.28
4.35	1.00	0.00	0.00	568.80	7030.00	593.43	.12	.00	.02	7030.00	24.63	161.05
4.35	1.00	0.00	0.00	568.80	8030.00	594.72	.13	.00	.02	8030.00	25.92	172.34
4.35	1.00	0.00	0.00	568.80	10400.00	597.66	.15	.00	.05	10400.00	28.86	172.34
4.38	150.00	0.00	0.00	569.20	4740.00	590.00	.10	.06	.01	4461.36	20.80	256.01
4.38	150.00	0.00	0.00	569.20	7030.00	593.59	.13	.07	.01	6346.54	24.30	284.10
4.38	150.00	0.00	0.00	569.20	8030.00	594.90	.13	.04	.01	7148.28	25.60	299.14
4.38	150.00	0.00	0.00	569.20	10400.00	597.74	.15	.08	.00	8942.98	26.54	383.34
4.90	2700.00	0.00	0.00	571.00	4740.00	591.63	.08	1.00	.01	4135.69	20.03	432.30
4.90	2700.00	0.00	0.00	571.00	7030.00	594.59	.10	1.04	.02	5603.51	23.59	548.37
4.90	2700.00	0.00	0.00	571.00	8030.00	595.90	.10	1.05	.02	6178.72	24.90	595.21
4.90	2700.00	0.00	0.00	571.00	10400.00	598.84	.10	1.02	.03	7375.76	27.84	800.00

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	AV	HL	OLOSS	OCA	DEPTH	TOPWID
5.13	1200.00	0.00	0.00	570.80	4740.00	591.52	.11	.49	.02	4659.60	20.72	133.97
5.13	1200.00	0.00	0.00	570.80	7030.00	595.11	.16	.53	.03	6816.24	24.31	135.90
5.13	1200.00	0.00	0.00	570.80	8830.00	596.43	.19	.55	.07	7748.43	25.63	135.99
5.13	1200.00	0.00	0.00	570.80	10400.00	594.37	.24	.55	.11	9892.32	28.57	365.24
5.14	49.00	0.00	0.00	572.90	4600.00	591.56	.10	.02	.01	4600.00	18.66	110.85
5.14	49.00	0.00	0.00	572.90	6840.00	595.15	.15	.03	.01	6840.00	22.25	110.85
5.14	49.00	0.00	0.00	572.90	7820.00	596.48	.17	.03	.01	7820.00	23.58	110.85
5.14	49.00	0.00	0.00	572.90	10200.00	595.41	.23	.03	.01	10200.00	26.51	110.85
5.15	39.00	597.40	593.10	572.90	4600.00	591.57	.11	.02	0.00	4600.00	18.67	105.07
5.15	39.00	597.40	593.10	572.90	6840.00	595.34	.16	.20	0.00	6840.00	22.44	105.07
5.15	39.00	597.40	593.10	572.90	7820.00	596.76	.19	.29	0.00	7820.00	23.86	105.07
5.15	39.00	597.40	593.10	572.90	10200.00	594.77	.25	.37	0.00	10200.00	26.87	110.85
5.16	50.00	0.00	0.00	571.50	4600.00	591.63	.18	.02	.12	4474.03	20.13	197.33
5.16	50.00	0.00	0.00	571.50	6840.00	595.45	.19	.02	.14	6459.56	23.96	210.80
5.16	50.00	0.00	0.00	571.50	7820.00	596.89	.11	.02	.04	7305.66	25.39	210.80
5.16	50.00	0.00	0.00	571.50	10200.00	599.97	.13	.02	.07	9155.95	28.47	490.53
5.34	950.00	0.00	0.00	571.00	4600.00	591.53	.08	.35	.00	4401.15	20.93	400.11
5.34	950.00	0.00	0.00	571.00	6840.10	595.53	.11	.32	.01	6975.85	24.82	700.00
5.34	950.00	0.00	0.00	571.00	7820.00	597.26	.10	.31	.02	6552.06	26.26	700.00
5.34	950.00	0.00	0.00	571.00	10200.00	600.35	.07	.26	.04	7723.34	29.35	1330.59
5.49	800.00	0.00	0.00	570.40	4600.00	592.29	.12	.23	.12	3826.71	21.59	453.17
5.49	800.00	0.00	0.00	570.40	6840.00	595.07	.05	.21	.02	5147.07	24.67	504.53
5.49	800.00	0.00	0.00	570.40	7820.00	597.50	.06	.29	.01	5592.19	27.10	515.74
5.49	800.00	0.00	0.00	570.40	10200.00	600.54	.06	.18	.01	5934.43	30.14	942.90
5.71	1200.00	0.00	0.00	569.40	4600.00	592.60	.06	.31	.01	4264.08	23.20	331.88
5.71	1200.00	0.00	0.00	569.40	6840.00	596.36	.06	.29	.10	5713.79	26.96	589.04
5.71	1200.00	0.00	0.00	569.40	7820.00	597.78	.05	.25	.00	5197.58	28.38	593.30
5.71	1200.00	0.00	0.00	569.40	10200.00	600.81	.05	.23	.01	7095.55	31.41	1150.00
6.12	2100.00	0.00	0.00	570.80	4600.00	593.34	.07	.74	.11	3882.46	22.54	399.11
6.12	2100.00	0.00	0.00	570.80	6840.00	597.03	.09	.67	.00	4793.23	26.23	481.19
6.12	2100.00	0.00	0.00	570.80	7820.00	598.41	.06	.63	.00	5125.72	27.61	485.20
6.12	2100.00	0.00	0.00	570.80	10200.00	601.36	.04	.55	.01	5840.03	30.56	892.06
6.42	1550.00	0.00	0.00	571.50	4600.00	593.90	.05	.54	.01	4404.11	22.40	559.19
6.42	1550.00	0.00	0.00	571.50	6840.00	597.49	.05	.44	.01	5858.26	25.99	908.63
6.42	1550.00	0.00	0.00	571.50	7820.00	598.83	.05	.40	.01	6314.01	27.33	1044.95
6.42	1550.00	0.00	0.00	571.50	10200.00	601.72	.04	.33	.01	7213.34	30.22	1356.61
6.56	650.00	0.00	0.00	572.00	4600.00	594.07	.01	.10	.02	2936.14	22.07	1033.28
6.56	650.00	0.00	0.00	572.00	6840.00	597.63	.01	.08	.02	3560.45	25.63	1075.45
6.56	650.00	0.00	0.00	572.00	7820.00	598.96	.01	.06	.02	3812.93	26.96	1151.65
6.56	650.00	0.00	0.00	572.00	10200.00	601.83	.01	.06	.02	4351.20	29.83	1415.59

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	WCS	DEPTH	TOPWID
6.96	2100.00	0.00	0.00	570.60	4600.00	594.43	.06	.37	.04	3610.16	23.83	445.05
6.96	2100.00	0.00	0.00	570.60	5440.00	597.94	.07	.42	.04	4951.44	27.34	527.45
6.96	2100.00	0.00	0.00	570.60	7820.00	604.26	.08	.31	.04	6396.15	28.66	558.11
6.96	2100.00	0.00	0.00	570.60	10200.00	607.10	.06	.21	.04	6364.25	31.50	600.00
7.04	400.00	0.00	0.00	559.20	4600.00	594.61	.10	.14	.03	3536.01	25.41	309.31
7.04	400.00	0.00	0.00	559.20	6840.00	598.12	.11	.13	.04	4902.72	28.92	667.49
7.04	400.00	0.00	0.00	559.20	7820.00	599.63	.11	.13	.03	4931.70	30.23	525.40
7.04	400.00	0.00	0.00	559.20	10200.00	602.25	.10	.10	.02	5514.36	33.05	1115.65
7.12	400.00	0.00	0.00	567.80	4600.00	594.62	.06	.15	.02	3145.45	27.02	531.33
7.12	400.00	0.00	0.00	567.80	6840.00	598.35	.06	.14	.03	3836.17	30.55	785.24
7.12	400.00	0.00	0.00	567.80	7820.00	599.65	.05	.14	.03	4060.53	31.85	946.43
7.12	400.00	0.00	0.00	567.80	10200.00	602.45	.05	.12	.03	4521.36	34.65	1010.07
7.31	970.00	0.00	0.00	571.40	4600.00	595.00	.07	.11	.03	4515.42	23.60	351.63
7.31	970.00	0.00	0.00	571.40	6840.00	598.51	.08	.12	.02	5576.37	27.11	489.51
7.31	970.00	0.00	0.00	571.40	7820.00	599.81	.08	.12	.02	7435.79	28.41	492.93
7.31	970.00	0.00	0.00	571.40	10200.00	602.60	.08	.12	.01	5449.44	31.20	550.00
7.47	800.00	0.00	0.00	573.50	4410.00	595.05	.05	.09	.03	3055.94	21.55	867.92
7.47	800.00	0.00	0.00	573.50	6600.00	598.80	.06	.09	.01	3827.08	25.30	900.00
7.47	800.00	0.00	0.00	573.50	7550.00	599.90	.04	.09	.01	3838.92	26.40	800.00
7.47	800.00	0.00	0.00	573.50	9860.00	602.70	.03	.09	.00	4248.36	29.20	1340.57
7.57	530.00	0.00	0.00	574.10	4410.00	595.62	.07	.10	.02	3588.47	22.12	341.51
7.57	530.00	0.00	0.00	574.10	6600.00	598.72	.07	.13	.04	5443.53	25.02	331.44
7.57	530.00	0.00	0.00	574.10	7550.00	600.02	.06	.13	.04	5146.51	26.32	341.25
7.57	530.00	0.00	0.00	574.10	9860.00	602.80	.10	.11	.05	7389.06	29.70	963.26
7.64	370.00	0.00	0.00	572.80	4410.00	595.36	.07	.14	.00	3472.56	22.56	576.58
7.64	370.00	0.00	0.00	572.80	6600.00	598.89	.07	.13	.01	4343.74	26.09	512.55
7.64	370.00	0.00	0.00	572.80	7550.00	600.19	.06	.13	.02	4585.03	27.39	513.00
7.64	370.00	0.00	0.00	572.80	9860.00	602.94	.05	.13	.02	5497.23	30.18	513.00
7.65	50.00	0.00	0.00	570.40	4410.00	595.40	.06	.02	.01	4410.00	25.00	147.00
7.65	50.00	0.00	0.00	570.40	6600.00	598.91	.06	.02	.00	5393.14	28.51	600.00
7.65	50.00	0.00	0.00	570.40	7550.00	600.21	.06	.02	.00	6463.55	29.81	600.00
7.65	50.00	0.00	0.00	570.40	9860.00	603.00	.07	.02	.00	7755.35	32.60	600.00
7.65	17.00	598.10	596.70	570.40	4410.00	595.40	.06	.00	0.00	4332.29	25.00	452.36
7.65	17.00	598.10	596.70	570.40	6600.00	598.91	.06	-0.00	0.00	5894.71	28.51	600.20
7.65	17.00	598.10	596.70	570.40	7550.00	600.21	.06	.00	0.00	6470.42	29.81	600.20
7.65	17.00	598.10	596.70	570.40	9860.00	603.01	.07	.01	0.00	7784.15	32.61	750.00
7.66	50.00	0.00	0.00	570.60	4410.00	595.42	.01	.01	.00	4410.00	24.82	147.00
7.66	50.00	0.00	0.00	570.60	6600.00	598.92	.06	.01	.00	5441.37	26.32	600.00
7.66	50.00	0.00	0.00	570.60	7550.00	600.23	.06	.01	.00	6389.15	29.63	600.00
7.66	50.00	0.00	0.00	570.60	9860.00	603.06	.05	.01	.01	7100.54	32.45	750.00

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
7.82	850.00	0.00	0.00	573.10	4410.00	595.61	.01	.12	.03	2109.03	22.51	929.04
7.82	850.00	0.00	0.00	573.10	6600.00	599.12	.01	.12	.03	2634.10	25.02	940.76
7.82	850.00	0.00	0.00	573.10	7550.00	600.42	.01	.12	.03	3133.21	27.32	945.11
7.82	850.00	0.00	0.00	573.10	9860.00	603.24	.02	.14	.02	3835.03	30.14	950.00
8.20	2000.00	0.00	0.00	559.40	4410.00	595.64	.14	.23	.02	4357.65	26.44	295.19
8.20	2000.00	0.00	0.00	559.40	6600.00	599.36	.15	.23	.03	6330.54	29.96	360.29
8.20	2000.00	0.00	0.00	559.40	7550.00	600.67	.16	.25	.13	7136.32	31.27	403.51
8.20	2000.00	0.00	0.00	559.40	9860.00	603.51	.17	.24	.04	9031.50	34.11	542.44
8.29	500.00	0.00	0.00	559.50	4410.00	595.92	.03	.07	.00	3522.00	27.42	536.94
8.29	500.00	0.00	0.00	559.50	6600.00	599.47	.03	.04	.01	5238.42	30.97	582.49
8.29	500.00	0.00	0.00	559.50	7550.00	600.79	.04	.04	.01	5832.95	32.29	728.36
8.29	500.00	0.00	0.00	559.50	9860.00	603.65	.04	.05	.02	7044.29	35.15	834.85
8.72	2250.00	0.00	0.00	573.00	4410.00	596.14	.02	.2	.01	4145.35	23.14	509.12
8.72	2250.00	0.00	0.00	573.00	6600.00	599.77	.02	.2	.01	5445.04	26.77	572.16
8.72	2250.00	0.00	0.00	573.00	7550.00	601.10	.02	.25	.01	6546.63	28.10	693.52
8.72	2250.00	0.00	0.00	573.00	9860.00	603.96	.02	.24	.01	8185.84	30.96	739.72
9.01	1550.00	0.00	0.00	575.50	4410.00	596.41	.03	.03	.03	3524.24	20.91	447.94
9.01	1550.00	0.00	0.00	575.50	6600.00	600.05	.07	.24	.04	4359.79	24.55	411.68
9.01	1550.00	0.00	0.00	575.50	7550.00	601.37	.07	.28	.04	4621.89	25.87	833.90
9.01	1550.00	0.00	0.00	575.50	9860.00	604.23	.10	.27	.03	5188.19	28.73	865.92
9.17	850.00	0.00	0.00	575.10	4410.00	596.54	.14	.43	.04	3651.45	21.13	592.99
9.17	850.00	0.00	0.00	575.10	6600.00	600.44	.12	.43	.04	4626.43	24.54	654.94
9.17	850.00	0.00	0.00	575.10	7550.00	601.74	.12	.31	.12	4922.01	25.84	669.05
9.17	850.00	0.00	0.00	575.80	9860.00	604.56	.11	.34	.05	5744.21	28.76	702.06
9.42	1300.00	0.00	0.00	576.10	4410.00	597.72	.05	.37	.05	4410.00	21.62	165.00
9.42	1300.00	0.00	0.00	576.10	6600.00	601.11	.05	.35	.05	5259.10	25.01	320.00
9.42	1300.00	0.00	0.00	576.10	7550.00	602.39	.05	.34	.04	5756.58	26.29	320.00
9.42	1300.00	0.00	0.00	576.10	9860.00	605.16	.05	.31	.04	7090.77	29.06	748.81
9.43	49.00	0.00	0.00	576.20	4410.00	597.74	.08	.02	.02	4410.00	21.54	144.94
9.43	49.00	0.00	0.00	576.20	6600.00	601.12	.11	.02	.05	6600.00	24.92	144.94
9.43	49.00	0.00	0.00	576.20	7550.00	602.39	.12	.02	.06	7531.38	26.19	295.80
9.43	49.00	0.00	0.00	576.20	9860.00	605.17	.15	.02	.08	9598.73	28.97	396.37
9.43	18.00	601.30	600.80	576.20	4410.00	597.75	.08	.01	1.00	4410.00	21.55	144.94
9.43	18.00	601.30	600.80	576.20	6600.00	601.23	.11	.12	1.00	6600.00	25.03	144.94
9.43	18.00	601.30	600.80	576.20	7550.00	602.53	.12	.13	1.00	7526.54	26.33	295.80
9.43	18.00	601.30	600.80	576.20	9860.00	605.25	.15	.04	1.00	9601.42	29.05	396.37
9.44	50.00	0.00	0.00	576.10	4410.00	597.77	.09	.02	.01	3911.70	21.67	368.90
9.44	50.00	0.00	0.00	576.10	6600.00	601.27	.10	.02	.01	5248.62	25.17	395.80
9.44	50.00	0.00	0.00	576.10	7550.00	602.58	.10	.02	.01	5772.98	26.48	395.80
9.44	50.00	0.00	0.00	576.10	9860.00	605.33	.11	.02	.02	6993.40	29.23	591.75

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	SCH	DEPTH	TOPWID
9.51	350.00	0.00	0.00	575.40	4410.00	597.91	.15	.12	.01	3662.40	22.61	437.09
9.51	350.00	0.00	0.00	575.40	6600.00	601.41	.15	.11	.01	5141.34	26.11	557.26
9.51	350.00	0.00	0.00	575.40	7550.00	602.72	.09	.11	.01	5808.81	27.42	583.73
9.51	350.00	0.00	0.00	575.40	9660.00	605.47	.15	.11	.11	5672.57	30.17	513.93
9.75	1300.00	0.00	0.00	575.00	4410.00	598.33	.10	.39	.01	2987.51	23.33	490.53
9.75	1300.00	0.00	0.00	575.00	6600.00	601.82	.10	.37	.01	3822.19	26.82	625.47
9.75	1300.00	0.00	0.00	575.00	7550.00	603.12	.10	.36	.12	4143.94	28.12	651.78
9.75	1300.00	0.00	0.00	575.00	9660.00	605.86	.16	.34	.02	4865.09	30.86	678.62
9.91	800.00	0.00	0.00	575.40	4410.00	598.58	.04	.22	.01	2486.43	23.18	1014.59
9.91	800.00	0.00	0.00	575.40	6600.00	602.05	.03	.14	.02	2729.44	26.65	1078.53
9.91	800.00	0.00	0.00	575.40	7550.00	603.34	.02	.17	.02	2841.10	27.94	1116.54
9.91	800.00	0.00	0.00	575.40	9660.00	606.07	.12	.13	.02	3168.22	30.67	1159.25
10.08	900.00	0.00	0.00	575.50	4410.00	598.46	.09	.24	.04	3532.42	23.36	419.13
10.08	900.00	0.00	0.00	575.50	6600.00	602.25	.10	.24	.06	4700.19	26.78	511.44
10.08	900.00	0.00	0.00	575.50	7550.00	603.56	.11	.23	.06	5178.24	28.06	515.00
10.08	900.00	0.00	0.00	575.50	9660.00	606.28	.11	.21	.07	5126.16	30.76	510.07
10.32	1300.00	0.00	0.00	575.50	4410.00	598.39	.09	.47	.02	3473.54	23.39	423.59
10.32	1300.00	0.00	0.00	575.50	6600.00	602.02	.07	.49	.02	4753.43	27.32	456.15
10.32	1300.00	0.00	0.00	575.50	7550.00	604.19	.07	.49	.02	5288.05	28.69	466.45
10.32	1300.00	0.00	0.00	575.50	9660.00	608.54	.04	.47	.04	6245.31	31.34	1046.30
10.50	924.00	0.00	0.00	577.00	4270.00	599.75	.11	.37	.04	3758.36	22.75	203.10
10.50	924.00	0.00	0.00	577.00	6400.00	603.29	.13	.35	.03	5150.14	26.29	214.66
10.50	924.00	0.00	0.00	577.00	7340.00	604.49	.13	.41	.05	5754.11	27.49	217.00
10.50	924.00	0.00	0.00	577.00	9610.00	607.21	.15	.39	.09	7155.40	30.21	217.00
10.51	75.00	0.00	0.00	578.00	4270.00	599.87	.04	.02	.04	4270.00	21.87	164.41
10.51	75.00	0.00	0.00	578.00	6400.00	603.32	.06	.03	.04	6400.00	25.32	178.46
10.51	75.00	0.00	0.00	578.00	7340.00	604.61	.07	.03	.03	7340.00	26.61	179.24
10.51	75.00	0.00	0.00	578.00	9610.00	607.33	.10	.03	.03	9610.00	29.33	179.24
10.52	48.00	608.20	604.50	578.00	4270.00	599.88	.04	.00	0.00	4270.00	21.88	164.41
10.52	48.00	608.20	604.50	578.00	6400.00	603.33	.06	.00	0.00	6400.00	25.33	178.48
10.52	48.00	608.20	604.50	578.00	7340.00	604.71	.07	.10	0.00	7340.00	26.71	179.24
10.52	48.00	608.20	604.50	578.00	9610.00	607.53	.09	.20	0.00	9610.00	29.53	179.24
10.53	48.00	0.00	0.00	577.60	4270.00	599.88	.05	.01	.00	4270.00	22.28	163.40
10.53	48.00	0.00	0.00	577.60	6400.00	603.34	.07	.01	.00	6400.00	25.74	180.43
10.53	48.00	0.00	0.00	577.60	7340.00	604.72	.08	.01	.00	7340.00	27.12	181.05
10.53	48.00	0.00	0.00	577.60	9610.00	607.54	.10	.01	.00	9610.00	29.94	181.05
10.54	48.00	608.20	604.50	577.60	4270.00	599.88	.05	.00	0.00	4270.00	22.28	163.40
10.54	48.00	608.20	604.50	577.60	6400.00	603.34	.07	.00	0.00	6400.00	25.74	180.43
10.54	48.00	608.20	604.50	577.60	7340.00	604.84	.08	.12	0.00	7340.00	27.24	181.05
10.54	48.00	608.20	604.50	577.60	9610.00	607.74	.10	.24	0.00	9610.00	30.18	181.05

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	OCH	DEPTH	TOPWID
10.55	50.00	0.00	0.00	577.60	4270.00	599.39	.05	.01	.00	4270.00	22.29	163.44
10.55	50.00	0.00	0.00	577.60	6400.00	603.35	.07	.01	.00	6400.00	25.75	180.44
10.55	50.00	0.00	0.00	577.60	7340.00	604.35	.08	.01	.00	7340.00	27.25	181.05
10.55	50.00	0.00	0.00	577.60	9610.00	607.39	.10	.01	.00	9610.00	30.20	181.05
10.66	600.00	0.00	0.00	577.40	4270.00	600.02	.17	.13	.02	3107.95	22.62	249.37
10.66	600.00	0.00	0.00	577.40	6400.00	604.50	.23	.19	.02	4336.56	26.10	365.30
10.66	600.00	0.00	0.00	577.40	7340.00	605.01	.25	.15	.01	4806.45	27.61	418.39
10.66	600.00	0.00	0.00	577.40	9610.00	607.10	.17	.17	.00	5644.51	30.56	465.00
11.09	2240.00	0.00	0.00	576.60	4270.00	600.60	.07	.50	.03	1638.27	24.00	938.25
11.09	2240.00	0.00	0.00	576.60	6400.00	604.10	.01	.43	.04	1958.43	27.50	1037.00
11.09	2240.00	0.00	0.00	576.60	7340.00	605.59	.01	.45	.05	2095.24	28.99	1068.29
11.09	2240.00	0.00	0.00	576.60	9610.00	608.54	.01	.42	.05	2430.29	31.93	1329.51
11.41	1720.00	0.00	0.00	579.70	4270.00	601.01	.17	.42	.04	3235.22	21.31	168.00
11.41	1720.00	0.00	0.00	579.70	6400.00	604.47	.09	.34	.05	4741.53	24.77	168.00
11.41	1720.00	0.00	0.00	579.70	7340.00	605.94	.10	.37	.07	5337.48	26.24	168.00
11.41	1720.00	0.00	0.00	579.70	9610.00	608.48	.11	.36	.08	6714.12	29.16	988.45
11.42	49.00	0.00	0.00	580.30	4270.00	601.03	.10	.01	.00	4270.00	20.73	144.00
11.42	49.00	0.00	0.00	580.30	6400.00	604.49	.14	.01	.00	6400.00	24.19	144.00
11.42	49.00	0.00	0.00	580.30	7340.00	605.96	.10	.02	.00	7340.00	25.66	144.00
11.42	49.00	0.00	0.00	580.30	9610.00	608.87	.11	.02	.00	9521.59	28.57	592.33
11.43	30.00	605.90	602.60	580.30	4270.00	601.03	.10	.00	0.00	4270.00	20.73	144.00
11.43	30.00	605.90	602.60	580.30	6400.00	604.50	.14	.11	0.00	6400.00	24.20	144.00
11.43	30.00	605.90	602.60	580.30	7340.00	606.11	.16	.15	0.00	7340.00	25.81	144.00
11.43	30.00	605.90	602.60	580.30	9610.00	609.05	.12	.20	0.00	9498.39	28.75	608.27
11.44	50.00	0.00	0.00	579.70	4270.00	601.04	.10	.02	.03	3912.36	21.34	226.92
11.44	50.00	0.00	0.00	579.70	6400.00	604.60	.13	.02	.03	5514.52	24.90	240.00
11.44	50.00	0.00	0.00	579.70	7340.00	606.12	.15	.02	.03	6179.69	26.42	240.00
11.44	50.00	0.00	0.00	579.70	9610.00	609.07	.13	.02	.02	7530.95	29.37	1174.77
11.79	1850.00	0.00	0.00	581.40	4270.00	602.11	.11	1.07	.01	3791.74	20.71	257.37
11.79	1850.00	0.00	0.00	581.40	6400.00	605.64	.13	1.03	.00	5246.24	24.24	613.59
11.79	1850.00	0.00	0.00	581.40	7340.00	607.11	.12	.96	.01	5635.52	25.71	692.46
11.79	1850.00	0.00	0.00	581.40	9610.00	609.99	.11	.86	.02	6584.35	28.59	781.32
12.13	1800.00	0.00	0.00	582.20	4270.00	603.11	.06	.92	.03	3240.90	20.91	602.15
12.13	1800.00	0.00	0.00	582.20	6400.00	606.57	.05	.82	.04	3942.39	24.37	632.99
12.13	1800.00	0.00	0.00	582.20	7340.00	607.97	.05	.75	.04	4250.84	25.77	685.37
12.13	1800.00	0.00	0.00	582.20	9610.00	610.75	.05	.65	.04	4899.55	28.55	721.84
12.24	600.00	0.00	0.00	582.40	4270.00	603.34	.12	.24	.03	3266.13	20.98	471.75
12.24	600.00	0.00	0.00	582.40	6400.00	606.81	.11	.23	.05	3969.92	24.41	640.74
12.24	600.00	0.00	0.00	582.40	7340.00	608.20	.10	.23	.04	4185.33	25.80	753.94
12.24	600.00	0.00	0.00	582.40	9610.00	610.95	.09	.21	.03	4624.00	28.55	903.90

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	CLOSS	QCH	DEPTH	TOPWID
12.49	1300.00	0.00	0.00	582.80	4270.00	603.92	.01	.36	.07	1952.09	21.12	339.12
12.49	1300.00	0.00	0.00	582.80	6400.00	607.25	.01	.29	.06	2400.55	24.46	1056.99
12.49	1300.00	0.00	0.00	582.80	7340.00	608.60	.01	.26	.06	2559.40	25.80	1387.44
12.49	1300.00	0.00	0.00	582.80	9610.00	611.29	.01	.21	.05	2907.90	28.49	1515.19
12.72	1200.00	0.00	0.00	582.90	4270.00	604.21	.01	.29	.00	0.00	21.31	564.25
12.72	1200.00	0.00	0.00	582.90	6400.00	607.49	.01	.23	.00	0.00	24.59	995.76
12.72	1200.00	0.00	0.00	582.90	7340.00	608.81	.01	.21	.00	0.00	25.91	1156.42
12.72	1200.00	0.00	0.00	582.90	9610.00	611.45	.01	.16	.00	0.00	28.56	1203.88
12.85	700.00	0.00	0.00	583.00	4270.00	604.50	.19	.32	.14	2964.95	21.50	135.00
12.85	700.00	0.00	0.00	583.00	6400.00	607.75	.26	.32	.21	4262.43	24.76	135.00
12.85	700.00	0.00	0.00	583.00	7340.00	609.05	.32	.30	.24	4821.88	26.06	135.00
12.85	700.00	0.00	0.00	583.00	9610.00	611.67	.41	.24	.32	6140.73	28.67	1035.68
12.86	49.00	0.00	0.00	583.50	4270.00	604.70	.06	.04	.04	4270.00	21.10	109.27
12.86	49.00	0.00	0.00	583.50	6400.00	608.04	.13	.05	.09	6400.00	24.44	109.27
12.86	49.00	0.00	0.00	583.50	7340.00	609.37	.15	.07	.10	7340.00	25.77	109.27
12.86	49.00	0.00	0.00	583.50	9610.00	612.10	.18	.06	.14	9174.40	28.50	982.68
12.87	54.00	610.40	606.20	583.60	4270.00	604.70	.08	.00	0.00	4270.00	21.10	109.27
12.87	54.00	610.40	606.20	583.60	6400.00	608.04	.13	.14	0.00	6400.00	24.59	109.27
12.87	54.00	610.40	606.20	583.60	7340.00	609.56	.15	.21	0.00	7340.00	25.98	109.27
12.87	54.00	610.40	606.20	583.60	9610.00	612.44	.18	.33	0.00	9021.73	28.84	1024.88
12.88	50.00	0.00	0.00	583.50	4270.00	604.79	.14	.02	.03	4270.00	21.29	208.00
12.88	50.00	0.00	0.00	583.50	6400.00	608.33	.05	.02	.14	6400.00	24.83	208.00
12.88	50.00	0.00	0.00	583.50	7340.00	609.74	.06	.04	.05	7340.00	26.24	208.00
12.88	50.00	0.00	0.00	583.50	9610.00	612.64	.07	.06	.05	9606.52	29.14	1034.64
12.96	450.00	0.00	0.00	582.40	4270.00	604.89	.05	.10	.01	3818.17	22.49	391.69
12.96	450.00	0.00	0.00	582.40	6400.00	608.43	.06	.11	.01	5131.84	26.03	829.04
12.96	450.00	0.00	0.00	582.40	7340.00	609.85	.06	.10	.00	5548.92	27.45	360.56
12.96	450.00	0.00	0.00	582.40	9610.00	612.84	.05	.17	.01	6420.29	30.44	1048.69
13.07	580.00	0.00	0.00	580.80	4270.00	605.03	.03	.10	.01	2630.69	24.23	675.13
13.07	580.00	0.00	0.00	580.80	6400.00	608.57	.04	.10	.01	3681.59	27.77	995.12
13.07	580.00	0.00	0.00	580.80	7340.00	609.98	.04	.11	.01	3990.03	29.18	993.94
13.07	580.00	0.00	0.00	580.80	9610.00	612.96	.03	.09	.01	4645.45	32.16	1080.21
13.37	1600.00	0.00	0.00	584.00	4270.00	605.45	.04	.42	.01	2950.19	21.45	851.34
13.37	1600.00	0.00	0.00	584.00	6400.00	608.96	.03	.37	.00	3438.20	24.96	927.96
13.37	1600.00	0.00	0.00	584.00	7340.00	610.35	.02	.35	.01	3691.46	26.35	964.32
13.37	1600.00	0.00	0.00	584.00	9610.00	613.30	.02	.31	.01	4153.13	29.30	1169.29
13.57	1020.00	0.00	0.00	584.00	4270.00	606.04	.13	.61	.07	4002.39	22.04	381.38
13.57	1020.00	0.00	0.00	584.00	6400.00	609.38	.13	.45	.08	5183.73	25.38	692.10
13.57	1020.00	0.00	0.00	584.00	7340.00	610.72	.12	.39	.07	5503.14	26.72	850.39
13.57	1020.00	0.00	0.00	584.00	9610.00	613.57	.08	.29	.05	5885.30	29.57	1185.72

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
13.81	1260.00	0.00	0.00	585.20	2980.00	606.76	.04	.54	.05	1882.97	21.56	715.00
13.81	1260.00	0.00	0.00	585.20	4660.00	610.00	.03	.45	.06	2078.72	24.80	715.00
13.81	1260.00	0.00	0.00	585.20	5420.00	611.24	.03	.41	.05	2163.03	26.08	715.00
13.81	1260.00	0.00	0.00	585.20	7300.00	614.00	.06	.33	.04	2395.95	28.80	850.00
13.82	49.00	0.00	0.00	585.30	2980.00	606.79	.03	.01	.01	2843.55	21.49	446.02
13.82	49.00	0.00	0.00	585.30	4660.00	610.01	.04	.01	.01	3949.50	24.71	536.40
13.82	49.00	0.00	0.00	585.30	5420.00	611.29	.04	.01	.01	4348.52	25.99	690.31
13.82	49.00	0.00	0.00	585.30	7300.00	614.01	.03	.01	.01	5222.55	28.71	728.45
13.82	1.00	604.10	605.20	585.30	2980.00	606.79	.04	.00	.00	2571.07	21.49	432.30
13.82	1.00	604.10	605.20	585.30	4660.00	610.02	.03	.00	.00	3275.46	24.72	536.42
13.82	1.00	604.10	605.20	585.30	5420.00	611.31	.03	.00	.01	3442.77	26.01	590.32
13.82	1.00	604.10	605.20	585.30	7300.00	614.03	.02	.00	.01	3720.46	28.73	728.45
13.82	16.00	604.10	605.20	585.30	2980.00	606.82	.04	.03	.00	2936.42	21.52	434.31
13.82	16.00	604.10	605.20	585.30	4660.00	610.04	.03	.02	.00	3271.46	24.74	537.48
13.82	16.00	604.10	605.20	585.30	5420.00	611.32	.03	.02	.00	3437.99	26.02	690.89
13.82	16.00	604.10	605.20	585.30	7300.00	614.04	.02	.01	.00	3715.32	28.74	728.45
13.82	1.00	0.00	0.00	585.30	2980.00	606.83	.03	.00	.00	2635.35	21.53	448.35
13.82	1.00	0.00	0.00	585.30	4660.00	610.04	.04	.00	.01	3272.01	24.74	537.54
13.82	1.00	0.00	0.00	585.30	5420.00	611.32	.04	.00	.01	4392.09	26.02	690.93
13.82	1.00	0.00	0.00	585.30	7300.00	614.04	.04	.00	.01	5331.47	28.74	728.45
13.83	49.00	0.00	0.00	585.20	2980.00	606.84	.05	.01	.02	1814.99	21.64	534.80
13.83	49.00	0.00	0.00	585.20	4660.00	610.05	.05	.01	.01	2208.71	24.85	617.62
13.83	49.00	0.00	0.00	585.20	5420.00	611.33	.04	.01	.01	2343.13	26.13	633.09
13.83	49.00	0.00	0.00	585.20	7300.00	614.05	.04	.01	.00	2668.85	28.85	665.67
13.88	250.00	0.00	0.00	585.30	2980.00	606.92	.08	.09	.02	1950.11	21.62	272.34
13.88	250.00	0.00	0.00	585.30	4660.00	610.13	.10	.09	.04	2651.66	24.83	329.40
13.88	250.00	0.00	0.00	585.30	5420.00	611.40	.10	.09	.05	2917.09	26.10	382.18
13.88	250.00	0.00	0.00	585.30	7300.00	614.11	.10	.09	.05	3471.93	28.81	520.80
14.18	1600.00	0.00	0.00	585.70	2980.00	607.43	.01	.41	.04	981.74	21.73	613.91
14.18	1600.00	0.00	0.00	585.70	4660.00	610.68	.01	.42	.05	1250.57	24.98	824.14
14.18	1600.00	0.00	0.00	585.70	5420.00	611.95	.01	.40	.05	1333.61	26.25	1022.45
14.18	1600.00	0.00	0.00	585.70	7300.00	614.63	.01	.37	.05	1482.82	28.93	1181.78
14.58	2100.00	0.00	0.00	588.10	2980.00	607.92	.02	.49	.01	1786.99	19.82	569.63
14.58	2100.00	0.00	0.00	588.10	4660.00	611.14	.02	.45	.01	2320.97	23.04	674.46
14.58	2100.00	0.00	0.00	588.10	5420.00	612.39	.02	.44	.01	2527.19	24.29	751.90
14.58	2100.00	0.00	0.00	588.10	7300.00	615.02	.02	.39	.01	2988.37	26.92	800.00
15.10	2740.00	0.00	0.00	589.30	2980.00	608.53	.01	.59	.01	940.53	19.23	911.53
15.10	2740.00	0.00	0.00	589.30	4660.00	611.64	.01	.52	.01	1145.19	22.38	968.37
15.10	2740.00	0.00	0.00	589.30	5420.00	612.91	.01	.50	.01	1232.05	23.61	1159.65
15.10	2740.00	0.00	0.00	589.30	7300.00	615.51	.01	.47	.01	1430.93	26.21	1226.41

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	WV	AL	DLOSS	WCH	DEPTH	TOPWID
15.62	2750.00	0.00	0.00	591.40	2820.00	608.79	.00	.25	.00	784.07	17.39	1091.54
15.62	2750.00	0.00	0.00	591.40	4440.00	611.89	.00	.20	.00	969.58	20.49	1146.97
15.62	2750.00	0.00	0.00	591.40	5170.00	613.10	.00	.18	.00	1049.54	21.70	1168.67
15.62	2750.00	0.00	0.00	591.40	7000.00	615.69	.00	.17	.00	1254.40	24.29	1283.77

SECTION NUMBER	DISCHARGE CFS	CWSEL	CWSEL DIFF EACH Q	CWSEL DIFF EACH SECTION	CWSEL-WSELK	TOPWID	TOPWID DIFF	LENGTH
0.000	4820.000	578.600	0.000	0.000	0.000	142.933	0.000	-0.000
0.000	7140.000	578.600	0.000	0.000	0.000	142.933	0.000	-0.000
0.000	8150.000	578.600	0.000	0.000	0.000	142.933	0.000	-0.000
0.000	10600.000	578.600	0.000	0.000	0.000	142.933	0.000	-0.000
.018	4820.000	578.666	0.000	.066	0.000	162.662	0.000	100.000
.018	7140.000	578.747	.081	.147	0.000	162.985	-.324	100.000
.018	8150.000	578.793	.046	.193	0.000	163.172	-.510	100.000
.018	10600.000	578.937	.144	.337	0.000	163.749	-1.087	100.000
.019	4820.000	578.553	0.000	-.012	0.000	162.639	0.000	1.000
.019	7140.000	578.720	.067	-.026	0.000	162.881	-.242	1.000
.019	8150.000	578.759	.039	-.034	0.000	163.033	-.394	1.000
.019	10600.000	578.680	.121	-.067	0.000	163.320	-.681	1.000
.034	4820.000	578.712	0.000	.059	0.000	162.821	0.000	83.000
.034	7140.000	578.852	.140	.132	0.000	163.408	-.587	83.000
.034	8150.000	578.932	.080	.173	0.000	163.729	-.908	83.000
.034	10600.000	579.182	.249	.302	0.000	164.725	-1.905	83.000
.035	4820.000	578.813	0.000	.161	0.000	163.253	0.000	1.000
.035	7140.000	579.074	.261	.222	0.000	164.298	-1.044	1.000
.035	8150.000	579.222	.148	.290	0.000	164.889	-1.635	1.000
.035	10600.000	579.670	.448	.489	0.000	166.684	-3.431	1.000
.129	4820.000	578.984	0.000	.171	0.000	161.372	0.000	500.000
.129	7140.000	579.419	.435	.345	0.000	161.707	-.335	500.000
.129	8150.000	579.652	.233	.430	0.000	161.885	-.514	500.000
.129	10600.000	580.310	.659	.640	0.000	196.660	-35.288	500.000
.177	4820.000	579.159	0.000	.175	0.000	129.205	0.000	250.000
.177	7140.000	579.751	.592	.332	0.000	129.570	-.364	250.000
.177	8150.000	580.053	.301	.400	0.000	143.361	-14.155	250.000
.177	10600.000	580.863	.811	.553	0.000	189.172	-59.967	250.000
.300	4820.000	579.736	0.000	.576	0.000	100.001	0.000	650.000
.300	7140.000	580.793	1.057	1.041	0.000	100.001	-.000	650.000
.300	8150.000	581.296	.503	1.243	0.000	100.001	-.000	650.000
.300	10600.000	582.544	1.249	1.611	0.000	100.001	-.000	650.000
.357	4820.000	579.997	0.000	.251	0.000	90.001	0.000	300.000
.357	7140.000	581.240	1.243	.448	0.000	90.001	-.000	300.000
.357	8150.000	581.818	.578	.522	0.000	90.001	-.000	300.000
.357	10600.000	583.230	1.412	.686	0.000	90.001	-.000	300.000
.452	4820.000	580.510	0.000	.513	0.000	135.001	0.000	500.000
.452	7140.000	582.131	1.620	.691	0.000	135.001	-.000	500.000
.452	8150.000	582.867	.737	1.050	0.000	135.001	-.000	500.000
.452	10600.000	584.548	1.680	1.418	0.000	135.001	-.000	500.000
.548	4820.000	580.733	0.000	.222	0.000	170.345	0.000	500.000
.548	7140.000	582.459	1.726	.328	0.000	174.188	-3.842	500.000
.548	8150.000	583.230	.772	.363	0.000	175.309	-4.963	500.000
.548	10600.000	585.075	1.844	.427	0.000	177.990	-7.644	500.000

.636	4820.000	581.009	0.000	.278	0.000	171.300	0.000	475.000
.636	7140.000	582.837	1.828	.378	0.000	211.587	-40.288	475.000
.636	8150.000	583.640	.803	.410	0.000	233.340	-62.040	475.000
.636	10600.000	585.550	1.910	.475	0.000	278.674	-107.379	475.000
.829	4820.000	581.495	0.000	.428	0.000	173.105	0.000	1020.000
.829	7140.000	583.502	2.007	.565	0.000	216.573	-43.467	1020.000
.829	8150.000	584.352	.850	.712	0.000	235.840	-62.734	1020.000
.829	10600.000	586.314	1.962	.765	0.000	341.065	-167.960	1020.000
1.152	4820.000	582.128	0.000	.633	0.000	575.735	0.000	1705.000
1.152	7140.000	584.228	2.101	.727	0.000	610.704	-34.965	1705.000
1.152	8150.000	585.088	.860	.736	0.000	612.472	-36.737	1705.000
1.152	10600.000	587.043	1.955	.729	0.000	613.000	-34.262	1705.000
1.436	4820.000	582.859	0.000	.731	0.000	235.811	0.000	1500.000
1.436	7140.000	584.904	2.046	.676	0.000	330.963	-92.552	1500.000
1.436	8150.000	585.722	.817	.634	0.000	397.653	-159.147	1500.000
1.436	10600.000	587.583	1.861	.540	0.000	466.155	-227.644	1500.000
1.635	4820.000	583.551	0.000	.692	0.000	500.124	0.000	1050.000
1.635	7140.000	585.708	2.158	.804	0.000	750.000	-249.875	1050.000
1.635	8150.000	586.532	.824	.810	0.000	750.000	-249.876	1050.000
1.635	10600.000	588.361	1.828	.776	0.000	750.001	-249.877	1050.000
1.967	4820.000	584.317	0.000	.767	0.000	143.000	0.000	1750.000
1.967	7140.000	586.555	2.237	.846	0.000	143.000	-.001	1750.000
1.967	8150.000	587.387	.832	.855	0.000	143.001	-.001	1750.000
1.967	10600.000	589.207	1.820	.846	0.000	605.581	-462.581	1750.000
1.977	4820.000	584.332	0.000	.015	0.000	119.278	0.000	59.000
1.977	7140.000	586.572	2.240	.013	0.000	120.192	-.313	59.000
1.977	8150.000	587.406	.833	.019	0.000	120.292	-.413	59.000
1.977	10600.000	589.221	1.815	.014	0.000	120.351	-.473	59.000
1.978	4820.000	584.329	0.000	-.003	0.000	119.879	0.000	1.000
1.978	7140.000	586.567	2.238	-.005	0.000	120.141	-.313	1.000
1.978	8150.000	587.399	.832	-.007	0.000	120.241	-.413	1.000
1.978	10600.000	589.192	1.793	-.029	0.000	120.351	-.473	1.000
1.980	4820.000	584.344	0.000	.015	0.000	119.880	0.000	12.000
1.980	7140.000	586.587	2.243	.020	0.000	120.194	-.313	12.000
1.980	8150.000	587.428	.841	.029	0.000	120.293	-.413	12.000
1.980	10600.000	589.265	1.837	.073	0.000	120.351	-.471	12.000
1.981	4820.000	584.379	0.000	.035	0.000	119.884	0.000	1.000
1.981	7140.000	586.646	2.267	.059	0.000	120.201	-.317	1.000
1.981	8150.000	587.504	.858	.076	0.000	120.300	-.415	1.000
1.991	10600.000	589.548	2.044	.283	0.000	120.351	-.467	1.000
1.990	4820.000	584.431	0.000	.052	0.000	119.892	0.000	50.000
1.990	7140.000	586.714	2.282	.067	0.000	120.212	-.320	50.000
1.990	8150.000	587.577	.863	.073	0.000	120.306	-.414	50.000
1.990	10600.000	589.632	2.055	.064	0.000	120.351	-.459	50.000
2.011	4820.000	584.558	0.000	.127	0.000	124.141	0.000	110.000
2.011	7140.000	586.884	2.326	.170	0.000	124.479	-.338	110.000
2.011	8150.000	587.766	.882	.189	0.000	124.570	-.429	110.000
2.011	10600.000	589.857	2.091	.226	0.000	124.600	-.459	110.000
2.089	4740.000	584.942	0.000	.384	0.000	414.965	0.000	415.000
2.089	7030.000	587.422	2.480	.538	0.000	434.999	-20.034	415.000
2.089	8030.000	588.371	.948	.604	0.000	434.999	-20.035	415.000
2.089	10400.000	590.602	2.232	.745	0.000	435.000	-20.035	415.000

2.383	7030.000	588.197	2.492	.774	0.000	447.257	-30.066	1550.000
2.383	8030.000	589.142	.946	.772	0.000	459.571	-42.379	1550.000
2.383	10400.000	591.333	2.190	.731	0.000	488.671	-71.480	1550.000
2.714	4740.000	586.446	0.000	.742	0.000	274.679	0.000	1750.000
2.714	7030.000	588.977	2.531	.781	0.000	295.069	-20.390	1750.000
2.714	8030.000	589.930	.953	.768	0.000	345.564	-70.885	1750.000
2.714	10400.000	592.094	2.164	.761	0.000	420.222	-145.543	1750.000
2.979	4740.000	587.028	0.000	.582	0.000	324.487	0.000	1400.000
2.979	7030.000	589.629	2.601	.652	0.000	347.024	-22.538	1400.000
2.979	8030.000	590.604	.975	.674	0.000	380.418	-55.932	1400.000
2.979	10400.000	592.779	2.175	.684	0.000	471.536	-147.049	1400.000
3.339	4740.000	587.701	0.000	.673	0.000	573.693	0.000	1900.000
3.339	7030.000	590.332	2.631	.703	0.000	704.734	-31.041	1900.000
3.339	8030.000	591.320	.988	.717	0.000	716.207	-42.515	1900.000
3.339	10400.000	593.505	2.184	.726	0.000	741.564	-67.871	1900.000
3.593	4740.000	588.105	0.000	.405	0.000	313.351	0.000	1340.000
3.593	7030.000	590.763	2.657	.431	0.000	404.113	-90.762	1340.000
3.593	8030.000	591.759	.996	.439	0.000	448.783	-135.435	1340.000
3.593	10400.000	593.949	2.190	.444	0.000	546.955	-233.605	1340.000
3.820	4740.000	588.571	0.000	.465	0.000	242.987	0.000	1200.000
3.820	7030.000	591.330	2.758	.567	0.000	405.731	-162.744	1200.000
3.820	8030.000	592.358	1.028	.599	0.000	446.034	-203.051	1200.000
3.820	10400.000	594.593	2.235	.644	0.000	525.620	-282.633	1200.000
4.199	4740.000	589.532	0.000	.961	0.000	154.220	0.000	2000.000
4.199	7030.000	592.507	2.975	1.177	0.000	183.275	-25.055	2000.000
4.199	8030.000	593.606	1.099	1.243	0.000	227.564	-69.344	2000.000
4.199	10400.000	595.952	2.346	1.359	0.000	280.000	-121.780	2000.000
4.322	4740.000	589.820	0.000	.289	0.000	169.000	0.000	650.000
4.322	7030.000	592.863	3.043	.356	0.000	169.000	-.001	650.000
4.322	8030.000	593.987	1.124	.361	0.000	169.001	-.001	650.000
4.322	10400.000	596.377	2.390	.425	0.000	214.505	-45.505	650.000
4.332	4740.000	589.839	0.000	.018	0.000	144.885	0.000	49.000
4.332	7030.000	592.887	3.048	.024	0.000	144.885	0.000	49.000
4.332	8030.000	594.013	1.126	.026	0.000	144.885	0.000	49.000
4.332	10400.000	596.407	2.394	.030	0.000	158.447	-13.562	49.000
4.336	4740.000	589.855	0.000	.017	0.000	144.885	0.000	22.000
4.336	7030.000	593.327	3.472	.440	0.000	144.885	-0.000	22.000
4.336	8030.000	594.606	1.279	.594	0.000	144.885	0.000	22.000
4.336	10400.000	597.420	2.814	1.013	0.000	193.180	-48.295	22.000
4.344	4740.000	589.876	0.000	.021	0.000	147.053	0.000	45.000
4.344	7030.000	593.352	3.475	.025	0.000	160.773	-13.720	45.000
4.344	8030.000	594.637	1.285	.031	0.000	172.342	-25.289	45.000
4.344	10400.000	597.464	2.827	.044	0.000	172.342	-25.289	45.000
4.345	4740.000	589.871	0.000	-.005	0.000	147.032	0.000	1.000
4.345	7030.000	593.345	3.474	-.006	0.000	160.746	-13.713	1.000
4.345	8030.000	594.630	1.285	-.007	0.000	172.342	-25.310	1.000
4.345	10400.000	597.450	2.820	-.013	0.000	172.342	-25.310	1.000
4.352	4740.000	589.897	0.000	.025	0.000	147.111	0.000	39.000
4.352	7030.000	593.374	3.477	.028	0.000	160.834	-13.724	39.000
4.352	8030.000	594.661	1.288	.031	0.000	172.342	-25.231	39.000
4.352	10400.000	597.537	2.875	.086	0.000	172.342	-25.231	39.000
4.353	4740.000	589.941	0.000	.044	0.000	147.282	0.000	1.000

	4.353	8030.000	594.724	1.293	.063	0.000	172.342	-25.060	1.000
	4.353	10400.000	597.658	2.934	.121	0.000	172.342	-25.060	1.000
	4.381	4740.000	590.001	0.000	.060	0.000	256.012	0.000	150.000
	4.381	7030.000	593.500	3.499	.069	0.000	284.097	-28.085	150.000
	4.381	8030.000	594.798	1.298	.074	0.000	299.144	-43.132	150.000
	4.381	10400.000	597.741	2.943	.083	0.000	383.337	-127.326	150.000
	4.898	4740.000	591.034	0.000	1.033	0.000	432.300	0.000	2700.000
	4.898	7030.000	594.587	3.554	1.087	0.000	548.366	-116.065	2700.000
	4.898	8030.000	595.904	1.317	1.106	0.000	595.212	-162.911	2700.000
	4.898	10400.000	598.840	2.935	1.099	0.000	800.000	-367.700	2700.000
	5.128	4740.000	591.521	0.000	.487	0.000	133.973	0.000	1200.000
	5.128	7030.000	595.108	3.587	.520	0.000	135.899	-1.927	1200.000
	5.128	8030.000	596.434	1.327	.530	0.000	135.900	-1.927	1200.000
	5.128	10400.000	599.367	2.932	.527	0.000	385.539	-251.566	1200.000
	5.137	4600.000	591.559	0.000	.038	0.000	110.845	0.000	49.000
	5.137	6840.000	595.154	3.595	.047	0.000	110.845	-.000	49.000
	5.137	7820.000	596.484	1.330	.050	0.000	110.846	-.001	49.000
	5.137	10200.000	599.411	2.927	.044	0.000	110.846	-.001	49.000
	5.146	4600.000	591.558	0.000	.009	0.000	105.066	0.000	39.000
	5.146	6840.000	595.344	3.776	.169	0.000	105.066	-.000	39.000
	5.146	7820.000	596.759	1.415	.275	0.000	105.067	-.001	39.000
	5.146	10200.000	599.772	3.013	.361	0.000	110.846	-5.780	39.000
	5.155	4600.000	591.634	0.000	.066	0.000	197.532	0.000	50.000
	5.155	6840.000	595.456	3.822	.113	0.000	210.800	-13.268	50.000
	5.155	7820.000	596.893	1.437	.134	0.000	210.801	-13.269	50.000
	5.155	10200.000	599.970	3.077	.195	0.000	490.531	-292.999	50.000
	5.335	4600.000	591.982	0.000	.348	0.000	400.108	0.000	950.000
	5.335	6840.000	595.818	3.836	.362	0.000	700.000	-299.892	950.000
	5.335	7820.000	597.262	1.444	.369	0.000	700.001	-299.893	950.000
	5.335	10200.000	600.346	3.084	.376	0.000	1330.584	-930.481	950.000
	5.487	4600.000	592.292	0.000	.309	0.000	453.174	0.000	800.000
	5.487	6840.000	596.073	3.781	.255	0.000	508.577	-55.403	800.000
	5.487	7820.000	597.496	1.423	.234	0.000	515.737	-62.563	800.000
	5.487	10200.000	600.537	3.041	.191	0.000	942.699	-489.725	800.000
	5.714	4600.000	592.600	0.000	.308	0.000	331.877	0.000	1200.000
	5.714	6840.000	596.361	3.761	.288	0.000	589.038	-257.161	1200.000
	5.714	7820.000	597.776	1.415	.280	0.000	593.301	-261.424	1200.000
	5.714	10200.000	600.813	3.037	.276	0.000	1150.000	-816.123	1200.000
	6.116	4600.000	593.338	0.000	.738	0.000	399.112	0.000	2100.000
	6.116	6840.000	597.030	3.692	.669	0.000	481.191	-82.079	2100.000
	6.116	7820.000	598.408	1.375	.632	0.000	485.198	-86.086	2100.000
	6.116	10200.000	601.363	2.954	.550	0.000	692.061	-292.948	2100.000
	6.423	4600.000	593.903	0.000	.565	0.000	559.189	0.000	1550.000
	6.423	6840.000	597.486	3.583	.437	0.000	908.630	-349.441	1550.000
	6.423	7820.000	598.822	1.342	.420	0.000	1044.982	-485.794	1550.000
	6.423	10200.000	601.717	2.895	.354	0.000	1359.606	-800.418	1550.000
	6.560	4600.000	594.065	0.000	.163	0.000	1033.279	0.000	650.000
	6.560	6840.000	597.625	3.561	.141	0.000	1075.447	-42.168	650.000
	6.560	7820.000	598.959	1.331	.131	0.000	1151.655	-118.376	650.000
	6.560	10200.000	601.825	2.867	.109	0.000	1415.249	-382.310	650.000
	6.962	4600.000	594.428	0.000	.361	0.000	445.050	0.000	2100.000
	6.962	6840.000	597.941	3.513	.313	0.000	527.450	-82.399	2100.000

	6.962	10200.000	602.099	2.840	.273	0.000	600.000	-154.950	2100.000
	7.040	4600.000	594.610	0.000	.182	0.000	309.307	0.000	400.000
	7.040	6840.000	598.116	3.516	.175	0.000	667.491	-356.165	400.000
	7.040	7820.000	599.429	1.313	.170	0.000	685.396	-376.089	400.000
	7.040	10200.000	602.255	2.826	.157	0.000	1115.650	-706.344	400.000
	7.118	4600.000	594.524	0.000	.214	0.000	531.326	0.000	400.000
	7.118	6840.000	598.346	3.822	.230	0.000	795.543	-254.217	400.000
	7.118	7820.000	599.653	1.307	.224	0.000	946.429	-315.104	400.000
	7.118	10200.000	602.453	2.800	.197	0.000	910.170	-378.745	400.000
	7.308	4600.000	595.000	0.000	.176	0.000	351.627	0.000	970.000
	7.308	6840.000	598.514	.514	.166	0.000	489.513	-137.884	970.000
	7.308	7820.000	599.814	1.300	.161	0.000	492.931	-141.305	970.000
	7.308	10200.000	602.598	2.784	.145	0.000	650.000	-298.373	970.000
	7.466	4410.000	595.079	0.000	.079	0.000	587.916	0.000	800.000
	7.466	6600.000	598.602	3.523	.085	0.000	700.000	-112.084	800.000
	7.466	7550.000	599.904	1.302	.090	0.000	700.001	-112.085	800.000
	7.466	9860.000	602.699	2.794	.100	0.000	1330.573	-742.657	800.000
	7.566	4410.000	595.224	0.000	.145	0.000	341.511	0.000	530.000
	7.566	6600.000	598.724	3.500	.122	0.000	381.433	-39.922	530.000
	7.566	7550.000	600.019	1.295	.115	0.000	381.557	-50.045	530.000
	7.566	9860.000	602.793	2.778	.099	0.000	963.254	-521.791	530.000
	7.636	4410.000	595.359	0.000	.135	0.000	576.583	0.000	370.000
	7.636	6600.000	598.886	3.528	.162	0.000	612.553	-35.970	370.000
	7.636	7550.000	600.191	1.305	.172	0.000	612.994	-36.416	370.000
	7.636	9860.000	602.981	2.789	.143	0.000	613.000	-36.417	370.000
	7.645	4410.000	595.398	0.000	.039	0.000	147.000	0.000	50.000
	7.645	6600.000	598.907	3.509	.021	0.000	600.000	-453.000	50.000
	7.645	7550.000	600.208	1.301	.017	0.000	600.000	-453.000	50.000
	7.645	9860.000	602.996	2.788	.015	0.000	600.001	-453.001	50.000
	7.649	4410.000	595.402	0.000	.005	0.000	452.358	0.000	17.000
	7.649	6600.000	598.907	3.505	-.000	0.000	600.200	-147.842	17.000
	7.649	7550.000	600.211	1.304	.003	0.000	600.200	-147.843	17.000
	7.649	9860.000	603.009	2.799	.013	0.000	750.000	-297.643	17.000
	7.658	4410.000	595.416	0.000	.013	0.000	147.000	0.000	50.000
	7.658	6600.000	598.923	3.507	.016	0.000	600.000	-453.000	50.000
	7.658	7550.000	600.227	1.304	.016	0.000	600.000	-453.000	50.000
	7.658	9860.000	603.050	2.823	.041	0.000	750.000	-603.000	50.000
	7.819	4410.000	595.613	0.000	.197	0.000	929.041	0.000	850.000
	7.819	6600.000	599.120	3.507	.197	0.000	940.762	-11.721	850.000
	7.819	7550.000	600.423	1.303	.196	0.000	945.110	-16.069	850.000
	7.819	9860.000	603.244	2.821	.194	0.000	950.000	-20.959	850.000
	8.198	4410.000	595.836	0.000	.224	0.000	295.194	0.000	2000.000
	8.198	6600.000	599.364	3.528	.244	0.000	360.291	-65.098	2000.000
	8.198	7550.000	600.673	1.310	.251	0.000	403.510	-108.317	2000.000
	8.198	9860.000	603.509	2.834	.265	0.000	542.436	-247.243	2000.000
	8.293	4410.000	595.917	0.000	.080	0.000	636.943	0.000	500.000
	8.293	6600.000	599.471	3.554	.106	0.000	682.493	-45.550	500.000
	8.293	7550.000	600.791	1.320	.116	0.000	728.363	-91.419	500.000
	8.293	9860.000	603.645	2.854	.136	0.000	834.845	-197.902	500.000
	8.719	4410.000	596.192	0.000	.275	0.000	604.120	0.000	2250.000
	8.719	6600.000	599.770	3.578	.300	0.000	672.180	-63.059	2250.000
	8.719	7550.000	601.098	1.329	.307	0.000	693.522	-84.402	2250.000

9.012	4410.000	596.479	0.000	.287	0.000	647.939	0.000	1550.000
9.012	6600.000	600.048	3.569	.278	0.000	511.576	-163.738	1550.000
9.012	7550.000	601.371	1.323	.273	0.000	833.897	-185.958	1550.000
9.012	9860.000	604.627	2.256	.264	0.000	895.923	-237.984	1550.000
9.173	4410.000	596.927	0.000	.448	0.000	992.993	0.000	950.000
9.173	6600.000	600.436	3.509	.386	0.000	654.979	-61.996	950.000
9.173	7550.000	601.737	1.301	.366	0.000	669.451	-73.458	950.000
9.173	9860.000	604.555	2.818	.326	0.000	702.061	-109.068	950.000
9.419	4410.000	597.723	0.000	.796	0.000	1[illegible]5.000	0.000	1300.000
9.419	6600.000	601.110	3.387	.674	0.000	320.801	-155.501	1300.000
9.419	7550.000	602.388	1.279	.651	0.000	320.601	-155.701	1300.000
9.419	9860.000	605.164	2.776	.609	0.000	748.306	-583.006	1300.000
9.429	4410.000	597.741	0.000	.013	0.000	144.942	0.000	49.000
9.429	6600.000	601.117	3.377	.008	0.000	144.942	0.000	49.000
9.429	7550.000	602.395	1.277	.006	0.000	2[illegible].[illegible]0	-150.[illegible]58	49.000
9.429	9860.000	605.165	2.771	.002	0.000	3[illegible].372	-251.430	49.000
9.432	4410.000	597.747	0.000	.006	0.000	144.942	0.000	18.000
9.432	6600.000	601.234	3.487	.117	0.000	144.942	0.000	18.000
9.432	7550.000	602.528	1.294	.133	0.000	255.[illegible]10	-150.[illegible]58	18.000
9.432	9860.000	605.251	2.723	.085	0.000	396.372	-251.430	18.000
9.442	4410.000	597.765	0.000	.018	0.000	368.901	0.000	50.000
9.442	6600.000	601.272	3.507	.038	0.000	395.[illegible]00	-26.[illegible]99	50.000
9.442	7550.000	602.583	1.310	.055	0.000	395.[illegible]00	-26.900	50.000
9.442	9860.000	605.334	2.751	.083	0.000	591.747	-222.846	50.000
9.508	4410.000	597.907	0.000	.141	0.000	4[illegible].093	0.000	350.000
9.508	6600.000	601.409	3.503	.137	0.000	557.277	-120.184	350.000
9.508	7550.000	602.720	1.310	.137	0.000	583.726	-146.633	350.000
9.508	9860.000	605.475	2.755	.141	0.000	613.950	-176.857	350.000
9.754	4410.000	598.329	0.000	.422	0.000	4[illegible].[illegible]27	0.000	1300.000
9.754	6600.000	601.817	3.488	.408	0.000	525.472	-134.845	1300.000
9.754	7550.000	603.117	1.300	.398	0.000	651.780	-161.153	1300.000
9.754	9860.000	605.858	2.741	.384	0.000	678.624	-187.997	1300.000
9.906	4410.000	598.540	0.000	.251	0.000	101[illegible].990	0.000	300.000
9.906	6600.000	602.048	3.465	.231	0.000	107[illegible].523	-63.[illegible]3[illegible]	300.000
9.906	7550.000	603.341	1.293	.224	0.000	1116.540	-101.[illegible]50	300.000
9.906	9860.000	606.071	2.730	.213	0.000	1159.250	-144.560	300.000
10.076	4410.000	598.864	0.000	.283	0.000	419.129	0.000	900.000
10.076	6600.000	602.278	3.414	.230	0.000	511.443	-92.314	900.000
10.076	7550.000	603.555	1.278	.215	0.000	515.700	-95.872	900.000
10.076	9860.000	606.263	2.709	.192	0.000	510.067	-190.938	900.000
10.322	4410.000	599.368	0.000	.525	0.000	4[illegible]3.585	0.000	1300.000
10.322	6600.000	602.824	3.436	.546	0.000	456.161	-32.575	1300.000
10.322	7550.000	604.102	1.279	.547	0.000	466.443	-42.857	1300.000
10.322	9860.000	606.845	2.742	.581	0.000	1046.795	-623.212	1300.000
10.497	4270.000	599.747	0.000	.358	0.000	203.100	0.000	924.000
10.497	6400.000	603.202	3.456	.378	0.000	214.665	-11.565	924.000
10.497	7340.000	604.488	1.286	.385	0.000	217.000	-13.900	924.000
10.497	9610.000	607.213	2.725	.369	0.000	217.001	-13.901	924.000
10.512	4270.000	599.874	0.000	.128	0.000	164.406	0.000	75.000
10.512	6400.000	603.325	3.450	.123	0.000	178.481	-14.073	75.000
10.512	7340.000	604.607	1.282	.119	0.000	179.241	-14.833	75.000
10.512	9610.000	607.326	2.719	.112	0.000	179.241	-14.833	75.000

	10.521	4270.000	599.876	0.000	.001	0.000	164.413	0.000	48.000
	10.521	6400.000	603.326	3.451	.002	0.000	176.483	-14.070	48.000
	10.521	7340.000	604.708	1.382	.101	0.000	179.241	-14.829	48.000
	10.521	9610.000	607.530	2.822	.204	0.000	179.241	-14.829	48.000
	10.530	4270.000	599.884	0.000	.005	0.000	163.400	0.000	48.000
	10.530	6400.000	603.336	3.452	.010	0.000	175.433	-17.633	48.000
	10.530	7340.000	604.719	1.382	.010	0.000	181.152	-17.632	48.000
	10.530	9610.000	607.541	2.823	.012	0.000	181.152	-17.632	48.000
	10.539	4270.000	599.885	0.000	.001	0.000	163.402	0.000	48.000
	10.539	6400.000	603.338	3.453	.006	0.000	175.433	-17.632	48.000
	10.539	7340.000	604.840	1.502	.121	0.000	181.152	-17.650	48.000
	10.539	9610.000	607.782	2.943	.241	0.000	181.152	-17.650	48.000
	10.548	4270.000	599.894	0.000	.009	0.000	163.434	0.000	50.000
	10.548	6400.000	603.349	3.455	.011	0.000	175.439	-17.000	50.000
	10.548	7340.000	604.851	1.502	.014	0.000	181.152	-17.013	50.000
	10.548	9610.000	607.795	2.944	.013	0.000	181.152	-17.613	50.000
	10.662	4270.000	600.022	0.000	.128	0.000	349.369	0.000	300.000
	10.662	6400.000	603.504	3.482	.154	0.000	365.235	-115.227	300.000
	10.662	7340.000	605.007	1.504	.156	0.000	413.402	-161.933	300.000
	10.662	9610.000	607.962	2.954	.167	0.000	465.000	-215.832	300.000
	11.086	4270.000	600.601	0.000	.570	0.000	93.254	0.000	2240.000
	11.086	6400.000	604.097	3.496	.595	0.000	1037.000	-94.740	2240.000
	11.086	7340.000	605.595	1.498	.575	0.000	1069.246	-130.032	2240.000
	11.086	9610.000	608.529	2.944	.567	0.000	1329.498	-391.244	2240.000
	11.412	4270.000	601.012	0.000	.410	0.000	168.000	0.000	1720.000
	11.412	6400.000	604.472	3.460	.375	0.000	168.001	-.001	1720.000
	11.412	7340.000	605.939	1.467	.354	0.000	168.001	-.001	1720.000
	11.412	9610.000	608.857	2.918	.328	0.000	988.847	-820.847	1720.000
	11.421	4270.000	601.033	0.000	.026	0.000	144.000	0.000	49.000
	11.421	6400.000	604.492	3.459	.020	0.000	144.000	-.000	49.000
	11.421	7340.000	605.958	1.465	.019	0.000	144.000	-.000	49.000
	11.421	9610.000	608.873	2.915	.016	0.000	592.332	-448.332	49.000
	11.427	4270.000	601.035	0.000	.001	0.000	144.000	0.000	30.000
	11.427	6400.000	604.594	3.560	.102	0.000	144.000	0.000	30.000
	11.427	7340.000	606.109	1.515	.152	0.000	144.000	0.000	30.000
	11.427	9610.000	609.055	2.945	.182	0.000	608.273	-464.273	30.000
	11.436	4270.000	601.043	0.000	.008	0.000	226.924	-0.000	50.000
	11.436	6400.000	604.604	3.562	.010	0.000	240.000	-13.076	50.000
	11.436	7340.000	606.120	1.516	.011	0.000	240.001	-13.077	50.000
	11.436	9610.000	609.070	2.950	.015	0.000	1174.769	-947.846	50.000
	11.787	4270.000	602.112	0.000	1.069	0.000	257.367	0.000	1850.000
	11.787	6400.000	605.639	3.526	1.033	0.000	613.588	-356.221	1850.000
	11.787	7340.000	607.111	1.473	.991	0.000	692.462	-435.094	1850.000
	11.787	9610.000	609.989	2.878	.919	0.000	751.320	-523.953	1850.000
	12.128	4270.000	603.110	0.000	.999	0.000	602.155	0.000	1800.000
	12.128	6400.000	606.572	3.462	.935	0.000	632.936	-30.631	1800.000
	12.128	7340.000	607.973	1.401	.862	0.000	685.370	-63.216	1800.000
	12.128	9610.000	610.748	2.775	.759	0.000	721.841	-119.646	1800.000
	12.241	4270.000	603.382	0.000	.272	0.000	471.745	0.000	600.000
	12.241	6400.000	606.810	3.428	.236	0.000	640.740	-168.995	600.000
	12.241	7340.000	608.195	1.385	.222	0.000	753.937	-282.191	600.000
	12.241	9610.000	610.948	2.753	.199	0.000	903.902	-432.137	600.000

12.487	6400.000	607.258	3.389	.447	0.000	1055.983	-217.671	1300.000
12.487	7340.000	608.600	1.343	.405	0.000	1367.441	-545.324	1300.000
12.487	9610.000	611.285	2.685	.336	0.000	1515.196	-676.070	1300.000
12.715	4270.000	604.207	0.000	.288	0.000	564.254	0.000	1200.000
12.715	6400.000	607.492	3.285	.234	0.000	995.759	-431.503	1200.000
12.715	7340.000	608.811	1.320	.211	0.000	1206.417	-492.163	1200.000
12.715	9610.000	611.461	2.650	.175	0.000	1203.478	-639.824	1200.000
12.847	4270.000	604.496	0.000	.289	0.000	135.000	0.000	700.000
12.847	6400.000	607.757	3.261	.265	0.000	135.001	-.000	700.000
12.847	7340.000	609.055	1.298	.244	0.000	135.001	-.001	700.000
12.847	9610.000	611.667	2.612	.206	0.000	1035.581	-406.661	700.000
12.856	4270.000	604.701	0.000	.205	0.000	109.272	0.000	49.000
12.856	6400.000	608.043	3.342	.286	0.000	109.272	0.000	49.000
12.856	7340.000	609.373	1.330	.318	0.000	109.272	0.000	49.000
12.856	9610.000	612.096	2.723	.429	0.000	982.384	-873.412	49.000
12.867	4270.000	604.702	0.000	.001	0.000	109.272	0.000	54.000
12.867	6400.000	608.186	3.483	.143	0.000	109.272	0.000	54.000
12.867	7340.000	609.582	1.396	.206	0.000	109.272	0.000	54.000
12.867	9610.000	612.440	2.858	.344	0.000	1024.477	-915.605	54.000
12.876	4270.000	604.792	1.000	.090	0.000	20 .001	0.000	50.000
12.876	6400.000	608.326	3.533	.140	0.000	20 .000	-.001	50.000
12.876	7340.000	609.743	1.418	.162	0.000	20 .001	-.001	50.000
12.876	9610.000	612.639	2.895	.199	0.000	1034.639	-926.039	50.000
12.962	4270.000	604.894	0.000	.102	0.000	391.590	0.000	450.000
12.962	6400.000	608.431	3.536	.103	0.000	379.040	-437.350	450.000
12.962	7340.000	609.849	1.419	.105	0.000	550.579	-498.189	450.000
12.962	9610.000	612.839	2.990	.201	0.000	1048.588	-656.997	450.000
13.071	4270.000	605.033	0.000	.139	0.000	675.130	0.000	580.000
13.071	6400.000	608.572	3.539	.141	0.000	595.123	-219.993	580.000
13.071	7340.000	609.983	1.411	.135	0.000	993.935	-518.405	580.000
13.071	9610.000	612.957	2.974	.118	0.000	1030.208	-905.078	580.000
13.374	4270.000	605.450	0.000	.417	0.000	851.335	0.000	1600.000
13.374	6400.000	608.958	3.508	.356	0.000	927.957	-66.622	1600.000
13.374	7340.000	610.353	1.395	.371	0.000	954.315	-102.983	1600.000
13.374	9610.000	613.296	2.943	.339	0.000	1159.292	-307.956	1600.000
13.568	4270.000	606.043	0.000	.593	0.000	381.375	0.000	1020.000
13.568	6400.000	609.384	3.341	.426	0.000	692.104	-310.728	1020.000
13.568	7340.000	610.724	1.339	.371	0.000	850.386	-469.010	1020.000
13.568	9610.000	613.572	2.849	.276	0.000	1135.724	-604.349	1020.000
13.806	2980.000	606.758	0.000	.715	0.000	715.000	0.000	1260.000
13.806	4660.000	610.000	3.241	.615	0.000	715.000	-.001	1260.000
13.806	5420.000	611.280	1.281	.556	0.000	715.001	-.001	1260.000
13.806	7300.000	614.001	2.721	.429	0.000	850.000	-135.001	1260.000
13.815	2980.000	606.769	0.000	.031	0.000	446.016	0.000	49.000
13.815	4660.000	610.010	3.241	.011	0.000	636.494	-190.488	49.000
13.815	5420.000	611.289	1.279	.009	0.000	650.311	-244.295	49.000
13.815	7300.000	614.009	2.719	.008	0.000	728.450	-262.434	49.000
13.816	2980.000	606.789	0.000	-.000	0.000	432.301	0.000	1.000
13.816	4660.000	610.021	3.233	.011	0.000	636.424	-214.123	1.000
13.816	5420.000	611.305	1.284	.016	0.000	690.319	-254.018	1.000
13.816	7300.000	614.029	2.724	.021	0.000	729.450	-295.149	1.000
13.819	2980.000	606.820	0.000	.032	0.000	434.608	0.000	16.000

13.819	5420.000	611.323	1.230	.018	0.000	690.491	-256.233	16.000
13.819	7300.000	614.043	2.719	.013	0.000	728.450	-293.542	16.000
13.820	2980.000	606.829	0.000	.009	0.000	448.351	0.000	1.000
13.820	4660.000	610.042	3.212	-.001	0.000	537.587	-189.237	1.000
13.820	5420.000	611.322	1.280	-.002	0.000	530.527	-242.576	1.000
13.820	7300.000	614.040	2.719	-.003	0.000	728.450	-230.100	1.000
13.828	2980.000	606.838	0.000	.009	0.000	534.799	0.000	49.000
13.828	4660.000	610.052	3.213	.010	0.000	617.620	-82.821	49.000
13.828	5420.000	611.331	1.280	.010	0.000	633.087	-98.288	49.000
13.828	7300.000	614.049	2.718	.009	0.000	665.671	-130.871	49.000
13.876	2980.000	606.918	0.000	.080	0.000	273.340	0.000	250.000
13.876	4660.000	610.126	3.208	.075	0.000	329.401	-57.662	250.000
13.876	5420.000	611.402	1.276	.071	0.000	382.183	-109.443	250.000
13.876	7300.000	614.114	2.712	.065	0.000	520.798	-248.458	250.000
14.179	2980.000	607.434	0.000	.516	0.000	514.510	0.000	1600.000
14.179	4660.000	610.679	3.244	.552	0.000	624.139	-210.230	1600.000
14.179	5420.000	611.948	1.270	.540	0.000	1022.454	-408.544	1600.000
14.179	7300.000	614.630	2.682	.516	0.000	1141.776	-367.066	1600.000
14.576	2980.000	607.914	0.000	.434	0.000	305.625	0.000	2100.000
14.576	4660.000	611.137	3.219	.458	0.000	574.454	-114.431	2100.000
14.576	5420.000	612.385	1.249	.437	0.000	751.402	-182.279	2100.000
14.576	7300.000	615.021	2.636	.391	0.000	800.000	-230.374	2100.000
15.095	2980.000	608.527	0.000	.609	0.000	911.525	0.000	2740.000
15.095	4660.000	611.683	3.156	.546	0.000	958.368	-30.843	2740.000
15.095	5420.000	612.911	1.228	.525	0.000	1159.554	-248.120	2740.000
15.095	7300.000	615.514	2.603	.443	0.000	1220.408	-314.883	2740.000
15.616	2820.000	608.786	0.000	.258	0.000	1091.535	0.000	2750.000
15.616	4440.000	611.887	3.101	.204	0.000	1146.967	-55.432	2750.000
15.616	5170.000	613.101	1.214	.191	0.000	1168.671	-77.136	2750.000
15.616	7000.000	615.665	2.564	.171	0.000	1283.768	-192.232	2750.000

DATA FOR LAST CROSS SECTIO

PROFILE	TYPE ENC	TARGET	TOP WIDTH AREA-ACRES	TOP WIDTH AREA-DIFF
1	0.000	0.000	808.141	0.000
2	0.000	0.000	983.166	175.025
3	0.000	0.000	1053.940	245.809
4	0.000	0.000	1337.648	529.518

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**** 7000 SCOPE 2.1 LVL  221  03/20/77  10.45.23  04/19/77      77109

SYS DEVICES 819/ 4/4F FLS=200K FLL=767K MXS=1D0K MXL=457K MX=457K

HH.MM.SS CPU SECOND ORIGIN
         15.14.59.EJ  ::    2CPU CR273 E44 SYN ECS-2CPUS 02/19/77
15.13.40 00000.021 MEZ.     -STCJ0B2,T10,C27U.    ST. CLASS T P F1S
15.13.40 00000.021 JOB.     -CHARGE,810-0037-45-73-5502,JADA,D010,JA.DA.
15.13.48 00000.064 JOB.     -ATTACH(HEC2,-EC2PROD,ID=NULL,V,CY=1)
15.13.48 00000.069 MEZ.        PF254 - CYCLE    1 ATTACHED FROM SN=SYSTE.
15.13.48 00000.070 LOD.     -HEC2(PL=99999).
15.13.51 00000.441 MEZ.        LD610 - FLS REQUIRED TO LOAD =  002 222 0.1.03
15.13.51 00000.501 MEZ.        LD613 - EXECUTION INITIATED 05.E.P
15.13.51 00000.501 USR.       FORTRAN LIBRARY 217-MODIFIED 03/16/76
15.13.58 00006.589 USR.          STOP
15.13.58 00006.589 USR.           5.0.7 CP SECONDS EXECUTION TIME
15.13.59 00006.592 MEZ.        RM770 - MAXIMUM ACTIVE FILES                 3
15.13.59 00006.592 MEZ.        RM771 - OPEN/CLOSE CALLS                    52
15.13.59 00006.592 MEZ.        RM772 - DATA TRANSFER CALLS              14,941
15.13.59 00006.593 MEZ.        RM773 - CONTROL/POSITIONING CALLS            2
15.13.59 00006.593 MEZ.        RM774 - BM DATA TRANSFER CALLS             5.0
15.13.59 00006.593 MEZ.        RM775 - BM CONTROL/POSITIONING CALLS         5
15.13.59 00006.593 MEZ.        RM776 -  DEVICE MANAGER CALLS              121
15.13.59 00006.593 MEZ.        RM777 - RECALL CALLS                         0
15.13.59 00006.594 MEZ.        B.MSG - NUMBER OF TAPES MOUNTED
15.13.59 00006.594 MEZ.           SRU                  7.072  SRU
15.13.59 00006.594 MEZ.           SCM                329.594  K-S
15.13.59 00006.595 MEZ.           I/O                  0.140  SEC
15.13.59 00006.595 MEZ.           CPU                  1.331  SEC
15.13.59 00006.595 MEZ.           USE                  4.096  SEC
15.13.59 00006.595 MEZ.           JOB                  0.247  SEC
15.13.59 00006.595 MEZ.        SC030 - 000017 SC/LC STAPS
15.13.59 00006.596 MEZ.     STCJ040    STCJ040
15.13.59.EJ  END OF JOB
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HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
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Jan. 1977
Natural Floodway

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C
1       CITY OF ST. CLAIR, ST. CLAIR TOWNSHIP  5555-61&62  PM: GILBERTO M. FONT
T2       100 YEAR FLOW
T3       PINE RIVER

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        -0.       4.       -0.       -0.  -0.000000    -0.00     -0.0      -0.    578.600   -0.000

J2  NPROF      IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
      0.000     -0.000    -1.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

NC       .049      .049      .056      .600      .800    -0.000    -0.000    -0.000    -0.000    -0.000
QT      4.000  4820.000  7140.000  8150.000 10600.000    -0.000    -0.000    -0.000    -0.000    -0.000

X1      0.000    25.000   245.000   472.000    -0.000    -0.000    -0.000    -0.000    -0.000     1.000
GR    589.500     0.000   589.000   100.000   589.600   200.000   588.000   207.000   587.500   245.000
GR    581.000   288.000   577.000   312.000   574.000   320.000   570.000   330.000   569.000   340.000
GR    566.000   350.000   562.700   360.000   558.000   370.000   557.700   395.000   557.900   400.000
GR    560.000   413.000   561.400   418.000   561.500   428.000   577.000   440.000   580.000   450.000
GR    584.000   462.000   587.500   472.000   587.000   500.000   587.000   540.000   587.600   600.000

X1       .018    30.000   289.000   485.000   100.000   100.000   100.000    -0.000    -0.000    -0.000
GR    589.500     0.000   589.000   100.000   589.600   200.000   591.700   289.000   585.500   289.000
GR    585.500   291.000   583.500   291.000   583.500   296.000   570.000   325.000   570.000   333.000
GR    568.400   340.000   566.800   347.000   565.000   355.000   560.000   364.000   558.000   370.000
GR    558.000   388.000   558.000   405.000   561.200   422.000   564.100   429.000   567.100   436.000
GR    570.000   444.000   570.000   453.000   583.500   478.000   583.500   483.000   585.500   483.000
GR    585.500   485.000   591.700   485.000   591.200   500.000   589.000   600.000   589.100   700.000

X1       .019    -0.000    -0.000    -0.000     1.000     1.000     1.000    -0.000    -0.000    -0.000
BT     13.000   289.000   591.700     0.000   289.000   591.700   586.700   333.000   592.400   587.000
BT    333.000   592.400   570.000   355.000   592.500   565.000   355.000   592.500   587.000   388.000
BT    592.900   588.000   422.000   592.500   587.000   422.000   592.500   561.200   444.000   592.400
BT    570.000   444.000   592.400   587.000   485.000   591.700   586.700   485.000   591.700    -0.000

X1       .034    -0.000    -0.000    -0.000    83.000    83.000    83.000    -0.000    -0.000     1.000
X2    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000     1.000    -0.000    -0.000    -0.000

X1       .035    -0.000    -0.000    -0.000     1.000     1.000     1.000    -0.000    -0.000    -0.000

X1       .129    32.000  1000.000  1191.000   500.000   500.000   500.000    -0.000    -0.000     1.000
GR    589.100     0.000   588.500   100.000   588.300   200.000   587.800   300.000   587.300   400.000
GR    586.700   500.000   586.300   600.000   585.800   700.000   585.500   800.000   585.600   900.000
GR    585.700  1000.000   580.500  1029.000   563.400  1029.000   562.800  1040.000   562.800  1060.000
GR    566.000  1080.000   568.000  1100.000   569.300  1120.000   570.400  1140.000   573.000  1160.000
GR    576.600  1180.000   578.500  1190.000   579.800  1191.000   581.400  1300.000   582.900  1400.000
GR    582.600  1500.000   584.300  1600.000   584.700  1700.000   585.100  1800.000   585.300  1900.000
GR    586.300  1992.000   590.700  2006.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

X1       .177    -0.000    -0.000    -0.000   250.000   250.000   250.000      .800    -0.000    -0.000
X3     10.000   563.500    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

X1         300    37.000  1200.000  1525.100   650.000   650.000   650.000    -0.000    -0.000    -0.000
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GR	585.100	0.000	586.600	100.000	585.900	200.000	583.700	300.000	585.600	400.000
GR	585.600	500.000	585.800	600.000	587.100	700.000	586.000	800.000	585.600	900.000
GR	586.800	1000.000	583.200	1100.000	581.400	1200.000	578.800	1201.000	576.100	1210.000
GR	571.200	1216.000	566.600	1230.000	567.200	1240.000	566.800	1260.000	565.200	1280.000
GR	566.200	1300.000	567.100	1320.000	568.100	1340.000	568.800	1360.000	569.200	1380.000
GR	569.500	1400.000	569.300	1420.000	569.500	1440.000	569.100	1460.000	570.300	1480.000
GR	573.200	1500.000	575.400	1510.000	584.100	1525.000	584.000	1600.000	584.700	1700.000
GP	585.400	1732.000	592.900	1750.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.357	-0.000	-0.000	-0.000	300.000	300.000	300.000	-0.000	-0.000	1.000
X3	10.000	566.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.452	-0.000	-0.000	-0.000	500.000	500.000	500.000	1.500	-0.000	-0.000
X3	10.000	566.370	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.045	1200.000	.098	1208.000	.061	1365.000	.154	1500.000	-0.000
X1	.548	29.000	1200.000	1385.000	500.000	500.000	500.000	-0.000	-0.000	-0.000
X3	10.000	566.730	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	584.300	0.000	583.300	100.000	582.200	200.000	583.200	300.000	583.800	400.000
GR	582.500	500.000	583.900	600.000	586.300	700.000	584.800	800.000	585.200	900.000
GR	585.700	1000.000	585.300	1100.000	581.400	1200.000	577.400	1208.000	575.300	1220.000
GR	571.600	1240.000	569.500	1260.000	567.600	1280.000	567.200	1300.000	567.100	1320.000
GR	567.400	1340.000	572.600	1350.000	576.600	1360.000	578.200	1368.000	589.900	1385.000
GR	589.600	1400.000	589.400	1420.000	591.800	1437.000	594.000	1500.000	-0.000	-0.000
X1	.636	-0.000	-0.000	-0.000	475.000	475.000	475.000	-0.000	-0.000	1.000
X3	10.000	567.100	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.049	160.000	.098	168.000	.066	328.000	.170	447.000	-0.000
X1	.829	16.000	160.000	347.000	1050.000	1020.000	1020.000	-0.000	-0.000	1.000
GR	586.100	0.000	585.400	80.000	581.600	160.000	577.400	168.000	574.300	180.000
GR	570.600	200.000	568.500	220.000	565.600	240.000	564.200	260.000	564.000	280.000
GR	565.400	300.000	570.600	310.000	575.600	320.000	578.200	328.000	590.000	347.000
GR	591.000	447.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.045	.098	.071	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.152	23.000	1200.000	1323.000	1300.000	1705.000	1705.000	-0.000	-0.000	1.000
GR	589.300	0.000	589.800	100.000	583.200	200.000	588.100	300.000	587.400	400.000
GR	587.800	500.000	583.700	600.000	583.200	700.000	579.700	800.000	580.100	900.000
GR	579.200	1000.000	579.500	1100.000	579.000	1200.000	575.000	1200.000	570.700	1210.000
GR	569.300	1220.000	564.000	1240.000	562.300	1260.000	563.900	1280.000	567.400	1295.000
GR	580.000	1295.000	580.000	1302.000	590.200	1323.000	-0.000	-0.000	-0.000	-0.000
X1	1.436	15.000	200.000	298.000	1450.000	1520.000	1500.000	-0.000	-0.000	1.000
GR	587.400	0.000	587.800	100.000	583.700	150.000	579.000	200.000	575.000	203.000
GR	570.700	210.000	569.300	220.000	565.600	240.000	564.900	260.000	565.000	280.000
GR	567.400	295.000	579.700	298.000	580.100	348.000	584.300	423.000	585.700	523.000
NH	5.000	.098	200.000	.140	312.000	.073	468.000	.140	600.000	.056
NH	1500.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.635	27.000	300.000	472.000	1150.000	850.000	1050.000	-0.000	-0.000	1.000
GR	590.200	0.000	589.900	100.000	584.000	162.000	583.500	200.000	582.200	300.000
GR	575.500	312.000	571.500	320.000	566.700	340.000	568.300	360.000	570.300	380.000
GR	572.300	400.000	573.400	420.000	574.100	440.000	577.900	460.000	578.800	468.000
GR	584.400	472.000	584.500	500.000	583.400	600.000	582.500	700.000	582.300	800.000
GR	584.200	900.000	585.300	1000.000	586.200	1100.000	585.400	1200.000	585.800	1300.000
GR	585.500	1400.000	586.900	1500.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.098	800.000	.168	810.000	.073	947.000	.168	953.000	.112
NH	1238.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.967	25.000	800.000	953.000	1200.000	1800.000	1750.000	-0.000	-0.000	1.000
GR	594.800	0.000	588.900	100.000	589.800	200.000	589.100	300.000	589.600	400.000
GR	587.700	500.000	583.000	600.000	581.200	700.000	581.000	800.000	578.300	803.000
GR	575.700	810.000	571.200	820.000	569.500	840.000	568.900	860.000	565.700	880.000
GR	565.000	900.000	568.400	920.000	570.900	930.000	575.300	940.000	578.500	947.000
GR	587.000	953.000	590.400	1000.000	591.000	1100.000	590.000	1200.000	589.600	1238.000

NC	.112	.112	.072	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.977	22.000	100.000	224.600	69.000	49.000	59.000	.966	-0.000	-0.000
GR	596.100	0.000	595.400	100.000	588.100	100.000	576.900	101.000	573.400	110.000
GR	570.100	120.000	571.100	130.000	570.200	140.000	571.200	150.000	575.200	160.000
GR	575.300	162.000	575.400	166.000	575.500	166.000	571.600	175.000	570.100	185.000
GR	569.000	195.000	573.100	205.000	571.900	215.000	576.300	224.000	587.100	224.600
GR	594.400	224.600	593.900	324.600	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.042	.042	.067	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.978	-0.000	-0.000	-0.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	.966	-0.000
BT	8.000	100.000	595.400	-0.000	100.000	595.400	588.100	160.000	595.000	587.600
BT	160.000	595.000	575.200	166.000	594.900	575.500	166.000	594.900	587.600	224.600
BT	594.400	587.100	324.600	593.900	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.980	-0.000	-0.000	-0.000	12.000	12.000	12.000	-0.000	-0.000	1.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	1.000	-0.000	-0.000	-0.000
NC	.084	.112	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.981	-0.000	-0.000	-0.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
X1	1.990	20.000	100.000	224.000	50.000	50.000	50.000	.966	-0.000	-0.000
GR	596.100	0.000	595.400	100.000	588.100	100.000	576.900	101.000	573.400	110.000
GR	570.100	120.000	571.100	130.000	570.200	140.000	571.200	150.000	575.200	160.000
GR	575.500	166.000	571.600	175.000	570.100	185.000	568.900	195.000	573.100	205.000
GR	571.900	215.000	576.300	224.000	587.100	224.600	594.400	224.600	593.900	324.600
NC	.112	.084	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.011	20.000	100.000	224.600	110.000	110.000	110.000	-0.000	-0.000	1.000
GR	596.100	0.000	595.400	100.000	588.100	100.000	576.900	101.000	573.400	110.000
GR	570.100	120.000	571.100	130.000	570.200	140.000	571.200	150.000	575.200	160.000
GR	575.500	166.000	571.600	175.000	570.100	185.000	568.700	195.000	573.100	205.000
GR	571.900	215.000	576.300	224.000	587.100	224.600	594.400	224.600	593.900	324.600
QT	4.000	4740.000	7030.000	8030.000	10400.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.112	300.000	.154	309.000	.073	380.000	.084	435.000	-0.000
X1	2.089	20.000	300.000	435.000	490.000	340.000	415.000	-0.000	-0.000	1.000
GR	585.300	0.000	583.500	100.000	582.600	200.000	579.500	270.000	584.100	300.000
GR	577.500	309.000	573.400	320.000	567.900	340.000	569.300	360.000	569.500	380.000
GR	570.700	400.000	573.700	420.000	578.400	430.000	580.900	435.000	581.600	500.000
GR	583.500	600.000	583.100	700.000	583.300	720.000	589.900	740.000	592.200	777.000
NH	4.000	.084	227.000	.098	327.000	.072	439.000	.130	502.000	-0.000
X1	2.383	16.000	327.000	502.000	1400.000	1625.000	1550.000	-0.000	-0.000	1.000
GR	591.400	0.000	588.400	27.000	583.900	62.000	582.800	127.000	582.700	227.000
GR	582.700	327.000	576.500	331.000	573.400	339.000	569.900	347.000	568.300	367.000
GR	569.600	387.000	570.700	407.000	573.100	427.000	576.600	439.000	579.600	439.000
GR	594.300	502.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	3.000	.170	113.000	.070	219.000	.084	430.000	-0.000	-0.000	-0.000
X1	2.714	15.000	100.000	220.000	1700.000	1750.000	1750.000	-0.000	-0.000	1.000
GR	590.500	0.000	589.500	100.000	578.100	110.000	573.800	120.000	569.300	140.000
GR	568.700	160.000	568.800	180.000	572.200	200.000	573.100	210.000	576.600	219.000
GR	581.600	220.000	583.500	300.000	585.700	372.000	589.600	400.000	593.300	430.000
NH	3.000	.180	100.000	.070	231.000	.098	480.000	-0.000	-0.000	-0.000
X1	2.979	15.000	100.000	233.000	1150.000	1500.000	1400.000	-0.000	-0.000	1.000
GR	591.500	0.000	590.300	100.000	578.500	113.000	576.100	120.000	574.100	130.000
GR	573.700	140.000	567.100	160.000	571.200	180.000	573.300	200.000	575.600	220.000
GR	578.300	231.000	581.700	233.000	582.300	300.000	583.300	400.000	593.900	480.000
NH	4.000	.182	28.000	.070	140.000	.084	200.000	.182	755.000	-0.000
X1	3.339	20.000	0.000	144.000	1800.000	1950.000	1900.000	-0.000	-0.000	1.000
GR	593.600	0.000	580.900	27.000	578.600	28.000	576.300	34.000	574.200	40.000
GR	570.900	60.000	571.800	80.000	572.800	100.000	573.900	120.000	575.500	130.000

GR	579.100	140.000	584.400	144.000	583.500	200.000	583.400	300.000	580.600	400.000
GR	581.200	500.000	581.700	600.000	583.000	640.000	589.100	700.000	594.900	755.000
NH	3.000	.210	35.000	.070	140.000	.196	600.000	-0.000	-0.000	-0.000
X1	3.593	16.000	0.000	144.000	1340.000	1150.000	1340.000	-0.000	-0.000	1.000
GR	597.500	0.000	581.600	34.000	578.700	35.000	577.400	40.000	571.500	50.000
GR	568.100	60.000	568.400	80.000	570.300	100.000	572.400	120.000	573.500	130.000
GR	578.600	140.000	584.300	144.000	584.500	200.000	586.500	300.000	589.400	360.000
GR	595.000	600.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.168	350.000	.196	368.000	.072	464.000	.210	620.000	-0.000
X1	3.820	15.000	350.000	464.000	1250.000	1100.000	1200.000	-0.000	-0.000	1.000
GR	597.500	0.000	589.800	250.000	588.500	350.000	580.400	367.000	577.600	368.000
GR	571.600	380.000	570.300	390.000	570.100	410.000	570.300	430.000	573.400	450.000
GR	575.500	456.000	578.500	463.000	581.300	464.000	583.000	550.000	593.400	620.000
NH	3.000	.224	38.000	.077	131.000	.238	280.000	-0.000	-0.000	-0.000
X1	4.199	13.000	0.000	180.000	2000.000	2000.000	2000.000	-0.000	-0.000	1.000
GR	593.800	0.000	583.200	36.000	577.200	38.000	570.900	50.000	570.900	60.000
GR	571.800	80.000	571.900	100.000	573.000	120.000	577.800	131.000	582.000	133.000
GR	584.700	160.000	592.300	180.000	595.000	280.000	-0.000	-0.000	-0.000	-0.000
NH	3.000	.224	143.000	.075	244.000	.224	282.000	-0.000	-0.000	-0.000
X1	4.322	15.000	130.000	282.000	650.000	650.000	650.000	-0.000	-0.000	1.000
GR	601.000	0.000	585.800	73.000	583.300	130.000	578.700	143.000	575.900	150.000
GR	571.300	160.000	569.400	170.000	568.100	190.000	569.100	210.000	569.900	220.000
GR	570.900	230.000	573.100	237.000	578.600	244.000	580.900	245.000	594.000	282.000
NH	6.000	6.300	38.000	.063	47.000	5.600	61.000	.063	98.500	5.600
NH	112.500	.063	150.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.332	26.000	0.000	150.000	49.000	49.000	49.000	.966	-0.000	-0.000
GR	597.200	0.000	585.200	0.000	583.400	9.500	581.600	19.000	580.600	23.800
GR	580.200	26.000	579.000	28.000	578.800	28.500	576.200	38.000	575.600	47.000
GR	574.200	52.000	574.700	61.000	573.000	70.500	572.300	75.800	571.600	80.000
GR	571.600	89.500	573.100	98.500	573.700	103.500	573.500	112.500	574.000	122.000
GR	574.000	126.800	574.100	131.500	572.800	141.000	575.600	150.000	597.200	150.000
GR	596.100	200.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
SB	1.000	1.708	3.010	0.000	62.940	19.060	1536.000	2.010	574.100	574.000
X1	4.336	-0.000	-0.000	-0.000	22.000	22.000	22.000	-0.000	-0.000	1.000
X2	-0.000	-0.000	1.000	592.000	597.100	-0.000	-0.000	-0.000	.966	-0.000
BT	27.000	0.000	597.100	0.000	0.000	597.100	589.900	9.500	597.100	591.400
BT	19.000	597.100	592.000	23.800	597.100	592.000	28.500	597.100	591.800	38.000
BT	597.100	591.100	47.000	597.100	589.900	47.000	597.100	575.600	52.000	597.100
BT	574.200	52.000	597.100	589.900	61.000	597.100	591.300	70.500	597.100	591.900
BT	75.800	597.100	592.000	80.000	597.100	591.900	89.500	597.100	591.200	98.500
BT	597.100	589.900	98.500	597.100	573.100	103.500	597.100	573.700	103.500	597.100
BT	589.900	112.500	597.100	591.400	122.000	597.100	592.000	126.800	597.100	592.000
BT	131.500	597.100	591.900	141.000	597.100	591.300	150.000	597.100	589.900	150.000
BT	597.100	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.196	.196	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.354	27.000	0.000	175.000	45.000	45.000	45.000	.985	-0.000	-0.000
GR	600.900	0.000	593.700	0.000	593.700	5.000	586.900	15.000	583.700	25.000
GR	578.700	35.000	574.700	45.000	574.200	56.000	574.000	57.000	573.700	58.000
GR	573.500	59.000	572.900	70.000	572.100	80.000	570.200	90.000	569.000	100.000
GR	568.800	110.000	571.200	116.000	571.800	117.000	572.500	118.000	573.100	119.000
GR	573.600	130.000	577.500	140.000	582.900	150.000	588.700	160.000	593.900	170.000
GR	594.100	175.000	601.000	175.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.056	.056	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.355	-0.000	-0.000	-0.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	.985	-0.000
BT	12.000	0.000	600.900	0.000	0.000	600.900	596.300	56.000	600.900	596.300
BT	56.000	600.900	574.200	59.000	600.900	573.500	59.000	600.900	596.300	116.000
BT	600.900	596.300	116.000	600.900	571.200	119.000	600.900	573.100	119.000	600.900

BT	596.300	175.000	600.900	596.300	175.000	600.900	0.000	-0.000	-0.000	-0.000
X1	4.362	-0.000	-0.000	-0.000	39.000	39.000	39.000	-0.000	-0.000	1.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	1.000	-0.000	-0.000	-0.000
NC	.224	.140	.074	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.363	-0.000	-0.000	-0.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
NH	3.000	.224	200.000	.070	283.000	.126	400.000	-0.000	-0.000	-0.000
X1	4.391	15.000	190.000	322.000	150.000	150.000	150.000	-0.000	-0.000	1.000
GR	600.300	0.000	586.000	75.000	584.300	90.000	584.500	190.000	578.800	199.000
GR	576.100	205.000	573.500	210.000	571.600	230.000	569.200	250.000	571.400	270.000
GR	574.900	276.000	578.000	283.000	581.100	285.000	594.300	322.000	596.500	400.000
NH	4.000	.240	434.000	.072	526.000	.170	528.000	.210	700.000	-0.000
X1	4.902	21.000	431.000	528.000	2750.000	2650.000	2700.000	-0.000	-0.000	1.000
GR	595.000	0.000	592.500	150.000	599.000	320.000	591.500	360.000	590.700	400.000
GR	582.500	420.000	582.700	431.000	578.600	434.000	575.000	440.000	572.300	450.000
GR	571.900	460.000	571.000	480.000	573.300	500.000	575.100	510.000	575.900	520.000
GR	578.500	526.000	581.600	528.000	583.800	600.000	584.900	660.000	595.000	700.000
GR	597.000	800.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.240	23.000	.083	109.000	.224	200.000	.170	399.000	-0.000
X1	5.129	16.000	23.000	119.000	1200.000	1350.000	1200.000	-0.000	-0.000	1.000
GR	592.400	0.000	581.800	23.000	578.200	24.000	574.300	30.000	571.100	40.000
GR	572.800	60.000	570.800	80.000	571.400	90.000	571.900	100.000	578.200	109.000
GR	586.200	119.000	585.800	200.000	588.200	300.000	592.300	332.000	595.000	365.000
GR	600.000	399.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
QT	4.000	4600.000	6840.000	7820.000	10200.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.067	6.000	.070	57.000	7.000	61.000	.070	109.000	.067
NH	117.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	5.137	17.000	0.000	117.000	49.000	49.000	49.000	.947	-0.000	-0.000
GR	597.400	0.000	584.500	0.000	584.300	6.000	577.600	13.000	574.400	19.000
GR	574.300	29.000	574.000	39.000	574.500	49.000	573.500	57.000	572.900	61.000
GR	572.900	69.000	573.500	79.000	574.100	89.000	574.500	99.000	576.800	109.000
GR	578.600	117.000	597.400	117.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
SB	1.200	1.732	3.020	0.000	81.800	5.350	1891.450	.760	572.900	572.900
X1	5.146	-0.000	-0.000	-0.000	39.000	39.000	39.000	-0.000	-0.000	1.000
X2	-0.000	-0.000	1.000	593.100	597.400	-0.000	-0.000	-0.000	.947	-0.000
BT	8.000	0.000	597.400	0.000	0.000	597.400	593.100	57.000	597.400	593.100
BT	57.000	597.400	573.500	61.000	597.400	572.900	61.000	597.400	593.100	117.000
BT	597.400	593.100	117.000	597.400	0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.168	140.000	.210	164.000	.067	259.000	.154	500.000	-0.000
X1	5.155	17.000	140.000	269.000	50.000	50.000	50.000	-0.000	-0.000	1.000
GR	597.500	0.000	595.000	100.000	590.400	140.000	582.500	163.000	578.600	164.000
GR	575.000	170.000	571.800	180.000	573.500	200.000	571.500	220.000	571.900	230.000
GR	572.600	240.000	579.200	259.000	586.800	269.000	587.100	350.000	588.200	450.000
GR	591.300	482.000	602.600	500.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.168	.224	.073	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	5.335	28.000	720.000	880.000	950.000	950.000	950.000	-0.000	-0.000	1.000
GR	610.500	0.000	606.700	100.000	603.200	200.000	600.200	300.000	600.600	400.000
GR	598.700	500.000	597.400	600.000	595.400	700.000	592.700	720.000	590.000	750.000
GR	584.000	770.000	578.500	800.000	574.700	810.000	571.300	820.000	571.000	830.000
GR	571.300	840.000	572.400	855.000	577.400	870.000	584.900	880.000	587.000	930.000
GR	590.600	950.000	590.700	1020.000	591.900	1120.000	592.800	1220.000	593.500	1320.000
GR	597.800	1620.000	600.000	1700.000	605.300	1740.000	-0.000	-0.000	-0.000	-0.000
X1	5.487	24.000	545.000	665.000	800.000	700.000	800.000	-0.000	-0.000	1.000
GR	614.400	0.000	608.700	100.000	602.300	210.000	592.400	260.000	587.800	300.000
GR	587.500	400.000	585.000	500.000	578.500	545.000	574.700	555.000	571.300	565.000
GR	570.400	575.000	570.500	585.000	572.500	600.000	575.400	615.000	578.900	625.000
GR	580.000	650.000	585.600	665.000	590.000	680.000	591.700	700.000	595.800	800.000

GR	584.300	900.000	595.600	1000.000	600.900	1200.000	605.000	1280.000	-0.000	-0.000
NH	4.000	.196	95.000	.070	165.000	.210	175.000	.126	1150.000	-0.000
X1	5.714	17.000	0.000	175.000	1150.000	1200.000	1200.000	-0.000	-0.000	1.000
GR	600.000	0.000	583.400	50.000	578.500	95.000	574.700	105.000	571.300	115.000
GR	569.400	125.000	569.400	135.000	572.400	150.000	577.400	165.000	584.900	175.000
GR	584.900	200.000	589.700	240.000	591.300	300.000	593.700	400.000	595.000	500.000
GR	597.500	800.000	600.000	1150.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.120	550.000	.182	559.000	.091	636.000	.210	645.000	.126
NH	700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	6.112	18.000	550.000	645.000	1950.000	2000.000	2100.000	-0.000	-0.000	1.000
GR	600.000	0.000	594.000	250.000	590.900	350.000	591.100	400.000	587.600	450.000
GR	588.800	500.000	586.100	550.000	577.800	559.000	575.000	569.000	573.900	580.000
GR	572.600	590.000	571.500	602.000	570.800	614.000	572.600	625.000	577.700	636.000
GR	583.500	645.000	586.300	650.000	603.500	700.000	-0.000	-0.000	-0.000	-0.000
NH	6.000	.224	100.000	.084	200.000	.126	650.000	.196	700.000	.077
NH	900.000	.196	1600.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	6.405	26.000	700.000	900.000	1350.000	1550.000	1550.000	-0.000	-0.000	1.000
GR	605.800	0.000	597.500	100.000	592.500	150.000	597.500	200.000	601.500	300.000
GR	602.000	350.000	601.000	400.000	597.500	500.000	593.200	560.000	597.500	650.000
GR	592.500	700.000	583.600	750.000	579.200	800.000	578.500	807.000	575.100	811.000
GR	571.500	820.000	573.100	835.000	574.500	840.000	578.500	850.000	590.100	900.000
GR	591.500	950.000	591.000	1040.000	591.000	1120.000	595.000	1220.000	600.000	1400.000
GR	606.700	1600.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.170	64.000	.097	191.000	.224	300.000	.140	1550.000	-0.000
X1	6.585	25.000	62.000	195.000	650.000	550.000	650.000	-0.000	-0.000	1.000
GR	606.100	0.000	587.700	32.000	581.500	62.000	577.400	64.000	572.200	85.000
GR	572.700	105.000	573.000	120.000	572.500	140.000	572.000	160.000	575.500	175.000
GR	577.500	191.000	581.500	195.000	584.200	217.000	579.900	272.000	583.300	300.000
GR	586.300	400.000	588.400	500.000	589.000	600.000	592.600	718.000	592.600	800.000
GR	591.100	900.000	588.700	1000.000	598.600	1100.000	600.000	1350.000	605.000	1550.000
NH	4.000	.126	100.000	.182	125.000	.087	180.000	.210	600.000	-0.000
X1	6.983	14.000	100.000	207.000	2100.000	1700.000	2100.000	-0.000	-0.000	1.000
GR	602.000	0.000	593.800	100.000	577.400	125.000	571.100	135.000	570.600	145.000
GR	572.300	155.000	574.100	165.000	576.200	180.000	588.300	207.000	586.500	225.000
GR	589.100	300.000	589.400	400.000	591.100	500.000	600.000	600.000	-0.000	-0.000
NC	.168	.154	.078	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.059	20.000	740.000	800.000	450.000	330.000	400.000	-0.000	-0.000	1.000
GR	602.100	0.000	598.500	200.000	598.000	400.000	597.500	600.000	595.300	700.000
GR	586.000	720.000	581.000	740.000	578.500	745.000	571.400	753.000	570.100	761.000
GR	569.200	772.000	571.000	782.000	579.400	791.000	582.800	800.000	585.400	840.000
GR	590.200	890.000	591.000	940.000	596.100	1040.000	600.500	1100.000	610.100	1200.000
NH	4.000	.168	812.000	.080	859.000	.112	897.000	.140	940.000	-0.000
X1	7.134	17.000	800.000	863.000	350.000	420.000	400.000	-0.000	-0.000	1.000
GR	601.500	0.000	598.500	100.000	596.800	300.000	593.600	400.000	592.800	500.000
GR	587.800	600.000	586.700	700.000	584.800	800.000	578.100	812.000	571.400	820.000
GR	568.700	828.000	567.800	840.000	569.600	850.000	578.000	859.000	582.800	863.000
GR	596.400	897.000	609.000	940.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.168	.182	.076	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.314	16.000	295.000	524.000	900.000	970.000	970.000	-0.000	-0.000	1.000
GR	601.500	0.000	597.900	150.000	596.100	250.000	590.000	275.000	585.000	295.000
GR	581.600	320.000	578.900	345.000	573.200	354.000	571.400	466.000	572.300	480.000
GR	575.000	488.000	579.500	502.000	586.200	524.000	591.500	550.000	596.800	635.000
GR	602.500	650.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
QT	4.000	4410.000	6600.000	7550.000	9860.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.120	800.000	.168	900.000	.210	1230.000	.073	1278.000	.224
NH	1445.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.419	25.000	1200.000	1291.000	500.000	530.000	530.000	-0.000	-0.000	1.000

GR	602.300	0.000	600.000	100.000	597.700	200.000	597.000	300.000	596.400	400.000
GR	596.000	500.000	595.700	600.000	594.700	700.000	593.600	800.000	590.500	900.000
GR	589.500	1000.000	587.800	1100.000	587.000	1200.000	587.000	1219.000	576.500	1230.000
GR	573.900	1240.000	573.500	1250.000	574.100	1260.000	575.000	1270.000	576.700	1278.000
GR	587.200	1291.000	588.100	1300.000	585.500	1330.000	591.500	1380.000	611.500	1445.000
NC	.154	.154	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.523	22.000	682.000	786.000	400.000	530.000	530.000	-0.000	-0.000	1.000
GR	602.300	0.000	600.000	100.000	598.700	200.000	597.000	300.000	596.400	400.000
GR	596.100	500.000	594.700	600.000	590.000	660.000	585.200	682.000	580.100	707.000
GR	578.900	722.000	576.200	726.000	573.600	735.000	573.100	745.000	573.800	755.000
GR	574.700	765.000	576.400	773.000	587.200	786.000	588.100	795.000	589.500	825.000
GR	591.500	875.000	607.500	1000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	3.000	.210	31.000	.087	85.000	.224	750.000	-0.000	-0.000	-0.000
X1	7.589	15.000	0.000	90.000	370.000	370.000	370.000	-0.000	-0.000	1.000
GR	599.200	0.000	577.400	31.000	572.800	45.000	572.900	60.000	575.300	75.000
GR	578.200	85.000	584.100	90.000	583.000	100.000	594.000	200.000	593.700	300.000
GR	589.400	400.000	590.600	500.000	596.400	600.000	600.400	650.000	602.300	750.000
NC	.168	.168	.073	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.598	21.000	100.000	247.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
GR	599.500	0.000	596.100	100.000	590.600	100.000	580.300	119.000	578.200	123.000
GR	573.200	134.000	570.400	150.000	573.700	166.000	579.400	181.000	582.000	197.000
GR	583.500	212.000	585.900	226.000	586.200	229.000	592.000	247.000	598.100	247.000
GR	596.700	300.000	594.200	400.000	593.200	500.000	594.200	600.000	596.300	700.000
GR	602.200	750.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
SB	1.050	1.580	5.470	-0.000	35.800	7.000	2385.600	2.130	570.400	570.400
X1	7.602	-0.000	-0.000	-0.000	17.000	17.000	17.000	-0.000	-0.000	1.000
X2	-0.000	-0.000	1.000	596.700	598.100	-0.000	-0.000	-0.000	-0.000	-0.000
BT	15.000	100.000	598.100	596.500	119.000	598.100	596.600	119.000	598.100	580.300
BT	123.000	598.100	578.200	123.000	598.100	596.600	226.000	598.100	596.600	226.000
BT	598.100	585.900	229.000	598.100	586.200	229.000	598.100	596.600	247.000	598.200
BT	596.600	300.000	596.700	0.000	400.000	594.200	0.000	500.000	593.200	0.000
BT	600.000	594.200	0.000	700.000	596.300	0.000	-0.000	-0.000	-0.000	-0.000
NC	.154	.154	.072	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.611	-0.000	-0.000	-0.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	10.000	570.600	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	3.000	.240	628.000	.067	690.000	.200	1600.000	-0.000	-0.000	-0.000
X1	7.772	23.000	615.000	717.000	850.000	800.000	850.000	-0.000	-0.000	1.000
GR	601.900	0.000	582.400	65.000	582.400	115.000	582.200	215.000	581.400	315.000
GR	582.700	415.000	585.600	515.000	582.900	615.000	580.800	628.000	577.500	630.000
GR	574.800	640.000	573.600	650.000	573.100	660.000	573.100	670.000	573.100	680.000
GR	578.200	689.000	580.800	690.000	594.700	717.000	593.400	815.000	593.000	915.000
GR	596.600	1000.000	598.000	1050.000	601.100	1100.000	-0.000	-0.000	-0.000	-0.000
QT	4.000	4410.000	6600.000	7550.000	9860.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.210	.224	.060	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	8.151	20.000	145.000	305.000	2200.000	1970.000	2000.000	-0.000	-0.000	1.000
GR	605.500	0.000	600.200	100.000	595.400	120.000	589.900	145.000	585.000	165.000
GR	580.100	200.000	577.900	205.000	574.000	208.000	572.200	218.000	571.700	228.000
GR	571.600	238.000	570.100	248.000	569.400	258.000	570.800	268.000	575.700	280.000
GR	588.500	305.000	593.800	333.000	595.600	410.000	600.500	480.000	601.700	580.000
NH	3.000	.224	693.000	.078	778.000	.224	857.000	-0.000	-0.000	-0.000
X1	8.245	21.000	665.000	807.000	300.000	530.000	500.000	-0.000	-0.000	1.000
GR	605.200	0.000	601.000	50.000	600.700	150.000	596.000	200.000	593.300	265.000
GR	589.900	365.000	590.200	465.000	590.700	565.000	591.900	665.000	577.700	693.000
GR	573.900	705.000	571.900	715.000	571.400	725.000	570.700	735.000	569.200	745.000
GR	568.500	755.000	570.100	765.000	575.500	778.000	588.100	807.000	593.800	835.000
GR	605.600	857.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	3.000	.224	260.000	.077	378.000	.224	900.000	-0.000	-0.000	-0.000

X1	8.672	21.000	150.000	450.000	2250.000	2250.000	2000.000	-0.000	-0.000	1.000
GR	615.500	0.000	600.500	100.000	595.600	150.000	580.700	260.000	579.000	285.000
GR	577.500	305.000	573.600	318.000	573.000	328.000	573.200	338.000	574.500	348.000
GR	575.000	358.000	576.400	368.000	579.400	378.000	582.000	400.000	585.100	425.000
GR	590.500	450.000	592.500	550.000	590.800	700.000	595.800	750.000	602.500	800.000
GR	611.300	900.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.224	115.000	.072	162.000	.224	700.000	.198	950.000	.224
NH	1200.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	8.908	22.000	105.000	187.000	600.000	1250.000	1250.000	-0.000	-0.000	1.000
GR	605.000	0.000	600.300	50.000	590.900	80.000	587.600	105.000	578.300	115.000
GR	575.500	125.000	575.600	135.000	575.800	145.000	578.000	162.000	591.300	187.000
GR	593.300	205.000	593.800	305.000	594.600	405.000	596.400	505.000	598.700	550.000
GR	599.600	600.000	594.700	650.000	589.700	700.000	591.800	800.000	605.000	900.000
GR	615.400	950.000	616.300	1000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.230	100.000	.072	165.000	.230	500.000	.210	640.000	.240
NH	800.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	9.069	19.000	100.000	165.000	850.000	1000.000	850.000	-0.000	-0.000	1.000
GR	610.500	0.000	600.000	50.000	584.200	100.000	578.300	110.000	575.800	120.000
GR	576.000	130.000	576.200	140.000	579.100	150.000	569.500	165.000	595.600	200.000
GR	595.300	250.000	590.100	275.000	596.500	310.000	595.000	500.000	589.700	550.000
GR	587.600	585.000	596.100	640.000	600.000	700.000	615.000	800.000	-0.000	-0.000
NH	5.000	.070	200.000	.126	283.000	.081	322.000	.224	530.000	.126
NH	800.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	9.316	17.000	200.000	365.000	1300.000	1300.000	1300.000	-0.000	-0.000	1.000
GR	602.200	0.000	600.300	50.000	596.000	100.000	591.800	200.000	579.000	283.000
GR	576.400	297.000	576.100	311.000	577.200	322.000	579.000	332.000	586.500	340.000
GR	591.800	365.000	590.800	410.000	594.600	500.000	600.700	530.000	601.600	600.000
GR	603.700	700.000	606.700	800.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.154	.182	.073	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	9.325	21.000	100.000	247.000	49.000	49.000	49.000	.986	-0.000	-0.000
GR	605.100	0.000	602.400	99.000	602.500	100.000	594.700	100.000	594.000	111.000
GR	594.000	112.000	594.000	113.000	594.000	114.000	588.000	130.000	576.600	165.000
GR	576.200	182.000	576.900	200.000	590.300	233.000	590.300	234.000	590.400	235.000
GR	590.400	236.000	590.800	247.000	602.400	247.000	601.300	300.000	601.700	400.000
GR	601.700	402.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
SB	1.050	1.650	3.440	-0.000	55.980	7.200	2223.000	1.618	576.200	576.200
X1	9.328	-0.000	-0.000	-0.000	18.000	18.000	18.000	-0.000	-0.000	1.000
X2	-0.000	-0.000	1.000	600.300	601.300	-0.000	-0.000	-0.000	.986	-0.000
BT	14.000	100.000	602.400	0.000	100.000	602.400	601.000	111.000	602.400	601.000
BT	111.000	602.400	594.000	114.000	602.400	594.000	114.000	602.400	601.000	233.000
BT	602.400	601.000	233.000	602.400	590.300	236.000	602.400	590.400	236.000	602.400
BT	601.000	247.000	602.400	601.000	247.000	602.400	0.000	300.000	601.300	0.000
BT	400.000	601.700	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	9.338	20.000	600.000	694.000	50.000	50.000	50.000	-0.000	-0.000	1.000
GR	611.200	0.000	609.300	100.000	607.600	140.000	606.200	160.000	603.400	180.000
GR	601.100	220.000	598.200	320.000	597.000	420.000	595.600	500.000	591.400	550.000
GR	588.400	600.000	587.100	617.000	579.700	626.000	578.400	635.000	577.300	642.000
GR	576.100	660.000	579.300	677.000	591.100	694.000	601.100	754.000	606.600	774.000
NC	.168	.168	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	9.404	20.000	600.000	694.000	300.000	350.000	350.000	-0.000	-0.000	1.000
GR	610.400	0.000	608.500	100.000	606.800	140.000	605.400	160.000	602.600	180.000
GR	600.300	220.000	597.400	320.000	596.200	420.000	594.800	500.000	590.600	550.000
GR	587.600	600.000	586.300	617.000	573.900	626.000	577.600	635.000	576.500	642.000
GR	575.300	660.000	578.500	677.000	590.300	694.000	600.300	754.000	605.800	774.000
X1	9.650	20.000	520.000	590.000	1300.000	1250.000	1300.000	-0.000	-0.000	1.000
GR	615.000	0.000	610.000	50.000	603.400	100.000	595.000	200.000	592.600	300.000
GR	590.400	400.000	589.600	500.000	591.400	520.000	583.900	540.000	576.700	547.000
GR	575.000	555.000	575.400	560.000	575.600	565.000	575.900	575.000	577.800	585.000

GR	586.000	590.000	595.800	640.000	600.400	660.000	601.300	740.000	603.700	760.000
NH	5.000	.119	85.000	.168	880.000	.182	900.000	.071	943.000	.168
NH	1200.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	9.802	29.000	880.000	945.000	800.000	700.000	800.000	-0.000	-0.000	1.000
GR	616.900	0.000	594.300	85.000	594.300	180.000	593.000	280.000	593.200	380.000
GR	595.600	480.000	596.600	580.000	596.400	680.000	596.900	752.000	588.500	786.000
GR	588.600	838.000	592.600	865.000	592.600	880.000	583.900	900.000	580.400	901.000
GR	576.700	905.000	575.500	910.000	575.400	915.000	575.600	920.000	575.900	925.000
GR	575.900	930.000	575.900	935.000	577.800	940.000	583.400	943.000	586.000	945.000
GR	590.000	980.000	598.100	1080.000	600.700	1100.000	604.600	1200.000	-0.000	-0.000
NH	3.000	.196	603.000	.076	662.000	.196	860.000	-0.000	-0.000	-0.000
X1	9.972	31.000	600.000	570.000	900.000	900.000	900.000	-0.000	-0.000	1.000
GR	625.000	0.000	620.000	40.000	615.000	70.000	610.000	150.000	605.000	210.000
GR	600.000	290.000	595.000	400.000	592.500	435.000	595.000	460.000	600.200	520.000
GR	595.000	558.000	590.000	570.000	588.200	600.000	583.000	603.000	580.100	607.000
GR	579.200	612.000	577.200	617.000	576.000	627.000	575.500	637.000	579.400	647.000
GR	581.500	652.000	582.600	657.000	583.000	662.000	585.000	667.000	588.100	670.000
GR	592.300	710.000	595.000	740.000	600.000	765.000	605.000	800.000	610.000	820.000
GR	615.000	860.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.063	600.000	.119	665.000	.076	730.000	.224	1100.000	-0.000
X1	10.219	27.000	600.000	733.000	1200.000	1300.000	1300.000	-0.000	-0.000	1.000
GR	607.900	0.000	605.000	100.000	603.300	200.000	603.900	300.000	603.700	400.000
GR	606.400	500.000	605.000	600.000	591.100	655.000	588.200	665.000	583.000	666.000
GR	580.100	670.000	579.200	675.000	577.200	680.000	576.000	690.000	575.500	700.000
GR	579.400	710.000	581.500	715.000	582.600	720.000	583.000	725.000	585.000	730.000
GR	588.100	733.000	592.300	748.000	593.300	800.000	588.300	860.000	595.100	930.000
GR	591.100	1000.000	609.200	1100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.070	400.000	.126	500.000	.074	550.000	.154	620.000	-0.000
QT	4.000	4270.000	6400.000	7340.000	9610.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.394	20.000	495.000	620.000	924.000	874.000	924.000	-0.000	-0.000	1.000
GR	603.100	0.000	598.500	100.000	596.900	200.000	594.200	300.000	597.600	400.000
GR	596.600	415.000	590.600	495.000	585.400	500.000	579.700	505.000	579.600	510.000
GR	578.800	515.000	577.900	520.000	577.000	530.000	578.100	540.000	580.200	545.000
GR	583.800	547.000	585.400	550.000	595.800	575.000	602.200	593.000	608.000	620.000
NH	5.000	.140	400.000	.112	455.000	.063	553.000	.112	598.000	.168
NH	1000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.408	37.000	400.000	598.000	75.000	75.000	75.000	.905	-0.000	-0.000
GR	609.800	0.000	609.100	100.000	608.700	200.000	608.200	300.000	608.300	400.000
GR	604.500	400.000	601.700	402.000	601.400	406.000	583.400	445.000	582.600	446.000
GR	581.700	450.000	580.900	455.000	582.500	462.000	581.700	463.000	580.800	464.000
GR	580.000	465.000	580.200	470.000	579.800	480.000	578.700	490.000	578.800	500.000
GR	578.000	510.000	578.300	520.000	578.000	535.000	578.400	536.000	578.900	537.000
GR	579.300	538.000	579.300	540.000	581.700	550.000	583.000	553.000	600.800	593.000
GR	601.100	598.000	604.300	598.000	608.200	598.000	608.300	700.000	608.300	800.000
GR	608.600	900.000	609.100	1000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
SB	.900	1.740	3.010	0.000	64.100	5.430	2889.800	2.670	578.000	578.000
X1	10.417	-0.000	-0.000	-0.000	48.000	48.000	48.000	-0.000	-0.000	1.000
X2	-0.000	-0.000	1.000	604.500	608.200	-0.000	-0.000	-0.000	.905	-0.000
BT	12.000	400.000	608.300	-0.000	400.000	608.300	604.500	462.000	608.300	604.500
BT	462.000	608.300	582.500	465.000	608.300	580.000	465.000	608.300	604.400	535.000
BT	608.200	604.400	535.000	608.200	578.000	538.000	608.200	579.300	538.000	608.200
BT	604.300	598.000	608.200	604.300	598.000	608.200	0.000	-0.000	-0.000	-0.000
NH	5.000	.084	600.000	.077	655.000	.064	740.000	.077	800.000	.084
NH	1400.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.426	39.000	600.000	800.000	48.000	48.000	48.000	.905	-0.000	-0.000
GR	611.800	0.000	610.400	100.000	610.000	200.000	609.300	300.000	608.800	400.000
GR	608.300	500.000	608.200	600.000	604.500	600.000	601.100	602.000	600.900	607.000
GR	581.900	653.000	580.700	655.000	580.500	662.000	580.300	663.000	580.100	664.000
GR	579.900	665.000	580.100	670.000	578.800	680.000	578.300	690.000	577.600	695.000

GR	577.700	700.000	578.600	710.000	579.300	720.000	579.800	730.000	579.900	735.000
GR	580.000	736.000	580.100	737.000	580.200	738.000	580.400	740.000	582.600	750.000
GR	601.200	793.000	601.300	800.000	608.200	800.000	608.100	900.000	608.100	1000.000
GR	608.300	1100.000	608.600	1200.000	609.100	1300.000	609.700	1400.000	-0.000	-0.000
SB	.900	1.760	3.010	0.000	48.100	5.430	2737.000	2.970	577.700	577.700
X1	10.435	-0.000	-0.000	-0.000	48.000	48.000	48.000	-0.000	-0.000	1.000
X2	-0.000	-0.000	1.000	604.500	608.200	-0.000	-0.000	-0.000	.905	-0.000
BT	12.000	600.000	608.200	0.000	600.000	608.200	604.500	662.000	608.300	604.500
BT	662.000	608.300	580.500	665.000	608.300	579.900	665.000	608.300	604.400	735.000
BT	608.200	604.400	735.000	608.200	579.900	738.000	608.200	580.200	738.000	608.200
BT	604.300	800.000	608.200	604.300	800.000	608.200	0.000	-0.000	-0.000	-0.000
NC	.154	.154	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.445	-0.000	-0.000	-0.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	10.000	577.560	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.140	.182	.073	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.549	16.000	235.000	300.000	600.000	600.000	600.000	-0.000	-0.000	1.000
GR	606.500	0.000	600.500	115.000	595.000	150.000	590.100	180.000	587.500	195.000
GR	584.600	200.000	593.200	235.000	579.300	250.000	578.200	260.000	577.400	265.000
GR	579.400	285.000	583.500	300.000	589.200	310.000	595.200	330.000	600.000	370.000
GR	606.100	465.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.210	500.000	.168	510.000	.077	540.000	.112	562.000	.210
NH	1450.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.973	29.000	500.000	562.000	2240.000	2050.000	2240.000	-0.000	-0.000	1.000
GR	610.400	0.000	604.500	100.000	601.400	200.000	598.000	250.000	591.200	300.000
GR	591.700	400.000	589.700	469.000	586.800	494.000	584.700	500.000	584.000	510.000
GR	581.400	515.000	579.500	520.000	577.200	525.000	576.600	530.000	577.000	535.000
GR	578.700	538.000	584.000	540.000	595.800	562.000	594.900	600.000	594.100	700.000
GR	595.600	800.000	594.000	900.000	591.400	1000.000	591.500	1100.000	591.500	1200.000
GR	591.500	1280.000	597.900	1300.000	600.000	1350.000	624.600	1450.000	-0.000	-0.000
NH	6.000	.084	200.000	.112	942.000	.168	970.000	.084	1013.000	.073
NH	1100.000	.168	1150.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	11.299	36.000	1008.000	1100.000	1720.000	1500.000	1720.000	-0.000	-0.000	1.000
GR	614.800	0.000	610.600	100.000	603.500	200.000	598.600	300.000	598.400	400.000
GR	598.600	500.000	599.100	600.000	601.600	650.000	599.900	700.000	597.900	800.000
GR	596.700	900.000	596.700	942.000	588.600	970.000	587.600	985.000	588.900	1000.000
GR	591.200	1008.000	588.600	1013.000	587.600	1014.000	586.100	1020.000	585.100	1025.000
GR	582.700	1030.000	579.700	1035.000	580.000	1040.000	581.600	1045.000	582.100	1050.000
GR	583.000	1055.000	585.100	1060.000	585.200	1065.000	587.100	1070.000	587.100	1075.000
GR	586.900	1080.000	587.200	1085.000	587.300	1095.000	588.600	1100.000	601.100	1130.000
GR	609.300	1150.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.168	300.000	.084	372.000	.064	440.000	.182	700.000	-0.000
X1	11.309	26.000	300.000	444.000	49.000	49.000	49.000	-0.000	-0.000	-0.000
GR	610.000	0.000	608.000	100.000	606.200	200.000	606.200	300.000	593.700	300.000
GR	592.200	310.000	588.700	320.000	587.300	330.000	587.100	340.000	587.500	350.000
GR	587.700	360.000	585.000	372.000	584.500	376.000	583.900	385.000	580.300	395.000
GR	580.300	405.000	580.300	415.000	581.000	425.000	584.500	430.000	589.800	435.000
GR	591.500	440.000	592.100	444.000	606.200	444.000	605.900	500.000	607.500	600.000
GR	610.300	700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
SB	.900	1.670	3.000	-0.000	67.940	4.200	2363.200	1.705	580.300	580.300
X1	11.314	-0.000	-0.000	-0.000	30.000	30.000	30.000	-0.000	-0.000	1.000
X2	-0.000	-0.000	1.000	602.600	605.900	-0.000	-0.000	-0.000	-0.000	-0.000
BT	8.000	300.000	606.200	0.000	300.000	606.200	602.600	372.000	605.900	602.700
BT	372.000	605.900	585.000	376.000	605.900	584.500	376.000	605.900	602.700	444.000
BT	606.200	602.600	444.000	606.200	0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.168	.196	.076	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	11.318	30.000	1008.000	1100.000	50.000	50.000	50.000	-0.000	-0.000	1.000
GR	614.800	0.000	610.600	100.000	603.500	200.000	602.500	400.000	601.200	600.000
GR	599.000	700.000	594.000	800.000	600.000	900.000	594.500	1008.000	588.600	1013.000

GR	587.600	1014.000	586.100	1020.000	585.100	1025.000	582.700	1030.000	579.700	1035.000
GR	580.000	1040.000	581.600	1045.000	582.200	1050.000	583.000	1055.000	585.100	1060.000
GR	585.200	1065.000	587.100	1070.000	587.100	1075.000	586.900	1080.000	587.200	1085.000
GR	587.300	1095.000	588.600	1100.000	600.000	1140.000	605.000	1240.000	610.000	1380.000
X1	11.674	22.000	200.000	293.000	1850.000	1600.000	1850.000	-0.000	-0.000	1.000
GR	625.000	0.000	620.000	50.000	613.500	100.000	606.400	150.000	600.400	200.000
GR	595.700	220.000	590.600	229.000	585.200	239.000	582.800	245.000	582.700	255.000
GR	582.300	265.000	581.400	275.000	582.600	285.000	585.200	290.000	590.600	293.000
GR	595.600	343.000	601.400	400.000	604.700	600.000	605.800	800.000	609.300	900.000
GR	615.000	950.000	625.000	990.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.098	100.000	.196	600.000	.081	654.000	.224	668.000	-0.000
X1	12.015	31.000	585.000	668.000	1800.000	1500.000	1800.000	-0.000	-0.000	1.000
GR	608.700	0.000	606.900	90.000	604.200	100.000	600.600	125.000	598.300	200.000
GR	598.800	300.000	598.100	400.000	597.500	500.000	599.200	563.000	594.500	585.000
GR	590.400	596.000	590.400	596.000	585.200	600.000	564.500	601.000	582.800	605.000
GR	582.700	610.000	582.700	615.000	582.600	620.000	582.700	625.000	582.500	630.000
GR	582.200	635.000	582.400	640.000	582.600	650.000	584.300	654.000	585.200	655.000
GR	590.000	658.000	595.300	668.000	597.100	685.000	600.600	700.000	603.200	710.000
GR	625.000	745.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.168	.182	.080	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	12.128	27.000	789.000	839.000	600.000	600.000	600.000	-0.000	-0.000	1.000
GR	610.000	0.000	605.200	380.000	600.200	470.000	598.500	600.000	600.800	700.000
GR	600.500	725.000	600.700	760.000	590.000	785.000	585.400	789.000	584.700	790.000
GR	583.600	794.000	583.000	799.000	582.800	804.000	582.700	809.000	582.600	814.000
GR	582.400	819.000	582.600	824.000	582.600	824.000	583.000	834.000	584.600	838.000
GR	585.400	839.000	590.500	842.000	595.300	852.000	597.100	869.000	600.600	874.000
GR	603.200	884.000	625.000	940.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.154	1400.000	.182	1526.000	.168	1573.000	.077	1600.000	.130
NH	1711.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	12.374	25.000	1526.000	1711.000	850.000	1300.000	1300.000	-0.000	-0.000	1.000
GR	615.600	0.000	608.900	200.000	607.300	600.000	605.000	700.000	604.300	800.000
GR	600.900	900.000	600.900	1000.000	600.800	1100.000	600.700	1135.000	598.300	1200.000
GR	593.700	1248.000	593.600	1300.000	592.900	1400.000	594.000	1500.000	594.500	1526.000
GR	584.900	1573.000	583.600	1575.000	582.900	1580.000	582.800	1585.000	582.900	1590.000
GR	583.400	1595.000	583.900	1598.000	584.900	1600.000	611.500	1670.000	616.500	1711.000
NC	.168	.140	.078	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	12.602	21.000	882.000	942.000	850.000	1200.000	1200.000	-0.000	-0.000	1.000
GR	615.600	0.000	608.900	200.000	607.500	350.000	606.300	550.000	605.200	750.000
GR	600.100	800.000	593.400	850.000	590.800	875.000	586.000	882.000	584.200	890.000
GR	583.700	908.000	583.400	915.000	582.900	923.000	583.200	928.000	583.600	935.000
GR	586.000	940.000	590.500	950.000	595.000	955.000	597.500	1150.000	600.800	1300.000
GR	615.000	1400.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.112	560.000	.210	690.000	.070	725.000	.196	825.000	.168
NH	1125.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	12.734	26.000	690.000	725.000	550.000	700.000	700.000	-0.000	-0.000	1.000
GR	608.000	0.000	604.300	25.000	601.400	45.000	600.100	125.000	600.300	225.000
GR	601.000	325.000	601.600	425.000	600.700	525.000	600.200	560.000	593.400	625.000
GR	590.500	683.000	586.000	690.000	584.200	695.000	583.700	700.000	583.400	705.000
GR	583.000	710.000	583.000	715.000	583.600	720.000	586.000	725.000	597.800	755.000
GR	596.600	825.000	593.700	897.000	603.100	907.000	604.400	925.000	609.100	1025.000
GR	613.900	1125.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.196	600.000	.140	650.000	.063	695.000	.168	716.000	.210
NH	1400.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	12.744	29.000	600.000	716.000	49.000	49.000	49.000	.942	-0.000	-0.000
GR	613.300	0.000	611.600	100.000	610.700	200.000	610.300	300.000	610.300	400.000
GR	610.300	500.000	610.400	600.000	592.100	600.000	591.000	610.000	589.600	620.000
GR	589.300	630.000	589.200	640.000	585.000	650.000	583.900	658.000	583.700	661.000
GR	583.600	670.000	583.700	680.000	584.600	690.000	585.600	693.000	587.100	695.000
GR	590.20	700.000	592.100	710.000	592.500	716.000	610.600	716.000	610.400	800.000

GR	610.400	900.000	610.900	1000.000	611.900	1100.000	613.300	1200.000	-0.000	-0.000
SB	.900	1.780	2.900	-0.000	77.720	2.830	2050.000	.846	583.500	583.600
X1	12.754	-0.000	-0.000	-0.000	54.000	54.000	54.000	-0.000	-0.000	1.000
X2	-0.000	-0.000	1.000	606.200	610.400	-0.000	-0.000	-0.000	.942	-0.000
BT	8.000	600.000	610.400	0.000	600.000	610.400	606.200	658.000	610.600	606.200
BT	658.000	610.600	583.900	661.000	610.600	583.700	661.000	610.600	606.200	716.000
BT	610.600	606.200	716.000	610.600	0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.182	.182	.077	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	12.763	29.000	550.000	758.000	50.000	50.000	50.000	-0.000	-0.000	1.000
GR	613.300	0.000	611.600	100.000	610.700	200.000	610.300	300.000	610.300	400.000
GR	610.300	500.000	601.200	550.000	592.100	600.000	591.000	610.000	589.600	620.000
GR	589.300	630.000	589.200	640.000	585.000	650.000	583.900	658.000	583.700	661.000
GR	583.500	670.000	583.700	680.000	584.600	690.000	585.600	693.000	587.100	695.000
GR	590.200	700.000	592.100	710.000	592.500	716.000	601.400	758.000	610.400	800.000
GR	610.400	900.000	610.900	1000.000	611.900	1100.000	613.300	1200.000	-0.000	-0.000
X1	12.848	27.000	430.000	543.000	470.000	430.000	450.000	-0.000	-0.000	1.000
GR	617.500	0.000	608.300	100.000	605.000	300.000	600.100	390.000	594.000	430.000
GR	588.900	480.000	586.800	483.000	585.200	490.000	583.500	495.000	583.000	500.000
GR	582.600	505.000	582.400	510.000	583.000	515.000	583.800	520.000	584.200	525.000
GR	585.200	530.000	586.200	535.000	588.400	543.000	595.300	555.000	598.400	565.000
GR	602.200	630.000	605.000	670.000	606.800	780.000	604.500	850.000	606.000	900.000
GR	610.400	950.000	615.300	1250.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	3.000	.210	245.000	.091	320.000	.210	1400.000	-0.000	-0.000	-0.000
X1	12.962	33.000	245.000	320.000	580.000	370.000	580.000	-0.000	-0.000	1.000
GR	625.600	0.000	600.900	100.000	596.700	130.000	592.500	175.000	593.100	200.000
GR	593.200	237.000	587.400	244.000	586.800	245.000	584.000	250.000	582.600	255.000
GR	581.600	260.000	581.100	265.000	580.800	270.000	580.800	270.000	580.800	275.000
GR	580.800	275.000	581.100	280.000	581.500	285.000	582.500	290.000	583.200	295.000
GR	587.400	305.000	585.300	320.000	596.400	400.000	602.200	500.000	601.100	600.000
GR	601.400	700.000	607.600	800.000	609.400	900.000	606.200	1000.000	612.800	1100.000
GR	613.300	1200.000	614.500	1300.000	620.200	1400.000	-0.000	-0.000	-0.000	-0.000
NH	3.000	.224	1025.000	.078	1058.000	.168	1200.000	-0.000	-0.000	-0.000
X1	13.265	24.000	1000.000	1200.000	1600.000	1450.000	1600.000	-0.000	-0.000	1.000
GR	611.500	0.000	610.600	100.000	610.300	200.000	603.000	300.000	602.300	400.000
GR	601.800	500.000	599.700	600.000	600.000	700.000	600.800	800.000	603.000	900.000
GR	597.200	1000.000	590.400	1022.000	585.700	1025.000	585.500	1030.000	584.000	1035.000
GR	584.200	1040.000	584.200	1045.000	584.200	1050.000	585.100	1055.000	586.400	1057.000
GR	588.800	1058.000	591.700	1064.000	600.200	1100.000	619.100	1200.000	-0.000	-0.000
NC	.168	.168	.078	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.458	25.000	980.000	1068.000	600.000	1020.000	1020.000	-0.000	-0.000	1.000
GR	611.500	0.000	610.800	100.000	607.500	250.000	605.500	350.000	605.200	470.000
GR	610.500	550.000	612.200	650.000	610.300	800.000	605.200	935.000	600.000	970.000
GR	597.500	980.000	590.400	987.000	585.700	990.000	585.500	995.000	584.000	1000.000
GR	584.200	1005.000	584.200	1010.000	585.100	1020.000	586.400	1022.000	588.800	1025.000
GR	591.700	1030.000	600.200	1068.000	605.000	1130.000	610.000	1150.000	615.000	1200.000
NH	4.000	.210	180.000	.071	210.000	.224	400.000	.098	850.000	-0.000
QT	4.000	2980.000	4660.000	5420.000	7300.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.697	24.000	173.000	220.000	1260.000	1450.000	1260.000	-0.000	-0.000	1.000
GR	610.700	0.000	597.800	102.000	606.400	133.000	592.200	173.000	587.500	181.000
GR	585.700	185.000	585.300	190.000	585.200	195.000	585.400	200.000	585.700	205.000
GR	587.500	210.000	591.800	219.000	595.100	220.000	599.400	244.000	597.400	254.000
GR	597.100	265.000	596.300	271.000	603.300	300.000	602.800	400.000	603.900	500.000
GR	604.200	600.000	604.900	700.000	605.700	800.000	606.800	850.000	-0.000	-0.000
NH	5.000	.182	300.000	.140	350.000	.063	398.000	.154	478.000	.196
NH	850.000	-0.000	-0.000	-0.000	-0.000	-0.000	0.000	-0.000	-0.000	-0.000
X1	13.705	40.000	300.000	478.000	49.000	49.000	49.000	.857	-0.000	-0.000
GR	612.500	0.000	609.800	100.000	607.400	200.000	605.200	300.000	604.300	310.000
GR	600.800	320.000	600.800	324.000	597.100	330.000	593.400	340.000	591.800	345.000

GR	589.300	350.000	586.300	355.000	586.200	360.000	586.000	365.000	585.800	370.000
GR	585.300	375.000	587.000	380.000	586.900	385.000	587.200	390.000	587.400	395.000
GR	589.300	398.000	590.000	400.000	590.900	410.000	594.600	420.000	586.700	430.000
GR	596.700	433.000	596.600	437.000	598.200	440.000	599.600	450.000	599.300	455.000
GR	599.700	457.000	599.400	460.000	600.000	470.000	603.700	478.000	604.100	500.000
GR	604.200	600.000	604.900	700.000	608.200	785.000	609.400	800.000	610.300	850.000
X1	13.706	41.000	300.000	478.000	1.000	1.000	1.000	.857	-0.000	-0.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	.857	-0.000
BT	23.000	100.000	609.800	0.000	200.000	607.400	0.000	300.000	606.000	0.000
BT	300.000	606.000	605.200	320.000	606.100	604.800	320.000	606.100	600.800	324.000
BT	606.100	600.800	324.000	606.100	604.800	433.000	605.700	604.400	433.000	605.700
BT	596.700	437.000	605.700	596.600	437.000	605.700	604.400	455.000	605.000	603.800
BT	455.000	605.000	599.300	457.000	605.000	599.700	457.000	605.000	603.800	478.000
BT	604.300	603.700	478.000	504.300	0.000	500.000	604.100	0.000	600.000	604.200
BT	0.000	700.000	604.900	0.000	785.000	608.200	0.000	800.000	609.400	0.000
GR	612.500	0.000	609.800	100.000	607.400	200.000	606.000	300.000	605.200	300.000
GR	604.300	310.000	600.800	320.000	600.800	324.000	597.100	330.000	593.400	340.000
GR	591.800	345.000	589.300	350.000	586.300	355.000	586.200	360.000	586.000	365.000
GR	585.800	370.000	585.300	375.000	587.000	380.000	586.900	385.000	587.200	390.000
GR	587.400	395.000	589.300	398.000	590.000	400.000	590.900	410.000	594.600	420.000
GR	596.700	430.000	596.700	433.000	596.600	437.000	598.200	440.000	599.600	450.000
GR	599.300	455.000	599.700	457.000	599.400	460.000	600.000	470.000	603.700	478.000
GR	604.100	500.000	604.200	600.000	604.900	700.000	608.200	785.000	609.400	800.000
GR	610.300	850.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.709	41.000	300.000	478.000	16.000	16.000	16.000	.857	-0.000	1.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	.857	-0.000
BT	23.000	100.000	609.800	0.000	200.000	607.400	0.000	300.000	606.000	0.000
BT	300.000	606.000	605.200	320.000	606.100	604.800	320.000	606.100	600.800	324.000
BT	606.100	600.800	324.000	606.100	604.800	433.000	605.700	604.400	433.000	605.700
BT	596.700	437.000	605.700	596.600	437.000	605.700	604.400	455.000	605.000	603.800
BT	455.000	605.000	599.300	457.000	605.000	599.700	457.000	605.000	603.800	478.000
BT	604.300	603.700	478.000	604.300	0.000	500.000	604.100	0.000	600.000	604.200
BT	0.000	700.000	604.900	0.000	785.000	608.200	0.000	800.000	609.400	0.000
GR	612.500	0.000	609.800	100.000	607.400	200.000	606.000	300.000	605.200	300.000
GR	604.300	310.000	600.800	320.000	600.800	324.000	597.100	330.000	593.400	340.000
GR	591.800	345.000	589.300	350.000	586.300	355.000	586.200	360.000	586.000	365.000
GR	585.800	370.000	585.300	375.000	587.000	380.000	586.900	385.000	587.200	390.000
GR	587.400	395.000	589.300	398.000	590.000	400.000	590.900	410.000	594.600	420.000
GR	596.700	430.000	596.700	433.000	596.600	437.000	598.200	440.000	599.600	450.000
GR	599.300	455.000	599.700	457.000	599.400	460.000	600.000	470.000	603.700	478.000
GR	604.100	500.000	604.200	600.000	604.900	700.000	608.200	785.000	609.400	800.000
GR	610.300	850.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.168	.154	.076	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.710	40.000	300.000	478.000	1.000	1.000	1.000	.857	-0.000	-0.000
GR	612.500	0.000	609.800	100.000	607.400	200.000	605.200	300.000	604.300	310.000
GR	600.800	320.000	600.800	324.000	597.100	330.000	593.400	340.000	591.800	345.000
GR	589.300	350.000	586.300	355.000	586.200	360.000	586.000	365.000	585.800	370.000
GR	585.300	375.000	587.000	380.000	586.900	385.000	587.200	390.000	587.400	395.000
GR	589.300	398.000	590.000	400.000	590.900	410.000	594.600	420.000	586.700	430.000
GR	596.700	433.000	596.600	437.000	598.200	440.000	599.600	450.000	599.300	455.000
GR	599.700	457.000	599.400	460.000	600.000	470.000	603.700	478.000	604.100	500.000
GR	604.200	600.000	604.900	700.000	608.200	785.000	609.400	800.000	610.300	850.000
X1	13.719	21.000	160.000	200.000	49.000	49.000	49.000	-0.000	-0.000	1.000
GR	610.000	0.000	605.000	35.000	610.000	70.000	605.000	90.000	600.000	100.000
GR	597.800	110.000	592.200	160.000	587.500	164.000	585.700	168.000	585.300	173.000
GR	585.200	178.000	585.400	183.000	585.700	188.000	587.500	193.000	591.800	195.000
GR	595.000	200.000	599.400	221.000	603.300	277.000	605.000	577.000	610.000	617.000
GR	615.000	677.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.766	20.000	275.000	310.000	200.000	250.000	250.000	-0.000	-0.000	1.000
GR	611.700	0.000	612.500	75.000	610.200	150.000	605.000	200.000	600.000	250.000
GR	597.100	256.000	593.400	265.000	591.800	270.000	589.300	275.000	586.300	280.000

GR	585.800	290.000	585.300	295.000	587.000	305.000	569.500	310.000	594.000	325.000
GR	600.100	350.000	605.200	440.000	610.100	480.000	615.500	535.000	620.000	625.000
NH	4.000	.130	700.000	.238	1055.000	.084	1075.000	.224	1262.000	-0.000
X1	14.069	25.000	1044.000	1095.000	1100.000	1600.000	1600.000	-0.000	-0.000	1.000
GR	614.500	0.000	610.300	100.000	611.300	300.000	610.400	400.000	608.400	500.000
GR	606.400	580.000	605.500	650.000	605.300	700.000	595.000	732.000	595.000	762.000
GR	596.300	862.000	597.100	962.000	597.000	1008.000	593.700	1044.000	589.000	1055.000
GR	587.300	1057.000	585.900	1062.000	585.700	1067.000	587.900	1072.000	589.000	1075.000
GR	594.100	1085.000	602.100	1127.000	609.300	1162.000	620.700	1207.000	623.900	1262.000
NH	3.000	.224	348.000	.084	385.000	.182	800.000	-0.000	-0.000	-0.000
X1	14.467	25.000	320.000	400.000	1500.000	2100.000	2100.000	-0.000	-0.000	1.000
GR	613.500	0.000	610.700	100.000	606.400	150.000	604.900	200.000	603.600	250.000
GR	603.500	300.000	600.000	320.000	599.100	337.000	590.400	348.000	589.300	350.000
GR	588.400	355.000	588.100	360.000	588.400	365.000	589.000	370.000	589.600	375.000
GR	589.600	379.000	589.400	384.000	590.400	385.000	597.500	400.000	599.100	500.000
GR	600.900	575.000	605.200	600.000	607.800	700.000	610.800	750.000	612.700	800.000
NH	4.000	.238	1122.000	.087	1149.000	.238	1300.000	.140	1600.000	-0.000
X1	14.940	32.000	1112.000	1155.000	2000.000	2400.000	2500.000	-0.000	-0.000	1.000
GR	616.200	0.000	612.300	100.000	612.500	200.000	611.400	300.000	601.900	370.000
GR	601.500	400.000	603.400	500.000	602.000	600.000	602.100	700.000	601.100	800.000
GR	601.700	900.000	599.300	1000.000	601.300	1065.000	596.100	1112.000	592.000	1122.000
GR	590.100	1125.000	590.100	1130.000	589.400	1135.000	589.300	1140.000	590.000	1148.000
GR	592.000	1149.000	596.500	1155.000	601.200	1180.000	602.700	1200.000	603.000	1215.000
GR	612.100	1244.000	611.800	1300.000	610.300	1330.000	598.500	1375.000	607.100	1400.000
GR	616.300	1500.000	619.200	1600.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	3.000	.154	1199.000	.081	1230.000	.140	1300.000	-0.000	-0.000	-0.000
QT	4.000	2820.000	4440.000	5170.000	7000.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.414	27.000	1193.000	1300.000	1200.000	2100.000	2500.000	-0.000	-0.000	1.000
GR	615.800	0.000	613.500	100.000	607.200	200.000	606.700	300.000	606.800	400.000
GR	605.900	500.000	606.000	600.000	604.400	700.000	603.600	800.000	600.900	855.000
GR	601.300	900.000	601.700	1000.000	597.000	1036.000	597.700	1100.000	595.700	1193.000
GR	593.700	1199.000	592.300	1200.000	591.400	1205.000	592.100	1210.000	592.400	1215.000
GR	592.600	1220.000	592.700	1225.000	593.700	1230.000	596.000	1238.000	604.100	1257.000
GR	613.100	1275.000	617.800	1300.000	-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

CCHV= .600 CEHV= .800

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
	A		MOUTH OF PINE RIVER						
0.00	20.90	578.60	0.00	578.60	578.89	.29	0.00	0.00	587.50
8150.	0.	8150.	0.	0.	1881.	0.	0.	0.	587.50
0.00	0.00	4.33	0.00	.049	.056	.049	0.000	557.70	302.40
.000953	-0.	-0.	-0.	0	0	1	0.00	142.93	445.33
.02	20.79	578.79	0.00	0.00	579.01	.22	.08	.04	591.70
8150.	0.	8150.	0.	0.	2160.	0.	5.	0.	591.70
.01	0.00	3.77	0.00	.049	.056	.049	.055	558.00	306.11
.000691	100.	100.	100.	2	0	1	0.00	163.17	469.28
NORMAL BRIDGE,NRD=13 MIN ELTRD= 591.70 MAX ELLC= 588.00									
	B		D/S FACE OF M-29 BRIDGE						
.02	20.76	578.76	0.00	0.00	579.16	.40	.00	.14	591.70
8150.	0.	8150.	0.	0.	1610.	0.	5.	0.	591.70
.01	0.00	5.06	0.00	.049	.056	.049	.055	558.00	306.18
.001935	1.	1.	1.	2	0	1	-543.52	163.04	469.22
NORMAL BRIDGE,NRD=13 MIN ELTRD= 591.70 MAX ELLC= 588.00									
			U/S FACE OF M-29 BRIDGE						
.03	20.93	578.93	0.00	0.00	579.32	.39	.16	.01	591.70
8150.	0.	8150.	0.	0.	1631.	0.	8.	1.	591.70
.01	0.00	5.00	0.00	.049	.056	.049	.055	558.00	305.81
.001866	83.	83.	83.	2	0	1	-551.50	163.73	469.54
8930,RDST NOT ON GR CARD 288.99									
.04	21.22	579.22	0.00	0.00	579.43	.21	.00	.11	591.70
8150.	0.	8150.	0.	0.	2230.	0.	8.	1.	591.70
.01	0.00	3.65	0.00	.049	.056	.049	.055	558.00	305.19
.000630	1.	1.	1.	2	0	1	0.00	164.89	470.08

SECNO	DEPTH	CWSEL	CRIWS	WSELK	FQ	NV	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

C 500FT U/S M-29 BRIDGE

13 16.85 579.65 0.00 0.00 579.98 .33 .46 .10 585.70

8150.	0.	8150.	0.	0.	1771.	0.	31.	3.	579.80
.04	0.00	4.60	0.00	.049	.056	.049	.056	562.80	1029.00
.001425	500.	500.	500.	2	0	1	0.00	161.89	1190.89

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 585.70 ELREA= 579.80

.13	16.55	580.05	0.00	0.00	580.54	.49	.43	.13	585.70
8150.	0.	8149.	1.	0.	1448.	2.	40.	3.	579.80
.05	0.00	5.63	.35	.049	.056	.049	.056	563.50	823.20
.002150	250.	250.	250.	2	0	1	0.00	143.36	966.56

.30	15.89	581.09	0.00	0.00	581.16	.07	.36	.25	581.40
8150.	0.	8150.	0.	0.	3783.	0.	79.	7.	584.10
.14	0.00	2.15	0.00	.049	.056	.049	.056	565.20	1200.12
.000251	650.	650.	650.	2	0	1	0.00	319.68	1519.80

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 581.40 ELREA= 584.10

D 1700FT U/S M-29 BRIDGE

.36	14.16	581.16	0.00	0.00	581.23	.07	.08	.00	581.40
8150.	0.	8150.	0.	0.	3791.	0.	105.	9.	584.10
.18	0.00	2.15	0.00	.049	.056	.049	.056	566.00	1200.09
.000250	300.	300.	300.	2	0	1	0.00	319.84	1519.93

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 581.40 ELREA= 584.10

.45	14.93	581.30	0.00	0.00	581.34	.03	.08	.02	581.40
8150.	0.	8150.	0.	0.	5735.	0.	160.	14.	584.10
.27	0.00	1.42	0.00	.049	.056	.049	.056	566.37	1800.06
.000106	500.	500.	500.	1	0	1	0.00	480.19	2280.25

1490 NH CARD USED

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 581.40 ELREA= 589.90

.55	14.28	581.38	0.00	0.00	581.70	.33	.13	.24	581.40
8150.	0.	8150.	0.	0.	1776.	0.	203.	17.	589.90
.31	0.00	4.59	0.00	.049	.061	.049	.056	567.10	1200.03
.001375	500.	500.	500.	0	0	1	0.00	172.60	1372.63

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

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 581.40 ELREA= 589.90

E 3175FT U/S M-29 BRIDGE

.64	14.93	582.03	0.00	0.00	582.32	.29	.60	.02	581.40
8150.	3.	8147.	0.	5.	1889.	0.	223.	19.	589.90
.34	.52	4.31	0.00	.048	.062	.049	.056	567.10	1183.78

.001148	475.	4.75.	475.	2	0	1	0.00	189.79	1373.57

1490 NH CARD USED

MANUFACTURED SEC.

.83	19.06	583.06	0.00	0.00	583.25	.19	.87	.06	581.60
8150.	14.	8136.	0.	23.	2346.	0.	273.	24.	590.00
.42	.63	3.47	0.00	.049	.066	.049	.056	564.00	129.19
.000654	1050.	1020.	1020.	2	0	1	0.00	206.64	335.83

3265 DIVIDED FLOW

F 5900FT U/S M-29 BRIDGE

1.15	21.79	584.09	0.00	0.00	584.16	.07	.84	.07	579.00
8150.	3808.	4342.	0.	2164.	1763.	0.	386.	40.	590.20
.63	1.76	2.46	0.00	.045	.071	.098	.061	562.30	186.54
.000429	1300.	1705.	1705.	2	0	1	0.00	751.46	1310.42

MANUFACTURED SEC.

1.44	20.09	584.99	0.00	0.00	585.23	.24	.94	.13	579.00
8150.	461.	7120.	569.	192.	1722.	481.	494.	58.	579.70
.74	2.39	4.14	1.18	.045	.071	.098	.063	564.90	134.23
.001015	1450.	1500.	1520.	2	0	1	0.00	338.30	472.53

1490 NH CARD USED

3265 DIVIDED FLOW

G 8450FT U/S M-29 BRIDGE

1.64	19.26	585.98	0.00	0.00	586.08	.10	.76	.08	582.20
8150.	229.	6427.	1493.	419.	2306.	1431.	569.	75.	584.40
.85	.55	2.79	1.04	.129	.074	.061	.064	566.70	141.17
.000567	1150.	1050.	850.	2	0	1	0.00	1241.86	1434.44

1490 NH CARD USED

H 60FT D/S PH&D RR BRIDGE

1.97	21.83	586.83	0.00	0.00	586.93	.11	.85	.01	581.00
8150.	1077.	7073.	0.	1201.	2532.	0.	718.	106.	587.00
1.04	.90	2.79	0.00	.098	.074	.112	.066	565.00	518.60
.000436	1200.	1750.	1800.	2	0	1	0.00	434.28	952.88

1.98	17.83	586.83	0.00	0.00	587.16	.33	.05	.18	595.40
8150.	0.	8150.	0.	0.	1759.	0.	722.	107.	594.40
1.04	0.00	4.63	0.00	.112	.072	.112	.066	569.00	96.70
.001797	69.	59.	49.	2	0	1	0.00	120.23	216.93

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA

SLOPE XLOBL XLCH XLOBR ITRIAL IDC ICONT CORAR TOPWID ENDST

NORMAL BRIDGE,NRD= 8 MIN ELTRD= 593.90 MAX ELLC= 588.10

I D/S FACE OF PORT HURON DETROIT RR BRIDGE, 15 DEGREE

SKEW

1.98	17.82	586.82	0.00	0.00	587.20	.38	.00	.03	595.40
8150.	0.	8150.	0.	0.	1655.	0.	722.	107.	594.40
1.04	0.00	4.92	0.00	.042	.067	.042	.066	569.00	96.70
.001908	1.	1.	1.	0	0	1	-104.54	120.23	216.93

NORMAL BRIDGE,NRD= 8 MIN ELTRD= 593.90 MAX ELLC= 588.10

U/S FACE OF PORT HURON DETROIT RR BRIDGE, 15 DEGREE

SKEW

1.98	17.85	586.85	0.00	0.00	587.22	.38	.02	.00	595.40
8150.	0.	8150.	0.	0.	1657.	0.	722.	107.	594.40
1.04	0.00	4.92	0.00	.042	.067	.042	.066	569.00	96.70
.001900	12.	12.	12.	0	0	1	-104.74	120.23	216.93

8930,RDST NOT ON GR CARD 96.58
8930,RDST NOT ON GR CARD 154.54
8930,RDST NOT ON GR CARD 160.34
8930,RDST NOT ON GR CARD 313.53

1.98	17.92	586.92	0.00	0.00	587.25	.33	.00	.03	595.40
8150.	0.	8150.	0.	0.	1771.	0.	722.	107.	594.40
1.05	0.00	4.60	0.00	.084	.070	.112	.066	569.00	96.69
.001666	1.	1.	1.	2	0	1	0.00	120.24	216.93

MANUFACTURED SEC.

1.99	18.11	587.01	0.00	0.00	587.33	.33	.08	.00	595.40
8150.	0.	8149.	1.	0.	1779.	3.	724.	107.	576.30
1.05	0.00	4.58	.22	.084	.070	.112	.066	568.90	96.68
.001482	50.	50.	50.	0	0	1	0.00	120.25	216.94

MOUTH OF JORDAN CREEK, MANUFACTURED SEC.

2.01	18.52	587.22	0.00	0.00	587.51	.29	.16	.02	595.40
8150.	0.	8150.	0.	0.	1873.	0.	729.	107.	594.40
1.06	0.00	4.35	0.00	.112	.070	.084	.066	568.70	100.08
.001443	110.	110.	110.	2	0	1	0.00	124.52	224.60

1490 NH CARD USED
3280 CROSS SECTION 2.09 EXTENDED 2.57 FEET

J 575FT U/S PH&D RR BRIDGE

2.09	19.97	587.87	0.00	0.00	587.93	.06	.28	.14	584.10
8030.	1181.	5192.	1658.	1488.	2127.	1543.	762.	111.	580.90
1.11	.79	2.44	1.07	.112	.077	.084	.066	567.90	0.00
.000396	490.	415.	340.	2	0	1	0.00	733.84	733.84

1490 NH CARD USED

K 2125FT U/S PH&D RR BRIDGE

2.38	20.25	588.55	0.00	0.00	588.66	.11	.69	.03	582.70
8030.	1894.	6136.	0.	1588.	2098.	0.	916.	132.	594.30
1.28	1.19	2.92	0.00	.089	.073	.084	.066	568.30	25.63
.000526	1400.	1550.	1625.	2	0	1	0.00	451.74	477.37

1490 NH CARD USED

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

L 3875FT U/S PH&D RR BRIDGE

2.71	20.76	589.46	0.00	0.00	589.61	.15	.92	.03	589.50
8030.	0.	6777.	1253.	0.	2063.	954.	1049.	147.	581.60
1.45	0.00	3.29	1.31	.089	.070	.084	.067	568.70	100.03
.000526	1700.	1750.	1750.	2	0	1	0.00	298.99	399.02

1490 NH CARD USED

M 5275FT U/S PH&D RR BRIDGE

2.98	23.11	590.21	0.00	0.00	590.32	.11	.69	.02	590.30
8030.	0.	6267.	1763.	0.	2139.	1472.	1159.	157.	581.70
1.60	0.00	2.93	1.20	.089	.070	.098	.067	567.10	100.10
.000452	1150.	1400.	1500.	2	0	1	0.00	352.07	452.17

1490 NH CARD USED

N 7175FT U/S PH&D RR BRIDGE

3.34	20.10	591.00	0.00	0.00	591.05	.06	.70	.03	593.60
8030.	0.	5015.	3015.	0.	2136.	4673.	1389.	181.	584.40
1.91	0.00	2.35	.65	.089	.071	.168	.067	570.90	5.53
.000301	1800.	1900.	1950.	2	0	1	0.00	712.45	717.98

1490 NH CARD USED

O 8515FT U/S PH&D RR BRIDGE

3.59	23.37	591.47	0.00	0.00	591.62	.15	.49	.08	597.50
8030.	0.	7853.	677.	0.	2259.	1298.	1536.	197.	584.30
2.03	0.00	3.25	.52	.089	.071	.196	.068	568.10	12.88
.000495	1340.	1340.	1150.	0	0	1	0.00	436.14	449.02

1490 NH CARD USED

P 9715FT U/S PH&D RR BRIDGE

3.82	22.00	592.10	0.00	0.00	592.26	.16	.64	.01	588.50
8030.	149.	7079.	802.	381.	2070.	1135.	1632.	208.	581.30
2.14	.39	3.42	.71	.168	.074	.210	.068	570.10	175.21
.000576	1250.	1200.	1100.	2	0	1	0.00	436.06	611.27

1490 NH CARD USED

Q 11715FT U/S PH&D RR BRIDGE

4.20	22.51	593.41	0.00	0.00	593.57	.15	1.30	.00	593.80
8030.	0.	8027.	3.	0.	2548.	23.	1773.	223.	592.30
2.31	0.00	3.15	.11	.168	.084	.238	.068	570.90	1.32
.000735	2000.	2000.	2000.	2	0	1	0.00	219.83	221.15

1490 NH CARD USED

R 50FT D/S OLD FRED MOORE HWY BRIDGE

4.32	25.72	593.82	0.00	0.00	593.94	.12	.35	.02	583.30
8030.	356.	7664.	0.	694.	2732.	0.	1818.	227.	594.00
2.38	.54	2.81	0.00	.224	.079	.238	.068	568.10	34.44
.000411	650.	650.	650.	1	0	1	0.00	247.08	281.52

1490 NH CARD USED

S D/S FACE OLD FRED MOORE HWY BRIDGE, 15 DEGREE SKEW

4.33	22.24	593.84	0.00	0.00	593.99	.14	.03	.02	597.20
8030.	0.	8030.	0.	0.	2652.	0.	1821.	227.	597.20
2.39	0.00	3.03	0.00	.224	.096	.238	.068	571.60	0.00
.000847	49.	49.	49.	1	0	1	0.00	144.88	144.89

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.00	1.71	3.01	0.00	62.94	19.06	1536.00	2.01	574.10	574.00

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 FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
594.57	594.01	.03	0.	8030.	1536.	592.00	597.10	10.00

U/S FACE OLD FRED MOORE HWY BRIDGE, 15 DEGREE SKEW

4.34	22.83	594.43	0.00	0.00	594.57	.13	.58	0.00	597.20
8030.	0.	8030.	0.	0.	2736.	0.	1822.	227.	597.20
2.39	0.00	2.93	0.00	.224	.097	.238	.068	571.60	0.00
.000772	22.	22.	22.	2	0	1	0.00	144.88	144.89

8930,RDST NOT ON GR CARD 18.35
8930,RDST NOT ON GR CARD 45.40
8930,RDST NOT ON GR CARD 50.23
8930,RDST NOT ON GR CARD 95.14
8930,RDST NOT ON GR CARD 99.97
8930,RDST NOT ON GR CARD 144.89
8930,RDST NOT ON GR CARD 144.89

4.35	25.67	594.47	0.00	0.00	594.60	.13	.03	.00	600.90
8030.	0.	8030.	0.	0.	2757.	0.	1825.	227.	601.00
2.39	0.00	2.91	0.00	.196	.070	.196	.068	568.80	0.00
.000510	45.	45.	45.	0	0	1	0.00	172.34	172.34

NORMAL BRIDGE,NRD=12 MIN ELTRD= 600.90 MAX ELLC= 596.30

T D/S FACE NEW FRED MOORE HWY BRIDGE, 10 DEGREE SKEW

4.36	25.66	594.46	0.00	0.00	594.63	.17	.00	.03	600.90
8030.	0.	8030.	0.	0.	2422.	0.	1825.	227.	601.00
2.39	0.00	3.32	0.00	.056	.070	.056	.068	568.80	0.00
.000798	1.	1.	1.	1	0	1	-334.62	172.34	172.34

NORMAL BRIDGE,NRD=12 MIN ELTRD= 600.90 MAX ELLC= 596.30

U/S FACE NEW FRED MOORE HWY BRIDGE, 10 DEGREE SKEW

4.36	25.69	594.49	0.00	0.00	594.66	.17	.03	.00	600.90
8030.	0.	8030.	0.	0.	2426.	0.	1828.	228.	601.00
2.40	0.00	3.31	0.00	.056	.070	.056	.068	568.80	0.00
.000794	39.	39.	39.	0	0	1	-335.02	172.34	172.34

8930,RDST NOT ON GR CARD 55.15
8930,RDST NOT ON GR CARD 58.10
8930,RDST NOT ON GR CARD 114.24
8930,RDST NOT ON GR CARD 117.19
8930,RDST NOT ON GR CARD 172.34

4.36	25.76	594.56	0.00	0.00	594.69	.13	.00	.02	600.90
8030.	0.	8030.	0.	0.	2772.	0.	1828.	228.	601.00
2.40	0.00	2.90	0.00	.224	.074	.140	.068	568.80	0.00
.000564	1.	1.	1.	2	0	1	0.00	172.34	172.34

1490 NH CARD USED

U 150FT U/S NEW FRED MOORE HWY BRIDGE

4.39	25.43	594.63	0.00	0.00	594.77	.14	.08	.01	584.50
8030.	869.	7161.	0.	1361.	2275.	2.	1839.	228.	594.30
2.41	.64	3.15	.08	.224	.074	.126	.068	569.20	29.73
.000482	150.	150.	150.	2	0	1	0.00	304.04	333.76

1490 NH CARD USED
3280 'CROSS' SECTION 4.90 EXTENDED .77 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	ELMTN	SSTA

SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

V 2850FT U/S NEW FRED MOORE HWY BRIDGE

4.90	24.77	595.77	0.00	0.00	595.87	.10	1.07	.02	582.70
8030.	651.	6160.	1219.	1890.	2137.	1873.	2135.	261.	581.60
2.73	.34	2.88	.65	.240	.073	.210	.069	571.00	0.00
.000334	2750.	2700.	2650.	2	0	1	0.00	738.28	738.28

1490 NH CARD USED
3280 CROSS SECTION 5.13 EXTENDED 3.84 FEET

W 50FT D/S RATTLE RUN PD. BRIDGE

5.13	25.44	596.24	0.00	0.00	596.35	.11	.48	.01	581.80
8030.	105.	6444.	1481.	210.	2175.	2037.	2284.	277.	586.20
2.87	.50	2.96	.73	.240	.065	.190	.069	570.80	0.00
.000468	1200.	1200.	1350.	2	0	1	0.00	373.46	373.46

1490 NH CARD USED

X D/S FACE RATTLE RUN BRIDGE, 18.67 DEGREE SKEW

5.14	23.36	596.26	0.00	0.00	596.43	.18	.02	.05	597.40
7820.	0.	7820.	0.	0.	2318.	0.	2288.	277.	597.40
2.87	0.00	3.37	0.00	.240	.073	.190	.069	572.90	0.00
.000521	49.	49.	49.	0	0	1	0.00	110.85	110.85

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.20	1.73	3.02	0.00	81.80	5.35	1891.45	.76	572.90	572.90

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
596.71	596.45	.02	0.	7820.	1891.	593.10	597.40	10.00

U/S FACE RATTLE RUN BRIDGE, 18.67 DEGREE SKEW

5.15	23.64	596.54	0.00	0.00	596.71	.17	.28	0.00	597.40
7820.	0.	7820.	0.	0.	2349.	0.	2290.	277.	597.40
2.87	0.00	3.33	0.00	.240	.073	.190	.069	572.90	0.00
.000499	39.	39.	39.	2	0	1	0.00	110.85	110.85

8930,RDST NOT ON GR CARD 54.00
8930,RDST NOT ON GR CARD 57.79
8930,RDST NOT ON GR CARD 110.85
1490 NH CARD USED

MANUFACTURED SEC.

5.16	25.21	596.71	0.00	0.00	596.79	.08	.05	.05	590.40

7820.	64.	6468.	1288.	218.	2597.	1942.	2294.	278.	586.80
2.88	.29	2.49	.66	.168	.071	.154	.069	571.50	31.76
.000253	50.	50.	50.	2	0	1	0.00	458.85	490.61

MANUFACTURED SEC.

5.34	25.99	596.99	0.00	0.00	597.07	.08	.29	.00	592.70
7820.	29.	6581.	1209.	122.	2669.	3003.	2409.	293.	584.90
3.00	.24	2.47	.40	.168	.073	.224	.069	571.00	620.37
.000362	950.	950.	950.	2	0	1	0.00	943.29	1563.66

MANUFACTURED SEC.

5.49	26.84	597.24	0.00	0.00	597.29	.05	.20	.02	578.50
7820.	1811.	5359.	651.	3098.	2578.	2115.	2528.	308.	585.60
3.14	.58	2.06	.31	.168	.073	.224	.069	570.40	235.58
.000181	300.	800.	700.	1	0	1	0.00	826.09	1061.67

1490 NH CARD USED

SECNO	DEPTH	CHSEL	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

Y 3000FT U/S RATTLE RUN BRIDGE

5.71	28.11	597.51	0.00	0.00	597.57	.06	.27	.01	600.00
7820.	0.	6245.	1575.	0.	2954.	2340.	2706.	330.	584.90
3.32	0.00	2.11	.67	.168	.088	.126	.069	569.40	7.50
.000297	1150.	1200.	1200.	2	0	1	0.00	794.08	801.57

1490 NH CARD USED

Z 5100FT U/S RATTLE RUN BRIDGE

6.11	27.38	598.18	0.00	0.00	598.23	.06	.66	.00	586.10
7820.	2447.	5155.	218.	2771.	2215.	271.	2953.	362.	583.50
3.64	.88	2.33	.80	.120	.096	.126	.070	570.80	76.03
.000350	1950.	2100.	2000.	2	0	1	0.00	608.49	684.52

1490 NH CARD USED

3265 DIVIDED FLOW

MANUFACTURED SEC.

6.41	27.12	598.62	0.00	0.00	598.66	.05	.42	.01	592.50
7820.	471.	6374.	975.	1073.	3288.	2460.	3159.	389.	590.10
3.89	.44	1.94	.40	.113	.077	.196	.070	571.50	86.56
.000227	1350.	1550.	1550.	2	0	1	0.00	1023.37	1350.16

1490 NH CARD USED

AA 7600FT U/S RATTLE RUN BRIDGE

6.59	26.75	598.75	0.00	0.00	598.77	.01	.08	.02	581.50
7820.	219.	3851.	3751.	531.	3315.	8821.	3291.	404.	581.50
4.11	.41	1.16	.43	.170	.098	.155	.070	572.00	12.78
.000083	650.	650.	550.	2	0	1	0.00	1114.62	1127.39

1490 NH CARD USED

AB 9700FT U/S RATTLE RUN BRIDGE

6.98	28.47	599.07	0.00	0.00	599.14	.07	.33	.04	593.80
7820.	85.	5436.	2299.	169.	2214.	3272.	3677.	438.	588.30
4.39	.50	2.46	.70	.125	.102	.210	.071	570.60	35.88
.000505	2100.	2100.	1700.	0	0	1	0.00	553.54	589.42

MANUFACTURED SEC.

7.06	30.04	599.24	0.00	0.00	599.35	.11	.19	.03	581.00
7820.	721.	4953.	2146.	1285.	1516.	2247.	3723.	445.	582.80
4.43	.56	3.27	.95	.168	.078	.154	.071	569.20	158.62
.000464	450.	400.	330.	2	0	1	0.00	924.26	1082.88

1490 NH CARD USED

AC 10500FT U/S RATTLE RUN BRIDGE

7.13	31.67	599.47	0.00	0.00	599.53	.05	.14	.03	584.80
7820.	3377.	4103.	340.	4948.	1639.	352.	3775.	452.	582.80
4.50	.68	2.50	.97	.168	.085	.112	.071	567.80	67.51
.000296	350.	400.	420.	2	0	1	0.00	839.98	907.49

MANUFACTURED SEC.

7.31	28.24	599.64	0.00	0.00	599.67	.03	.12	.02	585.00
7820.	181.	7443.	197.	735.	5448.	758.	3925.	467.	586.20
4.70	.25	1.37	.26	.168	.076	.182	.071	571.40	77.39
.000073	900.	970.	970.	2	0	1	0.00	565.09	642.48

1490 NH CARD USED

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

AD 12000FT U/S RATTLE RUN BRIDGE

7.42	26.20	599.70	0.00	0.00	599.74	.03	.06	.00	587.00
7550.	3327.	3633.	590.	6437.	1876.	1165.	4022.	478.	587.20
4.82	.52	1.94	.51	.175	.089	.224	.071	573.50	112.83
.000239	500.	530.	530.	2	0	1	0.00	1293.84	1406.67

MANUFACTURED SEC.

7.52	26.72	599.82	0.00	0.00	599.90	.08	.12	.04	585.20
7550.	958.	5817.	775.	2072.	2260.	1176.	4101.	488.	587.20
4.89	.46	2.57	.66	.156	.070	.184	.071	573.10	114.01

.000261	400.	530.	530.	2	0	1	0.00	825.98	939.98

1490 NH CARD USED
3280 CROSS SECTION 7.59 EXTENDED .77 FEET

AE 50FT D/S VINE RD BRIDGE

7.59	27.17	599.97	0.00	0.00	600.03	.07	.13	.01	599.20
7550.	0.	4728.	2822.	0.	1831.	4487.	4151.	494.	584.10
4.94	0.00	2.58	.63	.154	.096	.224	.071	572.80	0.00
.000482	370.	370.	370.	2	0	1	0.00	644.59	644.59

3280 CROSS SECTION 7.60 EXTENDED .49 FEET

AF D/S FACE VINE RD BRIDGE

7.60	29.59	599.99	0.00	0.00	600.05	.07	.02	.00	598.10
7550.	19.	6489.	1041.	119.	2910.	2379.	4158.	495.	598.10
4.95	.16	2.23	.44	.168	.073	.168	.071	570.40	0.00
.000267	50.	50.	50.	0	0	1	0.00	731.24	731.24

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.05	1.58	5.47	0.00	35.80	7.00	2385.60	2.13	570.40	570.40

3280 CROSS SECTION 7.60 EXTENDED .49 FEET

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
600.23	600.06	.00	3541.	3986.	2386.	596.70	598.10	30.00

U/S FACE VINE RD BRIDGE

7.60	29.59	599.99	0.00	0.00	600.05	.07	.00	0.00	598.10
7550.	19.	6489.	1042.	119.	2910.	2380.	4160.	496.	598.10
4.95	.16	2.23	.44	.168	.073	.168	.071	570.40	0.00
.000267	17.	17.	17.	2	0	5	0.00	731.25	731.25

8930.RDST NOT ON GR CARD 99.99
3280 CROSS SECTION 7.61 EXTENDED .50 FEET

7.61	29.60	600.00	0.00	0.00	600.07	.06	.01	.00	598.10
7550.	21.	6416.	1113.	120.	2909.	2386.	4166.	496.	598.10
4.96	.17	2.21	.47	.154	.072	.154	.071	570.40	0.00
.000254	50.	50.	50.	0	0	1	0.00	731.36	731.36

1490 NH CARD USED
SECNO DEPTH CWSEL CRI'S WSELK E3 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

AG 900FT U/S VINE RD BRIDGE

7.77	27.11	600.21	0.00	0.00	600.22	.01	.12	.03	582.90
7550.	3975.	3124.	451.	10070.	2171.	1912.	4355.	514.	594.70
5.25	.39	1.44	.24	.240	.078	.200	.071	573.10	5.63
.000094	850.	850.	800.	1	0	1	0.00	1075.07	1080.70

MANUFACTURED SEC.

8.15	31.06	600.46	0.00	0.00	600.52	.06	.27	.04	589.90
7550.	84.	7201.	265.	249.	3608.	874.	4811.	548.	588.50
5.54	.34	2.00	.30	.210	.080	.224	.071	569.40	95.00
.000193	2200.	2000.	1970.	2	0	1	0.00	384.50	479.50

1490 NH CARD USED

AH 3400FT U/S VINE RD. BRIDGE

8.25	32.08	600.58	0.00	0.00	600.62	.04	.08	.01	591.90
7550.	1578.	5866.	106.	4391.	3443.	313.	4875.	553.	588.10
5.64	.36	1.70	.34	.224	.091	.224	.072	568.50	151.23
.000153	300.	500.	530.	2	0	1	0.00	696.42	847.65

1490 NH CARD USED

MANUFACTURED SEC.

8.67	27.90	600.90	0.00	0.00	600.92	.02	.29	.01	595.60
7550.	22.	6608.	920.	143.	5486.	2805.	5277.	588.	590.50
6.16	.15	1.20	.33	.224	.104	.224	.072	573.00	97.32
.000135	2250.	2000.	2250.	2	0	1	0.00	690.76	788.08

1490 NH CARD USED

AI 6900FT U/S VINE RD. BRIDGE

8.91	25.67	601.17	0.00	0.00	601.24	.07	.28	.04	587.60
7550.	288.	4789.	2472.	469.	1761.	4473.	5490.	609.	591.30
6.34	.62	2.72	.55	.224	.088	.214	.072	575.50	40.76
.000447	600.	1250.	1250.	2	0	1	0.00	830.22	870.98

1490 NH CARD USED

MANUFACTURED SEC.

9.07	25.77	601.57	0.00	0.00	601.69	.12	.41	.04	584.20
7550.	286.	5020.	2243.	479.	1458.	3905.	5627.	626.	589.50
6.44	.60	3.44	.57	.230	.072	.221	.072	575.80	42.54
.000464	850.	850.	1000.	2	0	1	0.00	667.92	710.45

1490 NH CARD USED
3280 CROSS SECTION 9.32 EXTENDED .00 FEET

AJ 50FT D/S NEWMAN RD BRIDGE

9.32	26.10	602.20	0.00	0.00	602.24	.04	.50	.05	591.80
7550.	1504.	5244.	802.	1081.	3105.	1565.	5800.	645.	591.80
6.68	1.39	1.69	.51	.070	.113	.222	.072	576.10	0.00
.000320	1300.	1300.	1300.	2	0	1	0.00	628.73	628.73

3265 DIVIDED FLOW

3280 CROSS SECTION 9.33 EXTENDED .31 FEET

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

AK D/S FACE NEWMAN BRIDGE, 10 DEGREE SKEW FOR WEIR FLOW

9.33	26.00	602.20	0.00	0.00	602.33	.13	.02	.07	602.50
7550.	0.	7537.	13.	0.	2629.	91.	5804.	645.	602.40
6.68	0.00	2.87	.14	.154	.073	.182	.072	576.20	98.60
.000513	49.	49.	49.	1	0	1	0.00	288.92	396.37

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.05	1.65	3.44	0.00	55.98	7.20	2223.00	1.62	576.20	576.20

3265 DIVIDED FLOW

3280 CROSS SECTION 9.33 EXTENDED .65 FEET

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
602.50	602.34	.01	392.	7175.	2223.	600.80	601.30	30.00

U/S FACE NEWMAN BRIDGE, 10 DEGREE SKEW FOR WEIR FLOW

MAY 1943: HWM 600.0?(USGS)

9.33	26.15	602.35	0.00	0.00	602.47	.13	.14	0.00	602.50
7550.	0.	7533.	17.	0.	2648.	111.	5805.	646.	602.40
6.68	0.00	2.85	.15	.154	.073	.182	.072	576.20	98.60
.000501	18.	18.	18.	2	0	4	0.00	295.22	396.37

8930,RDST NOT ON GR CARD 229.74
8930,RDST NOT ON GR CARD 232.70
8930,RDST NOT ON GR CARD 243.54

8930,RDST NOT ON GR CARD 394.40

MANUFACTURED SEC.

9.34	26.31	602.41	0.00	0.00	602.51	.10	.02	.02	588.40
7550.	1657.	5689.	204.	2332.	1978.	382.	5810.	646.	591.10
6.69	.71	2.88	.53	.154	.073	.182	.072	576.10	197.20
.000378	50.	50.	50.	2	0	1	0.00	561.56	758.77

MANUFACTURED SEC.

9.40	27.24	602.54	0.00	0.00	602.63	.09	.11	.01	587.60
7550.	1659.	5644.	247.	2718.	2066.	444.	5847.	650.	590.30
6.73	.61	2.73	.56	.168	.070	.168	.072	575.30	180.89
.000296	300.	350.	350.	1	0	1	0.00	581.29	762.18

MANUFACTURED SEC.

9.65	27.95	602.95	0.00	0.00	603.02	.06	.37	.02	591.40
7550.	2835.	4171.	543.	3982.	1596.	879.	6020.	663.	586.00
6.94	.71	2.61	.62	.168	.070	.168	.072	575.00	105.31
.000277	1300.	1300.	1250.	2	0	1	0.00	648.47	753.78

1490 NH CARD USED

AL 2500FT U/S NEWMAN RD BRIDGE

9.80	27.79	603.19	0.00	0.00	603.21	.03	.17	.02	592.60
7550.	3797.	2872.	881.	7292.	1477.	1599.	6172.	684.	586.00
7.14	.52	1.94	.55	.167	.079	.168	.072	575.40	51.60
.000176	800.	800.	700.	1	0	1	0.00	1111.97	1163.57

1490 NH CARD USED

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

MANUFACTURED SEC.

9.97	27.91	603.41	0.00	0.00	603.52	.11	.24	.07	588.20
7550.	1577.	5203.	770.	2452.	1662.	1009.	6332.	701.	588.10
7.25	.64	3.13	.76	.196	.080	.196	.072	575.50	235.47
.000446	900.	900.	900.	2	0	1	0.00	553.39	788.86

1490 NH CARD USED

3265 DIVIDED FLOW

AM 4700FT U/S NEWMAN RD BRIDGE

10.22	28.47	603.97	0.00	0.00	604.04	.07	.50	.02	605.00
7550.	14.	5295.	2241.	69.	2136.	3655.	6493.	720.	588.10
7.44	.20	2.48	.61	.063	.081	.224	.072	575.50	160.57
.000341	1200.	1300.	1300.	2	0	1	0.00	716.47	1071.11

1490 NH CARD USED
3280 CROSS SECTION 10.39 EXTENDED 1.17 FEET

AN 75FT D/S I-94 BRIDGES

10.39	27.27	604.27	0.00	0.00	604.30	.04	.24	.02	590.60
7341.	3953.	3387.	0.	3673.	1779.	0.	6611.	733.	608.00
7.61	1.08	1.90	0.00	.081	.082	.224	.072	577.00	0.00
.000213	924.	924.	874.	2	0	1	0.00	602.63	602.63

1490 NH CARD USED

AO D/S FACE I-94 EAST BOUND LANES, 25.14 DEGREE SKEW

10.41	26.28	604.28	0.00	0.00	604.35	.08	.02	.03	608.30
7340.	0.	7340.	0.	0.	3307.	0.	6618.	734.	608.20
7.62	0.00	2.22	0.00	.081	.080	.224	.072	578.00	362.24
.000260	75.	75.	75.	1	0	1	0.00	179.10	541.35

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	ROLEN	BNC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.74	3.01	0.00	64.10	5.43	2889.80	2.67	578.00	578.00

CLASS A LOW FLOW

BRIDGE W.S.= 604.28 BRIDGE VELOCITY= 2.17

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
0.00	604.36	.00	0.	7340.	2890.	604.50	608.20	1.00

U/S FACE I-94 EAST BOUND LANES, 25.14 DEGREE SKEW

10.42	26.28	604.28	0.00	0.00	604.36	.08	.00	0.00	608.30
7340.	0.	7340.	0.	0.	3306.	0.	6622.	734.	608.20
7.63	0.00	2.22	0.00	.081	.080	.224	.072	578.00	362.25
.000260	48.	48.	48.	0	0	1	0.00	179.10	541.35

8930,RDST NOT ON GR CARD 362.09
8930,RDST NOT ON GR CARD 418.23
8930,RDST NOT ON GR CARD 420.95
8930,RDST NOT ON GR CARD 484.31
8930,RDST NOT ON GR CARD 487.03
8930,RDST NOT ON GR CARD 541.35
8930,RDST NOT ON GR CARD 541.35
1490 NH CARD USED

AP D/S FACE I-94 WEST BOUND LANES, 25.14 DEGREE SKEW

10.43	26.69	604.29	0.00	0.00	604.37	.05	.01	.00	608.20
7340.	0.	7340.	0.	0.	3234.	0.	6626.	734.	608.20
7.63	0.00	2.27	0.00	.081	.073	.224	.072	577.60	543.27
.000235	48.	48.	48.	0	0	1	0.00	180.94	724.21

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.76	3.01	0.00	48.10	5.43	2737.00	2.97	577.70	577.70

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

CLASS A LOW FLOW

BRIDGE W.S.= 604.29 BRIDGE VELOCITY= 2.27

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
0.00	604.37	.00	0.	7340.	2737.	604.50	608.20	1.00

U/S FACE I-94 WEST BOUND LANES, 25.14 DEGREE SKEW

10.44	26.69	604.29	0.00	0.00	604.37	.08	.00	0.00	608.20
7340.	0.	7340.	0.	0.	3234.	0.	6629.	735.	608.20
7.64	0.00	2.27	0.00	.081	.073	.224	.072	577.60	543.27
.000235	48.	48.	48.	0	0	1	0.00	180.94	724.21

8930,RDST NOT ON GR CARD 543.15
8930,RDST NOT ON GR CARD 543.16
8930,RDST NOT ON GR CARD 599.28
8930,RDST NOT ON GR CARD 602.00
8930,RDST NOT ON GR CARD 665.37
8930,RDST NOT ON GR CARD 668.08
8930,RDST NOT ON GR CARD 724.21
8930,RDST NOT ON GR CARD 724.21

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 608.20 ELREA= 608.20

10.45	26.70	604.30	0.00	0.00	604.38	.08	.01	.00	608.20
7340.	0.	7340.	0.	0.	3236.	0.	6633.	735.	608.20
7.64	0.00	2.27	0.00	.154	.070	.154	.072	577.60	543.26
.000270	50.	50.	50.	0	0	1	0.00	180.95	724.21

MANUFACTURED SEC.

10.55	27.08	604.48	0.00	0.00	604.58	.10	.17	.02	583.20
7340.	1943.	4865.	532.	1776.	1606.	858.	6684.	739.	583.50
7.71	1.09	3.03	.62	.140	.073	.182	.072	577.40	39.81
.000316	600.	600.	600.	2	0	1	0.00	399.90	439.71

1490 NH CARD USED

AQ 2840FT U/S I-94 BRIDGES

10.97	28.44	605.04	0.00	0.00	605.05	.01	.43	.05	584.70
7340.	1688.	1863.	3789.	3886.	1319.	9062.	7139.	780.	595.80
8.61	.43	1.41	.42	.210	.090	.210	.072	576.60	90.77
.000132	2240.	2240.	2050.	2	0	1	0.00	1279.74	1370.51

1490 NH CARD USED

AR 50FT D/S WADHAMS RD BRIDGE

11.30	25.58	605.28	0.00	0.00	605.30	.03	.24	.01	591.20
7340.	3801.	3381.	158.	5700.	1853.	334.	7552.	822.	588.60
9.00	.67	1.82	.47	.108	.073	.168	.072	579.70	174.98
.000153	1720.	1720.	1500.	2	0	1	0.00	965.21	1140.19

1490 NH CARD USED

AS D/S FACE WADHAMS RD BRIDGE

11.31	24.97	605.27	0.00	0.00	605.38	.11	.01	.06	606.20
7340.	0.	7340.	0.	0.	2789.	0.	7558.	823.	606.20
9.01	0.00	2.63	0.00	.108	.071	.168	.072	580.30	300.00
.000318	49.	49.	49.	1	0	1	0.00	144.00	444.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.67	3.00	0.00	67.94	4.20	2363.20	1.71	580.30	580.30

PRESSURE FLOW

EGPRS	EGLWC	HS	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
605.52	605.38	.00	0.	7340.	2363.	602.60	605.90	10.00

U/S FACE WADHAMS RD BRIDGE

11.31	25.12	605.42	0.00	0.00	605.52	.11	.14	0.00	606.20
7340.	0.	7340.	0.	0.	2808.	0.	7560.	823.	606.20
9.01	0.00	2.61	0.00	.108	.071	.168	.072	580.30	300.00
.000311	30.	30.	30.	2	0	1	0.00	144.00	444.00

8930,RDST NOT ON GR CARD 299.99

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

MANUFACTURED SEC.

11.32	25.78	605.48	0.00	0.00	605.56	.07	.02	.02	594.50
7340.	2034.	4905.	401.	3926.	1864.	749.	7566.	824.	588.60
9.02	.52	2.63	.54	.168	.076	.196	.072	579.70	172.05
.000357	50.	50.	50.	2	0	1	0.00	1081.51	1253.56

MANUFACTURED SEC.

11.67	24.94	606.34	0.00	0.00	606.48	.14	.87	.06	600.40
7340.	69.	5865.	1405.	147.	1733.	1990.	7779.	859.	590.60
9.19	.47	3.38	.71	.168	.076	.196	.072	581.40	150.49
.000674	1850.	1850.	1600.	2	0	1	0.00	664.96	815.46

1490 NH CARD USED

AT 3700FT U/S WADHAMS RD BRIDGE

12.02	25.17	607.37	0.00	0.00	607.42	.06	.89	.05	594.50
7340.	2735.	4389.	215.	4288.	1801.	386.	7984.	884.	595.30
9.48	.64	2.44	.56	.195	.092	.224	.073	582.20	59.29
.000389	1800.	1800.	1500.	2	0	1	0.00	657.40	716.69

MANUFACTURED SEC.

12.13	25.22	607.62	0.00	0.00	607.74	.12	.27	.05	585.40
7340.	2548.	4334.	458.	3354.	1228.	527.	8064.	893.	585.40
9.55	.76	3.53	.87	.168	.080	.182	.073	582.40	188.24
.000519	600.	600.	600.	2	0	1	0.00	707.12	895.36

1490 NH CARD USED

AU 5600FT U/S WADHAMS RD BRIDGE

12.37	25.29	608.09	0.00	0.00	608.10	.01	.30	.06	594.50
7340.	4709.	2631.	0.	8065.	2242.	0.	8235.	914.	616.50
9.93	.58	1.17	0.00	.161	.111	.182	.073	582.80	401.97
.000172	850.	1300.	1300.	2	0	1	0.00	1259.06	1661.03

MANUFACTURED SEC.

12.60	25.43	608.33	0.00	0.00	608.35	.01	.24	.00	586.00
7340.	0.	0.	7340.	0.	0.	7881.	8453.	939.	665.60
10.25	0.00	0.00	.93	.168	.078	.140	.073	582.90	260.57
.000301	850.	1200.	1200.	2	0	1	0.00	1092.49	1353.06

1490 NH CARD USED
3280 CROSS SECTION 12.73 EXTENDED .49 FEET

AV 50FT D/S GRATIOT RD BRIDGE

12.73	25.48	608.48	0.00	0.00	608.51	.03	.15	.01	586.00
7340.	3855.	2031.	1454.	5998.	863.	2612.	8582.	954.	586.00
10.42	.64	2.35	.56	.138	.070	.182	.073	583.00	0.00
.000177	550.	700.	700.	0	0	1	0.00	1011.99	1011.99

1490 NH CARD USED

AV D/S FACE GRATIOT RD BRIDGE, 19.65 DEGREE SKEW

APRIL 1975: HWM 605.14(USGS) AND

ESTIMATED DISCHARGE(GREST GAGE) 5400 CFS

12.74	24.87	608.47	0.00	0.00	608.54	.16	.02	.11	610.40
7340.	0.	7340.	0.	0.	2272.	0.	8589.	955.	610.60
10.42	0.00	3.23	0.00	.138	.122	.182	.073	583.60	565.20
.001363	49	49	49	2	0	1	0.00	1097.37	1674.7

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.78	2.90	-0.00	77.72	2.83	2050.00	.85	583.50	583.60

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

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
608.83	608.64	.00	0.	7340.	2050.	606.20	610.40	10.00

U/S FACE GRATIOT RD BRIDGE, 19.65 DEGREE SKEW

12.75	25.07	608.67	0.00	0.00	608.83	.16	.19	0.00	610.40
7340.	0.	7340.	0.	0.	2293.	0.	8592.	955.	610.60
10.43	0.00	3.20	0.00	.138	.121	.182	.073	583.60	565.20
.001323	54.	54.	54.	2	0	1	0.00	109.27	674.47

8930,RDST NOT ON GR CARD 565.19
8930,RDST NOT ON GR CARD 565.20
8930,RDST NOT ON GR CARD 619.84
8930,RDST NOT ON GR CARD 622.66
8930,RDST NOT ON GR CARD 674.47
8930,RDST NOT ON GR CARD 674.47

MANUFACTURED SEC.

12.76	25.35	608.85	0.00	0.00	608.91	.06	.02	.06	601.20
7340.	51.	7249.	40.	161.	3566.	129.	8595.	955.	601.40
10.43	.32	2.03	.31	.182	.077	.182	.073	583.50	507.99
.000258	50.	50.	50.	2	0	1	0.00	284.77	792.75

12.85	26.56	608.96	0.00	0.00	609.03	.07	.12	.01	594.00
7340.	701.	5758.	881.	1519.	2409.	1909.	8645.	961.	588.40
10.50	.46	2.39	.46	.182	.077	.182	.073	582.40	92.79
.000266	470.	450.	430.	2	0	1	0.00	840.88	933.67

1490 NH CARD USED

3265 DIVIDED FLOW

AX 1100FT U/S GRATIOT RD BRIDGE

12.96	28.33	609.13	0.00	0.00	609.17	.04	.12	.02	586.80
7340.	1246.	4130.	1964.	2254.	1931.	4527.	8727.	970.	585.30
10.60	.55	2.14	.43	.210	.081	.210	.074	580.80	66.69
.000188	580.	580.	370.	2	0	1	0.00	953.97	1044.35

1490 NH CARD USED

AY 2700FT U/S GRATIOT RD BRIDGE

13.27	25.57	609.57	0.00	0.00	609.60	.03	.43	.01	597.20
7340.	3533.	3807.	0.	6227.	2070.	0.	9031.	1004.	619.10
10.96	.57	1.84	0.00	.224	.110	.210	.074	584.00	209.96
.000437	1600.	1600.	1450.	2	0	1	0.00	939.63	1149.59

3265 DIVIDED FLOW

13.46	26.04	610.04	0.00	0.00	610.18	.14	.48	.09	597.50
7340.	1172.	5734.	434.	1921.	1690.	512.	9137.	1017.	600.20
11.05	.61	3.39	.85	.168	.078	.168	.074	584.00	134.76
.000707	600.	1020.	1020.	2	0	1	0.00	751.57	1150.35

1490 NH CARD USED
3280 CROSS SECTION 13.70 EXTENDED 3.89 FEET

A2 50FT D/S FIRTH RD BRIDGE

13.70	25.49	610.69	0.00	0.00	610.72	.03	.47	.07	592.20
5420.	538.	2179.	2702.	1379.	1096.	4530.	9309.	1042.	595.10
11.37	.39	1.99	.60	.210	.080	.133	.074	585.20	.08
.000187	1260.	1260.	1450.	2	0	1	0.00	849.92	850.00

1490 NH CARD USED
3280 CROSS SECTION 13.71 EXTENDED .41 FEET

SECNO	DEPTH	CHSEL	CRIWS	WSELK	EG	HV	HL	QLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
13.71	25.40	610.70	0.00	0.00	610.74	.04	.01	.01	605.20
5420.	206.	4461.	752.	571.	2519.	1581.	9316.	1042.	603.70
11.38	.36	1.77	.48	.182	.106	.191	.074	585.30	56.96
.000367	49.	49.	49.	1	0	1	0.00	671.49	728.45

3280 CROSS SECTION 13.71 EXTENDED .41 FEET

NORMAL BRIDGE,NRD=23 MIN ELTRD= 604.10 MAX ELLC= 605.20

BA D/S FACE FIRTH RD BRIDGE, 31 DEGREE SKEW

13.71	25.42	610.72	0.00	0.00	610.75	.03	.00	.01	606.00
5420.	357.	3607.	1456.	537.	2228.	1576.	9316.	1042.	603.70
11.38	.67	1.62	.92	.182	.108	.192	.074	585.30	56.96
.001398	1.	1.	1.	0	0	1	-240.86	671.49	728.45

3280 CROSS SECTION 13.71 EXTENDED .43 FEET

NORMAL BRIDGE,NRD=23 MIN ELTRD= 604.10 MAX ELLC= 605.20

U/S FACE FIRTH RD BRIDGE, 31 DEGREE SKEW

13.71	25.44	610.74	0.00	0.00	610.77	.03	.02	.00	606.00
5420.	360.	3600.	1460.	541.	2232.	1583.	9318.	1043.	603.70
11.38	.66	1.61	.92	.182	.108	.192	.074	585.30	56.22
.001386	16.	16.	15.	1	0	1	-240.86	672.23	728.45

8930,RDST NOT ON GR CARD 85.69
8930,RDST NOT ON GR CARD 371.08
8930,RDST NOT ON GR CARD 374.51
8930,RDST NOT ON GR CARD 389.94
8930,RDST NOT ON GR CARD 391.65
8930,RDST NOT ON GR CARD 409.65
8930,RDST NOT ON GR CARD 685.60

3280 CROSS SECTION 13.71 EXTENDED .43 FEET

13.71	25.44	610.74	0.00	0.00	610.78	.04	.00	.01	605.20
5420.	179.	4495.	746.	576.	2523.	1589.	9318.	1043.	603.70
11.38	.31	1.78	.47	.168	.076	.154	.074	585.30	56.18
.000230	1.	1.	1.	0	0	1	0.00	672.27	728.45

3280 CROSS SECTION 13.72 EXTENDED .75 FEET

13.72	25.55	610.75	0.00	0.00	610.80	.05	.01	.01	592.20
5420.	1033.	2442.	1945.	1281.	937.	2923.	9323.	1043.	595.00
11.39	.81	2.61	.67	.168	.076	.154	.074	585.20	0.00
.000325	49.	49.	49.	2	0	1	0.00	625.97	625.97

13.77	25.53	610.83	0.00	0.00	610.94	.11	.10	.05	589.30
5420.	894.	2991.	1535.	990.	849.	1495.	9346.	1046.	589.50
11.42	.90	3.52	1.03	.168	.076	.154	.074	585.30	129.74
.000491	200.	250.	250.	1	0	1	0.00	357.61	487.35

1490 NH CARD USED

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

BB 1400FT U/S FIRTH RD BRIDGE

14.07	25.75	611.45	0.00	0.00	611.47	.01	.46	.06	593.70
5420.	3654.	1379.	387.	6577.	912.	771.	9516.	1066.	594.10
11.90	.56	1.51	.50	.220	.115	.224	.074	585.70	72.55
.000239	1100.	1600.	1600.	2	0	1	0.00	1097.95	1170.50

1490 NH CARD USED

BC 4000FT U/S FIRTH RD BRIDGE

14.47	23.85	611.95	0.00	0.00	611.97	.02	.50	.01	600.00
5420.	653.	2585.	2182.	1522.	1520.	3178.	9809.	1102.	597.50
12.36	.43	1.70	.69	.224	.107	.182	.074	588.10	55.38
.000302	1500.	2100.	2100.	2	0	1	0.00	724.87	780.25

1490 NH CARD USED

3265 DIVIDED FLOW

BD 6500FT U/S FIRTH RD BRIDGE

14.94	23.19	612.49	0.00	0.00	612.50	.01	.51	.01	596.10
5420.	3468.	1223.	730.	8659.	904.	1677.	10246.	1153.	596.50
13.38	.40	1.35	.44	.238	.106	.184	.075	589.30	95.16
.000174	2000.	2500.	2400.	2	0	1	0.00	1356.83	1458.57

1490 NH CARD USED

BE 9000FT U/S FIRTH RD BRIDGE

15.41	21.28	612.68	0.00	0.00	612.69	.01	.19	.00	595.70
5170.	4066.	1104.	0.	9490.	1193.	0.	10537.	1193.	617.80
14.18	.43	.93	0.00	.154	.096	.184	.076	591.40	112.96
.000090	1200.	2500.	2100.	2	0	1	0.00	1161.20	1274.17

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FEB 2
WATER MANAGEMENT

revised

HYDRAULIC ANALYSIS

Introduction

The river being studied is the Belle River in the Townships of East China and China; St. Clair County, Michigan. The hydraulic investigations include a reach that extends from its confluence with the St. Clair River to the northwest limits of China Township. This as a distance of approximately 18.6 miles.

The 10-, 50-, 100-, and 500-year flood frequency flows used in this study have been approved by Michigan's Department of Natural Resources. These discharges were computed from a regional study of drainage-area-peak discharge-frequency relationships.

Method of Analysis

The water surface profiles were computed by the HEC-2 computer program developed by the U.S. Army Corps of Engineers.[1]

All bridges have been modeled according to the HEC Training Document No. 6, Application of the HEC-2 Bridge Routines.[2] Either the "Normal Bridge" or the "Special Bridge" routines were used. The decision was based on flow conditions at the river crossing.

The hydraulic model of the floodway was developed for the 100-year flow. The guidelines set forth on pages 18 through 21 in the HEC Training Document No. 6,[3] were used to locate valley sections upstream and downstream of the

bridges. If additional sections were found necessary within this distance, the intermediate sections were encroached as appropriate. These same guidelines were used in modeling natural constrictions in the floodway.

The cross sections used in the hydraulic analysis were developed from field surveys (Fall and Winter, 1975) or from a combination of the field data and topographic information on the USGS maps. The field data were used to duplicate the channel of an adjacent cross section or to interpolate the channel between two adjacent cross sections. The USGS maps were used to delineate the overbanks in locations where the flood plain was well defined.

Variables and Coefficients

The roughness factors (Manning's "n") were chosen after considering photographs taken during the field surveys, observations made in field inspection trips to the study area, and descriptions in Chow[4] and Water-Supply Paper No. 1849.[5] In general, the following range of values was used:

Description	Manning's "n"
1. Channel	
a. At bridges with concrete abutments and piers	.021
b. Hard clay, silt	.026 - .030
c. Muck	.034 - .040
2. Flood Plain	
a. Roads: asphalt, gravel	.012 - .025
b. Lawns	.030
c. Fields with light to heavy grass	.04 - .06
d. Light brush and trees	.06 - .08
e. Medium brush and trees	.09 - .11
f. Dense brush and trees	.12 - .14
g. Modeling in overbanks	.35 - 2.25

The roughness coefficient of the channel was increased by a factor of 1.15 or 1.3 if its degree of meandering within the flood plain was respectively appreciable or severe.[6] The roughness coefficient of the channel was also increased by a factor of 1.2, 1.4 or 1.5 if the amount of vegetation on the bank slopes was respectively light, medium or dense.

The coefficients of expansion and contraction chosen were those suggested on Exhibit 2 of the HEC-2 Water Surface Profiles.

Starting Elevation

The initial water-surface elevation at the mouth of the Belle River was based on a Johnson & Anderson study of 10-, 50-, 100- and 500-year flood levels on the St. Clair River. This study was approved by the DNR.

Discussion

The following five high-water marks were located to verify the 18 miles of profiles:

Station (s)	Elevations	Date of Occurrence	Approximate Recurrence Interval (years)*
2.766	582.1	April 1975	20
3.484	582.8	April 1975	20
5.801-6.286	587.3	May 1943	35
13.547	605.4	April 1975	20
17.394	613.9	April 1975	20

* based on recorded gage data from the Belle River and contiguous drainage basins

The bridge at Bridge Street (sec. no. 0.473) is a swing structure (no longer in operation) which rotated about its axis. For the protection of the structure during those times that it was open to river traffic, there was built in the center of the channel a large wood pier with a triangular nose and trapezoidal tail. The pier has an overall length of 164 feet and a width of 41 feet. To adequately model the flow, the channel cross sections for the bridge (0.473 and 0.481) and the valley section 100 feet downstream (0.454) were repeated at various intervals. Similarly, the cross sections of sections S and T were encroached and a new section was added between sections U and T in order to negate the obstructed areas and improve continuity. The change in flow from the right overbank of T to the left overbank of S is typical of many regions of the Belle River.

After careful analysis of the region between sections AC and AE with aerial photographs and a stereoscope, a change in the floodway was decided upon. The region contains many old meandering channels (oxbows) which govern the floodway to a great extent.

At the Indian Trail Bridge, the water-surface elevations calculated by the HEC-2 normal bridge routine were used in place of hand-calculated elevations. Since the low point and the culvert area handle only 3 percent of the flow, it was decided that the normal bridge routine would handle the situation as well as other methods.

The river meanders throughout the reach studied. As a result, flows in the overbanks of consecutive cross sections will show rapid changes in magnitude.

The flow in the right overbank of cross sections 10.97, 11.31, 11.55 and 11.78 is a typical example.

At the Puttygutt Road Bridge, the water-surface elevations calculated by the HEC-2 normal bridge routine were used in place of hand-calculated elevations. Since 83 percent of the flow is weir flow in the right overbank, it was decided that the normal bridge routine will handle the situation as well as other methods.

At the Westrick Road Bridge, the water-surface elevations calculated by the HEC-2 normal bridge routine were used in place of hand-calculated elevations. Since only 9 percent of the flow is weir flow in the left overbank, it was decided that the normal bridge routine will handle the situation as well as other methods.

At the Trail Bridge, the water-surface elevations calculated by the HEC-2 normal bridge routine were used in place of hand-calculated elevations. Since 84 percent of the flow is weir flow in the left overbank, it was decided that the normal bridge routine will handle the situation as well as other methods.

For the 500-year flood, weir flow conditions were found at Meisner Road, Port Huron and Detroit Railroad and King Road Bridges. To prevent an undue rise in the water-surface elevation of the contiguous valley sections, the

The river meanders throughout the reach studied. As a result, flows in the overbanks of consecutive cross sections will show rapid changes in magnitude.

References

[1]U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, Users Manual, 1973.

[2]U.S. Army Corps of Engineers, Hydrologic Engineering Center, Application of HEC-2 Bridge Routines, 1974.

[3]Ibid.

[4]Chow, V.T. Open-Channel Hydraulics, pp. 101-123, McGraw-Hill (1959).

[5]Geological Survey Water-Supply Paper No. 1849, Roughness Characteristics of Natural Channels, pp. 139-141, U.S. Government Printing Office (1967).

[6]Chow, op. cit., p. 106.

China & East China Townships
St. Clair County
5555-12 & 15

BELLE RIVER

Cross Section	SECNO Miles	Location
A	0.027	120' u/s mouth of Belle River
B	0.454	100' d/s face Bridge Street Bridge
C	0.473	d/s face Bridge Street Bridge
D	0.481	u/s face Bridge Street Bridge
E	0.632	800' u/s face Bridge Street Bridge
F	0.998	50' d/s face M-29 Bridge
G	1.008	d/s face M-29 Bridge
H	1.016	u/s face M-29 Bridge
I	1.167	800' u/s face M-29 Bridge
J	1.512	2620' u/s face M-29 Bridge
K	1.876	4540' u/s face M-29 Bridge
L	2.463	7640' u/s face M-29 Bridge
M	2.766	9240' u/s face M-29 Bridge
N	3.180	11430' u/s face M-29 Bridge
O	3.313	12130' u/s face M-29 Bridge
P	3.484	13030' u/s face M-29 Bridge
Q	3.711	50' d/s face Meisner Road Bridge
	3.720	d/s face Meisner Road Bridge
R	3.729	u/s face Meisner Road Bridge
S	3.977	1310' u/s face Meisner Road Bridge
T	4.239	2690' u/s face Meisner Road Bridge
U	4.616	50' d/s face Port Huron-Detroit RR Bridge

China & East China Townships
St. Clair County
Belle River
5555-12 & 15

Cross Section	SECNO Miles	Location
	4.625	d/s face Port Huron-Detroit RR Bridge
V	4.629	u/s face Port Huron-Detroit RR Bridge
W	5.161	2810' u/s face Port Huron-Detroit RR Bridge
X	5.392	4030' u/s face Port Huron-Detroit RR Bridge
Y	5.801	6190' u/s face Port Huron-Detroit RR Bridge
Z	6.286	8750' u/s face Port Huron-Detroit RR Bridge
AA	6.570	10250' u/s face Port Huron-Detroit RR Bridge
AB	7.070	50' d/s face King Road Bridge
	7.080	d/s face King Road Bridge
AC	7.095	u/s face King Road Bridge
AD	7.807	3810' u/s face King Road Bridge
AE	8.297	6400' u/s face King Road Bridge
AF	8.831	9220' u/s face King Road Bridge
AG	9.229	11320' u/s face King Road Bridge
AH	9.794	13460' u/s face King Road Bridge
AI	10.456	16960' u/s face King Road Bridge
AJ	10.760	60' d/s face Indian Trail Bridge
	10.771	d/s face Indian Trail Bridge and Culvert
AK	10.776	u/s face Indian Trail Bridge and Culvert
AL	11.307	2800' u/s face Indian Trail Bridge and Culvert
AM	12.060	6780' u/s face Indian Trail Bridge and Culvert
AN	12.481	9000' u/s face Indian Trail Bridge and Culvert

China & East China Townships
St. Clair County
Belle River
5555-12 & 15

Cross Section	SECNO Miles	Location
AO	12.879	11100' u/s face Indian Trail Bridge and Culvert
AP	13.189	12740' u/s face Indian Trail Bridge and Culvert
AQ	13.420	13960' u/s face Indian Trail Bridge and Culvert
AR	13.538	50' d/s face Puttygut Bridge
	13.547	d/s face Puttygut Bridge
AS	13.551	u/s face Puttygut Bridge
AT	13.738	990' u/s face Puttygut Bridge
AU	14.348	4210' u/s face Puttygut Bridge
AV	15.081	8080' u/s face Puttygut Bridge
AW	15.170	50' d/s face Westrick Road Bridge
	15.179	d/s face Westrick Road Bridge
AX	15.184	u/s face Westrick Road Bridge
AY	15.364	950' u/s face Westrick Road Bridge
AZ	15.729	3470' u/s face Westrick Road Bridge
BA	16.188	50' d/s face St. Clair Highway Bridge
	16.197	d/s face St. Clair Highway Bridge
BB	16.205	u/s face St. Clair Highway Bridge
BC	16.396	1010' u/s face St. Clair Highway Bridge
BD	16.811	3200' u/s face St. Clair Highway Bridge
BE	17.381	50' d/s face Trail Bridge and Culvert
	17.390	d/s face Trail Bridge and Culvert
BF	17.394	u/s face Trail Bridge
BG	17.864	2480' u/s face Trail Bridge

China & East China Twps
FIS Nos. 5555-12 & 15

Section No	Description
.001	Repeat of sec. A
.027	Sec. A
.074	Repeat of sec. A
.358	Repeat of sec. A
.445	Repeat of sec. B with adj. inv.
.454	Sec. B
.458	Repeat of sec. B with adj. inv.
.464	Repeat of sec. C with adj. inv.
.472	Repeat of sec. C
.473	Sec. C
.481	Sec. D
.482	Repeat of sec. D
.490	Repeat of sec. D with adj. inv.
.492	Repeat of sec. D with adj. inv.
.502	Repeat of sec. E
.632	Sec. E
.979	Repeat of sec. F
.989	Repeat of sec. F
.998	Sec. F
1.007	Repeat of sec. G with adj. inv.
1.008	Sec. G
1.016	Sec. H
1.017	Repeat of sec. I with adj. inv.
1.025	Repeat of sec. I with adj. inv.
1.167	Sec. I
1.360	Repeat of sec J with adj. inv.
1.512	Sec. J
1.743	Repeat of sec K with adj. inv.

1.876	Sec. K
2.084	Repeat of Sec. K
2.463	Sec. L
2.766	Sec. M
3.180	Sec. N
3.313	Sec. O
3.484	Sec. P
3.635	Repeat of Sec. Q with adj. inv.
3.711	Sec. Q
3.720	Sec. R
3.729	Sec. R
3.739	Repeat of Sec. R with adj. inv.
3.977	Sec. S
4.239	Sec. T
4.464	Manufactured - based on sec. U
4.616	Sec. U
4.625	Sec. V
4.629	Sec. V
4.638	Manufactured - based on sec. V
5.161	Sec. W
5.392	Sec. X
5.801	Sec. Y
6.286	Sec. Z
6.570	Sec. AA
6.775	Manufactured - based on sec. AA
7.070	Sec. AB
7.080	Sec. AC
7.095	Sec. AC

7.104	Manufactured- based on sec. AC
7.152	Manufactured- based on sec. AD
7.398	Manufactured- based on sec. AD
7.557	Manufactured- based on sec. AD
7.807	Sec. AD
7.977	Repeat of Sec. AD with adj. inv.
8.152	Manufactured - based on sec. AE
8.297	Sec. AE
8.831	Sec. AF
9.229	Sec. AG
9.377	Manufactured- based on sec. AG
9.634	Manufactured- based on sec. AH
9.794	Sec. AH-
10.123	Manufactured- based on sec AI
10.456	Sec. AI
10.760	Sec. AJ
10.770	Manufactured - based on sec. AK
10.771	Sec. AK
10.776	Sec. AK
10.777	Manufactured - based on sec. AK
10.786	Manufactured - based on sec. AK
10.968	Manufactured - based on sec. AL
11.307	Sec. AL
11.547	Manufactured - based on sec. AL
1.776	Manufactured - based on sec. AM
12.060	Sec. AM
12.326	Manufactured - based on sec. AM
12.481	Sec. AN

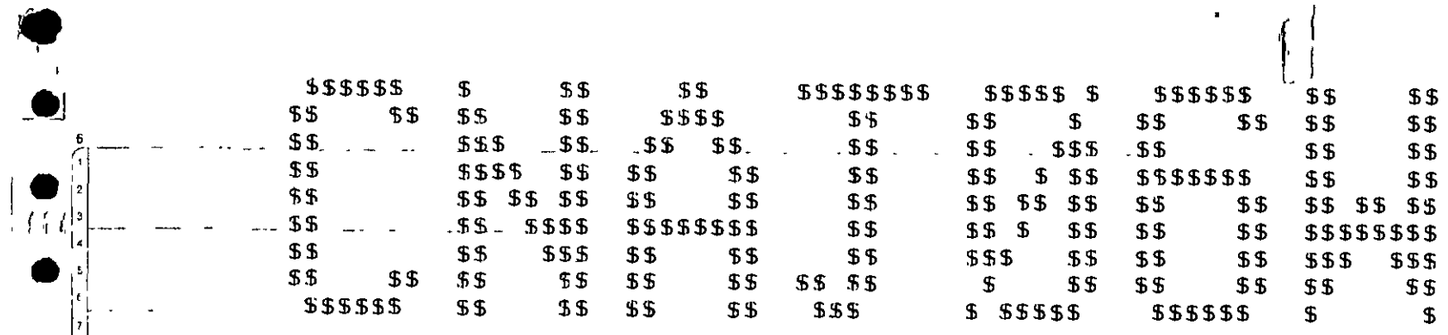
12.680 Manufactured - based on sec. AN
12.879 Sec. AO
13.043 Manufactured - based on sec. AP
13.189 Sec. AP
13.420 Sec. AQ
13.538 Sec. AR

13.546 Repeat of sec. AS
13.547 Sec. AS
13.551 Sec. AS
13.552 Repeat of sec. AS
13.560 Repeat of sec. AS with adj. inv.
13.738 Sec. AT
14.083 Manufactured - based on sec. AT
14.348 Sec. AU
14.903 Manufactured - based on sec. AU
15.081 Sec. AV

15.094 Manufactured - based on sec. AV
15.132 Manufactured - based on sec. AW
15.153 Manufactured - based on sec. AW
15.170 Sec. AW
15.178 Repeat of sec. AX
15.179 Sec. AX
15.184 Sec. AX
15.185 Repeat of sec. AX
15.193 Manufactured - based on sec. AX
15.240 Manufactured - based on sec. AX

15.331 Manufactured - based on sec. AY
15.364 Sec. AY

15.477	Manufactured - based on Sec. AY
15.659	Manufactured - based on sec. AZ
15.697	Manufactured - based on sec. AZ
15.729	Manufactured - based on sec. AZ
15.841	Sec. AZ
16.034	Manufactured - based on sec. AZ
16.144	Manufactured - based on sec. BA
16.188	Sec. BA
16.197	Sec. BB
16.205	Sec. BB
16.214	Manufactured - based on sec. BB
16.326	Manufactured - based on sec. BC
16.396	Sec. BC
16.455	Manufactured - based on sec. BC
16.512	Manufactured - based on sec BD
16.633	Manufactured - based on sec BD
16.811	Sec. BD
17.381	Sec. BE
17.389	Repeat of sec. BF
17.390	Sec. BF
17.394	Sec. BF
17.395	Repeat of sec. BF
17.403	Repeat of sec. BF
17.722	Manufactured - based on sec. BG
17.864	Sec. BG
18.663	Manufactured - based on sec. BG



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$$         $$    $$$  $$     $$      $$      $$$    $$  $$     $$  $$$   $$$
$$     $$  $$     $$  $$     $$  $$ $$       $     $$  $$     $$  $$     $$
 $$$$$$   $$     $$  $$     $$    $$$       $ $$$$$    $$$$$$   $       $
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BELLE RIVER
J&A FILE NOS. 5555-12 & 15
10-50-100-500-YR. FLOWS
DNR SUBMITTAL

MAY 06 '77

RECEIVED
MAY 31 1977
WATER MANAGEMENT

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**********************************************
HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
**********************************************


C
1          BELLE RIVER  EAST CHINA  CHINA TOWNSHIPS FIS 5555-15  12
T2          10 YEAR FLOW
T3          BELLE RIVER

J1  ICHECK    INQ     NINV    IDIR      STRT      METRIC    HVINS     Q       WSEL      FQ
       -0.      2.      -0.      -0.  -0.000000    -0.00     -0.0      -0.   577.570   -0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
      1.000    -0.000    -1.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

J3      1.000    10.000    11.000    12.000    14.000     8.000     4.000    -0.000    -0.000    -0.000
NC       .030      .030      .026      .300      .500     -0.000    -0.000    -0.000    -0.000    -0.000
QT      4.000  4590.000  6540.000  7410.000  9380.000    -0.000    -0.000    -0.000    -0.000    -0.000

X1       .001    29.000   105.000   213.000     0.000     0.000     0.000    -0.000    -.079     -0.000
GR    580.300     0.000   580.300     0.000   580.800    55.000   580.400   105.000   568.000   105.000
GR    565.800   115.000   563.400   135.000   562.700   155.000   564.200   175.000   570.100   195.000
GR    577.000   205.000   577.800   210.000   579.900   213.000   580.600   305.000   584.200   375.000
GR    584.100   405.000   584.000   505.000   583.900   605.000   583.100   705.000   581.600   805.000
GR    581.900   858.000   582.700   905.000   583.700  1005.000   583.100  1105.000   583.400  1205.000
GR    585.300  1322.000   583.600  1405.000   582.700  1505.000   582.300  1605.000    =0.000    =0.000

X1       .027    29.000   105.000   213.000   120.000   120.000   120.000    -0.000    -0.000    -0.000
GR    580.300     0.000   580.300     0.000   580.800    55.000   580.400   105.000   568.000   105.000
GR    565.800   115.000   563.400   135.000   562.700   155.000   564.200   175.000   570.100   195.000
GR    577.000   205.000   577.800   210.000   579.900   213.000   580.600   305.000   584.200   375.000
GR    584.100   405.000   584.000   505.000   583.900   605.000   583.100   705.000   581.600   805.000
GR    581.900   858.000   582.700   905.000   583.700  1005.000   583.100  1105.000   583.400  1205.000
GR    585.300  1322.000   583.600  1405.000   582.700  1505.000   582.300  1605.000    -0.000    -0.000

X1       .074    -0.000    -0.000    -0.000   250.000   290.000   270.000    -0.000    -0.000    -0.000
X3     10.000   562.880    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

X1       .358    -0.000    -0.000    -0.000  1500.000  1500.000  1500.000    -0.000    -0.000    -0.000
X3     10.000   563.860    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

X1       .445    15.000   123.000   226.000   460.000   460.000   460.000    -0.000    -0.000    -0.000
GR    580.900     0.000   581.800    23.000   582.200    83.000   580.000   123.000   567.100   123.000
GR    564.070   143.000   564.500   153.000   564.700   163.000   567.300   183.000   567.100   193.000
GR    571.600   226.000   580.100   226.000   580.700   263.000   581.700   298.000   583.600   429.000
NH      3.000      .026   163.000      .260   183.000      .026   429.000    -0.000    -0.000    -0.000

X1       .454    17.000   123.000   226.000    50.000    50.000    50.000    -0.000    -0.000    -0.000
GR    580.900     0.000   581.800    23.000   582.200    83.000   580.000   123.000   567.100   123.000
GR    564.200   143.000   564.500   153.000   564.700   163.000   567.300   183.000   567.100   193.000
GR    567.000   203.000   571.200   223.000   571.600   226.000   580.100   226.000   580.700   263.000
GR    581.700   298.000   583.600   429.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000
NH      3.000      .026   153.000      .260   193.000      .026   429.000    -0.000    -0.000    -0.000

X1       .458    17.000   123.000   226.000    20.000    20.000    20.000    -0.000    -0.000    -0.000
GR    580.900     0.000   581.800    23.000   582.200     3.000   580.000   123.000   567.100   123.000
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	[illegible]	143.000	564.400	153.000	564.700	[illegible]	567.300	183.000	567.100	193.000
GR	567.000	203.000	571.200	223.000	571.600	226.000	580.100	226.000	580.700	263.000
GR	581.700	298.000	583.600	429.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.464	48.000	800.000	931.000	30.000	30.000	30.000	-0.000	-0.000	-0.000
GR	582.300	0.000	584.400	105.000	584.000	200.000	583.900	300.000	583.800	400.000
GR	583.200	500.000	582.600	600.000	582.700	700.000	584.800	800.000	576.400	800.000
GR	576.400	801.000	566.500	801.000	565.200	810.000	564.000	820.000	563.800	830.000
GR	564.000	840.000	565.900	845.000	579.800	845.000	579.800	851.000	581.800	851.000
GR	581.800	880.000	580.100	880.000	580.100	886.000	570.800	886.000	570.200	896.000
GR	571.100	906.000	571.700	911.000	572.500	921.000	572.900	929.000	576.300	929.000
GR	576.300	931.000	584.800	931.000	583.600	985.000	583.500	990.000	583.500	1000.000
GR	583.500	1100.000	584.000	1200.000	584.200	1300.000	584.300	1400.000	584.500	1500.000
GR	583.800	1600.000	583.200	1700.000	583.100	1800.000	583.400	1900.000	583.600	2000.000
GR	584.400	2100.000	585.000	2200.000	585.100	2300.000	-0.000	-0.000	-0.000	-0.000
X1	.472	48.000	800.000	931.000	49.000	49.000	49.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	582.200	582.200	-0.000
GR	582.300	0.000	584.400	105.000	584.000	200.000	583.900	300.000	583.800	400.000
GR	583.200	500.000	582.600	600.000	582.700	700.000	584.800	800.000	576.400	800.000
GR	576.400	801.000	566.500	801.000	565.200	810.000	564.000	820.000	563.400	830.000
GR	564.000	840.000	565.900	845.000	579.800	845.000	579.800	851.000	581.800	851.000
GR	581.800	880.000	580.100	880.000	580.100	886.000	570.800	886.000	570.200	896.000
GR	571.100	906.000	571.700	911.000	572.500	921.000	572.900	929.000	576.300	929.000
GR	576.300	931.000	584.800	931.000	583.600	985.000	583.500	990.000	583.500	1000.000
GR	583.500	1100.000	584.000	1200.000	584.200	1300.000	584.300	1400.000	584.500	1500.000
GR	583.800	1600.000	583.200	1700.000	583.100	1800.000	583.400	1900.000	583.600	2000.000
GR	584.400	2100.000	585.000	2200.000	585.100	2300.000	-0.000	-0.000	-0.000	-0.000
NC	.016	.016	.021	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.473	-0.000	-0.000	-0.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
BT	6.000	800.000	584.800	0.000	800.000	585.500	581.700	851.000	585.400	581.800
BT	880.000	585.500	581.800	931.000	585.500	581.800	931.000	584.800	0.000	-0.000
X1	.481	48.000	800.000	931.000	40.000	40.000	40.000	-0.000	-0.000	-0.000
BT	6.000	800.000	584.800	0.000	800.000	585.500	581.800	851.000	585.400	581.800
BT	880.000	585.400	581.800	931.000	585.400	581.700	931.000	584.800	0.000	-0.000
GR	582.300	0.000	584.400	105.000	584.000	200.000	583.900	300.000	583.800	400.000
GR	583.200	500.000	582.600	600.000	582.700	700.000	585.500	800.000	576.300	800.000
GR	576.200	801.000	566.500	801.000	566.200	810.000	563.400	820.000	562.100	830.000
GR	563.500	840.000	565.400	845.000	580.100	845.000	580.100	851.000	581.800	851.000
GR	581.800	880.000	580.100	880.000	580.100	886.000	569.400	886.000	569.500	896.000
GR	570.300	906.000	571.400	911.000	572.900	921.000	573.200	929.000	576.500	929.000
GR	576.500	931.000	584.800	931.000	583.600	985.000	583.500	990.000	583.500	1000.000
GR	583.500	1100.000	584.000	1200.000	584.200	1300.000	584.300	1400.000	584.500	1500.000
GR	583.800	1600.000	583.200	1700.000	583.100	1800.000	583.400	1900.000	583.600	2000.000
GR	584.400	2100.000	585.000	2200.000	585.100	2300.000	-0.000	-0.000	-0.000	-0.000
NC	.040	.060	.026	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.482	-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	582.600	582.600	-0.000
X1	.490	48.000	800.000	931.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
GR	582.300	0.000	584.400	105.000	584.000	200.000	583.900	300.000	583.800	400.000
GR	583.200	500.000	582.600	600.000	582.700	700.000	585.500	800.000	576.300	800.000
GR	576.200	801.000	566.500	801.000	566.200	810.000	563.400	820.000	562.160	830.000
GR	563.500	840.000	564.400	845.000	565.400	852.000	580.100	852.000	580.100	860.000
GR	580.100	870.000	580.100	880.000	568.600	880.000	569.400	886.000	569.500	896.000
GR	570.300	906.000	571.400	911.000	572.900	921.000	573.200	929.000	576.500	929.000
GR	576.500	931.000	584.800	931.000	583.600	985.000	583.500	990.000	583.500	1000.000
GR	583.500	1100.000	584.000	1200.000	584.200	1300.000	584.300	1400.000	584.500	1500.000
GR	583.800	1600.000	583.200	1700.000	583.100	1800.000	583.400	1900.000	583.600	2000.000
GR	584.400	2100.000	585.000	2200.000	585.100	2300.000	-0.000	-0.000	-0.000	-0.000
X1	.492	48.000	800.000	931.000	10.000	10.000	10.000	-0.000	-0.000	-0.000
GR	582.300	0.000	584.400	105.000	584.000	200.000	583.900	300.000	583.800	400.000

	585.200	500.000	582.600	600.000	582.700	700.000	585.500	800.000	576.300	800.000
GR	576.200	801.000	566.500	801.000	566.200	810.000	563.400	820.000	562.180	830.000
GR	563.500	840.000	564.400	845.000	565.400	858.000	580.100	858.000	580.100	860.000
GR	580.100	870.000	580.100	873.000	568.600	873.000	569.400	886.000	569.500	896.000
GR	570.300	906.000	571.400	911.000	572.900	921.000	573.200	929.000	576.500	929.000
GR	576.500	931.000	584.800	931.000	583.600	985.000	583.500	990.000	583.500	1000.000
GR	583.500	1100.000	584.000	1200.000	584.200	1300.000	584.300	1400.000	584.500	1500.000
GR	583.800	1600.000	583.200	1700.000	583.100	1800.000	583.400	1900.000	583.600	2000.000
GR	584.400	2100.000	585.000	2200.000	585.100	2300.000	-0.000	-0.000	-0.000	-0.000
X1	.502	43.000	800.000	931.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
GR	582.300	0.000	584.400	105.000	584.000	200.000	583.900	300.000	583.800	400.000
GR	583.200	500.000	582.600	600.000	582.700	700.000	585.500	800.000	576.300	800.000
GR	576.200	801.000	566.500	801.000	566.200	810.000	563.400	820.000	562.240	830.000
GR	563.500	840.000	565.400	845.000	567.600	856.000	569.400	886.000	569.500	896.000
GR	570.300	906.000	571.400	911.000	572.900	921.000	573.200	929.000	576.500	929.000
GR	576.500	931.000	584.800	931.000	583.600	985.000	583.500	990.000	583.500	1000.000
GR	583.500	1100.000	584.000	1200.000	584.200	1300.000	584.300	1400.000	584.500	1500.000
GR	583.800	1600.000	583.200	1700.000	583.100	1800.000	583.400	1900.000	583.600	2000.000
GR	584.400	2100.000	585.000	2200.000	585.100	2300.000	-0.000	-0.000	-0.000	-0.000
X1	.632	-0.000	-0.000	-0.000	690.000	690.000	690.000	-0.000	-0.000	-0.000
X3	10.000	563.100	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.979	42.000	1500.000	1658.000	1830.000	1830.000	1830.000	-0.000	-0.000	-0.000
GR	584.200	0.000	584.400	100.000	584.200	200.000	583.800	300.000	584.200	400.000
GR	584.200	500.000	585.200	600.000	585.500	700.000	584.900	800.000	585.500	900.000
GR	584.500	1000.000	583.700	1100.000	583.400	1200.000	582.600	1300.000	583.700	1400.000
GR	583.100	1450.000	578.700	1500.000	577.500	1501.000	573.100	1510.000	571.900	1520.000
GR	568.400	1540.000	565.470	1560.000	568.600	1580.000	568.800	1600.000	568.100	1620.000
GR	572.800	1640.000	577.800	1651.000	583.900	1658.000	583.000	1700.000	583.200	1800.000
GR	583.700	1900.000	584.800	2000.000	585.000	2100.000	584.600	2200.000	585.100	2300.000
GR	586.100	2400.000	585.300	2500.000	584.600	2600.000	585.000	2700.000	584.400	2800.000
GR	585.100	2900.000	585.000	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.989	-0.000	-0.000	-0.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	10.000	565.540	-0.000	1509.000	-0.000	1649.000	-0.000	-0.000	-0.000	-0.000
X1	.998	42.000	1500.000	1658.000	50.000	50.000	50.000	.943	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1520.000	-0.000	1636.000	-0.000	-0.000	-0.000	-0.000
GR	584.200	0.000	584.400	100.000	584.200	200.000	583.800	300.000	584.200	400.000
GR	584.200	500.000	585.200	600.000	585.500	700.000	584.900	800.000	585.500	900.000
GR	584.500	1000.000	583.700	1100.000	583.400	1200.000	582.600	1300.000	583.700	1400.000
GR	583.100	1450.000	578.700	1500.000	577.500	1501.000	573.100	1510.000	571.900	1520.000
GR	568.400	1540.000	565.600	1560.000	568.600	1580.000	568.800	1600.000	568.100	1620.000
GR	572.800	1640.000	577.800	1651.000	583.900	1658.000	583.000	1700.000	583.200	1800.000
GR	583.700	1900.000	584.800	2000.000	585.000	2100.000	584.600	2200.000	585.100	2300.000
GR	586.100	2400.000	585.300	2500.000	584.600	2600.000	585.000	2700.000	584.400	2800.000
GR	585.100	2900.000	585.000	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.007	46.000	1500.000	1590.000	29.000	79.000	49.000	.942	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	583.900	583.900	-0.000
GR	584.300	0.000	584.000	100.000	583.900	200.000	584.000	300.000	584.300	400.000
GR	584.600	500.000	584.800	600.000	585.200	700.000	584.900	800.000	584.300	900.000
GR	583.700	1000.000	583.400	1100.000	582.300	1200.000	582.700	1300.000	583.400	1400.000
GR	585.300	1500.000	572.600	1500.000	569.300	1505.000	568.200	1512.000	568.000	1520.000
GR	568.300	1526.000	569.400	1528.000	568.700	1538.000	569.200	1548.000	569.200	1553.000
GR	568.100	1562.000	568.300	1564.000	567.600	1569.000	567.800	1575.000	568.200	1585.000
GR	569.600	1590.000	585.400	1590.000	585.100	1700.000	584.400	1800.000	584.100	1900.000
GR	583.900	2000.000	584.100	2100.000	584.300	2200.000	584.700	2300.000	584.900	2400.000
GR	585.300	2500.000	584.800	2600.000	584.600	2700.000	584.200	2800.000	585.000	2900.000
GR	584.300	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.016	.016	.021	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.008	51.000	1500.000	1590.000	1.000	1.000	1.000	.942	-0.000	-0.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	.942	-0.000	-0.000

BT	6.000	1500.000	585.300	0.000	1500.000	585.900	582.600	1526.000	585.900	582.600
BT	1562.000	585.900	582.600	1590.000	585.900	582.600	1590.000	585.400	-0.000	-0.000
GR	584.300	0.000	584.000	100.000	583.900	200.000	584.000	300.000	584.300	400.000
GR	584.600	500.000	584.800	600.000	585.200	700.000	584.900	800.000	584.300	900.000
GR	583.700	1000.000	583.400	1100.000	582.300	1200.000	582.700	1300.000	583.400	1400.000
GR	585.300	1500.000	572.600	1500.000	569.300	1505.000	568.200	1512.000	568.000	1520.000
GR	568.300	1526.000	582.600	1526.000	582.600	1528.000	569.400	1528.000	568.700	1538.000
GR	569.200	1548.000	569.200	1553.000	568.100	1562.000	582.600	1562.000	582.600	1564.000
GR	568.300	1564.000	567.600	1569.000	567.800	1575.000	568.200	1585.000	569.600	1590.000
GR	585.400	1590.000	585.400	1600.000	585.100	1700.000	584.400	1800.000	584.100	1900.000
GR	583.900	2000.000	584.100	2100.000	584.300	2200.000	584.700	2300.000	584.900	2400.000
GR	585.300	2500.000	584.800	2600.000	584.600	2700.000	584.200	2800.000	585.000	2900.000
GR	584.300	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.016	51.000	1513.000	1603.000	43.000	-43.000	43.000	.942	-0.000	-0.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	.942	-0.000
BT	6.000	1513.000	585.300	0.000	1513.000	585.900	582.600	1539.000	585.900	582.600
BT	1575.000	585.800	582.600	1603.000	585.900	582.600	1603.000	585.400	0.000	-0.000
GR	584.300	0.000	584.000	100.000	583.900	200.000	584.000	300.000	584.300	400.000
GR	584.600	500.000	584.800	600.000	585.200	700.000	584.900	800.000	584.300	900.000
GR	583.700	1000.000	583.400	1100.000	582.300	1200.000	582.700	1300.000	583.400	1400.000
GR	585.300	1500.000	585.300	1513.000	573.300	1513.000	572.700	1519.000	568.300	1526.000
GR	568.700	1535.000	568.400	1539.000	582.700	1539.000	582.700	1541.000	569.000	1541.000
GR	568.500	1551.000	567.800	1561.000	567.900	1568.000	567.900	1575.000	582.600	1575.000
GR	582.600	1577.000	568.700	1577.000	566.900	1582.000	567.700	1589.000	568.800	1598.000
GR	568.800	1603.000	585.400	1603.000	585.900	1700.000	584.400	1800.000	584.100	1900.000
GR	583.900	2000.000	584.100	2100.000	584.300	2200.000	584.700	2300.000	584.900	2400.000
GR	585.300	2500.000	584.800	2600.000	584.600	2700.000	584.200	2800.000	585.000	2900.000
GR	584.300	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.060	.050	.026	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.017	46.000	1513.000	1603.000	1.000	1.000	1.000	.942	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	585.300	585.300	-0.000
GR	584.300	0.000	584.000	100.000	583.900	200.000	584.000	300.000	584.300	400.000
GR	584.600	500.000	584.800	600.000	585.200	700.000	584.900	800.000	584.300	900.000
GR	583.700	1000.000	583.400	1100.000	582.300	1200.000	582.700	1300.000	583.400	1400.000
GR	585.300	1500.000	585.300	1513.000	573.300	1513.000	572.700	1519.000	568.300	1526.000
GR	568.700	1535.000	568.400	1539.000	569.000	1541.000	568.500	1551.000	567.900	1568.000
GR	567.900	1575.000	568.700	1577.000	566.900	1582.000	567.700	1589.000	568.800	1598.000
GR	568.800	1603.000	585.900	1603.000	585.100	1700.000	584.400	1800.000	584.100	1900.000
GR	583.900	2000.000	584.100	2100.000	584.300	2200.000	584.700	2300.000	584.900	2400.000
GR	585.300	2500.000	584.800	2600.000	584.600	2700.000	584.200	2800.000	585.000	2900.000
GR	584.300	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.025	-0.000	-0.000	-0.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	10.000	566.950	-0.000	-0.000	-0.000	-0.000	-0.000	585.300	585.300	-0.000
X1	1.167	46.000	1513.000	1603.000	750.000	750.000	750.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1513.000	582.190	1603.000	582.190	-0.000	-0.000	-0.000
GR	584.300	0.000	584.000	100.000	583.900	200.000	584.000	300.000	584.300	400.000
GR	584.600	500.000	584.800	600.000	585.200	700.000	584.900	800.000	584.300	900.000
GR	583.700	1000.000	583.400	1100.000	582.300	1200.000	582.700	1300.000	583.400	1400.000
GR	585.300	1500.000	585.300	1513.000	573.300	1513.000	572.700	1519.000	568.300	1526.000
GR	568.700	1535.000	568.400	1539.000	569.000	1541.000	568.500	1551.000	567.900	1568.000
GR	567.900	1575.000	568.700	1577.000	567.600	1582.000	567.700	1589.000	568.800	1598.000
GR	568.800	1603.000	585.900	1603.000	585.100	1700.000	584.400	1800.000	584.100	1900.000
GR	583.900	2000.000	584.100	2100.000	584.300	2200.000	584.700	2300.000	584.900	2400.000
GR	585.300	2500.000	584.800	2600.000	584.600	2700.000	584.200	2800.000	585.000	2900.000
GR	584.300	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.051	1100.000	.085	1400.000	.255	1480.000	.026	1700.000	.051
NH	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.360	42.000	1480.000	1650.000	1020.000	1020.000	1020.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1400.000	583.030	1700.000	583.030	-0.000	-0.000	-0.000
GR	584.400	0.000	584.400	100.000	584.300	200.000	585.400	300.000	584.600	400.000
GR	584.500	500.000	585.000	600.000	584.100	700.000	584.900	800.000	584.500	900.000

	[illegible]	1000.000	582.500	1100.000	581.000	1200.000	579.000	1300.000	583.000	1400.000
GR	584.000	1480.000	578.900	1500.000	577.700	1503.000	575.200	1510.000	573.000	1520.000
GR	569.900	1540.000	569.600	1560.000	568.500	1580.000	569.900	1600.000	573.100	1620.000
GR	575.700	1630.000	582.500	1650.000	584.200	1700.000	583.800	1800.000	583.600	1900.000
GR	583.300	2000.000	583.300	2100.000	583.200	2200.000	583.000	2300.000	583.200	2400.000
GR	583.700	2500.000	583.900	2600.000	584.200	2700.000	584.700	2800.000	584.400	2900.000
GR	586.500	2925.000	585.000	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.051	1000.000	.085	1300.000	.255	1480.000	.026	1700.000	.051
NH	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.512	42.000	1480.000	1650.000	800.000	800.000	800.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1400.000	583.310	1700.000	583.310	-0.000	-0.000	-0.000
GR	584.400	0.000	584.400	100.000	584.300	200.000	585.400	300.000	584.600	400.000
GR	584.500	500.000	585.000	600.000	584.100	700.000	584.900	800.000	584.500	900.000
GR	583.700	1000.000	581.000	1100.000	579.700	1200.000	584.000	1300.000	585.000	1400.000
GR	584.000	1480.000	578.900	1500.000	577.700	1503.000	575.200	1510.000	573.000	1520.000
GR	569.900	1540.000	569.600	1560.000	569.200	1580.000	569.900	1600.000	573.100	1620.000
GR	575.700	1630.000	582.500	1650.000	584.200	1700.000	583.800	1800.000	583.600	1900.000
GR	583.300	2000.000	583.300	2100.000	583.200	2200.000	583.000	2300.000	583.200	2400.000
GR	583.700	2500.000	583.900	2600.000	584.200	2700.000	584.700	2800.000	584.400	2900.000
GR	586.500	2925.000	585.000	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	6.000	.060	1000.000	.085	1100.000	.255	1300.000	.060	1500.000	.026
NH	1633.000	.050	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.743	41.000	1500.000	1633.000	1210.000	1230.000	1220.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1394.000	583.740	1670.000	583.740	-0.000	-0.000	-0.000
GR	586.100	0.000	586.000	100.000	585.900	200.000	586.200	300.000	586.200	400.000
GR	586.500	500.000	586.300	600.000	583.300	700.000	582.500	800.000	582.600	900.000
GR	585.000	1000.000	586.000	1100.000	585.800	1200.000	585.100	1300.000	582.600	1400.000
GR	581.800	1500.000	577.300	1503.000	575.700	1510.000	572.800	1520.000	569.900	1540.000
GR	569.900	1560.000	570.300	1580.000	571.000	1600.000	573.500	1620.000	577.900	1632.000
GR	580.500	1633.000	581.400	1700.000	580.900	1800.000	581.000	1900.000	581.100	2000.000
GR	581.700	2100.000	581.200	2200.000	581.500	2300.000	581.200	2400.000	581.000	2500.000
GR	580.500	2600.000	579.900	2700.000	580.400	2800.000	580.700	2900.000	583.900	2944.000
GR	582.600	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.876	41.000	1500.000	1633.000	690.000	730.000	700.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1387.000	583.960	1700.000	583.960	-0.000	-0.000	-0.000
GR	586.100	0.000	586.000	100.000	585.900	200.000	586.200	300.000	586.200	400.000
GR	586.500	500.000	586.300	600.000	583.300	700.000	582.500	800.000	582.600	900.000
GR	585.000	1000.000	586.000	1100.000	585.800	1200.000	585.100	1300.000	582.600	1400.000
GR	581.800	1500.000	577.300	1503.000	575.700	1510.000	572.800	1520.000	570.300	1540.000
GR	570.300	1560.000	570.300	1580.000	571.000	1600.000	573.500	1620.000	577.900	1632.000
GR	580.500	1633.000	581.400	1700.000	580.900	1800.000	581.000	1900.000	581.100	2000.000
GR	581.700	2100.000	581.200	2200.000	581.500	2300.000	581.200	2400.000	581.000	2500.000
GR	580.500	2600.000	579.900	2700.000	580.400	2800.000	580.700	2900.000	583.900	2944.000
GR	582.600	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
QT	4.000	4500.000	6410.000	7260.000	9190.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.084	-0.000	-0.000	-0.000	990.000	1070.000	1100.000	-0.000	-0.000	-0.000
X3	10.000	570.340	-0.000	1377.000	584.260	1700.000	584.260	-0.000	-0.000	-0.000
NH	6.000	.051	1060.000	.085	1360.000	.255	1430.000	.085	1460.000	.026
NH	1588.000	.051	2960.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.463	44.000	1460.000	1588.000	1990.000	2140.000	2000.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1448.000	584.790	1678.000	584.790	-0.000	-0.000	-0.000
GR	575.100	0.000	583.500	6.000	583.600	60.000	584.100	160.000	583.900	260.000
GR	587.100	360.000	585.800	460.000	585.200	560.000	585.700	660.000	585.700	760.000
GR	586.400	860.000	585.600	960.000	585.400	1060.000	582.200	1160.000	581.900	1260.000
GR	584.000	1360.000	585.700	1390.000	585.400	1430.000	582.700	1460.000	577.200	1462.000
GR	574.600	1470.000	572.800	1480.000	570.400	1500.000	570.600	1520.000	571.300	1540.000
GR	571.400	1560.000	573.000	1570.000	575.900	1580.000	577.800	1585.000	580.200	1588.000
GR	583.300	1660.000	585.300	1760.000	586.500	1860.000	585.400	1960.000	585.900	2060.000
GR	585.500	2160.000	585.500	2260.000	585.200	2360.000	586.900	2460.000	585.700	2560.000
GR	585.500	2660.000	585.400	2760.000	585.600	2860.000	585.800	2960.000	-0.000	-0.000
NH	5.000	.051	1200.000	.255	1400.000	.051	1503.000	.026	1666.000	.051

[illegible]	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.766	41.000	1503.000	1666.000	1600.000	1600.000	1600.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1409.000	585.320	1691.000	585.320	-0.000	-0.000	-0.000
GR	585.900	0.000	585.700	100.000	586.400	200.000	586.300	300.000	585.000	400.000
GR	585.100	500.000	584.900	600.000	585.400	700.000	585.600	800.000	585.000	900.000
GR	583.700	1000.000	583.900	1100.000	584.400	1200.000	585.300	1300.000	584.700	1400.000
GR	579.400	1503.000	575.600	1506.000	572.100	1513.000	569.000	1520.000	568.800	1540.000
GR	570.500	1560.000	571.000	1580.000	573.900	1600.000	575.500	1620.000	576.400	1640.000
GR	577.400	1650.000	583.600	1666.000	584.400	1700.000	586.700	1800.000	586.700	1900.000
GR	586.400	2000.000	585.400	2100.000	585.700	2200.000	585.600	2300.000	585.600	2400.000
GR	585.500	2500.000	585.600	2600.000	585.600	2700.000	586.700	2800.000	585.500	2900.000
GR	585.500	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.050	.050	.028	.300	.500	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3.180	39.000	1290.000	1400.000	1820.000	1640.000	2190.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1290.000	586.830	2130.000	585.830	-0.000	-0.000	-0.000
GR	581.300	0.000	587.000	100.000	587.400	122.000	587.100	200.000	587.400	300.000
GR	587.400	400.000	587.500	500.000	587.400	600.000	587.400	700.000	587.000	800.000
GR	586.100	900.000	585.200	1000.000	583.200	1100.000	582.900	1200.000	583.900	1290.000
GR	577.100	1295.000	575.100	1300.000	570.400	1320.000	570.400	1340.000	571.300	1360.000
GR	573.300	1380.000	575.300	1387.000	577.400	1394.000	581.300	1400.000	578.800	1500.000
GR	581.500	1600.000	580.100	1700.000	581.100	1800.000	583.100	1900.000	583.800	2000.000
GR	582.000	2100.000	583.000	2200.000	585.200	2300.000	586.000	2400.000	585.600	2500.000
GR	585.500	2600.000	585.400	2700.000	585.500	2800.000	585.400	2900.000	-0.000	-0.000
X1	3.313	20.000	600.000	711.000	760.000	480.000	700.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	447.000	585.930	1060.000	585.930	-0.000	-0.000	-0.000
GR	586.000	0.000	586.300	100.000	587.200	200.000	587.400	300.000	585.900	400.000
GR	583.600	500.000	583.600	600.000	576.300	611.000	572.700	620.000	570.100	640.000
GR	570.200	660.000	570.900	680.000	574.400	700.000	577.600	709.000	580.000	711.000
GR	580.300	800.000	580.000	860.000	585.000	1110.000	586.800	2060.000	588.700	2530.000
X1	3.484	40.000	1500.000	1592.000	600.000	740.000	900.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1000.000	586.130	1700.000	586.130	-0.000	-0.000	-0.000
GR	586.000	0.000	586.300	100.000	587.200	200.000	586.800	300.000	585.300	400.000
GR	584.900	500.000	585.000	600.000	584.900	700.000	584.100	800.000	583.400	900.000
GR	583.100	1000.000	583.700	1100.000	583.600	1200.000	582.300	1300.000	581.600	1400.000
GR	579.100	1500.000	577.800	1505.000	575.900	1512.000	572.900	1520.000	571.300	1540.000
GR	569.300	1560.000	571.500	1580.000	574.800	1585.000	577.800	1590.000	584.200	1592.000
GR	584.500	1600.000	585.900	1700.000	586.500	1800.000	586.400	1900.000	586.100	2000.000
GR	587.300	2100.000	586.400	2200.000	587.000	2300.000	586.200	2400.000	588.800	2495.000
GR	586.700	2600.000	586.800	2700.000	586.700	2800.000	586.900	2900.000	587.700	3000.000
NC	.080	.060	.030	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3.635	42.000	1500.000	1658.000	300.000	900.000	800.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1512.000	586.430	1762.000	586.430	-0.000	-0.000	-0.000
GR	587.000	0.000	586.400	100.000	587.200	200.000	587.700	300.000	588.000	400.000
GR	586.700	500.000	585.800	600.000	586.400	700.000	587.100	800.000	586.300	900.000
GR	586.600	1000.000	587.100	1100.000	587.200	1200.000	587.200	1300.000	588.500	1400.000
GR	587.100	1500.000	584.100	1520.000	577.600	1540.000	576.400	1550.000	575.000	1560.000
GR	571.700	1580.000	571.500	1600.000	570.400	1620.000	571.100	1640.000	573.200	1650.000
GR	577.300	1656.000	580.000	1658.000	581.800	1700.000	582.600	1800.000	583.700	1900.000
GR	583.300	2000.000	582.000	2100.000	582.300	2200.000	582.800	2300.000	586.400	2400.000
GR	587.200	2500.000	589.000	2558.000	588.100	2600.000	588.200	2700.000	587.300	2800.000
GR	586.800	2900.000	587.000	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3.711	42.000	1500.000	1658.000	660.000	270.000	400.000	.868	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1512.000	586.530	1727.000	586.530	-0.000	-0.000	-0.000
GR	587.000	0.000	586.400	100.000	587.200	200.000	587.700	300.000	588.000	400.000
GR	586.700	500.000	585.800	600.000	586.400	700.000	587.100	800.000	586.300	900.000
GR	586.600	1000.000	587.100	1100.000	587.200	1200.000	587.200	1300.000	588.500	1400.000
GR	587.100	1500.000	584.100	1520.000	577.600	1540.000	576.400	1550.000	575.000	1560.000
GR	571.700	1580.000	571.500	1600.000	570.900	1620.000	571.100	1640.000	573.200	1650.000
GR	577.300	1656.000	580.000	1658.000	581.800	1700.000	582.600	1800.000	583.700	1900.000
GR	583.300	2000.000	582.000	2100.000	582.300	2200.000	582.800	2300.000	586.400	2400.000

GR	587.200	2500.000	589.000	2558.000	588.100	2600.000	588.200	2700.000	587.300	2800.000
GR	586.800	2900.000	587.000	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.080	.060	.030	.600	.800	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3.720	58.000	1500.000	1716.000	50.000	50.000	50.000	.868	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	587.000	587.000	-0.000
GR	587.000	0.000	587.200	100.000	587.200	200.000	587.000	300.000	586.700	400.000
GR	586.500	500.000	586.300	600.000	586.400	700.000	586.600	800.000	586.700	900.000
GR	586.700	1000.000	586.500	1100.000	587.100	1200.000	587.900	1300.000	589.300	1400.000
GR	590.100	1500.000	583.500	1501.000	583.300	1507.000	578.100	1517.000	577.200	1520.000
GR	575.800	1530.000	575.200	1540.000	574.000	1551.000	572.900	1554.000	573.200	1560.000
GR	573.000	1570.000	573.300	1580.000	573.300	1590.000	573.200	1600.000	573.200	1607.000
GR	573.900	1610.000	572.500	1620.000	572.400	1630.000	572.500	1640.000	572.900	1650.000
GR	572.900	1663.000	572.900	1666.000	572.800	1670.000	573.500	1680.000	575.800	1690.000
GR	578.100	1696.000	579.400	1700.000	583.900	1711.000	584.000	1715.000	589.900	1716.000
GR	588.900	1800.000	587.500	1900.000	587.000	2000.000	587.100	2100.000	587.500	2200.000
GR	588.100	2300.000	588.900	2400.000	589.200	2500.000	589.500	2596.000	589.600	2700.000
GR	589.400	2800.000	589.700	2900.000	584.700	3000.000	-0.000	-0.000	-0.000	-0.000
SB	.900	1.630	3.000	0.000	141.000	7.800	2090.000	.601	572.400	572.400
X1	3.729	-0.000	-0.000	-0.000	48.000	48.000	48.000	-0.000	-0.000	-0.000
X2	-0.000	-0.000	1.000	586.600	587.000	-0.000	-0.000	-0.000	.868	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	587.000	587.000	-0.000
BT	11.000	1200.000	587.100	-0.000	1300.000	587.900	0.000	1400.000	589.300	0.000
BT	1500.000	590.100	586.600	1716.000	590.100	586.600	1800.000	588.900	0.000	1900.000
BT	587.500	0.000	2000.000	587.000	0.000	2100.000	587.100	0.000	2200.000	587.500
BT	0.000	2300.000	588.100	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.030	.040	.030	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3.739	58.000	1500.000	1716.000	50.000	50.000	50.000	.868	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1450.000	587.000	1766.000	587.000	-0.000	-0.000	-0.000
GR	587.000	0.000	586.400	100.000	587.200	200.000	587.700	300.000	588.000	400.000
GR	586.700	500.000	585.800	600.000	586.400	700.000	587.100	800.000	586.300	900.000
GR	586.600	1000.000	587.100	1100.000	587.200	1200.000	587.200	1300.000	588.500	1400.000
GR	587.100	1500.000	583.500	1501.000	583.300	1507.000	578.100	1517.000	577.200	1520.000
GR	575.800	1530.000	575.200	1540.000	574.000	1551.000	572.900	1554.000	573.200	1560.000
GR	573.000	1570.000	573.300	1580.000	573.300	1590.000	573.200	1600.000	573.200	1607.000
GR	573.900	1610.000	572.500	1620.000	572.300	1630.000	572.500	1640.000	572.900	1650.000
GR	572.900	1663.000	572.900	1666.000	572.800	1670.000	573.500	1680.000	575.800	1690.000
GR	578.100	1696.000	579.400	1700.000	583.900	1711.000	584.000	1716.000	583.700	1800.000
GR	583.300	1900.000	582.000	2000.000	582.300	2100.000	582.800	2200.000	586.400	2300.000
GR	587.200	2400.000	589.000	2458.000	588.100	2500.000	588.200	2600.000	587.300	2700.000
GR	596.800	2800.000	587.000	2900.000	587.000	3000.000	-0.000	-0.000	-0.000	-0.000
NC	.064	.080	.034	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3.977	30.000	1500.000	1602.000	820.000	900.000	1260.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	500.000	587.210	1710.000	587.210	-0.000	-0.000	-0.000
GR	585.800	0.000	584.200	100.000	584.300	200.000	586.600	300.000	586.600	400.000
GR	585.900	500.000	581.400	600.000	583.300	700.000	585.600	800.000	586.700	900.000
GR	583.600	1000.000	583.600	1100.000	582.800	1200.000	582.300	1300.000	581.900	1400.000
GR	581.700	1500.000	577.800	1502.000	573.300	1511.000	572.200	1520.000	571.100	1540.000
GR	569.400	1560.000	575.100	1580.000	577.600	1587.000	585.600	1602.000	588.000	1664.000
GR	590.300	1710.000	587.100	1800.000	587.500	1900.000	588.400	2000.000	587.800	2100.000
NC	.060	.100	.034	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.239	38.000	1500.000	1592.000	700.000	1150.000	1380.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1500.000	587.640	2200.000	587.640	-0.000	-0.000	-0.000
GR	583.500	0.000	586.400	100.000	586.200	200.000	586.100	300.000	586.200	400.000
GR	586.100	500.000	585.900	600.000	585.600	700.000	584.300	800.000	584.100	900.000
GR	585.500	1000.000	585.400	1100.000	586.600	1200.000	587.000	1300.000	587.400	1400.000
GR	586.600	1500.000	577.600	1513.000	573.100	1520.000	569.800	1540.000	570.200	1560.000
GR	573.700	1580.000	577.800	1589.000	581.800	1592.000	582.300	1700.000	583.000	1800.000
GR	583.100	1900.000	583.900	2000.000	584.700	2100.000	585.200	2200.000	585.100	2300.000
GR	585.500	2400.000	584.800	2500.000	584.500	2600.000	584.600	2700.000	584.900	2800.000
GR	585.300	2900.000	585.300	3000.000	588.900	3172.000	-0.000	-0.000	-0.000	-0.000
NC	.100	.100	.039	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

	X1	4.464	29.000	2300.000	2415.000	1310.000	730.000	1190.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	2000.000	588.590	2500.000	588.590	-0.000	-0.000	-0.000
	GR	589.000	0.000	585.000	300.000	580.000	700.000	580.000	750.000	585.000	800.000
	GR	585.000	1200.000	580.000	1500.000	580.000	1600.000	580.000	1700.000	585.000	1800.000
	GR	589.500	2000.000	585.000	2100.000	580.000	2300.000	577.100	2320.000	572.500	2330.000
	GR	568.700	2340.000	568.700	2360.000	571.000	2370.000	572.900	2380.000	573.400	2390.000
	GR	577.300	2403.000	581.100	2406.000	583.700	2415.000	584.500	2500.000	584.600	2600.000
	GR	584.900	270.000	585.300	2800.000	585.300	2900.000	588.900	3072.000	-0.000	-0.000
	QT	4.000	4450.000	6340.000	7180.000	9090.000	-0.000	-0.000	-0.000	-0.000	-0.000
	X1	4.616	44.000	1500.000	1615.000	850.000	750.000	800.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	1487.500	588.240	1603.500	588.240	-0.000	-0.000	-0.000
	GR	586.300	0.000	586.400	100.000	586.300	200.000	586.300	300.000	586.100	400.000
	GR	586.400	500.000	589.200	600.000	588.600	610.000	586.200	621.000	586.600	700.000
	GR	586.100	780.000	588.700	800.000	590.800	900.000	591.000	1000.000	590.700	1100.000
	GR	589.700	1200.000	588.700	1300.000	587.300	1348.000	586.200	1400.000	585.700	1500.000
	GR	577.100	1520.000	572.500	1530.000	567.900	1540.000	568.500	1560.000	571.000	1570.000
	GR	572.900	1580.000	573.400	1590.000	577.300	1603.000	581.100	1606.000	583.700	1615.000
	GR	580.100	1700.000	581.600	1800.000	582.200	1900.000	585.700	2000.000	584.200	2100.000
	GR	583.200	2200.000	583.100	2300.000	583.700	2400.000	583.100	2500.000	585.900	2600.000
	GR	585.700	2700.000	585.400	2800.000	586.700	2900.000	586.000	3000.000	-0.000	-0.000
	X1	4.625	46.000	1500.000	1591.000	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	588.300	588.300	-0.000
	GR	590.000	0.000	590.000	100.000	589.900	200.000	589.700	300.000	589.800	400.000
	GR	589.800	500.000	589.700	600.000	589.600	700.000	589.600	800.000	589.700	900.000
	GR	589.600	1000.000	589.500	1100.000	589.400	1200.000	589.300	1300.000	589.300	1400.000
	GR	589.100	1500.000	583.200	1500.000	583.100	1504.000	576.200	1505.000	575.000	1510.000
	GR	574.500	1520.000	572.000	1530.000	568.900	1540.000	568.200	1550.000	569.800	1560.000
	GR	572.100	1570.000	574.700	1580.000	576.300	1586.000	583.300	1587.000	583.300	1591.000
	GR	589.200	1591.000	589.200	1600.000	589.100	1700.000	589.000	1800.000	588.800	1900.000
	GR	588.400	2000.000	588.100	2100.000	588.000	2200.000	588.000	2300.000	588.100	2400.000
	GR	588.200	2500.000	588.500	2600.000	588.800	2700.000	589.000	2800.000	589.400	2900.000
	GR	589.600	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	SB	0.000	1.430	3.000	0.000	37.000	0.000	1109.000	.644	568.200	568.200
	X1	4.629	-0.000	-0.000	-0.000	19.000	19.000	19.000	-0.000	-0.000	-0.000
	X2	-0.000	-0.000	1.000	585.600	589.200	-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	589.100	589.100	-0.000
	BT	6.000	1400.000	589.300	0.000	1500.000	589.100	0.000	1500.000	594.000	585.500
	BT	1591.000	594.000	585.500	1591.000	589.200	0.000	1600.000	589.200	0.000	-0.000
	NC	.060	.060	.039	.600	.800	-0.000	-0.000	-0.000	-0.000	-0.000
	X1	4.638	46.000	1500.000	1591.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	1450.000	589.400	1641.000	589.400	-0.000	-0.000	-0.000
	GR	586.300	0.000	586.400	100.000	586.300	200.000	586.300	300.000	586.100	400.000
	GR	586.400	500.000	589.200	600.000	588.600	610.000	586.200	621.000	586.600	700.000
	GR	586.100	780.000	588.700	800.000	590.800	900.000	591.000	1000.000	590.700	1100.000
	GR	589.700	1200.000	588.700	1300.000	587.300	1348.000	586.200	1400.000	585.700	1500.000
	GR	576.200	1505.000	575.000	1510.000	574.500	1520.000	572.000	1530.000	568.900	1540.000
	GR	568.200	1550.000	569.800	1560.000	572.100	1570.000	574.700	1580.000	576.300	1586.000
	GR	583.300	1591.000	583.700	1615.000	580.100	1700.000	581.600	1800.000	582.200	1900.000
	GR	585.700	2000.000	584.200	2100.000	583.200	2200.000	583.100	2300.000	583.700	2400.000
	GR	583.100	2500.000	585.900	2600.000	585.700	2700.000	585.400	2800.000	586.700	2900.000
	GR	586.000	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	NH	5.000	.060	2500.000	.100	2600.000	.046	2710.000	.100	2800.000	.060
	NH	4100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	X1	5.161	45.000	2600.000	2710.000	1020.000	2960.000	2760.000	-0.000	-0.000	-0.000
	X3	-0.000	-0.000	-0.000	250.000	589.900	3226.000	589.900	-0.000	-0.000	-0.000
	GR	589.300	0.000	585.000	300.000	580.000	350.000	580.000	1080.000	581.400	1100.000
	GR	580.500	1200.000	580.900	1300.000	581.600	1400.000	581.500	1500.000	582.400	1600.000
	GR	582.200	1700.000	582.600	1800.000	582.800	1900.000	582.700	2000.000	583.200	2100.000
	GR	582.900	2200.000	582.900	2300.000	582.800	2400.000	583.900	2500.000	583.600	2600.000
	GR	577.500	2620.000	577.900	2632.000	577.300	2640.000	574.200	2660.000	572.700	2680.000

	572.600	2690.000	573.600	2700.000	577.200	2705.000	583.400	2710.000	584.700	2800.000
GR	585.000	2900.000	585.400	3000.000	581.900	3100.000	580.300	3155.000	589.600	3190.000
GR	590.000	3200.000	587.400	3300.000	587.200	3400.000	587.000	3500.000	587.700	3600.000
GR	588.100	3720.000	588.000	3800.000	587.900	3900.000	588.400	4000.000	568.600	4100.000
NH	5.000	.060	3000.000	.100	3100.000	.046	3225.000	.100	3275.000	.060
NH	4600.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	5.392	51.000	3100.000	3225.000	1.000	1320.000	1220.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	400.000	589.910	3320.000	589.910	-0.000	-0.000	-0.000
GR	589.300	0.000	585.000	300.000	580.000	350.000	580.000	1080.000	581.400	1100.000
GR	580.500	1200.000	580.900	1300.000	581.600	1400.000	581.500	1500.000	582.000	1550.000
GR	582.400	1600.000	582.100	1700.000	581.800	1800.000	580.600	1900.000	585.100	2000.000
GR	586.600	2100.000	587.200	2200.000	587.500	2300.000	588.300	2400.000	586.900	2500.000
GR	585.600	2600.000	584.500	2700.000	585.500	2800.000	583.900	2900.000	583.100	3000.000
GR	583.000	3100.000	576.900	3116.000	575.700	3120.000	570.500	3130.000	568.400	3140.000
GR	565.500	3160.000	566.800	3180.000	572.400	3200.000	574.100	3207.000	577.500	3214.000
GR	582.400	3225.000	590.400	3275.000	590.600	3300.000	589.500	3400.000	590.000	3500.000
GR	589.900	3600.000	588.800	3700.000	588.100	3800.000	588.000	3900.000	588.200	4000.000
GR	587.800	4100.000	587.000	4200.000	586.100	4300.000	585.500	4400.000	585.400	4500.000
GR	586.800	4600.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.060	2500.000	.100	2515.000	.052	2606.000	.100	2700.000	.060
NH	4100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	5.801	48.000	2515.000	2606.000	1160.000	700.000	2160.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1050.000	589.940	3500.000	589.940	-0.000	-0.000	-0.000
GR	590.000	0.000	585.000	900.000	586.400	1000.000	586.400	1100.000	585.200	1200.000
GR	584.000	1300.000	586.100	1359.000	585.800	1400.000	585.500	1500.000	585.300	1600.000
GR	585.500	1700.000	585.900	1800.000	585.900	1900.000	582.100	2000.000	581.200	2100.000
GR	581.800	2200.000	582.800	2300.000	583.800	2400.000	583.100	2500.000	583.600	2515.000
GR	577.700	2522.000	576.300	2525.000	574.000	2530.000	573.000	2535.000	573.000	2540.000
GR	573.100	2550.000	573.700	2560.000	573.600	2570.000	573.700	2580.000	574.300	2590.000
GR	576.100	2595.000	582.300	2606.000	583.900	2700.000	588.500	2800.000	589.300	2900.000
GR	590.000	2983.000	590.000	3000.000	588.700	3100.000	587.600	3200.000	589.300	3300.000
GR	589.500	3400.000	590.800	3500.000	590.100	3600.000	589.700	3700.000	588.300	3800.000
GR	588.200	3900.000	587.800	4000.000	587.700	4100.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.070	3200.000	.100	3215.000	.052	3305.000	.100	3350.000	.060
NH	5150.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	6.286	56.000	3215.000	3305.000	1040.000	1360.000	2560.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1700.000	590.060	3930.000	590.060	-0.000	-0.000	-0.000
GR	589.000	0.000	585.000	110.000	585.000	1780.000	584.000	1800.000	585.700	1900.000
GR	586.400	2000.000	585.100	2017.000	577.200	2070.000	580.000	2100.000	581.400	2110.000
GR	582.200	2200.000	583.400	2300.000	579.500	2400.000	583.100	2500.000	584.100	2542.000
GR	582.700	2600.000	583.000	2700.000	583.400	2800.000	583.600	2900.000	585.000	3000.000
GR	584.900	3100.000	585.300	3200.000	585.700	3215.000	577.900	3231.000	576.600	3235.000
GR	573.600	3240.000	572.200	3245.000	571.700	3250.000	572.500	3260.000	571.600	3270.000
GR	572.500	3280.000	573.700	3290.000	575.700	3295.000	576.400	3300.000	583.500	3305.000
GR	583.500	3350.000	583.400	3385.000	583.200	3395.000	583.300	3405.000	583.700	3500.000
GR	583.500	3600.000	585.500	3700.000	587.500	3800.000	587.900	3900.000	588.100	3930.000
GR	584.700	4000.000	583.500	4024.000	586.000	4100.000	586.600	4200.000	586.300	4300.000
GR	586.500	4400.000	586.500	4500.000	587.400	4600.000	586.700	4700.000	587.200	4800.000
GR	590.000	5150.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.070	3452.000	.100	3498.000	.046	3600.000	.120	5100.000	-0.000
X1	6.570	48.000	3498.000	3600.000	1400.000	1420.000	1500.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	2300.000	590.200	4300.000	590.940	-0.000	-0.000	-0.000
GR	590.000	0.000	585.000	1462.000	584.700	2000.000	585.000	2100.000	585.200	2200.000
GR	586.800	2300.000	588.500	2400.000	588.300	2500.000	588.900	2600.000	588.200	2700.000
GR	587.200	2800.000	587.500	2900.000	587.200	3000.000	587.100	3100.000	587.200	3200.000
GR	587.400	3300.000	587.200	3400.000	588.400	3452.000	585.700	3498.000	583.100	3506.000
GR	577.200	3515.000	576.200	3520.000	575.200	3525.000	573.600	3530.000	570.700	3540.000
GR	572.200	3550.000	573.000	3560.000	573.300	3565.000	573.400	3570.000	574.800	3575.000
GR	576.500	3586.000	585.100	3600.000	584.300	3700.000	587.400	3800.000	588.900	3875.000
GR	588.900	3900.000	588.900	4000.000	587.100	4100.000	586.700	4200.000	586.200	4300.000
GR	586.300	4400.000	585.000	4500.000	581.000	4600.000	585.300	4700.000	586.600	4800.000
GR	585.600	4900.000	588.400	5000.000	587.000	5100.000	-0.000	-0.000	-0.000	-0.000

NC	.070	.120	.052	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	6.775	29.000	340.000	442.000	1580.000	450.000	1080.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	590.730	1600.000	590.730	-0.000	-0.000	-0.000
GR	590.000	0.000	586.500	100.000	588.300	170.000	585.000	260.000	580.200	320.000
GR	585.700	340.000	583.100	348.000	577.200	357.000	576.200	362.000	575.200	367.000
GR	573.600	372.000	571.600	382.000	572.200	392.000	573.000	402.000	573.300	407.000
GR	573.400	412.000	574.800	417.000	576.500	428.000	579.100	442.000	580.200	480.000
GR	581.200	500.000	585.200	650.000	586.700	700.000	585.900	800.000	587.200	1300.000
GR	588.500	1400.000	588.600	1500.000	588.900	1600.000	590.000	2400.000	-0.000	-0.000
NC	.070	.100	.046	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.070	46.000	1495.000	1582.000	1040.000	1080.000	1560.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1469.000	591.300	1649.000	591.300	-0.000	-0.000	-0.000
GR	590.900	0.000	590.700	100.000	590.600	200.000	590.500	300.000	589.800	500.000
GR	588.800	600.000	591.100	635.000	588.900	700.000	588.900	800.000	589.000	900.000
GR	589.000	1000.000	589.100	1100.000	588.900	1200.000	589.000	1300.000	588.900	1330.000
GR	589.200	1348.000	589.500	1370.000	590.200	1400.000	590.600	1438.000	591.200	1469.000
GR	586.400	1495.000	582.200	1503.000	578.200	1504.000	575.800	1510.000	576.100	1515.000
GR	575.400	1520.000	573.800	1530.000	573.100	1540.000	572.900	1545.000	572.900	1550.000
GR	573.500	1560.000	575.200	1565.000	576.300	1567.000	583.000	1582.000	583.300	1594.000
GR	584.600	1700.000	586.700	1800.000	586.300	1900.000	584.600	2000.000	583.200	2100.000
GR	582.400	2200.000	583.700	2300.000	587.500	2400.000	586.500	2500.000	589.200	2600.000
GR	592.400	2700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.080	44.000	867.000	1022.000	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	591.600	591.600	-0.000
GR	591.900	0.000	591.800	45.000	591.800	145.000	591.700	245.000	591.800	345.000
GR	592.000	445.000	592.200	545.000	592.200	645.000	592.200	745.000	592.300	845.000
GR	592.800	867.000	586.200	867.000	583.000	873.000	580.000	885.000	579.200	897.000
GR	579.500	898.000	579.900	900.000	580.200	901.000	576.400	911.000	574.400	915.000
GR	574.500	925.000	574.500	935.000	574.000	945.000	574.400	955.000	577.000	964.000
GR	579.200	968.000	579.500	975.000	580.300	989.000	580.400	990.000	580.500	992.000
GR	580.600	993.000	584.000	1008.000	586.000	1022.000	592.900	1022.000	592.400	1045.000
GR	592.300	1145.000	592.200	1245.000	592.100	1345.000	592.000	1445.000	592.000	1545.000
GR	592.000	1645.000	592.100	1745.000	592.300	1845.000	592.500	1941.000	-0.000	-0.000
SB	.950	1.600	3.000	0.000	65.000	7.000	1710.000	.344	574.400	574.400
X1	7.086	-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	590.100	592.300	-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	592.300	592.300	-0.000
BT	7.000	845.000	592.300	0.000	867.000	592.800	588.800	901.000	592.800	588.800
BT	945.000	592.900	590.100	989.000	592.900	588.900	1022.000	592.900	588.900	1045.000
BT	592.400	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.070	.070	.046	.600	.800	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.095	44.000	867.000	1022.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	837.000	592.300	1077.000	592.300	-0.000	-0.000	-0.000
GR	588.000	0.000	591.100	35.000	588.900	100.000	588.900	200.000	589.000	300.000
GR	589.000	400.000	589.100	500.000	588.900	600.000	589.000	700.000	588.900	730.000
GR	589.200	748.000	589.500	770.000	590.200	800.000	590.600	838.000	586.200	867.000
GR	583.000	873.000	580.000	885.000	579.200	897.000	580.200	901.000	576.400	911.000
GR	574.400	915.000	574.500	925.000	574.500	935.000	574.000	945.000	574.400	955.000
GR	577.000	964.000	579.200	968.000	579.500	975.000	580.300	989.000	580.600	993.000
GR	584.000	1008.000	586.000	1022.000	586.300	1034.000	586.600	1040.000	586.700	1140.000
GR	586.300	1240.000	584.600	1340.000	583.200	1440.000	582.400	1540.000	583.700	1640.000
GR	587.500	1740.000	586.500	1940.000	589.200	1940.000	592.400	2040.000	-0.000	-0.000
QT	4.000	4400.000	6270.000	7090.000	8980.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.152	17.000	1027.000	1100.000	300.000	300.000	300.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	300.000	592.300	1200.000	592.300	-0.000	-0.000	-0.000
GR	585.000	0.000	585.000	450.000	580.000	500.000	580.000	550.000	585.000	580.000
GR	585.000	900.000	587.900	1027.000	577.900	1037.000	576.400	1040.000	576.800	1047.000
GR	577.100	1057.000	576.700	1067.000	575.500	1072.000	574.200	1077.000	577.100	1082.000
GR	587.400	1100.000	585.000	1700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.060	900.000	140	1227.000	.062	1300.000	.140	1950.000	060

NH	2500.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.398	15.000	1227.000	1300.000	800.000	1100.000	1300.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	350.000	592.560	1900.000	592.560	-0.000	-0.000	-0.000
GR	590.000	0.000	590.000	500.000	590.000	900.000	588.900	1227.000	578.900	1237.000
GR	577.400	1240.000	577.800	1247.000	578.100	1257.000	576.700	1267.000	576.000	1272.000
GR	575.000	1277.000	577.100	1282.000	588.400	1300.000	585.000	1950.000	590.000	2500.000
NH	4.000	.060	400.000	.140	1327.000	.055	1400.000	.080	1750.000	-0.000
X1	7.557	15.000	1327.000	1400.000	660.000	900.000	840.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	275.000	593.040	1700.000	593.040	-0.000	-0.000	-0.000
GR	590.000	0.000	590.000	400.000	590.000	750.000	585.000	850.000	588.900	1327.000
GR	578.900	1337.000	577.400	1340.000	577.800	1347.000	578.100	1357.000	577.700	1367.000
GR	576.600	1372.000	575.600	1377.000	578.100	1382.000	588.500	1400.000	590.000	1750.000
NH	4.000	.140	1927.000	.055	2000.000	.140	2100.000	.060	2200.000	-0.000
X1	7.807	30.000	1927.000	2000.000	1100.000	1000.000	1320.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1090.000	594.170	2110.000	594.170	-0.000	-0.000	-0.000
GR	595.100	0.000	594.900	250.000	594.700	300.000	591.200	580.000	592.400	900.000
GR	593.200	1000.000	592.800	1100.000	592.300	1200.000	592.200	1300.000	589.900	1400.000
GR	587.900	1500.000	589.400	1600.000	585.900	1645.000	584.800	1700.000	588.200	1800.000
GR	589.500	1850.000	588.600	1900.000	588.900	1927.000	578.900	1937.000	577.400	1940.000
GR	577.800	1947.000	578.100	1957.000	577.700	1967.000	576.600	1972.000	576.400	1977.000
GR	578.100	1982.000	588.400	2000.000	593.000	2100.000	595.300	2150.000	595.300	2200.000
NH	4.000	.140	1927.000	.055	2000.000	.140	2100.000	.060	2200.000	-0.000
X1	7.977	30.000	1927.000	2000.000	900.000	900.000	900.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1300.000	594.900	2050.000	594.900	-0.000	-0.000	-0.000
GR	595.100	0.000	594.900	250.000	594.700	300.000	591.200	580.000	592.400	900.000
GR	593.200	1000.000	592.800	1100.000	592.300	1200.000	592.200	1300.000	589.900	1400.000
GR	587.900	1500.000	589.400	1600.000	585.900	1645.000	584.800	1700.000	588.200	1800.000
GR	589.500	1850.000	588.600	1900.000	588.900	1927.000	578.900	1937.000	577.400	1940.000
GR	577.800	1947.000	578.100	1957.000	577.700	1967.000	576.600	1972.000	575.700	1977.000
GR	578.100	1982.000	588.400	2000.000	593.000	2100.000	595.300	2150.000	595.300	2200.000
NH	4.000	.120	244.000	.055	315.000	.120	344.000	.060	715.000	-0.000
X1	8.152	17.000	244.000	315.000	820.000	920.000	920.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	100.000	595.540	550.000	595.540	-0.000	-0.000	-0.000
GR	595.000	0.000	590.000	100.000	586.000	200.000	585.900	244.000	578.700	247.000
GR	577.000	254.000	575.200	259.000	574.900	264.000	574.900	269.000	575.800	274.000
GR	576.200	279.000	576.200	284.000	577.400	289.000	590.800	315.000	590.000	344.000
GR	590.000	645.000	595.000	715.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.080	.080	.062	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	8.297	21.000	44.000	115.000	760.000	500.000	770.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	20.000	595.930	615.000	595.930	-0.000	-0.000	-0.000
GR	602.800	0.000	585.800	38.000	585.900	44.000	578.700	47.000	577.000	54.000
GR	575.200	59.000	574.300	64.000	575.100	69.000	575.800	74.000	576.200	79.000
GR	576.400	84.000	577.400	89.000	590.800	115.000	588.900	143.000	590.200	241.000
GR	591.000	339.000	592.000	437.000	593.100	535.000	593.600	632.000	595.000	1024.000
GR	601.000	1460.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	6.000	.060	900.000	.140	1300.000	.070	1600.000	.140	1700.000	.062
NH	1872.000	.140	1900.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	8.831	31.000	1700.000	1872.000	980.000	1690.000	2820.000	-0.000	-0.000	-0.000
GR	605.100	0.000	600.400	150.000	595.600	300.000	595.100	400.000	594.200	500.000
GR	591.700	700.000	590.900	800.000	591.700	900.000	591.600	1000.000	591.200	1100.000
GR	588.300	1200.000	592.700	1300.000	593.300	1400.000	593.800	1500.000	593.700	1600.000
GR	589.200	1700.000	586.400	1800.000	586.300	1812.000	580.800	1821.000	579.800	1824.000
GR	578.400	1829.000	577.700	1834.000	576.700	1839.000	576.300	1844.000	576.600	1849.000
GR	578.700	1852.000	580.400	1854.000	587.300	1867.000	589.500	1872.000	590.300	1882.000
GR	600.700	1900.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.080	90.000	.140	160.000	.062	241.000	.080	747.000	-0.000
X1	9.229	25.000	160.000	241.000	650.000	1880.000	2100.000	-0.000	-0.000	-0.000
GR	600.000	0.000	594.000	32.000	588.400	90.000	588.300	132.000	588.800	160.000

GR	580.100	164.000	578.500	167.000	579.300	182.000	580.200	187.000	580.400	192.000
GR	580.900	202.000	581.600	207.000	581.800	212.000	582.200	217.000	582.500	222.000
GR	582.500	227.000	582.900	232.000	588.600	241.000	592.600	280.000	591.900	332.000
GR	592.100	432.000	591.000	532.000	591.800	632.000	591.900	654.000	604.100	747.000
NC	.100	.100	.062	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	9.377	25.000	1460.000	1541.000	480.000	600.000	780.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	50.000	-0.000	1550.000	-0.000	-0.000	-0.000	-0.000
GR	600.000	0.000	595.000	20.000	590.000	50.000	589.000	75.000	590.000	100.000
GR	590.000	1060.000	589.000	1080.000	590.000	1100.000	590.000	1380.000	588.600	1460.000
GR	582.900	1469.000	582.500	1474.000	582.500	1479.000	582.200	1484.000	581.800	1489.000
GR	581.600	1494.000	580.900	1499.000	580.400	1509.000	580.200	1514.000	579.300	1519.000
GR	579.000	1534.000	580.100	1537.000	588.800	1541.000	595.000	1640.000	600.000	1650.000
NH	4.000	.080	238.000	.055	305.000	.120	315.000	.060	1300.000	-0.000
X1	9.634	17.000	238.000	305.000	860.000	980.000	1360.000	-0.000	-0.000	-0.000
GR	605.000	0.000	600.000	50.000	595.000	100.000	590.600	238.000	582.500	247.000
GR	580.800	252.000	580.600	260.000	581.000	270.000	580.800	280.000	580.000	290.000
GR	581.400	298.000	589.000	305.000	590.000	315.000	595.000	665.000	595.000	1065.000
GR	600.000	1100.000	605.000	1300.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.060	425.000	.140	438.000	.055	505.000	.080	950.000	-0.000
X1	9.794	20.000	438.000	505.000	840.000	550.000	840.000	-0.000	-0.000	-0.000
GR	605.900	0.000	598.700	100.000	595.600	200.000	595.200	300.000	593.100	425.000
GR	590.600	438.000	582.500	447.000	580.800	452.000	580.600	460.000	581.000	470.000
GR	580.800	480.000	580.300	490.000	581.400	498.000	589.000	505.000	594.500	533.000
GR	595.000	600.000	594.000	700.000	592.600	800.000	594.500	900.000	601.200	950.000
NC	.070	.100	.055	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.123	12.000	1541.000	1591.000	1010.000	1520.000	1740.000	-0.000	-0.000	-0.000
GR	605.000	0.000	600.000	200.000	595.000	600.000	595.000	1150.000	590.700	1541.000
GR	582.600	1554.000	581.200	1567.000	583.100	1579.000	590.700	1591.000	595.000	1631.000
GR	600.000	1651.000	605.000	1661.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.120	41.000	.055	91.000	.100	141.000	.060	1491.000	-0.000
X1	10.456	18.000	41.000	91.000	1050.000	1460.000	1760.000	-0.000	-0.000	-0.000
GR	602.700	0.000	590.700	41.000	583.100	53.000	582.100	65.000	582.600	78.000
GR	590.700	91.000	591.900	141.000	593.500	241.000	593.800	341.000	593.500	441.000
GR	594.200	541.000	592.500	641.000	594.500	741.000	595.800	841.000	596.100	941.000
GR	596.400	1041.000	599.000	1141.000	600.400	1491.000	-0.000	-0.000	-0.000	-0.000
NC	.375	.080	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
QT	4.000	4370.000	6220.000	7040.000	8920.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.760	37.000	463.000	694.000	1800.000	950.000	1600.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	71.000	-0.000	768.000	-0.000	-0.000	-0.000	-0.000
GR	613.300	0.000	598.900	71.000	597.400	79.000	594.400	94.000	594.500	109.000
GR	594.500	116.000	595.000	194.000	595.900	294.000	591.300	346.000	585.300	353.000
GR	584.900	363.000	592.500	373.000	592.800	394.000	591.700	463.000	587.400	494.000
GR	584.700	520.000	584.300	526.000	584.300	534.000	584.300	554.000	583.700	566.000
GR	580.000	574.000	579.900	584.000	578.800	589.000	578.700	594.000	579.400	605.000
GR	581.400	625.000	581.600	630.000	583.800	636.000	585.800	639.000	587.400	663.000
GR	595.900	694.000	596.600	714.000	596.600	794.000	597.300	894.000	601.500	994.000
GR	605.700	1094.000	607.500	1194.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	2.250	.100	.040	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.770	22.000	680.000	784.000	59.000	59.000	59.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	147.000	-0.000	784.000	-0.000	592.500	592.500	-0.000
GR	605.000	0.000	600.000	60.000	595.000	90.000	592.800	120.000	592.500	135.000
GR	592.500	150.000	595.000	180.000	595.000	460.000	585.400	680.000	584.000	690.000
GR	584.100	702.000	584.400	713.000	584.400	722.000	584.400	729.000	584.100	741.000
GR	584.200	753.000	584.000	759.000	588.800	765.000	592.000	771.000	593.900	784.000
GR	595.000	844.000	600.000	864.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.025	239.000	.040	254.000	.025	787.000	.040	876.000	.025
NH	1331.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.771	29.000	787.000	876.000	1.000	1.000	1.000	-0.000	-0.000	-0.000

BT	11.000	131.000	603.200	0.000	239.000	600.000	600.000	239.000	600.000	597.900
BT	254.000	599.600	597.900	254.000	599.600	599.600	331.000	598.100	0.000	731.000
BT	602.800	0.000	787.000	603.400	0.000	787.000	603.400	600.300	876.000	603.400
BT	600.300	876.000	603.400	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	610.500	0.000	608.400	31.000	603.200	131.000	600.000	239.000	592.800	239.000
GR	592.500	247.000	592.500	254.000	599.600	254.000	598.100	331.000	602.800	731.000
GR	603.400	787.000	585.400	787.000	584.000	796.000	584.100	806.000	584.400	816.000
GR	584.400	825.000	584.400	831.000	584.100	841.000	584.200	851.000	584.000	856.000
GR	588.800	860.000	592.000	865.000	593.900	876.000	603.400	876.000	601.600	931.000
GR	603.200	1031.000	604.800	1131.000	607.600	1231.000	609.400	1331.000	-0.000	-0.000
NH	5.000	.025	239.000	.040	254.000	.025	787.000	.040	876.000	.025
NH	1331.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.776	-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	2.250	.100	.040	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.777	22.000	680.000	784.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	147.000	-0.000	784.000	-0.000	592.500	592.500	-0.000
GR	605.000	0.000	600.000	60.000	595.000	90.000	592.800	120.000	592.500	135.000
GR	592.500	150.000	595.000	180.000	595.000	460.000	585.400	680.000	584.000	690.000
GR	584.100	702.000	584.400	713.000	584.400	722.000	584.400	729.000	584.100	741.000
GR	584.200	753.000	584.000	759.000	588.800	765.000	592.000	771.000	593.900	784.000
GR	595.000	844.000	600.000	864.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	1.750	.100	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.786	21.000	787.000	876.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	189.000	-0.000	926.000	-0.000	-0.000	-0.000	-0.000
GR	605.000	0.000	600.000	70.000	595.000	130.000	595.000	188.000	595.000	246.000
GR	595.000	480.000	590.000	730.000	585.400	787.000	584.000	796.000	584.100	806.000
GR	584.400	816.000	584.400	825.000	584.400	831.000	584.100	841.000	584.200	851.000
GR	584.000	856.000	588.800	860.000	592.000	865.000	593.900	876.000	600.000	926.000
GR	605.000	976.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.080	400.000	.140	1030.000	.064	1098.000	.140	1130.000	.060
NH	1240.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.968	19.000	1030.000	1098.000	540.000	1020.000	960.000	-0.000	-0.000	-0.000
GR	615.000	0.000	610.000	50.000	605.000	90.000	600.000	140.000	595.000	170.000
GR	595.000	400.000	592.000	1030.000	586.000	1041.000	584.500	1048.000	585.700	1056.000
GR	585.900	1064.000	587.300	1073.000	590.400	1079.000	594.000	1098.000	595.000	1100.000
GR	600.000	1110.000	605.000	1120.000	610.000	1130.000	615.000	1240.000	-0.000	-0.000
NH	4.000	.140	130.000	.073	198.000	.140	930.000	.060	1230.000	-0.000
X1	11.307	21.000	130.000	198.000	1470.000	1520.000	1790.000	-0.000	-0.000	-0.000
GR	614.700	0.000	610.100	30.000	594.000	130.000	590.400	149.000	587.300	155.000
GR	585.900	164.000	585.700	172.000	585.500	180.000	586.000	187.000	592.000	198.000
GR	594.600	230.000	595.200	330.000	595.500	430.000	594.500	530.000	594.500	630.000
GR	597.200	730.000	596.100	830.000	593.600	930.000	597.800	1030.000	604.100	1130.000
GR	608.100	1230.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.060	770.000	.140	830.000	.064	898.000	.140	910.000	.060
NH	980.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	11.547	17.000	830.000	898.000	1200.000	700.000	1270.000	-0.000	-0.000	-0.000
GR	615.000	0.000	610.000	10.000	605.000	50.000	600.000	70.000	595.000	770.000
GR	592.000	830.000	586.000	841.000	585.700	848.000	585.700	856.000	585.900	864.000
GR	587.300	873.000	590.400	879.000	594.000	898.000	595.000	900.000	600.000	910.000
GR	605.000	920.000	610.000	980.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.140	.140	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	11.776	17.000	140.000	212.000	940.000	1070.000	1210.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	90.000	-0.000	1050.000	-0.000	-0.000	-0.000	-0.000
GR	615.000	0.000	610.000	20.000	605.000	40.000	600.000	50.000	595.000	80.000
GR	594.800	140.000	587.500	152.000	585.900	161.000	586.500	175.000	587.400	184.000
GR	588.100	196.000	596.800	212.000	595.000	340.000	595.000	1400.000	600.000	1450.000
GR	605.000	1470.000	610.000	1500.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.060	740.000	.080	840.000	.064	917.000	.140	940.000	.080

NH	1015.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	12.060	19.000	840.000	917.000	1330.000	1260.000	1500.000	-0.000	-0.000	-0.000
GR	618.300	0.000	613.500	40.000	598.900	140.000	597.800	240.000	597.900	340.000
GR	598.200	440.000	598.900	540.000	598.900	640.000	596.900	740.000	597.100	840.000
GR	588.400	857.000	587.700	870.000	586.800	879.000	586.100	894.000	587.800	904.000
GR	595.100	917.000	600.100	940.000	606.800	980.000	620.300	1015.000	-0.000	-0.000
NH	5.000	.090	1080.000	.140	1140.000	.064	1217.000	.140	1220.000	.100
NH	1245.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	12.326	16.000	1140.000	1217.000	1190.000	1250.000	1400.000	-0.000	-0.000	-0.000
GR	610.000	0.000	605.000	180.000	600.000	380.000	600.000	980.000	598.000	1080.000
GR	597.100	1140.000	588.400	1157.000	587.700	1170.000	587.300	1179.000	587.300	1194.000
GR	587.800	1204.000	595.100	1217.000	600.000	1225.000	605.000	1230.000	610.000	1235.000
GR	615.000	1240.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.090	1116.000	.140	1137.000	.064	1177.000	.140	1200.000	.100
NH	1300.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	12.481	23.000	1137.000	1177.000	700.000	840.000	820.000	-0.000	-0.000	-0.000
GR	611.800	0.000	605.800	100.000	601.500	150.000	600.200	200.000	600.200	300.000
GR	600.800	400.000	599.400	500.000	597.700	600.000	599.100	700.000	600.300	800.000
GR	596.400	900.000	597.500	1000.000	597.800	1095.000	593.700	1116.000	593.300	1137.000
GR	588.400	1144.000	588.000	1153.000	588.300	1162.000	588.800	1175.000	592.700	1177.000
GR	601.400	1200.000	607.900	1230.000	620.700	1300.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.090	400.000	.060	670.000	.064	710.000	.140	790.000	-0.000
X1	12.680	16.000	670.000	710.000	750.000	1050.000	1050.000	-0.000	-0.000	-0.000
GR	605.000	0.000	600.000	300.000	600.000	400.000	595.000	600.000	593.300	670.000
GR	588.400	677.000	588.000	686.000	588.300	695.000	588.800	708.000	592.700	710.000
GR	595.000	730.000	600.000	750.000	605.000	760.000	610.000	770.000	615.000	780.000
GR	620.000	790.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.140	.140	.073	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	12.879	15.000	487.000	558.000	820.000	780.000	1050.000	-0.000	-0.000	-0.000
GR	608.300	0.000	605.500	70.000	600.800	170.000	598.200	270.000	597.200	370.000
GR	598.700	487.000	591.000	498.000	589.000	510.000	589.700	516.000	587.000	530.000
GR	588.100	539.000	590.700	545.000	598.000	558.000	605.700	605.000	620.600	670.000
NC	.140	.140	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.043	15.000	736.000	804.000	750.000	850.000	870.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	500.000	606.830	1200.000	606.830	-0.000	-0.000	-0.000
GR	610.000	0.000	605.000	140.000	600.000	600.000	597.600	736.000	589.200	748.000
GR	588.600	761.000	588.000	775.000	588.000	784.000	589.100	788.000	599.600	804.000
GR	600.000	1100.000	605.000	1125.000	610.000	1150.000	615.000	1175.000	620.000	1200.000
X1	13.189	25.000	936.000	1000.000	520.000	900.000	770.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	500.000	607.360	1300.000	607.360	-0.000	-0.000	-0.000
GR	612.400	0.000	607.000	100.000	604.200	200.000	602.800	300.000	602.200	400.000
GR	602.700	500.000	598.900	600.000	600.400	700.000	599.800	800.000	600.200	900.000
GR	598.500	936.000	590.100	947.000	589.500	959.000	588.800	972.000	588.900	981.000
GR	590.200	985.000	600.500	1000.000	598.200	1100.000	600.200	1200.000	599.000	1300.000
GR	598.100	1400.000	599.800	1500.000	599.600	1600.000	597.500	1700.000	621.800	1775.000
X1	13.420	19.000	313.000	400.000	920.000	1300.000	1220.000	-0.000	-0.000	-0.000
GR	612.600	0.000	600.500	50.000	601.600	100.000	599.700	200.000	598.500	300.000
GR	598.700	313.000	591.000	333.000	591.000	356.000	588.900	370.000	589.200	385.000
GR	600.200	400.000	596.300	500.000	599.800	555.000	599.900	600.000	599.100	700.000
GR	600.200	735.000	613.700	775.000	615.000	780.000	620.000	850.000	-0.000	-0.000
NC	.140	.140	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.538	32.000	976.000	1052.000	680.000	120.000	620.000	.950	-0.000	-0.000
X3	-0.000	-0.000	-0.000	850.000	-0.000	2000.000	-0.000	-0.000	-0.000	-0.000
GR	609.500	0.000	605.600	52.000	603.000	152.000	601.700	252.000	601.100	352.000
GR	601.200	452.000	601.500	552.000	601.000	652.000	601.300	752.000	601.000	852.000
GR	601.200	952.000	598.200	976.000	591.100	985.000	589.600	996.000	589.300	1014.000
GR	591.000	1025.000	592.000	1038.000	597.700	1052.000	601.500	1077.000	600.900	1252.000

GR	599.000	1352.000	598.600	1452.000	600.100	1552.000	600.100	1652.000	600.100	1652.000
GR	600.200	1700.000	599.900	1747.000	599.100	1852.000	600.200	1889.000	613.700	1932.000
GR	615.000	1937.000	620.000	2010.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.025	.025	.073	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.546	37.000	938.000	1025.000	49.000	49.000	49.000	.950	-0.000	-0.000
X3	10.000	-0.000	-0.000	750.000	-0.000	1950.000	-0.000	601.800	601.800	-0.000
GR	609.200	0.000	604.100	25.000	602.600	125.000	602.900	225.000	603.100	325.000
GR	603.000	425.000	602.300	425.000	602.300	525.000	601.800	625.000	602.100	725.000
GR	602.200	825.000	604.600	925.000	605.300	938.000	588.100	938.000	588.400	951.000
GR	589.500	959.000	591.800	966.000	594.300	985.000	595.000	996.000	596.600	1013.000
GR	598.100	1024.000	605.200	1025.000	601.400	1125.000	601.100	1225.000	600.400	1325.000
GR	599.900	1425.000	599.900	1525.000	600.000	1625.000	600.000	1625.000	600.000	1625.000
GR	600.200	1650.000	599.900	1697.000	599.100	1802.000	600.200	1839.000	613.700	1882.000
GR	615.000	1887.000	620.000	1960.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.025	.025	.040	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.547	37.000	938.000	1025.000	1.000	1.000	1.000	.950	-0.000	-0.000
X3	10.000	-0.000	-0.000	750.000	-0.000	1950.000	-0.000	601.800	601.800	-0.000
BT	8.000	925.000	605.300	0.000	938.000	605.300	604.200	951.000	605.400	604.300
BT	966.000	605.500	604.400	985.000	605.500	604.400	996.000	605.500	604.400	1013.000
BT	605.400	604.300	1025.000	605.200	604.100	1038.000	592.000	0.000	-0.000	-0.000
GR	609.200	0.000	604.100	25.000	602.600	125.000	602.900	225.000	603.100	325.000
GR	603.000	425.000	602.300	425.000	602.300	525.000	601.800	625.000	602.100	725.000
GR	602.200	825.000	604.600	925.000	605.300	938.000	588.100	938.000	588.400	951.000
GR	589.500	959.000	591.800	966.000	594.300	985.000	595.000	996.000	596.600	1013.000
GR	598.100	1024.000	605.200	1025.000	601.400	1125.000	601.100	1225.000	600.400	1325.000
GR	599.900	1425.000	599.900	1525.000	600.000	1625.000	600.000	1625.000	600.000	1625.000
GR	600.200	1650.000	599.900	1697.000	599.100	1802.000	600.200	1839.000	613.700	1882.000
GR	615.000	1887.000	620.000	1960.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.551	37.000	938.000	1025.000	18.000	18.000	18.000	.950	-0.000	-0.000
X3	10.000	-0.000	-0.000	750.000	-0.000	1950.000	-0.000	601.800	601.800	-0.000
BT	8.000	925.000	605.300	0.000	938.000	605.300	604.200	951.000	605.400	604.300
BT	966.000	605.500	604.400	985.000	605.500	604.400	996.000	605.500	604.400	1013.000
BT	605.400	604.300	1025.000	605.200	604.100	1038.000	592.000	-0.000	-0.000	-0.000
GR	609.200	0.000	604.100	25.000	602.600	125.000	602.900	225.000	603.100	325.000
GR	603.000	425.000	602.300	425.000	602.300	525.000	601.800	625.000	602.100	725.000
GR	602.200	825.000	604.600	925.000	605.300	938.000	588.100	938.000	588.400	951.000
GR	589.500	959.000	591.800	966.000	594.300	985.000	595.000	996.000	596.600	1013.000
GR	598.100	1024.000	605.200	1025.000	601.400	1125.000	601.100	1225.000	600.400	1325.000
GR	599.900	1425.000	599.900	1525.000	600.000	1625.000	600.000	1625.000	600.000	1625.000
GR	600.200	1650.000	599.900	1697.000	599.100	1802.000	600.200	1839.000	613.700	1882.000
GR	615.000	1887.000	620.000	1960.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.025	.025	.073	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.552	37.000	938.000	1025.000	1.000	1.000	1.000	.950	-0.000	-0.000
X3	10.000	-0.000	-0.000	750.000	-0.000	1950.000	-0.000	601.800	601.800	-0.000
GR	609.200	0.000	604.100	25.000	602.600	125.000	602.900	225.000	603.100	325.000
GR	603.000	425.000	602.300	425.000	602.300	525.000	601.800	625.000	602.100	725.000
GR	602.200	825.000	604.600	925.000	605.300	938.000	588.100	938.000	588.400	951.000
GR	589.500	959.000	591.800	966.000	594.300	985.000	595.000	996.000	596.600	1013.000
GR	598.100	1024.000	605.200	1025.000	601.400	1125.000	601.100	1225.000	600.400	1325.000
GR	599.900	1425.000	599.900	1525.000	600.000	1625.000	600.000	1625.000	600.000	1625.000
GR	600.200	1650.000	599.900	1697.000	599.100	1802.000	600.200	1839.000	613.700	1882.000
GR	615.000	1887.000	620.000	1960.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.060	.060	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.560	37.000	938.000	1025.000	49.000	49.000	49.000	.950	-0.000	-0.000
X3	-0.000	-0.000	-0.000	682.000	-0.000	1950.000	-0.000	-0.000	-0.000	-0.000
GR	609.200	0.000	604.100	25.000	602.600	125.000	602.900	225.000	603.100	325.000
GR	603.000	425.000	602.300	425.000	602.300	525.000	601.800	625.000	602.100	725.000
GR	602.200	825.000	604.600	925.000	605.300	938.000	588.200	938.000	588.400	951.000
GR	589.500	959.000	591.800	966.000	594.300	985.000	595.000	996.000	596.600	1013.000
GR	598.100	1024.000	605.200	1025.000	601.400	1125.000	601.100	1225.000	600.400	1325.000
GR	599.900	1425.000	599.900	1525.000	600.000	1625.000	600.000	1625.000	600.000	1625.000

GR	599.000	1352.000	598.600	1452.000	600.100	1552.000	600.100	1652.000	600.100	1652.000
GR	600.200	1700.000	599.900	1747.000	599.100	1852.000	600.200	1889.000	613.700	1932.000
NH	4.000	.080	150.000	.060	1050.000	.140	1260.000	.064	1350.000	-0.000
X1	13.738	19.000	1260.000	1350.000	1240.000	620.000	940.000	-0.000	-0.000	-0.000
GR	621.300	0.000	609.300	50.000	602.400	150.000	600.400	250.000	602.200	450.000
GR	599.100	550.000	600.700	650.000	599.900	750.000	601.700	850.000	599.500	950.000
GR	600.600	1050.000	601.200	1150.000	596.300	1260.000	591.700	1270.000	590.900	1285.000
GR	590.700	1290.000	590.800	1300.000	593.500	1310.000	610.800	1350.000	-0.000	-0.000
NC	.140	.140	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	14.083	17.000	460.000	550.000	940.000	1260.000	1820.000	-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	620.000	0.000	615.000	10.000	610.000	20.000	605.000	30.000	600.000	70.000
GR	600.000	350.000	596.300	460.000	591.700	470.000	591.200	485.000	591.200	490.000
GR	591.200	500.000	593.500	510.000	600.000	550.000	600.000	850.000	605.000	1070.000
GR	610.000	1100.000	615.000	1130.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.100	.140	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	14.348	17.000	660.000	727.000	1090.000	760.000	1400.000	-0.000	-0.000	-0.000
GR	620.800	0.000	603.500	80.000	602.200	160.000	603.800	260.000	602.100	360.000
GR	602.100	460.000	602.100	560.000	602.800	660.000	593.200	668.000	591.800	679.000
GR	591.700	687.000	591.500	697.000	591.500	704.000	592.500	719.000	601.200	727.000
GR	602.700	787.000	615.000	837.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.140	140.000	.060	490.000	.140	560.000	.073	627.000	.140
NH	840.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	14.903	16.000	560.000	627.000	1120.000	1500.000	2930.000	-0.000	-0.000	-0.000
GR	620.000	0.000	615.000	100.000	610.000	120.000	605.000	140.000	600.000	490.000
GR	602.800	560.000	593.200	568.000	591.800	579.000	591.700	587.000	591.300	597.000
GR	591.300	604.000	592.500	619.000	601.200	627.000	605.000	780.000	610.000	810.000
GR	615.000	840.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.080	160.000	.060	960.000	.120	1060.000	.064	1150.000	.140
NH	1515.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.081	24.000	1060.000	1150.000	810.000	680.000	940.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	370.000	-0.000	1470.000	-0.000	-0.000	-0.000	-0.000
GR	625.300	0.000	606.200	85.000	603.200	160.000	603.300	260.000	602.400	360.000
GR	603.100	460.000	602.800	560.000	604.000	660.000	604.600	760.000	603.400	860.000
GR	604.100	960.000	605.000	1060.000	595.500	1074.000	592.800	1092.000	591.300	1100.000
GR	593.500	1110.000	595.800	1130.000	598.500	1137.000	604.400	1150.000	604.600	1260.000
GR	603.000	1360.000	601.400	1460.000	601.400	1483.000	612.900	1515.000	-0.000	-0.000
NH	5.000	.080	350.000	.060	700.000	.140	760.000	.064	850.000	.140
NH	1155.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.094	19.000	760.000	850.000	190.000	20.000	70.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	200.000	-0.000	1150.000	-0.000	-0.000	-0.000	-0.000
GR	625.000	0.000	620.000	30.000	615.000	60.000	610.000	90.000	605.000	120.000
GR	605.000	350.000	605.000	700.000	605.300	760.000	595.800	774.000	593.100	792.000
GR	591.500	800.000	593.800	810.000	596.100	830.000	598.800	837.000	604.700	850.000
GR	603.000	1050.000	601.400	1110.000	601.400	1123.000	612.900	1155.000	-0.000	-0.000
NH	6.000	.080	170.000	.060	450.000	.140	750.000	.064	832.000	.140
NH	1040.000	.080	1200.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.132	17.000	750.000	832.000	280.000	80.000	200.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	180.000	-0.000	970.000	-0.000	-0.000	-0.000	-0.000
GR	625.000	0.000	620.000	20.000	615.000	40.000	610.000	60.000	605.000	80.000
GR	605.000	170.000	605.000	450.000	602.800	750.000	594.300	761.000	593.100	770.000
GR	592.200	785.000	593.000	800.000	594.900	817.000	605.000	832.000	605.000	1010.000
GR	610.000	1040.000	615.000	1200.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.080	160.000	.060	430.000	.140	650.000	.064	732.000	.140
NH	1100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.153	18.000	650.000	732.000	120.000	90.000	110.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	90.000	-0.000	770.000	-0.000	-0.000	-0.000	-0.000
GR	625.000	0.000	620.000	20.000	615.000	40.000	610.000	60.000	605.000	80.000

GR	605.000	160.000	605.000	430.000	603.000	650.000	594.600	661.000	593.400	670.000
GR	592.500	685.000	593.300	700.000	595.200	717.000	600.000	732.000	600.000	750.000
GR	605.000	910.000	610.000	1050.000	615.000	1100.000	-0.000	-0.000	-0.000	-0.000
NC	.500	.140	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.170	15.000	650.000	732.000	100.000	90.000	90.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	142.000	-0.000	732.000	-0.000	-0.000	-0.000	-0.000
GR	614.100	0.000	605.400	50.000	604.800	150.000	604.100	250.000	602.400	350.000
GR	602.700	450.000	604.300	550.000	603.400	650.000	594.900	661.000	593.700	670.000
GR	592.900	685.000	593.600	700.000	595.500	717.000	609.300	732.000	613.400	850.000
NC	.025	.025	.040	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.178	17.000	620.000	696.000	49.000	49.000	49.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	608.200	608.200	-0.000
GR	613.900	0.000	612.800	20.000	609.700	120.000	608.600	220.000	608.200	320.000
GR	608.200	420.000	608.400	520.000	610.900	620.000	594.200	620.000	593.600	634.000
GR	595.000	650.000	593.600	666.000	592.700	682.000	591.400	696.000	610.800	696.000
GR	611.500	720.000	613.100	920.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.179	-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	608.200	608.200	-0.000
BT	11.000	0.000	613.900	0.000	20.000	612.800	0.000	120.000	609.700	0.000
BT	220.000	608.600	0.000	320.000	608.200	0.000	420.000	608.200	0.000	520.000
BT	608.400	0.000	620.000	610.900	609.600	696.000	610.800	609.600	720.000	611.500
BT	0.000	920.000	613.100	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.184	-0.000	-0.000	-0.000	23.000	23.000	23.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	608.200	608.200	-0.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	1.000	-0.000	-0.000	-0.000
X1	15.185	-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	608.200	608.200	-0.000
NC	.500	.140	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.193	16.000	680.000	770.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	149.000	-0.000	789.000	-0.000	-0.000	-0.000	-0.000
GR	614.000	0.000	605.400	50.000	604.800	150.000	604.100	250.000	602.400	350.000
GR	602.700	450.000	604.300	550.000	601.400	650.000	601.300	680.000	593.600	697.000
GR	595.000	716.000	593.600	735.000	592.700	754.000	591.500	770.000	611.500	789.000
GR	613.100	920.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.140	.140	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.240	14.000	560.000	636.000	250.000	250.000	250.000	-0.000	-0.000	-0.000
GR	625.000	0.000	620.000	30.000	615.000	60.000	610.000	90.000	605.000	150.000
GR	600.000	200.000	601.300	560.000	594.300	574.000	595.700	590.000	594.300	606.000
GR	593.400	622.000	592.100	636.000	611.500	660.000	613.100	860.000	-0.000	-0.000
X1	15.331	20.000	254.000	335.000	180.000	350.000	480.000	-0.000	-0.000	-0.000
GR	625.000	0.000	620.000	30.000	615.000	60.000	610.000	80.000	605.000	120.000
GR	605.000	170.000	600.000	190.000	597.500	254.000	593.100	275.000	593.400	290.000
GR	593.100	300.000	593.100	310.000	597.500	323.000	603.000	335.000	602.100	435.000
GR	604.600	535.000	601.800	635.000	605.000	685.000	610.000	715.000	615.000	760.000
X1	15.364	18.000	204.000	285.000	140.000	200.000	170.000	-0.000	-0.000	-0.000
GR	624.000	0.000	622.900	51.000	604.400	85.000	605.000	204.000	598.100	209.000
GR	593.500	225.000	594.000	240.000	593.700	250.000	593.600	260.000	598.100	273.000
GR	603.600	285.000	602.100	385.000	604.600	485.000	601.800	585.000	603.800	660.000
GR	610.500	685.000	617.400	705.000	624.300	735.000	-0.000	-0.000	-0.000	-0.000
X1	15.477	19.000	204.000	285.000	600.000	280.000	600.000	-0.000	-0.000	-0.000
GR	615.000	0.000	610.000	100.000	605.000	160.000	605.000	204.000	598.100	209.000
GR	593.600	225.000	594.000	240.000	593.700	250.000	593.600	260.000	598.100	273.000
GR	603.600	285.000	602.100	385.000	604.600	485.000	601.800	585.000	605.000	590.000
GR	610.000	610.000	615.000	630.000	620.000	650.000	625.000	670.000	-0.000	-0.000
NH	4.000	.080	900.000	.140	1100.000	.064	1154.000	.140	1400.000	-0.000

X1	15.659	20.000	1100.000	1154.000	260.000	900.000	960.000	-0.000	-0.000	-0.000
GR	618.800	0.000	612.400	100.000	609.000	185.000	609.000	200.000	609.100	295.000
GR	609.200	309.000	609.000	400.000	607.700	900.000	608.400	1100.000	597.900	1110.000
GR	593.800	1120.000	594.500	1127.000	595.500	1134.000	598.900	1148.000	602.600	1154.000
GR	605.000	1354.000	610.000	1360.000	615.000	1380.000	620.000	1390.000	625.000	1400.000
NH	5.000	.140	295.000	.080	850.000	.140	1150.000	.064	1204.000	.080
NH	1620.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.697	20.000	1150.000	1204.000	1.000	340.000	200.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	-0.000	1600.000	-0.000	-0.000	-0.000	-0.000
GR	618.800	0.000	612.400	100.000	609.000	185.000	609.000	200.000	609.100	295.000
GR	609.200	309.000	609.000	400.000	608.000	500.000	608.000	850.000	608.400	1150.000
GR	597.900	1160.000	593.900	1170.000	594.500	1177.000	595.500	1184.000	598.900	1198.000
GR	602.600	1204.000	605.000	1550.000	610.000	1580.000	615.000	1600.000	620.000	1620.000
NH	4.000	.140	295.000	.100	1200.000	.064	1254.000	.080	2160.000	-0.000
X1	15.729	21.000	1200.000	1254.000	1.000	250.000	170.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	-0.000	2000.000	-0.000	-0.000	-0.000	-0.000
GR	618.800	0.000	612.400	100.000	609.000	185.000	609.000	200.000	609.100	295.000
GR	609.200	309.000	609.000	400.000	608.500	500.000	608.400	950.000	605.000	1200.000
GR	597.900	1210.000	593.900	1220.000	594.500	1227.000	595.500	1234.000	598.900	1248.000
GR	602.600	1254.000	605.000	1700.000	605.000	2100.000	610.000	2120.000	615.000	2140.000
GR	620.000	2160.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.140	295.000	.100	600.000	.064	654.000	.080	2400.000	-0.000
X1	15.841	35.000	600.000	654.000	1.000	680.000	590.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	613.260	1800.000	613.260	-0.000	-0.000	-0.000
GR	618.800	0.000	612.400	100.000	609.000	185.000	609.000	200.000	609.100	295.000
GR	609.200	309.000	609.000	400.000	607.700	500.000	608.400	600.000	597.900	610.000
GR	594.400	620.000	594.500	627.000	595.500	634.000	598.900	648.000	602.600	654.000
GR	605.200	700.000	604.100	800.000	607.300	900.000	606.700	1000.000	606.300	1100.000
GR	606.100	1200.000	605.400	1300.000	607.000	1400.000	607.600	1500.000	606.600	1600.000
GR	606.100	1700.000	605.700	1800.000	605.300	1900.000	604.600	2000.000	604.300	2100.000
GR	607.000	2200.000	610.000	2280.000	615.000	2300.000	620.000	2350.000	625.000	2400.000
NH	4.000	.140	100.000	.064	154.000	.140	800.000	.080	1400.000	-0.000
X1	16.034	15.000	100.000	154.000	820.000	1030.000	1020.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	613.580	1150.000	613.580	-0.000	-0.000	-0.000
GR	625.000	-0.000	620.000	40.000	615.000	60.000	610.000	80.000	608.400	100.000
GR	600.000	106.000	596.600	120.000	595.600	127.000	595.300	134.000	599.000	144.000
GR	602.600	154.000	605.000	800.000	610.000	1200.000	615.000	1300.000	620.000	1400.000
NC	.140	.140	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	16.144	14.000	500.000	605.000	580.000	340.000	580.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	400.000	613.830	950.000	613.830	-0.000	-0.000	-0.000
GR	630.000	0.000	625.000	30.000	620.000	60.000	615.000	110.000	610.000	130.000
GR	606.300	500.000	600.100	516.000	595.800	530.000	595.800	557.000	595.800	571.000
GR	599.400	585.000	608.600	605.000	610.000	1230.000	615.000	1300.000	-0.000	-0.000
QT	4.000	4280.000	6100.000	6910.000	8750.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	16.188	24.000	400.000	505.000	180.000	240.000	230.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	388.000	614.090	570.000	614.090	-0.000	-0.000	-0.000
GR	615.900	0.000	608.000	68.000	604.900	100.000	604.400	200.000	606.300	300.000
GR	606.300	388.000	606.300	400.000	601.000	416.000	596.000	430.000	596.300	457.000
GR	596.600	471.000	600.300	485.000	608.600	505.000	610.200	600.000	609.900	700.000
GR	609.900	800.000	610.700	900.000	614.300	1000.000	617.000	1100.000	617.000	1100.000
GR	620.000	1200.000	620.000	1400.000	622.000	1500.000	625.000	1700.000	-0.000	-0.000
NC	.088	.088	.053	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	16.197	22.000	200.000	296.000	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	613.400	613.400	-0.000
GR	617.600	0.000	616.200	100.000	614.900	200.000	605.800	200.000	598.100	215.000
GR	596.600	225.000	597.000	235.000	595.600	246.000	596.300	246.000	596.300	252.000
GR	595.200	260.000	594.500	270.000	595.300	280.000	594.600	290.000	595.800	296.000
GR	615.000	296.000	615.000	300.000	614.300	400.000	614.200	500.000	614.500	600.000
GR	614.900	700.000	616.000	800.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

SB	.900	1.550	3.000	0.000	75.000	3.750	1394.000	.616	595.300	595.300
X1	16.205	-0.000	-0.000	-0.000	41.000	41.000	41.000	-0.000	-0.000	-0.000
X2	-0.000	-0.000	1.000	611.500	614.200	-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	614.200	614.200	-0.000
BT	9.000	100.000	616.200	0.000	200.000	614.900	611.500	296.000	615.000	611.500
BT	300.000	615.000	0.000	400.000	614.300	0.000	500.000	614.200	0.000	600.000
BT	614.500	0.000	700.000	614.900	0.000	800.000	616.000	0.000	-0.000	-0.000
NC	.080	.140	.069	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	16.214	14.000	397.000	530.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	347.000	614.200	530.000	614.200	-0.000	-0.000	-0.000
GR	615.900	0.000	608.000	68.000	604.900	100.000	604.400	200.000	606.300	300.000
GR	606.300	388.000	609.400	397.000	599.400	421.000	597.600	439.000	600.100	456.000
GR	595.600	466.000	594.400	486.000	597.600	503.000	610.300	530.000	-0.000	-0.000
NC	.140	.140	.069	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	16.326	18.000	459.000	517.000	620.000	560.000	590.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	350.000	614.750	620.000	614.750	-0.000	-0.000	-0.000
GR	625.000	0.000	620.000	20.000	615.000	40.000	610.000	70.000	605.000	240.000
GR	605.000	400.000	602.200	459.000	599.700	466.000	595.500	473.000	593.200	484.000
GR	594.500	496.000	595.200	505.000	598.500	517.000	600.000	520.000	605.000	550.000
GR	610.000	580.000	615.000	600.000	620.000	670.000	-0.000	-0.000	-0.000	-0.000
X1	16.396	13.000	59.000	110.000	380.000	370.000	370.000	-0.000	-0.000	-0.000
GR	627.000	0.000	615.300	25.000	604.800	40.000	602.200	59.000	598.800	65.000
GR	594.600	71.000	592.800	80.000	593.600	90.000	594.300	97.000	597.600	107.000
GR	602.200	110.000	607.800	125.000	620.300	145.000	-0.000	-0.000	-0.000	-0.000
X1	16.464	13.000	59.000	110.000	340.000	380.000	360.000	-0.000	-0.000	-0.000
GR	627.000	0.000	615.300	25.000	604.800	40.000	602.200	59.000	598.800	65.000
GR	594.600	71.000	593.300	80.000	593.600	90.000	594.300	97.000	597.600	107.000
GR	602.200	110.000	607.800	125.000	620.300	145.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.080	280.000	.140	355.000	.069	425.000	.140	460.000	.060
NH	930.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	16.521	17.000	355.000	425.000	300.000	280.000	300.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	200.000	-0.000	625.000	-0.000	-0.000	-0.000	-0.000
GR	625.000	0.000	620.000	30.000	615.000	50.000	610.000	80.000	610.000	280.000
GR	606.300	355.000	595.800	375.000	594.500	385.000	593.900	395.000	594.200	400.000
GR	596.400	410.000	608.000	425.000	610.000	460.000	610.000	500.000	615.000	690.000
GR	620.000	830.000	625.000	930.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.140	155.000	.069	225.000	.140	425.000	.060	950.000	-0.000
X1	16.644	18.000	155.000	225.000	650.000	560.000	650.000	-0.000	-0.000	-0.000
GR	630.000	0.000	625.000	70.000	620.000	90.000	615.000	110.000	610.000	130.000
GR	605.000	140.000	604.800	155.000	596.900	175.000	595.600	185.000	595.000	195.000
GR	595.300	200.000	597.500	210.000	605.000	225.000	605.000	425.000	610.000	600.000
GR	615.000	850.000	620.000	950.000	625.000	1050.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.140	755.000	.078	825.000	.140	925.000	.060	1725.000	-0.000
X1	16.833	23.000	755.000	825.000	980.000	800.000	1000.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	100.000	-0.000	1200.000	-0.000	-0.000	-0.000	-0.000
GR	620.000	0.000	618.900	100.000	605.500	150.000	606.300	225.000	607.600	325.000
GR	606.300	425.000	607.700	525.000	606.400	625.000	605.300	725.000	606.300	755.000
GR	598.400	775.000	597.100	785.000	596.600	795.000	596.800	800.000	599.000	810.000
GR	608.000	825.000	609.900	925.000	610.300	1025.000	612.000	1325.000	614.000	1425.000
GR	617.100	1525.000	622.600	1625.000	626.700	1725.000	-0.000	-0.000	-0.000	-0.000
NC	.060	.100	.069	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
QT	4.000	4280.000	6100.000	6910.000	8750.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	17.215	23.000	800.000	860.000	2060.000	1520.000	2020.000	-0.000	-0.000	-0.000
GR	619.200	0.000	614.200	100.000	605.000	180.000	605.200	200.000	606.300	300.000
GR	608.000	400.000	608.900	500.000	608.900	600.000	608.100	700.000	608.700	776.000
GR	612.900	781.000	612.800	790.000	609.300	794.000	609.100	800.000	601.500	807.000
GR	597.800	815.000	597.700	825.000	597.200	835.000	597.400	845.000	600.600	852.000

GR	609.100	860.000	617.700	900.000	626.300	930.000	-0.000	-0.000	-0.000	-0.000	
NC	.025	.025	.078	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	
X1	17.233	27.000	800.000	843.000	49.000	49.000	49.000	-0.000	-0.000	-0.000	
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	611.500	611.500	-0.000	
GR	618.600	0.000	613.700	100.000	611.900	180.900	605.900	180.900	605.000	182.000	
GR	604.000	183.000	605.000	184.000	605.900	185.100	611.900	185.100	611.500	200.000	
GR	612.300	300.000	613.000	400.000	613.100	500.000	613.200	600.000	613.300	700.000	
GR	615.000	800.000	602.100	800.000	601.700	805.000	598.700	810.000	597.200	820.000	
GR	597.300	830.000	600.900	841.000	603.200	841.000	603.400	843.000	615.000	843.000	
GR	620.800	900.000	628.100	1000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	
NC	.025	.025	.040	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	
X1	17.224	-0.000	-0.000	-0.000	1.000	1.000	1.000	-0.000	-0.000	-0.000	
BT	18.000	100.000	613.700	0.000	180.900	611.900	0.000	180.900	611.900	605.900	
BT	182.000	611.900	606.900	183.000	611.900	607.800	184.000	611.900	606.900	185.100	
BT	611.900	605.900	185.100	611.900	0.000	200.000	611.500	0.000	300.000	612.300	
BT	0.000	400.000	613.000	0.000	500.000	613.100	0.000	600.000	613.200	0.000	
BT	700.000	613.300	0.000	800.000	615.000	0.000	800.000	615.000	612.800	843.000	
BT	615.000	612.800	843.000	615.000	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	
X1	17.227	27.000	800.000	843.000	18.000	18.000	18.000	-0.000	-0.000	-0.000	
BT	18.000	100.000	613.700	0.000	174.900	611.900	0.000	174.900	611.900	606.200	
BT	175.900	611.900	607.200	177.000	611.900	608.100	178.100	611.900	607.200	179.100	
BT	611.900	606.200	179.100	611.900	0.000	200.000	611.500	0.000	300.000	612.300	
BT	0.000	400.000	613.000	0.000	500.000	613.100	0.000	600.000	613.200	0.000	
BT	700.000	613.300	0.000	800.000	615.000	0.000	800.000	615.000	612.800	843.000	
BT	615.000	612.800	843.000	615.000	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	
GR	618.600	0.000	613.700	100.000	611.900	174.900	606.200	174.900	605.300	175.900	
GR	604.300	177.000	605.300	178.100	606.200	179.100	611.900	179.100	611.500	200.000	
GR	612.300	300.000	613.000	400.000	613.100	500.000	613.200	600.000	613.300	700.000	
GR	615.000	800.000	602.100	800.000	601.700	805.000	598.700	810.000	597.200	820.000	
GR	597.300	830.000	600.900	841.000	603.200	841.000	603.400	843.000	615.000	843.000	
GR	620.800	900.000	628.100	1000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	
NC	.025	.025	.078	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	
X1	17.228	-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	611.500	611.500	-0.000	
NC	.060	.060	.069	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	
X1	17.236	-0.000	-0.000	-0.000	50.000	50.000	50.000	-0.000	-0.000	-0.000	
NC	.140	.140	.069	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	
X1	17.514	24.000	1236.000	1300.000	800.000	1490.000	1470.000	-0.000	-0.000	-0.000	
GR	619.800	0.000	610.100	100.000	609.500	200.000	610.400	300.000	610.800	400.000	
GR	609.500	500.000	610.000	600.000	611.200	700.000	611.000	800.000	609.200	900.000	
GR	610.700	1000.000	610.500	1100.000	611.000	1200.000	608.700	1236.000	599.500	1254.000	
GR	599.000	1261.000	598.500	1270.000	598.500	1279.000	600.400	1284.000	608.900	1300.000	
GR	613.000	1330.000	615.000	1530.000	620.000	1580.000	625.000	1620.000	-0.000	-0.000	
X1	17.656	22.000	1236.000	1300.000	750.000	770.000	750.000	-0.000	-0.000	-0.000	
GR	619.800	0.000	610.100	100.000	609.500	200.000	610.400	300.000	610.800	400.000	
GR	609.500	500.000	610.000	600.000	611.200	700.000	611.000	800.000	609.200	900.000	
GR	610.700	1000.000	610.500	1100.000	611.000	1200.000	608.700	1236.000	600.300	1254.000	
GR	599.800	1261.000	599.300	1270.000	599.100	1279.000	601.200	1284.000	608.900	1300.000	
GR	624.300	1400.000	632.500	1440.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	
NC	.140	.080	.069	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	
X1	18.549	17.000	836.000	900.000	3260.000	2200.000	4720.000	-0.000	-0.000	-0.000	
GR	635.000	0.000	630.000	70.000	625.000	140.000	620.000	170.000	615.000	220.000	
GR	610.000	770.000	608.700	836.000	601.000	854.000	601.000	861.000	601.000	870.000	
GR	601.000	879.000	601.200	884.000	608.900	900.000	610.000	920.000	615.000	1200.000	
GR	620.000	1300.000	625.000	1500.000	-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	

SUMMARY PRINTOUT FOR MULTIPLE PROFILES

BELLE RIVER

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
.00	0.00	0.00	0.00	562.62	4590.00	577.57	.23	0.00	0.00	4590.00	14.95	104.06
.00	0.00	0.00	0.00	562.62	6540.00	577.57	.46	0.00	0.00	6540.00	14.95	104.06
.00	0.00	0.00	0.00	562.62	7410.00	577.57	.60	0.00	0.00	7410.00	14.95	104.06
.00	0.00	0.00	0.00	562.62	9380.00	577.57	.95	0.00	0.00	9380.00	14.95	104.06
.03	120.00	0.00	0.00	562.70	4590.00	577.59	.23	.02	.00	4590.00	14.89	103.71
.03	120.00	0.00	0.00	562.70	6540.00	577.62	.47	.05	.00	6540.00	14.92	103.87
.03	120.00	0.00	0.00	562.70	7410.00	577.63	.60	.06	.00	7410.00	14.93	103.96
.03	120.00	0.00	0.00	562.70	9380.00	577.68	.95	.10	.00	9380.00	14.98	104.20
.07	270.00	0.00	0.00	562.88	4590.00	577.65	.23	.06	.00	4590.00	14.77	104.06
.07	270.00	0.00	0.00	562.88	6540.00	577.74	.46	.11	.00	6540.00	14.86	104.57
.07	270.00	0.00	0.00	562.88	7410.00	577.79	.59	.14	.00	7410.00	14.91	104.89
.07	270.00	0.00	0.00	562.88	9380.00	577.95	.91	.22	.01	9380.00	15.07	105.21
.36	1500.00	0.00	0.00	563.86	4590.00	577.96	.23	.31	.00	4590.00	14.10	105.23
.36	1500.00	0.00	0.00	563.86	6540.00	578.36	.43	.59	.01	6540.00	14.50	105.80
.36	1500.00	0.00	0.00	563.86	7410.00	578.59	.53	.73	.02	7410.00	14.73	106.11
.36	1500.00	0.00	0.00	563.86	9380.00	579.19	.78	1.07	.04	9380.00	15.33	106.98
.45	460.00	0.00	0.00	564.07	4590.00	578.05	.24	.10	.01	4590.00	13.98	103.00
.45	460.00	0.00	0.00	564.07	6540.00	578.54	.45	.18	.01	6540.00	14.47	103.00
.45	460.00	0.00	0.00	564.07	7410.00	578.80	.56	.22	.01	7410.00	14.73	103.00
.45	460.00	0.00	0.00	564.07	9380.00	579.48	.80	.30	.01	9380.00	15.41	103.00
.45	50.00	0.00	0.00	564.20	4590.00	578.08	.23	.01	.00	4590.00	13.88	103.00
.45	50.00	0.00	0.00	564.20	6540.00	578.58	.44	.02	.01	6540.00	14.38	103.00
.45	50.00	0.00	0.00	564.20	7410.00	578.86	.54	.03	.01	7410.00	14.66	103.00
.45	50.00	0.00	0.00	564.20	9380.00	579.56	.77	.04	.01	9380.00	15.36	103.00
.46	20.00	0.00	0.00	564.04	4590.00	578.09	.23	.01	.00	4590.00	14.05	103.00
.46	20.00	0.00	0.00	564.04	6540.00	578.60	.43	.01	.00	6540.00	14.56	103.00
.46	20.00	0.00	0.00	564.04	7410.00	578.88	.53	.02	.00	7410.00	14.84	103.00
.46	20.00	0.00	0.00	564.04	9380.00	579.59	.76	.02	.00	9380.00	15.55	103.00
.46	30.00	0.00	0.00	563.80	4590.00	578.01	.42	.01	.09	4590.00	14.21	90.00
.46	30.00	0.00	0.00	563.80	6540.00	578.45	.79	.03	.18	6540.00	14.65	90.00
.46	30.00	0.00	0.00	563.80	7410.00	578.69	.96	.03	.22	7410.00	14.89	90.00
.46	30.00	0.00	0.00	563.80	9380.00	579.33	1.37	.04	.30	9380.00	15.53	90.00
.47	49.00	0.00	0.00	563.40	4590.00	578.04	.42	.02	.00	4590.00	14.64	90.00
.47	49.00	0.00	0.00	563.40	6540.00	578.51	.77	.04	.00	6540.00	15.11	90.00
.47	49.00	0.00	0.00	563.40	7410.00	578.77	.94	.05	.01	7410.00	15.37	90.00
.47	49.00	0.00	0.00	563.40	9380.00	579.44	1.33	.06	.01	9380.00	16.04	90.00
.47	1.00	584.80	581.80	563.40	4590.00	578.04	.42	.00	.00	4590.00	14.64	90.00
.47	1.00	584.80	581.80	563.40	6540.00	578.51	.77	.00	.00	6540.00	15.11	90.00
.47	1.00	584.80	581.80	563.40	7410.00	578.77	.94	.00	.00	7410.00	15.37	90.00
.47	1.00	584.80	581.80	563.40	9380.00	579.44	1.33	.00	.00	9380.00	16.04	90.00

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
.48	40.00	584.80	581.80	562.10	4590.00	578.10	.38	.02	.01	4590.00	16.00	90.00
.48	40.00	584.80	581.80	562.10	6540.00	578.62	.71	.03	.02	6540.00	16.52	90.00
.48	40.00	584.80	581.80	562.10	7410.00	578.91	.86	.03	.02	7410.00	16.81	90.00
.48	40.00	584.80	581.80	562.10	9380.00	579.65	1.21	.04	.04	9380.00	17.55	90.00
.48	1.00	0.00	0.00	562.10	4590.00	578.10	.38	.00	.00	4590.00	16.00	90.00
.48	1.00	0.00	0.00	562.10	6540.00	578.62	.71	.00	.00	6540.00	16.52	90.00
.48	1.00	0.00	0.00	562.10	7410.00	578.91	.86	.00	.00	7410.00	16.81	90.00
.48	1.00	0.00	0.00	562.10	9380.00	579.65	1.21	.00	.00	9380.00	17.55	90.00
.49	50.00	0.00	0.00	562.16	4590.00	578.26	.28	.02	.03	4590.00	16.10	103.00
.49	50.00	0.00	0.00	562.16	6540.00	578.94	.50	.04	.06	6540.00	16.78	103.00
.49	50.00	0.00	0.00	562.16	7410.00	579.29	.60	.04	.08	7410.00	17.13	103.00
.49	50.00	0.00	0.00	562.16	9380.00	580.22	.82	.07	.12	9380.00	18.06	131.00
.49	10.00	0.00	0.00	562.18	4590.00	578.35	.21	.00	.02	4590.00	16.17	116.00
.49	10.00	0.00	0.00	562.18	6540.00	579.10	.38	.01	.04	6540.00	16.92	116.00
.49	10.00	0.00	0.00	562.18	7410.00	579.49	.45	.01	.04	7410.00	17.31	116.00
.49	10.00	0.00	0.00	562.18	9380.00	580.51	.61	.01	.06	9380.00	18.33	131.00
.50	50.00	0.00	0.00	562.24	4590.00	578.41	.17	.01	.01	4590.00	16.17	131.00
.50	50.00	0.00	0.00	562.24	6540.00	579.21	.30	.02	.02	6540.00	16.97	131.00
.50	50.00	0.00	0.00	562.24	7410.00	579.63	.36	.02	.03	7410.00	17.39	131.00
.50	50.00	0.00	0.00	562.24	9380.00	580.69	.49	.03	.04	9380.00	18.45	131.00
.63	690.00	0.00	0.00	563.10	4590.00	578.53	.17	.12	.00	4590.00	15.43	131.00
.63	690.00	0.00	0.00	563.10	6540.00	579.41	.30	.19	.00	6540.00	16.31	131.00
.63	690.00	0.00	0.00	563.10	7410.00	579.86	.35	.22	.00	7410.00	16.76	131.00
.63	690.00	0.00	0.00	563.10	9380.00	580.98	.47	.27	.00	9380.00	17.88	131.00
.98	1830.00	0.00	0.00	565.47	4590.00	578.86	.18	.33	.00	4589.99	13.39	154.00
.98	1830.00	0.00	0.00	565.47	6540.00	579.92	.28	.50	.00	6536.28	14.45	167.28
.98	1830.00	0.00	0.00	565.47	7410.00	580.44	.33	.56	.01	7399.97	14.97	173.81
.98	1830.00	0.00	0.00	565.47	9380.00	581.69	.42	.64	.02	9335.53	16.22	189.38
.99	50.00	0.00	0.00	565.54	4590.00	578.87	.18	.01	.00	4590.00	13.33	140.00
.99	50.00	0.00	0.00	565.54	6540.00	579.93	.30	.01	.01	6540.00	14.39	140.00
.99	50.00	0.00	0.00	565.54	7410.00	580.45	.35	.02	.01	7410.00	14.91	140.00
.99	50.00	0.00	0.00	565.54	9380.00	581.69	.46	.02	.02	9380.00	16.15	140.00
1.00	50.00	0.00	0.00	565.60	4590.00	578.84	.26	.01	.04	4590.00	13.24	109.41
1.00	50.00	0.00	0.00	565.60	6540.00	579.88	.43	.02	.06	6540.00	14.28	109.41
1.00	50.00	0.00	0.00	565.60	7410.00	580.39	.51	.02	.08	7410.00	14.79	109.41
1.00	50.00	0.00	0.00	565.60	9380.00	581.60	.67	.02	.10	9380.00	16.00	109.41
1.01	49.00	0.00	0.00	567.60	4590.00	578.77	.44	.02	.09	4590.00	11.17	84.81
1.01	49.00	0.00	0.00	567.60	6540.00	579.75	.75	.03	.16	6540.00	12.15	84.81
1.01	49.00	0.00	0.00	567.60	7410.00	580.23	.88	.03	.19	7410.00	12.63	84.81
1.01	49.00	0.00	0.00	567.60	9380.00	581.39	1.17	.04	.25	9380.00	13.79	84.81

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
1.01	1.00	585.30	582.60	567.60	4590.00	578.75	.49	.00	.02	4590.00	11.15	81.04
1.01	1.00	585.30	582.60	567.60	6540.00	579.71	.83	.00	.04	6540.00	12.11	81.04
1.01	1.00	585.30	582.60	567.60	7410.00	580.19	.98	.00	.05	7410.00	12.59	81.04
1.01	1.00	585.30	582.60	567.60	9380.00	581.33	1.29	.00	.06	9380.00	13.73	81.04
1.02	43.00	585.30	582.60	566.90	4590.00	578.77	.49	.03	.00	4590.00	11.87	81.04
1.02	43.00	585.30	582.60	566.90	6540.00	579.75	.83	.04	.00	6540.00	12.85	81.04
1.02	43.00	585.30	582.60	566.90	7410.00	580.23	.98	.05	.00	7410.00	13.33	81.04
1.02	43.00	585.30	582.60	566.90	9380.00	581.38	1.30	.06	.00	9380.00	14.48	81.04
1.02	1.00	0.00	0.00	566.90	4590.00	578.83	.45	.00	.01	4590.00	11.93	84.81
1.02	1.00	0.00	0.00	566.90	6540.00	579.86	.75	.00	.03	6540.00	12.96	84.81
1.02	1.00	0.00	0.00	566.90	7410.00	580.36	.88	.00	.03	7410.00	13.46	84.81
1.02	1.00	0.00	0.00	566.90	9380.00	581.57	1.15	.00	.04	9380.00	14.67	84.81
1.03	50.00	0.00	0.00	566.95	4590.00	578.86	.44	.03	.00	4590.00	11.91	84.81
1.03	50.00	0.00	0.00	566.95	6540.00	579.91	.74	.04	.00	6540.00	12.96	84.81
1.03	50.00	0.00	0.00	566.95	7410.00	580.42	.87	.04	.00	7410.00	13.47	84.81
1.03	50.00	0.00	0.00	566.95	9380.00	581.64	1.14	.05	.00	9380.00	14.69	84.81
1.17	750.00	0.00	0.00	567.60	4590.00	579.30	.37	.34	.02	4590.00	11.70	90.00
1.17	750.00	0.00	0.00	567.60	6540.00	580.60	.59	.50	.05	6540.00	13.00	90.00
1.17	750.00	0.00	0.00	567.60	7410.00	581.21	.68	.55	.06	7410.00	13.61	90.00
1.17	750.00	0.00	0.00	567.60	9380.00	583.44	.60	1.09	.16	9380.00	15.84	404.11
1.36	1020.00	0.00	0.00	568.50	4590.00	579.78	.26	.34	.03	4590.00	11.28	145.41
1.36	1020.00	0.00	0.00	568.50	6540.00	581.33	.36	.43	.07	6540.00	12.83	156.09
1.36	1020.00	0.00	0.00	568.50	7410.00	582.04	.39	.46	.09	7410.00	13.54	160.98
1.36	1020.00	0.00	0.00	568.50	9380.00	584.35	.33	.56	.08	8789.14	15.85	1927.27
1.51	800.00	0.00	0.00	569.20	4590.00	580.01	.25	.22	.00	4590.00	10.81	147.05
1.51	800.00	0.00	0.00	569.20	6540.00	581.61	.35	.26	.00	6540.00	12.41	157.99
1.51	800.00	0.00	0.00	569.20	7410.00	582.33	.38	.26	.00	7410.00	13.13	162.93
1.51	800.00	0.00	0.00	569.20	9380.00	584.55	.32	.19	.00	8749.41	15.35	2273.67
1.74	1220.00	0.00	0.00	569.90	4590.00	580.35	.27	.34	.01	4590.00	10.45	131.98
1.74	1220.00	0.00	0.00	569.90	6540.00	581.98	.38	.39	.02	6510.91	12.08	193.97
1.74	1220.00	0.00	0.00	569.90	7410.00	582.71	.41	.40	.02	7332.29	12.81	274.70
1.74	1220.00	0.00	0.00	569.90	9380.00	584.84	.32	.28	.00	8179.00	14.94	2013.11
1.88	700.00	0.00	0.00	570.30	4590.00	580.56	.27	.20	.00	4590.00	10.26	135.90
1.88	700.00	0.00	0.00	570.30	6540.00	582.23	.37	.23	.00	6485.10	11.93	252.54
1.88	700.00	0.00	0.00	570.30	7410.00	582.96	.39	.23	.01	7267.72	12.66	313.00
1.88	700.00	0.00	0.00	570.30	9380.00	585.01	.30	.16	.00	8102.08	14.71	2038.75
2.08	1100.00	0.00	0.00	570.30	4500.00	580.88	.24	.29	.01	4499.15	10.54	161.03
2.08	1100.00	0.00	0.00	570.30	6410.00	582.61	.32	.32	.01	6324.12	12.31	300.48
2.08	1100.00	0.00	0.00	570.30	7260.00	583.35	.35	.32	.01	7063.94	13.05	323.00
2.08	1100.00	0.00	0.00	570.30	9190.00	585.28	.28	.24	.01	7917.45	14.98	2104.22

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
2.46	2000.00	0.00	0.00	570.40	4500.00	581.37	.24	.49	.00	4494.91	10.97	154.74
2.46	2000.00	0.00	0.00	570.40	6410.00	583.15	.33	.55	.01	6346.83	12.75	201.56
2.46	2000.00	0.00	0.00	570.40	7260.00	583.89	.36	.55	.01	7131.87	13.49	230.00
2.46	2000.00	0.00	0.00	570.40	9190.00	585.69	.38	.45	.05	8602.09	15.29	2011.45
2.77	1600.00	0.00	0.00	568.80	4500.00	581.79	.16	.31	.02	4477.44	12.99	204.69
2.77	1600.00	0.00	0.00	568.80	6410.00	583.65	.21	.34	.04	6300.11	14.85	247.54
2.77	1600.00	0.00	0.00	568.80	7260.00	584.41	.23	.34	.04	7081.01	15.61	282.00
2.77	1600.00	0.00	0.00	568.80	9190.00	586.19	.23	.31	.05	8384.69	17.39	2512.55
3.18	2190.00	0.00	0.00	570.40	4500.00	582.21	.21	.45	.02	3926.28	11.81	597.66
3.18	2190.00	0.00	0.00	570.40	6410.00	584.12	.16	.41	.02	4559.77	13.72	840.00
3.18	2190.00	0.00	0.00	570.40	7260.00	584.91	.14	.38	.03	4733.26	14.51	840.00
3.18	2190.00	0.00	0.00	570.40	9190.00	586.65	.10	.29	.04	4965.55	16.25	1610.00
3.31	700.00	0.00	0.00	570.10	4500.00	582.40	.22	.19	.00	4135.42	12.30	378.32
3.31	700.00	0.00	0.00	570.10	6410.00	584.24	.23	.15	.03	5275.54	14.14	588.18
3.31	700.00	0.00	0.00	570.10	7260.00	585.01	.22	.13	.04	5643.98	14.91	613.00
3.31	700.00	0.00	0.00	570.10	9190.00	586.71	.18	.10	.04	6243.14	16.61	1754.91
3.48	900.00	0.00	0.00	569.30	4500.00	582.64	.32	.29	.05	4233.58	13.34	317.78
3.48	900.00	0.00	0.00	569.30	6410.00	584.46	.32	.26	.05	5338.36	15.16	598.83
3.48	900.00	0.00	0.00	569.30	7260.00	585.20	.30	.24	.04	5649.13	15.90	650.05
3.48	900.00	0.00	0.00	569.30	9190.00	586.86	.22	.17	.02	5951.59	17.56	2462.96
3.64	800.00	0.00	0.00	570.40	4500.00	583.06	.19	.25	.04	4413.25	12.66	238.79
3.64	800.00	0.00	0.00	570.40	6410.00	584.81	.24	.25	.02	6088.46	14.41	246.71
3.64	800.00	0.00	0.00	570.40	7260.00	585.48	.27	.24	.01	6810.54	15.08	250.00
3.64	800.00	0.00	0.00	570.40	9190.00	587.03	.28	.20	.03	8216.04	16.63	1891.17
3.71	400.00	0.00	0.00	570.90	4500.00	583.15	.25	.12	.03	4418.32	12.25	177.16
3.71	400.00	0.00	0.00	570.90	6410.00	584.90	.33	.14	.04	6150.41	14.00	184.34
3.71	400.00	0.00	0.00	570.90	7260.00	585.58	.37	.15	.05	6906.97	14.68	186.64
3.71	400.00	0.00	0.00	570.90	9190.00	587.12	.40	.15	.06	8382.44	16.22	1736.39
3.72	50.00	0.00	0.00	572.40	4500.00	583.35	.13	.01	.07	4500.00	10.95	177.29
3.72	50.00	0.00	0.00	572.40	6410.00	585.16	.18	.02	.09	6410.00	12.76	186.16
3.72	50.00	0.00	0.00	572.40	7260.00	585.86	.20	.02	.10	7260.00	13.46	186.36
3.72	50.00	0.00	0.00	572.40	9190.00	587.40	.23	.02	.10	8987.25	15.00	1530.56
3.73	48.00	587.00	586.60	572.40	4500.00	583.36	.13	.01	0.00	4500.00	10.96	177.44
3.73	48.00	587.00	586.60	572.40	6410.00	585.17	.18	.01	0.00	6410.00	12.77	186.16
3.73	48.00	587.00	586.60	572.40	7260.00	585.87	.20	.01	0.00	7260.00	13.47	186.36
3.73	48.00	587.00	586.60	572.40	9190.00	587.63	.22	.21	0.00	8882.45	15.23	1623.60
3.74	50.00	0.00	0.00	572.30	4500.00	583.37	.13	.01	.00	4500.00	11.07	177.72
3.74	50.00	0.00	0.00	572.30	6410.00	585.19	.18	.01	.00	6374.31	12.89	230.45
3.74	50.00	0.00	0.00	572.30	7260.00	585.89	.19	.01	.00	7184.78	13.59	230.62
3.74	50.00	0.00	0.00	572.30	9190.00	587.68	.19	.01	.02	8528.48	15.38	2006.64

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
3.98	1260.00	0.00	0.00	569.40	4500.00	583.69	.23	.34	.08	4074.13	14.29	769.33
3.98	1260.00	0.00	0.00	569.40	6410.00	585.51	.18	.32	.00	4662.37	16.11	950.68
3.98	1260.00	0.00	0.00	569.40	7260.00	586.26	.15	.30	.02	4809.64	16.86	1064.53
3.98	1260.00	0.00	0.00	569.40	9190.00	588.04	.10	.22	.05	4862.35	18.64	1890.00
4.24	1380.00	0.00	0.00	569.80	4500.00	584.27	.28	.58	.04	4236.54	14.47	542.55
4.24	1380.00	0.00	0.00	569.80	6410.00	585.98	.30	.50	.10	5386.32	16.18	699.10
4.24	1380.00	0.00	0.00	569.80	7260.00	586.67	.30	.44	.11	5797.03	16.87	700.00
4.24	1380.00	0.00	0.00	569.80	9190.00	588.55	.03	.40	.04	4842.31	18.75	3123.75
4.46	1190.00	0.00	0.00	568.70	4500.00	584.91	.17	.46	.07	4242.87	16.21	396.21
4.46	1190.00	0.00	0.00	568.70	6410.00	586.60	.21	.48	.05	5679.79	17.90	435.66
4.46	1190.00	0.00	0.00	568.70	7260.00	587.27	.23	.48	.04	6277.95	18.57	450.34
4.46	1190.00	0.00	0.00	568.70	9190.00	589.06	.22	.55	.15	7322.46	20.36	2965.74
4.62	800.00	0.00	0.00	567.90	4450.00	585.19	.21	.30	.03	4450.00	17.29	102.32
4.62	800.00	0.00	0.00	567.90	6340.00	586.94	.32	.36	.09	6334.10	19.04	116.00
4.62	800.00	0.00	0.00	567.90	7180.00	587.62	.37	.38	.12	7167.16	19.72	116.00
4.62	800.00	0.00	0.00	567.90	9090.00	589.39	.33	.35	.08	8047.87	21.49	2601.40
4.63	50.00	0.00	0.00	568.20	4450.00	585.21	.26	.02	.04	4450.00	17.01	91.00
4.63	50.00	0.00	0.00	568.20	6340.00	586.96	.40	.03	.06	6340.00	18.76	91.00
4.63	50.00	0.00	0.00	568.20	7180.00	587.63	.46	.03	.07	7180.00	19.43	91.00
4.63	50.00	0.00	0.00	568.20	9090.00	589.38	.51	.03	.14	8630.62	21.18	1679.52
4.63	19.00	589.20	585.60	568.20	4450.00	585.22	.26	.01	.00	4450.00	17.02	91.00
4.63	19.00	589.20	585.60	568.20	6340.00	587.30	.38	.33	0.00	6340.00	19.10	91.00
4.63	19.00	589.20	585.60	568.20	7180.00	588.13	.43	.47	0.00	7180.00	19.93	91.00
4.63	19.00	589.20	585.60	568.20	9090.00	590.39	.30	.80	0.00	7512.23	22.19	3000.00
4.64	50.00	0.00	0.00	568.20	4450.00	585.28	.23	.02	.02	4371.02	17.08	140.78
4.64	50.00	0.00	0.00	568.20	6340.00	587.45	.30	.03	.04	5994.30	19.25	191.00
4.64	50.00	0.00	0.00	568.20	7180.00	588.32	.33	.03	.06	6659.36	20.12	191.00
4.64	50.00	0.00	0.00	568.20	9090.00	590.54	.22	.02	.05	6858.22	22.34	2764.81
5.16	2760.00	0.00	0.00	572.60	4450.00	585.79	.00	.14	.14	913.88	13.19	2925.65
5.16	2760.00	0.00	0.00	572.60	6340.00	588.02	.00	.09	.18	934.88	15.42	2934.05
5.16	2760.00	0.00	0.00	572.60	7180.00	588.92	.00	.08	.20	961.74	16.32	2937.45
5.16	2760.00	0.00	0.00	572.60	9090.00	590.93	.00	.05	.13	1021.74	18.33	4100.00
5.39	1220.00	0.00	0.00	565.50	4450.00	585.80	.01	.01	.00	1634.24	20.30	2308.10
5.39	1220.00	0.00	0.00	565.50	6340.00	588.03	.00	.00	.00	1702.00	22.53	2806.20
5.39	1220.00	0.00	0.00	565.50	7180.00	588.93	.00	.00	.00	1730.89	23.43	2865.80
5.39	1220.00	0.00	0.00	565.50	9090.00	590.94	.00	.00	.00	1765.67	25.44	4600.00
5.80	2160.00	0.00	0.00	573.00	4450.00	585.88	.05	.09	.04	2362.06	12.88	1456.67
5.80	2160.00	0.00	0.00	573.00	6340.00	588.07	.02	.05	.01	2096.60	15.07	1811.22
5.80	2160.00	0.00	0.00	573.00	7180.00	588.96	.02	.04	.01	2025.54	15.96	2008.77
5.80	2160.00	0.00	0.00	573.00	9090.00	590.96	.01	.03	.00	1834.71	17.96	4100.00

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
6.29	2560.00	0.00	0.00	571.60	4450.00	586.24	.02	.31	.02	1636.40	14.64	2012.85
6.29	2560.00	0.00	0.00	571.60	6340.00	588.22	.01	.14	.01	1564.75	16.62	2230.00
6.29	2560.00	0.00	0.00	571.60	7180.00	589.08	.01	.10	.00	1548.38	17.48	2230.00
6.29	2560.00	0.00	0.00	571.60	9090.00	591.02	.01	.05	.00	1483.59	19.42	5150.00
6.57	1500.00	0.00	0.00	570.70	4450.00	586.54	.25	.34	.19	4336.79	15.84	355.81
6.57	1500.00	0.00	0.00	570.70	6340.00	588.40	.23	.22	.18	5313.95	17.70	1607.72
6.57	1500.00	0.00	0.00	570.70	7180.00	589.22	.17	.17	.13	5192.46	18.52	2000.00
6.57	1500.00	0.00	0.00	570.70	9090.00	591.10	.06	.10	.04	4328.00	20.40	5100.00
6.78	1080.00	0.00	0.00	571.60	4450.00	587.28	.08	.47	.10	3164.68	15.68	1161.54
6.78	1080.00	0.00	0.00	571.60	6340.00	589.06	.07	.40	.10	3656.77	17.46	1573.18
6.78	1080.00	0.00	0.00	571.60	7180.00	589.74	.06	.35	.06	3804.45	18.14	1592.49
6.78	1080.00	0.00	0.00	571.60	9090.00	591.34	.05	.21	.01	3973.55	19.74	2400.00
7.07	1560.00	0.00	0.00	572.90	4450.00	587.95	.24	.70	.13	4143.69	15.05	162.39
7.07	1560.00	0.00	0.00	572.90	6340.00	589.66	.34	.66	.22	5737.96	16.76	171.66
7.07	1560.00	0.00	0.00	572.90	7180.00	590.30	.39	.63	.26	6432.13	17.40	175.14
7.07	1560.00	0.00	0.00	572.90	9090.00	591.78	.42	.51	.30	7609.49	18.88	2643.65
7.08	50.00	0.00	0.00	574.00	4450.00	588.12	.15	.03	.05	4450.00	14.12	155.00
7.08	50.00	0.00	0.00	574.00	6340.00	589.90	.22	.03	.08	6340.00	15.90	155.00
7.08	50.00	0.00	0.00	574.00	7180.00	590.57	.25	.04	.09	7180.00	16.57	155.00
7.08	50.00	0.00	0.00	574.00	9090.00	591.99	.31	.04	.06	9074.53	17.99	592.69
7.09	30.00	592.30	590.10	574.00	4450.00	588.14	.15	.01	0.00	4450.00	14.14	155.00
7.09	30.00	592.30	590.10	574.00	6340.00	590.03	.21	.13	0.00	6340.00	16.03	155.00
7.09	30.00	592.30	590.10	574.00	7180.00	590.77	.24	.19	0.00	7180.00	16.77	155.00
7.09	30.00	592.30	590.10	574.00	9090.00	592.40	.28	.38	0.00	8934.96	18.40	1853.61
7.10	50.00	0.00	0.00	574.00	4450.00	588.17	.14	.02	.00	4383.86	14.17	222.96
7.10	50.00	0.00	0.00	574.00	6340.00	590.10	.18	.03	.02	6084.81	16.10	235.70
7.10	50.00	0.00	0.00	574.00	7180.00	590.86	.20	.03	.02	6817.51	16.86	240.00
7.10	50.00	0.00	0.00	574.00	9090.00	592.51	.23	.03	.03	8373.85	18.51	2040.00
7.15	300.00	0.00	0.00	574.20	4400.00	588.45	.04	.11	.06	1656.74	14.25	900.00
7.15	300.00	0.00	0.00	574.20	6270.00	590.43	.03	.09	.09	1848.95	16.23	900.00
7.15	300.00	0.00	0.00	574.20	7090.00	591.21	.03	.08	.10	1943.77	17.01	900.00
7.15	300.00	0.00	0.00	574.20	8980.00	592.90	.03	.07	.12	2147.39	18.70	1700.00
7.40	1300.00	0.00	0.00	575.00	4400.00	589.07	.27	.67	.18	3346.89	14.07	724.76
7.40	1300.00	0.00	0.00	575.00	6270.00	590.83	.16	.43	.10	3493.47	15.83	1550.00
7.40	1300.00	0.00	0.00	575.00	7090.00	591.55	.11	.35	.06	3334.19	16.55	1550.00
7.40	1300.00	0.00	0.00	575.00	8980.00	593.14	.05	.24	.02	3006.76	18.14	2500.00
7.56	840.00	0.00	0.00	575.60	4400.00	590.26	.15	1.00	.07	2918.81	14.66	1425.00
7.56	840.00	0.00	0.00	575.60	6270.00	591.63	.11	.72	.03	3163.53	16.03	1425.00
7.56	840.00	0.00	0.00	575.60	7090.00	592.17	.10	.60	.01	3246.94	16.57	1425.00
7.56	840.00	0.00	0.00	575.60	8980.00	593.51	.07	.38	.01	3318.24	17.91	1750.00

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
7.81	1320.00	0.00	0.00	576.40	4400.00	591.26	.16	1.00	.00	3131.72	14.86	720.89
7.81	1320.00	0.00	0.00	576.40	6270.00	592.54	.18	.93	.06	3940.49	16.14	938.90
7.81	1320.00	0.00	0.00	576.40	7090.00	593.04	.19	.89	.07	4244.67	16.64	1010.80
7.81	1320.00	0.00	0.00	576.40	8980.00	594.23	.18	.73	.09	4779.40	17.83	1561.76
7.98	900.00	0.00	0.00	575.70	4400.00	591.90	.12	.58	.02	2941.13	16.20	737.09
7.98	900.00	0.00	0.00	575.70	6270.00	593.27	.13	.65	.03	3702.03	17.57	750.00
7.98	900.00	0.00	0.00	575.70	7090.00	593.78	.14	.67	.03	4013.45	18.08	750.00
7.98	900.00	0.00	0.00	575.70	8980.00	594.95	.15	.68	.02	4663.41	19.25	1913.42
8.15	920.00	0.00	0.00	574.90	4400.00	592.38	.15	.49	.02	3259.95	17.48	450.00
8.15	920.00	0.00	0.00	574.90	6270.00	593.81	.17	.54	.03	4063.44	18.91	450.00
8.15	920.00	0.00	0.00	574.90	7090.00	594.34	.17	.57	.03	4389.20	19.44	450.00
8.15	920.00	0.00	0.00	574.90	8980.00	595.53	.19	.59	.03	5069.02	20.63	450.00
8.30	770.00	0.00	0.00	574.30	4400.00	592.86	.16	.48	.02	3479.23	18.56	490.95
8.30	770.00	0.00	0.00	574.30	6270.00	594.30	.17	.50	.00	4200.13	20.00	595.00
8.30	770.00	0.00	0.00	574.30	7090.00	594.85	.17	.50	.00	4457.57	20.55	595.00
8.30	770.00	0.00	0.00	574.30	8980.00	596.06	.16	.49	.01	4946.86	21.76	1015.69
8.83	2820.00	0.00	0.00	576.30	4400.00	594.19	.04	1.14	.07	2976.84	17.89	1388.14
8.83	2820.00	0.00	0.00	576.30	6270.00	595.50	.04	.98	.08	3438.46	19.20	1571.68
8.83	2820.00	0.00	0.00	576.30	7090.00	596.00	.03	.93	.08	3609.96	19.70	1604.26
8.83	2820.00	0.00	0.00	576.30	8980.00	597.08	.03	.80	.08	3946.02	20.78	1639.91
9.23	2100.00	0.00	0.00	578.50	4400.00	594.80	.07	.61	.03	2838.98	16.30	648.35
9.23	2100.00	0.00	0.00	578.50	6270.00	596.06	.08	.57	.04	3505.96	17.56	664.71
9.23	2100.00	0.00	0.00	578.50	7090.00	596.54	.09	.55	.04	3776.50	18.04	670.89
9.23	2100.00	0.00	0.00	578.50	8980.00	597.57	.10	.51	.05	4344.99	19.07	684.32
9.38	780.00	0.00	0.00	579.00	4400.00	595.01	.01	.11	.04	1341.54	16.01	1500.00
9.38	780.00	0.00	0.00	579.00	6270.00	596.29	.01	.12	.04	1631.10	17.29	1500.00
9.38	780.00	0.00	0.00	579.00	7090.00	596.78	.01	.12	.05	1753.03	17.78	1500.00
9.38	780.00	0.00	0.00	579.00	8980.00	597.83	.01	.12	.05	2013.72	18.83	1500.00
9.63	1360.00	0.00	0.00	580.00	4400.00	595.19	.13	.21	.10	3033.83	15.19	968.23
9.63	1360.00	0.00	0.00	580.00	6270.00	596.48	.11	.21	.08	3361.73	16.48	990.17
9.63	1360.00	0.00	0.00	580.00	7090.00	596.97	.10	.21	.07	3469.68	16.97	998.47
9.63	1360.00	0.00	0.00	580.00	8980.00	598.02	.09	.20	.06	3676.76	18.02	1016.35
9.79	840.00	0.00	0.00	580.30	4400.00	595.65	.20	.47	.06	3609.75	15.35	710.23
9.79	840.00	0.00	0.00	580.30	6270.00	596.90	.20	.44	.07	4264.00	16.60	760.03
9.79	840.00	0.00	0.00	580.30	7090.00	597.38	.20	.43	.08	4492.57	17.08	778.77
9.79	840.00	0.00	0.00	580.30	8980.00	598.39	.19	.39	.08	4925.45	18.09	819.04
10.12	1740.00	0.00	0.00	581.20	4400.00	596.73	.07	.86	.08	1839.37	15.53	1176.15
10.12	1740.00	0.00	0.00	581.20	6270.00	597.91	.05	.77	.09	1980.41	16.71	1275.20
10.12	1740.00	0.00	0.00	581.20	7090.00	598.35	.05	.74	.09	2045.03	17.15	1312.29
10.12	1740.00	0.00	0.00	581.20	8980.00	599.29	.05	.68	.08	2181.91	18.09	1391.28

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
10.46	1760.00	0.00	0.00	582.10	4400.00	597.29	.04	.52	.02	1513.91	15.19	1056.91
10.46	1760.00	0.00	0.00	582.10	6270.00	598.40	.04	.47	.01	1717.27	16.30	1103.14
10.46	1760.00	0.00	0.00	582.10	7090.00	598.82	.04	.45	.01	1800.03	16.72	1120.84
10.46	1760.00	0.00	0.00	582.10	8980.00	599.72	.04	.42	.00	1968.63	17.62	1311.84
10.76	1600.00	0.00	0.00	578.70	4370.00	597.58	.03	.27	.00	4156.34	18.88	689.93
10.76	1600.00	0.00	0.00	578.70	6220.00	598.72	.05	.32	.01	5802.55	20.02	696.03
10.76	1600.00	0.00	0.00	578.70	7040.00	599.16	.06	.34	.02	6517.66	20.46	697.00
10.76	1600.00	0.00	0.00	578.70	8920.00	600.09	.08	.37	.03	8127.82	21.39	697.00
10.77	59.00	0.00	0.00	584.00	4370.00	597.56	.19	.01	.12	4272.21	13.56	637.00
10.77	59.00	0.00	0.00	584.00	6220.00	598.68	.31	.02	.21	6055.14	14.68	637.00
10.77	59.00	0.00	0.00	584.00	7040.00	599.12	.37	.02	.25	6842.74	15.12	637.00
10.77	59.00	0.00	0.00	584.00	8920.00	600.03	.52	.03	.35	8642.78	16.03	637.00
10.77	1.00	598.10	600.30	584.00	4370.00	597.54	.25	.00	.05	4244.42	13.54	104.00
10.77	1.00	598.10	600.30	584.00	6220.00	598.66	.43	.00	.09	6081.78	14.66	180.60
10.77	1.00	598.10	600.30	584.00	7040.00	599.09	.50	.00	.11	6837.63	15.09	239.23
10.77	1.00	598.10	600.30	584.00	8920.00	600.01	.63	.00	.09	8326.89	16.01	343.70
10.78	28.00	598.10	600.30	584.00	4370.00	597.56	.25	.01	.00	4244.20	13.56	104.00
10.78	28.00	598.10	600.30	584.00	6220.00	598.68	.43	.02	.00	6080.88	14.68	183.04
10.78	28.00	598.10	600.30	584.00	7040.00	599.12	.50	.02	.00	6834.24	15.12	242.03
10.78	28.00	598.10	600.30	584.00	8920.00	600.05	.62	.03	.00	8308.14	16.05	347.42
10.78	1.00	0.00	0.00	584.00	4370.00	597.66	.18	.00	.04	4270.44	13.66	637.00
10.78	1.00	0.00	0.00	584.00	6220.00	598.89	.30	.00	.08	6050.66	14.89	637.00
10.78	1.00	0.00	0.00	584.00	7040.00	599.35	.36	.00	.09	6837.08	15.35	637.00
10.78	1.00	0.00	0.00	584.00	8920.00	600.25	.50	.00	.08	8636.49	16.25	637.00
10.79	50.00	0.00	0.00	584.00	4370.00	597.69	.22	.03	.03	4102.22	13.69	718.03
10.79	50.00	0.00	0.00	584.00	6220.00	598.92	.34	.04	.04	5727.40	14.92	728.15
10.79	50.00	0.00	0.00	584.00	7040.00	599.39	.40	.05	.04	6434.24	15.39	731.98
10.79	50.00	0.00	0.00	584.00	8920.00	600.30	.54	.06	.03	8027.91	16.30	737.00
10.97	960.00	0.00	0.00	584.50	4370.00	598.51	.03	.53	.11	1589.21	14.01	958.07
10.97	960.00	0.00	0.00	584.50	6220.00	599.98	.03	.56	.19	1900.84	15.48	969.81
10.97	960.00	0.00	0.00	584.50	7040.00	600.55	.04	.57	.22	2035.35	16.05	976.59
10.97	960.00	0.00	0.00	584.50	8920.00	601.71	.04	.61	.30	2342.30	17.21	990.55
11.31	1790.00	0.00	0.00	585.50	4370.00	599.31	.04	.80	.01	1801.72	13.81	956.90
11.31	1790.00	0.00	0.00	585.50	6220.00	600.71	.04	.74	.01	2110.42	15.21	987.93
11.31	1790.00	0.00	0.00	585.50	7040.00	601.27	.04	.72	.01	2240.09	15.77	1000.19
11.31	1790.00	0.00	0.00	585.50	8920.00	602.41	.04	.70	.00	2529.87	16.91	1025.45
11.55	1270.00	0.00	0.00	585.70	4370.00	599.93	.07	.62	.02	2195.45	14.23	829.71
11.55	1270.00	0.00	0.00	585.70	6220.00	601.24	.06	.53	.01	2386.36	15.54	847.46
11.55	1270.00	0.00	0.00	585.70	7040.00	601.77	.06	.51	.01	2469.54	16.07	850.59
11.55	1270.00	0.00	0.00	585.70	8920.00	602.87	.06	.47	.01	2657.87	17.17	857.29

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
11.78	1210.00	0.00	0.00	585.90	4370.00	600.44	.03	.45	.03	1680.28	14.54	960.00
11.78	1210.00	0.00	0.00	585.90	6220.00	601.72	.03	.43	.02	2127.23	15.82	960.00
11.78	1210.00	0.00	0.00	585.90	7040.00	602.24	.04	.43	.01	2313.50	16.34	960.00
11.78	1210.00	0.00	0.00	585.90	8920.00	603.32	.04	.42	.01	2726.34	17.42	960.00
12.06	1500.00	0.00	0.00	586.10	4370.00	600.94	.06	.51	.03	2313.71	14.84	819.04
12.06	1500.00	0.00	0.00	586.10	6220.00	602.23	.06	.51	.02	2594.44	16.13	835.47
12.06	1500.00	0.00	0.00	586.10	7040.00	602.74	.06	.51	.02	2708.31	16.64	842.08
12.06	1500.00	0.00	0.00	586.10	8920.00	603.82	.06	.51	.01	2963.95	17.72	855.91
12.33	1400.00	0.00	0.00	587.30	4370.00	601.68	.14	.75	.06	3237.64	14.38	914.00
12.33	1400.00	0.00	0.00	587.30	6220.00	602.90	.13	.69	.06	3741.17	15.60	964.05
12.33	1400.00	0.00	0.00	587.30	7040.00	603.39	.12	.67	.05	3919.71	16.09	984.17
12.33	1400.00	0.00	0.00	587.30	8920.00	604.43	.11	.62	.05	4283.06	17.13	1026.56
12.48	820.00	0.00	0.00	588.00	4370.00	602.27	.04	.44	.06	1437.54	14.27	1062.99
12.48	820.00	0.00	0.00	588.00	6220.00	603.46	.04	.42	.05	1632.77	15.46	1082.31
12.48	820.00	0.00	0.00	588.00	7040.00	603.93	.04	.41	.05	1711.31	15.93	1090.00
12.48	820.00	0.00	0.00	588.00	8920.00	604.93	.04	.40	.04	1880.63	16.93	1106.25
12.68	1050.00	0.00	0.00	588.00	4370.00	602.61	.05	.34	.00	1344.81	14.61	611.89
12.68	1050.00	0.00	0.00	588.00	6220.00	603.81	.06	.36	.01	1658.77	15.81	686.49
12.68	1050.00	0.00	0.00	588.00	7040.00	604.29	.06	.36	.02	1782.93	16.29	716.01
12.68	1050.00	0.00	0.00	588.00	8920.00	605.29	.07	.36	.02	2038.38	17.29	760.58
12.88	1050.00	0.00	0.00	587.00	4370.00	603.12	.11	.52	.05	2848.52	16.12	468.67
12.88	1050.00	0.00	0.00	587.00	6220.00	604.40	.14	.60	.07	3689.92	17.40	503.70
12.88	1050.00	0.00	0.00	587.00	7040.00	604.90	.16	.63	.07	4037.78	17.90	517.42
12.88	1050.00	0.00	0.00	587.00	8920.00	605.94	.18	.67	.09	4785.43	18.94	547.17
13.04	870.00	0.00	0.00	588.00	4370.00	603.81	.10	.67	.01	2794.83	15.81	619.06
13.04	870.00	0.00	0.00	588.00	6220.00	605.22	.12	.77	.02	3505.07	17.22	626.09
13.04	870.00	0.00	0.00	588.00	7040.00	605.76	.12	.81	.02	3799.09	17.76	628.82
13.04	870.00	0.00	0.00	588.00	8920.00	606.89	.14	.88	.03	4443.70	18.89	997.19
13.19	770.00	0.00	0.00	588.80	4370.00	604.31	.06	.43	.02	2181.25	15.51	800.00
13.19	770.00	0.00	0.00	588.80	6220.00	605.76	.06	.46	.03	2669.52	16.96	800.00
13.19	770.00	0.00	0.00	588.80	7040.00	606.33	.07	.47	.03	2876.12	17.53	800.00
13.19	770.00	0.00	0.00	588.80	8920.00	607.49	.07	.50	.04	3331.93	18.69	1603.31
13.42	1220.00	0.00	0.00	588.90	4370.00	604.80	.04	.47	.01	2437.44	15.90	716.41
13.42	1220.00	0.00	0.00	588.90	6220.00	606.29	.05	.51	.01	3125.76	17.39	726.96
13.42	1220.00	0.00	0.00	588.90	7040.00	606.87	.06	.53	.00	3416.42	17.97	731.06
13.42	1220.00	0.00	0.00	588.90	8920.00	608.06	.07	.56	.00	4060.04	19.16	739.53
13.54	620.00	0.00	0.00	589.30	4370.00	604.95	.03	.13	.01	2034.17	15.65	1001.42
13.54	620.00	0.00	0.00	589.30	6220.00	606.45	.04	.14	.01	2491.32	17.15	1005.97
13.54	620.00	0.00	0.00	589.30	7040.00	607.04	.04	.14	.01	2684.29	17.74	1007.74
13.54	620.00	0.00	0.00	589.30	8920.00	608.24	.04	.15	.01	3111.81	18.94	1011.39

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
13.55	49.00	0.00	0.00	588.10	4370.00	604.98	.01	.00	.01	550.81	16.88	1038.03
13.55	49.00	0.00	0.00	588.10	6220.00	606.49	.02	.00	.01	597.01	18.39	1053.58
13.55	49.00	0.00	0.00	588.10	7040.00	607.07	.02	.00	.01	621.79	18.97	1055.35
13.55	49.00	0.00	0.00	588.10	8920.00	608.28	.02	.00	.01	682.23	20.18	1059.01
13.55	1.00	605.20	604.40	588.10	4370.00	604.98	.01	.00	.00	589.22	16.88	1038.03
13.55	1.00	605.20	604.40	588.10	6220.00	606.49	.02	.00	.00	562.28	18.39	1053.58
13.55	1.00	605.20	604.40	588.10	7040.00	607.07	.02	.00	.00	593.22	18.97	1055.35
13.55	1.00	605.20	604.40	588.10	8920.00	608.28	.02	.00	.00	666.50	20.18	1059.01
13.55	18.00	605.20	604.40	588.10	4370.00	604.98	.01	.00	.00	589.11	16.88	1038.06
13.55	18.00	605.20	604.40	588.10	6220.00	606.49	.02	.00	.00	562.24	18.39	1053.58
13.55	18.00	605.20	604.40	588.10	7040.00	607.07	.02	.00	.00	593.18	18.97	1055.35
13.55	18.00	605.20	604.40	588.10	8920.00	608.28	.02	.00	.00	666.47	20.18	1059.01
13.55	1.00	0.00	0.00	588.10	4370.00	604.98	.01	.00	.00	550.70	16.88	1038.07
13.55	1.00	0.00	0.00	588.10	6220.00	606.49	.02	.00	.00	596.94	18.39	1053.58
13.55	1.00	0.00	0.00	588.10	7040.00	607.07	.02	.00	.00	621.73	18.97	1055.35
13.55	1.00	0.00	0.00	588.10	8920.00	608.28	.02	.00	.00	682.18	20.18	1059.01
13.56	49.00	0.00	0.00	588.20	4370.00	604.99	.01	.00	.00	1203.32	16.79	1102.75
13.56	49.00	0.00	0.00	588.20	6220.00	606.50	.01	.00	.00	1352.08	18.30	1118.18
13.56	49.00	0.00	0.00	588.20	7040.00	607.08	.02	.00	.00	1421.36	18.88	1119.95
13.56	49.00	0.00	0.00	588.20	8920.00	608.29	.02	.00	.00	1582.26	20.09	1123.61
13.74	940.00	0.00	0.00	590.70	4370.00	605.12	.01	.13	.00	1048.86	14.42	1226.28
13.74	940.00	0.00	0.00	590.70	6220.00	606.61	.01	.11	.00	1197.10	15.91	1251.33
13.74	940.00	0.00	0.00	590.70	7040.00	607.19	.01	.11	.00	1265.31	16.49	1261.11
13.74	940.00	0.00	0.00	590.70	8920.00	608.40	.01	.10	.00	1423.51	17.70	1281.38
14.08	1820.00	0.00	0.00	591.20	4370.00	605.34	.03	.22	.01	1920.39	14.14	1042.70
14.08	1820.00	0.00	0.00	591.20	6220.00	606.81	.03	.20	.02	2406.70	15.61	1054.46
14.08	1820.00	0.00	0.00	591.20	7040.00	607.39	.03	.20	.02	2612.51	16.19	1059.08
14.08	1820.00	0.00	0.00	591.20	8920.00	608.59	.04	.19	.02	3069.68	17.39	1068.68
14.35	1400.00	0.00	0.00	591.50	4370.00	605.82	.09	.50	.05	2567.71	14.32	730.43
14.35	1400.00	0.00	0.00	591.50	6220.00	607.28	.08	.49	.04	2994.24	15.78	743.12
14.35	1400.00	0.00	0.00	591.50	7040.00	607.86	.08	.48	.04	3171.16	16.36	748.11
14.35	1400.00	0.00	0.00	591.50	8920.00	609.05	.08	.48	.04	3561.62	17.55	758.52
14.90	2930.00	0.00	0.00	591.30	4370.00	606.88	.04	.98	.03	1961.36	15.58	658.83
14.90	2930.00	0.00	0.00	591.30	6220.00	608.25	.05	.91	.02	2337.77	16.95	672.52
14.90	2930.00	0.00	0.00	591.30	7040.00	608.80	.05	.89	.02	2491.28	17.50	677.98
14.90	2930.00	0.00	0.00	591.30	8920.00	609.95	.06	.85	.02	2824.41	18.65	689.49
15.08	940.00	0.00	0.00	591.30	4370.00	607.15	.03	.25	.01	1834.25	15.85	1100.00
15.08	940.00	0.00	0.00	591.30	6220.00	608.52	.03	.23	.01	2100.19	17.22	1100.00
15.08	940.00	0.00	0.00	591.30	7040.00	609.06	.03	.23	.01	2214.20	17.76	1100.00
15.08	940.00	0.00	0.00	591.30	8920.00	610.22	.03	.22	.02	2470.59	18.92	1100.00

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
15.09	70.00	0.00	0.00	591.50	4370.00	607.18	.08	.04	.04	2665.32	15.68	939.08
15.09	70.00	0.00	0.00	591.50	6220.00	608.55	.06	.04	.03	3001.70	17.05	942.88
15.09	70.00	0.00	0.00	591.50	7040.00	609.09	.06	.04	.03	3140.22	17.59	944.40
15.09	70.00	0.00	0.00	591.50	8920.00	610.25	.06	.04	.02	3450.14	18.75	947.61
15.13	200.00	0.00	0.00	592.20	4370.00	607.29	.10	.12	.02	2990.73	15.09	790.00
15.13	200.00	0.00	0.00	592.20	6220.00	608.66	.09	.11	.02	3500.31	16.46	790.00
15.13	200.00	0.00	0.00	592.20	7040.00	609.20	.09	.11	.02	3701.45	17.00	790.00
15.13	200.00	0.00	0.00	592.20	8920.00	610.35	.09	.11	.03	4134.61	18.15	790.00
15.15	110.00	0.00	0.00	592.50	4370.00	607.37	.09	.06	.00	2936.27	14.87	680.00
15.15	110.00	0.00	0.00	592.50	6220.00	608.72	.09	.06	.00	3499.00	16.22	680.00
15.15	110.00	0.00	0.00	592.50	7040.00	609.26	.09	.06	.00	3722.96	16.76	680.00
15.15	110.00	0.00	0.00	592.50	8920.00	610.41	.09	.06	.00	4198.41	17.91	680.00
15.17	90.00	0.00	0.00	592.90	4370.00	607.42	.23	.07	.11	3830.61	14.52	587.95
15.17	90.00	0.00	0.00	592.90	6220.00	608.76	.33	.08	.19	5208.33	15.86	589.42
15.17	90.00	0.00	0.00	592.90	7040.00	609.29	.37	.09	.22	5797.63	16.39	590.00
15.17	90.00	0.00	0.00	592.90	8920.00	610.43	.46	.09	.29	7117.22	17.53	590.00
15.18	49.00	0.00	0.00	591.40	4370.00	607.45	.27	.04	.03	4370.00	16.05	76.00
15.18	49.00	0.00	0.00	591.40	6220.00	608.80	.41	.06	.07	6052.42	17.40	410.13
15.18	49.00	0.00	0.00	591.40	7040.00	609.35	.41	.06	.03	6427.51	17.95	482.62
15.18	49.00	0.00	0.00	591.40	8920.00	610.74	.29	.05	.10	6358.89	19.34	603.79
15.18	1.00	608.20	609.60	591.40	4370.00	607.45	.27	.00	.00	4370.00	16.05	76.00
15.18	1.00	608.20	609.60	591.40	6220.00	608.80	.41	.00	.00	6051.72	17.40	410.30
15.18	1.00	608.20	609.60	591.40	7040.00	609.35	.41	.00	.00	6426.26	17.95	482.81
15.18	1.00	608.20	609.60	591.40	8920.00	610.82	.25	.00	.03	5242.04	19.42	608.54
15.18	23.00	608.20	609.60	591.40	4370.00	607.46	.27	.01	.00	4370.00	16.06	76.00
15.18	23.00	608.20	609.60	591.40	6220.00	608.82	.41	.02	.00	6041.32	17.42	412.83
15.18	23.00	608.20	609.60	591.40	7040.00	609.37	.41	.02	.00	6408.68	17.97	485.37
15.18	23.00	608.20	609.60	591.40	8920.00	610.87	.23	.03	.01	4841.51	19.47	614.68
15.19	1.00	0.00	0.00	591.40	4370.00	607.47	.27	.00	.00	4370.00	16.07	76.00
15.19	1.00	0.00	0.00	591.40	6220.00	608.83	.41	.00	.00	6040.86	17.43	412.94
15.19	1.00	0.00	0.00	591.40	7040.00	609.37	.41	.00	.00	6407.91	17.97	485.49
15.19	1.00	0.00	0.00	591.40	8920.00	610.86	.27	.00	.03	6210.47	19.46	614.82
15.19	50.00	0.00	0.00	591.50	4370.00	607.71	.13	.03	.08	3793.67	16.21	636.40
15.19	50.00	0.00	0.00	591.50	6220.00	609.21	.19	.04	.13	5196.57	17.71	637.83
15.19	50.00	0.00	0.00	591.50	7040.00	609.71	.22	.04	.11	5813.86	18.21	638.30
15.19	50.00	0.00	0.00	591.50	8920.00	610.90	.29	.04	.01	7178.51	19.40	639.43
15.24	250.00	0.00	0.00	592.10	4370.00	607.95	.04	.10	.05	2238.65	15.85	541.06
15.24	250.00	0.00	0.00	592.10	6220.00	609.56	.06	.13	.08	2952.46	17.46	562.32
15.24	250.00	0.00	0.00	592.10	7040.00	610.11	.06	.14	.10	3266.33	18.01	568.92
15.24	250.00	0.00	0.00	592.10	8920.00	611.40	.08	.16	.13	3938.66	19.30	578.26

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
15.33	480.00	0.00	0.00	593.10	4370.00	608.08	.06	.13	.01	2591.23	14.98	608.11
15.33	480.00	0.00	0.00	593.10	6220.00	609.70	.07	.14	.01	3333.75	16.60	630.81
15.33	480.00	0.00	0.00	593.10	7040.00	610.26	.08	.15	.01	3658.76	17.16	638.34
15.33	480.00	0.00	0.00	593.10	8920.00	611.56	.09	.16	.01	4340.52	18.46	655.26
15.36	170.00	0.00	0.00	593.50	4370.00	608.16	.08	.08	.01	2704.50	14.66	598.11
15.36	170.00	0.00	0.00	593.50	6220.00	609.79	.09	.09	.01	3417.48	16.29	607.19
15.36	170.00	0.00	0.00	593.50	7040.00	610.35	.09	.09	.01	3735.38	16.85	610.31
15.36	170.00	0.00	0.00	593.50	8920.00	611.65	.10	.10	.01	4403.01	18.15	616.64
15.48	600.00	0.00	0.00	593.60	4370.00	608.45	.09	.29	.01	2949.37	14.85	485.12
15.48	600.00	0.00	0.00	593.60	6220.00	610.08	.11	.30	.02	3805.40	16.48	512.03
15.48	600.00	0.00	0.00	593.60	7040.00	610.66	.12	.32	.02	4174.06	17.06	525.78
15.48	600.00	0.00	0.00	593.60	8920.00	611.97	.14	.33	.03	4953.64	18.37	557.35
15.66	960.00	0.00	0.00	593.80	4370.00	609.22	.19	.79	.07	2684.55	15.42	1179.54
15.66	960.00	0.00	0.00	593.80	6220.00	610.74	.11	.65	.00	2720.19	16.94	1221.29
15.66	960.00	0.00	0.00	593.80	7040.00	611.31	.09	.61	.02	2731.03	17.51	1238.02
15.66	960.00	0.00	0.00	593.80	8920.00	612.60	.07	.52	.04	2742.91	18.80	1273.49
15.70	200.00	0.00	0.00	593.90	4370.00	609.61	.04	.16	.09	1509.24	15.71	1407.77
15.70	200.00	0.00	0.00	593.90	6220.00	610.96	.04	.11	.05	1661.79	17.06	1447.91
15.70	200.00	0.00	0.00	593.90	7040.00	611.50	.03	.09	.04	1721.14	17.60	1463.46
15.70	200.00	0.00	0.00	593.90	8920.00	612.73	.03	.07	.02	1828.88	18.83	1495.92
15.73	170.00	0.00	0.00	593.90	4370.00	609.70	.01	.05	.02	1008.65	15.80	1832.42
15.73	170.00	0.00	0.00	593.90	6220.00	611.04	.01	.04	.01	1134.25	17.14	1866.10
15.73	170.00	0.00	0.00	593.90	7040.00	611.57	.01	.04	.01	1186.55	17.67	1879.31
15.73	170.00	0.00	0.00	593.90	8920.00	612.78	.01	.03	.01	1286.51	18.88	1906.01
15.84	590.00	0.00	0.00	594.40	4370.00	609.81	.02	.12	.01	1233.60	15.41	1635.29
15.84	590.00	0.00	0.00	594.40	6220.00	611.13	.02	.10	.00	1320.86	16.73	1668.47
15.84	590.00	0.00	0.00	594.40	7040.00	611.66	.02	.09	.00	1362.37	17.26	1681.70
15.84	590.00	0.00	0.00	594.40	8920.00	612.86	.02	.08	.00	1445.03	18.46	1707.31
16.03	1020.00	0.00	0.00	595.30	4370.00	610.09	.02	.27	.00	1243.08	14.79	1070.35
16.03	1020.00	0.00	0.00	595.30	6220.00	611.38	.02	.25	.00	1509.73	16.08	1075.53
16.03	1020.00	0.00	0.00	595.30	7040.00	611.90	.03	.24	.01	1619.79	16.60	1077.60
16.03	1020.00	0.00	0.00	595.30	8920.00	613.08	.03	.22	.01	1846.93	17.78	1082.32
16.14	580.00	0.00	0.00	595.80	4370.00	610.28	.16	.23	.11	3953.70	14.48	550.00
16.14	580.00	0.00	0.00	595.80	6220.00	611.59	.20	.24	.14	5178.28	15.79	550.00
16.14	580.00	0.00	0.00	595.80	7040.00	612.11	.22	.25	.15	5674.48	16.31	550.00
16.14	580.00	0.00	0.00	595.80	8920.00	613.28	.24	.24	.17	6713.40	17.48	550.00
16.19	230.00	0.00	0.00	596.00	4280.00	610.49	.20	.22	.04	4197.76	14.49	182.00
16.19	230.00	0.00	0.00	596.00	6100.00	611.84	.31	.27	.09	5881.32	15.84	182.00
16.19	230.00	0.00	0.00	596.00	6910.00	612.37	.36	.29	.11	6616.59	16.37	182.00
16.19	230.00	0.00	0.00	596.00	8750.00	613.56	.46	.32	.18	8254.53	17.56	182.00

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
16.20	50.00	0.00	0.00	594.50	4280.00	610.60	.16	.04	.02	4280.00	16.10	96.00
16.20	50.00	0.00	0.00	594.50	6100.00	611.95	.27	.05	.02	6100.00	17.45	96.00
16.20	50.00	0.00	0.00	594.50	6910.00	612.48	.33	.06	.02	6910.00	17.98	96.00
16.20	50.00	0.00	0.00	594.50	8750.00	613.64	.45	.07	.00	8750.00	19.14	96.00
16.21	41.00	614.20	611.50	594.50	4280.00	610.60	.16	.01	0.00	4280.00	16.10	96.00
16.21	41.00	614.20	611.50	594.50	6100.00	612.15	.27	.19	0.00	6100.00	17.65	96.00
16.21	41.00	614.20	611.50	594.50	6910.00	612.76	.32	.26	0.00	6910.00	18.26	96.00
16.21	41.00	614.20	611.50	594.50	8750.00	614.15	.43	.48	0.00	8750.00	19.65	96.00
16.21	50.00	0.00	0.00	594.40	4280.00	610.71	.11	.03	.03	4010.51	16.31	183.00
16.21	50.00	0.00	0.00	594.40	6100.00	612.35	.16	.04	.06	5580.78	17.95	183.00
16.21	50.00	0.00	0.00	594.40	6910.00	613.01	.19	.05	.08	6267.85	18.61	183.00
16.21	50.00	0.00	0.00	594.40	8750.00	614.53	.22	.05	.12	7775.35	20.13	475.04
16.33	590.00	0.00	0.00	593.20	4280.00	611.14	.14	.44	.02	3053.41	17.94	234.56
16.33	590.00	0.00	0.00	593.20	6100.00	612.89	.19	.54	.02	4102.36	19.69	241.56
16.33	590.00	0.00	0.00	593.20	6910.00	613.59	.22	.58	.02	4550.33	20.39	244.35
16.33	590.00	0.00	0.00	593.20	8750.00	615.15	.26	.63	.02	5504.63	21.95	562.86
16.40	370.00	0.00	0.00	592.80	4280.00	611.47	.33	.37	.15	3879.69	18.67	100.41
16.40	370.00	0.00	0.00	592.80	6100.00	613.31	.50	.48	.24	5403.57	20.51	105.97
16.40	370.00	0.00	0.00	592.80	6910.00	614.04	.58	.52	.29	6067.99	21.24	108.17
16.40	370.00	0.00	0.00	592.80	8750.00	615.64	.74	.59	.39	7541.38	22.84	113.28
16.46	360.00	0.00	0.00	593.30	4280.00	611.99	.30	.48	.01	3850.59	18.69	101.99
16.46	360.00	0.00	0.00	593.30	6100.00	614.02	.45	.64	.03	5352.91	20.72	108.13
16.46	360.00	0.00	0.00	593.30	6910.00	614.83	.52	.70	.03	6006.88	21.53	110.58
16.46	360.00	0.00	0.00	593.30	8750.00	616.59	.66	.81	.05	7451.41	23.29	116.82
16.52	300.00	0.00	0.00	593.90	4280.00	612.52	.16	.29	.09	3524.17	18.62	395.57
16.52	300.00	0.00	0.00	593.90	6100.00	614.82	.13	.29	.19	4058.01	20.92	425.00
16.52	300.00	0.00	0.00	593.90	6910.00	615.74	.12	.28	.24	4245.04	21.84	425.00
16.52	300.00	0.00	0.00	593.90	8750.00	617.73	.11	.26	.33	4633.50	23.83	425.00
16.64	650.00	0.00	0.00	595.00	4280.00	612.96	.03	.24	.08	1948.63	17.96	629.68
16.64	650.00	0.00	0.00	595.00	6100.00	615.19	.03	.20	.06	2270.68	20.19	744.44
16.64	650.00	0.00	0.00	595.00	6910.00	616.08	.03	.18	.06	2376.60	21.08	765.87
16.64	650.00	0.00	0.00	595.00	8750.00	618.01	.03	.15	.05	2588.85	23.01	812.34
16.83	1000.00	0.00	0.00	596.60	4280.00	613.19	.02	.20	.01	1402.43	16.59	1078.68
16.83	1000.00	0.00	0.00	596.60	6100.00	615.37	.01	.16	.01	1553.07	18.77	1086.83
16.83	1000.00	0.00	0.00	596.60	6910.00	616.25	.01	.14	.01	1625.41	19.65	1090.10
16.83	1000.00	0.00	0.00	596.60	8750.00	618.16	.01	.12	.01	1788.17	21.56	1097.23
17.22	2020.00	0.00	0.00	597.20	4280.00	613.50	.01	.31	.00	997.87	16.30	774.32
17.22	2020.00	0.00	0.00	597.20	6100.00	615.61	.02	.24	.00	1131.33	18.41	818.38
17.22	2020.00	0.00	0.00	597.20	6910.00	616.46	.02	.22	.00	1190.06	19.26	839.54
17.22	2020.00	0.00	0.00	597.20	8750.00	618.34	.02	.18	.00	1316.45	21.14	885.04

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
17.28	49.00	0.00	0.00	597.20	4280.00	613.46	.26	.02	.20	2726.76	16.26	641.92
17.28	49.00	0.00	0.00	597.20	6100.00	615.60	.09	.01	.06	1334.83	18.40	787.86
17.28	49.00	0.00	0.00	597.20	6910.00	616.46	.07	.01	.05	1118.10	19.26	813.98
17.28	49.00	0.00	0.00	597.20	8750.00	618.34	.05	.00	.03	880.18	21.14	870.68
17.22	1.00	611.50	612.80	597.20	4280.00	613.45	.35	.00	.07	3117.82	16.25	641.25
17.22	1.00	611.50	612.80	597.20	6100.00	615.60	.09	.00	.01	1260.17	18.40	787.86
17.22	1.00	611.50	612.80	597.20	6910.00	616.46	.08	.00	.00	1057.75	19.26	813.83
17.22	1.00	611.50	612.80	597.20	8750.00	618.34	.06	.00	.00	840.29	21.14	870.68
17.23	18.00	611.50	612.80	597.20	4280.00	613.56	.30	.04	.03	2940.67	16.36	652.47
17.23	18.00	611.50	612.80	597.20	6100.00	615.61	.09	.01	.00	1248.96	18.41	788.12
17.23	18.00	611.50	612.80	597.20	6910.00	616.47	.08	.01	.00	1051.49	19.27	813.98
17.23	18.00	611.50	612.80	597.20	8750.00	618.34	.06	.00	.00	837.48	21.14	870.74
17.23	1.00	0.00	0.00	597.20	4280.00	613.75	.18	.00	.07	2303.13	16.55	671.36
17.23	1.00	0.00	0.00	597.20	6100.00	615.62	.09	.00	.00	1322.61	18.42	788.13
17.23	1.00	0.00	0.00	597.20	6910.00	616.47	.07	.00	.00	1113.05	19.27	813.98
17.23	1.00	0.00	0.00	597.20	8750.00	618.34	.05	.00	.00	877.04	21.14	870.75
17.24	50.00	0.00	0.00	597.20	4280.00	613.84	.29	.11	.09	3166.54	16.64	678.44
17.24	50.00	0.00	0.00	597.20	6100.00	615.65	.12	.04	.02	2595.30	18.45	789.00
17.24	50.00	0.00	0.00	597.20	6910.00	616.49	.08	.02	.01	2358.88	19.29	814.40
17.24	50.00	0.00	0.00	597.20	8750.00	618.35	.05	.01	.00	2028.65	21.15	870.93
17.51	1470.00	0.00	0.00	598.50	4280.00	615.00	.02	.72	.16	1564.68	16.50	1480.55
17.51	1470.00	0.00	0.00	598.50	6100.00	616.34	.02	.53	.06	1851.61	17.84	1507.59
17.51	1470.00	0.00	0.00	598.50	6910.00	617.03	.02	.44	.04	1932.01	18.53	1521.80
17.51	1470.00	0.00	0.00	598.50	8750.00	618.70	.02	.29	.02	2078.27	20.20	1555.75
17.66	750.00	0.00	0.00	599.10	4280.00	615.19	.02	.19	.00	1474.14	16.09	1293.38
17.66	750.00	0.00	0.00	599.10	6100.00	616.54	.02	.20	.00	1782.11	17.44	1315.92
17.66	750.00	0.00	0.00	599.10	6910.00	617.22	.02	.19	.00	1882.68	18.12	1327.43
17.66	750.00	0.00	0.00	599.10	8750.00	618.86	.02	.16	.00	2075.66	19.76	1354.99
18.55	4720.00	0.00	0.00	601.00	4280.00	616.29	.04	1.10	.01	1850.96	15.29	1018.60
18.55	4720.00	0.00	0.00	601.00	6100.00	617.63	.04	1.10	.01	2185.94	16.63	1058.80
18.55	4720.00	0.00	0.00	601.00	6910.00	618.25	.04	1.04	.01	2297.90	17.25	1077.57
18.55	4720.00	0.00	0.00	601.00	8750.00	619.73	.03	.87	.01	2501.13	18.73	1121.94

SECTION NUMBER	DISCHARGE -CFS-	CWSEL	CWSEL DIFF EACH Q	CWSEL DIFF EACH SECTION	CWSEL-WSELK	TOPWID	T.W. DIFF	LENGTH
.001	4590.000	577.570	0.000	0.000	0.000	104.056	0.000	0.000
.001	6540.000	577.570	0.000	0.000	0.000	104.056	0.000	0.000
.001	7410.000	577.570	0.000	0.000	0.000	104.056	0.000	0.000
.001	9380.000	577.570	0.000	0.000	0.000	104.056	0.000	0.000
.027	4590.000	577.593	0.000	.023	0.000	103.715	0.000	120.000
.027	6540.000	577.618	.025	.048	0.000	103.872	-.157	120.000
.027	7410.000	577.633	.014	.063	0.000	103.960	-.245	120.000
.027	9380.000	577.677	.044	.107	0.000	104.199	-.484	120.000
.074	4590.000	577.650	0.000	.057	0.000	104.060	0.000	270.000
.074	6540.000	577.738	.088	.119	0.000	104.571	-.511	270.000
.074	7410.000	577.790	.052	.157	0.000	104.895	-.835	270.000
.074	9380.000	577.949	.159	.273	0.000	105.213	-1.154	270.000
.358	4590.000	577.961	0.000	.311	0.000	105.225	0.000	1500.000
.358	6540.000	578.364	.403	.626	0.000	105.795	-.570	1500.000
.358	7410.000	578.588	.224	.798	0.000	106.114	-.889	1500.000
.358	9380.000	579.190	.602	1.241	0.000	106.975	-1.750	1500.000

.445	4590.000	578.055	0.000	.094	0.000	103.000	0.000	460.000
.445	6540.000	578.536	.482	.173	0.000	103.000	0.000	460.000
.445	7410.000	578.798	.262	.210	0.000	103.000	0.000	460.000
.445	9380.000	579.481	.683	.291	0.000	103.000	0.000	460.000
.454	4590.000	578.080	0.000	.025	0.000	103.000	0.000	50.000
.454	6540.000	578.584	.504	.047	0.000	103.000	0.000	50.000
.454	7410.000	578.855	.272	.057	0.000	103.000	0.000	50.000
.454	9380.000	579.563	.708	.083	0.000	103.000	0.000	50.000
.458	4590.000	578.090	0.000	.011	0.000	103.000	0.000	20.000
.458	6540.000	578.602	.512	.018	0.000	103.000	0.000	20.000
.458	7410.000	578.878	.276	.023	0.000	103.000	0.000	20.000
.458	9380.000	579.595	.717	.032	0.000	103.000	0.000	20.000
.464	4590.000	578.010	0.000	-.080	0.000	90.000	0.000	30.000
.464	6540.000	578.452	.442	-.150	0.000	90.000	0.000	30.000
.464	7410.000	578.694	.242	-.184	0.000	90.000	0.000	30.000
.464	9380.000	579.333	.639	-.262	0.000	90.000	0.000	30.000
.472	4590.000	578.039	0.000	.029	0.000	90.000	0.000	49.000
.472	6540.000	578.509	.470	.057	0.000	90.000	0.000	49.000
.472	7410.000	578.768	.258	.073	0.000	90.000	0.000	49.000
.472	9380.000	579.442	.675	.109	0.000	90.000	0.000	49.000
.473	4590.000	578.040	0.000	.000	-0.000	90.000	0.000	-1.000
.473	6540.000	578.510	.470	.001	0.000	90.000	0.000	1.000
.473	7410.000	578.769	.259	.001	0.000	90.000	0.000	1.000
.473	9380.000	579.444	.675	.002	0.000	90.000	-0.000	-1.000
.481	4590.000	578.098	0.000	.058	0.000	90.000	0.000	40.000
.481	6540.000	578.623	.525	.113	0.000	90.000	0.000	40.000
.481	7410.000	578.907	.284	.138	0.000	90.000	0.000	40.000
.481	9380.000	579.645	.739	.202	0.000	90.000	0.000	40.000
.482	4590.000	578.099	0.000	.000	0.000	90.000	0.000	1.000
.482	6540.000	578.624	.525	.001	0.000	90.000	0.000	1.000
.482	7410.000	578.908	.284	.001	0.000	90.000	0.000	1.000
.482	9380.000	579.647	.739	.002	0.000	90.000	0.000	1.000
.490	4590.000	578.261	0.000	.162	0.000	103.000	-0.000	50.000
.490	6540.000	578.935	.674	.311	0.000	103.000	0.000	50.000
.490	7410.000	579.294	.359	.387	0.000	103.000	0.000	50.000
.490	9380.000	580.224	.930	.577	0.000	131.000	-28.000	50.000
.492	4590.000	578.348	0.000	.087	0.000	116.000	0.000	10.000
.492	6540.000	579.096	.748	.161	0.000	116.000	0.000	10.000
.492	7410.000	579.491	.395	.197	0.000	116.000	0.000	10.000
.492	9380.000	580.506	1.015	.282	0.000	131.000	-15.000	10.000
.502	4590.000	578.410	0.000	.062	0.000	131.000	0.000	50.000
.502	6540.000	579.209	.799	.112	0.000	131.000	0.000	50.000
.502	7410.000	579.627	.419	.136	0.000	131.000	0.000	50.000
.502	9380.000	580.689	1.062	.183	0.000	131.000	0.000	50.000
.632	4590.000	578.532	0.000	.123	0.000	131.000	0.000	690.000
.632	6540.000	579.410	.878	.201	0.000	131.000	0.000	690.000
.632	7410.000	579.860	.450	.232	0.000	131.000	0.000	690.000
.632	9380.000	580.977	1.118	.288	0.000	131.000	0.000	690.000
.979	4590.000	578.864	0.000	.331	0.000	154.001	0.000	1830.000
.979	6540.000	579.923	1.060	.514	0.000	167.282	-13.281	1830.000
.979	7410.000	580.444	.521	.584	0.000	173.813	-19.812	1830.000
.979	9380.000	581.691	1.247	.713	0.000	189.379	-35.378	1830.000

.989	4590.000	578.869	0.000	.006	0.000	139.999	0.000	50.000
.989	6540.000	579.928	1.059	.005	0.000	139.999	-.000	50.000
.989	7410.000	580.448	.519	.004	0.000	139.999	-.000	50.000
.989	9380.000	581.688	1.240	-.003	0.000	139.999	-.000	50.000
.998	4590.000	578.844	0.000	-.025	0.000	109.411	0.000	50.000
.998	6540.000	579.882	1.037	-.047	0.000	109.411	-.000	50.000
.998	7410.000	580.390	.508	-.058	0.000	109.411	-.000	50.000
.998	9380.000	581.605	1.215	-.083	0.000	109.411	-.000	50.000
1.007	4590.000	578.768	0.000	-.076	0.000	84.808	0.000	49.000
1.007	6540.000	579.749	.980	-.133	0.000	84.808	0.000	49.000
1.007	7410.000	580.231	.482	-.159	0.000	84.808	0.000	49.000
1.007	9380.000	581.389	1.158	-.216	0.000	84.808	0.000	49.000
1.008	4590.000	578.746	0.000	-.022	0.000	81.039	0.000	1.000
1.008	6540.000	579.710	.964	-.038	0.000	81.039	0.000	1.000
1.008	7410.000	580.185	.475	-.045	0.000	81.039	0.000	1.000
1.008	9380.000	581.328	1.142	-.061	0.000	81.039	0.000	1.000
1.016	4590.000	578.770	0.000	.024	0.000	81.039	0.000	43.000
1.016	6540.000	579.749	.979	.038	0.000	81.039	0.000	43.000
1.016	7410.000	580.230	.481	.044	0.000	81.039	0.000	43.000
1.016	9380.000	581.383	1.154	.056	0.000	81.039	0.000	43.000
1.017	4590.000	578.830	0.000	.061	0.000	84.808	0.000	1.000
1.017	6540.000	579.859	1.029	-.111	0.000	84.808	0.000	1.000
1.017	7410.000	580.364	.505	.134	0.000	84.808	0.000	1.000
1.017	9380.000	581.572	1.208	.189	0.000	84.808	0.000	1.000
1.025	4590.000	578.859	0.000	.029	0.000	84.808	0.000	50.000
1.025	6540.000	579.905	1.046	.046	0.000	84.808	0.000	50.000
1.025	7410.000	580.417	.511	.053	0.000	84.808	0.000	50.000
1.025	9380.000	581.637	1.220	.065	0.000	84.808	0.000	50.000
1.167	4590.000	579.302	0.000	.443	0.000	90.000	0.000	750.000
1.167	6540.000	580.601	1.299	.695	0.000	90.000	-.000	750.000
1.167	7410.000	581.211	.611	.795	0.000	90.000	-.000	750.000
1.167	9380.000	583.438	2.227	1.801	0.000	-404.112	-314.112	750.000
1.360	4590.000	579.780	0.000	.478	0.000	145.412	0.000	1020.000
1.360	6540.000	581.330	1.550	.729	0.000	156.087	-10.674	1020.000
1.360	7410.000	582.042	.713	.831	0.000	160.978	-15.566	1020.000
1.360	9380.000	584.349	2.306	.911	0.000	1927.269	-1781.857	1020.000
1.512	4590.000	580.013	0.000	.234	0.000	147.053	0.000	800.000
1.512	6540.000	581.607	1.593	.277	0.000	157.988	-10.935	800.000
1.512	7410.000	582.326	.720	.284	0.000	162.926	-15.873	800.000
1.512	9380.000	584.553	2.227	.205	0.000	2273.675	-2126.622	800.000
1.743	4590.000	580.346	0.000	.333	0.000	131.977	0.000	1220.000
1.743	6540.000	581.984	1.638	.378	0.000	193.971	-61.994	1220.000
1.743	7410.000	582.709	.724	.382	0.000	274.699	-142.722	1220.000
1.743	9380.000	584.837	2.129	.284	0.000	2013.113	-1881.136	1220.000
1.876	4590.000	580.556	0.000	.210	0.000	135.903	0.000	700.000
1.876	6540.000	582.230	1.674	.246	0.000	252.536	-116.633	700.000
1.876	7410.000	582.965	.735	.256	0.000	313.000	-177.097	700.000
1.876	9380.000	585.013	2.048	.176	0.000	2038.747	-1902.844	700.000
2.084	4500.000	580.885	0.000	.329	0.000	161.030	0.000	1100.000
2.084	6410.000	582.612	1.727	.382	0.000	300.481	-139.451	1100.000
2.084	7260.000	583.354	.742	.389	0.000	323.000	-161.970	1100.000
2.084	9190.000	585.282	1.928	.269	0.000	2104.216	-1943.186	1100.000
2.463	4500.000	581.372	0.000	.488	0.000	154.745	0.000	2000.000

2.463	6410.000	583.151	1.779	.539	0.000	201.565	-46.820	2000.000
2.463	7260.000	583.894	.742	.540	0.000	229.999	-75.255	2000.000
2.463	9190.000	585.686	1.792	.404	0.000	2011.448	-1856.703	2000.000
2.766	4500.000	581.786	0.000	.414	0.000	204.694	0.000	1600.000
2.766	6410.000	583.647	1.861	.496	0.000	247.539	-42.845	1600.000
2.766	7260.000	584.411	.764	.518	0.000	281.999	-77.305	1600.000
2.766	9190.000	586.191	1.780	.505	0.000	2512.552	-2307.858	1600.000
3.180	4500.000	582.214	0.000	.427	0.000	597.660	0.000	2190.000
3.180	6410.000	584.122	1.908	.475	0.000	840.000	-242.340	2190.000
3.180	7260.000	584.909	.787	.498	0.000	840.000	-242.340	2190.000
3.180	9190.000	586.648	1.739	.457	0.000	1610.001	-1012.341	2190.000
3.313	4500.000	582.403	0.000	.189	0.000	378.324	0.000	700.000
3.313	6410.000	584.243	1.841	.121	0.000	588.179	-209.855	700.000
3.313	7260.000	585.006	.763	.097	0.000	613.000	-234.675	700.000
3.313	9190.000	586.706	1.699	.058	0.000	1754.912	-1376.587	700.000
3.484	4500.000	582.641	0.000	.239	0.000	317.777	0.000	900.000
3.484	6410.000	584.456	1.815	.213	0.000	598.830	-281.053	900.000
3.484	7260.000	585.201	.745	.194	0.000	650.050	-332.273	900.000
3.484	9190.000	586.861	1.660	.155	0.000	2462.959	-2145.182	900.000
3.635	4500.000	583.058	0.000	.417	0.000	238.794	0.000	800.000
3.635	6410.000	584.806	1.748	.350	0.000	246.708	-7.915	800.000
3.635	7260.000	585.484	.678	.283	0.000	250.000	-11.206	800.000
3.635	9190.000	587.030	1.546	.169	0.000	1891.166	-1652.372	800.000
3.711	4500.000	583.150	0.000	.092	0.000	177.158	0.000	400.000
3.711	6410.000	584.902	1.752	.096	0.000	184.337	-7.179	400.000
3.711	7260.000	585.579	.678	.096	0.000	186.642	-9.484	400.000
3.711	9190.000	587.124	1.544	.094	0.000	1736.388	-1559.230	400.000
3.720	4500.000	583.352	0.000	.203	0.000	177.293	0.000	50.000
3.720	6410.000	585.161	1.809	.260	0.000	186.163	-8.870	50.000
3.720	7260.000	585.859	.698	.280	0.000	186.357	-9.065	50.000
3.720	9190.000	587.403	1.544	.279	0.000	1530.564	-1353.272	50.000
3.729	4500.000	583.357	0.000	.005	0.000	177.438	0.000	48.000
3.729	6410.000	585.169	1.812	.008	0.000	186.165	-8.727	48.000
3.729	7260.000	585.868	.699	.009	0.000	186.360	-8.921	48.000
3.729	9190.000	587.628	1.760	.225	0.000	1623.603	-1446.165	48.000
3.739	4500.000	583.368	0.000	.011	0.000	177.715	0.000	50.000
3.739	6410.000	585.186	1.818	.017	0.000	230.451	-52.736	50.000
3.739	7260.000	585.891	.705	.023	0.000	230.621	-52.906	50.000
3.739	9190.000	587.681	1.790	.053	0.000	2006.635	-1828.920	50.000
3.977	4500.000	583.692	0.000	.324	0.000	769.331	0.000	1260.000
3.977	6410.000	585.508	1.817	.322	0.000	950.679	-181.348	1260.000
3.977	7260.000	586.257	.749	.367	0.000	1064.527	-295.196	1260.000
3.977	9190.000	588.043	1.785	.362	0.000	1889.998	-1120.667	1260.000
4.239	4500.000	584.267	0.000	.576	0.000	542.551	0.000	1380.000
4.239	6410.000	585.980	1.713	.472	0.000	699.104	-156.553	1380.000
4.239	7260.000	586.674	.694	.416	0.000	700.000	-157.449	1380.000
4.239	9190.000	588.546	1.872	.503	0.000	3123.750	-2581.199	1380.000
4.464	4500.000	584.905	0.000	.638	0.000	396.207	0.000	1190.000
4.464	6410.000	586.605	1.700	.625	0.000	435.663	-39.456	1190.000
4.464	7260.000	587.265	.660	.591	0.000	450.341	-54.134	1190.000
4.464	9190.000	589.061	1.796	.515	0.000	2965.740	-2569.533	1190.000
4.616	4450.000	585.194	0.000	.289	0.000	102.323	0.000	800.000
4.616	6340.000	586.940	1.746	.335	0.000	116.000	-13.677	800.000

4.616	7180.000	587.615	.675	.350	0.000	116.001	-13.678	800.000
4.616	9090.000	589.387	1.772	.326	0.000	2601.398	-2499.075	800.000
4.625	4450.000	585.208	0.000	.014	0.000	91.000	0.000	50.000
4.625	6340.000	586.956	1.748	.016	0.000	91.000	0.000	50.000
4.625	7180.000	587.631	.675	.016	0.000	91.000	0.000	50.000
4.625	9090.000	589.384	1.752	-.003	0.000	1679.518	-1588.518	50.000
4.629	4450.000	585.218	0.000	.010	0.000	91.000	0.000	19.000
4.629	6340.000	587.303	2.086	.348	0.000	91.000	0.000	19.000
4.629	7180.000	588.129	.826	.498	0.000	91.000	0.000	19.000
4.629	9090.000	590.389	2.260	1.006	0.000	3000.000	-2909.000	19.000
4.638	4450.000	585.282	0.000	.064	0.000	140.779	0.000	50.000
4.638	6340.000	587.449	2.167	.145	0.000	191.000	-50.221	50.000
4.638	7180.000	588.325	.876	.195	0.000	191.001	-50.221	50.000
4.638	9090.000	590.536	2.211	.146	0.000	2764.806	-2624.027	50.000
5.161	4450.000	585.790	0.000	.508	0.000	2925.650	0.000	2760.000
5.161	6340.000	588.021	2.231	.572	0.000	2934.052	-8.402	2760.000
5.161	7180.000	588.924	.903	.599	0.000	2937.451	-11.801	2760.000
5.161	9090.000	590.933	2.009	.397	0.000	4100.000	-1174.351	2760.000
5.392	4450.000	585.799	0.000	.009	0.000	2308.099	0.000	1220.000
5.392	6340.000	588.025	2.227	.004	0.000	2806.201	-498.102	1220.000
5.392	7180.000	588.927	.902	.003	0.000	2865.796	-557.697	1220.000
5.392	9090.000	590.935	2.008	.002	0.000	4600.000	-2291.901	1220.000
5.801	4450.000	585.878	0.000	.079	0.000	1456.666	0.000	2160.000
5.801	6340.000	588.071	2.193	.046	0.000	1811.223	-354.557	2160.000
5.801	7180.000	588.965	.894	.038	0.000	2008.772	-552.106	2160.000
5.801	9090.000	590.959	1.994	.024	0.000	4100.000	-2643.335	2160.000
6.286	4450.000	586.244	0.000	.366	0.000	2012.853	0.000	2560.000
6.286	6340.000	588.224	1.980	.153	0.000	2230.000	-217.146	2560.000
6.286	7180.000	589.080	.855	.115	0.000	2230.000	-217.147	2560.000
6.286	9090.000	591.020	1.941	.061	0.000	5150.000	-3137.147	2560.000
6.570	4450.000	586.541	0.000	.297	0.000	355.815	-0.000	1500.000
6.570	6340.000	588.396	1.855	.172	0.000	1607.723	-1251.908	1500.000
6.570	7180.000	589.219	.823	.140	0.000	2000.000	-1644.186	1500.000
6.570	9090.000	591.105	1.886	.084	0.000	5100.000	-4744.185	1500.000
6.775	4450.000	587.283	0.000	.742	0.000	1161.539	0.000	1080.000
6.775	6340.000	589.061	1.778	.665	0.000	1573.177	-411.639	1080.000
6.775	7180.000	589.737	.676	.518	0.000	1592.488	-430.949	1080.000
6.775	9090.000	591.340	1.603	.235	0.000	2400.000	-1238.461	1080.000
7.070	4450.000	587.949	0.000	.666	0.000	162.388	0.000	1560.000
7.070	6340.000	589.661	1.712	.600	0.000	171.664	-9.276	1560.000
7.070	7180.000	590.303	.641	.566	0.000	175.139	-12.751	1560.000
7.070	9090.000	591.780	1.477	.440	0.000	2643.649	-2481.261	1560.000
7.080	4450.000	588.122	0.000	.174	0.000	155.000	0.000	50.000
7.080	6340.000	589.901	1.778	.240	0.000	155.000	0.000	50.000
7.080	7180.000	590.571	.670	.268	0.000	155.000	0.000	50.000
7.080	9090.000	591.986	1.415	.206	0.000	592.688	-437.688	50.000
7.086	4450.000	588.136	0.000	.013	0.000	155.000	0.000	30.000
7.086	6340.000	590.032	1.896	.131	0.000	155.000	0.000	30.000
7.086	7180.000	590.771	.739	.201	0.000	155.000	0.000	30.000
7.086	9090.000	592.403	1.631	.417	0.000	1853.608	-1698.608	30.000
7.095	4450.000	588.173	0.000	.037	0.000	222.964	0.000	50.000
7.095	6340.000	590.100	1.927	.068	0.000	235.705	-12.741	50.000
7.095	7180.000	590.856	.756	.085	0.000	240.000	-17.036	50.000

7.095	9090.000	592.513	1.657	.111	0.000	2040.000	-1817.036	50.000
7.152	4400.000	588.447	0.000	.274	0.000	900.000	0.000	300.000
7.152	6270.000	590.432	1.985	.332	0.000	900.000	-.001	300.000
7.152	7090.000	591.212	.779	.356	0.000	900.001	-.001	300.000
7.152	8980.000	592.903	1.692	.390	0.000	1700.000	-800.000	300.000
7.398	4400.000	589.074	0.000	.627	0.000	724.764	0.000	1300.000
7.398	6270.000	590.833	1.759	.401	0.000	1550.000	-825.236	1300.000
7.398	7090.000	591.548	.715	.336	0.000	1550.000	-825.237	1300.000
7.398	8980.000	593.138	1.590	.234	0.000	2500.000	-1775.236	1300.000
7.557	4400.000	590.261	0.000	1.187	0.000	1424.999	0.000	840.000
7.557	6270.000	591.632	1.371	.799	0.000	1425.000	-.001	840.000
7.557	7090.000	592.166	.534	.618	0.000	1425.000	-.001	840.000
7.557	8980.000	593.514	1.348	.377	0.000	1750.000	-325.001	840.000
7.807	4400.000	591.262	0.000	1.000	0.000	720.892	0.000	1320.000
7.807	6270.000	592.544	1.283	.912	0.000	938.902	-218.009	1320.000
7.807	7090.000	593.037	.493	.871	0.000	1010.799	-289.907	1320.000
7.807	8980.000	594.226	1.189	.712	0.000	1561.759	-840.867	1320.000
7.977	4400.000	591.903	0.000	.641	0.000	737.085	0.000	900.000
7.977	6270.000	593.268	1.365	.724	0.000	750.000	-12.915	900.000
7.977	7090.000	593.781	.513	.744	0.000	750.000	-12.915	900.000
7.977	8980.000	594.946	1.165	.720	0.000	1913.419	-1176.333	900.000
8.152	4400.000	592.383	0.000	.480	0.000	450.000	0.000	920.000
8.152	6270.000	593.806	1.423	.538	0.000	450.000	-.001	920.000
8.152	7090.000	594.341	.535	.560	0.000	450.001	-.001	920.000
8.152	8980.000	595.530	1.189	.584	0.000	450.001	-.001	920.000
8.297	4400.000	592.855	0.000	.472	0.000	490.945	0.000	770.000
8.297	6270.000	594.303	1.448	.497	0.000	595.000	-104.054	770.000
8.297	7090.000	594.850	.546	.509	0.000	595.000	-104.055	770.000
8.297	8980.000	596.061	1.212	.531	0.000	1015.685	-524.740	770.000
8.831	4400.000	594.193	0.000	1.338	0.000	1388.136	0.000	2820.000
8.831	6270.000	595.504	1.311	1.200	0.000	1571.676	-183.540	2820.000
8.831	7090.000	595.998	.494	1.148	0.000	1604.257	-216.121	2820.000
8.831	8980.000	597.080	1.082	1.018	0.000	1639.914	-251.778	2820.000
9.229	4400.000	594.798	0.000	.606	0.000	648.346	0.000	2100.000
9.229	6270.000	596.062	1.263	.558	0.000	664.713	-16.367	2100.000
9.229	7090.000	596.538	.477	.541	0.000	670.890	-22.544	2100.000
9.229	8980.000	597.575	1.037	.495	0.000	684.322	-35.975	2100.000
9.377	4400.000	595.007	0.000	.209	0.000	1499.999	0.000	780.000
9.377	6270.000	596.294	1.287	.232	0.000	1499.999	-.000	780.000
9.377	7090.000	596.780	.487	.242	0.000	1499.999	-.000	780.000
9.377	8980.000	597.834	1.053	.259	0.000	1499.999	-.000	780.000
9.634	4400.000	595.190	0.000	.183	0.000	968.234	0.000	1360.000
9.634	6270.000	596.481	1.291	.187	0.000	990.173	-21.939	1360.000
9.634	7090.000	596.969	.488	.188	0.000	998.470	-30.236	1360.000
9.634	8980.000	598.020	1.052	.187	0.000	1016.347	-48.113	1360.000
9.794	4400.000	595.651	0.000	.461	0.000	710.231	0.000	840.000
9.794	6270.000	596.905	1.254	.424	0.000	760.033	-49.803	840.000
9.794	7090.000	597.376	.472	.408	0.000	778.768	-68.537	840.000
9.794	8980.000	598.390	1.014	.370	0.000	819.039	-108.809	840.000
10.123	4400.000	596.729	0.000	1.078	0.000	1176.154	0.000	1740.000
10.123	6270.000	597.907	1.179	1.003	0.000	1275.195	-99.041	1740.000
10.123	7090.000	598.349	.442	.972	0.000	1312.288	-136.134	1740.000
10.123	8980.000	599.289	.940	.899	0.000	1391.283	-215.129	1740.000

10.456	4400.000	597.295	0.000	.566	0.000	1056.910	0.000	1760.000
10.456	6270.000	598.398	1.104	.491	0.000	1103.139	-46.229	1760.000
10.456	7090.000	598.821	.423	.472	0.000	1120.844	-63.934	1760.000
10.456	8980.000	599.724	.903	.435	0.000	1311.838	-254.928	1760.000
10.760	4370.000	597.575	0.000	.281	0.000	689.933	0.000	1600.000
10.760	6220.000	598.718	1.143	.320	0.000	696.028	-6.095	1600.000
10.760	7040.000	599.158	.440	.337	0.000	696.999	-7.066	1600.000
10.760	8920.000	600.091	.933	.367	0.000	696.999	-7.066	1600.000
10.770	4370.000	597.557	0.000	-.018	0.000	636.999	0.000	59.000
10.770	6220.000	598.684	1.128	-.033	0.000	636.999	-.000	59.000
10.770	7040.000	599.117	.433	-.041	0.000	636.999	-.000	59.000
10.770	8920.000	600.031	.913	-.060	0.000	636.999	-.000	59.000
10.771	4370.000	597.545	0.000	-.012	0.000	104.000	0.000	1.000
10.771	6220.000	598.661	1.117	-.023	0.000	180.600	-76.600	1.000
10.771	7040.000	599.091	.430	-.026	0.000	239.234	-135.234	1.000
10.771	8920.000	600.008	.917	-.022	0.000	343.696	-239.696	1.000
10.776	4370.000	597.559	0.000	.014	0.000	104.000	0.000	28.000
10.776	6220.000	598.684	1.125	.023	0.000	183.043	-79.043	28.000
10.776	7040.000	599.118	.434	.027	0.000	242.032	-138.032	28.000
10.776	8920.000	600.047	.929	.039	0.000	347.417	-243.417	28.000
10.777	4370.000	597.665	0.000	.106	0.000	636.999	0.000	1.000
10.777	6220.000	598.889	1.224	.204	0.000	636.999	-.000	1.000
10.777	7040.000	599.351	.463	.233	0.000	636.999	-.000	1.000
10.777	8920.000	600.249	.898	.202	0.000	636.999	-.000	1.000
10.786	4370.000	597.686	0.000	.021	0.000	718.028	0.000	50.000
10.786	6220.000	598.921	1.235	.032	0.000	728.147	-10.119	50.000
10.786	7040.000	599.389	.468	.038	0.000	731.977	-13.949	50.000
10.786	8920.000	600.301	.912	.051	0.000	736.999	-18.971	50.000
10.968	4370.000	598.510	0.000	.824	0.000	958.073	0.000	960.000
10.968	6220.000	599.977	1.468	1.056	0.000	969.814	-11.742	960.000
10.968	7040.000	600.550	.572	1.161	0.000	976.589	-18.516	960.000
10.968	8920.000	601.713	1.164	1.413	0.000	990.552	-32.480	960.000
11.307	4370.000	599.310	0.000	.800	0.000	956.901	0.000	1790.000
11.307	6220.000	600.713	1.403	.735	0.000	987.930	-31.029	1790.000
11.307	7040.000	601.268	.555	.718	0.000	1000.189	-43.287	1790.000
11.307	8920.000	602.412	1.144	.699	0.000	1025.452	-68.550	1790.000
11.547	4370.000	599.928	0.000	.618	0.000	829.712	0.000	1270.000
11.547	6220.000	601.244	1.316	.531	0.000	847.462	-17.750	1270.000
11.547	7040.000	601.773	.529	.505	0.000	850.591	-20.879	1270.000
11.547	8920.000	602.875	1.102	.463	0.000	857.286	-27.574	1270.000
11.776	4370.000	600.443	0.000	.516	0.000	959.999	0.000	1210.000
11.776	6220.000	601.720	1.276	.476	0.000	959.999	-.000	1210.000
11.776	7040.000	602.237	.517	.464	0.000	959.999	-.000	1210.000
11.776	8920.000	603.316	1.080	.441	0.000	959.999	-.000	1210.000
12.060	4370.000	600.944	0.000	.501	0.000	819.037	0.000	1500.000
12.060	6220.000	602.226	1.282	.506	0.000	835.473	-16.436	1500.000
12.060	7040.000	602.742	.516	.505	0.000	842.084	-23.047	1500.000
12.060	8920.000	603.820	1.078	.504	0.000	855.910	-36.873	1500.000
12.326	4370.000	601.683	0.000	.739	0.000	913.997	0.000	1400.000
12.326	6220.000	602.904	1.221	.678	0.000	964.050	-50.054	1400.000
12.326	7040.000	603.394	.491	.653	0.000	984.166	-70.169	1400.000
12.326	8920.000	604.428	1.034	.608	0.000	1026.563	-112.566	1400.000

12.481	4370.000	602.271	0.000	.588	0.000	1062.988	0.000	820.000
12.481	6220.000	603.461	1.189	.557	0.000	1082.307	-19.319	820.000
12.481	7040.000	603.934	.474	.540	0.000	1090.001	-27.013	820.000
12.481	8920.000	604.934	1.000	.506	0.000	1106.247	-43.259	820.000
12.680	4370.000	602.613	0.000	.342	0.000	611.888	0.000	1050.000
12.680	6220.000	603.815	1.201	.354	0.000	686.493	-74.605	1050.000
12.680	7040.000	604.291	.476	.356	0.000	716.006	-104.118	1050.000
12.680	8920.000	605.292	1.001	.357	0.000	760.583	-148.695	1050.000
12.879	4370.000	603.122	0.000	.509	0.000	468.667	0.000	1050.000
12.879	6220.000	604.402	-1.280	.587	0.000	503.705	-35.037	1050.000
12.879	7040.000	604.903	.501	.612	0.000	517.425	-48.757	1050.000
12.879	8920.000	605.944	1.042	.653	0.000	547.173	-78.506	1050.000
13.043	4370.000	603.812	0.000	.690	0.000	619.062	0.000	870.000
13.043	6220.000	605.218	1.406	.816	0.000	626.090	-7.028	870.000
13.043	7040.000	605.764	.546	.861	0.000	628.822	-9.760	870.000
13.043	8920.000	606.892	1.128	.948	0.000	997.188	-378.127	870.000
13.189	4370.000	604.308	0.000	.496	0.000	800.000	0.000	770.000
13.189	6220.000	605.761	1.454	.544	0.000	800.000	-.000	770.000
13.189	7040.000	606.326	.564	.562	0.000	800.001	-.001	770.000
13.189	8920.000	607.492	1.166	.600	0.000	1603.311	-803.311	770.000
13.420	4370.000	604.802	0.000	.494	0.000	716.411	0.000	1220.000
13.420	6220.000	606.288	1.487	.527	0.000	726.958	-10.547	1220.000
13.420	7040.000	606.866	.578	.540	0.000	731.058	-14.647	1220.000
13.420	8920.000	608.060	1.194	.568	0.000	739.528	-23.117	1220.000
13.538	4370.000	604.948	0.000	.146	0.000	1001.418	0.000	620.000
13.538	6220.000	606.451	1.503	.163	0.000	1005.966	-4.548	620.000
13.538	7040.000	607.036	.585	.170	0.000	1007.735	-6.317	620.000
13.538	8920.000	608.244	1.208	.184	0.000	1011.392	-9.974	620.000
13.546	4370.000	604.984	0.000	.036	0.000	1038.025	0.000	49.000
13.546	6220.000	606.488	1.504	.036	0.000	1053.576	-15.551	49.000
13.546	7040.000	607.073	.585	.037	0.000	1055.347	-17.322	49.000
13.546	8920.000	608.283	1.210	.038	0.000	1059.008	-20.983	49.000
13.547	4370.000	604.984	0.000	.000	0.000	1038.032	0.000	1.000
13.547	6220.000	606.488	1.504	-.000	0.000	1053.577	-15.545	1.000
13.547	7040.000	607.073	.585	-.000	0.000	1055.347	-17.315	1.000
13.547	8920.000	608.283	1.210	-.000	0.000	1059.008	-20.976	1.000
13.551	4370.000	604.985	0.000	.001	0.000	1038.065	0.000	18.000
13.551	6220.000	606.488	1.504	.001	0.000	1053.579	-15.514	18.000
13.551	7040.000	607.073	.585	.001	0.000	1055.349	-17.284	18.000
13.551	8920.000	608.283	1.210	.000	0.000	1059.010	-20.945	18.000
13.552	4370.000	604.985	0.000	.000	0.000	1038.067	0.000	1.000
13.552	6220.000	606.489	1.504	.001	0.000	1053.579	-15.512	1.000
13.552	7040.000	607.074	.585	.001	0.000	1055.349	-17.282	1.000
13.552	8920.000	608.284	1.210	.001	0.000	1059.010	-20.943	1.000
13.560	4370.000	604.990	0.000	.005	0.000	1102.755	0.000	49.000
13.560	6220.000	606.495	1.506	.006	0.000	1118.183	-15.429	49.000
13.560	7040.000	607.081	.585	.007	0.000	1119.953	-17.199	49.000
13.560	8920.000	608.291	1.211	.008	0.000	1123.614	-20.859	49.000
13.738	4370.000	605.120	0.000	.130	0.000	1226.283	0.000	940.000
13.738	6220.000	606.610	1.491	.115	0.000	1251.331	-25.048	940.000
13.738	7040.000	607.192	.582	.111	0.000	1261.111	-34.828	940.000
13.738	8920.000	608.399	1.206	.107	0.000	1281.383	-55.100	940.000
14.083	4370.000	605.337	0.000	.218	0.000	1012.698	.0.000	1820.000

	14.083	6220.000	606.808	1.471	.198	0.000	1054.464	-11.766	1820.000
	14.083	7040.000	607.385	.577	.193	0.000	1059.082	-16.384	1820.000
	14.083	8920.000	608.585	1.200	.187	0.000	1068.682	-25.984	1820.000
	14.348	4370.000	605.823	0.000	.486	0.000	730.435	0.000	1400.000
	14.348	6220.000	607.283	1.460	.475	0.000	743.119	-12.684	1400.000
	14.348	7040.000	607.857	.575	.472	0.000	748.112	-17.677	1400.000
	14.348	8920.000	609.055	1.197	.469	0.000	758.517	-28.082	1400.000
	14.903	4370.000	606.883	0.000	1.061	0.000	658.830	0.000	2930.000
	14.903	6220.000	608.252	1.369	.970	0.000	672.521	-13.691	2930.000
	14.903	7040.000	608.799	.546	.941	0.000	677.984	-19.155	2930.000
	14.903	8920.000	609.949	1.151	.895	0.000	689.492	-30.662	2930.000
	15.081	4370.000	607.151	0.000	.267	0.000	1099.999	0.000	940.000
	15.081	6220.000	608.519	1.368	.266	0.000	1099.999	-.000	940.000
	15.081	7040.000	609.065	.546	.266	0.000	1099.999	-.000	940.000
	15.081	8920.000	610.217	1.152	.267	0.000	1099.999	-.000	940.000
	15.094	4370.000	607.178	0.000	.028	0.000	939.078	0.000	70.000
	15.094	6220.000	608.548	1.369	.029	0.000	942.883	-3.805	70.000
	15.094	7040.000	609.094	.546	.029	0.000	944.402	-5.325	70.000
	15.094	8920.000	610.246	1.152	.029	0.000	947.607	-8.529	70.000
	15.132	4370.000	607.293	0.000	.115	0.000	789.999	0.000	200.000
	15.132	6220.000	608.656	1.362	.108	0.000	789.999	-.000	200.000
	15.132	7040.000	609.199	.544	.105	0.000	789.999	-.000	200.000
	15.132	8920.000	610.346	1.147	.100	0.000	789.999	-.000	200.000
	15.153	4370.000	607.369	0.000	.076	0.000	679.999	0.000	110.000
	15.153	6220.000	608.722	1.353	.067	0.000	679.999	-.000	110.000
	15.153	7040.000	609.262	.540	.063	0.000	679.999	-.000	110.000
	15.153	8920.000	610.407	1.145	.061	0.000	679.999	-.000	110.000
	15.170	4370.000	607.415	0.000	.046	0.000	587.949	0.000	90.000
	15.170	6220.000	608.759	1.343	.036	0.000	589.416	-1.467	90.000
	15.170	7040.000	609.294	.535	.031	0.000	589.999	-2.050	90.000
	15.170	8920.000	610.426	1.132	.019	0.000	589.999	-2.050	90.000
	15.178	4370.000	607.450	0.000	.034	0.000	76.000	0.000	49.000
	15.178	6220.000	608.800	1.350	.041	0.000	410.127	-334.127	49.000
	15.178	7040.000	609.346	.546	.052	0.000	482.623	-406.623	49.000
	15.178	8920.000	610.745	1.399	.319	0.000	603.794	-527.794	49.000
	15.179	4370.000	607.451	0.000	.001	0.000	76.000	-0.000	1.000
	15.179	6220.000	608.801	1.350	.001	0.000	410.299	-334.299	1.000
	15.179	7040.000	609.347	.546	.001	0.000	482.806	-406.806	1.000
	15.179	8920.000	610.816	1.469	.071	0.000	608.536	-532.536	1.000
	15.184	4370.000	607.465	0.000	.014	0.000	76.000	0.000	23.000
	15.184	6220.000	608.825	1.360	.024	0.000	412.829	-336.829	23.000
	15.184	7040.000	609.373	.548	.026	0.000	485.374	-409.374	23.000
	15.184	8920.000	610.868	1.495	.052	0.000	614.681	-538.681	23.000
	15.185	4370.000	607.465	0.000	.001	0.000	76.000	0.000	1.000
	15.185	6220.000	608.826	1.361	.001	0.000	412.938	-336.938	1.000
	15.185	7040.000	609.374	.548	.001	0.000	485.485	-409.485	1.000
	15.185	8920.000	610.861	1.487	-.007	0.000	614.820	-538.820	1.000
	15.193	4370.000	607.707	0.000	.242	0.000	636.396	-0.000	50.000
	15.193	6220.000	609.212	1.505	.386	0.000	637.826	-1.430	50.000
	15.193	7040.000	609.707	.495	.333	0.000	638.296	-1.901	50.000
	15.193	8920.000	610.897	1.189	.035	0.000	639.426	-3.030	50.000
	15.240	4370.000	607.954	0.000	.247	0.000	541.060	0.000	250.000
	15.240	6220.000	609.560	1.606	.348	0.000	562.323	-21.263	250.000

15.240	7040.000	610.107	.547	.399	0.000	568.918	-27.858	250.000
15.240	8920.000	611.397	1.290	.501	0.000	578.257	-37.197	250.000
15.331	4370.000	608.079	0.000	.125	0.000	608.106	0.000	480.000
15.331	6220.000	609.701	1.622	.141	0.000	630.811	-22.705	480.000
15.331	7040.000	610.257	.556	.150	0.000	638.339	-30.233	480.000
15.331	8920.000	611.558	1.302	.161	0.000	655.259	-47.154	480.000
15.364	4370.000	608.156	0.000	.077	0.000	598.109	0.000	170.000
15.364	6220.000	609.786	1.630	.085	0.000	607.187	-9.078	170.000
15.364	7040.000	610.347	.561	.090	0.000	610.312	-12.203	170.000
15.364	8920.000	611.654	1.307	.096	0.000	616.639	-18.530	170.000
15.477	4370.000	608.445	0.000	.289	0.000	485.121	0.000	600.000
15.477	6220.000	610.085	1.640	.299	0.000	512.033	-26.912	600.000
15.477	7040.000	610.657	.573	.310	0.000	525.778	-40.657	600.000
15.477	8920.000	611.973	1.315	.319	0.000	557.347	-72.226	600.000
15.659	4370.000	609.216	0.000	.771	0.000	1179.544	0.000	960.000
15.659	6220.000	610.735	1.519	.651	0.000	1221.294	-41.750	960.000
15.659	7040.000	611.311	.575	.653	0.000	1238.016	-58.472	960.000
15.659	8920.000	612.598	1.288	.625	0.000	1273.490	-93.945	960.000
15.697	4370.000	609.605	0.000	.389	0.000	1407.770	0.000	200.000
15.697	6220.000	610.963	1.357	.227	0.000	1447.913	-40.143	200.000
15.697	7040.000	611.499	.536	.188	0.000	1463.456	-55.687	200.000
15.697	8920.000	612.725	1.227	.127	0.000	1495.919	-88.149	200.000
15.729	4370.000	609.697	0.000	.092	0.000	1832.424	0.000	170.000
15.729	6220.000	611.036	1.339	.074	0.000	1866.095	-33.671	170.000
15.729	7040.000	611.567	.531	.068	0.000	1879.312	-46.888	170.000
15.729	8920.000	612.782	1.215	.057	0.000	1906.007	-73.584	170.000
15.841	4370.000	609.815	0.000	.118	0.000	1635.295	0.000	590.000
15.841	6220.000	611.133	1.319	.097	0.000	1668.468	-33.173	590.000
15.841	7040.000	611.658	.525	.091	0.000	1681.700	-46.405	590.000
15.841	8920.000	612.860	1.202	.078	0.000	1707.310	-72.015	590.000
16.034	4370.000	610.087	0.000	.272	0.000	1070.345	0.000	1020.000
16.034	6220.000	611.382	1.296	.249	0.000	1075.528	-5.183	1020.000
16.034	7040.000	611.899	.517	.241	0.000	1077.597	-7.251	1020.000
16.034	8920.000	613.080	1.180	.220	0.000	1082.318	-11.973	1020.000
16.144	4370.000	610.285	0.000	.198	0.000	550.000	0.000	580.000
16.144	6220.000	611.588	1.304	.206	0.000	550.000	-.000	580.000
16.144	7040.000	612.107	.519	.208	0.000	550.000	-.001	580.000
16.144	8920.000	613.282	1.175	.202	0.000	550.001	-.001	580.000
16.188	4280.000	610.494	0.000	.209	0.000	182.000	0.000	230.000
16.188	6100.000	611.840	1.346	.252	0.000	182.000	-.000	230.000
16.188	6910.000	612.372	.532	.265	0.000	182.000	-.001	230.000
16.188	8750.000	613.559	1.187	.277	0.000	182.001	-.001	230.000
16.197	4280.000	610.596	0.000	.102	0.000	96.000	0.000	50.000
16.197	6100.000	611.954	1.358	.113	0.000	96.000	0.000	50.000
16.197	6910.000	612.483	.529	.111	0.000	96.000	0.000	50.000
16.197	8750.000	613.644	1.161	.085	0.000	96.000	0.000	50.000
16.205	4280.000	610.601	0.000	.005	0.000	96.000	0.000	41.000
16.205	6100.000	612.149	1.548	.195	0.000	96.000	0.000	41.000
16.205	6910.000	612.759	.610	.276	0.000	96.000	0.000	41.000
16.205	8750.000	614.146	1.387	.501	0.000	96.000	0.000	41.000
16.214	4280.000	610.710	0.000	.109	0.000	183.000	0.000	50.000
16.214	6100.000	612.354	1.645	.206	0.000	183.000	-.001	50.000
16.214	6910.000	613.013	.659	.255	0.000	183.001	-.001	50.000

16.214	8750.000	614.525	1.512	.380	0.000	475.035	-292.036	50.000
16.326	4280.000	611.140	0.000	.430	0.000	234.561	0.000	590.000
16.326	6100.000	612.890	1.750	.535	0.000	241.560	-6.999	590.000
16.326	6910.000	613.588	.698	.575	0.000	244.353	-9.792	590.000
16.326	8750.000	615.154	1.566	.628	0.000	562.858	-328.297	590.000
16.396	4280.000	611.473	0.000	.333	0.000	100.410	0.000	370.000
16.396	6100.000	613.307	1.834	.418	0.000	105.965	-5.555	370.000
16.396	6910.000	614.036	.729	.448	0.000	108.172	-7.762	370.000
16.396	8750.000	615.643	1.607	.489	0.000	113.281	-12.871	370.000
16.464	4280.000	611.995	0.000	.521	0.000	101.989	0.000	360.000
16.464	6100.000	614.022	2.027	.715	0.000	108.130	-6.141	360.000
16.464	6910.000	614.830	.808	.794	0.000	110.577	-8.588	360.000
16.464	8750.000	616.589	1.759	.946	0.000	116.817	-14.828	360.000
16.521	4280.000	612.515	0.000	.520	0.000	395.574	0.000	300.000
16.521	6100.000	614.822	2.307	.800	0.000	424.999	-29.425	300.000
16.521	6910.000	615.744	.921	.914	0.000	424.999	-29.425	300.000
16.521	8750.000	617.727	1.983	1.138	0.000	424.999	-29.425	300.000
16.644	4280.000	612.957	0.000	.442	0.000	629.680	0.000	650.000
16.644	6100.000	615.185	2.228	.363	0.000	744.442	-114.763	650.000
16.644	6910.000	616.078	.893	.335	0.000	765.874	-136.194	650.000
16.644	8750.000	618.014	1.936	.287	0.000	812.341	-182.662	650.000
16.833	4280.000	613.186	0.000	.229	0.000	1078.677	0.000	1000.000
16.833	6100.000	615.370	2.184	.185	0.000	1086.827	-8.150	1000.000
16.833	6910.000	616.248	.878	.170	0.000	1090.104	-11.427	1000.000
16.833	8750.000	618.158	1.910	.143	0.000	1097.230	-18.553	1000.000
17.215	4280.000	613.496	0.000	.310	0.000	774.323	0.000	2020.000
17.215	6100.000	615.606	2.110	.236	0.000	818.376	-44.053	2020.000
17.215	6910.000	616.465	.859	.216	0.000	839.544	-65.221	2020.000
17.215	8750.000	618.340	1.876	.183	0.000	885.044	-110.720	2020.000
17.233	4280.000	613.463	0.000	-.033	0.000	641.924	0.000	49.000
17.233	6100.000	615.600	2.137	-.006	0.000	787.855	-145.932	49.000
17.233	6910.000	616.460	.860	-.004	0.000	813.982	-172.058	49.000
17.233	8750.000	618.337	1.877	-.003	0.000	870.677	-228.753	49.000
17.224	4280.000	613.448	0.000	-.015	0.000	641.253	0.000	1.000
17.224	6100.000	615.599	2.151	-.001	0.000	787.864	-146.611	1.000
17.224	6910.000	616.460	.860	-.001	0.000	813.826	-172.573	1.000
17.224	8750.000	618.337	1.878	-.000	0.000	870.679	-229.426	1.000
17.227	4280.000	613.559	0.000	.111	0.000	652.469	0.000	18.000
17.227	6100.000	615.609	2.050	.010	0.000	788.119	-135.650	18.000
17.227	6910.000	616.465	.856	.006	0.000	813.976	-161.507	18.000
17.227	8750.000	618.340	1.874	.002	0.000	870.744	-218.276	18.000
17.228	4280.000	613.753	0.000	.194	0.000	671.362	0.000	1.000
17.228	6100.000	615.620	1.867	.011	0.000	788.134	-116.772	1.000
17.228	6910.000	616.472	.851	.006	0.000	813.984	-142.623	1.000
17.228	8750.000	618.342	1.870	.003	0.000	870.748	-199.386	1.000
17.236	4280.000	613.844	0.000	.090	0.000	678.440	0.000	50.000
17.236	6100.000	615.650	1.806	.030	0.000	789.004	-110.564	50.000
17.236	6910.000	616.492	.842	.020	0.000	814.396	-135.956	50.000
17.236	8750.000	618.353	1.861	.011	0.000	870.927	-192.487	50.000
17.514	4280.000	614.999	0.000	1.156	0.000	1480.551	0.000	1470.000
17.514	6100.000	616.335	1.336	.686	0.000	1507.595	-27.044	1470.000
17.514	6910.000	617.033	.698	.541	0.000	1521.801	-41.250	1470.000
17.514	8750.000	618.704	1.671	.351	0.000	1555.745	-75.194	1470.000

17.656	4280.000	615.195	0.000	.195	0.000	1293.379	0.000	750.000
17.656	6100.000	616.535	1.341	.200	0.000	1315.922	-22.543	750.000
17.656	6910.000	617.220	.685	.187	0.000	1327.432	-34.053	750.000
17.656	8750.000	618.861	1.640	.156	0.000	1354.994	-61.614	750.000
18.549	4280.000	616.287	0.000	1.093	0.000	1018.597	0.000	4720.000
18.549	6100.000	617.627	1.340	1.092	0.000	1058.801	-40.204	4720.000
18.549	6910.000	618.253	.625	1.032	0.000	1077.567	-58.970	-4720.000
18.549	8750.000	619.732	1.479	.871	0.000	1121.943	-103.346	4720.000

DATA FOR LAST CROSS SECTION

PROFILE	TYPE ENC	TARGET	TOP WIDTH AREA-ACRES	TOP WIDTH AREA-DIFF
1	0.000	0.000	1285.563	0.000
2	0.000	0.000	1438.575	153.011
3	0.000	0.000	1477.197	191.633
4	0.000	0.000	2715.927	1430.364

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**** 7000 SCOPE 2.1 LVL  221  04/26/77  00.09.51  05/06/77      77126

SYS DEVICES 819/ 4/PF FLS=200K FLL=764K MXS=160K MXL=457K MXB=457B

HH.MM.SS CPU SECOND ORIGIN
         15.28.41.MFA. ::    20PPU CRR73 B+W LYN ECS-2CPUS 02/15/77
15.28.15 00000.024 MFZ.     -CNAJ012,T20,CP70.  CHINA TWP FIS
15.28.15 00000.024 JOB.     -CHARGE.810-0037-45-78-5512,JANDA,001,D,JANDA.
15.28.16 00000.068 JOB.     -ATTACH(HEC2,HEC2PROD,ID=MULLAN,CY=1)
15.28.16 00000.073 MFZ.       PF254 - CYCLE    1 ATTACHED FROM SN=SYSTEM
15.28.16 00000.074 LOD.     -HEC2(PL=99999).
15.28.46 00000.492 MFZ.       LD610 - FLS REQUIRED TO LOAD - 0025222 OU.COG
15.28.46 00000.502 MFZ.       LD603 - EXECUTION INITIATED OS.EXP
15.28.46 00000.503 USR.     FORTRAN LIBRARY 217-MODIFIED 03/16/76
15.29.15 00007.755 USR.        STOP
15.29.15 00007.755 USR.         7.251 CP SECONDS EXECUTION TIME
15.29.17 00007.758 MFZ.       RM770 - MAXIMUM ACTIVE FILES                    3
15.29.17 00007.758 MFZ.       RM771 - OPEN/CLOSE CALLS                       22
15.29.17 00007.758 MFZ.       RM772 - DATA TRANSFER CALLS                16,844
15.29.17 00007.758 MFZ.       RM773 - CONTROL/POSITIONING CALLS              26
15.29.17 00007.759 MFZ.       RM774 - BM DATA TRANSFER CALLS                680
15.29.17 00007.759 MFZ.       RM775 - BM CONTROL/POSITIONING CALLS           54
15.29.17 00007.759 MFZ.       RM776 - QUEUE MANAGER CALLS                   131
15.29.17 00007.759 MFZ.       RM777 - RECALL CALLS                           67
15.29.17 00007.759 MFZ.       BWMSG - NUMBER OF TAPES MOUNTED
15.29.17 00007.760 MFZ.       SRU                 9.279  SRU
15.29.17 00007.760 MFZ.       SCM               392.020  KWS
15.29.17 00007.760 MFZ.       I/O                 0.170  MW
15.29.17 00007.761 MFZ.       RMS                 0.442  MWS
15.29.17 00007.761 MFZ.       USER                5.981  SEC
15.29.17 00007.761 MFZ.       JOB                 7.763  SEC
15.29.17 00007.761 MFZ.       SC050 - 000042 SC/LC SWAPS
15.29.17 00007.761 MFZ.     CNAJ06W   CNAJ06W
15.29.17.EJ. END OF JOB
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BELLE RIVER

CHINA & EAST CHINA TOWNSHIPS

J&A FILE NOS. 5555-12 & 15

100-YEAR NATURAL FLOODWAY

DNR SUBMITTAL

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*****************************************
HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
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C
1       BELLE RIVER   EAST CHINA, CHINA TOWNSHIPS       5555-15&12
T2       100 YEAR FLOW
T3       BELLE RIVER

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      -0.       4.       -0.       -0. -0.000000     -0.00      -0.0      -0.   577.570    -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      .030      .030      .026      .300      .500     -0.000     -0.000     -0.000     -0.000     -0.000
QT     4.000  4590.000  6540.000  7410.000  9380.000     -0.000     -0.000     -0.000     -0.000     -0.000

X1      .001    29.000   105.000   213.000     0.000      0.000      0.000     -0.000      -.079     -0.000
GR   580.300     0.000   580.300     0.000   580.800     55.000    580.400    105.000    568.000    105.000
GR   565.800   115.000   563.400   135.000   562.700    155.000    564.200    175.000    570.100    195.000
GR   577.000   205.000   577.800   210.000   579.900    213.000    580.600    305.000    584.200    375.000
GR   584.100   405.000   584.000   505.000   583.900    605.000    583.100    705.000    581.600    805.000
GR   581.900   858.000   582.700   905.000   583.700   1005.000    583.100   1105.000    583.400   1205.000
GR   585.300  1322.000   583.600  1405.000   582.700   1505.000    582.300   1605.000     -0.000     -0.000

X1      .027    29.000   105.000   213.000   120.000    120.000    120.000     -0.000     -0.000     -0.000
GR   580.300     0.000   580.300     0.000   580.800     55.000    580.400    105.000    568.000    105.000
GR   565.800   115.000   563.400   135.000   562.700    155.000    564.200    175.000    570.100    195.000
GR   577.000   205.000   577.800   210.000   579.900    213.000    580.600    305.000    584.200    375.000
GR   584.100   405.000   584.000   505.000   583.900    605.000    583.100    705.000    581.600    805.000
GR   581.900   858.000   582.700   905.000   583.700   1005.000    583.100   1105.000    583.400   1205.000
GR   585.300  1322.000   583.600  1405.000   582.700   1505.000    582.300   1605.000     -0.000     -0.000

X1      .074    -0.000    -0.000    -0.000   250.000    290.000    270.000     -0.000     -0.000     -0.000
X3    10.000   562.880    -0.000    -0.000    -0.000     -0.000     -0.000     -0.000     -0.000     -0.000

X1      .358    -0.000    -0.000    -0.000  1500.000   1500.000   1500.000     -0.000     -0.000     -0.000
X3    10.000   563.860    -0.000    -0.000    -0.000     -0.000     -0.000     -0.000     -0.000     -0.000

X1      .445    15.000   123.000   226.000   460.000    460.000    460.000     -0.000     -0.000     -0.000
GR   580.900     0.000   581.800    23.000   582.200     83.000    580.000    123.000    567.100    123.000
GR   564.070   143.000   564.500   153.000   564.700    163.000    567.300    183.000    567.100    193.000
GR   571.600   226.000   580.100   226.000   580.700    263.000    581.700    298.000    583.600    429.000
NH     3.000      .026   163.000      .260   183.000      .026    429.000     -0.000     -0.000     -0.000

X1      .454    17.000   123.000   226.000    50.000     50.000     50.000     -0.000     -0.000     -0.000
GR   580.900     0.000   581.800    23.000   582.200     83.000    580.000    123.000    567.100    123.000
GR   564.200   143.000   564.500   153.000   564.700    163.000    567.300    183.000    567.100    193.000
GR   567.000   203.000   571.200   223.000   571.600    226.000    580.100    226.000    580.700    263.000
GR   581.700   298.000   583.600   429.000    -0.000     -0.000     -0.000     -0.000     -0.000     -0.000
NH     3.000      .026   153.000      .260   193.000      .026    429.000     -0.000     -0.000     -0.000

X1      .458    17.000   123.000   226.000    20.000     20.000     20.000     -0.000     -0.000     -0.000
GR   580.900     0.000   581.800    23.000   582.200     83.000    580.000    123.000    567.100    123.000
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GR	567.000	203.000	571.200	223.000	571.600	226.000	580.100	226.000	580.700	263.000
GR	581.700	298.000	583.600	429.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.464	48.000	800.000	931.000	30.000	30.000	30.000	-0.000	-0.000	-0.000
GR	582.300	0.000	584.400	105.000	584.000	200.000	583.900	300.000	583.800	400.000
GR	583.200	500.000	582.600	600.000	582.700	700.000	584.800	800.000	576.400	800.000
GR	576.400	801.000	566.500	801.000	565.200	810.000	564.000	820.000	563.800	830.000
GR	564.000	840.000	565.900	845.000	579.800	845.000	579.800	851.000	581.800	851.000
GR	581.800	880.000	580.100	880.000	580.100	886.000	570.800	886.000	570.200	896.000
GR	571.100	906.000	571.700	911.000	572.500	921.000	572.900	929.000	576.300	929.000
GR	576.300	931.000	584.800	931.000	583.600	985.000	583.500	990.000	583.500	1000.000
GR	583.500	1100.000	584.000	1200.000	584.200	1300.000	584.300	1400.000	584.500	1500.000
GR	583.800	1600.000	583.200	1700.000	583.100	1800.000	583.400	1900.000	583.600	2000.000
GR	584.400	2100.000	585.000	2200.000	585.100	2300.000	-0.000	-0.000	-0.000	-0.000
X1	.472	48.000	800.000	931.000	49.000	49.000	49.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	582.200	582.200	-0.000
GR	582.300	0.000	584.400	105.000	584.000	200.000	583.900	300.000	583.800	400.000
GR	583.200	500.000	582.600	600.000	582.700	700.000	584.800	800.000	576.400	800.000
GR	576.400	801.000	566.500	801.000	565.200	810.000	564.000	820.000	563.400	830.000
GR	564.000	840.000	565.900	845.000	579.800	845.000	579.800	851.000	581.800	851.000
GR	581.800	880.000	580.100	880.000	580.100	886.000	570.800	886.000	570.200	896.000
GR	571.100	906.000	571.700	911.000	572.500	921.000	572.900	929.000	576.300	929.000
GR	576.300	931.000	584.800	931.000	583.600	985.000	583.500	990.000	583.500	1000.000
GR	583.500	1100.000	584.000	1200.000	584.200	1300.000	584.300	1400.000	584.500	1500.000
GR	583.800	1600.000	583.200	1700.000	583.100	1800.000	583.400	1900.000	583.600	2000.000
GR	584.400	2100.000	585.000	2200.000	585.100	2300.000	-0.000	-0.000	-0.000	-0.000
NC	.016	.016	.021	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.473	-0.000	-0.000	-0.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
BT	6.000	800.000	584.800	0.000	800.000	585.500	581.700	851.000	585.400	581.800
BT	880.000	585.500	581.800	931.000	585.500	581.800	931.000	584.800	0.000	-0.000
X1	.481	48.000	800.000	931.000	40.000	40.000	40.000	-0.000	-0.000	-0.000
BT	6.000	800.000	584.800	0.000	800.000	585.500	581.800	851.000	585.400	581.800
BT	880.000	585.400	581.800	931.000	585.400	581.700	931.000	584.800	0.000	-0.000
GR	582.300	0.000	584.400	105.000	584.000	200.000	583.900	300.000	583.800	400.000
GR	583.200	500.000	582.600	600.000	582.700	700.000	585.500	800.000	576.300	800.000
GR	576.200	801.000	566.500	801.000	566.200	810.000	563.400	820.000	562.100	830.000
GR	563.500	840.000	565.400	845.000	580.100	845.000	580.100	851.000	581.800	851.000
GR	581.800	880.000	580.100	880.000	580.100	886.000	569.400	886.000	569.500	896.000
GR	570.300	906.000	571.400	911.000	572.900	921.000	573.200	929.000	576.500	929.000
GR	576.500	931.000	584.800	931.000	583.600	985.000	583.500	990.000	583.500	1000.000
GR	583.500	1100.000	584.000	1200.000	584.200	1300.000	584.300	1400.000	584.500	1500.000
GR	583.800	1600.000	583.200	1700.000	583.100	1800.000	583.400	1900.000	583.600	2000.000
GR	584.400	2100.000	585.000	2200.000	585.100	2300.000	-0.000	-0.000	-0.000	-0.000
NC	.040	.060	.026	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.482	-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	582.600	582.600	-0.000
X1	.490	48.000	800.000	931.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
GR	582.300	0.000	584.400	105.000	584.000	200.000	583.900	300.000	583.800	400.000
GR	583.200	500.000	582.600	600.000	582.700	700.000	585.500	800.000	576.300	800.000
GR	576.200	801.000	566.500	801.000	566.200	810.000	563.400	820.000	562.160	830.000
GR	563.500	840.000	564.400	845.000	565.400	852.000	580.100	852.000	580.100	860.000
GR	580.100	870.000	580.100	880.000	568.600	880.000	569.400	886.000	569.500	896.000
GR	570.300	906.000	571.400	911.000	572.900	921.000	573.200	929.000	576.500	929.000
GR	576.500	931.000	584.800	931.000	583.600	985.000	583.500	990.000	583.500	1000.000
GR	583.500	1100.000	584.000	1200.000	584.200	1300.000	584.300	1400.000	584.500	1500.000
GR	583.800	1600.000	583.200	1700.000	583.100	1800.000	583.400	1900.000	583.600	2000.000
GR	584.400	2100.000	585.000	2200.000	585.100	2300.000	-0.000	-0.000	-0.000	-0.000
X1	.492	48.000	800.000	931.000	10.000	10.000	10.000	-0.000	-0.000	-0.000
GR	582.300	0.000	584.400	105.000	584.000	200.000	583.900	300.000	583.800	400.000

GR	576.200	801.000	566.500	801.000	566.200	810.000	563.400	820.000	562.180	830.000
GR	563.500	840.000	564.400	845.000	565.400	858.000	580.100	858.000	580.100	860.000
GR	580.100	870.000	580.100	873.000	568.600	873.000	569.400	886.000	569.500	896.000
GR	570.300	906.000	571.400	911.000	572.900	921.000	573.200	929.000	576.500	929.000
GR	576.500	931.000	584.800	931.000	583.600	985.000	583.500	990.000	583.500	1000.000
GR	583.500	1100.000	584.000	1200.000	584.200	1300.000	584.300	1400.000	584.500	1500.000
GR	583.800	1600.000	583.200	1700.000	583.100	1800.000	583.400	1900.000	583.600	2000.000
GR	584.400	2100.000	585.000	2200.000	585.100	2300.000	-0.000	-0.000	-0.000	-0.000
X1	.502	43.000	800.000	931.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
GR	582.300	0.000	584.400	105.000	584.000	200.000	583.900	300.000	583.800	400.000
GR	583.200	500.000	582.600	600.000	582.700	700.000	585.500	800.000	576.300	800.000
GR	576.200	801.000	566.500	801.000	566.200	810.000	563.400	820.000	562.240	830.000
GR	563.500	840.000	565.400	845.000	567.600	856.000	569.400	886.000	569.500	896.000
GR	570.300	906.000	571.400	911.000	572.900	921.000	573.200	929.000	576.500	929.000
GR	576.500	931.000	584.800	931.000	583.600	985.000	583.500	990.000	583.500	1000.000
GR	583.500	1100.000	584.000	1200.000	584.200	1300.000	584.300	1400.000	584.500	1500.000
GR	583.800	1600.000	583.200	1700.000	583.100	1800.000	583.400	1900.000	583.600	2000.000
GR	584.400	2100.000	585.000	2200.000	585.100	2300.000	-0.000	-0.000	-0.000	-0.000
X1	.632	-0.000	-0.000	-0.000	690.000	690.000	690.000	-0.000	-0.000	-0.000
X3	10.000	563.100	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.979	42.000	1500.000	1658.000	1830.000	1830.000	1830.000	-0.000	-0.000	-0.000
GR	584.200	0.000	584.400	100.000	584.200	200.000	583.800	300.000	584.200	400.000
GR	584.200	500.000	585.200	600.000	585.500	700.000	584.900	800.000	585.500	900.000
GR	584.500	1000.000	583.700	1100.000	583.400	1200.000	582.600	1300.000	583.700	1400.000
GR	583.100	1450.000	578.700	1500.000	577.500	1501.000	573.100	1510.000	571.900	1520.000
GR	568.400	1540.000	565.470	1560.000	568.600	1580.000	568.800	1600.000	568.100	1620.000
GR	572.800	1640.000	577.800	1651.000	583.900	1658.000	583.000	1700.000	583.200	1800.000
GR	583.700	1900.000	584.800	2000.000	585.000	2100.000	584.600	2200.000	585.100	2300.000
GR	586.100	2400.000	585.300	2500.000	584.600	2600.000	585.000	2700.000	584.400	2800.000
GR	585.100	2900.000	585.000	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	.989	-0.000	-0.000	-0.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	10.000	565.540	-0.000	1509.000	-0.000	1649.000	-0.000	-0.000	-0.000	-0.000
X1	.998	42.000	1500.000	1658.000	50.000	50.000	50.000	.943	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1520.000	-0.000	1636.000	-0.000	-0.000	-0.000	-0.000
GR	584.200	0.000	584.400	100.000	584.200	200.000	583.800	300.000	584.200	400.000
GR	584.200	500.000	585.200	600.000	585.500	700.000	584.900	800.000	585.500	900.000
GR	584.500	1000.000	583.700	1100.000	583.400	1200.000	582.600	1300.000	583.700	1400.000
GR	583.100	1450.000	578.700	1500.000	577.500	1501.000	573.100	1510.000	571.900	1520.000
GR	568.400	1540.000	565.600	1560.000	568.600	1580.000	568.800	1600.000	568.100	1620.000
GR	572.800	1640.000	577.800	1651.000	583.900	1658.000	583.000	1700.000	583.200	1800.000
GR	583.700	1900.000	584.800	2000.000	585.000	2100.000	584.600	2200.000	585.100	2300.000
GR	586.100	2400.000	585.300	2500.000	584.600	2600.000	585.000	2700.000	584.400	2800.000
GR	585.100	2900.000	585.000	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.007	46.000	1500.000	1590.000	29.000	79.000	49.000	.942	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	583.900	583.900	-0.000
GR	584.300	0.000	584.000	100.000	583.900	200.000	584.000	300.000	584.300	400.000
GR	584.600	500.000	584.800	600.000	585.200	700.000	584.900	800.000	584.300	900.000
GR	583.700	1000.000	583.400	1100.000	582.300	1200.000	582.700	1300.000	583.400	1400.000
GR	585.300	1500.000	572.600	1500.000	569.300	1505.000	568.200	1512.000	568.000	1520.000
GR	568.300	1526.000	569.400	1528.000	568.700	1538.000	569.200	1548.000	569.200	1553.000
GR	568.100	1562.000	568.300	1564.000	567.600	1569.000	567.800	1575.000	568.200	1585.000
GR	569.600	1590.000	585.400	1590.000	585.100	1700.000	584.400	1800.000	584.100	1900.000
GR	583.900	2000.000	584.100	2100.000	584.300	2200.000	584.700	2300.000	584.900	2400.000
GR	585.300	2500.000	584.800	2600.000	584.600	2700.000	584.200	2800.000	585.000	2900.000
GR	584.300	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.016	.016	.021	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.008	51.000	1500.000	1590.000	1.000	1.000	1.000	.942	-0.000	-0.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	.942	-0.000

BT	1562.000	585.900	582.600	1590.000	585.900	582.600	1590.000	585.400	-0.000	-0.000
GR	584.300	0.000	584.000	100.000	583.900	200.000	584.000	300.000	584.300	400.000
GR	584.600	500.000	584.800	600.000	585.200	700.000	584.900	800.000	584.300	900.000
GR	583.700	1000.000	583.400	1100.000	582.300	1200.000	582.700	1300.000	583.400	1400.000
GR	585.300	1500.000	572.600	1500.000	569.300	1505.000	568.200	1512.000	568.000	1520.000
GR	568.300	1526.000	582.600	1526.000	582.600	1528.000	569.400	1528.000	568.700	1538.000
GR	569.200	1548.000	569.200	1553.000	568.100	1562.000	582.600	1562.000	582.600	1564.000
GR	568.300	1564.000	567.600	1569.000	567.800	1575.000	568.200	1585.000	569.600	1590.000
GR	585.400	1590.000	585.400	1600.000	585.100	1700.000	584.400	1800.000	584.100	1900.000
GR	583.900	2000.000	584.100	2100.000	584.300	2200.000	584.700	2300.000	584.900	2400.000
GR	585.300	2500.000	584.800	2600.000	584.600	2700.000	584.200	2800.000	585.000	2900.000
GR	584.300	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.016	51.000	1513.000	1603.000	43.000	43.000	43.000	.942	-0.000	-0.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	.942	-0.000
BT	6.000	1513.000	585.300	0.000	1513.000	585.900	582.600	1539.000	585.900	582.600
BT	1575.000	585.800	582.600	1603.000	585.900	582.600	1603.000	585.400	0.000	-0.000
GR	584.300	0.000	584.000	100.000	583.900	200.000	584.000	300.000	584.300	400.000
GR	584.600	500.000	584.800	600.000	585.200	700.000	584.900	800.000	584.300	900.000
GR	583.700	1000.000	583.400	1100.000	582.300	1200.000	582.700	1300.000	583.400	1400.000
GR	585.300	1500.000	585.300	1513.000	573.300	1513.000	572.700	1519.000	568.300	1526.000
GR	568.700	1535.000	568.400	1539.000	582.700	1539.000	582.700	1541.000	569.000	1541.000
GR	568.500	1551.000	567.800	1561.000	567.900	1568.000	567.900	1575.000	582.600	1575.000
GR	582.600	1577.000	568.700	1577.000	566.900	1582.000	567.700	1589.000	568.800	1598.000
GR	568.800	1603.000	585.400	1603.000	585.900	1700.000	584.400	1800.000	584.100	1900.000
GR	583.900	2000.000	584.100	2100.000	584.300	2200.000	584.700	2300.000	584.900	2400.000
GR	585.300	2500.000	584.800	2600.000	584.600	2700.000	584.200	2800.000	585.000	2900.000
GR	584.300	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.060	.050	.026	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.017	46.000	1513.000	1603.000	1.000	1.000	1.000	.942	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	585.300	585.300	-0.000
GR	584.300	0.000	584.000	100.000	583.900	200.000	584.000	300.000	584.300	400.000
GR	584.600	500.000	584.800	600.000	585.200	700.000	584.900	800.000	584.300	900.000
GR	583.700	1000.000	583.400	1100.000	582.300	1200.000	582.700	1300.000	583.400	1400.000
GR	585.300	1500.000	585.300	1513.000	573.300	1513.000	572.700	1519.000	568.300	1526.000
GR	568.700	1535.000	568.400	1539.000	569.000	1541.000	568.500	1551.000	567.900	1568.000
GR	567.900	1575.000	568.700	1577.000	566.900	1582.000	567.700	1589.000	568.800	1598.000
GR	568.800	1603.000	585.900	1603.000	585.100	1700.000	584.400	1800.000	584.100	1900.000
GR	583.900	2000.000	584.100	2100.000	584.300	2200.000	584.700	2300.000	584.900	2400.000
GR	585.300	2500.000	584.800	2600.000	584.600	2700.000	584.200	2800.000	585.000	2900.000
GR	584.300	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.025	-0.000	-0.000	-0.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	10.000	566.950	-0.000	-0.000	-0.000	-0.000	-0.000	585.300	585.300	-0.000
X1	1.167	46.000	1513.000	1603.000	750.000	750.000	750.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1513.000	582.190	1603.000	582.190	-0.000	-0.000	-0.000
GR	584.300	0.000	584.000	100.000	583.900	200.000	584.000	300.000	584.300	400.000
GR	584.600	500.000	584.800	600.000	585.200	700.000	584.900	800.000	584.300	900.000
GR	583.700	1000.000	583.400	1100.000	582.300	1200.000	582.700	1300.000	583.400	1400.000
GR	585.300	1500.000	585.300	1513.000	573.300	1513.000	572.700	1519.000	568.300	1526.000
GR	568.700	1535.000	568.400	1539.000	569.000	1541.000	568.500	1551.000	567.900	1568.000
GR	567.900	1575.000	568.700	1577.000	567.600	1582.000	567.700	1589.000	568.800	1598.000
GR	568.800	1603.000	585.900	1603.000	585.100	1700.000	584.400	1800.000	584.100	1900.000
GR	583.900	2000.000	584.100	2100.000	584.300	2200.000	584.700	2300.000	584.900	2400.000
GR	585.300	2500.000	584.800	2600.000	584.600	2700.000	584.200	2800.000	585.000	2900.000
GR	584.300	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.051	1100.000	.085	1400.000	.255	1480.000	.026	1700.000	.051
NH	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.360	42.000	1480.000	1650.000	1020.000	1020.000	1020.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1400.000	583.030	1700.000	583.030	-0.000	-0.000	-0.000
GR	584.400	0.000	584.400	100.000	584.300	200.000	585.400	300.000	584.600	400.000
GR	584.500	500.000	585.000	600.000	584.100	700.000	584.900	800.000	584.500	900.000

GR	584.000	1480.000	578.900	1500.000	577.700	1503.000	575.200	1510.000	573.000	1520.000
GR	569.900	1540.000	569.600	1560.000	568.500	1580.000	569.900	1600.000	573.100	1620.000
GR	575.700	1630.000	582.500	1650.000	584.200	1700.000	583.800	1800.000	583.600	1900.000
GR	583.300	2000.000	583.300	2100.000	583.200	2200.000	583.000	2300.000	583.200	2400.000
GR	583.700	2500.000	583.900	2600.000	584.200	2700.000	584.700	2800.000	584.400	2900.000
GR	586.500	2925.000	585.000	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.051	1000.000	.085	1300.000	.255	1480.000	.026	1700.000	.051
NH	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.512	42.000	1480.000	1650.000	800.000	800.000	800.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1400.000	583.310	1700.000	583.310	-0.000	-0.000	-0.000
GR	584.400	0.000	584.400	100.000	584.300	200.000	585.400	300.000	584.600	400.000
GR	584.500	500.000	585.000	600.000	584.100	700.000	584.900	800.000	584.500	900.000
GR	583.700	1000.000	581.000	1100.000	579.700	1200.000	584.000	1300.000	585.000	1400.000
GR	584.000	1480.000	578.900	1500.000	577.700	1503.000	575.200	1510.000	573.000	1520.000
GR	569.900	1540.000	569.600	1560.000	569.200	1580.000	569.900	1600.000	573.100	1620.000
GR	575.700	1630.000	582.500	1650.000	584.200	1700.000	583.800	1800.000	583.600	1900.000
GR	583.300	2000.000	583.300	2100.000	583.200	2200.000	583.000	2300.000	583.200	2400.000
GR	583.700	2500.000	583.900	2600.000	584.200	2700.000	584.700	2800.000	584.400	2900.000
GR	586.500	2925.000	585.000	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	6.000	.060	1000.000	.085	1100.000	.255	1300.000	.060	1500.000	.026
NH	1633.000	.050	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.743	41.000	1500.000	1633.000	1210.000	1230.000	1220.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1394.000	583.740	1670.000	583.740	-0.000	-0.000	-0.000
GR	586.100	0.000	586.000	100.000	585.900	200.000	586.200	300.000	586.200	400.000
GR	586.500	500.000	586.300	600.000	583.300	700.000	582.500	800.000	582.600	900.000
GR	585.000	1000.000	586.000	1100.000	585.800	1200.000	585.100	1300.000	582.600	1400.000
GR	581.800	1500.000	577.300	1503.000	575.700	1510.000	572.800	1520.000	569.900	1540.000
GR	569.900	1560.000	570.300	1580.000	571.000	1600.000	573.500	1620.000	577.900	1632.000
GR	580.500	1633.000	581.400	1700.000	580.900	1800.000	581.000	1900.000	581.100	2000.000
GR	581.700	2100.000	581.200	2200.000	581.500	2300.000	581.200	2400.000	581.000	2500.000
GR	580.500	2600.000	579.900	2700.000	580.400	2800.000	580.700	2900.000	583.900	2944.000
GR	582.600	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1.876	41.000	1500.000	1633.000	690.000	730.000	700.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1387.000	583.960	2170.000	583.960	-0.000	-0.000	-0.000
GR	586.100	0.000	586.000	100.000	585.900	200.000	586.200	300.000	586.200	400.000
GR	586.500	500.000	586.300	600.000	583.300	700.000	582.500	800.000	582.600	900.000
GR	585.000	1000.000	586.000	1100.000	585.800	1200.000	585.100	1300.000	582.600	1400.000
GR	581.800	1500.000	577.300	1503.000	575.700	1510.000	572.800	1520.000	570.300	1540.000
GR	570.300	1560.000	570.300	1580.000	571.000	1600.000	573.500	1620.000	577.900	1632.000
GR	580.500	1633.000	581.400	1700.000	580.900	1800.000	581.000	1900.000	581.100	2000.000
GR	581.700	2100.000	581.200	2200.000	581.500	2300.000	581.200	2400.000	581.000	2500.000
GR	580.500	2600.000	579.900	2700.000	580.400	2800.000	580.700	2900.000	583.900	2944.000
GR	582.600	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
QT	4.000	4500.000	6410.000	7260.000	9190.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.084	-0.000	-0.000	-0.000	990.000	1070.000	1100.000	-0.000	-0.000	-0.000
X3	10.000	570.340	-0.000	1377.000	584.260	1903.000	584.260	-0.000	-0.000	-0.000
NH	6.000	.051	1060.000	.085	1360.000	.255	1430.000	.085	1460.000	.026
NH	1588.000	.051	2960.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2.463	44.000	1460.000	1588.000	1990.000	2140.000	2000.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1448.000	584.790	-0.000	-0.000	-0.000	-0.000	-0.000
GR	575.100	0.000	583.500	6.000	583.600	60.000	584.100	160.000	583.900	260.000
GR	587.100	360.000	585.800	460.000	585.200	560.000	585.700	660.000	585.700	760.000
GR	586.400	860.000	585.600	960.000	585.400	1060.000	582.200	1160.000	581.900	1260.000
GR	584.000	1360.000	585.700	1390.000	585.400	1430.000	582.700	1460.000	577.200	1462.000
GR	574.600	1470.000	572.800	1480.000	570.400	1500.000	570.600	1520.000	571.300	1540.000
GR	571.400	1560.000	573.000	1570.000	575.900	1580.000	577.800	1585.000	580.200	1588.000
GR	583.300	1660.000	585.300	1760.000	586.500	1860.000	585.400	1960.000	585.900	2060.000
GR	585.500	2160.000	585.500	2260.000	585.200	2360.000	586.900	2460.000	585.700	2560.000
GR	585.500	2660.000	585.400	2760.000	585.600	2860.000	585.800	2960.000	-0.000	-0.000
NH	5.000	.051	1200.000	.255	1400.000	.051	1503.000	.026	1666.000	.051

X1	2.766	41.000	1503.000	1666.000	1600.000	1600.000	1600.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1409.000	585.320	-0.000	-0.000	-0.000	-0.000	-0.000
GR	585.900	0.000	585.700	100.000	586.400	200.000	586.300	300.000	585.000	400.000
GR	585.100	500.000	584.900	600.000	585.400	700.000	585.600	800.000	585.000	900.000
GR	583.700	1000.000	583.900	1100.000	584.400	1200.000	585.300	1300.000	584.700	1400.000
GR	579.400	1503.000	575.600	1506.000	572.100	1513.000	569.000	1520.000	568.800	1540.000
GR	570.500	1560.000	571.000	1580.000	573.900	1600.000	575.500	1620.000	576.400	1640.000
GR	577.400	1650.000	583.600	1666.000	584.400	1700.000	586.700	1800.000	586.700	1900.000
GR	586.400	2000.000	585.400	2100.000	585.700	2200.000	585.600	2300.000	585.600	2400.000
GR	585.500	2500.000	585.600	2600.000	585.600	2700.000	586.700	2800.000	585.500	2900.000
GR	585.500	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.050	.050	.028	.300	.500	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3.180	39.000	1290.000	1400.000	1820.000	1640.000	2190.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1290.000	586.830	2130.000	585.830	-0.000	-0.000	-0.000
GR	581.300	0.000	587.000	100.000	587.400	122.000	587.100	200.000	587.400	300.000
GR	587.400	400.000	587.500	500.000	587.400	600.000	587.400	700.000	587.000	800.000
GR	586.100	900.000	585.200	1000.000	583.200	1100.000	582.900	1200.000	583.900	1290.000
GR	577.100	1295.000	575.100	1300.000	570.400	1320.000	570.400	1340.000	571.300	1360.000
GR	573.300	1380.000	575.300	1387.000	577.400	1394.000	581.300	1400.000	578.800	1500.000
GR	581.500	1600.000	580.100	1700.000	581.100	1800.000	583.100	1900.000	583.800	2000.000
GR	582.000	2100.000	583.000	2200.000	585.200	2300.000	586.000	2400.000	585.600	2500.000
GR	585.500	2600.000	585.400	2700.000	585.500	2800.000	585.400	2900.000	-0.000	-0.000
X1	3.313	20.000	600.000	711.000	760.000	480.000	700.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	447.000	585.930	1060.000	585.930	-0.000	-0.000	-0.000
GR	586.000	0.000	586.300	100.000	587.200	200.000	587.400	300.000	585.900	400.000
GR	583.600	500.000	583.600	600.000	576.300	611.000	572.700	620.000	570.100	640.000
GR	570.200	660.000	570.900	680.000	574.400	700.000	577.600	709.000	580.000	711.000
GR	580.300	800.000	580.000	860.000	585.000	1110.000	586.800	2060.000	588.700	2530.000
X1	3.484	40.000	1500.000	1592.000	600.000	740.000	900.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1000.000	586.130	1700.000	586.130	-0.000	-0.000	-0.000
GR	586.000	0.000	586.300	100.000	587.200	200.000	586.800	300.000	585.300	400.000
GR	584.900	500.000	585.000	600.000	584.900	700.000	584.100	800.000	583.400	900.000
GR	583.100	1000.000	583.700	1100.000	583.600	1200.000	582.300	1300.000	581.600	1400.000
GR	579.100	1500.000	577.800	1505.000	575.900	1512.000	572.900	1520.000	571.300	1540.000
GR	569.300	1560.000	571.500	1580.000	574.800	1585.000	577.800	1590.000	584.200	1592.000
GR	584.500	1600.000	585.900	1700.000	586.500	1800.000	586.400	1900.000	586.100	2000.000
GR	587.300	2100.000	586.400	2200.000	587.000	2300.000	586.200	2400.000	588.800	2495.000
GR	586.700	2600.000	586.800	2700.000	586.700	2800.000	586.900	2900.000	587.700	3000.000
NC	.080	.060	.030	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3.635	42.000	1500.000	1658.000	300.000	900.000	800.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1512.000	586.430	1762.000	586.430	-0.000	-0.000	-0.000
GR	587.000	0.000	586.400	100.000	587.200	200.000	587.700	300.000	588.000	400.000
GR	586.700	500.000	585.800	600.000	586.400	700.000	587.100	800.000	586.300	900.000
GR	586.600	1000.000	587.100	1100.000	587.200	1200.000	587.200	1300.000	588.500	1400.000
GR	587.100	1500.000	584.100	1520.000	577.600	1540.000	576.400	1550.000	575.000	1560.000
GR	571.700	1580.000	571.500	1600.000	570.400	1620.000	571.100	1640.000	573.200	1650.000
GR	577.300	1656.000	580.000	1658.000	581.800	1700.000	582.600	1800.000	583.700	1900.000
GR	583.300	2000.000	582.000	2100.000	582.300	2200.000	582.800	2300.000	586.400	2400.000
GR	587.200	2500.000	589.000	2558.000	588.100	2600.000	588.200	2700.000	587.300	2800.000
GR	586.800	2900.000	587.000	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3.711	42.000	1500.000	1658.000	660.000	270.000	400.000	.868	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1512.000	586.530	1727.000	586.530	-0.000	-0.000	-0.000
GR	587.000	0.000	586.400	100.000	587.200	200.000	587.700	300.000	588.000	400.000
GR	586.700	500.000	585.800	600.000	586.400	700.000	587.100	800.000	586.300	900.000
GR	586.600	1000.000	587.100	1100.000	587.200	1200.000	587.200	1300.000	588.500	1400.000
GR	587.100	1500.000	584.100	1520.000	577.600	1540.000	576.400	1550.000	575.000	1560.000
GR	571.700	1580.000	571.500	1600.000	570.900	1620.000	571.100	1640.000	573.200	1650.000
GR	577.300	1656.000	580.000	1658.000	581.800	1700.000	582.600	1800.000	583.700	1900.000
GR	583.300	2000.000	582.000	2100.000	582.300	2200.000	582.800	2300.000	586.400	2400.000
GR	587.200	2500.000	589.000	2558.000	588.100	2600.000	588.200	2700.000	587.300	2800.000

F

G 595.7

H 595.6

GR	586.800	2900.000	587.000	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.080	.060	.030	.600	.800	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3.720	58.000	1500.000	1716.000	50.000	50.000	50.000	.868	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	587.000	587.000	-0.000
GR	587.000	0.000	587.200	100.000	587.200	200.000	587.000	300.000	586.700	400.000
GR	586.500	500.000	586.300	600.000	586.400	700.000	586.600	800.000	586.700	900.000
GR	586.700	1000.000	586.500	1100.000	587.100	1200.000	587.900	1300.000	589.300	1400.000
GR	590.100	1500.000	583.500	1501.000	583.300	1507.000	578.100	1517.000	577.200	1520.000
GR	575.800	1530.000	575.200	1540.000	574.000	1551.000	572.900	1554.000	573.200	1560.000
GR	573.000	1570.000	573.300	1580.000	573.300	1590.000	573.200	1600.000	573.200	1607.000
GR	573.900	1610.000	572.500	1620.000	572.400	1630.000	572.500	1640.000	572.900	1650.000
GR	572.900	1663.000	572.900	1666.000	572.800	1670.000	573.500	1680.000	575.800	1690.000
GR	578.100	1696.000	579.400	1700.000	583.900	1711.000	584.000	1715.000	589.900	1716.000
GR	588.900	1800.000	587.500	1900.000	587.000	2000.000	587.100	2100.000	587.500	2200.000
GR	588.100	2300.000	588.900	2400.000	589.200	2500.000	589.500	2596.000	589.600	2700.000
GR	589.400	2800.000	589.700	2900.000	584.700	3000.000	-0.000	-0.000	-0.000	-0.000
SB	.900	1.630	3.000	0.000	141.000	7.800	2090.000	.601	572.400	572.400
X1	3.729	-0.000	-0.000	-0.000	48.000	48.000	48.000	-0.000	-0.000	-0.000
X2	-0.000	-0.000	1.000	586.600	587.000	-0.000	-0.000	-0.000	.868	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	587.000	587.000	-0.000
BT	11.000	1200.000	587.100	0.000	1300.000	587.900	0.000	1400.000	589.300	0.000
BT	1500.000	590.100	586.600	1716.000	590.100	586.600	1800.000	588.900	0.000	1900.000
BT	587.500	0.000	2000.000	587.000	0.000	2100.000	587.100	0.000	2200.000	587.500
BT	0.000	2300.000	588.100	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.030	.040	.030	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3.739	58.000	1500.000	1716.000	50.000	50.000	50.000	.868	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1450.000	587.000	1766.000	587.000	-0.000	-0.000	-0.000
GR	587.000	0.000	586.400	100.000	587.200	200.000	587.700	300.000	588.000	400.000
GR	586.700	500.000	585.800	600.000	586.400	700.000	587.100	800.000	586.300	900.000
GR	586.600	1000.000	587.100	1100.000	587.200	1200.000	587.200	1300.000	588.500	1400.000
GR	587.100	1500.000	583.500	1501.000	583.300	1507.000	578.100	1517.000	577.200	1520.000
GR	575.800	1530.000	575.200	1540.000	574.000	1551.000	572.900	1554.000	573.200	1560.000
GR	573.000	1570.000	573.300	1580.000	573.300	1590.000	573.200	1600.000	573.200	1607.000
GR	573.900	1610.000	572.500	1620.000	572.300	1630.000	572.500	1640.000	572.900	1650.000
GR	572.900	1663.000	572.900	1666.000	572.800	1670.000	573.500	1680.000	575.800	1690.000
GR	578.100	1696.000	579.400	1700.000	583.900	1711.000	584.000	1716.000	583.700	1800.000
GR	583.300	1900.000	582.000	2000.000	582.300	2100.000	582.800	2200.000	586.400	2300.000
GR	587.200	2400.000	589.000	2458.000	588.100	2500.000	588.200	2600.000	587.300	2700.000
GR	596.800	2800.000	587.000	2900.000	587.000	3000.000	-0.000	-0.000	-0.000	-0.000
NC	.064	.080	.034	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3.977	30.000	1500.000	1602.000	820.000	900.000	1260.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	400.000	587.210	1710.000	587.210	-0.000	-0.000	-0.000
GR	585.800	0.000	584.200	100.000	584.300	200.000	586.600	300.000	586.600	400.000
GR	585.900	500.000	581.400	600.000	583.300	700.000	585.600	800.000	586.700	900.000
GR	583.600	1000.000	583.600	1100.000	582.800	1200.000	582.300	1300.000	581.900	1400.000
GR	581.700	1500.000	577.800	1502.000	573.300	1511.000	572.200	1520.000	571.100	1540.000
GR	569.400	1560.000	575.100	1580.000	577.600	1587.000	585.600	1602.000	588.000	1664.000
GR	590.300	1710.000	587.100	1800.000	587.500	1900.000	588.400	2000.000	587.800	2100.000
NC	.060	.100	.034	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.239	38.000	1500.000	1592.000	700.000	1150.000	1380.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1400.000	587.640	2611.000	587.640	-0.000	-0.000	-0.000
GR	583.500	0.000	586.400	100.000	586.200	200.000	586.100	300.000	586.200	400.000
GR	586.100	500.000	585.900	600.000	585.600	700.000	584.300	800.000	584.100	900.000
GR	585.500	1000.000	585.400	1100.000	586.600	1200.000	587.000	1300.000	587.400	1400.000
GR	586.600	1500.000	577.600	1513.000	573.100	1520.000	569.800	1540.000	570.200	1560.000
GR	573.700	1580.000	577.800	1589.000	581.800	1592.000	582.300	1700.000	583.000	1800.000
GR	583.100	1900.000	583.900	2000.000	584.700	2100.000	585.200	2200.000	585.100	2300.000
GR	585.500	2400.000	584.800	2500.000	584.500	2600.000	584.600	2700.000	584.900	2800.000
GR	585.300	2900.000	585.300	3000.000	588.900	3172.000	-0.000	-0.000	-0.000	-0.000
NC	.100	.100	.039	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

X1	4.464	29.000	2300.000	2415.000	1310.000	730.000	1190.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	2000.000	588.590	2500.000	588.590	-0.000	-0.000	-0.000
GR	589.000	0.000	585.000	300.000	580.000	700.000	580.000	750.000	585.000	800.000
GR	585.000	1200.000	580.000	1500.000	580.000	1600.000	580.000	1700.000	585.000	1800.000
GR	589.500	2000.000	585.000	2100.000	580.000	2300.000	577.100	2320.000	572.500	2330.000
GR	568.700	2340.000	568.700	2360.000	571.000	2370.000	572.900	2380.000	573.400	2390.000
GR	577.300	2403.000	581.100	2406.000	583.700	2415.000	584.500	2500.000	584.600	2600.000
GR	584.900	2700.000	585.300	2800.000	585.300	2900.000	588.900	3072.000	-0.000	-0.000
QT	4.000	4450.000	6340.000	7180.000	9090.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.616	44.000	1500.000	1615.000	850.000	750.000	800.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1487.500	588.240	1603.500	588.240	-0.000	-0.000	-0.000
GR	586.300	0.000	586.400	100.000	586.300	200.000	586.300	300.000	586.100	400.000
GR	586.400	500.000	589.200	600.000	588.600	610.000	586.200	621.000	586.600	700.000
GR	586.100	780.000	588.700	800.000	590.800	900.000	591.000	1000.000	590.700	1100.000
GR	589.700	1200.000	588.700	1300.000	587.300	1348.000	586.200	1400.000	585.700	1500.000
GR	577.100	1520.000	572.500	1530.000	567.900	1540.000	568.500	1560.000	571.000	1570.000
GR	572.900	1580.000	573.400	1590.000	577.300	1603.000	581.100	1606.000	583.700	1615.000
GR	580.100	1700.000	581.600	1800.000	582.200	1900.000	585.700	2000.000	584.200	2100.000
GR	583.200	2200.000	583.100	2300.000	583.700	2400.000	583.100	2500.000	585.900	2600.000
GR	585.700	2700.000	585.400	2800.000	586.700	2900.000	586.000	3000.000	-0.000	-0.000
X1	4.625	46.000	1500.000	1591.000	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	588.300	588.300	-0.000
GR	590.000	0.000	590.000	100.000	589.900	200.000	589.700	300.000	589.800	400.000
GR	589.800	500.000	589.700	600.000	589.600	700.000	589.600	800.000	589.700	900.000
GR	589.600	1000.000	589.500	1100.000	589.400	1200.000	589.300	1300.000	589.300	1400.000
GR	589.100	1500.000	583.200	1500.000	583.100	1504.000	576.200	1505.000	575.000	1510.000
GR	574.500	1520.000	572.000	1530.000	568.900	1540.000	568.200	1550.000	569.800	1560.000
GR	572.100	1570.000	574.700	1580.000	576.300	1586.000	583.300	1587.000	583.300	1591.000
GR	589.200	1591.000	589.200	1600.000	589.100	1700.000	589.000	1800.000	588.800	1900.000
GR	588.400	2000.000	588.100	2100.000	588.000	2200.000	588.000	2300.000	588.100	2400.000
GR	588.200	2500.000	588.500	2600.000	588.800	2700.000	589.000	2800.000	589.400	2900.000
GR	589.600	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
SB	0.000	1.430	3.000	0.000	37.000	0.000	1109.000	.644	568.200	568.200
X1	4.629	-0.000	-0.000	-0.000	19.000	19.000	19.000	-0.000	-0.000	-0.000
X2	-0.000	-0.000	1.000	585.600	589.200	-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	589.100	589.100	-0.000
BT	6.000	1400.000	589.300	0.000	1500.000	589.100	0.000	1500.000	594.000	585.500
BT	1591.000	594.000	585.500	1591.000	589.200	0.000	1600.000	589.200	0.000	-0.000
NC	.060	.060	.039	.600	.800	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4.638	46.000	1500.000	1591.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1450.000	589.400	1641.000	589.400	-0.000	-0.000	-0.000
GR	586.300	0.000	586.400	100.000	586.300	200.000	586.300	300.000	586.100	400.000
GR	586.400	500.000	589.200	600.000	588.600	610.000	586.200	621.000	586.600	700.000
GR	586.100	780.000	588.700	800.000	590.800	900.000	591.000	1000.000	590.700	1100.000
GR	589.700	1200.000	588.700	1300.000	587.300	1348.000	586.200	1400.000	585.700	1500.000
GR	576.200	1505.000	575.000	1510.000	574.500	1520.000	572.000	1530.000	568.900	1540.000
GR	568.200	1550.000	569.800	1560.000	572.100	1570.000	574.700	1580.000	576.300	1586.000
GR	583.300	1591.000	583.700	1615.000	580.100	1700.000	581.600	1800.000	582.200	1900.000
GR	585.700	2000.000	584.200	2100.000	583.200	2200.000	583.100	2300.000	583.700	2400.000
GR	583.100	2500.000	585.900	2600.000	585.700	2700.000	585.400	2800.000	586.700	2900.000
GR	586.000	3000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.060	2500.000	.100	2600.000	.046	2710.000	.100	2800.000	.060
NH	4100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	5.161	45.000	2600.000	2710.000	1020.000	2960.000	2760.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	250.000	589.900	3226.000	589.900	-0.000	-0.000	-0.000
GR	589.300	0.000	585.000	300.000	580.000	350.000	580.000	1080.000	581.400	1100.000
GR	580.500	1200.000	580.900	1300.000	581.600	1400.000	581.500	1500.000	582.400	1600.000
GR	582.200	1700.000	582.600	1800.000	582.800	1900.000	582.700	2000.000	583.200	2100.000
GR	582.900	2200.000	582.900	2300.000	582.800	2400.000	583.900	2500.000	583.600	2600.000
GR	577.500	2620.000	574.900	2632.000	574.300	2640.000	574.200	2660.000	572.700	2680.000

GR	585.000	2900.000	585.400	3000.000	581.900	3100.000	580.300	3155.000	589.600	3190.000
GR	590.000	3200.000	587.400	3300.000	587.200	3400.000	587.000	3500.000	587.700	3600.000
GR	588.100	3720.000	588.000	3800.000	587.900	3900.000	588.400	4000.000	588.600	4100.000
NH	5.000	.060	3000.000	.100	3100.000	.046	3225.000	.100	3275.000	.060
NH	4600.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	5.392	51.000	3100.000	3225.000	1.000	1320.000	1220.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	400.000	589.910	3320.000	589.910	-0.000	-0.000	-0.000
GR	589.300	0.000	585.000	300.000	580.000	350.000	580.000	1080.000	581.400	1100.000
GR	580.500	1200.000	580.900	1300.000	581.600	1400.000	581.500	1500.000	582.000	1550.000
GR	582.400	1600.000	582.100	1700.000	581.800	1800.000	580.600	1900.000	585.100	2000.000
GR	586.600	2100.000	587.200	2200.000	587.500	2300.000	588.300	2400.000	586.900	2500.000
GR	585.600	2600.000	584.500	2700.000	585.500	2800.000	583.900	2900.000	583.100	3000.000
GR	583.000	3100.000	576.900	3116.000	575.700	3120.000	570.500	3130.000	568.400	3140.000
GR	565.500	3160.000	566.800	3180.000	572.400	3200.000	574.100	3207.000	577.500	3214.000
GR	582.400	3225.000	590.400	3275.000	590.600	3300.000	589.500	3400.000	590.000	3500.000
GR	589.900	3600.000	588.800	3700.000	588.100	3800.000	588.000	3900.000	588.200	4000.000
GR	587.800	4100.000	587.000	4200.000	586.100	4300.000	585.500	4400.000	585.400	4500.000
GR	586.800	4600.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.060	2500.000	.100	2515.000	.052	2606.000	.100	2700.000	.060
NH	4100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	5.801	48.000	2515.000	2606.000	1160.000	700.000	2160.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1050.000	589.940	3500.000	589.940	-0.000	-0.000	-0.000
GR	590.000	0.000	585.000	900.000	586.400	1000.000	586.400	1100.000	585.200	1200.000
GR	584.000	1300.000	586.100	1359.000	585.800	1400.000	585.500	1500.000	585.300	1600.000
GR	585.500	1700.000	585.900	1800.000	585.900	1900.000	582.100	2000.000	581.200	2100.000
GR	581.800	2200.000	582.800	2300.000	583.800	2400.000	583.100	2500.000	583.600	2515.000
GR	577.700	2522.000	576.300	2525.000	574.000	2530.000	573.000	2535.000	573.000	2540.000
GR	573.100	2550.000	573.700	2560.000	573.600	2570.000	573.700	2580.000	574.300	2590.000
GR	576.100	2595.000	582.300	2606.000	583.900	2700.000	588.500	2800.000	589.300	2900.000
GR	590.000	2983.000	590.000	3000.000	588.700	3100.000	587.600	3200.000	589.300	3300.000
GR	589.500	3400.000	590.800	3500.000	590.100	3600.000	589.700	3700.000	588.300	3800.000
GR	588.200	3900.000	587.800	4000.000	587.700	4100.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.070	3200.000	.100	3215.000	.052	3305.000	.100	3350.000	.060
NH	5150.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	6.286	56.000	3215.000	3305.000	1040.000	1360.000	2560.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1700.000	590.060	3930.000	590.060	-0.000	-0.000	-0.000
GR	589.000	0.000	585.000	110.000	585.000	1780.000	584.000	1800.000	585.700	1900.000
GR	586.400	2000.000	585.100	2017.000	577.200	2070.000	580.000	2100.000	581.400	2110.000
GR	582.200	2200.000	583.400	2300.000	579.500	2400.000	583.100	2500.000	584.100	2542.000
GR	582.700	2600.000	583.000	2700.000	583.400	2800.000	583.600	2900.000	585.000	3000.000
GR	584.900	3100.000	585.300	3200.000	585.700	3215.000	577.900	3231.000	576.600	3235.000
GR	573.600	3240.000	572.200	3245.000	571.700	3250.000	572.500	3260.000	571.600	3270.000
GR	572.500	3280.000	573.700	3290.000	575.700	3295.000	576.400	3300.000	583.500	3305.000
GR	583.500	3350.000	583.400	3385.000	583.200	3395.000	583.300	3405.000	583.700	3500.000
GR	583.500	3600.000	585.500	3700.000	587.500	3800.000	587.900	3900.000	588.100	3930.000
GR	584.700	4000.000	583.500	4024.000	586.000	4100.000	586.600	4200.000	586.300	4300.000
GR	586.500	4400.000	586.500	4500.000	587.400	4600.000	586.700	4700.000	587.200	4800.000
GR	590.000	5150.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.070	3452.000	.100	3498.000	.046	3600.000	.120	5100.000	-0.000
X1	6.570	48.000	3498.000	3600.000	1400.000	1420.000	1500.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	2300.000	590.200	4300.000	590.940	-0.000	-0.000	-0.000
GR	590.000	0.000	585.000	1462.000	584.700	2000.000	585.000	2100.000	585.200	2200.000
GR	586.800	2300.000	588.500	2400.000	588.300	2500.000	588.900	2600.000	588.200	2700.000
GR	587.200	2800.000	587.500	2900.000	587.200	3000.000	587.100	3100.000	587.200	3200.000
GR	587.400	3300.000	587.200	3400.000	588.400	3452.000	585.700	3498.000	583.100	3506.000
GR	577.200	3515.000	576.200	3520.000	575.200	3525.000	573.600	3530.000	570.700	3540.000
GR	572.200	3550.000	573.000	3560.000	573.300	3565.000	573.400	3570.000	574.800	3575.000
GR	576.500	3586.000	585.100	3600.000	584.300	3700.000	587.400	3800.000	588.900	3875.000
GR	588.900	3900.000	588.900	4000.000	587.100	4100.000	586.700	4200.000	586.200	4300.000
GR	586.300	4400.000	585.000	4500.000	581.000	4600.000	585.300	4700.000	586.600	4800.000
GR	585.600	4900.000	588.400	5000.000	587.000	5100.000	-0.000	-0.000	-0.000	-0.000

X1	6.775	29.000	340.000	442.000	1580.000	450.000	1080.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	590.730	1600.000	590.730	-0.000	-0.000	-0.000
GR	590.000	0.000	586.500	100.000	588.300	170.000	585.000	260.000	580.200	320.000
GR	585.700	340.000	583.100	348.000	577.200	357.000	576.200	362.000	575.200	367.000
GR	573.600	372.000	571.600	382.000	572.200	392.000	573.000	402.000	573.300	407.000
GR	573.400	412.000	574.800	417.000	576.500	428.000	579.100	442.000	580.200	480.000
GR	581.200	500.000	585.200	650.000	586.700	700.000	585.900	800.000	587.200	1300.000
GR	588.500	1400.000	588.600	1500.000	588.900	1600.000	590.000	2400.000	-0.000	-0.000
NC	.070	.100	.046	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.070	46.000	1495.000	1582.000	1040.000	1080.000	1560.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1469.000	591.300	1649.000	591.300	-0.000	-0.000	-0.000
GR	590.900	0.000	590.700	100.000	590.600	200.000	590.500	300.000	589.800	500.000
GR	588.800	600.000	591.100	635.000	588.900	700.000	588.900	800.000	589.000	900.000
GR	589.000	1000.000	589.100	1100.000	588.900	1200.000	589.000	1300.000	588.900	1330.000
GR	589.200	1348.000	589.500	1370.000	590.200	1400.000	590.600	1438.000	591.200	1469.000
GR	586.400	1495.000	582.200	1503.000	578.200	1504.000	575.800	1510.000	576.100	1515.000
GR	575.400	1520.000	573.800	1530.000	573.100	1540.000	572.900	1545.000	572.900	1550.000
GR	573.500	1560.000	575.200	1565.000	576.300	1567.000	583.000	1582.000	583.300	1594.000
GR	584.600	1700.000	586.700	1800.000	586.300	1900.000	584.600	2000.000	583.200	2100.000
GR	582.400	2200.000	583.700	2300.000	587.500	2400.000	586.500	2500.000	589.200	2600.000
GR	592.400	2700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.080	44.000	867.000	1022.000	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	591.600	591.600	-0.000
GR	591.900	0.000	591.800	45.000	591.800	145.000	591.700	245.000	591.800	345.000
GR	592.000	445.000	592.200	545.000	592.200	645.000	592.200	745.000	592.300	845.000
GR	592.800	867.000	586.200	867.000	583.000	873.000	580.000	885.000	579.200	897.000
GR	579.500	898.000	579.900	900.000	580.200	901.000	576.400	911.000	574.400	915.000
GR	574.500	925.000	574.500	935.000	574.000	945.000	574.400	955.000	577.000	964.000
GR	579.200	968.000	579.500	975.000	580.300	989.000	580.400	990.000	580.500	992.000
GR	580.600	993.000	584.000	1008.000	586.000	1022.000	592.900	1022.000	592.400	1045.000
GR	592.300	1145.000	592.200	1245.000	592.100	1345.000	592.000	1445.000	592.000	1545.000
GR	592.000	1645.000	592.100	1745.000	592.300	1845.000	592.500	1941.000	-0.000	-0.000
SB	.950	1.600	3.000	0.000	65.000	7.000	1710.000	.344	574.400	574.400
X1	7.086	-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	590.100	592.300	-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	592.300	592.300	-0.000
BT	7.000	845.000	592.300	0.000	867.000	592.800	588.800	901.000	592.800	588.800
BT	945.000	592.900	590.100	989.000	592.900	588.900	1022.000	592.900	588.900	1045.000
BT	592.400	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.070	.070	.046	.600	.800	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.095	44.000	867.000	1022.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	837.000	592.300	1077.000	592.300	-0.000	-0.000	-0.000
GR	588.000	0.000	591.100	35.000	588.900	100.000	588.900	200.000	589.000	300.000
GR	589.000	400.000	589.100	500.000	588.900	600.000	589.000	700.000	588.900	730.000
GR	589.200	748.000	589.500	770.000	590.200	800.000	590.600	838.000	586.200	867.000
GR	583.000	873.000	580.000	885.000	579.200	897.000	580.200	901.000	576.400	911.000
GR	574.400	915.000	574.500	925.000	574.500	935.000	574.000	945.000	574.400	955.000
GR	577.000	964.000	579.200	968.000	579.500	975.000	580.300	989.000	580.600	993.000
GR	584.000	1008.000	586.000	1022.000	586.300	1034.000	586.600	1040.000	586.700	1140.000
GR	586.300	1240.000	584.600	1340.000	583.200	1440.000	582.400	1540.000	583.700	1640.000
GR	587.500	1740.000	586.500	1940.000	589.200	1940.000	592.400	2040.000	-0.000	-0.000
QT	4.000	4400.000	6270.000	7090.000	8980.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	7.152	17.000	1027.000	1100.000	300.000	300.000	300.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	300.000	592.300	1200.000	592.300	-0.000	-0.000	-0.000
GR	585.000	0.000	585.000	450.000	580.000	500.000	580.000	550.000	585.000	580.000
GR	585.000	900.000	587.900	1027.000	577.900	1037.000	576.400	1040.000	576.800	1047.000
GR	577.100	1057.000	576.700	1067.000	575.500	1072.000	574.200	1077.000	577.100	1082.000
GR	587.400	1100.000	585.000	1700.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.060	900.000	.140	1227.000	.062	1300.000	.140	1950.000	.060

X1	7.398	15.000	1227.000	1300.000	800.000	1100.000	1300.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	350.000	592.560	1900.000	592.560	-0.000	-0.000	-0.000
GR	590.000	0.000	590.000	500.000	590.000	900.000	588.900	1227.000	578.900	1237.000
GR	577.400	1240.000	577.800	1247.000	578.100	1257.000	576.700	1267.000	576.000	1272.000
GR	575.000	1277.000	577.100	1282.000	588.400	1300.000	585.000	1950.000	590.000	2500.000
NH	4.000	.060	400.000	.140	1327.000	.055	1400.000	.080	1750.000	-0.000
X1	7.557	15.000	1327.000	1400.000	660.000	900.000	840.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	275.000	593.040	1700.000	593.040	-0.000	-0.000	-0.000
GR	590.000	0.000	590.000	400.000	590.000	750.000	585.000	850.000	588.900	1327.000
GR	578.900	1337.000	577.400	1340.000	577.800	1347.000	578.100	1357.000	577.700	1367.000
GR	576.600	1372.000	575.600	1377.000	578.100	1382.000	588.500	1400.000	590.000	1750.000
NH	4.000	.140	1927.000	.055	2000.000	.140	2100.000	.060	2200.000	-0.000
X1	7.807	30.000	1927.000	2000.000	1100.000	1000.000	1320.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1090.000	594.170	2110.000	594.170	-0.000	-0.000	-0.000
GR	595.100	0.000	594.900	250.000	594.700	300.000	591.200	580.000	592.400	900.000
GR	593.200	1000.000	592.800	1100.000	592.300	1200.000	592.200	1300.000	589.900	1400.000
GR	587.900	1500.000	589.400	1600.000	585.900	1645.000	584.800	1700.000	588.200	1800.000
GR	589.500	1850.000	588.600	1900.000	588.900	1927.000	578.900	1937.000	577.400	1940.000
GR	577.800	1947.000	578.100	1957.000	577.700	1967.000	576.600	1972.000	576.400	1977.000
GR	578.100	1982.000	588.400	2000.000	593.000	2100.000	595.300	2150.000	595.300	2200.000
NH	4.000	.140	1927.000	.055	2000.000	.140	2100.000	.060	2200.000	-0.000
X1	7.977	30.000	1927.000	2000.000	900.000	900.000	900.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	1300.000	594.900	2050.000	594.900	-0.000	-0.000	-0.000
GR	595.100	0.000	594.900	250.000	594.700	300.000	591.200	580.000	592.400	900.000
GR	593.200	1000.000	592.800	1100.000	592.300	1200.000	592.200	1300.000	589.900	1400.000
GR	587.900	1500.000	589.400	1600.000	585.900	1645.000	584.800	1700.000	588.200	1800.000
GR	589.500	1850.000	588.600	1900.000	588.900	1927.000	578.900	1937.000	577.400	1940.000
GR	577.800	1947.000	578.100	1957.000	577.700	1967.000	576.600	1972.000	575.700	1977.000
GR	578.100	1982.000	588.400	2000.000	593.000	2100.000	595.300	2150.000	595.300	2200.000
NH	4.000	.120	244.000	.055	315.000	.120	344.000	.060	715.000	-0.000
X1	8.152	17.000	244.000	315.000	820.000	920.000	920.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	100.000	595.540	550.000	595.540	-0.000	-0.000	-0.000
GR	595.000	0.000	590.000	100.000	586.000	200.000	585.900	244.000	578.700	247.000
GR	577.000	254.000	575.200	259.000	574.900	264.000	574.900	269.000	575.800	274.000
GR	576.200	279.000	576.200	284.000	577.400	289.000	590.800	315.000	590.000	344.000
GR	590.000	645.000	595.000	715.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.080	.080	.062	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	8.297	21.000	44.000	115.000	760.000	500.000	770.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	20.000	595.930	615.000	595.930	-0.000	-0.000	-0.000
GR	602.800	0.000	585.800	38.000	585.900	44.000	578.700	47.000	577.000	54.000
GR	575.200	59.000	574.300	64.000	575.100	69.000	575.800	74.000	576.200	79.000
GR	576.400	84.000	577.400	89.000	590.800	115.000	588.900	143.000	590.200	241.000
GR	591.000	339.000	592.000	437.000	593.100	535.000	593.600	632.000	595.000	1024.000
GR	601.000	1460.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	6.000	.060	900.000	.140	1300.000	.070	1600.000	.140	1700.000	.062
NH	1872.000	.140	1900.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	8.831	31.000	1700.000	1872.000	980.000	1690.000	2820.000	-0.000	-0.000	-0.000
GR	605.100	0.000	600.400	150.000	595.600	300.000	595.100	400.000	594.200	500.000
GR	591.700	700.000	590.900	800.000	591.700	900.000	591.600	1000.000	591.200	1100.000
GR	588.300	1200.000	592.700	1300.000	593.300	1400.000	593.800	1500.000	593.700	1600.000
GR	589.200	1700.000	586.400	1800.000	586.300	1812.000	580.800	1821.000	579.800	1824.000
GR	578.400	1829.000	577.700	1834.000	576.700	1839.000	576.300	1844.000	576.600	1849.000
GR	578.700	1852.000	580.400	1854.000	587.300	1867.000	589.500	1872.000	590.300	1882.000
GR	600.700	1900.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.080	90.000	.140	160.000	.062	241.000	.080	747.000	-0.000
X1	9.229	25.000	160.000	241.000	650.000	1880.000	2100.000	-0.000	-0.000	-0.000
GR	600.000	0.000	594.000	32.000	588.400	90.000	588.300	132.000	588.800	160.000

GR	580.900	202.000	581.600	207.000	581.800	212.000	582.200	217.000	582.500	222.000
GR	582.500	227.000	582.900	232.000	588.600	241.000	592.600	280.000	591.900	332.000
GR	592.100	432.000	591.000	532.000	591.800	632.000	591.900	654.000	604.100	747.000
NC	.100	.100	.062	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	9.377	25.000	1460.000	1541.000	480.000	600.000	780.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	50.000	-0.000	1550.000	-0.000	-0.000	-0.000	-0.000
GR	600.000	0.000	595.000	20.000	590.000	50.000	589.000	75.000	590.000	100.000
GR	590.000	1060.000	589.000	1080.000	590.000	1100.000	590.000	1380.000	588.600	1460.000
GR	582.900	1469.000	582.500	1474.000	582.500	1479.000	582.200	1484.000	581.800	1489.000
GR	581.600	1494.000	580.900	1499.000	580.400	1509.000	580.200	1514.000	579.300	1519.000
GR	579.000	1534.000	580.100	1537.000	588.800	1541.000	595.000	1640.000	600.000	1650.000
NH	4.000	.080	238.000	.055	305.000	.120	315.000	.060	1300.000	-0.000
X1	9.634	17.000	238.000	305.000	860.000	980.000	1360.000	-0.000	-0.000	-0.000
GR	605.000	0.000	600.000	50.000	595.000	100.000	590.600	238.000	582.500	247.000
GR	580.800	252.000	580.600	260.000	581.000	270.000	580.800	280.000	580.000	290.000
GR	581.400	298.000	589.000	305.000	590.000	315.000	595.000	665.000	595.000	1065.000
GR	600.000	1100.000	605.000	1300.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.060	425.000	.140	438.000	.055	505.000	.080	950.000	-0.000
X1	9.794	20.000	438.000	505.000	840.000	550.000	840.000	-0.000	-0.000	-0.000
GR	605.900	0.000	598.700	100.000	595.600	200.000	595.200	300.000	593.100	425.000
GR	590.600	438.000	582.500	447.000	580.800	452.000	580.600	460.000	581.000	470.000
GR	580.800	480.000	580.300	490.000	581.400	498.000	589.000	505.000	594.500	533.000
GR	595.000	600.000	594.000	700.000	592.600	800.000	594.500	900.000	601.200	950.000
NC	.070	.100	.055	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.123	12.000	1541.000	1591.000	1010.000	1520.000	1740.000	-0.000	-0.000	-0.000
GR	605.000	0.000	600.000	200.000	595.000	600.000	595.000	1150.000	590.700	1541.000
GR	582.600	1554.000	581.200	1567.000	583.100	1579.000	590.700	1591.000	595.000	1631.000
GR	600.000	1651.000	605.000	1661.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.120	41.000	.055	91.000	.100	141.000	.060	1491.000	-0.000
X1	10.456	18.000	41.000	91.000	1050.000	1460.000	1760.000	-0.000	-0.000	-0.000
GR	602.700	0.000	590.700	41.000	583.100	53.000	582.100	65.000	582.600	78.000
GR	590.700	91.000	591.900	141.000	593.500	241.000	593.800	341.000	593.500	441.000
GR	594.200	541.000	592.500	641.000	594.500	741.000	595.800	841.000	596.100	941.000
GR	596.400	1041.000	599.000	1141.000	600.400	1491.000	-0.000	-0.000	-0.000	-0.000
NC	.375	.080	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
QT	4.000	4370.000	6220.000	7040.000	8920.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.760	37.000	463.000	694.000	1800.000	950.000	1600.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	71.000	-0.000	768.000	-0.000	-0.000	-0.000	-0.000
GR	613.300	0.000	598.900	71.000	597.400	79.000	594.400	94.000	594.500	109.000
GR	594.500	116.000	595.000	194.000	595.900	294.000	591.300	346.000	585.300	353.000
GR	584.900	363.000	592.500	373.000	592.800	394.000	591.700	463.000	587.400	494.000
GR	584.700	520.000	584.300	526.000	584.300	534.000	584.300	554.000	583.700	566.000
GR	580.000	574.000	579.900	584.000	578.800	589.000	578.700	594.000	579.400	605.000
GR	581.400	625.000	581.600	630.000	583.800	636.000	585.800	639.000	587.400	663.000
GR	595.900	694.000	596.600	714.000	596.600	794.000	597.300	894.000	601.500	994.000
GR	605.700	1094.000	607.500	1194.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	2.250	.100	.040	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.770	22.000	680.000	784.000	59.000	59.000	59.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	147.000	-0.000	784.000	-0.000	592.500	592.500	-0.000
GR	605.000	0.000	600.000	60.000	595.000	90.000	592.800	120.000	592.500	135.000
GR	592.500	150.000	595.000	180.000	595.000	460.000	585.400	680.000	584.000	690.000
GR	584.100	702.000	584.400	713.000	584.400	722.000	584.400	729.000	584.100	741.000
GR	584.200	753.000	584.000	759.000	588.800	765.000	592.000	771.000	593.900	784.000
GR	595.000	844.000	600.000	864.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.025	239.000	.040	254.000	.025	787.000	.040	876.000	.025
NH	1331.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.771	29.000	787.000	876.000	1.000	1.000	1.000	-0.000	-0.000	-0.000

BI	254.000	599.600	597.900	254.000	599.600	599.600	331.000	598.100	0.000	731.000
BT	602.800	0.000	787.000	603.400	0.000	787.000	603.400	600.300	876.000	603.400
BT	600.300	876.000	603.400	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	610.500	0.000	608.400	31.000	603.200	131.000	600.000	239.000	592.800	239.000
GR	592.500	247.000	592.500	254.000	599.600	254.000	598.100	331.000	602.800	731.000
GR	603.400	787.000	585.400	787.000	584.000	796.000	584.100	806.000	584.400	816.000
GR	584.400	825.000	584.400	831.000	584.100	841.000	584.200	851.000	584.000	856.000
GR	588.800	860.000	592.000	865.000	593.900	876.000	603.400	876.000	601.600	931.000
GR	603.200	1031.000	604.800	1131.000	607.600	1231.000	609.400	1331.000	-0.000	-0.000
NH	5.000	.025	239.000	.040	254.000	.025	787.000	.040	876.000	.025
NH	1331.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.776	-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	2.250	.100	.040	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.777	22.000	680.000	784.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	147.000	-0.000	784.000	-0.000	592.500	592.500	-0.000
GR	605.000	0.000	600.000	60.000	595.000	90.000	592.800	120.000	592.500	135.000
GR	592.500	150.000	595.000	180.000	595.000	460.000	585.400	680.000	584.000	690.000
GR	584.100	702.000	584.400	713.000	584.400	722.000	584.400	729.000	584.100	741.000
GR	584.200	753.000	584.000	759.000	588.800	765.000	592.000	771.000	593.900	784.000
GR	595.000	844.000	600.000	864.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	1.750	.100	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.786	21.000	787.000	876.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	189.000	-0.000	926.000	-0.000	-0.000	-0.000	-0.000
GR	605.000	0.000	600.000	70.000	595.000	130.000	595.000	188.000	595.000	246.000
GR	595.000	480.000	590.000	730.000	585.400	787.000	584.000	796.000	584.100	806.000
GR	584.400	816.000	584.400	825.000	584.400	831.000	584.100	841.000	584.200	851.000
GR	584.000	856.000	588.800	860.000	592.000	865.000	593.900	876.000	600.000	926.000
GR	605.000	976.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.080	400.000	.140	1030.000	.064	1098.000	.140	1130.000	.060
NH	1240.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	10.968	19.000	1030.000	1098.000	540.000	1020.000	960.000	-0.000	-0.000	-0.000
GR	615.000	0.000	610.000	50.000	605.000	90.000	600.000	140.000	595.000	170.000
GR	595.000	400.000	592.000	1030.000	586.000	1041.000	584.500	1048.000	585.700	1056.000
GR	585.900	1064.000	587.300	1073.000	590.400	1079.000	594.000	1098.000	595.000	1100.000
GR	600.000	1110.000	605.000	1120.000	610.000	1130.000	615.000	1240.000	-0.000	-0.000
NH	4.000	.140	130.000	.073	198.000	.140	930.000	.060	1230.000	-0.000
X1	11.307	21.000	130.000	198.000	1470.000	1520.000	1790.000	-0.000	-0.000	-0.000
GR	614.700	0.000	610.100	30.000	594.000	130.000	590.400	149.000	587.300	155.000
GR	585.900	164.000	585.700	172.000	585.500	180.000	586.000	187.000	592.000	198.000
GR	594.600	230.000	595.200	330.000	595.500	430.000	594.500	530.000	594.500	630.000
GR	597.200	730.000	596.100	830.000	593.600	930.000	597.800	1030.000	604.100	1130.000
GR	608.100	1230.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.060	770.000	.140	830.000	.064	898.000	.140	910.000	.060
NH	980.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	11.547	17.000	830.000	898.000	1200.000	700.000	1270.000	-0.000	-0.000	-0.000
GR	615.000	0.000	610.000	10.000	605.000	50.000	600.000	70.000	595.000	770.000
GR	592.000	830.000	586.000	841.000	585.700	848.000	585.700	856.000	585.900	864.000
GR	587.300	873.000	590.400	879.000	594.000	898.000	595.000	900.000	600.000	910.000
GR	605.000	920.000	610.000	980.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.140	.140	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	11.776	17.000	140.000	212.000	940.000	1070.000	1210.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	90.000	-0.000	1050.000	-0.000	-0.000	-0.000	-0.000
GR	615.000	0.000	610.000	20.000	605.000	40.000	600.000	50.000	595.000	80.000
GR	594.800	140.000	587.500	152.000	585.900	161.000	586.500	175.000	587.400	184.000
GR	588.100	196.000	596.800	212.000	595.000	340.000	595.000	1400.000	600.000	1450.000
GR	605.000	1470.000	610.000	1500.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.060	740.000	.080	840.000	.064	917.000	.140	940.000	.080

X1	12.060	19.000	840.000	917.000	1330.000	1260.000	1500.000	-0.000	-0.000	-0.000
GR	618.300	0.000	613.500	40.000	598.900	140.000	597.800	240.000	597.900	340.000
GR	598.200	440.000	598.900	540.000	598.900	640.000	596.900	740.000	597.100	840.000
GR	588.400	857.000	587.700	870.000	586.800	879.000	586.100	894.000	587.800	904.000
GR	595.100	917.000	600.100	940.000	606.800	980.000	620.300	1015.000	-0.000	-0.000
NH	5.000	.090	1080.000	.140	1140.000	.064	1217.000	.140	1220.000	.100
NH	1245.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	12.326	16.000	1140.000	1217.000	1190.000	1250.000	1400.000	-0.000	-0.000	-0.000
GR	610.000	0.000	605.000	180.000	600.000	380.000	600.000	980.000	598.000	1080.000
GR	597.100	1140.000	588.400	1157.000	587.700	1170.000	587.300	1179.000	587.300	1194.000
GR	587.800	1204.000	595.100	1217.000	600.000	1225.000	605.000	1230.000	610.000	1235.000
GR	615.000	1240.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.090	1116.000	.140	1137.000	.064	1177.000	.140	1200.000	.100
NH	1300.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	12.481	23.000	1137.000	1177.000	700.000	840.000	820.000	-0.000	-0.000	-0.000
GR	611.800	0.000	605.800	100.000	601.500	150.000	600.200	200.000	600.200	300.000
GR	600.800	400.000	599.400	500.000	597.700	600.000	599.100	700.000	600.300	800.000
GR	596.400	900.000	597.500	1000.000	597.800	1095.000	593.700	1116.000	593.300	1137.000
GR	588.400	1144.000	588.000	1153.000	588.300	1162.000	588.800	1175.000	592.700	1177.000
GR	601.400	1200.000	607.900	1230.000	620.700	1300.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.090	400.000	.060	670.000	.064	710.000	.140	790.000	-0.000
X1	12.680	16.000	670.000	710.000	750.000	1050.000	1050.000	-0.000	-0.000	-0.000
GR	605.000	0.000	600.000	300.000	600.000	400.000	595.000	600.000	593.300	670.000
GR	588.400	677.000	588.000	686.000	588.300	695.000	588.800	708.000	592.700	710.000
GR	595.000	730.000	600.000	750.000	605.000	760.000	610.000	770.000	615.000	780.000
GR	620.000	790.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.140	.140	.073	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	12.879	15.000	487.000	558.000	820.000	780.000	1050.000	-0.000	-0.000	-0.000
GR	608.300	0.000	605.500	70.000	600.800	170.000	598.200	270.000	597.200	370.000
GR	598.700	487.000	591.000	498.000	589.000	510.000	589.700	516.000	587.000	530.000
GR	588.100	539.000	590.700	545.000	598.000	558.000	605.700	605.000	620.600	670.000
NC	.140	.140	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.043	15.000	736.000	804.000	750.000	850.000	870.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	500.000	606.830	1200.000	606.830	-0.000	-0.000	-0.000
GR	610.000	0.000	605.000	140.000	600.000	600.000	597.600	736.000	589.200	748.000
GR	588.600	761.000	588.000	775.000	588.000	784.000	589.100	788.000	599.600	804.000
GR	600.000	1100.000	605.000	1125.000	610.000	1150.000	615.000	1175.000	620.000	1200.000
X1	13.189	25.000	936.000	1000.000	520.000	900.000	770.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	500.000	607.360	1300.000	607.360	-0.000	-0.000	-0.000
GR	612.400	0.000	607.000	100.000	604.200	200.000	602.800	300.000	602.200	400.000
GR	602.700	500.000	598.900	600.000	600.400	700.000	599.800	800.000	600.200	900.000
GR	598.500	936.000	590.100	947.000	589.500	959.000	588.800	972.000	588.900	981.000
GR	590.200	985.000	600.500	1000.000	598.200	1100.000	600.200	1200.000	599.000	1300.000
GR	598.100	1400.000	599.800	1500.000	599.600	1600.000	597.500	1700.000	621.800	1775.000
X1	13.420	19.000	313.000	400.000	920.000	1300.000	1220.000	-0.000	-0.000	-0.000
GR	612.600	0.000	600.500	50.000	601.600	100.000	599.700	200.000	598.500	300.000
GR	598.700	313.000	591.000	333.000	591.000	356.000	588.900	370.000	589.200	385.000
GR	600.200	400.000	596.300	500.000	599.800	555.000	599.900	600.000	599.100	700.000
GR	600.200	735.000	613.700	775.000	615.000	780.000	620.000	850.000	-0.000	-0.000
NC	.140	.140	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.538	32.000	976.000	1052.000	680.000	120.000	620.000	.950	-0.000	-0.000
X3	-0.000	-0.000	-0.000	850.000	-0.000	2000.000	-0.000	-0.000	-0.000	-0.000
GR	609.500	0.000	605.600	52.000	603.000	152.000	601.700	252.000	601.100	352.000
GR	601.200	452.000	601.500	552.000	601.000	652.000	601.300	752.000	601.000	852.000
GR	601.200	952.000	598.200	976.000	591.100	985.000	589.600	996.000	589.300	1014.000
GR	591.000	1025.000	592.000	1038.000	597.700	1052.000	601.500	1077.000	600.900	1252.000

GR	600.200	1700.000	599.900	1747.000	599.100	1852.000	600.200	1889.000	613.700	1932.000
GR	615.000	1937.000	620.000	2010.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.025	.025	.073	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.546	37.000	938.000	1025.000	49.000	49.000	49.000	.950	-0.000	-0.000
X3	10.000	-0.000	-0.000	750.000	-0.000	1950.000	-0.000	601.800	601.800	-0.000
GR	609.200	0.000	604.100	25.000	602.600	125.000	602.900	225.000	603.100	325.000
GR	603.000	425.000	602.300	425.000	602.300	525.000	601.800	625.000	602.100	725.000
GR	602.200	825.000	604.600	925.000	605.300	938.000	588.100	938.000	588.400	951.000
GR	589.500	959.000	591.800	966.000	594.300	985.000	595.000	996.000	596.600	1013.000
GR	598.100	1024.000	605.200	1025.000	601.400	1125.000	601.100	1225.000	600.400	1325.000
GR	599.900	1425.000	599.900	1525.000	600.000	1625.000	600.000	1625.000	600.000	1625.000
GR	600.200	1650.000	599.900	1697.000	599.100	1802.000	600.200	1839.000	613.700	1882.000
GR	615.000	1887.000	620.000	1960.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.025	.025	.040	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.547	37.000	938.000	1025.000	1.000	1.000	1.000	.950	-0.000	-0.000
X3	10.000	-0.000	-0.000	750.000	-0.000	1950.000	-0.000	601.800	601.800	-0.000
BT	8.000	925.000	605.300	0.000	938.000	605.300	604.200	951.000	605.400	604.300
BT	966.000	605.500	604.400	985.000	605.500	604.400	996.000	605.500	604.400	1013.000
BT	605.400	604.300	1025.000	605.200	604.100	1038.000	592.000	0.000	-0.000	-0.000
GR	609.200	0.000	604.100	25.000	602.600	125.000	602.900	225.000	603.100	325.000
GR	603.000	425.000	602.300	425.000	602.300	525.000	601.800	625.000	602.100	725.000
GR	602.200	825.000	604.600	925.000	605.300	938.000	588.100	938.000	588.400	951.000
GR	589.500	959.000	591.800	966.000	594.300	985.000	595.000	996.000	596.600	1013.000
GR	598.100	1024.000	605.200	1025.000	601.400	1125.000	601.100	1225.000	600.400	1325.000
GR	599.900	1425.000	599.900	1525.000	600.000	1625.000	600.000	1625.000	600.000	1625.000
GR	600.200	1650.000	599.900	1697.000	599.100	1802.000	600.200	1839.000	613.700	1882.000
GR	615.000	1887.000	620.000	1960.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.551	37.000	938.000	1025.000	18.000	18.000	18.000	.950	-0.000	-0.000
X3	10.000	-0.000	-0.000	750.000	-0.000	1950.000	-0.000	601.800	601.800	-0.000
BT	8.000	925.000	605.300	0.000	938.000	605.300	604.200	951.000	605.400	604.300
BT	966.000	605.500	604.400	985.000	605.500	604.400	996.000	605.500	604.400	1013.000
BT	605.400	604.300	1025.000	605.200	604.100	1038.000	592.000	0.000	-0.000	-0.000
GR	609.200	0.000	604.100	25.000	602.600	125.000	602.900	225.000	603.100	325.000
GR	603.000	425.000	602.300	425.000	602.300	525.000	601.800	625.000	602.100	725.000
GR	602.200	825.000	604.600	925.000	605.300	938.000	588.100	938.000	588.400	951.000
GR	589.500	959.000	591.800	966.000	594.300	985.000	595.000	996.000	596.600	1013.000
GR	598.100	1024.000	605.200	1025.000	601.400	1125.000	601.100	1225.000	600.400	1325.000
GR	599.900	1425.000	599.900	1525.000	600.000	1625.000	600.000	1625.000	600.000	1625.000
GR	600.200	1650.000	599.900	1697.000	599.100	1802.000	600.200	1839.000	613.700	1882.000
GR	615.000	1887.000	620.000	1960.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.025	.025	.073	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.552	37.000	938.000	1025.000	1.000	1.000	1.000	.950	-0.000	-0.000
X3	10.000	-0.000	-0.000	750.000	-0.000	1950.000	-0.000	601.800	601.800	-0.000
GR	609.200	0.000	604.100	25.000	602.600	125.000	602.900	225.000	603.100	325.000
GR	603.000	425.000	602.300	425.000	602.300	525.000	601.800	625.000	602.100	725.000
GR	602.200	825.000	604.600	925.000	605.300	938.000	588.100	938.000	588.400	951.000
GR	589.500	959.000	591.800	966.000	594.300	985.000	595.000	996.000	596.600	1013.000
GR	598.100	1024.000	605.200	1025.000	601.400	1125.000	601.100	1225.000	600.400	1325.000
GR	599.900	1425.000	599.900	1525.000	600.000	1625.000	600.000	1625.000	600.000	1625.000
GR	600.200	1650.000	599.900	1697.000	599.100	1802.000	600.200	1839.000	613.700	1882.000
GR	615.000	1887.000	620.000	1960.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.060	.060	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	13.560	37.000	938.000	1025.000	49.000	49.000	49.000	.950	-0.000	-0.000
X3	-0.000	-0.000	-0.000	682.000	-0.000	1950.000	-0.000	-0.000	-0.000	-0.000
GR	609.200	0.000	604.100	25.000	602.600	125.000	602.900	225.000	603.100	325.000
GR	603.000	425.000	602.300	425.000	602.300	525.000	601.800	625.000	602.100	725.000
GR	602.200	825.000	604.600	925.000	605.300	938.000	588.200	938.000	588.400	951.000
GR	589.500	959.000	591.800	966.000	594.300	985.000	595.000	996.000	596.600	1013.000
GR	598.100	1024.000	605.200	1025.000	601.400	1125.000	601.100	1225.000	600.400	1325.000
GR	599.900	1425.000	599.900	1525.000	600.000	1625.000	600.000	1625.000	600.000	1625.000

GR	615.000	1887.000	620.000	1960.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.080	150.000	.060	1050.000	.140	1260.000	.064	1350.000	-0.000
X1	13.738	19.000	1260.000	1350.000	1240.000	620.000	940.000	-0.000	-0.000	-0.000
GR	621.300	0.000	609.300	50.000	602.400	150.000	600.400	250.000	602.200	450.000
GR	599.100	550.000	600.700	650.000	599.900	750.000	601.700	850.000	599.500	950.000
GR	600.600	1050.000	601.200	1150.000	596.300	1260.000	591.700	1270.000	590.900	1285.000
GR	590.700	1290.000	590.800	1300.000	593.500	1310.000	610.800	1350.000	-0.000	-0.000
NC	.140	.140	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	14.083	17.000	460.000	550.000	940.000	1260.000	1820.000	-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	620.000	0.000	615.000	10.000	610.000	20.000	605.000	30.000	600.000	70.000
GR	600.000	350.000	596.300	460.000	591.700	470.000	591.200	485.000	591.200	490.000
GR	591.200	500.000	593.500	510.000	600.000	550.000	600.000	850.000	605.000	1070.000
GR	610.000	1100.000	615.000	1130.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.100	.140	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	14.348	17.000	660.000	727.000	1090.000	760.000	1400.000	-0.000	-0.000	-0.000
GR	620.800	0.000	603.500	80.000	602.200	160.000	603.800	260.000	602.100	360.000
GR	602.100	460.000	602.100	560.000	602.800	660.000	593.200	668.000	591.800	679.000
GR	591.700	687.000	591.500	697.000	591.500	704.000	592.500	719.000	601.200	727.000
GR	602.700	787.000	615.000	837.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.140	140.000	.060	490.000	.140	560.000	.073	627.000	.140
NH	840.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	14.903	16.000	560.000	627.000	1120.000	1500.000	2930.000	-0.000	-0.000	-0.000
GR	620.000	0.000	615.000	100.000	610.000	120.000	605.000	140.000	600.000	490.000
GR	602.800	560.000	593.200	568.000	591.800	579.000	591.700	587.000	591.300	597.000
GR	591.300	604.000	592.500	619.000	601.200	627.000	605.000	780.000	610.000	810.000
GR	615.000	840.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.080	160.000	.060	960.000	.120	1060.000	.064	1150.000	.140
NH	1515.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.081	24.000	1060.000	1150.000	810.000	680.000	940.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	370.000	-0.000	1470.000	-0.000	-0.000	-0.000	-0.000
GR	625.300	0.000	606.200	85.000	603.200	160.000	603.300	260.000	602.400	360.000
GR	603.100	460.000	602.800	560.000	604.000	660.000	604.600	760.000	603.400	860.000
GR	604.100	960.000	605.000	1060.000	595.500	1074.000	592.800	1092.000	591.300	1100.000
GR	593.500	1110.000	595.800	1130.000	598.500	1137.000	604.400	1150.000	604.600	1260.000
GR	603.000	1360.000	601.400	1460.000	601.400	1483.000	612.900	1515.000	-0.000	-0.000
NH	5.000	.080	350.000	.060	700.000	.140	760.000	.064	850.000	.140
NH	1155.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.094	19.000	760.000	850.000	190.000	20.000	70.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	200.000	-0.000	1150.000	-0.000	-0.000	-0.000	-0.000
GR	625.000	0.000	620.000	30.000	615.000	60.000	610.000	90.000	605.000	120.000
GR	605.000	350.000	605.000	700.000	605.300	760.000	595.800	774.000	593.100	792.000
GR	591.500	800.000	593.800	810.000	596.100	830.000	598.800	837.000	604.700	850.000
GR	603.000	1050.000	601.400	1110.000	601.400	1123.000	612.900	1155.000	-0.000	-0.000
NH	6.000	.080	170.000	.060	450.000	.140	750.000	.064	832.000	.140
NH	1040.000	.080	1200.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.132	17.000	750.000	832.000	280.000	80.000	200.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	180.000	-0.000	970.000	-0.000	-0.000	-0.000	-0.000
GR	625.000	0.000	620.000	20.000	615.000	40.000	610.000	60.000	605.000	80.000
GR	605.000	170.000	605.000	450.000	602.800	750.000	594.300	761.000	593.100	770.000
GR	592.200	785.000	593.000	800.000	594.900	817.000	605.000	832.000	605.000	1010.000
GR	610.000	1040.000	615.000	1200.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.080	160.000	.060	430.000	.140	650.000	.064	732.000	.140
NH	1100.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.153	18.000	650.000	732.000	120.000	90.000	110.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	90.000	-0.000	770.000	-0.000	-0.000	-0.000	-0.000
GR	625.000	0.000	620.000	20.000	615.000	40.000	610.000	60.000	605.000	80.000

GR	592.500	685.000	593.300	700.000	595.200	717.000	600.000	732.000	600.000	750.000
GR	605.000	910.000	610.000	1050.000	615.000	1100.000	-0.000	-0.000	-0.000	-0.000
NC	.500	.140	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.170	15.000	650.000	732.000	100.000	90.000	90.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	142.000	-0.000	732.000	-0.000	-0.000	-0.000	-0.000
GR	614.100	0.000	605.400	50.000	604.800	150.000	604.100	250.000	602.400	350.000
GR	602.700	450.000	604.300	550.000	603.400	650.000	594.900	661.000	593.700	670.000
GR	592.900	685.000	593.600	700.000	595.500	717.000	609.300	732.000	613.400	850.000
NC	.025	.025	.040	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.178	17.000	620.000	696.000	49.000	49.000	49.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	608.200	608.200	-0.000
GR	613.900	0.000	612.800	20.000	609.700	120.000	608.600	220.000	608.200	320.000
GR	608.200	420.000	608.400	520.000	610.900	620.000	594.200	620.000	593.600	634.000
GR	595.000	650.000	593.600	666.000	592.700	682.000	591.400	696.000	610.800	696.000
GR	611.500	720.000	613.100	920.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.179	-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	608.200	608.200	-0.000
BT	11.000	0.000	613.900	0.000	20.000	612.800	0.000	120.000	609.700	0.000
BT	220.000	608.600	0.000	320.000	608.200	0.000	420.000	608.200	0.000	520.000
BT	608.400	0.000	620.000	610.900	609.600	696.000	610.800	609.600	720.000	611.500
BT	0.000	920.000	613.100	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.184	-0.000	-0.000	-0.000	23.000	23.000	23.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	608.200	608.200	-0.000
X2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	1.000	-0.000	-0.000	-0.000
X1	15.185	-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	608.200	608.200	-0.000
NC	.500	.140	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.193	16.000	680.000	770.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	149.000	-0.000	789.000	-0.000	-0.000	-0.000	-0.000
GR	614.000	0.000	605.400	50.000	604.800	150.000	604.100	250.000	602.400	350.000
GR	602.700	450.000	604.300	550.000	601.400	650.000	601.300	680.000	593.600	697.000
GR	595.000	716.000	593.600	735.000	592.700	754.000	591.500	770.000	611.500	789.000
GR	613.100	920.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.140	.140	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.240	14.000	560.000	636.000	250.000	250.000	250.000	-0.000	-0.000	-0.000
GR	625.000	0.000	620.000	30.000	615.000	60.000	610.000	90.000	605.000	150.000
GR	600.000	200.000	601.300	560.000	594.300	574.000	595.700	590.000	594.300	606.000
GR	593.400	622.000	592.100	636.000	611.500	660.000	613.100	860.000	-0.000	-0.000
X1	15.331	20.000	254.000	335.000	180.000	350.000	480.000	-0.000	-0.000	-0.000
GR	625.000	0.000	620.000	30.000	615.000	60.000	610.000	80.000	605.000	120.000
GR	605.000	170.000	600.000	190.000	597.500	254.000	593.100	275.000	593.400	290.000
GR	593.100	300.000	593.100	310.000	597.500	323.000	603.000	335.000	602.100	435.000
GR	604.600	535.000	601.800	635.000	605.000	685.000	610.000	715.000	615.000	760.000
X1	15.364	18.000	204.000	285.000	140.000	200.000	170.000	-0.000	-0.000	-0.000
GR	624.000	0.000	622.900	51.000	604.400	85.000	605.000	204.000	598.100	209.000
GR	593.500	225.000	594.000	240.000	593.700	250.000	593.600	260.000	598.100	273.000
GR	603.600	285.000	602.100	385.000	604.600	485.000	601.800	585.000	603.800	660.000
GR	610.500	685.000	617.400	705.000	624.300	735.000	-0.000	-0.000	-0.000	-0.000
X1	15.477	19.000	204.000	285.000	600.000	280.000	600.000	-0.000	-0.000	-0.000
GR	615.000	0.000	610.000	100.000	605.000	160.000	605.000	204.000	598.100	209.000
GR	593.600	225.000	594.000	240.000	593.700	250.000	593.600	260.000	598.100	273.000
GR	603.600	285.000	602.100	385.000	604.600	485.000	601.800	585.000	605.000	590.000
GR	610.000	610.000	615.000	630.000	620.000	650.000	625.000	670.000	-0.000	-0.000
NH	4.000	.080	900.000	.140	1100.000	.064	1154.000	.140	1400.000	-0.000

GR	618.800	0.000	612.400	100.000	609.000	185.000	609.000	200.000	609.100	295.000
GR	609.200	309.000	609.000	400.000	607.700	900.000	608.400	1100.000	597.900	1110.000
GR	593.800	1120.000	594.500	1127.000	595.500	1134.000	598.900	1148.000	602.600	1154.000
GR	605.000	1354.000	610.000	1360.000	615.000	1380.000	620.000	1390.000	625.000	1400.000
NH	5.000	.140	295.000	.080	850.000	.140	1150.000	.064	1204.000	.080
NH	1620.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	15.697	20.000	1150.000	1204.000	1.000	340.000	200.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	-0.000	1600.000	-0.000	-0.000	-0.000	-0.000
GR	618.800	0.000	612.400	100.000	609.000	185.000	609.000	200.000	609.100	295.000
GR	609.200	309.000	609.000	400.000	608.000	500.000	608.000	850.000	608.400	1150.000
GR	597.900	1160.000	593.900	1170.000	594.500	1177.000	595.500	1184.000	598.900	1198.000
GR	602.600	1204.000	605.000	1550.000	610.000	1580.000	615.000	1600.000	620.000	1620.000
NH	4.000	.140	295.000	.100	1200.000	.064	1254.000	.080	2160.000	-0.000
X1	15.729	21.000	1200.000	1254.000	1.000	250.000	170.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	-0.000	2000.000	-0.000	-0.000	-0.000	-0.000
GR	618.800	0.000	612.400	100.000	609.000	185.000	609.000	200.000	609.100	295.000
GR	609.200	309.000	609.000	400.000	608.500	500.000	608.400	950.000	605.000	1200.000
GR	597.900	1210.000	593.900	1220.000	594.500	1227.000	595.500	1234.000	598.900	1248.000
GR	602.600	1254.000	605.000	1700.000	605.000	2100.000	610.000	2120.000	615.000	2140.000
GR	620.000	2160.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.140	295.000	.100	600.000	.064	654.000	.080	2400.000	-0.000
X1	15.841	35.000	600.000	654.000	1.000	680.000	590.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	613.260	1800.000	613.260	-0.000	-0.000	-0.000
GR	618.800	0.000	612.400	100.000	609.000	185.000	609.000	200.000	609.100	295.000
GR	609.200	309.000	609.000	400.000	607.700	500.000	608.400	600.000	597.900	610.000
GR	594.400	620.000	594.500	627.000	595.500	634.000	598.900	648.000	602.600	654.000
GR	605.200	700.000	604.100	800.000	607.300	900.000	606.700	1000.000	606.300	1100.000
GR	606.100	1200.000	605.400	1300.000	607.000	1400.000	607.600	1500.000	606.600	1600.000
GR	606.100	1700.000	605.700	1800.000	605.300	1900.000	604.600	2000.000	604.300	2100.000
GR	607.000	2200.000	610.000	2280.000	615.000	2300.000	620.000	2350.000	625.000	2400.000
NH	4.000	.140	100.000	.064	154.000	.140	800.000	.080	1400.000	-0.000
X1	16.034	15.000	100.000	154.000	820.000	1030.000	1020.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	0.000	613.580	1150.000	613.580	-0.000	-0.000	-0.000
GR	625.000	0.000	620.000	40.000	615.000	60.000	610.000	80.000	608.400	100.000
GR	600.000	106.000	596.600	120.000	595.600	127.000	595.300	134.000	599.000	144.000
GR	602.600	154.000	605.000	800.000	610.000	1200.000	615.000	1300.000	620.000	1400.000
NC	.140	.140	.064	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	16.144	14.000	500.000	605.000	580.000	340.000	580.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	400.000	613.830	950.000	613.830	-0.000	-0.000	-0.000
GR	630.000	0.000	625.000	30.000	620.000	60.000	615.000	110.000	610.000	130.000
GR	606.300	500.000	600.100	516.000	595.800	530.000	595.800	557.000	595.800	571.000
GR	599.400	585.000	608.600	605.000	610.000	1230.000	615.000	1300.000	-0.000	-0.000
QT	4.000	4280.000	6100.000	6910.000	8750.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	16.188	24.000	400.000	505.000	180.000	240.000	230.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	388.000	614.090	570.000	614.090	-0.000	-0.000	-0.000
GR	615.900	0.000	608.000	68.000	604.900	100.000	604.400	200.000	606.300	300.000
GR	606.300	388.000	606.300	400.000	601.000	416.000	596.000	430.000	596.300	457.000
GR	596.600	471.000	600.300	485.000	608.600	505.000	610.200	600.000	609.900	700.000
GR	609.900	800.000	610.700	900.000	614.300	1000.000	617.000	1100.000	617.000	1100.000
GR	620.000	1200.000	620.000	1400.000	622.000	1500.000	625.000	1700.000	-0.000	-0.000
NC	.088	.088	.053	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	16.197	22.000	200.000	296.000	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	613.400	613.400	-0.000	-0.000
GR	617.600	0.000	616.200	100.000	614.900	200.000	605.800	200.000	598.100	215.000
GR	596.600	225.000	597.000	235.000	595.600	246.000	596.300	246.000	596.300	252.000
GR	595.200	260.000	594.500	270.000	595.300	280.000	594.600	290.000	595.800	296.000
GR	615.000	296.000	615.000	300.000	614.300	400.000	614.200	500.000	614.500	600.000
GR	614.900	700.000	616.000	800.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

X1	16.205	-0.000	-0.000	-0.000	41.000	41.000	41.000	-0.000	-0.000	-0.000
X2	-0.000	-0.000	1.000	611.500	614.200	-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	614.200	614.200	-0.000
BT	9.000	100.000	616.200	0.000	200.000	614.900	611.500	296.000	615.000	611.500
BT	300.000	615.000	0.000	400.000	614.300	0.000	500.000	614.200	0.000	600.000
BT	614.500	0.000	700.000	614.900	0.000	800.000	616.000	0.000	-0.000	-0.000
NC	.080	.140	.069	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	16.214	14.000	397.000	530.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	347.000	614.200	530.000	614.200	-0.000	-0.000	-0.000
GR	615.900	0.000	608.000	68.000	604.900	100.000	604.400	200.000	606.300	300.000
GR	606.300	388.000	609.400	397.000	599.400	421.000	597.600	439.000	600.100	456.000
GR	595.600	466.000	594.400	486.000	597.600	503.000	610.300	530.000	-0.000	-0.000
NC	.140	.140	.069	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	16.326	18.000	459.000	517.000	620.000	560.000	590.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	350.000	614.750	620.000	614.750	-0.000	-0.000	-0.000
GR	625.000	0.000	620.000	20.000	615.000	40.000	610.000	70.000	605.000	240.000
GR	605.000	400.000	602.200	459.000	599.700	466.000	595.500	473.000	593.200	484.000
GR	594.500	496.000	595.200	505.000	598.500	517.000	600.000	520.000	605.000	550.000
GR	610.000	580.000	615.000	600.000	620.000	670.000	-0.000	-0.000	-0.000	-0.000
X1	16.396	13.000	59.000	110.000	380.000	370.000	370.000	-0.000	-0.000	-0.000
GR	627.000	0.000	615.300	25.000	604.800	40.000	602.200	59.000	598.800	65.000
GR	594.600	71.000	592.800	80.000	593.600	90.000	594.300	97.000	597.600	107.000
GR	602.200	110.000	607.800	125.000	620.300	145.000	-0.000	-0.000	-0.000	-0.000
X1	16.464	13.000	59.000	110.000	340.000	380.000	360.000	-0.000	-0.000	-0.000
GR	627.000	0.000	615.300	25.000	604.800	40.000	602.200	59.000	598.800	65.000
GR	594.600	71.000	593.300	80.000	593.600	90.000	594.300	97.000	597.600	107.000
GR	602.200	110.000	607.800	125.000	620.300	145.000	-0.000	-0.000	-0.000	-0.000
NH	5.000	.080	280.000	.140	355.000	.069	425.000	.140	460.000	.060
NH	930.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	16.521	17.000	355.000	425.000	300.000	280.000	300.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	200.000	-0.000	625.000	-0.000	-0.000	-0.000	-0.000
GR	625.000	0.000	620.000	30.000	615.000	50.000	610.000	80.000	610.000	280.000
GR	606.300	355.000	595.800	375.000	594.500	385.000	593.900	395.000	594.200	400.000
GR	596.400	410.000	608.000	425.000	610.000	460.000	610.000	500.000	615.000	690.000
GR	620.000	830.000	625.000	930.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.140	155.000	.069	225.000	.140	425.000	.060	950.000	-0.000
X1	16.644	18.000	155.000	225.000	650.000	560.000	650.000	-0.000	-0.000	-0.000
GR	630.000	0.000	625.000	70.000	620.000	90.000	615.000	110.000	610.000	130.000
GR	605.000	140.000	604.800	155.000	596.900	175.000	595.600	185.000	595.000	195.000
GR	595.300	200.000	597.500	210.000	605.000	225.000	605.000	425.000	610.000	600.000
GR	615.000	850.000	620.000	950.000	625.000	1050.000	-0.000	-0.000	-0.000	-0.000
NH	4.000	.140	755.000	.078	825.000	.140	925.000	.060	1725.000	-0.000
X1	16.833	23.000	755.000	825.000	980.000	800.000	1000.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	100.000	-0.000	1200.000	-0.000	-0.000	-0.000	-0.000
GR	620.000	0.000	618.900	100.000	605.500	150.000	606.300	225.000	607.600	325.000
GR	606.300	425.000	607.700	525.000	606.400	625.000	605.300	725.000	606.300	755.000
GR	598.400	775.000	597.100	785.000	596.600	795.000	596.800	800.000	599.000	810.000
GR	608.000	825.000	609.900	925.000	610.300	1025.000	612.000	1325.000	614.000	1425.000
GR	617.100	1525.000	622.600	1625.000	626.700	1725.000	-0.000	-0.000	-0.000	-0.000
NC	.060	.100	.069	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
QT	4.000	4280.000	6100.000	6910.000	8750.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	17.215	23.000	800.000	860.000	2060.000	1520.000	2020.000	-0.000	-0.000	-0.000
GR	619.200	0.000	614.200	100.000	605.000	180.000	605.200	200.000	606.300	300.000
GR	608.000	400.000	608.900	500.000	608.900	600.000	608.100	700.000	608.700	776.000
GR	612.900	781.000	612.800	790.000	609.300	794.000	609.100	800.000	601.500	807.000
GR	597.800	815.000	597.700	825.000	597.200	835.000	597.400	845.000	600.600	852.000

NC	.025	.025	.078	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	17.233	27.000	800.000	843.000	49.000	49.000	49.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	611.500	611.500	-0.000
GR	618.600	0.000	613.700	100.000	611.900	180.900	605.900	180.900	605.000	182.000
GR	604.000	183.000	605.000	184.000	605.900	185.100	611.900	185.100	611.500	200.000
GR	612.300	300.000	613.000	400.000	613.100	500.000	613.200	600.000	613.300	700.000
GR	615.000	800.000	602.100	800.000	601.700	805.000	598.700	810.000	597.200	820.000
GR	597.300	830.000	600.900	841.000	603.200	841.000	603.400	843.000	615.000	843.000
GR	620.800	900.000	628.100	1000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.025	.025	.040	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	17.224	-0.000	-0.000	-0.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
BT	18.000	100.000	613.700	0.000	180.900	611.900	0.000	180.900	611.900	605.900
BT	182.000	611.900	606.900	183.000	611.900	607.800	184.000	611.900	606.900	185.100
BT	611.900	605.900	185.100	611.900	0.000	200.000	611.500	0.000	300.000	612.300
BT	0.000	400.000	613.000	0.000	500.000	613.100	0.000	600.000	613.200	0.000
BT	700.000	613.300	0.000	800.000	615.000	0.000	800.000	615.000	612.800	843.000
BT	615.000	612.800	843.000	615.000	0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	17.227	27.000	800.000	843.000	18.000	18.000	18.000	-0.000	-0.000	-0.000
BT	18.000	100.000	613.700	0.000	174.900	611.900	0.000	174.900	611.900	606.200
BT	175.900	611.900	607.200	177.000	611.900	608.100	178.100	611.900	607.200	179.100
BT	611.900	606.200	179.100	611.900	0.000	200.000	611.500	0.000	300.000	612.300
BT	0.000	400.000	613.000	0.000	500.000	613.100	0.000	600.000	613.200	0.000
BT	700.000	613.300	0.000	800.000	615.000	0.000	800.000	615.000	612.800	843.000
BT	615.000	612.800	843.000	615.000	0.000	-0.000	-0.000	-0.000	-0.000	-0.000
GR	618.600	0.000	613.700	100.000	611.900	174.900	606.200	174.900	605.300	175.900
GR	604.300	177.000	605.300	178.100	606.200	179.100	611.900	179.100	611.500	200.000
GR	612.300	300.000	613.000	400.000	613.100	500.000	613.200	600.000	613.300	700.000
GR	615.000	800.000	602.100	800.000	601.700	805.000	598.700	810.000	597.200	820.000
GR	597.300	830.000	600.900	841.000	603.200	841.000	603.400	843.000	615.000	843.000
GR	620.800	900.000	628.100	1000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.025	.025	.078	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	17.228	-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	611.500	611.500	-0.000
NC	.060	.060	.069	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	17.236	-0.000	-0.000	-0.000	50.000	50.000	50.000	-0.000	-0.000	-0.000
NC	.140	.140	.069	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	17.514	24.000	1236.000	1300.000	800.000	1490.000	1470.000	-0.000	-0.000	-0.000
GR	619.800	0.000	610.100	100.000	609.500	200.000	610.400	300.000	610.800	400.000
GR	609.500	500.000	610.000	600.000	611.200	700.000	611.000	800.000	609.200	900.000
GR	610.700	1000.000	610.500	1100.000	611.000	1200.000	608.700	1236.000	599.500	1254.000
GR	599.000	1261.000	598.500	1270.000	598.500	1279.000	600.400	1284.000	608.900	1300.000
GR	613.000	1330.000	615.000	1530.000	620.000	1580.000	625.000	1620.000	-0.000	-0.000
X1	17.656	22.000	1236.000	1300.000	750.000	770.000	750.000	-0.000	-0.000	-0.000
GR	619.800	0.000	610.100	100.000	609.500	200.000	610.400	300.000	610.800	400.000
GR	609.500	500.000	610.000	600.000	611.200	700.000	611.000	800.000	609.200	900.000
GR	610.700	1000.000	610.500	1100.000	611.000	1200.000	608.700	1236.000	600.300	1254.000
GR	599.800	1261.000	599.300	1270.000	599.100	1279.000	601.200	1284.000	608.900	1300.000
GR	624.300	1400.000	632.500	1440.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.140	.080	.069	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	18.549	17.000	836.000	900.000	3260.000	2200.000	4720.000	-0.000	-0.000	-0.000
GR	635.000	0.000	630.000	70.000	625.000	140.000	620.000	170.000	615.000	220.000
GR	610.000	770.000	608.700	836.000	601.000	854.000	601.000	861.000	601.000	870.000
GR	601.000	879.000	601.200	884.000	608.900	900.000	610.000	920.000	615.000	1200.000
GR	620.000	1300.000	625.000	1500.000	-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

CCHV= .300 CEHV= .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
.00	14.95	577.57	0.00	577.57	578.17	.60	0.00	0.00	580.32
7410.	0.	7410.	0.	0.	1197.	0.	0.	0.	579.82
0.00	0.00	6.19	0.00	.030	.026	.030	0.000	562.62	105.00
.000530	0.	0.	0.	0	0	1	0.00	104.06	209.06

A 120' U/S MOUTH OF BELLE RIVER

.03	14.93	577.63	0.00	0.00	578.23	.60	.06	.00	580.40
7410.	0.	7410.	0.	0.	1195.	0.	3.	0.	579.90
.01	0.00	6.20	0.00	.030	.026	.030	.026	562.70	105.00
.000532	120.	120.	120.	0	0	1	0.00	103.96	208.96

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 580.40 ELREA= 579.90

.07	14.91	577.79	0.00	0.00	578.38	.59	.14	.00	580.40
7410.	0.	7410.	0.	0.	1207.	0.	11.	1.	579.90
.02	0.00	6.14	0.00	.030	.026	.030	.026	562.88	105.00
.000520	250.	270.	290.	1	0	1	0.00	104.89	209.89

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 580.40 ELREA= 579.90

.36	14.73	578.59	0.00	0.00	579.12	.53	.73	.02	580.40
7410.	0.	7410.	0.	0.	1262.	0.	53.	5.	579.90
.09	0.00	5.87	0.00	.030	.026	.030	.026	563.86	105.00
.000459	1500.	1500.	1500.	1	0	1	0.00	106.11	211.11

.45	14.73	578.80	0.00	0.00	579.36	.56	.22	.01	580.00
7410.	0.	7410.	0.	0.	1236.	0.	66.	6.	580.10
.11	0.00	6.00	0.00	.030	.026	.030	.026	564.07	123.00
.000505	460.	460.	460.	0	0	1	0.00	103.00	226.00

1490 NH CARD USED

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

B 100' D/S FACE BRIDGE ST. BRIDGE

.45	14.66	578.86	0.00	0.00	579.39	.54	.03	.01	580.00
7410.	0.	7410.	0.	0.	1261.	0.	68.	6.	580.10
.11	0.00	5.88	0.00	.030	.033	.030	.026	564.20	123.00
.000660	50.	50.	50.	2	0	1	0.00	103.00	226.00

1490 NH CARD USED

.46	14.84	578.88	0.00	0.00	579.41	.53	.02	.00	580.00
7410.	0.	7410.	0.	0.	1266.	0.	68.	6.	580.10
.11	0.00	5.85	0.00	.030	.044	.030	.026	564.04	123.00
.001173	20.	20.	20.	1	0	1	0.00	103.00	226.00

3265 DIVIDED FLOW

.46	14.89	578.69	0.00	0.00	579.66	.96	.03	.22	584.80
7410.	0.	7410.	0.	0.	941.	0.	69.	6.	584.80
.11	0.00	7.87	0.00	.030	.026	.030	.026	563.80	800.00
.000952	30.	30.	30.	2	0	1	0.00	90.00	931.00

3265 DIVIDED FLOW

OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 582.20 ELREA= 582.20

.47	15.37	578.77	0.00	0.00	579.71	.94	.05	.01	584.80
7410.	0.	7410.	0.	0.	952.	0.	70.	6.	584.80
.12	0.00	7.79	0.00	.030	.026	.030	.026	563.40	800.00
.000916	49.	49.	49.	2	0	1	0.00	90.00	931.00

3265 DIVIDED FLOW

NORMAL BRIDGE, NRD= 6 MIN ELTRD= 584.80 MAX ELLC= 581.80

C D/S FACE BRIDGE ST. BRIDGE

.47	15.37	578.77	0.00	0.00	579.71	.94	.00	.00	584.80
7410.	0.	7410.	0.	0.	952.	0.	70.	6.	584.80
.12	0.00	7.79	0.00	.016	.021	.016	.026	563.40	800.00
.000849	1.	1.	1.	0	0	1	0.00	90.00	931.00

3265 DIVIDED FLOW

NORMAL BRIDGE, NRD= 6 MIN ELTRD= 584.80 MAX ELLC= 581.80

D U/S FACE BRIDGE ST. BRIDGE

.48	16.81	578.91	0.00	0.00	579.77	.86	.03	.02	585.50
7410.	0.	7410.	0.	0.	996.	0.	71.	6.	584.80
.12	0.00	7.44	0.00	.016	.021	.016	.026	562.10	800.00
.000749	40.	40.	40.	2	0	1	0.00	90.00	931.00

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

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 582.60 ELREA= 582.60

.48	16.81	578.91	0.00	0.00	579.77	.86	.00	.00	585.50
7410.	0.	7410.	0.	0.	996.	0.	71.	6.	584.80
.12	0.00	7.44	0.00	.040	.026	.060	.026	562.10	800.00
.001148	1.	1.	1.	0	0	1	0.00	90.00	931.00

3265-DIVIDED-FLOW

.49	17.13	579.29	0.00	0.00	579.89	.60	.04	.08	585.50
7410.	0.	7410.	0.	0.	1195.	0.	72.	6.	584.80
.12	0.00	6.20	0.00	.040	.026	.060	.026	562.16	800.00
.000722	50.	50.	50.	2	0	1	0.00	103.00	931.00

3265-DIVIDED-FLOW

.49	17.31	579.49	0.00	0.00	579.94	.45	.01	.04	585.50
7410.	0.	7410.	0.	0.	1376.	0.	73.	6.	584.80
.12	0.00	5.38	0.00	.040	.026	.060	.026	562.18	800.00
.000508	10.	10.	10.	2	0	1	0.00	116.00	931.00

.50	17.39	579.63	0.00	0.00	579.99	.36	.02	.03	585.50
7410.	0.	7410.	0.	0.	1538.	0.	74.	6.	584.80
.12	0.00	4.82	0.00	.040	.026	.060	.026	562.24	800.00
.000325	50.	50.	50.	2	0	1	0.00	131.00	931.00

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 585.50 ELREA= 584.80

E 800' U/S FACE BRIDGE ST. BRIDGE

.63	16.76	579.86	0.00	0.00	580.21	.35	.22	.00	585.50
7410.	0.	7410.	0.	0.	1559.	0.	99.	8.	584.80
.16	0.00	4.75	0.00	.040	.026	.060	.026	563.10	800.00
.000311	690.	690.	690.	2	0	1	0.00	131.00	931.00

.98	14.97	580.44	0.00	0.00	580.77	.33	.56	.01	578.70
7410.	10.	7400.	0.	17.	1607.	0.	166.	15.	583.90
.27	.58	4.60	0.00	.040	.026	.060	.026	565.47	1480.22
.000297	1830.	1830.	1830.	0	0	1	0.00	173.81	1654.03

3470 ENCROACHMENT STATIONS= 1509.0 1649.0 TYPE= 1 TARGET= 140.000

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 100000.00 ELREA= 100000.00

.99	14.91	580.45	0.00	0.00	580.80	.35	.02	.01	100000.00
7410.	0.	7410.	0.	0.	1556.	0.	168.	15.	100000.00
.28	0.00	4.76	0.00	.040	.026	.060	.026	565.54	1509.00
.000314	50.	50.	50.	0	0	1	0.00	140.00	1649.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT

SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 1433.7 1543.1 TYPE= 1 TARGET= 116.000

F 50' D/S FACE M-29 BRIDGE

1.00	14.79	580.39	0.00	0.00	580.89	.51	.02	.08	100000.00
7410.	0.	7410.	0.	0.	1299.	0.	169.	15.	100000.00
.28	0.00	5.70	0.00	.040	.026	.060	.026	565.60	1433.68
.000451	50.	50.	50.	2	0	1	0.00	109.41	1543.09

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 583.90 ELREA= 583.90

1.01	12.63	580.23	0.00	0.00	581.11	.88	.03	.19	585.30
7410.	0.	7410.	0.	0.	983.	0.	171.	15.	585.40
.28	0.00	7.54	0.00	.040	.026	.060	.026	567.60	1413.47
.000882	29.	49.	79.	2	0	1	0.00	84.81	1498.27

3265 DIVIDED FLOW

NORMAL BRIDGE,NRD= 6 MIN ELTRD= 585.30 MAX ELLC= 582.60

G D/S FACE M-29 BRIDGE

1.01	12.59	580.19	0.00	0.00	581.16	.98	.00	.05	585.30
7410.	0.	7410.	0.	0.	935.	0.	171.	15.	585.40
.28	0.00	7.93	0.00	.016	.021	.016	.026	567.60	1413.47
.001069	1.	1.	1.	2	0	1	0.00	81.04	1498.27

3265 DIVIDED FLOW

NORMAL BRIDGE,NRD= 6 MIN ELTRD= 585.30 MAX ELLC= 582.60

H U/S FACE M-29 BRIDGE

1.02	13.33	580.23	0.00	0.00	581.21	.98	.05	.00	585.30
7410.	0.	7410.	0.	0.	933.	0.	172.	15.	585.40
.28	0.00	7.95	0.00	.016	.021	.016	.026	566.90	1425.72
.001085	43.	43.	43.	0	0	1	0.00	81.04	1510.52

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 585.30 ELREA= 585.30

1.02	13.46	580.36	0.00	0.00	581.24	.88	.00	.03	585.30
7410.	0.	7410.	0.	0.	986.	0.	172.	15.	585.90
.28	0.00	7.52	0.00	.060	.026	.050	.026	566.90	1425.72
.000880	1.	1.	1.	2	0	1	0.00	84.81	1510.52

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 585.30 ELREA= 585.30

7410.	0.	7410.	0.	0.	990.	0.	173.	15.	585.90	
.28	0.00	7.49	0.00	.060	.026	.050	.026	566.95	1425.72	
.000869	50.	50.	50.	0	0	1	0.00	84.81	1510.52	

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= 1513.0 1603.0 TYPE= 1 TARGET= 90.000
ELENCL= 582.19 ELENCR= 582.19

I 800' U/S FACE M-29 BRIDGE

1.17	13.61	581.21	0.00	0.00	581.89	.68	.55	.06	585.30
7410.	0.	7410.	0.	0.	1118.	0.	191.	17.	585.90
.32	0.00	6.63	0.00	.060	.026	.050	.026	567.60	1513.00
.000626	750.	750.	750.	2	0	1	0.00	90.00	1603.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 1400.0 1700.0 TYPE= 1 TARGET= 300.000
ELENCL= 583.03 ELENCR= 583.03

1.36	13.54	582.04	0.00	0.00	582.44	.39	.46	.09	584.00
7410.	0.	7410.	0.	0.	1470.	0.	221.	20.	582.50
.37	0.00	5.04	0.00	.060	.026	.050	.026	568.50	1487.68
.000337	1020.	1020.	1020.	2	0	1	0.00	160.98	1648.65

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 1400.0 1700.0 TYPE= 1 TARGET= 300.000
ELENCL= 583.31 ELENCR= 583.31

J 2620' U/S FACE M-29 BRIDGE

1.51	13.13	582.33	0.00	0.00	582.70	.38	.26	.00	584.00
7410.	0.	7410.	0.	0.	1502.	0.	248.	23.	582.50
.42	0.00	4.93	0.00	.060	.026	.050	.026	569.20	1486.56
.000319	800.	800.	800.	2	0	1	0.00	162.93	1649.49

1490 NH CARD USED
3280 CROSS SECTION 1.74 EXTENDED .12 FEET

3470 ENCROACHMENT STATIONS= 1394.0 1670.0 TYPE= 1 TARGET= 276.000
ELENCL= 583.74 ELENCR= 583.74

1.74	12.81	582.71	0.00	0.00	583.12	.41	.40	.02	581.80
7410.	15.	7332.	63.	52.	1412.	73.	291.	29.	580.50
.48	.29	5.19	.86	.060	.026	.050	.026	569.90	1395.30
.000338	1210.	1220.	1230.	1	0	1	0.00	274.70	1670.00

3280 CROSS SECTION 1.88 EXTENDED .47 FEET

3470 ENCROACHMENT STATIONS= 1387.0 2170.0 TYPE= 1 TARGET= 783.000
ELENCL= 583.96 ELENCR= 583.96

K 4540' U/S FACE M-29 BRIDGE

1.88	12.77	583.07	0.00	0.00	583.37	.29	.21	.04	581.80
7410.	32.	6620.	757.	91.	1443.	1025.	324.	38.	580.50
.53	.36	4.59	.74	.060	.026	.050	.026	570.30	1387.00
.000258	690.	700.	730.	2	0	1	0.00	783.00	2170.00

3280 CROSS SECTION 2.08 EXTENDED .75 FEET

3470 ENCROACHMENT STATIONS= 1377.0 1903.0 TYPE= 1 TARGET= 526.000
ELENCL= 584.26 ELENCR= 584.26

2.08	13.05	583.35	0.00	0.00	583.64	.30	.28	.00	581.80
7260.	51.	6697.	511.	125.	1477.	627.	384.	54.	580.50
.60	.41	4.53	.82	.060	.026	.050	.026	570.30	1377.00
.000245	990.	1100.	1070.	2	0	1	0.00	526.00	1903.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 1448.0 2960.0 TYPE= 1 TARGET= -1448.000
ELENCL= 584.79 ELENCR= 100000.00

L 7640' U/S FACE M-29 BRIDGE

2.46	13.44	583.84	0.00	0.00	584.21	.37	.53	.04	582.70
7260.	1.	7137.	121.	7.	1451.	157.	473.	72.	580.20
.72	.21	4.92	.77	.085	.026	.051	.026	570.40	1448.00
.000282	1990.	2000.	2140.	2	0	1	0.00	238.83	1686.83

1490 NH CARD USED

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

3470 ENCROACHMENT STATIONS= 1409.0 3000.0 TYPE= 1 TARGET= -1409.000
ELENCL= 585.32 ELENCR= 100000.00

M 9240' U/S FACE M-29 BRIDGE

2.77	15.56	584.36	0.00	0.00	584.60	.23	.35	.04	579.40
7260.	172.	7086.	3.	239.	1803.	12.	541.	81.	583.60
.83	.72	3.93	.20	.051	.026	.051	.026	568.80	1409.00
.000175	1600.	1600.	1600.	2	0	1	0.00	289.41	1698.41

CCHV= .300 CEHV= .500

3470 ENCROACHMENT STATIONS= 1290.0 2130.0 TYPE= 1 TARGET= 840.000
ELENCL= 586.83 ELENCR= 585.83

N 11430' U/S FACE M-29 BRIDGE

3.18	14.47	584.87	0.00	0.00	585.01	.14	.38	.03	583.90
7260.	0.	4755.	2505.	0.	1296.	2483.	671.	105.	581.30
1.04	0.00	3.67	1.01	.050	.028	.050	.026	570.40	1290.00
.000194	1820.	2190.	1640.	2	0	1	0.00	840.00	2130.00

3470 ENCROACHMENT STATIONS= 447.0 1060.0 TYPE= 1 TARGET= 613.000
ELENCL= 585.93 ELENCR= 585.93

O 12130' U/S FACE M-29 BRIDGE

3.31	14.87	584.97	0.00	0.00	585.18	.22	.14	.04	583.60	
7260.	94.	5657.	1509.	178.	1346.	1314.	714.	114.	580.00	F
1.09	.53	4.20	1.15	.050	.028	.050	.026	570.10	447.00	
.000239	760.	700.	480.	1	0	1	0.00	613.00	1060.00	

3470 ENCROACHMENT STATIONS= 1000.0 1700.0 TYPE= 1 TARGET= 700.000
ELENCL= 586.13 ELENCR= 586.13

P 13030' U/S FACE M-29 BRIDGE

3.48	15.86	585.16	0.00	0.00	585.47	.30	.24	.04	579.10	
7260.	1584.	5669.	7.	1352.	1144.	22.	762.	124.	584.20	
1.15	1.17	4.95	.32	.050	.028	.050	.027	569.30	1000.00	G
.000337	600.	900.	740.	2	0	1	0.00	647.39	1647.39	

3470 ENCROACHMENT STATIONS= 1512.0 1762.0 TYPE= 1 TARGET= 250.000
ELENCL= 586.43 ELENCR= 586.43

3.64	15.05	585.45	0.00	0.00	585.72	.27	.25	.01	587.10	
7260.	0.	6814.	446.	0.	1591.	402.	796.	129.	580.00	
1.20	0.00	4.28	1.11	.080	.030	.060	.027	570.40	1512.00	
.000322	300.	800.	900.	2	0	1	0.00	250.00	1762.00	

3470 ENCROACHMENT STATIONS= 1312.6 1499.2 TYPE= 1 TARGET= 215.000
ELENCL= 586.53 ELENCR= 586.53

Q 50' D/S FACE MEISNER RD. BRIDGE

3.71	14.65	585.55	0.00	0.00	585.92	.37	.15	.05	587.10	
7260.	0.	6909.	351.	0.	1385.	255.	812.	131.	580.00	H
1.22	0.00	4.99	1.38	.080	.030	.060	.027	570.90	1312.57	
.000441	660.	400.	270.	2	0	1	0.00	186.64	1499.21	

CCHV= .600 CEHV= .800
3280 CROSS SECTION 3.72 EXTENDED 1.13 FEET

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 587.00 ELREA= 587.00

R D/S FACE MEISNER RD. BRIDGE

3.72	13.43	585.83	0.00	0.00	586.04	.20	.02	.10	590.10
7260.	0.	7260.	0.	0.	2009.	0.	814.	131.	589.90
1.23	0.00	3.61	0.00	.080	.030	.060	.027	572.40	1302.71
.000236	50.	50.	50.	2	0	1	0.00	186.35	1489.06

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.63	3.00	0.00	141.00	7.80	2090.00	.60	572.40	572.40

3280 CROSS SECTION 3.73 EXTENDED 1.14 FEET

SECND	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

CLASS A LOW FLOW

BRIDGE W.S.= 585.81 BRIDGE VELOCITY= 3.83

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
0.00	586.04	.01	0.	7260.	2090.	586.60	587.00	1.00

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 587.00 ELREA= 587.00

R U/S FACE MEISNER RD. BRIDGE

3.73	13.44	585.84	0.00	0.00	586.04	.20	.01	0.00	590.10
7260.	0.	7260.	0.	0.	2010.	0.	816.	131.	589.90
1.23	0.00	3.61	0.00	.080	.030	.060	.027	572.40	1302.71
.000236	48.	48.	48.	0	0	1	0.00	186.35	1489.06

3470 ENCROACHMENT STATIONS= 1258.7 1533.1 TYPE= 1 TARGET= 316.000
ELENCL= 587.00 ELENCR= 587.00

3.74	13.56	585.86	0.00	0.00	586.06	.20	.01	.00	587.10
7260.	0.	7186.	74.	0.	2016.	85.	819.	132.	584.00
1.24	0.00	3.56	.87	.030	.030	.040	.027	572.30	1302.45
.000227	50.	50.	50.	1	0	1	0.00	230.61	1533.06

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 400.0 1710.0 TYPE= 1 TARGET= 1310.000
ELENCL= 587.21 ELENCR= 587.21

S 1310' U/S FACE MEISNER RD. BRIDGE

3.98	16.83	586.23	0.00	0.00	586.39	.16	.30	.02	581.70
7260.	2436.	4824.	1.	2755.	1260.	5.	893.	146.	585.60
1.35	.88	3.83	.15	.064	.034	.080	.027	569.40	452.40
.000293	820.	1260.	900.	2	0	1	0.00	1108.46	1618.36

3470 ENCROACHMENT STATIONS= 1400.0 2611.0 TYPE= 1 TARGET= 1211.000
ELENCL= 587.64 ELENCR= 587.64

T 2690' U/S FACE MEISNER RD. BRIDGE

4.24	16.84	586.64	0.00	0.00	586.91	.27	.43	.09	586.60
7260.	0.	5587.	1673.	0.	1187.	2630.	988.	171.	581.80
1.44	.04	4.70	.64	.060	.034	.100	.028	569.80	1494.43
.000425	700.	1380.	1150.	2	0	1	0.00	1116.57	2611.00

3470 ENCROACHMENT STATIONS= 2000.0 2500.0 TYPE= 1 TARGET= 500.000
ELENCL= 588.59 ELENCR= 588.59

4.46	18.47	587.17	0.00	0.00	587.40	.23	.47	.02	580.00
7260.	795.	6300.	164.	986.	1517.	261.	1064.	186.	583.70
1.53	.81	4.15	.63	.100	.039	.100	.029	568.70	2051.82
.000404	1310.	1190.	730.	2	0	1	0.00	448.18	2500.00

3280 CROSS SECTION 4.62 EXTENDED 1.53 FEET

3470 ENCROACHMENT STATIONS= 1487.5 1603.5 TYPE= 1 TARGET= 116.000
ELENCL= 588.24 ELENCR= 588.24

U 50' D/S FACE PORT HURON DETROIT RAILROAD BRIDGE

4.62	19.63	587.53	0.00	0.00	587.91	.38	.39	.12	585.70
7180.	12.	7168.	0.	22.	1450.	0.	1104.	192.	588.24
1.57	.54	4.94	0.00	.100	.039	.100	.029	567.90	1487.50
.000595	850.	800.	750.	2	0	1	0.00	116.00	1603.50

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

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 588.30 ELREA= 588.30

V D/S FACE PORT HURON DETROIT RAILROAD BRIDGE

4.63	19.34	587.54	0.00	0.00	588.01	.47	.03	.07	589.10
7180.	0.	7180.	0.	0.	1308.	0.	1105.	192.	589.20
1.58	0.00	5.49	0.00	.100	.039	.100	.029	568.20	1500.00
.000798	50.	50.	50.	0	0	1	0.00	91.00	1591.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.43	3.00	0.00	37.00	0.00	1109.00	.64	568.20	568.20

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
588.48	588.01	0.00	0.	7180.	1109.	585.60	589.20	10.00

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 589.10 ELREA= 589.10

V U/S FACE PORT HURON DETROIT RAILROAD BRIDGE

4.63	19.84	588.04	0.00	0.00	588.48	.44	.46	0.00	589.10
7180.	0.	7180.	0.	0.	1352.	0.	1106.	192.	589.20
1.58	0.00	5.31	0.00	.100	.039	.100	.029	568.20	1500.00

CCHV= .600 CEHV= .800
3280 CROSS SECTION 4.64 EXTENDED 2.23 FEET

3470 ENCROACHMENT STATIONS= 1450.0 1641.0 TYPE= 1 TARGET= 191.000
ELENCL= 589.40 ELENCR= 589.40

4.64	20.03	588.23	0.00	0.00	588.57	.33	.03	.06	585.70
7180.	118.	6673.	389.	120.	1391.	246.	1108.	192.	583.30
1.58	.98	4.80	1.58	.060	.039	.060	.029	568.20	1450.00
.000488	50.	50.	50.	2	0	1	0.00	191.00	1641.00

1490 NH CARD USED
3280 CROSS SECTION 5.16 EXTENDED .24 FEET

3470 ENCROACHMENT STATIONS= 250.0 3226.0 TYPE= 1 TARGET= 2976.000
ELENCL= 589.90 ELENCR= 589.90

W 2810' U/S FACE PORT HURON DETROIT RAILROAD BRIDGE

5.16	16.24	588.84	0.00	0.00	588.85	.00	.08	.20	583.60
7180.	5658.	969.	552.	16832.	1465.	2277.	1482.	244.	583.40
3.12	.34	.66	.24	.061	.046	.065	.031	572.60	250.00
.000013	1020.	2760.	2960.	2	0	1	0.00	2937.15	3187.15

LEFT EDGE OF CHAN 2600
RIGHT " " " 2710
2710
477

1490 NH CARD USED
3280 CROSS SECTION 5.39 EXTENDED 2.05 FEET

3470 ENCROACHMENT STATIONS= 400.0 3320.0 TYPE= 1 TARGET= 2920.000
ELENCL= 589.91 ELENCR= 589.91

X 4030' U/S FACE PORT HURON DETROIT RAILROAD BRIDGE

5.39	23.35	588.85	0.00	0.00	588.85	.00	.00	.00	583.00
7180.	5418.	1747.	16.	16091.	2119.	130.	1569.	256.	582.40
3.30	.34	.82	.12	.061	.046	.100	.032	565.50	400.00
.000014	1.	1220.	1320.	2	0	1	0.00	2865.30	3265.29

1490 NH CARD USED

3265 DIVIDED FLOW

3280 CROSS SECTION 5.80 EXTENDED 1.19 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= 1050.0 3500.0 TYPE= 1 TARGET= 2450.000
ELENCL= 589.94 ELENCR= 589.94

Y 6190' U/S FACE PORT HURON DETROIT RAILROAD BRIDGE

5.80	15.89	588.89	0.00	0.00	588.90	.02	.04	.01	583.60
7180.	4718.	2053.	409.	6641.	1260.	945.	1965.	320.	582.30
3.71	.71	1.63	.43	.060	.052	.085	.034	573.00	1050.00
.000098	1160.	2160.	700.	2	0	1	0.00	1988.26	3275.66

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 1700.0 3930.0 TYPE= 1 TARGET= 2230.000
ELENCL= 590.06 ELENCR= 590.06

Z 8750' U/S FACE PORT HURON-DETROIT RAILROAD BRIDGE

6.29	17.41	589.01	0.00	0.00	589.01	.01	.11	.01	585.70
7180.	4386.	1565.	1229.	8403.	1246.	2483.	2271.	378.	583.50
4.31	.52	1.26	.50	.070	.052	.063	.035	571.60	1700.00
.000056	1040.	2560.	1360.	2	0	1	0.00	2230.00	3930.00

1490 NH CARD USED
3280 CROSS SECTION 6.57 EXTENDED 2.15 FEET

3470 ENCROACHMENT STATIONS= 2300.0 4300.0 TYPE= 1 TARGET= 2000.000
ELENCL= 590.20 ELENCR= 590.94

AA 10250' U/S FACE PORT HURON DETROIT RAILROAD BRIDGE

6.57	18.45	589.15	0.00	0.00	589.33	.18	.18	.14	585.70
7180.	1109.	5262.	809.	1783.	1334.	1492.	2544.	446.	585.10
4.44	.62	3.94	.54	.071	.046	.120	.036	570.70	2300.00
.00456	1400.	1500.	1420.	2	0	1	0.00	2000.00	4300.00

3470 ENCROACHMENT STATIONS= .0 1600.0 TYPE= 1 TARGET= 1599.999
ELENCL= 590.73 ELENCR= 590.73

6.78	18.09	589.69	0.00	0.00	589.75	.06	.36	.07	585.70
7180.	1089.	3826.	2265.	1140.	1423.	4024.	2660.	486.	579.10
4.60	.96	2.69	.56	.070	.052	.120	.036	571.60	8.82
.000276	1580.	1080.	450.	2	0	1	0.00	1591.18	1600.00

3470 ENCROACHMENT STATIONS= 1469.0 1649.0 TYPE= 1 TARGET= 180.000
ELENCL= 591.30 ELENCR= 591.30

AB 50' D/S FACE KING RD. BRIDGE

7.07	17.37	590.27	0.00	0.00	590.66	.39	.64	.26	586.40
7180.	39.	6436.	705.	41.	1218.	450.	2777.	509.	583.00
4.68	.96	5.28	1.57	.070	.046	.100	.037	572.90	1474.05
.000876	1040.	1560.	1080.	2	0	1	0.00	174.95	1649.00

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 591.60 ELREA= 591.60

AC D/S FACE KING RD BRIDGE

7.08	16.54	590.54	0.00	0.00	590.78	.25	.04	.09	592.80
7180.	0.	7180.	0.	0.	1801.	0.	2779.	509.	592.90
4.68	0.00	3.99	0.00	.070	.046	.100	.037	574.00	867.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.95	1.60	3.00	0.00	65.00	7.00	1710.00	.34	574.40	574.40

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
590.98	590.81	.02	0.	7180.	1710.	590.10	592.30	10.00

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 592.30 ELREA= 592.30

AC U/S FACE KING RD BRIDGE

7.09	16.74	590.74	0.00	0.00	590.98	.24	.19	0.00	592.80
7180.	0.	7180.	0.	0.	1832.	0.	2780.	509.	592.90
4.69	0.00	3.92	0.00	.070	.046	.100	.037	574.00	867.00
.000610	30.	30.	30.	2	0	1	0.00	155.00	1022.00

CCHV= .600 CEHV= .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

3470 ENCROACHMENT STATIONS= 837.0 1077.0 TYPE= 1 TARGET= 240.000
ELENCL= 592.30 ELENCR= 592.30

7.10	16.82	590.82	0.00	0.00	591.03	.20	.03	.02	586.20
7180.	60.	6821.	299.	70.	1845.	238.	2782.	509.	586.00
4.69	.85	3.70	1.26	.070	.046	.070	.037	574.00	837.00
.000498	50.	50.	50.	2	0	1	0.00	240.00	1077.00

3280 CROSS SECTION 7.15 EXTENDED 6.18 FEET

3470 ENCROACHMENT STATIONS= 300.0 1200.0 TYPE= 1 TARGET= 900.000
ELENCL= 592.30 ELENCR= 592.30

7.15	16.98	591.18	0.00	0.00	591.21	.03	.08	.10	587.90
7090.	4858.	1949.	283.	4759.	908.	398.	2811.	513.	587.40
4.75	1.02	2.15	.71	.070	.046	.070	.037	574.20	300.00
.000177	300.	300.	300.	2	0	1	0.00	900.00	1200.00

1490 NH CARD USED
3280 CROSS SECTION 7.40 EXTENDED 1.53 FEET

3470 ENCROACHMENT STATIONS= 350.0 1900.0 TYPE= 1 TARGET= 1550.000
ELENCL= 592.56 ELENCR= 592.56

7.40	16.52	591.52	0.00	0.00	591.63	.11	.36	.06	588.90
7090.	1195.	3354.	2541.	1523.	883.	2820.	2936.	539.	588.40

```
 .000915     800.    1300.    1100.        1        0        1     0.00  1550.00  1900.00

1490 NH CARD USED
3280 CROSS SECTION      7.56 EXTENDED      2.15 FEET


3470 ENCROACHMENT STATIONS=     275.0    1700.0  TYPE=     1  TARGET=    1425.000
 ELENCL=    593.04  ELENCR=    593.04
     7.56    16.55   592.15     0.00     0.00   592.25      .10      .61      .01   588.90
    7090.    2954.    3255.     880.    3968.     902.     902.    3033.     564.   588.50
     4.99      .74     3.61      .98     .132     .055     .080     .038   575.60   275.00
 .000635     660.     840.     900.        2        0        1     0.00  1425.00  1700.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS=    1090.0    2110.0  TYPE=     1  TARGET=    1020.000
 ELENCL=    594.17  ELENCR=    594.17

             AD   3810'   U/S FACE KING RD BRIDGE

     7.81    16.63   593.03     0.00     0.00   593.21      .19      .89      .07   588.90
    7090.    2716.    4246.     129.    3022.     963.     233.    3162.     595.   588.40
     5.10      .90     4.41      .55     .140     .055     .140     .038   576.40  1090.00
 .000871    1100.    1320.    1000.        0        0        1     0.00  1010.75  2100.75

1490 NH CARD USED

3470 ENCROACHMENT STATIONS=    1300.0    2050.0  TYPE=     1  TARGET=     750.000
 ELENCL=    594.90  ELENCR=    594.90
     7.98    18.07   593.77     0.00     0.00   593.91      .14      .67      .03   588.90
    7090.    2924.    4016.     149.    3355.    1021.     211.    3253.     613.   588.40
     5.20      .87     3.93      .71     .140     .055     .140     .038   575.70  1300.00
 .000652     900.     900.     900.        2        0        1     0.00   750.00  2050.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS=     100.0     550.0  TYPE=     1  TARGET=     450.000
 ELENCL=    595.54  ELENCR=    595.54
     8.15    19.43   594.33     0.00     0.00   594.51      .17      .57      .03   585.90
    7090.    1142.    4392.    1557.    1002.    1067.    1007.    3329.     625.   590.80
     5.28     1.14     4.12     1.55     .120     .055     .063     .039   574.90   100.00
 .000624     820.     920.     920.        2        0        1     0.00   450.00   550.00

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


3470 ENCROACHMENT STATIONS=      20.0     615.0  TYPE=     1  TARGET=     595.000
 ELENCL=    595.93  ELENCR=    595.93

             AE   6400'   U/S FACE KING RD BRIDGE

     8.30    20.54   594.84     0.00     0.00   595.01      .17      .50      .00   585.90
    7090.     262.    4461.    2367.     144.    1104.    1749.    3374.     632.   590.80
     5.34     1.82     4.04     1.35     .080     .062     .080     .039   574.30    20.00
 .000856     760.     770.     500.        2        0        1     0.00   595.00   615.00
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1490 NH CARD USED

AF 9220' U/S FACE KING RD BRIDGE

8.83	19.69	595.99	0.00	0.00	596.03	.03	.93	.08	589.20
7090.	3435.	3612.	44.	5039.	1841.	89.	3564.	666.	589.50
5.79	.68	1.96	.49	.091	.062	.140	.041	576.30	287.70
.000261	980.	2820.	1690.	2	0	1	0.00	1604.16	1891.85

1490 NH CARD USED

AG 11320' U/S FACE KING RD BRIDGE

9.23	18.04	596.54	0.00	0.00	596.62	.09	.55	.04	588.80
7090.	909.	3777.	2404.	894.	1219.	2105.	3729.	694.	588.60
6.00	1.02	3.10	1.14	.115	.062	.080	.043	578.50	18.48
.000465	650.	2100.	1880.	2	0	1	0.00	670.86	689.34

3470 ENCROACHMENT STATIONS= 50.0 1550.0 TYPE= 1 TARGET= 1500.000

9.38	17.78	596.78	0.00	0.00	596.79	.01	.12	.05	588.60
7090.	5296.	1753.	41.	9646.	1234.	69.	3824.	707.	588.80
6.22	.55	1.42	.59	.100	.062	.100	.043	579.00	50.00
.000105	480.	780.	600.	1	0	1	0.00	1500.00	1550.00

1490 NH CARD USED

9.63	16.97	596.97	0.00	0.00	597.07	.10	.21	.07	590.60
7090.	605.	3471.	3014.	594.	1001.	2438.	3988.	733.	589.00
6.35	1.02	3.47	1.24	.080	.055	.062	.044	580.00	80.33
.000467	860.	1360.	980.	2	0	1	0.00	998.44	1078.77

1490 NH CARD USED

AH 13460' U/S FACE KING RD BRIDGE

9.79	17.07	597.37	0.00	0.00	597.57	.20	.43	.08	590.60
7090.	887.	4494.	1709.	723.	1026.	1442.	4045.	747.	589.00
6.41	1.23	4.38	1.19	.066	.055	.080	.045	580.30	142.74
.000723	840.	840.	550.	2	0	1	0.00	778.71	921.45

10.12	17.15	598.35	0.00	0.00	598.40	.05	.74	.09	590.70
7090.	4834.	2045.	211.	4439.	698.	242.	4169.	775.	590.70
6.66	1.09	2.93	.87	.070	.055	.100	.045	581.20	332.17
.000396	1010.	1740.	1520.	2	0	1	0.00	1312.22	1644.39

1490 NH CARD USED

AI 16960' U/S FACE KING RD BRIDGE

10.46	16.72	598.82	0.00	0.00	598.86	.04	.45	.01	590.70
7090.	57.	1800.	5233.	113.	710.	4622.	4333.	810.	590.70
6.92	.50	2.54	1.13	.120	.055	.063	.046	582.10	13.26
.000271	1050.	1760.	1460.	2	0	1	0.00	1120.82	1134.08

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

3470 ENCROACHMENT STATIONS= 71.0 768.0 TYPE= 1 TARGET= 697.000

AJ 60' D/S FACE INDIAN TRAIL BRIDGE

10.76	20.46	599.16	0.00	0.00	599.22	.06	.34	.02	591.70
7040.	416.	6518.	107.	2098.	3217.	196.	4504.	836.	595.90
7.12	.20	2.03	.54	.375	.064	.080	.047	578.70	71.00
.000232	1800.	1600.	950.	2	0	1	0.00	697.00	768.00

3470 ENCROACHMENT STATIONS= 147.0 784.0 TYPE= 1 TARGET= 637.000

10.77	15.12	599.12	0.00	0.00	599.49	.37	.02	.25	585.40
7040.	197.	6843.	0.	3295.	1381.	0.	4511.	837.	100000.00
7.12	.06	4.96	0.00	2.250	.040	.100	.047	584.00	147.00
.000624	59.	59.	59.	2	0	1	0.00	637.00	784.00

1490 NH CARD USED

3265 DIVIDED FLOW

NORMAL BRIDGE,NRD=11 MIN ELTRD= 598.10 MAX ELLC= 600.30

AK D/S FACE INDIAN TRAIL BRIDGE

10.77	15.09	599.09	0.00	0.00	599.60	.50	.00	.11	603.40
7040.	202.	6838.	0.	147.	1183.	0.	4511.	837.	603.40
7.12	1.38	5.78	0.00	.035	.040	.100	.047	584.00	239.00
.000841	1.	1.	1.	2	0	1	-17.86	239.17	876.00

1490 NH CARD USED

3265 DIVIDED FLOW

NORMAL BRIDGE,NRD=11 MIN ELTRD= 598.10 MAX ELLC= 600.30

AK U/S FACE INDIAN TRAIL BRIDGE

10.78	15.12	599.12	0.00	0.00	599.62	.50	.02	.00	603.40
7040.	206.	6834.	0.	150.	1185.	0.	4512.	837.	603.40
7.12	1.38	5.77	0.00	.034	.040	.100	.047	584.00	239.00
.000836	28.	28.	28.	0	0	1	-18.17	241.97	876.00

3470 ENCROACHMENT STATIONS= 147.0 784.0 TYPE= 1 TARGET= 637.000

10.78	15.35	599.35	0.00	0.00	599.71	.36	.00	.09	585.40
7040.	203.	6837.	0.	3420.	1405.	0.	4512.	837.	100000.00
7.12	.06	4.87	0.00	2.250	.040	.100	.047	584.00	147.00
.000590	1.	1.	1.	2	0	1	0.00	637.00	784.00

3470 ENCROACHMENT STATIONS= 189.0 926.0 TYPE= 1 TARGET= 737.000

10.79	15.39	599.39	0.00	0.00	599.79	.40	.05	.04	585.40
7040.	458.	6434.	148.	3664.	1210.	123.	4517.	838.	593.90

.001703	50.	50.	50.	0	0	1	0.00	731.97	920.97

1490 NH CARD USED

10.97	16.05	600.55	0.00	0.00	600.58	.04	.57	.22	592.00
7040.	4984.	2035.	20.	5810.	830.	43.	4600.	849.	594.00
7.29	.86	2.45	.48	.121	.064	.140	.047	584.50	134.51
.000394	540.	960.	1020.	2	0	1	0.00	976.59	1111.10

1490 NH CARD USED

SEGNO	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

AL 2800' U/S FACE INDIAN TRAIL BRIDGE

11.31	15.77	601.27	0.00	0.00	601.31	.04	.72	.01	594.00
7040.	94.	2240.	4706.	164.	871.	5085.	4826.	884.	592.00
7.60	.57	2.57	.93	.140	.073	.122	.048	585.50	84.86
.000530	1470.	1790.	1520.	3	0	1	0.00	1000.18	1085.04

1490 NH CARD USED

11.55	16.07	601.77	0.00	0.00	601.83	.06	.51	.01	592.00
7040.	4535.	2470.	36.	3488.	904.	60.	4943.	904.	594.00
7.76	1.30	2.73	.59	.068	.064	.137	.049	585.70	62.94
.000440	1200.	1270.	700.	1	0	1	0.00	850.59	913.53

3470 ENCROACHMENT STATIONS= 90.0 1050.0 TYPE= 1 TARGET= 960.000

11.78	16.34	602.24	0.00	0.00	602.27	.04	.43	.01	594.80
7040.	281.	2314.	4446.	368.	965.	5949.	5085.	926.	596.80
7.99	.76	2.40	.75	.140	.064	.140	.049	585.90	90.00
.000362	940.	1210.	1070.	2	0	1	0.00	960.00	1050.00

1490 NH CARD USED

AM 6780' U/S FACE INDIAN TRAIL BRIDGE

12.06	16.64	602.74	0.00	0.00	602.80	.06	.51	.02	597.10
7040.	4251.	2708.	81.	3310.	1049.	139.	5263.	953.	595.10
8.21	1.28	2.58	.58	.063	.064	.133	.050	586.10	113.69
.000382	1330.	1500.	1260.	2	0	1	0.00	842.08	955.77

1490 NH CARD USED

12.33	16.09	603.39	0.00	0.00	603.52	.12	.67	.05	597.10
7040.	3063.	3920.	58.	3057.	1079.	53.	5387.	978.	595.10
8.35	1.00	3.63	1.10	.095	.064	.100	.050	587.30	244.23
.000736	1190.	1400.	1250.	2	0	1	0.00	984.16	1228.39

1490 NH CARD USED

AN 9000' U/S FACE INDIAN TRAIL BRIDGE

12.48	15.93	603.93	0.00	0.00	603.98	.04	.41	.05	593.30
7040.	5203.	1711.	126.	5049.	602.	173.	5470.	995.	592.70
8.49	1.03	2.84	.73	.092	.064	.138	.050	588.00	121.70

1490 NH CARD USED

12.68	16.29	604.29	0.00	0.00	604.35	.06	.36	.02	593.30
7040.	4926.	1783.	331.	3049.	616.	363.	5561.	1011.	592.70
8.62	1.62	2.90	.91	.064	.064	.140	.051	588.00	42.58
.000433	750.	1050.	1050.	2	0	1	0.00	716.00	758.58

AO 11100' U/S FACE INDIAN TRAIL BRIDGE

12.88	17.90	604.90	0.00	0.00	605.06	.16	.63	.07	598.70
7040.	2878.	4038.	125.	2253.	1001.	145.	5635.	1023.	598.00
8.70	1.28	4.03	.86	.140	.073	.140	.051	587.00	82.71
.001272	820.	1050.	780.	2	0	1	0.00	517.42	600.13

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

3470 ENCROACHMENT STATIONS= 500.0 1200.0 TYPE= 1 TARGET= 700.000
ELENCL= 606.83 ELENCR= 606.83

13.04	17.76	605.76	0.00	0.00	605.89	.12	.81	.02	597.60
7040.	1479.	3799.	1762.	1469.	1023.	1848.	5707.	1033.	599.60
8.80	1.01	3.71	.95	.140	.064	.140	.052	588.00	500.00
.000769	750.	870.	850.	2	0	1	0.00	628.82	1128.82

3470 ENCROACHMENT STATIONS= 500.0 1300.0 TYPE= 1 TARGET= 800.000
ELENCL= 607.36 ELENCR= 607.36

AP 12740' U/S FACE INDIAN TRAIL BRIDGE

13.19	17.53	606.33	0.00	0.00	606.39	.07	.47	.03	598.50
7040.	2292.	2876.	1872.	2727.	943.	2083.	5790.	1045.	600.50
8.91	.84	3.05	.90	.140	.064	.140	.052	588.80	500.00
.000541	520.	770.	900.	2	0	1	0.00	800.00	1300.00

AQ 13960' U/S FACE INDIAN TRAIL BRIDGE

13.42	17.97	606.87	0.00	0.00	606.92	.06	.53	.00	598.70
7040.	1395.	3416.	2229.	1880.	1292.	2717.	5942.	1064.	600.20
9.11	.74	2.64	.82	.140	.064	.140	.052	588.90	23.69
.000384	920.	1220.	1300.	2	0	1	0.00	731.06	754.75

3470 ENCROACHMENT STATIONS= 807.5 1900.0 TYPE= 1 TARGET= 1150.000

AR 50' D/S FACE PUTTYGUT BRIDGE

13.54	17.74	607.04	0.00	0.00	607.07	.04	.14	.01	598.20
7040.	465.	2684.	3891.	743.	1111.	5699.	5991.	1070.	597.70
9.19	.63	2.42	.68	.140	.064	.140	.052	589.30	807.50
.000304	680.	620.	120.	2	0	1	0.00	1007.74	1815.24

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3470 ENCROACHMENT STATIONS=      712.5     1852.5  TYPE=      1  TARGET=     1200.000
    13.55     18.97    607.07      0.00      0.00    607.09       .02       .00       .01    605.30
    7040.      610.      622.      5809.      725.      1151.     5095.     5999.     1072.    605.20
     9.20       .84       .54      1.14       .025      .073      .025      .052    588.10    712.50
  .000030       49.       49.       49.          2         0         1      0.00   1055.35   1767.85

NORMAL BRIDGE,NRD= 8 MIN ELTRD=  605.20 MAX ELLC=  604.40

3470 ENCROACHMENT STATIONS=      712.5     1852.5  TYPE=      1  TARGET=     1200.000
                AS              D/S FACE PUTTYGUT BRIDGE
    13.55     18.97    607.07      0.00      0.00    607.09       .02       .00       .00    605.30
    7040.      614.      593.      5833.      725.      959.      5081.     5999.     1072.    605.20
     9.20       .85       .62      1.15       .025      .040      .025      .052    588.10    712.50
  .000030         1.        1.        1.          0         0         1   -206.67   1055.35   1767.85

NORMAL BRIDGE,NRD= 8 MIN ELTRD=  605.20 MAX ELLC=  604.40

3470 ENCROACHMENT STATIONS=      712.5     1852.5  TYPE=      1  TARGET=     1200.000
                AS              U/S FACE PUTTYGUT BRIDGE
    13.55     18.97    607.07      0.00      0.00    607.09       .02       .00       .00    605.30
    7040.      614.      593.      5833.      725.      959.      5081.     6002.     1072.    605.20
     9.21       .85       .62      1.15       .025      .040      .025      .052    588.10    712.50
  .000030        18.       18.       18.          0         0         1   -206.67   1055.35   1767.85

   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=      712.5     1852.5  TYPE=      1  TARGET=     1200.000
    13.55     18.97    607.07      0.00      0.00    607.09       .02       .00       .00    605.30
    7040.      610.      622.      5809.      725.      1151.     5096.     6002.     1072.    605.20
     9.21       .84       .54      1.14       .025      .073      .025      .052    588.10    712.50
  .000030         1.        1.        1.          0         0         1      0.00   1055.35   1767.85


3470 ENCROACHMENT STATIONS=      647.9     1852.5  TYPE=      1  TARGET=     1268.000
    13.56     18.88    607.08      0.00      0.00    607.10       .02       .00       .00    605.30
    7040.      765.     1421.      4853.     1049.     1151.     5097.     6010.     1073.    605.20
     9.22       .73      1.24       .95       .060      .064      .060      .052    588.20    647.90
  .000119       49.       49.       49.          0         0         1      0.00   1119.95   1767.85

1490 NH CARD USED
                AT      990'    U/S FACE PUTTYGUT BRIDGE
    13.74     16.49    607.19      0.00      0.00    607.20       .01       .11       .00    596.30
    7040.     5775.     1265.        0.     7567.      984.         0.     6192.     1101.    610.80
     9.54       .76      1.29      0.00       .069      .064      .060      .052    590.70     80.55
  .000101     1240.      940.      620.          2         0         1      0.00   1261.11   1341.66
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3470 ENCROACHMENT STATIONS= .0 1100.0 TYPE= 1 TARGET= 1099.999

14.08	16.19	607.39	0.00	0.00	607.42	.03	.20	.02	596.30
7040.	2337.	2613.	2090.	3285.	1191.	3307.	6402.	1130.	600.00
9.81	.71	2.19	.63	.140	.064	.140	.053	591.20	25.23
.000292	940.	1820.	1260.	2	0	1	.0.00	1059.08	1084.31

AU 4210' U/S FACE PUTTYGUT BRIDGE

14.35	16.36	607.86	0.00	0.00	607.94	.08	.48	.04	602.80
7040.	3532.	3171.	337.	3113.	980.	408.	6550.	1151.	601.20
9.97	1.13	3.24	.82	.100	.064	.140	.054	591.50	59.85
.000637	1090.	1400.	760.	2	0	1	0.00	748.11	807.96

1490 NH CARD USED

14.90	17.50	608.80	0.00	0.00	608.85	.05	.89	.02	602.80
7040.	3971.	2491.	578.	2751.	1047.	915.	6716.	1173.	601.20
10.27	1.44	2.38	.63	.068	.073	.140	.055	591.30	124.81
.000366	1120.	2930.	1500.	2	0	1	0.00	677.98	802.79

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 370.0 1470.0 TYPE= 1 TARGET= 1100.000

AV 8080' U/S FACE PUTTYGUT BRIDGE

15.08	17.76	609.06	0.00	0.00	609.09	.03	.23	.01	605.00
7040.	3932.	2214.	894.	3709.	1165.	1792.	6821.	1189.	604.40
10.46	1.06	1.90	.50	.063	.064	.140	.055	591.30	370.00
.000214	810.	940.	680.	2	0	1	0.00	1100.00	1470.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 200.0 1150.0 TYPE= 1 TARGET= 950.000

15.09	17.59	609.09	0.00	0.00	609.16	.06	.04	.03	605.30
7040.	2706.	3140.	1194.	2282.	1142.	1644.	6837.	1192.	604.70
10.48	1.19	2.75	.73	.069	.064	.140	.055	591.50	200.00
.000460	190.	70.	20.	0	0	1	0.00	944.40	1144.40

1490 NH CARD USED

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

3470 ENCROACHMENT STATIONS= 180.0 970.0 TYPE= 1 TARGET= 790.000

15.13	17.00	609.20	0.00	0.00	609.29	.09	.11	.02	602.80
7040.	2958.	3701.	381.	2724.	1152.	579.	6860.	1196.	605.00
10.51	1.09	3.21	.66	.093	.064	.140	.055	592.20	180.00
.000565	280.	200.	80.	2	0	1	0.00	790.00	970.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 90.0 770.0 TYPE= 1 TARGET= 680.000

15.15	16.76	609.26	0.00	0.00	609.35	.09	.06	.00	603.00

10.52	1.13	3.18	1.08	.086	.064	.140	.055	592.50	90.00
.000544	120.	110.	90.	0	0	1	0.00	680.00	770.00

3470 ENCROACHMENT STATIONS= 142.0 732.0 TYPE= 1 TARGET= 590.000

AW 50' D/S FACE WESTRICK RD BRIDGE

15.17	16.39	609.29	0.00	0.00	609.66	.37	.09	.22	603.40
7040.	1242.	5798.	0.	2926.	1082.	0.	6880.	1200.	100000.00
10.53	.42	5.36	0.00	.500	.064	.140	.055	592.90	142.00
.001950	100.	90.	90.	1	0	1	0.00	590.00	732.00

3265 DIVIDED FLOW

15.18	17.95	609.35	0.00	0.00	609.76	.41	.06	.03	610.90
7040.	612.	6428.	0.	360.	1200.	0.	6884.	1200.	610.80
10.53	1.70	5.36	0.00	.025	.040	.025	.055	591.40	151.51
.000853	49.	49.	49.	1	0	1	0.00	482.62	696.00

3265 DIVIDED FLOW

NORMAL BRIDGE, NRD=11 MIN ELTRD= 608.20 MAX ELLC= 609.60

AX D/S FACE WESTRICK RD BRIDGE

15.18	17.95	609.35	0.00	0.00	609.76	.41	.00	.00	610.90
7040.	614.	6426.	0.	361.	1200.	0.	6884.	1200.	610.80
10.53	1.70	5.36	0.00	.025	.040	.025	.055	591.40	151.38
.000853	1.	1.	1.	0	0	1	0.00	482.81	696.00

3265 DIVIDED FLOW

NORMAL BRIDGE, NRD=11 MIN ELTRD= 608.20 MAX ELLC= 609.60

AX U/S FACE WESTRICK RD BRIDGE

15.18	17.97	609.37	0.00	0.00	609.78	.41	.02	.00	610.90
7040.	631.	6409.	0.	369.	1201.	0.	6884.	1200.	610.80
10.53	1.71	5.34	0.00	.025	.040	.025	.055	591.40	149.60
.000845	23.	23.	23.	0	0	1	0.00	485.37	696.00

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

15.19	17.97	609.37	0.00	0.00	609.78	.41	.00	.00	610.90
7040.	632.	6408.	0.	369.	1201.	0.	6884.	1200.	610.80

.000844	1.	1.	1.	0	0	1	0.00	485.48	696.00

3470 ENCROACHMENT STATIONS= 149.0 789.0 TYPE= 1 TARGET= 640.000

15.19	18.21	609.71	0.00	0.00	609.93	.22	.04	.11	601.30
7040.	1059.	5814.	167.	3450.	1390.	157.	6888.	1201.	591.50
10.53	.31	4.18	1.06	.500	.064	.140	.055	591.50	149.00
.000866	50.	50.	50.	2	0	1	0.00	638.30	787.30
15.24	18.01	610.11	0.00	0.00	610.17	.06	.14	.10	601.30
7040.	3617.	3266.	156.	3941.	1159.	201.	6918.	1205.	592.10
10.57	.92	2.82	.78	.140	.064	.140	.055	592.10	89.36
.000402	250.	250.	250.	2	0	1	0.00	568.92	658.28
15.33	17.16	610.26	0.00	0.00	610.33	.08	.15	.01	597.50
7040.	1219.	3659.	2162.	1265.	1225.	2593.	6953.	1208.	603.00
10.62	.96	2.99	.83	.140	.064	.140	.055	593.10	78.97
.000459	180.	480.	350.	2	0	1	0.00	638.34	717.31

AY 950' U/S FACE WESTRICK RD BRIDGE

15.36	16.85	610.35	0.00	0.00	610.44	.09	.09	.01	605.00
7040.	574.	3735.	2731.	703.	1159.	2807.	6973.	1211.	603.60
10.65	.82	3.22	.97	.140	.064	.140	.055	593.50	74.09
.000611	140.	170.	200.	1	0	1	0.00	610.31	684.40
15.48	17.06	610.66	0.00	0.00	610.78	.12	.32	.02	605.00
7040.	339.	4174.	2526.	443.	1184.	2358.	7014.	1216.	603.60
10.70	.77	3.53	1.07	.140	.064	.140	.055	593.60	86.85
.000711	600.	600.	280.	2	0	1	0.00	525.78	612.63

1490 NH CARD USED

15.66	17.51	611.31	0.00	0.00	611.40	.09	.61	.02	608.40
7040.	2540.	2731.	1769.	2680.	731.	1528.	7084.	1226.	602.60
10.81	.95	3.73	1.16	.090	.064	.140	.056	593.80	127.23
.000822	260.	960.	900.	2	0	1	0.00	1238.02	1365.24

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= .0 1600.0 TYPE= 1 TARGET= 1599.999

15.70	17.60	611.50	0.00	0.00	611.53	.03	.09	.04	608.40
7040.	1803.	1721.	3516.	3113.	741.	2788.	7105.	1229.	602.60
10.84	.58	2.32	1.26	.097	.064	.080	.056	593.90	122.54
.000314	1.	200.	340.	2	0	1	0.00	1463.46	1585.99

1490 NH CARD USED

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= .0 2000.0 TYPE= 1 TARGET= 1999.999

15.73	17.67	611.57	0.00	0.00	611.58	.01	.04	.01	605.00
7040.	1389.	1187.	4465.	3525.	762.	5438.	7131.	1233.	602.60

.000137	1.	170.	250.	1	0	1	0.00	1879.31	2000.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= .0 1800.0 TYPE= 1 TARGET= 1799.999
ELENCL= 613.26 ELENCR= 613.26

AZ 3470' U/S FACE WESTRICK RD BRIDGE

15.84	17.26	611.66	0.00	0.00	611.68	.02	.09	.00	608.40
7040.	528.	1362.	5150.	1340.	746.	6327.	7233.	1248.	602.60
11.06	.39	1.83	.81	.107	.064	.080	.056	594.40	118.30
.000192	1.	590.	680.	0	0	1	0.00	1681.70	1800.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= .0 1150.0 TYPE= 1 TARGET= 1149.999
ELENCL= 613.58 ELENCR= 613.58

16.03	16.60	611.90	0.00	0.00	611.92	.03	.24	.01	608.40
7040.	21.	1620.	5400.	61.	721.	6881.	7420.	1279.	602.60
11.32	.34	2.25	.78	.140	.064	.123	.056	595.30	72.40
.000303	820.	1020.	1030.	2	0	1	0.00	1077.60	1150.00

3470 ENCROACHMENT STATIONS= 400.0 950.0 TYPE= 1 TARGET= 550.000
ELENCL= 613.83 ELENCR= 613.83

16.14	16.31	612.11	0.00	0.00	612.32	.22	.25	.15	606.30
7040.	563.	5674.	802.	531.	1375.	1077.	7469.	1287.	608.60
11.35	1.06	4.13	.75	.140	.064	.140	.056	595.80	400.00
.001080	580.	580.	340.	2	0	1	0.00	550.00	950.00

3470 ENCROACHMENT STATIONS= 388.0 570.0 TYPE= 1 TARGET= 182.000
ELENCL= 614.09 ELENCR= 614.09

BA 50' D/S FACE ST CLAIR HWY BRIDGE

16.19	16.37	612.37	0.00	0.00	612.73	.36	.29	.11	606.30
6910.	102.	6617.	192.	73.	1348.	210.	7481.	1289.	608.60
11.37	1.40	4.91	.91	.140	.064	.140	.056	596.00	388.00
.001560	180.	230.	240.	2	0	1	0.00	182.00	570.00

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 613.40 ELREA= 613.40

BB D/S FACE ST CLAIR HWY BRIDGE

16.20	17.98	612.48	0.00	0.00	612.81	.33	.06	.02	614.90
6910.	0.	6910.	0.	0.	1506.	0.	7483.	1289.	615.00
11.37	0.00	4.59	0.00	.088	.053	.088	.056	594.50	200.00
.000942	50.	50.	50.	2	0	1	0.00	96.00	296.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.55	3.00	0.00	75.00	3.75	1394.00	.62	595.30	595.30

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
613.07	612.82	.01	0.	6910.	1394.	611.50	614.20	10.00

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 614.20 ELREA= 614.20

BB U/S FACE ST CLAIR HWY BRIDGE

16.21	18.26	612.76	0.00	0.00	613.07	.32	.26	0.00	614.90
6910.	0.	6910.	0.	0.	1533.	0.	7484.	1289.	615.00
11.37	0.00	4.51	0.00	.088	.053	.088	.056	594.50	200.00
.000894	41.	41.	41.	2	0	1	0.00	96.00	296.00

3280 CROSS SECTION 16.21 EXTENDED 2.71 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= 347.0 530.0 TYPE= 1 TARGET= 183.000
ELENCL= 614.20 ELENCR= 614.20

16.21	18.61	613.01	0.00	0.00	613.20	.19	.05	.08	609.40
6910.	642.	6268.	0.	322.	1755.	0.	7486.	1289.	614.20
11.38	2.00	3.57	0.00	.080	.069	.140	.056	594.40	347.00
.000964	50.	50.	50.	2	0	1	0.00	183.00	530.00

3470 ENCROACHMENT STATIONS= 350.0 620.0 TYPE= 1 TARGET= 270.000
ELENCL= 614.75 ELENCR= 614.75

16.33	20.39	613.59	0.00	0.00	613.80	.22	.58	.02	602.20
6910.	1517.	4550.	842.	1019.	1018.	584.	7518.	1292.	598.50
11.43	1.49	4.47	1.44	.140	.069	.140	.056	593.20	350.00
.000995	620.	590.	560.	2	0	1	0.00	244.35	594.35

BC 1010 U/S FACE ST CLAIR HWY BRIDGE

16.40	21.24	614.04	0.00	0.00	614.61	.58	.52	.29	602.20
6910.	538.	6068.	304.	261.	940.	167.	7535.	1293.	602.20
11.44	2.06	6.45	1.82	.140	.069	.140	.056	592.80	26.81
.002111	380.	370.	370.	2	0	1	0.00	108.17	134.98

16.46	21.53	614.83	0.00	0.00	615.35	.52	.70	.03	602.20
6910.	572.	6007.	331.	287.	976.	187.	7547.	1294.	602.20
11.46	1.99	6.15	1.77	.140	.069	.140	.056	593.30	25.67
.001822	340.	360.	380.	2	0	1	0.00	110.58	136.25

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 200.0 625.0 TYPE= 1 TARGET= 425.000

16.52	21.84	615.74	0.00	0.00	615.87	.12	.28	.24	606.30

11.49	1.14	3.45	1.47	.108	.069	.072	.056	593.90	200.00
.000583	300.	300.	280.	2	0	1	0.00	425.00	625.00

1490 NH CARD USED

16.64	21.08	616.08	0.00	0.00	616.11	.03	.18	.06	604.80
6910.	190.	2377.	4343.	327.	1234.	4623.	7627.	1304.	605.00
11.63	.58	1.93	.94	.140	.069	.089	.057	595.00	105.69
.000179	650.	650.	560.	2	0	1	0.00	765.87	871.56

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 100.0 1200.0 TYPE= 1 TARGET= 1100.000

BD 3320' U/S FACE ST CLAIR HWY BRIDGE

16.83	19.65	616.25	0.00	0.00	616.26	.01	.14	.01	606.30
6910.	3447.	1625.	1838.	6049.	1129.	2299.	7790.	1323.	608.00
11.93	.57	1.44	.80	.140	.078	.075	.057	596.60	109.89
.000143	980.	1000.	800.	2	0	1	0.00	1090.10	1200.00

BE 50' D/S FACE TRAIL BRIDGE

17.22	19.26	616.46	0.00	0.00	616.48	.02	.22	.00	609.10
6910.	5679.	1190.	41.	5924.	997.	126.	8164.	1366.	609.10
12.48	.96	1.19	.32	.060	.069	.100	.057	597.20	54.71
.000087	2060.	2020.	1520.	2	0	1	0.00	839.54	894.25

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
17.23	19.26	616.46	0.00	0.00	616.53	.07	.01	.05	615.00
6910.	5784.	1118.	8.	2562.	749.	11.	8170.	1367.	615.00
12.49	2.26	1.49	.79	.025	.078	.025	.057	597.20	43.47
.000267	49.	49.	49.	0	0	1	0.00	813.98	857.45

NORMAL BRIDGE,NRD=18 MIN ELTRD= 611.50 MAX ELLC= 612.80

BF D/S FACE TRAIL BRIDGE

17.22	19.26	616.46	0.00	0.00	616.54	.08	.00	.00	615.00
6910.	5844.	1058.	9.	2536.	654.	11.	8170.	1367.	615.00
12.49	2.30	1.62	.81	.025	.040	.025	.057	597.20	43.57
.000283	1.	1.	1.	1	0	1	-115.80	813.83	857.40

NORMAL BRIDGE,NRD=18 MIN ELTRD= 611.50 MAX ELLC= 612.80

BF U/S FACE TRAIL BRIDGE

17.23	19.27	616.47	0.00	0.00	616.54	.08	.01	.00	615.00
6910.	5850.	1051.	9.	2547.	654.	11.	8172.	1367.	615.00
12.49	2.30	1.61	.81	.025	.040	.025	.057	597.20	43.47

17.23	19.27	616.47	0.00	0.00	616.54	.07	.00	.00	615.00
6910.	5789.	1113.	8.	2567.	749.	11.	8172.	1367.	615.00
12.49	2.25	1.49	.78	.025	.078	.025	.057	597.20	43.46
.000265	1.	1.	1.	0	0	1	0.00	813.98	857.45
17.24	19.29	616.49	0.00	0.00	616.58	.08	.02	.01	615.00
6910.	4544.	2359.	7.	2577.	750.	11.	8175.	1368.	615.00
12.49	1.76	3.15	.62	.060	.069	.060	.057	597.20	43.19
.000928	50.	50.	50.	0	0	1	0.00	814.40	857.58
17.51	18.53	617.03	0.00	0.00	617.05	.02	.44	.04	608.70
6910.	4662.	1932.	316.	7907.	975.	810.	8315.	1392.	608.90
12.79	.59	1.98	.39	.140	.069	.140	.058	598.50	28.53
.000247	800.	1470.	1490.	2	0	1	0.00	1521.80	1550.33
BG 2271' U/S FACE TRAIL BRIDGE									
17.66	18.12	617.22	0.00	0.00	617.24	.02	.19	.00	608.70
6910.	4930.	1883.	97.	8134.	950.	225.	8479.	1417.	608.90
13.00	.61	1.98	.43	.140	.069	.140	.058	599.10	26.60
.000252	750.	750.	770.	2	0	1	0.00	1327.43	1354.03
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
18.55	17.25	618.25	0.00	0.00	618.29	.04	1.04	.01	608.70
6910.	2517.	2298.	2095.	3804.	970.	1892.	9083.	1504.	608.90
13.72	.66	2.37	1.11	.140	.069	.080	.059	601.00	187.48
.000346	3260.	4720.	2200.	2	0	1	0.00	1077.57	1265.04

SUMMARY PRINTOUT FOR MULTIPLE PROFILES

BELLE RIVER

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	CRIWS	EG	TOPWID	10K*S	TIME	VOL
.00	0.00	0.00	0.00	562.62	7410.00	577.57	0.00	578.17	104.06	5.30	0.00	0.00
.03	120.00	0.00	0.00	562.70	7410.00	577.63	0.00	578.23	103.96	5.32	.01	3.29
.07	270.00	0.00	0.00	562.88	7410.00	577.79	0.00	578.38	104.89	5.20	.02	10.74
.36	1500.00	0.00	0.00	563.86	7410.00	578.59	0.00	579.12	106.11	4.59	.09	53.26
.45	460.00	0.00	0.00	564.07	7410.00	578.80	0.00	579.36	103.00	5.05	.11	66.45
.45	50.00	0.00	0.00	564.20	7410.00	578.86	0.00	579.39	103.00	6.60	.11	67.88
.46	20.00	0.00	0.00	564.04	7410.00	578.88	0.00	579.41	103.00	11.73	.11	68.46
.46	30.00	0.00	0.00	563.80	7410.00	578.69	0.00	579.66	90.00	9.52	.11	69.22
.47	49.00	0.00	0.00	563.40	7410.00	578.77	0.00	579.71	90.00	9.16	.12	70.29
.47	1.00	584.80	581.80	563.40	7410.00	578.77	0.00	579.71	90.00	8.49	.12	70.31
.48	40.00	584.80	581.80	562.10	7410.00	578.91	0.00	579.77	90.00	7.49	.12	71.20
.48	1.00	0.00	0.00	562.10	7410.00	578.91	0.00	579.77	90.00	11.48	.12	71.23
.49	50.00	0.00	0.00	562.16	7410.00	579.29	0.00	579.89	103.00	7.22	.12	72.48
.49	10.00	0.00	0.00	562.18	7410.00	579.49	0.00	579.94	116.00	5.08	.12	72.78
.50	50.00	0.00	0.00	562.24	7410.00	579.63	0.00	579.99	131.00	3.25	.12	74.45
.63	690.00	0.00	0.00	563.10	7410.00	579.86	0.00	580.21	131.00	3.11	.16	98.98
.98	1830.00	0.00	0.00	565.47	7410.00	580.44	0.00	580.77	173.81	2.97	.27	165.85
.99	50.00	0.00	0.00	565.54	7410.00	580.45	0.00	580.80	140.00	3.14	.28	167.68
1.00	50.00	0.00	0.00	565.60	7410.00	580.39	0.00	580.89	109.41	4.51	.28	169.32
1.01	49.00	0.00	0.00	567.60	7410.00	580.23	0.00	581.11	84.81	8.82	.28	170.60
1.01	1.00	585.30	582.60	567.60	7410.00	580.19	0.00	581.16	81.04	10.69	.28	170.62
1.02	43.00	585.30	582.60	566.90	7410.00	580.23	0.00	581.21	81.04	10.85	.28	171.54
1.02	1.00	0.00	0.00	566.90	7410.00	580.36	0.00	581.24	84.81	8.80	.28	171.57
1.03	50.00	0.00	0.00	566.95	7410.00	580.42	0.00	581.29	84.81	8.69	.28	172.70
1.17	750.00	0.00	0.00	567.60	7410.00	581.21	0.00	581.89	90.00	6.26	.32	190.84
1.36	1020.00	0.00	0.00	568.50	7410.00	582.04	0.00	582.44	160.98	3.37	.37	221.14
1.51	800.00	0.00	0.00	569.20	7410.00	582.33	0.00	582.70	162.93	3.19	.42	248.44

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	CRIWS	EG	TOPWID	10K*S	TIME	VOL
1.88	700.00	0.00	0.00	570.30	7410.00	583.07	0.00	583.37	783.00	2.58	.53	324.27
2.08	1100.00	0.00	0.00	570.30	7260.00	583.35	0.00	583.64	526.00	2.45	.60	383.90
2.46	2000.00	0.00	0.00	570.40	7260.00	583.84	0.00	584.21	238.83	2.82	.72	473.41
2.77	1600.00	0.00	0.00	568.80	7260.00	584.36	0.00	584.60	289.41	1.75	.83	540.81
3.18	2190.00	0.00	0.00	570.40	7260.00	584.87	0.00	585.01	840.00	1.94	1.04	670.68
3.31	700.00	0.00	0.00	570.10	7260.00	584.97	0.00	585.18	613.00	2.39	1.09	714.39
3.48	900.00	0.00	0.00	569.30	7260.00	585.16	0.00	585.47	647.39	3.37	1.15	762.01
3.64	800.00	0.00	0.00	570.40	7260.00	585.45	0.00	585.72	250.00	3.22	1.20	796.17
3.71	400.00	0.00	0.00	570.90	7260.00	585.55	0.00	585.92	186.64	4.41	1.22	811.87
3.72	50.00	0.00	0.00	572.40	7260.00	585.83	0.00	586.04	186.35	2.36	1.23	813.97
3.73	48.00	587.00	586.60	572.40	7260.00	585.84	0.00	586.04	186.35	2.36	1.23	816.18
3.74	50.00	0.00	0.00	572.30	7260.00	585.86	0.00	586.06	230.61	2.27	1.24	818.54
3.98	1260.00	0.00	0.00	569.40	7260.00	586.23	0.00	586.39	1108.46	2.93	1.35	892.78
4.24	1380.00	0.00	0.00	569.80	7260.00	586.64	0.00	586.91	1116.57	4.25	1.44	988.46
4.46	1190.00	0.00	0.00	568.70	7260.00	587.17	0.00	587.40	448.18	4.04	1.53	1064.45
4.62	800.00	0.00	0.00	567.90	7180.00	587.53	0.00	587.91	116.00	5.95	1.57	1103.78
4.63	50.00	0.00	0.00	568.20	7180.00	587.54	0.00	588.01	91.00	7.98	1.58	1105.38
4.63	19.00	589.20	585.60	568.20	7180.00	588.04	0.00	588.48	91.00	7.23	1.58	1105.96
4.64	50.00	0.00	0.00	568.20	7180.00	588.23	0.00	588.57	191.00	4.88	1.58	1107.74
5.16	2760.00	0.00	0.00	572.60	7180.00	588.84	0.00	588.85	2937.15	.13	3.12	1482.42
5.39	1220.00	0.00	0.00	565.50	7180.00	588.85	0.00	588.85	2865.30	.14	3.30	1569.46
5.80	2160.00	0.00	0.00	573.00	7180.00	588.89	0.00	588.90	1988.26	.98	3.71	1964.56
6.29	2560.00	0.00	0.00	571.60	7180.00	589.01	0.00	589.01	2230.00	.56	4.31	2271.31
6.57	1500.00	0.00	0.00	570.70	7180.00	589.15	0.00	589.33	2000.00	4.56	4.44	2544.21
6.78	1080.00	0.00	0.00	571.60	7180.00	589.69	0.00	589.75	1591.18	2.76	4.60	2659.89
7.07	1560.00	0.00	0.00	572.90	7180.00	590.27	0.00	590.66	174.95	8.76	4.68	2776.74
7.08	50.00	0.00	0.00	574.00	7180.00	590.54	0.00	590.78	155.00	6.43	4.68	2778.75
7.09	30.00	592.30	590.10	574.00	7180.00	590.74	0.00	590.98	155.00	6.10	4.69	2780.00

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	CRIWS	EG	TOPWID	10K*S	TIME	VOL
7.10	50.00	0.00	0.00	574.00	7180.00	590.82	0.00	591.03	240.00	4.98	4.69	2782.29
7.15	300.00	0.00	0.00	574.20	7090.00	591.18	0.00	591.21	900.00	1.77	4.75	2810.59
7.40	1300.00	0.00	0.00	575.00	7090.00	591.52	0.00	591.63	1550.00	9.15	4.88	2935.63
7.56	840.00	0.00	0.00	575.60	7090.00	592.15	0.00	592.25	1425.00	6.35	4.99	3032.89
7.81	1320.00	0.00	0.00	576.40	7090.00	593.03	0.00	593.21	1010.75	8.71	5.10	3162.45
7.98	900.00	0.00	0.00	575.70	7090.00	593.77	0.00	593.91	750.00	6.52	5.20	3253.42
8.15	920.00	0.00	0.00	574.90	7090.00	594.33	0.00	594.51	450.00	6.24	5.28	3329.35
8.30	770.00	0.00	0.00	574.30	7090.00	594.84	0.00	595.01	595.00	8.56	5.34	3374.36
8.83	2820.00	0.00	0.00	576.30	7090.00	595.99	0.00	596.03	1604.16	2.61	5.79	3563.65
9.23	2100.00	0.00	0.00	578.50	7090.00	596.54	0.00	596.62	670.86	4.65	6.00	3729.03
9.38	780.00	0.00	0.00	579.00	7090.00	596.78	0.00	596.79	1500.00	1.05	6.22	3824.04
9.63	1360.00	0.00	0.00	580.00	7090.00	596.97	0.00	597.07	998.44	4.67	6.35	3988.23
9.79	840.00	0.00	0.00	580.30	7090.00	597.37	0.00	597.57	778.71	7.23	6.41	4044.97
10.12	1740.00	0.00	0.00	581.20	7090.00	598.35	0.00	598.40	1312.22	3.96	6.66	4168.62
10.46	1760.00	0.00	0.00	582.10	7090.00	598.82	0.00	598.86	1120.82	2.71	6.92	4333.43
10.76	1600.00	0.00	0.00	578.70	7040.00	599.16	0.00	599.22	697.00	2.32	7.12	4503.76
10.77	59.00	0.00	0.00	584.00	7040.00	599.12	0.00	599.49	637.00	6.24	7.12	4510.66
10.77	1.00	598.10	600.30	584.00	7040.00	599.09	0.00	599.60	239.17	8.41	7.12	4510.73
10.78	28.00	598.10	600.30	584.00	7040.00	599.12	0.00	599.62	241.97	8.36	7.12	4511.59
10.78	1.00	0.00	0.00	584.00	7040.00	599.35	0.00	599.71	637.00	5.90	7.12	4511.66
10.79	50.00	0.00	0.00	584.00	7040.00	599.39	0.00	599.79	731.97	17.03	7.13	4517.30
10.97	960.00	0.00	0.00	584.50	7040.00	600.55	0.00	600.58	976.59	3.94	7.29	4600.44
11.31	1790.00	0.00	0.00	585.50	7040.00	601.27	0.00	601.31	1000.18	5.30	7.60	4825.66
11.55	1270.00	0.00	0.00	585.70	7040.00	601.77	0.00	601.83	850.59	4.40	7.76	4943.18
11.78	1210.00	0.00	0.00	585.90	7040.00	602.24	0.00	602.27	960.00	3.62	7.99	5084.54
12.06	1500.00	0.00	0.00	586.10	7040.00	602.74	0.00	602.80	842.08	3.82	8.21	5263.42
12.33	1400.00	0.00	0.00	587.30	7040.00	603.39	0.00	603.52	984.16	7.36	8.35	5387.33
12.48	820.00	0.00	0.00	588.00	7040.00	603.93	0.00	603.98	1090.00	4.31	8.49	5470.45

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	CRIWS	EG	TOPWID	10K*S	TIME	VOL
12.68	1050.00	0.00	0.00	588.00	7040.00	604.29	0.00	604.35	716.00	4.33	8.62	5561.30
12.88	1050.00	0.00	0.00	587.00	7040.00	604.90	0.00	605.06	517.42	12.72	8.70	5635.25
13.04	870.00	0.00	0.00	588.00	7040.00	605.76	0.00	605.89	628.82	7.69	8.80	5706.96
13.19	770.00	0.00	0.00	588.80	7040.00	606.33	0.00	606.39	800.00	5.41	8.91	5789.99
13.42	1220.00	0.00	0.00	588.90	7040.00	606.87	0.00	606.92	731.06	3.84	9.11	5941.56
13.54	620.00	0.00	0.00	589.30	7040.00	607.04	0.00	607.07	1007.74	3.04	9.19	5990.73
13.55	49.00	0.00	0.00	588.10	7040.00	607.07	0.00	607.09	1055.35	.30	9.20	5998.90
13.55	1.00	605.20	604.40	588.10	7040.00	607.07	0.00	607.09	1055.35	.30	9.20	5999.06
13.55	18.00	605.20	604.40	588.10	7040.00	607.07	0.00	607.09	1055.35	.30	9.21	6001.85
13.55	1.00	0.00	0.00	588.10	7040.00	607.07	0.00	607.09	1055.35	.30	9.21	6002.01
13.56	49.00	0.00	0.00	588.20	7040.00	607.08	0.00	607.10	1119.95	1.19	9.22	6010.03
13.74	940.00	0.00	0.00	590.70	7040.00	607.19	0.00	607.20	1261.11	1.01	9.54	6191.98
14.08	1820.00	0.00	0.00	591.20	7040.00	607.39	0.00	607.42	1059.08	2.92	9.81	6402.35
14.35	1400.00	0.00	0.00	591.50	7040.00	607.86	0.00	607.94	748.11	6.37	9.97	6549.70
14.90	2930.00	0.00	0.00	591.30	7040.00	608.80	0.00	608.85	677.98	3.66	10.27	6716.02
15.08	940.00	0.00	0.00	591.30	7040.00	609.06	0.00	609.09	1100.00	2.14	10.46	6821.08
15.09	70.00	0.00	0.00	591.50	7040.00	609.09	0.00	609.16	944.40	4.60	10.48	6836.79
15.13	200.00	0.00	0.00	592.20	7040.00	609.20	0.00	609.29	790.00	5.65	10.51	6860.18
15.15	110.00	0.00	0.00	592.50	7040.00	609.26	0.00	609.35	680.00	5.44	10.52	6871.41
15.17	90.00	0.00	0.00	592.90	7040.00	609.29	0.00	609.66	590.00	19.50	10.53	6880.44
15.18	49.00	0.00	0.00	591.40	7040.00	609.35	0.00	609.76	482.62	8.53	10.53	6883.57
15.18	1.00	608.20	609.60	591.40	7040.00	609.35	0.00	609.76	482.81	8.53	10.53	6883.61
15.18	23.00	608.20	609.60	591.40	7040.00	609.37	0.00	609.78	485.37	8.45	10.53	6884.43
15.19	1.00	0.00	0.00	591.40	7040.00	609.37	0.00	609.78	485.48	8.44	10.53	6884.47
15.19	50.00	0.00	0.00	591.50	7040.00	609.71	0.00	609.93	638.30	8.66	10.53	6888.24
15.24	250.00	0.00	0.00	592.10	7040.00	610.11	0.00	610.17	568.92	4.02	10.57	6917.79
15.33	480.00	0.00	0.00	593.10	7040.00	610.26	0.00	610.33	638.34	4.59	10.62	6952.90
15.36	170.00	0.00	0.00	593.50	7040.00	610.35	0.00	610.44	610.31	6.11	10.65	6973.12

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	CRIWS	EG	TOPWID	10K*S	TIME	VOL
15.48	600.00	0.00	0.00	593.60	7040.00	610.66	0.00	610.78	525.78	7.11	10.70	7013.74
15.66	960.00	0.00	0.00	593.80	7040.00	611.31	0.00	611.40	1238.02	8.22	10.81	7084.31
15.70	200.00	0.00	0.00	593.90	7040.00	611.50	0.00	611.53	1463.46	3.14	10.84	7104.60
15.73	170.00	0.00	0.00	593.90	7040.00	611.57	0.00	611.58	1879.31	1.37	10.90	7131.22
15.84	590.00	0.00	0.00	594.40	7040.00	611.66	0.00	611.68	1681.70	1.92	11.06	7233.31
16.03	1020.00	0.00	0.00	595.30	7040.00	611.90	0.00	611.92	1077.60	3.03	11.32	7419.83
16.14	580.00	0.00	0.00	595.80	7040.00	612.11	0.00	612.32	550.00	10.80	11.35	7468.78
16.19	230.00	0.00	0.00	596.00	6910.00	612.37	0.00	612.73	182.00	15.60	11.37	7480.76
16.20	50.00	0.00	0.00	594.50	6910.00	612.48	0.00	612.81	96.00	9.42	11.37	7482.56
16.21	41.00	614.20	611.50	594.50	6910.00	612.76	0.00	613.07	96.00	8.94	11.37	7483.99
16.21	50.00	0.00	0.00	594.40	6910.00	613.01	0.00	613.20	183.00	9.64	11.38	7486.06
16.33	590.00	0.00	0.00	593.20	6910.00	613.59	0.00	613.80	244.35	9.95	11.43	7518.13
16.40	370.00	0.00	0.00	592.80	6910.00	614.04	0.00	614.61	108.17	21.11	11.44	7535.22
16.46	360.00	0.00	0.00	593.30	6910.00	614.83	0.00	615.35	110.58	18.22	11.46	7546.82
16.52	300.00	0.00	0.00	593.90	6910.00	615.74	0.00	615.87	425.00	5.83	11.49	7562.70
16.64	650.00	0.00	0.00	595.00	6910.00	616.08	0.00	616.11	765.87	1.79	11.63	7627.23
16.83	1000.00	0.00	0.00	596.60	6910.00	616.25	0.00	616.26	1090.10	1.43	11.93	7789.65
17.22	2020.00	0.00	0.00	597.20	6910.00	616.46	0.00	616.48	839.54	.87	12.48	8164.36
17.23	49.00	0.00	0.00	597.20	6910.00	616.46	0.00	616.53	813.98	2.67	12.49	8170.20
17.22	1.00	611.50	612.80	597.20	6910.00	616.46	0.00	616.54	813.83	2.83	12.49	8170.27
17.23	18.00	611.50	612.80	597.20	6910.00	616.47	0.00	616.54	813.98	2.80	12.49	8171.60
17.23	1.00	0.00	0.00	597.20	6910.00	616.47	0.00	616.54	813.98	2.65	12.49	8171.67
17.24	50.00	0.00	0.00	597.20	6910.00	616.49	0.00	616.58	814.40	9.28	12.49	8175.50
17.51	1470.00	0.00	0.00	598.50	6910.00	617.03	0.00	617.05	1521.80	2.47	12.79	8314.90
17.66	750.00	0.00	0.00	599.10	6910.00	617.22	0.00	617.24	1327.43	2.52	13.00	8478.72
18.55	4720.00	0.00	0.00	601.00	6910.00	618.25	0.00	618.29	1077.57	3.46	13.72	9082.92

SECTION NUMBER	DISCHARGE CFS	CWSEL	CWSEL DIFF EACH Q	CWSEL DIFF EACH SECTION	CWSEL-WSELK	TOPWID	T.W. DIFF	LENGTH
.001	7410.000	577.570	0.000	0.000	0.000	104.056	0.000	0.000
.027	7410.000	577.633	0.000	.063	0.000	103.960	0.000	120.000
.074	7410.000	577.790	0.000	.157	0.000	104.895	0.000	270.000

.445	7410.000	578.798	0.000	.210	0.000	103.000	0.000	460.000
.454	7410.000	578.855	0.000	.057	0.000	103.000	0.000	50.000
.458	7410.000	578.878	0.000	.023	0.000	103.000	0.000	20.000
.464	7410.000	578.694	0.000	-.184	0.000	90.000	0.000	30.000
.472	7410.000	578.768	0.000	.073	0.000	90.000	0.000	49.000
.473	7410.000	578.769	0.000	.001	0.000	90.000	0.000	1.000
.481	7410.000	578.907	0.000	.138	0.000	90.000	0.000	40.000
.482	7410.000	578.908	0.000	.001	0.000	90.000	0.000	1.000
.490	7410.000	579.294	0.000	.387	0.000	103.000	0.000	50.000
.492	7410.000	579.491	0.000	.197	0.000	116.000	0.000	10.000
.502	7410.000	579.627	0.000	.136	0.000	131.000	0.000	50.000
.632	7410.000	579.860	0.000	.232	0.000	131.000	0.000	690.000
.979	7410.000	580.444	0.000	.584	0.000	173.813	0.000	1830.000
.989	7410.000	580.448	0.000	.004	0.000	139.999	0.000	50.000
.998	7410.000	580.390	0.000	-.058	0.000	109.411	0.000	50.000
1.007	7410.000	580.231	0.000	-.159	0.000	84.808	0.000	49.000
1.008	7410.000	580.185	0.000	-.045	0.000	81.039	0.000	1.000
1.016	7410.000	580.230	0.000	.044	0.000	81.039	0.000	43.000
1.017	7410.000	580.364	0.000	.134	0.000	84.808	0.000	1.000
1.025	7410.000	580.417	0.000	.053	0.000	84.808	0.000	50.000
1.167	7410.000	581.211	0.000	.795	0.000	90.000	0.000	750.000
1.360	7410.000	582.042	0.000	.831	0.000	160.978	0.000	1020.000
1.512	7410.000	582.326	0.000	.284	0.000	162.926	0.000	800.000
1.743	7410.000	582.709	0.000	.382	0.000	274.699	0.000	1220.000
1.876	7410.000	583.073	0.000	.364	0.000	783.000	0.000	700.000
2.084	7260.000	583.347	0.000	.274	0.000	526.000	0.000	1100.000
2.463	7260.000	583.837	0.000	.490	0.000	238.835	0.000	2000.000
2.766	7260.000	584.363	0.000	.526	0.000	289.413	0.000	1600.000
3.180	7260.000	584.867	0.000	.504	0.000	840.000	0.000	2190.000
3.313	7260.000	584.967	0.000	.100	0.000	613.000	0.000	700.000
3.484	7260.000	585.163	0.000	.197	0.000	647.392	0.000	900.000
3.635	7260.000	585.454	0.000	.290	0.000	250.000	0.000	800.000

3.720	7260.000	585.833	0.000	.282	0.000	186.350	0.000	50.000
3.729	7260.000	585.841	0.000	.009	0.000	186.352	0.000	48.000
3.739	7260.000	585.864	0.000	.023	0.000	230.615	0.000	50.000
3.977	7260.000	586.233	0.000	.369	0.000	1108.461	0.000	1260.000
4.239	7260.000	586.644	0.000	.412	0.000	1116.570	0.000	1380.000
4.464	7260.000	587.168	0.000	.523	0.000	448.177	0.000	1190.000
4.616	7180.000	587.528	0.000	.360	0.000	116.001	0.000	800.000
4.625	7180.000	587.544	0.000	.016	0.000	91.000	0.000	50.000
4.629	7180.000	588.037	0.000	.493	0.000	91.000	0.000	19.000
4.638	7180.000	588.232	0.000	.195	0.000	191.000	0.000	50.000
5.161	7180.000	588.844	0.000	.611	0.000	2937.148	0.000	2760.000
5.392	7180.000	588.847	0.000	.004	0.000	2865.295	0.000	1220.000
5.801	7180.000	588.886	0.000	.039	0.000	1988.259	0.000	2160.000
6.286	7180.000	589.006	0.000	.120	0.000	2230.000	0.000	2560.000
6.570	7180.000	589.151	0.000	.145	0.000	2000.000	0.000	1500.000
6.775	7180.000	589.691	0.000	.540	0.000	1591.176	0.000	1080.000
7.070	7180.000	590.268	0.000	.577	0.000	174.952	0.000	1560.000
7.080	7180.000	590.538	0.000	.270	0.000	155.000	0.000	50.000
7.086	7180.000	590.738	0.000	.200	0.000	155.000	0.000	30.000
7.095	7180.000	590.823	0.000	.085	0.000	240.000	0.000	50.000
7.152	7090.000	591.181	0.000	.358	0.000	900.001	0.000	300.000
7.398	7090.000	591.522	0.000	.342	0.000	1550.000	0.000	1300.000
7.557	7090.000	592.151	0.000	.629	0.000	1425.000	0.000	840.000
7.807	7090.000	593.027	0.000	.876	0.000	1010.754	0.000	1320.000
7.977	7090.000	593.772	0.000	.745	0.000	750.000	0.000	900.000
8.152	7090.000	594.334	0.000	.562	0.000	450.001	0.000	920.000
8.297	7090.000	594.844	0.000	.510	0.000	595.000	0.000	770.000
8.831	7090.000	595.995	0.000	1.151	0.000	1604.156	0.000	2820.000
9.229	7090.000	596.536	0.000	.541	0.000	670.862	0.000	2100.000
9.377	7090.000	596.778	0.000	.242	0.000	1499.999	0.000	780.000
9.634	7090.000	596.967	0.000	.188	0.000	998.439	0.000	1360.000
9.794	7090.000	597.375	0.000	.408	0.000	778.711	0.000	840.000

10.456	7090.000	598.821	0.000	.472	0.000	1120.821	0.000	1760.000
10.760	7040.000	599.158	0.000	.337	0.000	696.999	0.000	1600.000
10.770	7040.000	599.117	0.000	-.041	0.000	636.999	0.000	59.000
10.771	7040.000	599.091	0.000	-.026	0.000	239.168	0.000	1.000
10.776	7040.000	599.118	0.000	.027	0.000	241.967	0.000	28.000
10.777	7040.000	599.351	0.000	.233	0.000	636.999	0.000	1.000
10.786	7040.000	599.389	0.000	.038	0.000	731.973	0.000	50.000
10.968	7040.000	600.549	0.000	1.161	0.000	976.585	0.000	960.000
11.307	7040.000	601.268	0.000	.718	0.000	1000.184	0.000	1790.000
11.547	7040.000	601.773	0.000	.505	0.000	850.590	0.000	1270.000
11.776	7040.000	602.237	0.000	.464	0.000	959.999	0.000	1210.000
12.060	7040.000	602.742	0.000	.505	0.000	842.083	0.000	1500.000
12.326	7040.000	603.394	0.000	.653	0.000	984.163	0.000	1400.000
12.481	7040.000	603.934	0.000	.540	0.000	1090.000	0.000	820.000
12.680	7040.000	604.291	0.000	.356	0.000	716.004	0.000	1050.000
12.879	7040.000	604.903	0.000	.612	0.000	517.424	0.000	1050.000
13.043	7040.000	605.764	0.000	.861	0.000	628.821	0.000	870.000
13.189	7040.000	606.326	0.000	.562	0.000	800.001	0.000	770.000
13.420	7040.000	606.866	0.000	.540	0.000	731.058	0.000	1220.000
13.538	7040.000	607.036	0.000	.170	0.000	1007.735	0.000	620.000
13.546	7040.000	607.073	0.000	.037	0.000	1055.347	0.000	49.000
13.547	7040.000	607.073	0.000	-.000	0.000	1055.347	0.000	1.000
13.551	7040.000	607.073	0.000	.001	0.000	1055.349	0.000	18.000
13.552	7040.000	607.074	0.000	.001	0.000	1055.349	0.000	1.000
13.560	7040.000	607.081	0.000	.007	0.000	1119.953	0.000	49.000
13.738	7040.000	607.192	0.000	.111	0.000	1261.111	0.000	940.000
14.083	7040.000	607.385	0.000	.193	0.000	1059.082	0.000	1820.000
14.348	7040.000	607.857	0.000	.472	0.000	748.112	0.000	1400.000
14.903	7040.000	608.799	0.000	.941	0.000	677.984	0.000	2930.000
15.081	7040.000	609.065	0.000	.266	0.000	1099.999	0.000	940.000
15.094	7040.000	609.094	0.000	.029	0.000	944.402	0.000	70.000
15.132	7040.000	609.199	0.000	.105	0.000	789.999	0.000	200.000

15.170	7040.000	609.294	0.000	.031	0.000	589.999	0.000	90.000
15.178	7040.000	609.346	0.000	.052	0.000	482.622	0.000	49.000
15.179	7040.000	609.347	0.000	.001	0.000	482.806	0.000	1.000
15.184	7040.000	609.373	0.000	.026	0.000	485.373	0.000	23.000
15.185	7040.000	609.374	0.000	.001	0.000	485.484	0.000	1.000
15.193	7040.000	609.707	0.000	.333	0.000	638.296	0.000	50.000
15.240	7040.000	610.107	0.000	.399	0.000	568.918	0.000	250.000
15.331	7040.000	610.257	0.000	.150	0.000	638.339	0.000	480.000
15.364	7040.000	610.347	0.000	.090	0.000	610.312	0.000	170.000
15.477	7040.000	610.657	0.000	.310	0.000	525.778	0.000	600.000
15.659	7040.000	611.311	0.000	.653	0.000	1238.016	0.000	960.000
15.697	7040.000	611.499	0.000	.188	0.000	1463.456	0.000	200.000
15.729	7040.000	611.567	0.000	.068	0.000	1879.312	0.000	170.000
15.841	7040.000	611.658	0.000	.091	0.000	1681.700	0.000	590.000
16.034	7040.000	611.899	0.000	.241	0.000	1077.597	0.000	1020.000
16.144	7040.000	612.107	0.000	.208	0.000	550.000	0.000	580.000
16.188	6910.000	612.372	0.000	.265	0.000	182.000	0.000	230.000
16.197	6910.000	612.483	0.000	.111	0.000	96.000	0.000	50.000
16.205	6910.000	612.759	0.000	.276	0.000	96.000	0.000	41.000
16.214	6910.000	613.013	0.000	.255	0.000	183.001	0.000	50.000
16.326	6910.000	613.588	0.000	.575	0.000	244.353	0.000	590.000
16.396	6910.000	614.036	0.000	.448	0.000	108.172	0.000	370.000
16.464	6910.000	614.830	0.000	.794	0.000	110.577	0.000	360.000
16.521	6910.000	615.744	0.000	.914	0.000	424.999	0.000	300.000
16.644	6910.000	616.078	0.000	.335	0.000	765.874	0.000	650.000
16.833	6910.000	616.248	0.000	.170	0.000	1090.104	0.000	1000.000
17.215	6910.000	616.465	0.000	.216	0.000	839.544	0.000	2020.000
17.233	6910.000	616.460	0.000	-.004	0.000	813.982	0.000	49.000
17.224	6910.000	616.460	0.000	-.001	0.000	813.826	0.000	1.000
17.227	6910.000	616.465	0.000	.006	0.000	813.976	0.000	18.000
17.228	6910.000	616.472	0.000	.006	0.000	813.984	0.000	1.000
17.236	6910.000	616.492	0.000	.020	0.000	814.396	0.000	50.000

17.656	6910.000	617.220	0.000	.187	0.000	1327.432	0.000	750.000
18.549	6910.000	618.253	0.000	1.032	0.000	1077.567	0.000	4720.000

641G

DATA FOR LAST CROSS SECTION

PROFILE	TYPE ENC	TARGET	TOP WIDTH AREA-ACRES	TOP WIDTH AREA-DIFF
1	0.000	0.000	1504.137	0.000

```
**** 7000 SCOPE 2.1 LVL  221  04/26/77  00.09.51  05/06/77      77126

SYS DEVICES 819/ 4/PF FLS=200K FLL=764K MXS=160K MXL=457K MXB=457B

HH.MM.SS CPU SECOND ORIGIN
         09.31.01.:::. J0    20PPU CBR73 B+W LYN ECS-2CPUS 02/15/77
09.31.46 00000.024 MFZ.     -CNAJ012,T20,CP70.    CHINA TWP FIS
09.31.46 00000.024 JOB.     -CHARGE.810-0037-45-78-5512,JANDA,001,D,JANDA.
09.31.53 00000.068 JOB.     -ATTACH(HEC2,HEC2PROD,ID=MULLAN,CY=1)
09.31.53 00000.073 MFZ.       PF254 - CYCLE    1 ATTACHED FROM SN=SYSTEM
09.31.53 00000.074 LOD.     -HEC2(PL=99999).
09.31.54 00000.492 MFZ.       LD610 - FLS REQUIRED TO LOAD - 0025222 OU.COG
09.31.54 00000.502 MFZ.       LD603 - EXECUTION INITIATED OS.EXP
09.31.54 00000.503 USR.     FORTRAN LIBRARY 217-MODIFIED 03/16/76
09.31.58 00003.263 USR.        STOP
09.31.58 00003.263 USR.          2.759 CP SECONDS EXECUTION TIME
09.31.58 00003.266 MFZ.       RM770 - MAXIMUM ACTIVE FILES                3
09.31.58 00003.266 MFZ.       RM771 - OPEN/CLOSE CALLS                   16
09.31.58 00003.267 MFZ.       RM772 - DATA TRANSFER CALLS             7,260
09.31.58 00003.267 MFZ.       RM773 - CONTROL/POSITIONING CALLS          11
09.31.58 00003.267 MFZ.       RM774 - BM DATA TRANSFER CALLS            442
09.31.58 00003.267 MFZ.       RM775 - BM CONTROL/POSITIONING CALLS       53
09.31.58 00003.268 MFZ.       RM776 - QUEUE MANAGER CALLS                91
09.31.58 00003.268 MFZ.       RM777 - RECALL CALLS                       59
09.31.58 00003.268 MFZ.       BWMSG - NUMBER OF TAPES MOUNTED
09.31.58 00003.268 MFZ.       SRU                 3.916  SRU
09.31.58 00003.269 MFZ.       SCM               152.279  KWS
09.31.58 00003.269 MFZ.       I/O                 0.079  MW
09.31.58 00003.269 MFZ.       RMS                 0.111  MWS
09.31.58 00003.269 MFZ.       USER                2.214  SEC
09.31.58 00003.270 MFZ.       JOB                 3.271  SEC
09.31.58 00003.270 MFZ.       SC050 - 000153 SC/LC SWAPS
09.31.58 00003.270 MFZ.     CNAJOJB   CNAJOJB
09.31.58.EJ  END OF JOB
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RECEIVED
MAY 31 1977
WATER MANAGEMENT

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**********************************************
HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
**********************************************


T1       BELLE RIVER   EAST CHINA, CHINA TOWNSHIPS       5555-15&12
T2       100 YEAR FLOW
T3       BELLE RIVER

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        -0.       4.       -0.       -0. -0.000000     -0.00     -0.0      -0.   577.570   -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
```

CCHV= .300 CEHV= .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
	.00	14.95	577.57	0.00	577.57	578.17	.60	0.00	0.00	580.32
	7410.	0.	7410.	0.	0.	1197.	0.	0.	0.	579.82
	0.00	0.00	6.19	0.00	.030	.026	.030	0.000	562.62	105.00
	.000530	0.	0.	0.	0	0	1	-0.00	104.06	209.06

A 120' U/S MOUTH OF BELLE RIVER

	.03	14.93	577.63	0.00	0.00	578.23	.60	.06	.00	580.40
	7410.	0.	7410.	0.	0.	1195.	0.	3.	0.	579.90
	.01	0.00	6.20	0.00	.030	.026	.030	.026	562.70	105.00
	.000532	120.	120.	120.	0	0	1	0.00	103.96	208.96

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 580.40 ELREA= 579.90

	.07	14.91	577.79	0.00	0.00	578.38	.59	.14	.00	580.40
	7410.	0.	7410.	0.	0.	1207.	0.	11.	1.	579.90
	.02	0.00	6.14	0.00	.030	.026	.030	.026	562.88	105.00
	.000520	250.	270.	290.	1	0	1	0.00	104.89	209.89

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 580.40 ELREA= 579.90

	.36	14.73	578.59	0.00	0.00	579.12	.53	.73	.02	580.40
	7410.	0.	7410.	0.	0.	1262.	0.	53.	5.	579.90
	.09	0.00	5.87	0.00	.030	.026	.030	.026	563.86	105.00
	.000459	1500.	1500.	1500.	1	0	1	0.00	106.11	211.11

	.45	14.73	578.80	0.00	0.00	579.36	.56	.22	.01	580.00
	7410.	0.	7410.	0.	0.	1236.	0.	66.	6.	580.10
	.11	0.00	6.00	0.00	.030	.026	.030	.026	564.07	123.00
	.000505	460.	460.	460.	0	0	1	0.00	103.00	226.00

1490 NH CARD USED

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

B 100' D/S FACE BRIDGE ST. BRIDGE

	.45	14.66	578.86	0.00	0.00	579.39	.54	.03	.01	580.00
	7410.	0.	7410.	0.	0.	1261.	0.	68.	6.	580.10
	.11	0.00	5.88	0.00	.030	.033	.030	.026	564.20	123.00
	.000660	50.	50.	50.	2	0	1	0.00	103.00	226.00

1490 NH CARD USED

.46	14.84	578.88	0.00	0.00	579.41	.53	.02	.00	580.00
7410.	0.	7410.	0.	0.	1266.	0.	68.	6.	580.10
.11	0.00	5.85	0.00	.030	.044	.030	.026	564.04	123.00
.001173	20.	20.	20.	1	0	1	0.00	103.00	226.00

3265 DIVIDED FLOW

.46	14.89	578.69	0.00	0.00	579.66	.96	.03	.22	584.80
7410.	0.	7410.	0.	0.	941.	0.	69.	6.	584.80
.11	0.00	7.87	0.00	.030	.026	.030	.026	563.80	800.00
.000952	30.	30.	30.	2	0	1	0.00	90.00	931.00

3265 DIVIDED FLOW

OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 582.20 ELREA= 582.20

.47	15.37	578.77	0.00	0.00	579.71	.94	.05	.01	584.80
7410.	0.	7410.	0.	0.	952.	0.	70.	6.	584.80
.12	0.00	7.79	0.00	.030	.026	.030	.026	563.40	800.00
.000916	49.	49.	49.	2	0	1	0.00	90.00	931.00

3265 DIVIDED FLOW

NORMAL BRIDGE, NRD= 6 MIN ELTRD= 584.80 MAX ELLC= 581.80

C D/S FACE BRIDGE ST. BRIDGE

.47	15.37	578.77	0.00	0.00	579.71	.94	.00	.00	584.80
7410.	0.	7410.	0.	0.	952.	0.	70.	6.	584.80
.12	0.00	7.79	0.00	.016	.021	.016	.026	563.40	800.00
.000849	1.	1.	1.	0	0	1	0.00	90.00	931.00

3265 DIVIDED FLOW

NORMAL BRIDGE, NRD= 6 MIN ELTRD= 584.80 MAX ELLC= 581.80

D U/S FACE BRIDGE ST. BRIDGE

.48	16.81	578.91	0.00	0.00	579.77	.86	.03	.02	585.50
7410.	0.	7410.	0.	0.	996.	0.	-71.	6.	584.80
.12	0.00	7.44	0.00	.016	.021	.016	.026	562.10	800.00
.000749	40.	40.	40.	2	0	1	0.00	90.00	931.00

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

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 582.60 ELREA= 582.60

.48	16.81	578.91	0.00	0.00	579.77	.86	.00	.00	585.50
7410.	0.	7410.	0.	0.	996.	0.	71.	6.	584.80
.12	0.00	7.44	0.00	.040	.026	.060	.026	562.10	800.00
.001148	1.	1.	1.	0	0	1	0.00	90.00	931.00

3265 DIVIDED FLOW

.49	17.13	579.29	0.00	0.00	579.89	.60	.04	.08	585.50
7410.	0.	7410.	0.	0.	1195.	0.	72.	6.	584.80
.12	0.00	6.20	0.00	.040	.026	.060	.026	562.16	800.00
.000722	50.	50.	50.	2	0	1	0.00	103.00	931.00

3265 DIVIDED FLOW

.49	17.31	579.49	0.00	0.00	579.94	.45	.01	.04	585.50
7410.	0.	7410.	0.	0.	1376.	0.	73.	6.	584.80
.12	0.00	5.38	0.00	.040	.026	.060	.026	562.18	800.00
.000508	10.	10.	10.	2	0	1	0.00	116.00	931.00

.50	17.39	579.63	0.00	0.00	579.99	.36	.02	.03	585.50
7410.	0.	7410.	0.	0.	1538.	0.	74.	6.	584.80
.12	0.00	4.82	0.00	.040	.026	.060	.026	562.24	800.00
.000325	50.	50.	50.	2	0	1	0.00	131.00	931.00

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 585.50 ELREA= 584.80

E 800. U/S FACE BRIDGE ST. BRIDGE

.63	16.76	579.86	0.00	0.00	580.21	.35	.22	.00	585.50
7410.	0.	7410.	0.	0.	1559.	0.	99.	8.	584.80
.16	0.00	4.75	0.00	.040	.026	.060	.026	563.10	800.00
.000311	690.	690.	690.	2	0	1	0.00	131.00	931.00

.98	14.97	580.44	0.00	0.00	580.77	.33	.56	.01	578.70
7410.	10.	7400.	0.	17.	1607.	0.	166.	15.	583.90
.27	.58	4.60	0.00	.040	.026	.060	.026	565.47	1480.22
.000297	1830.	1830.	1830.	0	0	1	0.00	173.81	1654.03

3470 ENCROACHMENT STATIONS= 1509.0 1649.0 TYPE= 1 TARGET= 140.000

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 100000.00 ELREA= 100000.00

.99	14.91	580.45	0.00	0.00	580.80	.35	.02	.01	100000.00
7410.	0.	7410.	0.	0.	1556.	0.	168.	15.	100000.00
.28	0.00	4.76	0.00	.040	.026	.060	.026	565.54	1509.00
.000314	50.	50.	50.	0	0	1	0.00	140.00	1649.00

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	XNI	XCH	XNR	WTN	FLTN	SSTA

SLOPE XLOBL XLCH XLOBR ITRIAL IDC ICONT CORAR TOPWID ENDST

3470 ENCROACHMENT STATIONS= 1433.7 1543.1 TYPE= 1 TARGET= 116.000

F 50' D/S FACE M-29 BRIDGE

1.00	14.79	580.39	0.00	0.00	580.89	.51	.02	.08100000.00	
7410.	0.	7410.	0.	0.	1299.	0.	169.	15. 100000.00	
.28	0.00	5.70	0.00	.040	.026	.060	.026	565.60	1433.68
.000451	50.	50.	50.	2	0	1	0.00	109.41	1543.09

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 583.90 ELREA= 583.90

1.01	12.63	580.23	0.00	0.00	581.11	.88	.03	.19	585.30
7410.	0.	7410.	0.	0.	983.	0.	171.	15.	585.40
.28	0.00	7.54	0.00	.040	.026	.060	.026	567.60	1413.47
.000882	29.	49.	79.	2	0	1	0.00	84.81	1498.27

3265 DIVIDED FLOW

NORMAL BRIDGE,NRD= 6 MIN ELTRD= 585.30 MAX ELLC= 582.60

G D/S FACE M-29 BRIDGE

1.01	12.59	580.19	0.00	0.00	581.16	.98	.00	.05	585.30
7410.	0.	7410.	0.	0.	935.	0.	171.	15.	585.40
.28	0.00	7.93	0.00	.016	.021	.016	.026	567.60	1413.47
.001069	1.	1.	1.	2	0	1	0.00	81.04	1498.27

3265 DIVIDED FLOW

NORMAL BRIDGE,NRD= 6 MIN ELTRD= 585.30 MAX ELLC= 582.60

H U/S FACE M-29 BRIDGE

1.02	13.33	580.23	0.00	0.00	581.21	.98	.05	.00	585.30
7410.	0.	7410.	0.	0.	933.	0.	172.	15.	585.40
.28	0.00	7.95	0.00	.016	.021	.016	.026	566.90	1425.72
.001085	43.	43.	43.	0	0	1	0.00	81.04	1510.52

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 585.30 ELREA= 585.30

1.02	13.46	580.36	0.00	0.00	581.24	.88	.00	.03	585.30
7410.	0.	7410.	0.	0.	986.	0.	172.	15.	585.90
.28	0.00	7.52	0.00	.060	.026	.050	.026	566.90	1425.72
.000880	1.	1.	1.	2	0	1	0.00	84.81	1510.52

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 585.30 ELREA= 585.30

1.03	13.47	580.42	0.00	0.00	581.29	.87	.04	.00	585.30

7410.	0.	7410.	0.	0.	990.	0.	173.	15.	585.90	
.28	0.00	7.49	0.00	.060	.026	.050	.026	566.95	1425.72	
.000869	50.	50.	50.	0	0	1	0.00	84.81	1510.52	

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= 1513.0 1603.0 TYPE= 1 TARGET= 90.000
ELENCL= 582.19 ELENCR= 582.19

I 800' U/S FACE M-29 BRIDGE

1.17	13.61	581.21	0.00	0.00	581.89	.68	.55	.06	585.30
7410.	0.	7410.	0.	0.	1118.	0.	191.	17.	585.90
.32	0.00	6.63	0.00	.060	.026	.050	.026	567.60	1513.00
.000626	750.	750.	750.	2	0	1	0.00	90.00	1603.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 1400.0 1700.0 TYPE= 1 TARGET= 300.000
ELENCL= 583.03 ELENCR= 583.03

1.36	13.54	582.04	0.00	0.00	582.44	.39	.46	.09	584.00
7410.	0.	7410.	0.	0.	1470.	0.	221.	20.	582.50
.37	0.00	5.04	0.00	.060	.026	.050	.026	568.50	1487.68
.000337	1020.	1020.	1020.	2	0	1	0.00	160.98	1648.65

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 1400.0 1700.0 TYPE= 1 TARGET= 300.000
ELENCL= 583.31 ELENCR= 583.31

J 2620' U/S FACE M-29 BRIDGE

1.51	13.13	582.33	0.00	0.00	582.70	.38	.26	.00	584.00
7410.	0.	7410.	0.	0.	1502.	0.	248.	23.	582.50
.42	0.00	4.93	0.00	.060	.026	.050	.026	569.20	1486.56
.000319	800.	800.	800.	2	0	1	0.00	162.93	1649.49

1490 NH CARD USED
3280 CROSS-SECTION 1.74 EXTENDED .12 FEET

3470 ENCROACHMENT STATIONS= 1394.0 1670.0 TYPE= 1 TARGET= 276.000
ELENCL= 583.74 ELENCR= 583.74

1.74	12.81	582.71	0.00	0.00	583.12	.41	.40	.02	581.80
7410.	15.	7332.	63.	52.	1412.	73.	291.	29.	580.50
.48	.29	5.19	.86	.060	.026	.050	.026	569.90	1395.30
.000338	1210.	1220.	1230.	1	0	1	0.00	274.70	1670.00

3280 CROSS SECTION 1.88 EXTENDED .36 FEET

3470 ENCROACHMENT STATIONS= 1387.0 1700.0 TYPE= 1 TARGET= 313.000
ELENCL= 583.96 ELENCR= 583.96

K 4540' U/S FACE M-29 BRIDGE

1.88	12.66	582.96	0.00	0.00	583.36	.39	.23	.01	581.80
7410.	28.	7268.	114.	78.	1428.	134.	317.	34.	580.50
.52	.36	5.09	.85	.060	.026	.050	.026	570.30	1387.00
.000321	690.	700.	730.	1	0	1	0.00	313.00	1700.00

3280 CROSS SECTION 2.08 EXTENDED .75 FEET

3470 ENCROACHMENT STATIONS= 1377.0 1700.0 TYPE= 1 TARGET= 323.000
ELENCL= 584.26 ELENCR= 584.26

2.08	13.05	583.35	0.00	0.00	583.70	.35	.32	.01	581.80
7260.	54.	7064.	142.	126.	1478.	161.	359.	41.	580.50
.59	.43	4.78	.88	.060	.026	.050	.026	570.30	1377.00
.000272	990.	1100.	1070.	2	0	1	0.00	323.00	1700.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 1448.0 1678.0 TYPE= 1 TARGET= 230.000
ELENCL= 584.79 ELENCR= 584.79

L 7640' U/S FACE M-29 BRIDGE

2.46	13.49	583.89	0.00	0.00	584.26	.36	.55	.01	582.70
7260.	2.	7132.	126.	8.	1459.	162.	438.	54.	580.20
.70	.22	4.89	.78	.085	.026	.051	.026	570.40	1448.00
.000277	1990.	2000.	2140.	2	0	1	0.00	230.00	1678.00

1490 NH CARD USED

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= 1409.0 1691.0 TYPE= 1 TARGET= 282.000
ELENCL= 585.32 ELENCR= 585.32

M 9240' U/S FACE M-29 BRIDGE

2.77	15.61	584.41	0.00	0.00	584.64	.23	.34	.04	579.40
7260.	176.	7081.	3.	244.	1811.	13.	506.	64.	583.60
.82	.72	3.91	.25	.051	.026	.051	.026	568.80	1409.00
.000172	1600.	1600.	1600.	2	0	1	0.00	282.00	1691.00

CCHV= .300 CEHV= .500

3470 ENCROACHMENT STATIONS= 1290.0 2130.0 TYPE= 1 TARGET= 840.000
ELENCL= 586.83 ELENCR= 585.83

N 11430' U/S FACE M-29 BRIDGE

3.18	14.51	584.91	0.00	0.00	585.05	.14	.38	.03	583.90
7260.	0.	4733.	2527.	0.	1300.	2514.	636.	87.	581.30
1.03	0.00	3.64	1.00	.050	.028	.050	.026	570.40	1290.00
.000190	1820.	2190.	1640.	2	0	1	0.00	840.00	2130.00

3470 ENCROACHMENT STATIONS= 447.0 1060.0 TYPE= 1 TARGET= 613.000
ELENCL= 585.93 ELENCR= 585.93

O 12130' U/S FACE M-29 BRIDGE

3.31	14.91	585.01	0.00	0.00	585.22	.22	.13	.04	583.60	
7260.	97.	5644.	1519.	183.	1349.	1325.	680.	96.	580.00	
1.08	.53	4.16	1.15	.050	.028	.050	.026	570.10	447.00	
.000236	760.	700.	480.	2	0	1	0.00	613.00	1060.00	

3470 ENCROACHMENT STATIONS= 1000.0 1700.0 TYPE= 1 TARGET= 700.000
ELENCL= 586.13 ELENCR= 586.13

P 13030' U/S FACE M-29 BRIDGE

3.48	15.90	585.20	0.00	0.00	585.50	.30	.24	.04	579.10	
7260.	1603.	5649.	8.	1370.	1148.	24.	728.	106.	584.20	
1.14	1.17	4.92	.33	.050	.028	.050	.027	569.30	1000.00	
.000331	600.	900.	740.	2	0	1	0.00	650.05	1650.05	

3470 ENCROACHMENT STATIONS= 1512.0 1762.0 TYPE= 1 TARGET= 250.000
ELENCL= 586.43 ELENCR= 586.43

3.64	15.08	585.48	0.00	0.00	585.75	.27	.24	.01	587.10	
7260.	0.	6811.	449.	0.	1596.	406.	763.	111.	580.00	
1.19	0.00	4.27	1.11	.080	.030	.060	.027	570.40	1512.00	
.000319	300.	800.	900.	2	0	1	0.00	250.00	1762.00	

3470 ENCROACHMENT STATIONS= 1312.6 1499.2 TYPE= 1 TARGET= 215.000
ELENCL= 586.53 ELENCR= 586.53

Q 50' D/S FACE MEISNER RD. BRIDGE

3.71	14.68	585.58	0.00	0.00	585.95	.37	.15	.05	587.10	
7260.	0.	6907.	353.	0.	1389.	257.	778.	113.	580.00	
1.21	0.00	4.97	1.38	.080	.030	.060	.027	570.90	1312.57	
.000437	660.	400.	270.	2	0	1	0.00	186.64	1499.21	

CCHV= .600 CEHV= .800
3280 CROSS SECTION 3.72 EXTENDED 1.16 FEET

OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 587.00 ELREA= 587.00

R D/S FACE MEISNER RD. BRIDGE

3.72	13.46	585.86	0.00	0.00	586.06	.20	.02	.10	590.10
7260.	0.	7260.	0.	0.	2014.	0.	781.	113.	589.90
1.22	0.00	3.61	0.00	.080	.030	.060	.027	572.40	1302.71
.000235	50.	50.	50.	2	0	1	0.00	186.36	1489.07

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.63	3.00	0.00	141.00	7.80	2090.00	.60	572.40	572.40

3280 CROSS SECTION 3.73 EXTENDED 1.17 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

CLASS A LOW FLOW

BRIDGE W.S.= 585.84 BRIDGE VELOCITY= 3.82

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
0.00	586.07	.01	0.	7260.	2090.	586.60	587.00	1.00

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 587.00 ELREA= 587.00

R U/S FACE MEISNER RD. BRIDGE

3.73	13.47	585.87	0.00	0.00	586.07	.20	.01	0.00	590.10
7260.	0.	7260.	0.	0.	2015.	0.	783.	114.	589.90
1.22	0.00	3.60	0.00	.080	.030	.060	.027	572.40	1302.71
.000234	48.	48.	48.	0	0	1	0.00	186.36	1489.07

3470 ENCROACHMENT STATIONS= 1258.7 1533.1 TYPE= 1 TARGET= 316.000
ELENCL= 587.00 ELENCR= 587.00

3.74	13.59	585.89	0.00	0.00	586.09	.19	.01	.00	587.10
7260.	0.	7185.	75.	0.	2021.	86.	785.	114.	584.00
1.23	0.00	3.56	.88	.030	.030	.040	.027	572.30	1302.44
.000225	50.	50.	50.	1	0	1	0.00	230.62	1533.06

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 500.0 1710.0 TYPE= 1 TARGET= 1210.000
ELENCL= 587.21 ELENCR= 587.21

S 1310' U/S FACE MEISNER RD. BRIDGE

3.98	16.86	586.26	0.00	0.00	586.41	.15	.30	.02	581.70
7260.	2450.	4810.	1.	2770.	1263.	6.	860.	128.	585.60
1.34	.88	3.81	.15	.064	.034	.080	.027	569.40	500.00
.000289	820.	1260.	900.	2	0	1	0.00	1064.53	1618.99

3470 ENCROACHMENT STATIONS= 1500.0 2200.0 TYPE= 1 TARGET= 700.000
ELENCL= 587.64 ELENCR= 587.64

T 2690' U/S FACE MEISNER RD. BRIDGE

4.24	16.87	586.67	0.00	0.00	586.97	.30	.44	.11	586.60
7260.	0.	5797.	1463.	0.	1190.	1991.	947.	147.	581.80
1.43	0.00	4.87	.73	.060	.034	.100	.028	569.80	1500.00
.000455	700.	1380.	1150.	2	0	1	0.00	700.00	2200.00

3470 ENCROACHMENT STATIONS= 2000.0 2500.0 TYPE= 1 TARGET= 500.000
ELENCL= 588.59 ELENCR= 588.59

4.46	18.57	587.27	0.00	0.00	587.49	.23	.48	.04	580.00
7260.	812.	6278.	171.	1010.	1528.	269.	1018.	159.	583.70
1.51	.80	4.11	.63	.100	.039	.100	.029	568.70	2049.66
.000391	1310.	1190.	730.	2	0	1	0.00	450.34	2500.00

3280 CROSS SECTION 4.62 EXTENDED 1.61 FEET

3470 ENCROACHMENT STATIONS= 1487.5 1603.5 TYPE= 1 TARGET= 116.000
ELENCL= 588.24 ELENCR= 588.24

U 50' D/S FACE PORT HURON DETROIT RAILROAD BRIDGE

4.62	19.72	587.62	0.00	0.00	587.99	.37	.38	.12	585.70
7180.	13.	7167.	0.	23.	1459.	0.	1058.	164.	588.24
1.56	.55	4.91	0.00	.100	.039	.100	.029	567.90	1487.50
.000584	850.	800.	750.	1	0	1	0.00	116.00	1603.50

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

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 588.30 ELREA= 588.30

V D/S FACE PORT HURON DETROIT RAILROAD BRIDGE

4.63	19.43	587.63	0.00	0.00	588.09	.46	.03	.07	589.10
7180.	0.	7180.	0.	0.	1315.	0.	1060.	164.	589.20
1.56	0.00	5.46	0.00	.100	.039	.100	.029	568.20	1500.00
.000785	50.	50.	50.	0	0	1	0.00	91.00	1591.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.43	3.00	0.00	37.00	0.00	1109.00	.64	568.20	568.20

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
588.56	588.09	0.00	0.	7180.	1109.	585.60	589.20	10.00

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 589.10 ELREA= 589.10

V U/S FACE PORT HURON DETROIT RAILROAD BRIDGE

4.63	19.93	588.13	0.00	0.00	588.56	.43	.47	0.00	589.10
7180.	0.	7180.	0.	0.	1360.	0.	1060.	164.	589.20
1.56	0.00	5.28	0.00	.100	.039	.100	.029	568.20	1500.00
.000710	19	19	19	2	0	1	0.00	91.00	1591.00

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 CCHV=    .600 CEHV=     .800
 3280 CROSS SECTION       4.64 EXTENDED       2.32 FEET


 3470 ENCROACHMENT STATIONS=     1450.0     1641.0  TYPE=      1  TARGET=      191.000
  ELENCL=    589.40  ELENCR=    589.40
      4.64     20.12    588.32      0.00      0.00    588.65       .33       .03       .06    585.70
    7180.       124.     6659.      396.      125.     1399.      250.     1062.      165.    583.30
      1.57      1.00      4.76      1.58      .060      .039      .060      .029    568.20   1450.00
  .000476        50.       50.       50.         2         0         1      0.00    191.00   1641.00


 1490 NH CARD USED
 3280 CROSS SECTION       5.16 EXTENDED        .32 FEET


 3470 ENCROACHMENT STATIONS=      250.0     3226.0  TYPE=      1  TARGET=     2976.000
  ELENCL=    589.90  ELENCR=    589.90

                  N   2810'   U/S FACE PORT HURON DETROIT RAILROAD BRIDGE

      5.16     16.32    588.92      0.00      0.00    588.93       .00       .08       .20    583.60
    7180.      5661.      962.      557.     17021.     1474.     2315.     1441.      217.    583.40
      3.13       .33       .65       .24       .061      .046      .065      .031    572.60    250.00
  .000013      1020.     2760.     2960.         2         0         1      0.00   2937.45   3187.45


 1490 NH CARD USED
 3280 CROSS SECTION       5.39 EXTENDED       2.13 FEET


 3470 ENCROACHMENT STATIONS=      400.0     3320.0  TYPE=      1  TARGET=     2920.000
  ELENCL=    589.91  ELENCR=    589.91

                  X   4030'   U/S FACE PORT HURON DETROIT RAILROAD BRIDGE

      5.39     23.43    588.93      0.00      0.00    588.93       .00       .00       .00    583.00
    7180.      5433.     1731.       16.     16307.     2129.      133.     1529.      228.    582.40
      3.30       .33       .81       .12       .061      .046      .100      .032    565.50    400.00
  .000014        1.      1220.     1320.         2         0         1      0.00   2865.80   3265.80


 1490 NH CARD USED

 3265 DIVIDED FLOW

 3280 CROSS SECTION       5.80 EXTENDED       1.26 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=     1050.0     3500.0  TYPE=      1  TARGET=     2450.000
  ELENCL=    589.94  ELENCR=    589.94

                  Y   6190'   U/S FACE PORT HURON DETROIT RAILROAD BRIDGE
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5.80	15.96	588.96	0.00	0.00	588.98	.02	.04	.01	583.60
7180.	4738.	2026.	417.	6756.	1267.	980.	1929.	293.	582.30
3.72	.70	1.60	.43	.060	.052	.085	.034	573.00	1050.00
.000094	1160.	2160.	700.	2	0	1	0.00	2008.77	3280.29

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 1700.0 3930.0 TYPE= 1 TARGET= 2230.000
ELENCL= 590.06 ELENCR= 590.06

Z 8750' U/S FACE PORT HURON DETROIT RAILROAD BRIDGE

6.29	17.48	589.08	0.00	0.00	589.09	.01	.10	.00	585.70
7180.	4393.	1548.	1239.	8514.	1253.	2528.	2240.	351.	583.50
4.33	.52	1.24	.49	.070	.052	.063	.035	571.60	1700.00
.000054	1040.	2560.	1360.	2	0	1	0.00	2230.00	3930.00

1490 NH CARD USED
3280 CROSS-SECTION - - 6.57 EXTENDED 2.22 FEET

3470 ENCROACHMENT STATIONS= 2300.0 4300.0 TYPE= 1 TARGET= 2000.000
ELENCL= 590.20 ELENCR= 590.94

AA 10250' U/S FACE PORT HURON DETROIT RAILROAD BRIDGE

6.57	18.52	589.22	0.00	0.00	589.39	.17	.17	.13	585.70
7180.	1163.	5192.	824.	1865.	1341.	1540.	2518.	419.	585.10
4.46	.62	3.87	.54	.071	.046	.120	.036	570.70	2300.00
.000437	1400.	1500.	1420.	2	0	1	0.00	2000.00	4300.00

3470 ENCROACHMENT STATIONS= .0 1600.0 TYPE= 1 TARGET= 1599.999
ELENCL= 590.73 ELENCR= 590.73

6.78	18.14	589.74	0.00	0.00	589.80	.06	.35	.06	585.70
7180.	1095.	3804.	2280.	1155.	1427.	4077.	2636.	459.	579.10
4.63	.95	2.67	.56	.070	.052	.120	.036	571.60	7.51
.000270	1580.	1080.	450.	2	0	1	0.00	1592.49	1600.00

3470 ENCROACHMENT STATIONS= 1469.0 1649.0 TYPE= 1 TARGET= 180.000
ELENCL= 591.30 ELENCR= 591.30

AB 50' D/S FACE KING RD. BRIDGE

7.07	17.40	590.30	0.00	0.00	590.69	.39	.63	.26	586.40
7180.	40.	6432.	708.	41.	1221.	452.	2754.	482.	583.00
4.71	.97	5.27	1.56	.070	.046	.100	.037	572.90	1473.86
.000868	1040.	1560.	1080.	2	0	1	0.00	175.14	1649.00

OVERBANK AREA ASSUMED NON-EFFECTIVE.ELLEA= 591.60 ELREA= 591.60

AC D/S FACE KING RD BRIDGE

7.08	16.57	590.57	0.00	0.00	590.82	.25	.04	.09	592.80
7180.	0.	7180.	0.	0.	1806.	0.	2756.	482.	592.90
4.71	0.00	3.98	0.00	.070	.046	.100	.037	574.00	867.00
.000638	50	50	50	2	0	1	0.00	155.00	1022.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.95	1.60	3.00	0.00	65.00	7.00	1710.00	.34	574.40	574.40

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
591.01	590.84	.02	0.	7180.	1710.	590.10	592.30	10.00

OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 592.30 ELREA= 592.30

AC U/S FACE KING RD BRIDGE

7.09	16.77	590.77	0.00	0.00	591.01	.24	.19	0.00	592.80
7180.	0.	7180.	0.	0.	1837.	0.	2757.	482.	592.90
4.71	0.00	3.91	0.00	.070	.046	.100	.037	574.00	867.00
.000604	30.	30.	30.	2	0	1	0.00	155.00	1022.00

CCHV= .600 CEHV= .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

3470 ENCROACHMENT STATIONS= 837.0 1077.0 TYPE= 1 TARGET= 240.000
ELENCL= 592.30 ELENCR= 592.30

7.10	16.86	590.86	0.00	0.00	591.06	.20	.03	.02	586.20
7180.	61.	6818.	302.	71.	1850.	240.	2760.	482.	586.00
4.72	.85	3.68	1.26	.070	.046	.070	.037	574.00	837.00
.000493	50.	50.	50.	2	0	1	0.00	240.00	1077.00

3280 CROSS SECTION 7.15 EXTENDED 6.21 FEET

3470 ENCROACHMENT STATIONS= 300.0 1200.0 TYPE= 1 TARGET= 900.000
ELENCL= 592.30 ELENCR= 592.30

7.15	17.01	591.21	0.00	0.00	591.24	.03	.08	.10	587.90
7090.	4862.	1944.	284.	4782.	910.	401.	2788.	486.	587.40
4.78	1.02	2.14	.71	.070	.046	.070	.037	574.20	300.00
.000175	300.	300.	300.	2	0	1	0.00	900.00	1200.00

1490 NH CARD USED
3280 CROSS SECTION 7.40 EXTENDED 1.56 FEET

3470 ENCROACHMENT STATIONS= 350.0 1900.0 TYPE= 1 TARGET= 1550.000
ELENCL= 592.56 ELENCR= 592.56

7.40	16.55	591.55	0.00	0.00	591.66	.11	.35	.06	588.90
7090.	1215.	3334.	2541.	1546.	885.	2836.	2914.	512.	588.40
4.91	.79	3.77	.90	.084	.062	.140	.038	575.00	350.00

.000898	800.	1300.	1100.	1	0	1	0.00	1550.00	1900.00

1490 NH CARD USED
3280 CROSS SECTION 7.56 EXTENDED 2.17 FEET

3470 ENCROACHMENT STATIONS= 275.0 1700.0 TYPE= 1 TARGET= 1425.000
ELENCL= 593.04 ELENCR= 593.04

7.56	16.57	592.17	0.00	0.00	592.26	.10	.60	.01	588.90
7090.	2959.	3247.	884.	3984.	903.	907.	3012.	537.	588.50
5.02	.74	3.60	.97	.132	.055	.080	.038	575.60	275.00
.000629	660.	840.	900.	2	0	1	0.00	1425.00	1700.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 1090.0 2110.0 TYPE= 1 TARGET= 1020.000
ELENCL= 594.17 ELENCR= 594.17

AD 3810' U/S FACE KING RD BRIDGE

7.81	16.64	593.04	0.00	0.00	593.22	.19	.89	.07	588.90
7090.	2717.	4245.	129.	3024.	964.	234.	3142.	568.	588.40
5.13	.90	4.41	.55	.140	.055	.140	.038	576.40	1090.00
.000870	1100.	1320.	1000.	0	0	1	0.00	1010.80	2100.80

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 1300.0 2050.0 TYPE= 1 TARGET= 750.000
ELENCL= 594.90 ELENCR= 594.90

7.98	18.08	593.78	0.00	0.00	593.92	.14	.67	.03	588.90
7090.	2927.	4013.	150.	3361.	1021.	212.	3233.	586.	588.40
5.23	.87	3.93	.71	.140	.055	.140	.038	575.70	1300.00
.000649	900.	900.	900.	2	0	1	0.00	750.00	2050.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 100.0 550.0 TYPE= 1 TARGET= 450.000
ELENCL= 595.54 ELENCR= 595.54

8.15	19.44	594.34	0.00	0.00	594.52	.17	.57	.03	585.90
7090.	1142.	4389.	1559.	1003.	1068.	1009.	3309.	598.	590.80
5.31	1.14	4.11	1.55	.120	.055	.063	.039	574.90	100.00
.000623	820.	920.	920.	2	0	1	0.00	450.00	550.00

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

3470 ENCROACHMENT STATIONS= 20.0 615.0 TYPE= 1 TARGET= 595.000
ELENCL= 595.93 ELENCR= 595.93

AE 6400' U/S FACE KING RD BRIDGE

8.30	20.55	594.85	0.00	0.00	595.02	.17	.50	.00	585.90
7090.	262.	4458.	2370.	144.	1105.	1752.	3354.	605.	590.80
5.37	1.82	4.04	1.35	.080	.062	.080	.039	574.30	20.00
.000854	760.	770.	500.	2	0	1	0.00	595.00	615.00

1490 NH CARD USED

AF 9220' U/S FACE KING RD BRIDGE

8.83	19.70	596.00	0.00	0.00	596.03	.03	.93	.08	589.20
7090.	3436.	3610.	44.	5043.	1842.	89.	3543.	639.	589.50
5.82	.68	1.96	.49	.091	.062	.140	.041	576.30	287.60
.000261	980.	2820.	1690.	2	0	1	0.00	1604.26	1891.86

1490 NH CARD USED

AG 11320' U/S FACE KING RD BRIDGE

9.23	18.04	596.54	0.00	0.00	596.63	.09	.55	.04	588.80
7090.	909.	3777.	2404.	894.	1219.	2106.	3709.	667.	588.60
6.03	1.02	3.10	1.14	.115	.062	.080	.043	578.50	18.46
.000464	650.	2100.	1880.	2	0	1	0.00	670.89	689.35

3470 ENCROACHMENT STATIONS= 50.0 1550.0 TYPE= 1 TARGET= 1500.000

9.38	17.78	596.78	0.00	0.00	596.79	.01	.12	.05	588.60
7090.	5296.	1753.	41.	9649.	1234.	69.	3804.	680.	588.80
6.25	.55	1.42	.59	.100	.062	.100	.043	579.00	50.00
.000105	480.	780.	600.	1	0	1	0.00	1500.00	1550.00

1490 NH CARD USED

9.63	16.97	596.97	0.00	0.00	597.07	.10	.21	.07	590.60
7090.	605.	3470.	3015.	595.	1001.	2440.	3968.	707.	589.00
6.38	1.02	3.47	1.24	.080	.055	.062	.044	580.00	80.31
.000467	860.	1360.	980.	2	0	1	0.00	998.47	1078.78

1490 NH CARD USED

AH 13460' U/S FACE KING RD BRIDGE

9.79	17.08	597.38	0.00	0.00	597.57	.20	.43	.08	590.60
7090.	888.	4493.	1710.	724.	1026.	1442.	4025.	720.	589.00
6.44	1.23	4.38	1.19	.066	.055	.080	.045	580.30	142.70
.000722	840.	840.	550.	2	0	1	0.00	778.77	921.47

10.12	17.15	598.35	0.00	0.00	598.40	.05	.74	.09	590.70
7090.	4834.	2045.	211.	4440.	698.	242.	4148.	748.	590.70
6.69	1.09	2.93	.87	.070	.055	.100	.045	581.20	332.11
.000395	1010.	1740.	1520.	2	0	1	0.00	1312.29	1644.39

1490 NH CARD USED

AI 16960' U/S FACE KING RD BRIDGE

10.46	16.72	598.82	0.00	0.00	598.86	.04	.45	.01	590.70
7090.	57.	1800.	5233.	113.	710.	4622.	4313.	783.	590.70
6.95	.50	2.54	1.13	.120	.055	.063	.046	582.10	13.25
.000271	1050.	1760.	1460.	2	0	1	0.00	1120.84	1134.10

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

3470 ENCROACHMENT STATIONS= 71.0 768.0 TYPE= 1 TARGET= 697.000

AJ 60° D/S FACE INDIAN TRAIL BRIDGE

10.76	20.46	599.16	0.00	0.00	599.22	.06	.34	.02	591.70
7040.	416.	6518.	107.	2098.	3217.	196.	4484.	809.	595.90
7.15	.20	2.03	.54	.375	.064	.080	.047	578.70	71.00
.000232	1800.	1600.	950.	2	0	1	0.00	697.00	768.00

3470 ENCROACHMENT STATIONS= 147.0 784.0 TYPE= 1 TARGET= 637.000

10.77	15.12	599.12	0.00	0.00	599.49	.37	.02	.25	585.40
7040.	197.	6843.	0.	3295.	1381.	0.	4490.	810.	100000.00
7.15	.06	4.96	0.00	2.250	.040	.100	.047	584.00	147.00
.000624	59.	59.	59.	2	0	1	0.00	637.00	784.00

1490 NH CARD USED

3265 DIVIDED FLOW

NORMAL BRIDGE,NRD=11 MIN ELTRD= 598.10 MAX ELLC= 600.30

AK D/S FACE INDIAN TRAIL BRIDGE

10.77	15.09	599.09	0.00	0.00	599.60	.50	.00	.11	603.40
7040.	202.	6838.	0.	147.	1183.	0.	4490.	810.	603.40
7.15	1.38	5.78	0.00	.035	.040	.100	.047	584.00	239.00
.000841	1.	1.	1.	2	0	1	-17.87	239.23	876.00

1490 NH CARD USED

3265 DIVIDED FLOW

NORMAL BRIDGE,NRD=11 MIN ELTRD= 598.10 MAX ELLC= 600.30

AK U/S FACE INDIAN TRAIL BRIDGE

10.78	15.12	599.12	0.00	0.00	599.62	.50	.02	.00	603.40
7040.	206.	6834.	0.	150.	1185.	0.	4491.	810.	603.40
7.15	1.38	5.77	0.00	.034	.040	.100	.047	584.00	239.00
.000836	28.	28.	28.	0	0	1	-18.18	242.03	876.00

3470 ENCROACHMENT STATIONS= 147.0 784.0 TYPE= 1 TARGET= 637.000

10.78	15.35	599.35	0.00	0.00	599.71	.36	.00	.09	585.40
7040.	203.	6837.	0.	3420.	1405.	0.	4491.	810.	100000.00
7.15	.06	4.87	0.00	2.250	.040	.100	.047	584.00	147.00
.000589	1.	1.	1.	2	0	1	0.00	637.00	784.00

3470 ENCROACHMENT STATIONS= 189.0 926.0 TYPE= 1 TARGET= 737.000

10.79	15.39	599.39	0.00	0.00	599.79	.40	.05	.04	585.40
7040.	458.	6434.	148.	3665.	1210.	123.	4497.	811.	593.90
7.16	.13	5.32	1.20	1.750	.064	.100	.047	584.00	189.00

.001702	50.	50.	50.	0	0	1	0.00	731.98	920.98

1490 NH CARD USED

10.97	16.05	600.55	0.00	0.00	600.58	.04	.57	.22	592.00
7040.	4984.	2035.	20.	5810.	830.	43.	4580.	823.	594.00
7.33	.86	2.45	.48	.121	.064	.140	.047	584.50	134.51
.000394	540.	960.	1020.	2	0	1	0.00	976.59	1111.10

1490 NH CARD USED

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

AL 2800' U/S FACE INDIAN TRAIL BRIDGE

11.31	15.77	601.27	0.00	0.00	601.31	.04	.72	.01	594.00
7040.	94.	2240.	4706.	164.	871.	5085.	4805.	857.	592.00
7.63	.57	2.57	.93	.140	.073	.122	.048	585.50	84.86
.000530	1470.	1790.	1520.	3	0	1	0.00	1000.19	1085.05

1490 NH CARD USED

11.55	16.07	601.77	0.00	0.00	601.83	.06	.51	.01	592.00
7040.	4535.	2470.	36.	3488.	904.	60.	4923.	877.	594.00
7.79	1.30	2.73	.59	.068	.064	.137	.049	585.70	62.94
.000440	1200.	1270.	700.	1	0	1	0.00	850.59	913.53

3470 ENCROACHMENT STATIONS= 90.0 1050.0 TYPE= 1 TARGET= 960.000

11.78	16.34	602.24	0.00	0.00	602.27	.04	.43	.01	594.80
7040.	281.	2314.	4446.	368.	965.	5949.	5064.	899.	596.80
8.02	.76	2.40	.75	.140	.064	.140	.049	585.90	90.00
.000362	940.	1210.	1070.	2	0	1	0.00	960.00	1050.00

1490 NH CARD USED

AM 6780' U/S FACE INDIAN TRAIL BRIDGE

12.06	16.64	602.74	0.00	0.00	602.80	.06	.51	.02	597.10
7040.	4251.	2708.	81.	3310.	1049.	139.	5243.	926.	595.10
8.24	1.28	2.58	.58	.063	.064	.133	.050	586.10	113.69
.000382	1330.	1500.	1260.	2	0	1	0.00	842.08	955.77

1490 NH CARD USED

12.33	16.09	603.39	0.00	0.00	603.52	.12	.67	.05	597.10
7040.	3063.	3920.	58.	3057.	1079.	53.	5367.	951.	595.10
8.38	1.00	3.63	1.10	.095	.064	.100	.050	587.30	244.23
.000736	1190.	1400.	1250.	2	0	1	0.00	984.17	1228.39

1490 NH CARD USED

AN 9000' U/S FACE INDIAN TRAIL BRIDGE

12.48	15.93	603.93	0.00	0.00	603.98	.04	.41	.05	593.30
7040.	5203.	1711.	126.	5049.	602.	173.	5450.	968.	592.70
8.53	1.03	2.84	.73	.092	.064	.138	.050	588.00	121.70
.000431	700.	820.	840.	2	0	1	0.00	1090.00	1211.70

1490 NH CARD USED

12.68	16.29	604.29	0.00	0.00	604.35	.06	.36	.02	593.30
7040.	4926.	1783.	331.	3049.	616.	363.	5541.	984.	592.70
8.65	1.62	2.89	.91	.064	.064	.140	.051	588.00	42.57
.000433	750.	1050.	1050.	2	0	1	0.00	716.01	758.58

AO 11100' U/S FACE INDIAN TRAIL BRIDGE

12.88	17.90	604.90	0.00	0.00	605.06	.16	.63	.07	598.70
7040.	2878.	4038.	125.	2253.	1001.	145.	5615.	996.	598.00
8.74	1.28	4.03	.86	.140	.073	.140	.051	587.00	82.71
.001272	820.	1050.	780.	2	0	1	0.00	517.42	600.13

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

3470 ENCROACHMENT STATIONS= 500.0 1200.0 TYPE= 1 TARGET= 700.000
ELENCL= 606.83 ELENCR= 606.83

13.04	17.76	605.76	0.00	0.00	605.89	.12	.81	.02	597.60
7040.	1479.	3799.	1762.	1469.	1023.	1848.	5687.	1006.	599.60
8.83	1.01	3.71	.95	.140	.064	.140	.052	588.00	500.00
.000769	750.	870.	850.	2	0	1	0.00	628.82	1128.82

3470 ENCROACHMENT STATIONS= 500.0 1300.0 TYPE= 1 TARGET= 800.000
ELENCL= 607.36 ELENCR= 607.36

AP 12740' U/S FACE INDIAN TRAIL BRIDGE

13.19	17.53	606.33	0.00	0.00	606.39	.07	.47	.03	598.50
7040.	2292.	2876.	1872.	2727.	943.	2083.	5770.	1018.	600.50
8.95	.84	3.05	.90	.140	.064	.140	.052	588.80	500.00
.000541	520.	770.	900.	2	0	1	0.00	800.00	1300.00

AO 13960' U/S FACE INDIAN TRAIL BRIDGE

13.42	17.97	606.87	0.00	0.00	606.92	.06	.53	.00	598.70
7040.	1395.	3416.	2229.	1880.	1292.	2717.	5921.	1038.	600.20
9.14	.74	2.64	.82	.140	.064	.140	.052	588.90	23.69
.000384	920.	1220.	1300.	2	0	1	0.00	731.06	754.75

3470 ENCROACHMENT STATIONS= 807.5 1900.0 TYPE= 1 TARGET= 1150.000

AR 50' D/S FACE PUTTYGUT BRIDGE

13.54	17.74	607.04	0.00	0.00	607.07	.04	.14	.01	598.20
7040.	465.	2684.	3891.	743.	1111.	5699.	5971.	1043.	597.70
9.22	.63	2.42	.68	.140	.064	.140	.052	589.30	807.50
.000304	680.	620.	120.	2	0	1	0.00	1007.74	1815.24

3470 ENCROACHMENT STATIONS= 712.5 1852.5 TYPE= 1 TARGET= 1200.000

13.55	18.97	607.07	0.00	0.00	607.09	.02	.00	.01	605.30
7040.	610.	622.	5809.	725.	1151.	5095.	5979.	1045.	605.20
9.24	.84	.54	1.14	.025	.073	.025	.052	588.10	712.50
.000030	49.	49.	49.	2	0	1	0.00	1055.35	1767.85

NORMAL BRIDGE,NRD= 8 MIN ELTRD= 605.20 MAX ELLC= 604.40

3470 ENCROACHMENT STATIONS= 712.5 1852.5 TYPE= 1 TARGET= 1200.000

AS D/S FACE PUTTYGUT BRIDGE

13.55	18.97	607.07	0.00	0.00	607.09	.02	.00	.00	605.30
7040.	614.	593.	5833.	725.	959.	5081.	5979.	1045.	605.20
9.24	.85	.62	1.15	.025	.040	.025	.052	588.10	712.50
.000030	1.	1.	1.	0	0	1	-206.67	1055.35	1767.85

NORMAL BRIDGE,NRD= 8 MIN ELTRD= 605.20 MAX ELLC= 604.40

3470 ENCROACHMENT STATIONS= 712.5 1852.5 TYPE= 1 TARGET= 1200.000

AS U/S FACE PUTTYGUT BRIDGE

13.55	18.97	607.07	0.00	0.00	607.09	.02	.00	.00	605.30
7040.	614.	593.	5833.	725.	959.	5081.	5982.	1045.	605.20
9.24	.85	.62	1.15	.025	.040	.025	.052	588.10	712.50
.000030	18.	18.	18.	0	0	-1	-206.67	1055.35	1767.85

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= 712.5 1852.5 TYPE= 1 TARGET= 1200.000

13.55	18.97	607.07	0.00	0.00	607.09	.02	.00	.00	605.30
7040.	610.	622.	5809.	725.	1151.	5096.	5982.	1045.	605.20
9.24	.84	.54	1.14	.025	.073	.025	.052	588.10	712.50
.000030	1.	1.	1.	0	0	1	0.00	1055.35	1767.85

3470 ENCROACHMENT STATIONS= 647.9 1852.5 TYPE= 1 TARGET= 1268.000

13.56	18.88	607.08	0.00	0.00	607.10	.02	.00	.00	605.30
7040.	765.	1421.	4853.	1049.	1151.	5097.	5990.	1046.	605.20
9.25	.73	1.24	.95	.060	.064	.060	.052	588.20	647.90
.000119	49.	49.	49.	0	0	1	0.00	1119.95	1767.85

1490 NH CARD USED

AT 990. U/S FACE PUTTYGUT BRIDGE

13.74	16.49	607.19	0.00	0.00	607.20	.01	.11	.00	596.30
7040.	5775.	1265.	0.	7567.	984.	0.	6172.	1074.	610.80
9.57	.76	1.29	0.00	.069	.064	.060	.052	590.70	80.55
.000101	1240.	940.	620.	2	0	1	0.00	1261.11	1341.66

3470 ENCROACHMENT STATIONS= .0 1100.0 TYPE= 1 TARGET= 1099.999

14.08	16.19	607.39	0.00	0.00	607.42	.03	.20	.02	596.30
7040.	2337.	2613.	2090.	3285.	1191.	3307.	6382.	1103.	600.00
9.84	.71	2.19	.63	.140	.064	.140	.053	591.20	25.23
.000292	940.	1820.	1260.	2	0	1	0.00	1059.08	1084.31

AU 4210' U/S FACE PUTTYGUT BRIDGE

14.35	16.36	607.86	0.00	0.00	607.94	.08	.48	.04	602.80
7040.	3532.	3171.	337.	3113.	980.	408.	6529.	1124.	601.20
10.00	1.13	3.24	.82	.100	.064	.140	.054	591.50	59.85
.000637	1090.	1400.	760.	2	0	1	0.00	748.11	807.96

1490 NH CARD USED

14.90	17.50	608.80	0.00	0.00	608.85	.05	.89	.02	602.80
7040.	3971.	2491.	578.	2751.	1047.	915.	6696.	1146.	601.20
10.31	1.44	2.38	.63	.068	.073	.140	.055	591.30	124.81
.000366	1120.	2930.	1500.	2	0	1	0.00	677.98	802.79

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 370.0 1470.0 TYPE= 1 TARGET= 1100.000

AV 8080' U/S FACE PUTTYGUT BRIDGE

15.08	17.76	609.06	0.00	0.00	609.09	.03	.23	.01	605.00
7040.	3932.	2214.	894.	3709.	1165.	1792.	6801.	1162.	604.40
10.49	1.06	1.90	.50	.063	.064	.140	.055	591.30	370.00
.000214	810.	940.	680.	2	0	1	0.00	1100.00	1470.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 200.0 1150.0 TYPE= 1 TARGET= 950.000

15.09	17.59	609.09	0.00	0.00	609.16	.06	.04	.03	605.30
7040.	2706.	3140.	1194.	2282.	1142.	1644.	6817.	1165.	604.70
10.51	1.19	2.75	.73	.069	.064	.140	.055	591.50	200.00
.000460	190.	70.	20.	0	0	1	0.00	944.40	1144.40

1490 NH CARD USED

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

3470 ENCROACHMENT STATIONS= 180.0 970.0 TYPE= 1 TARGET= 790.000

15.13	17.00	609.20	0.00	0.00	609.29	.09	.11	.02	602.80
7040.	2958.	3701.	381.	2724.	1152.	579.	6840.	1169.	605.00
10.54	1.09	3.21	.66	.093	.064	.140	.055	592.20	180.00
.000565	280.	200.	80.	2	0	1	0.00	790.00	970.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 90.0 770.0 TYPE= 1 TARGET= 680.000

15.15	16.76	609.26	0.00	0.00	609.35	.09	.06	.00	603.00
7040	2945	3723	372	2602	1172	345	6851	1171	600.00

10.55	1.13	3.18	1.08	.086	.064	.140	.055	592.50	90.00
.000544	120.	110.	90.	0	0	1	0.00	680.00	770.00

3470 ENCROACHMENT STATIONS= 142.0 732.0 TYPE= 1 TARGET= 590.000

AW 50' D/S FACE WESTRICK RD BRIDGE

15.17	16.39	609.29	0.00	0.00	609.66	.37	.09	.22	603.40
7040.	1242.	5798.	0.	2926.	1082.	0.	6860.	1173.	100000.00
10.56	.42	5.36	0.00	.500	.064	.140	.055	592.90	142.00
.001950	100.	90.	90.	1	0	1	0.00	590.00	732.00

3265 DIVIDED FLOW

15.18	17.95	609.35	0.00	0.00	609.76	.41	.06	.03	610.90
7040.	612.	6428.	0.	360.	1200.	0.	6863.	1173.	610.80
10.56	1.70	5.36	0.00	.025	.040	.025	.055	591.40	151.51
.000853	49.	49.	49.	1	0	1	0.00	482.62	696.00

3265 DIVIDED FLOW

NORMAL BRIDGE,NRD=11 MIN ELTRD= 608.20 MAX ELLC= 609.60

AX D/S FACE WESTRICK RD BRIDGE

15.18	17.95	609.35	0.00	0.00	609.76	.41	.00	.00	610.90
7040.	614.	6426.	0.	361.	1200.	0.	6863.	1173.	610.80
10.56	1.70	5.36	0.00	.025	.040	.025	.055	591.40	151.38
.000853	1.	1.	1.	0	0	1	0.00	482.81	696.00

3265 DIVIDED FLOW

NORMAL BRIDGE,NRD=11 MIN ELTRD= 608.20 MAX ELLC= 609.60

AX U/S FACE WESTRICK RD BRIDGE

15.18	17.97	609.37	0.00	0.00	609.78	.41	.02	.00	610.90
7040.	631.	6409.	0.	369.	1201.	0.	6864.	1174.	610.80
10.56	1.71	5.34	0.00	.025	.040	.025	.055	591.40	149.60
.000845	23.	23.	23.	0	0	1	0.00	485.37	696.00

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
15.19	17.97	609.37	0.00	0.00	609.78	.41	.00	.00	610.90
7040.	632.	6408.	0.	369.	1201.	0.	6864.	1174.	610.80
10.56	1.71	5.33	0.00	.025	.040	.025	.055	591.40	149.52

	1.	1.	1.	0	0	1	0.00	485.49	696.00

3470 ENCROACHMENT STATIONS= 149.0 789.0 TYPE= 1 TARGET= 640.000

15.19	18.21	609.71	0.00	0.00	609.93	.22	.04	.11	601.30
7040.	1059.	5814.	167.	3450.	1390.	157.	6868.	1174.	591.50
10.57	.31	4.18	1.06	.500	.064	.140	.055	591.50	149.00
.000866	50.	50.	50.	2	0	1	0.00	638.30	787.30

15.24	18.01	610.11	0.00	0.00	610.17	.06	.14	.10	601.30
7040.	3617.	3266.	156.	3941.	1159.	201.	6898.	1178.	592.10
10.60	.92	2.82	.78	.140	.064	.140	.055	592.10	89.36
.000402	250.	250.	250.	2	0	1	0.00	568.92	658.28

15.33	17.16	610.26	0.00	0.00	610.33	.08	.15	.01	597.50
7040.	1219.	3659.	2162.	1265.	1225.	2593.	6933.	1181.	603.00
10.65	.96	2.99	.83	.140	.064	.140	.055	593.10	78.97
.000459	180.	480.	350.	2	0	1	0.00	638.34	717.31

AY 950' U/S FACE WESTRICK RD BRIDGE

15.36	16.85	610.35	0.00	0.00	610.44	.09	.09	.01	605.00
7040.	574.	3735.	2731.	703.	1159.	2807.	6953.	1184.	603.60
10.68	.82	3.22	.97	.140	.064	.140	.055	593.50	74.09
.000611	140.	170.	200.	1	0	1	0.00	610.31	684.40

15.48	17.06	610.66	0.00	0.00	610.78	.12	.32	.02	605.00
7040.	339.	4174.	2526.	443.	1184.	2358.	6994.	1189.	603.60
10.73	.77	3.53	1.07	.140	.064	.140	.056	593.60	86.85
.000711	600.	600.	280.	2	0	1	0.00	525.78	612.63

1490 NH CARD USED

15.66	17.51	611.31	0.00	0.00	611.40	.09	.61	.02	608.40
7040.	2540.	2731.	1769.	2680.	731.	1528.	7064.	1200.	602.60
10.84	.95	3.73	1.16	.090	.064	.140	.056	593.80	127.23
.000822	260.	960.	900.	2	0	1	0.00	1238.02	1365.24

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= .0 1600.0 TYPE= 1 TARGET= 1599.999

15.70	17.60	611.50	0.00	0.00	611.53	.03	.09	.04	608.40
7040.	1803.	1721.	3516.	3113.	741.	2788.	7084.	1202.	602.60
10.88	.58	2.32	1.26	.097	.064	.080	.056	593.90	122.54
.000314	1.	200.	340.	2	0	1	0.00	1463.46	1585.99

1490 NH CARD USED

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

3470 ENCROACHMENT STATIONS= .0 2000.0 TYPE= 1 TARGET= 1999.999

15.73	17.67	611.57	0.00	0.00	611.58	.01	.04	.01	605.00
7040.	1389.	1187.	4465.	3525.	762.	5438.	7111.	1206.	602.60
10.93	39	1.56	82	102	064	080	056	593.90	120.69

.000137	1.	170.	250.	1	0	1	0.00	1879.31	2000.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= .0 1800.0 TYPE= 1 TARGET= 1799.999
ELENCL= 613.26 ELENCR= 613.26

AZ 3470' U/S FACE WESTRICK RD BRIDGE

15.84	17.26	611.66	0.00	0.00	611.68	.02	.09	.00	608.40
7040.	528.	1362.	5150.	1340.	746.	6327.	7213.	1221.	602.60
11.10	.39	1.83	.81	.107	.064	.080	.056	594.40	118.30
.000192	1.	590.	680.	0	0	1	0.00	1681.70	1800.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= .0 1150.0 TYPE= 1 TARGET= 1149.999
ELENCL= 613.58 ELENCR= 613.58

16.03	16.60	611.90	0.00	0.00	611.92	.03	.24	.01	608.40
7040.	21.	1620.	5400.	61.	721.	6881.	7400.	1253.	602.60
11.35	.34	2.25	.78	.140	.064	.123	.056	595.30	72.40
.000303	820.	1020.	1030.	2	0	1	0.00	1077.60	1150.00

3470 ENCROACHMENT STATIONS= 400.0 950.0 TYPE= 1 TARGET= 550.000
ELENCL= 613.83 ELENCR= 613.83

16.14	16.31	612.11	0.00	0.00	612.32	.22	.25	.15	606.30
7040.	563.	5674.	802.	531.	1375.	1077.	7449.	1260.	608.60
11.39	1.06	4.13	.75	.140	.064	.140	.056	595.80	400.00
.001080	580.	580.	340.	2	0	1	0.00	550.00	950.00

3470 ENCROACHMENT STATIONS= 388.0 570.0 TYPE= 1 TARGET= 182.000
ELENCL= 614.09 ELENCR= 614.09

BA 50' D/S FACE ST CLAIR HWY BRIDGE

16.19	16.37	612.37	0.00	0.00	612.73	.36	.29	.11	606.30
6910.	102.	6617.	192.	73.	1348.	210.	7461.	1262.	608.60
11.40	1.40	4.91	.91	.140	.064	.140	.056	596.00	388.00
.001560	180.	230.	240.	2	0	1	0.00	182.00	570.00

OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 613.40 ELREA= 613.40

BB D/S FACE ST CLAIR HWY BRIDGE

16.20	17.98	612.48	0.00	0.00	612.81	.33	.06	.02	614.90
6910.	0.	6910.	0.	0.	1506.	0.	7462.	1262.	615.00
11.40	0.00	4.59	0.00	.088	.053	.088	.056	594.50	200.00
.000942	50.	50.	50.	2	0	1	0.00	96.00	296.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.55	3.00	0.00	75.00	3.75	1394.00	.62	595.30	595.30

PRESSURE FLO

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
613.07	612.82	.01	0.	6910.	1394.	611.50	614.20	10.00

OVERBANK AREA ASSUMED NON-EFFECTIVE.ELLEA= 614.20 ELREA= 614.20

BB U/S FACE ST CLAIR HWY BRIDGE

16.21	18.26	612.76	0.00	0.00	613.07	.32	.26	0.00	614.90
6910.	0.	6910.	0.	0.	1533.	0.	7464.	1262.	-615.00
11.40	0.00	4.51	0.00	.088	.053	.088	.056	594.50	200.00
.000894	41.	41.	41.	2	0	1	0.00	96.00	296.00

3280 CROSS SECTION 16.21 EXTENDED 2.71 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

347.0 ENCROACHMENT STATIONS= 347.0 530.0 TYPE= 1 TARGET= 183.000
ELENCL= 614.20 ELENCR= 614.20

16.21	18.61	613.01	0.00	0.00	613.20	.19	.05	.08	609.40
6910.	642.	6268.	0.	322.	1755.	0.	7466.	1262.	-614.20
11.41	2.00	3.57	0.00	.080	.069	.140	.056	594.40	347.00
.000964	50.	50.	50.	2	0	1	0.00	183.00	530.00

347.0 ENCROACHMENT STATIONS= 350.0 620.0 TYPE= 1 TARGET= 270.000
ELENCL= 614.75 ELENCR= 614.75

16.33	20.39	613.59	0.00	0.00	613.80	.22	.58	.02	602.20
6910.	1517.	4550.	842.	1019.	1018.	584.	7498.	1265.	598.50
11.46	1.49	4.47	1.44	.140	.069	.140	.056	593.20	350.00
.000995	620.	590.	560.	2	0	1	0.00	244.35	594.35

BC 1010' U/S FACE ST CLAIR HWY BRIDGE

16.40	21.24	614.04	0.00	0.00	614.61	.58	.52	.29	602.20
6910.	538.	6068.	304.	261.	940.	167.	7515.	1266.	602.20
11.47	2.06	6.45	1.82	.140	.069	.140	.056	592.80	26.81
.002111	380.	370.	370.	2	0	1	0.00	108.17	134.98

16.46	21.53	614.83	0.00	0.00	615.35	.52	.70	.03	602.20
6910.	572.	6007.	331.	287.	976.	187.	7527.	1267.	602.20
11.49	1.99	6.15	1.77	.140	.069	.140	.056	593.30	25.67
.001822	340.	360.	380.	2	0	1	0.00	110.58	136.25

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 200.0 625.0 TYPE= 1 TARGET= 425.000

16.52	21.84	615.74	0.00	0.00	615.87	.12	.28	.24	606.30
6910	1224	4245	1441	1029	1231	978	7512	1269	608.00

11.52	1.19	3.45	1.47	.108	.069	.072	.056	593.90	200.00
.000583	300.	300.	280.	2	0	1	0.00	425.00	625.00

1490 NH CARD USED

16.64	21.08	616.08	0.00	0.00	616.11	.03	.18	.06	604.80
6910.	190.	2377.	4343.	327.	1234.	4623.	7607.	1277.	605.00
11.66	.58	1.93	.94	.140	.069	.089	.057	595.00	105.69
.000179	650.	650.	560.	2	0	1	0.00	765.87	871.56

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 100.0 1200.0 TYPE= 1 TARGET= 1100.000

BD 3320' U/S FACE ST CLAIR HWY BRIDGE

16.83	19.65	616.25	0.00	0.00	616.26	.01	.14	.01	606.30
6910.	3447.	1625.	1838.	6049.	1129.	2299.	7769.	1296.	608.00
11.96	.57	1.44	.80	.140	.078	.075	.057	596.60	109.89
.000143	980.	1000.	800.	2	0	1	0.00	1090.10	1200.00

BE 50' D/S FACE TRAIL BRIDGE

17.22	19.26	616.46	0.00	0.00	616.48	.02	.22	.00	609.10
6910.	5679.	1190.	41.	5924.	997.	126.	8144.	1339.	609.10
12.51	.96	1.19	.32	.060	.069	.100	.057	597.20	54.71
.000087	2060.	2020.	1520.	2	0	1	0.00	839.54	894.25

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
17.23	19.26	616.46	0.00	0.00	616.53	.07	.01	.05	615.00
6910.	5784.	1118.	8.	2562.	749.	11.	8150.	1340.	615.00
12.52	2.26	1.49	.79	.025	.078	.025	.057	597.20	43.47
.000267	49.	49.	49.	0	0	1	0.00	813.98	857.45

NORMAL BRIDGE,NRD=18 MIN ELTRD= 611.50 MAX ELLC= 612.80

BF D/S FACE TRAIL BRIDGE

17.22	19.26	616.46	0.00	0.00	616.54	.08	.00	.00	615.00
6910.	5844.	1058.	9.	2536.	654.	11.	8150.	1340.	615.00
12.52	2.30	1.62	.81	.025	.040	.025	.057	597.20	43.57
.000283	1.	1.	1.	1	0	1	-115.80	813.83	857.40

NORMAL BRIDGE,NRD=18 MIN ELTRD= 611.50 MAX ELLC= 612.80

BF U/S FACE TRAIL BRIDGE

17.23	19.27	616.47	0.00	0.00	616.54	.08	.01	.00	615.00
6910.	5850.	1051.	9.	2547.	654.	11.	8151.	1340.	615.00
12.52	2.30	1.61	.81	.025	.040	.025	.057	597.20	43.47
.000280	18.	18.	18.	0	0	1	-11.35	813.98	857.45

17.23	19.27	616.47	0.00	0.00	616.54	.07	.00	.00	615.00
6910.	5789.	1113.	8.	2567.	749.	11.	8151.	1340.	615.00
12.52	2.25	1.49	.78	.025	.078	.025	.057	597.20	43.46
.000265	1.	1.	1.	0	0	1	0.00	813.98	857.45
17.24	19.29	616.49	0.00	0.00	616.58	.08	.02	.01	615.00
6910.	4544.	2359.	7.	2577.	750.	11.	8155.	1341.	615.00
12.53	1.76	3.15	.62	.060	.069	.060	.057	597.20	43.19
.000928	50.	50.	50.	0	0	1	0.00	814.40	857.58
17.51	18.53	617.03	0.00	0.00	617.05	.02	.44	.04	608.70
6910.	4662.	1932.	316.	7907.	975.	810.	8295.	1366.	608.90
12.82	.59	1.98	.39	.140	.069	.140	.058	598.50	28.53
.000247	800.	1470.	1490.	2	0	1	0.00	1521.80	1550.33

BG 2271' U/S FACE TRAIL BRIDGE

17.66	18.12	617.22	0.00	0.00	617.24	.02	.19	.00	608.70
6910.	4930.	1883.	97.	8134.	950.	225.	8458.	1390.	608.90
13.03	.61	1.98	.43	.140	.069	.140	.058	599.10	26.60
.000252	750.	750.	770.	2	0	1	0.00	1327.43	1354.03

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
18.55	17.25	618.25	0.00	0.00	618.29	.04	1.04	.01	608.70
6910.	2517.	2298.	2095.	3804.	970.	1892.	9063.	1477.	608.90
13.75	.66	2.37	1.11	.140	.069	.080	.059	601.00	187.48
.000346	3260.	4720.	2200.	2	0	1	0.00	1077.57	1265.04