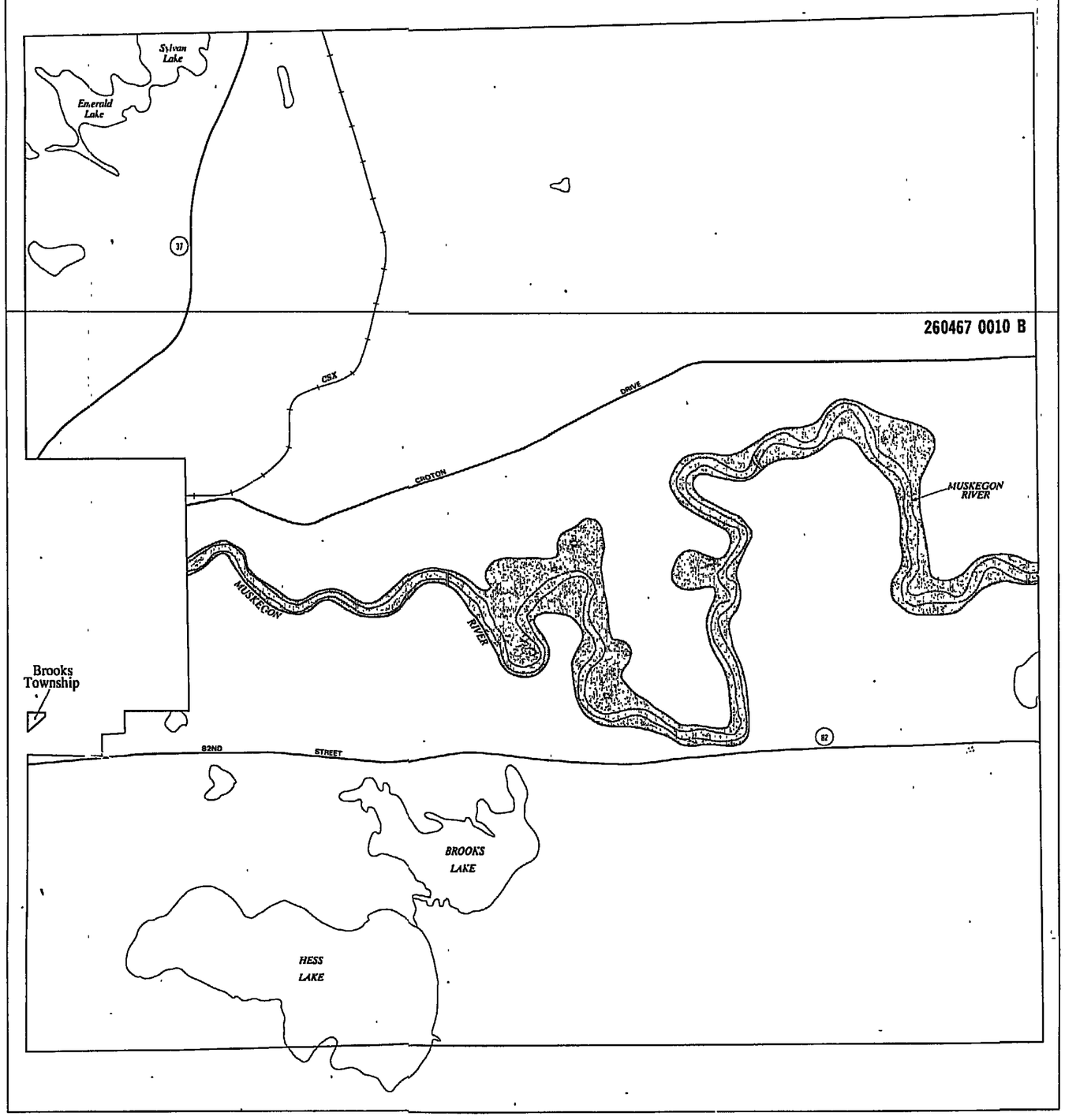
FOLD FOLD FOLD FOLD

COMMUNITY–PANEL NUMBERS

*260467 0005 B

260467 0010 B



*PANEL NOT PRINTED – AREA IN ZONE X

LEGEND

FLOOD PRONE AREAS:
FOR ORIENTATION PURPOSES ONLY

MAP REPOSITORY

N

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
PRELIMINARY

TOWNSHIP OF
BROOKS,
MICHIGAN
NEWAYGO COUNTY

MAP INDEX

PANELS PRINTED: 10

COMMUNITY-PANEL NUMBERS
260467 0005-0010

MAP REVISED:

Federal Emergency Management Agency

FOLD FOLD FOLD FOLD

GREENHORNE & O'MARA, A FRAME

TBM 71 Elev. 615.45
A horiz. spike & tag in 20" Sycamore on left river bank at X-Sec. 71.

TBM 72 Elev. 620.01
A horiz. spike & tag in 10" Ash on right river bank, 18' downstream from X-Sec. 72.

TBM 73 Elev. 621.71
A horiz. spike & tag in 8" Ash on left river bank, 15' downstream from X-Sec. 73.

TBM 74 Elev. 623.71
A horiz. spike & tag in 18" Sycamore on right bank, 15' upstream from X-Sec. 74.

TBM 75 Elev. 625.79
A horiz. spike & tag in 16" Sycamore on left river bank at X-Sec. 75.

TBM 76 Elev. 623.15
A horiz. spike & tag in 8" Birch on left river bank at X-Sec. 76.

TBM 77 Elev. 627.03
A horiz. spike & tag in a twin 14" Oak on right river bank at X-Sec. 77.

BM 15 Elev. 626.61
Left bank Muskegon River in SE 1/4, Sec. 34, T12N, R13W, about 40' downstream from a cable, a 7" Birch, a PK spike & BM tag.

Area maps were compiled using aerial photographs dated 7-23-65 and a Department of Natural Resources field survey dated Sept. 1977 for background data. Section lines and section corners approximate only.

SCALE 1" = 500'

BUILDING COMMITTEE APPROVAL
BY: _____ CHAIRMAN DATE

RECOMMENDED FOR APPROVAL: _____ ENGINEERING DIVISION SUPERVISOR DATE 5-30-78

RECOMMENDED FOR APPROVAL: _____ PROGRAM AND PLAN COORDINATOR DATE

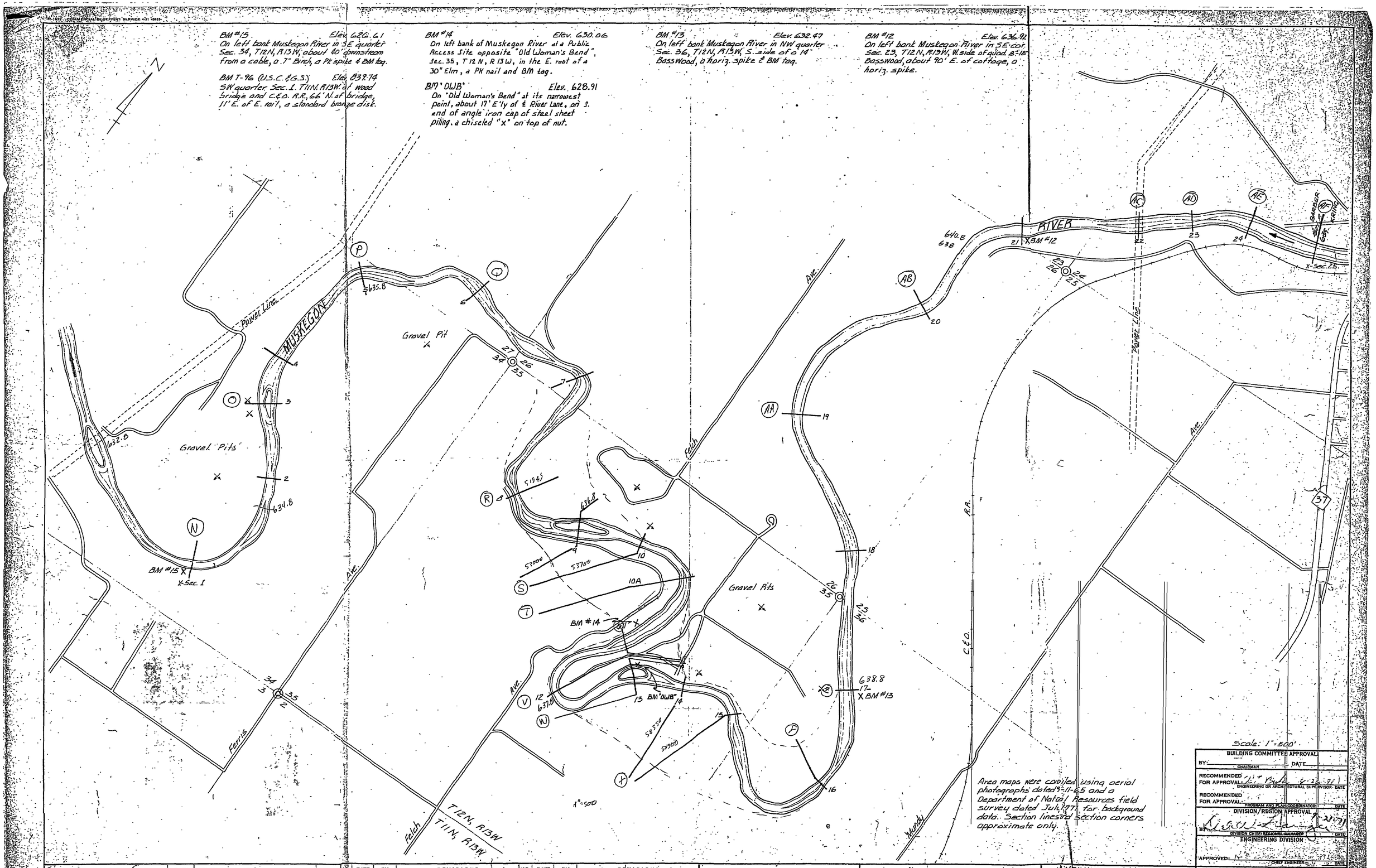
DIVISION / REGION APPROVAL
BY: _____ DIVISION CHIEF / REGIONAL MANAGER DATE 5-15-78

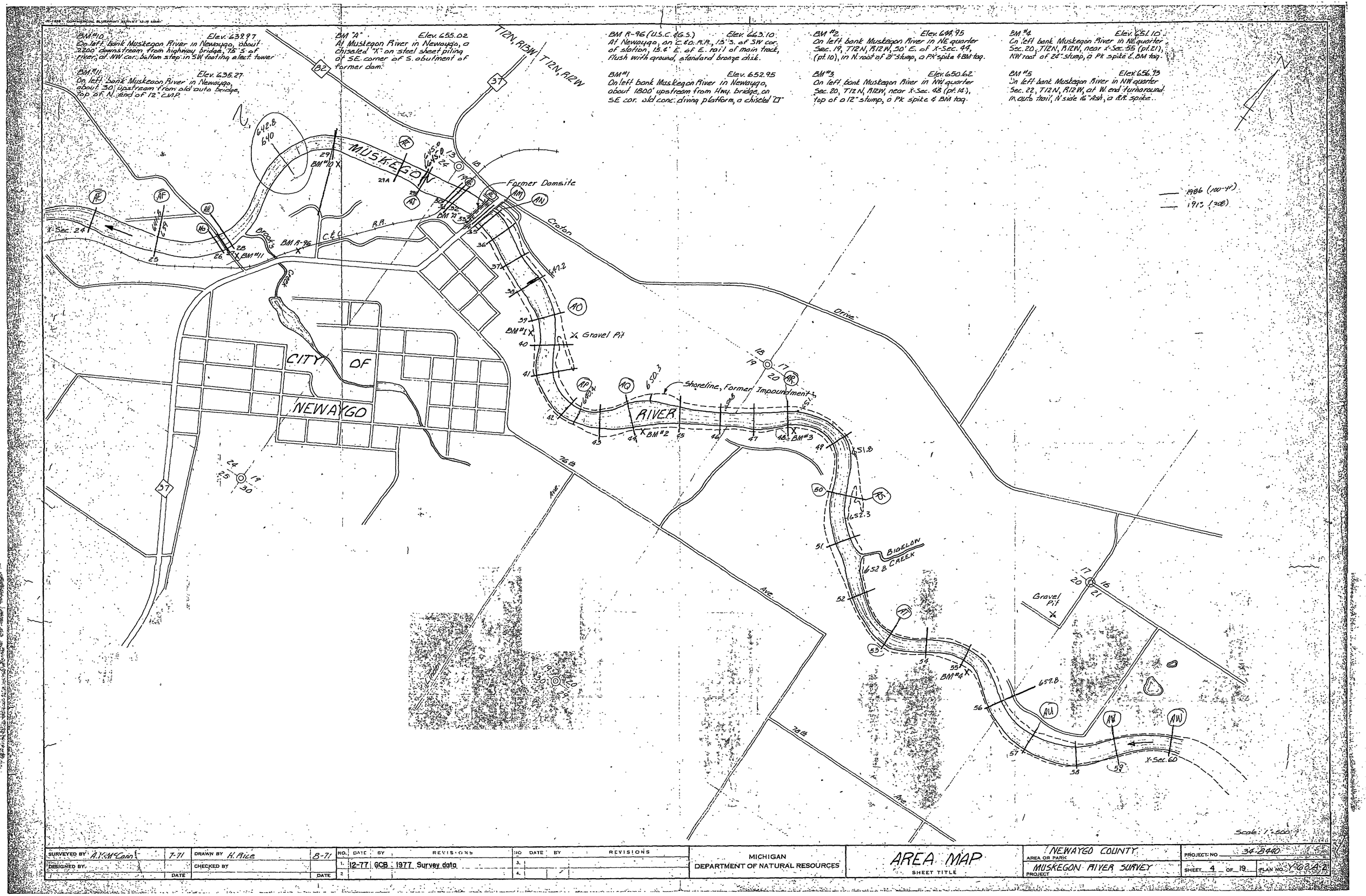
ENGINEERING DIVISION
APPROVED: _____ CHIEF ENGINEER DATE 5-30-78

SURVEYED BY Alfred N. McCann, Registered Land Surveyor	5/20/78	DRAWN BY Gary W. Taylor	Oct. '77	NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	MICHIGAN DEPARTMENT OF NATURAL RESOURCES	AREA MAP
DESIGNED BY		CHECKED BY		1.				3.					SHEET TITLE
	DATE		DATE	2.				4.					

AREA OR PARK NEWAYGO COUNTY
PROJECT MUSKEGON RIVER SURVEY
PROJECT NO. 34-8613
SHEET 2 OF 19 PLAN NO. Y 62 A-2

BRUNING 40-105 32200


BM #15 Elev. 626.61
On left bank Muskegon River in SE quarter Sec. 34, T12N, R13W, about 40' downstream from a cable, a 7" Birch, a Pk spike & BM tag.
BM T-96 (U.S.C.&G.S.) Elev. 839.74
SW quarter Sec. 1. T11N. R13W. at wood bridge and C.&O. R.R., 66' N. of bridge, 11' E. of E. rail, a standard bronze disk.
BM #14 Elev. 630.06
On left bank of Muskegon River at a Public Access Site opposite "Old Woman's Bend", Sec. 35, T12N, R13W, in the E. root of a 30" Elm, a PK nail and BM tag.
BM "OWB" Elev. 628.91
On "Old Woman's Bend" at its narrowest point, about 17' E'ly of ℄ River Lane, on S. end of angle iron cap of steel sheet piling, a chiseled "X" on top of nut.
BM #13 Elev. 632.47
On left bank Muskegon River in NW quarter Sec. 36, T12N, R13W, S. side of a 14" Basswood, a horiz. spike & BM tag.
BM #12 Elev. 636.92
On left bank Muskegon River in SE cor. Sec. 23, T12N, R13W, W. side of quad. 8"-18" Basswood, about 90' E. of cottage, a horiz. spike.
N
MUSKEGON
RIVER
Power Line
Gravel Pit
Gravel Pits
Gravel Pits
Ave.
Felch
Ferris
Mundy
C.&O. R.R.
BARBER
KRING
X-Sec. 1
X-Sec. 25
BM #15
BM #14
BM #13
BM "OWB"
BM #12
T12N, R13W
T11N, R13W
Scale: 1"=500'
Area maps were compiled using aerial photographs dated 9-11-65 and a Department of Natural Resources field survey dated July 1971 for background data. Section lines and section corners approximate only.
BUILDING COMMITTEE APPROVAL
BY: CHAIRMAN DATE
RECOMMENDED FOR APPROVAL: ENGINEERING OR ARCHITECTURAL SUPERVISOR DATE
RECOMMENDED FOR APPROVAL: PROGRAM AND PLAN COORDINATOR DATE
DIVISION/REGION APPROVAL
BY: DIVISION CHIEF/REGIONAL MANAGER DATE
ENGINEERING DIVISION
APPROVED: CHIEF ENGINEER DATE
SURVEYED BY A.V. McCann 7-71
DRAWN BY H. Rice 8-71
DESIGNED BY
CHECKED BY
DATE
NO. DATE BY REVISIONS
12-77 GCB 1977 Survey data
MICHIGAN DEPARTMENT OF NATURAL RESOURCES
AREA MAP
SHEET TITLE
AREA CLARK NEWAYGO COUNTY
PROJECT MUSKEGON RIVER SURVEY
PROJECT NO. 34-8440
SHEET 3 OF 19
PLAN NO. Y62A2



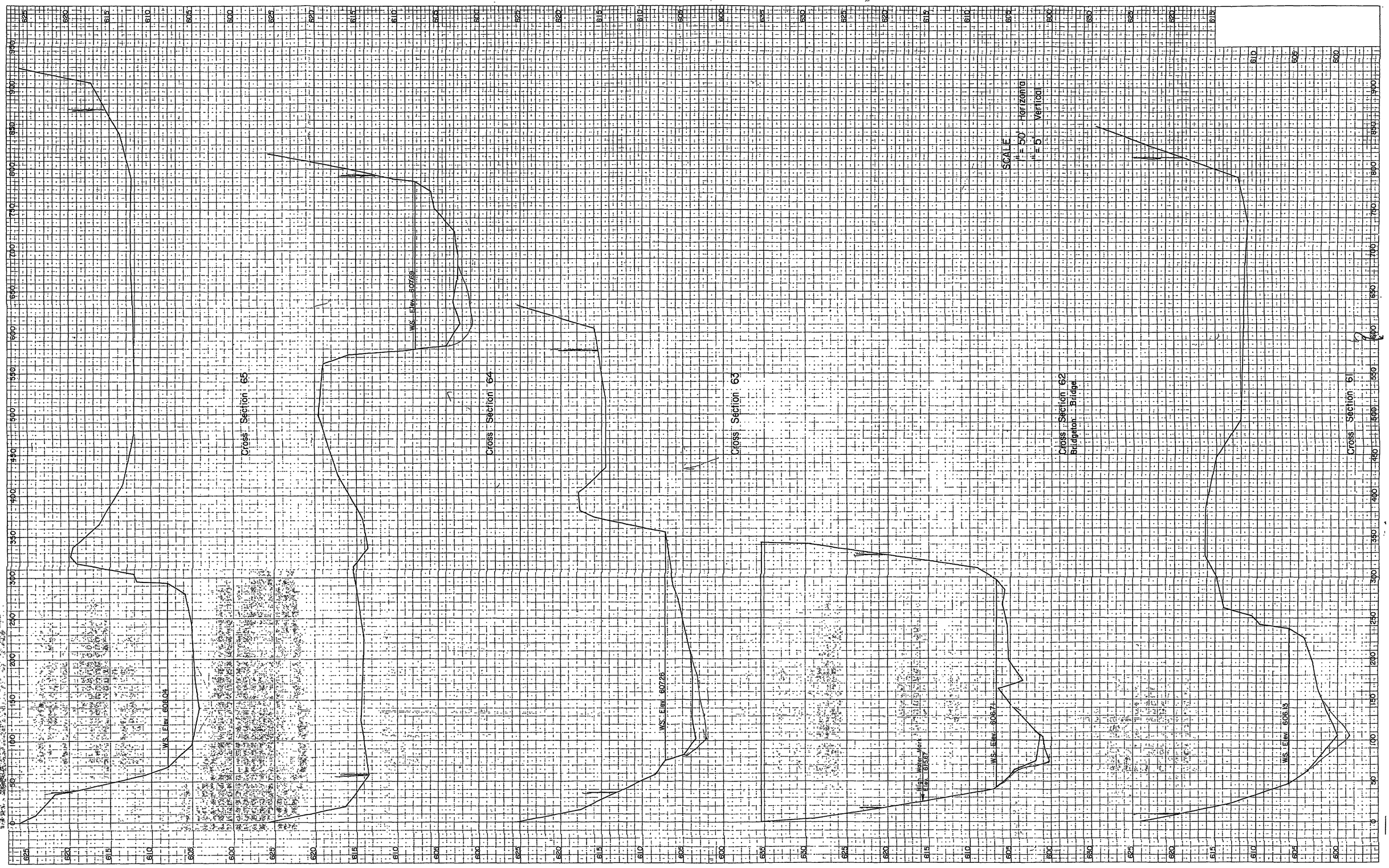
SURVEYED BY A.Y. McCann	7-71	DRAWN BY H. Rice	8-71	NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS
DESIGNED BY		CHECKED BY		1.	12-77	GCB	1977 Survey data	3.			
	DATE		DATE	2.				4.			

MICHIGAN
DEPARTMENT OF NATURAL RESOURCES

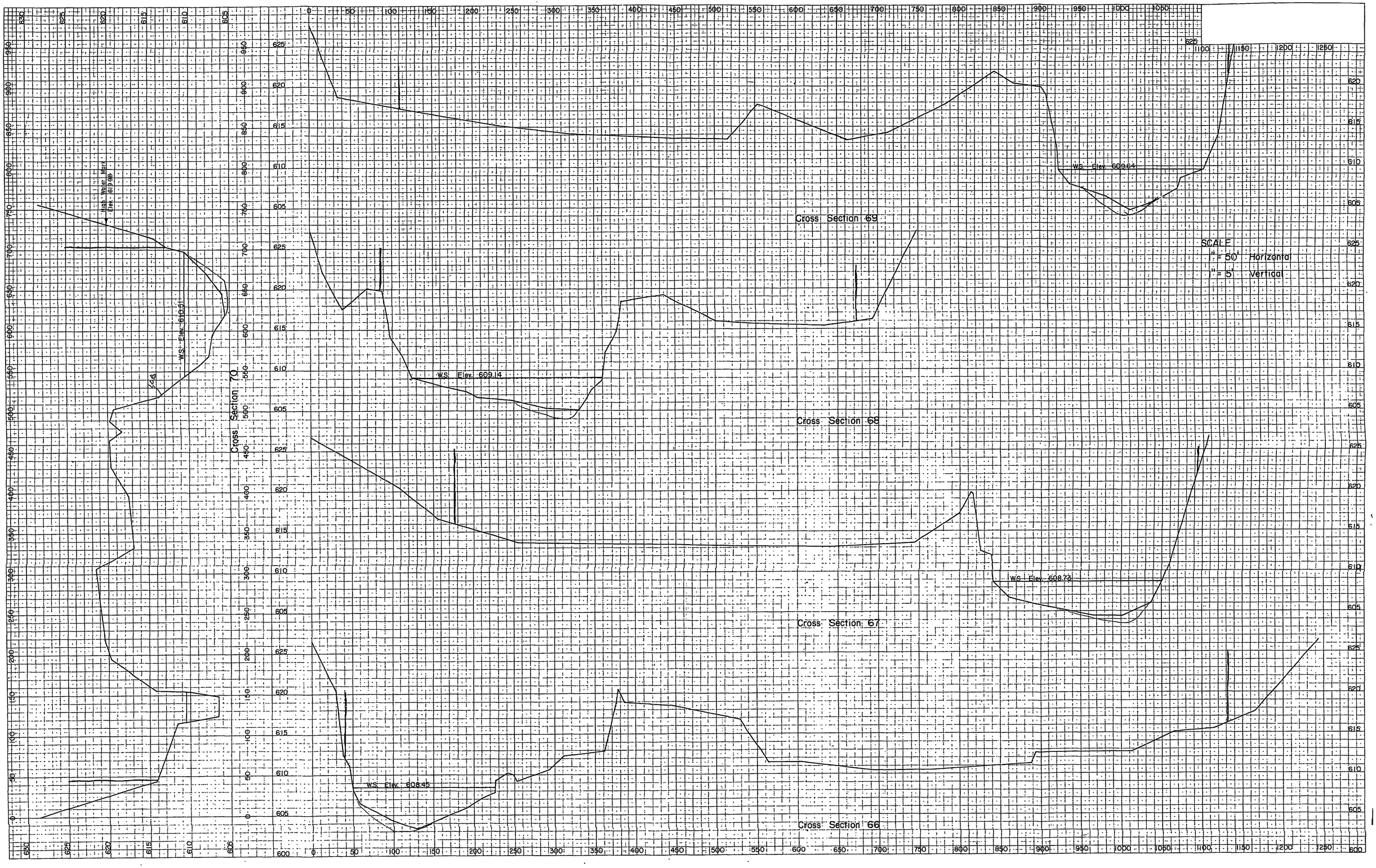
AREA MAP
SHEET TITLE

NEWAYGO COUNTY
AREA OR PARK
MUSKEGON RIVER SURVEY
PROJECT

PROJECT NO. 34-B440
SHEET 4 OF 19
PLAN NO. Y62A-2



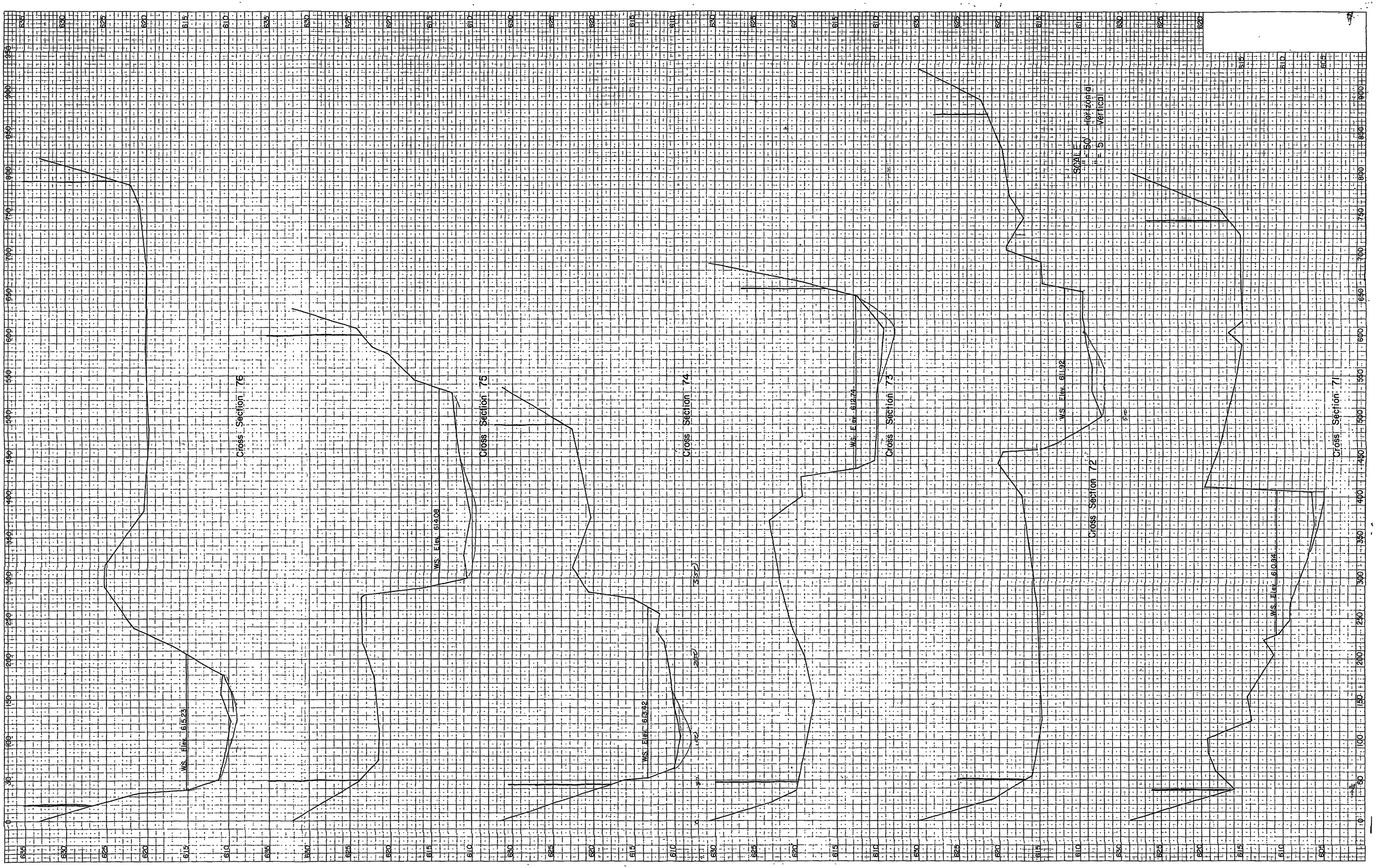
SURVEYED BY A.V. McCANN	9-77	DRAWN BY G.W. TAYLOR	12-77	NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	MICHIGAN DEPARTMENT OF NATURAL RESOURCES	RIVER CROSS SECTIONS MUSKEGON RIVER SURVEY NEWAYGO COUNTY
DESIGNED BY	DATE	CHECKED BY A.V.M.	DATE	1.				3.					SHEET NO. ____ OF ____ FOR PROJECT NO. 34-8613
				2.				4.					SHEET 5 OF 19 PLAN NO. Y62A-2



SURVEYED BY A.V. McCANN	9-77	DRAWN BY G.W. TAYLOR	12-77	NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	MICHIGAN DEPARTMENT OF NATURAL RESOURCES	RIVER CROSS SECTIONS MUSKEGON RIVER SURVEY NEWAYGO COUNTY
DESIGNED BY		CHECKED BY A.V.M.		1.				3.					
	DATE		DATE	2.				4.					

SHEET NO. ____ OF ____
FOR PROJECT NO. 34-8613

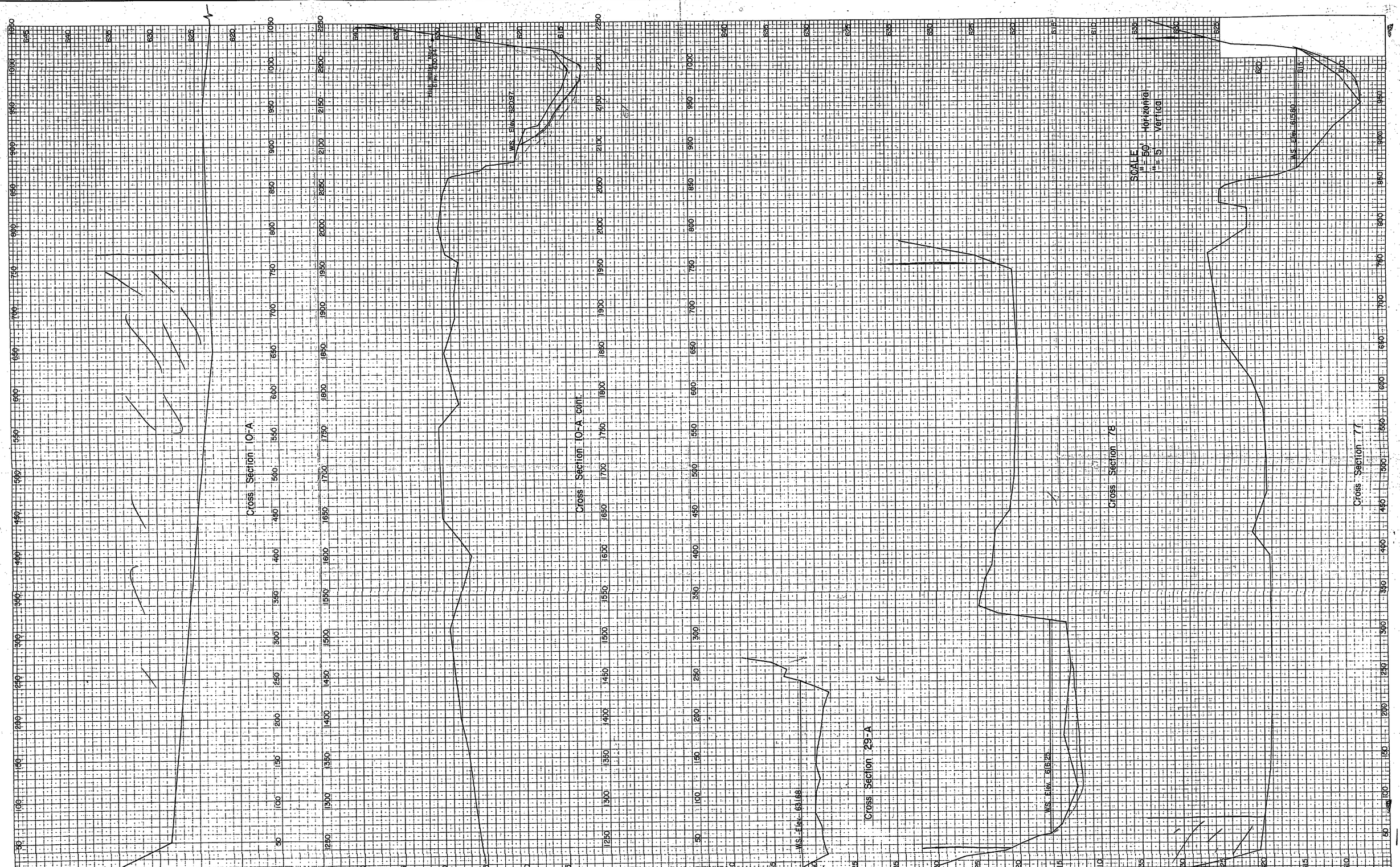
SHEET 6 OF 19 | PLAN NO. Y62A-2



SURVEYED BY A.V. McCANN	9-77	DRAWN BY G.W. TAYLOR	12-77	NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	MICHIGAN DEPARTMENT OF NATURAL RESOURCES	RIVER CROSS SECTIONS MUSKEGON RIVER SURVEY NEWAYGO COUNTY
DESIGNED BY	DATE	CHECKED BY A.V.M.	DATE	1.				3.					
				2.				4.					

SHEET NO. ____ OF ____
FOR PROJECT NO. 34-8613

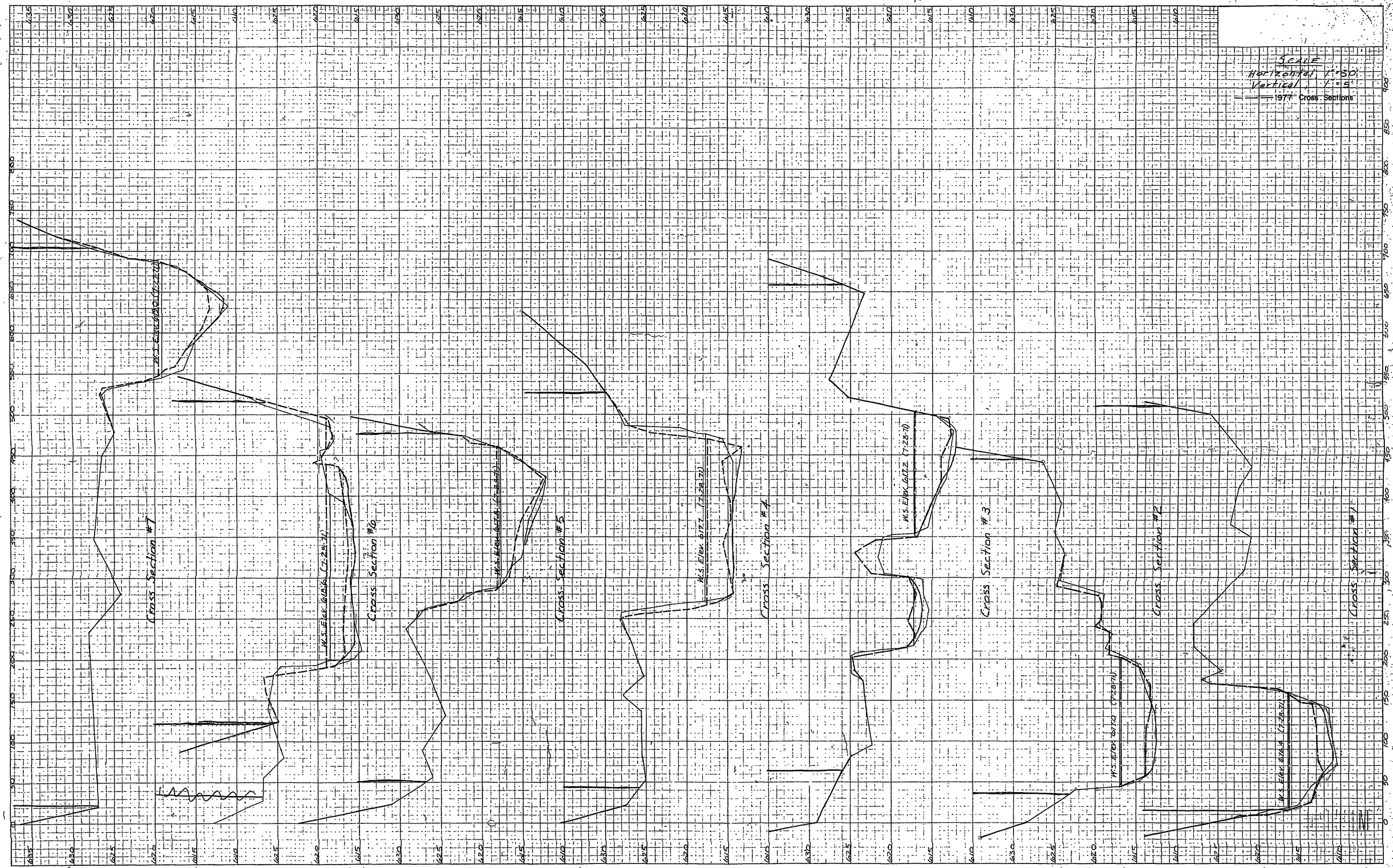
SHEET 7 OF 19 | PLAN NO. Y62A-2



SURVEYED BY A.V. McCANN	9-77	DRAWN BY G.W. TAYLOR	12-77	NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	MICHIGAN DEPARTMENT OF NATURAL RESOURCES	RIVER CROSS SECTIONS MUSKEGON RIVER SURVEY NEWAYGO COUNTY
DESIGNED BY		CHECKED BY A.V.M.		1.				3.					
	DATE		DATE	2.				4.					

SHEET NO. ____ OF ____
FOR PROJECT NO 34-8613
SHEET 8 OF 19 | PLAN NO. Y 62 A-2

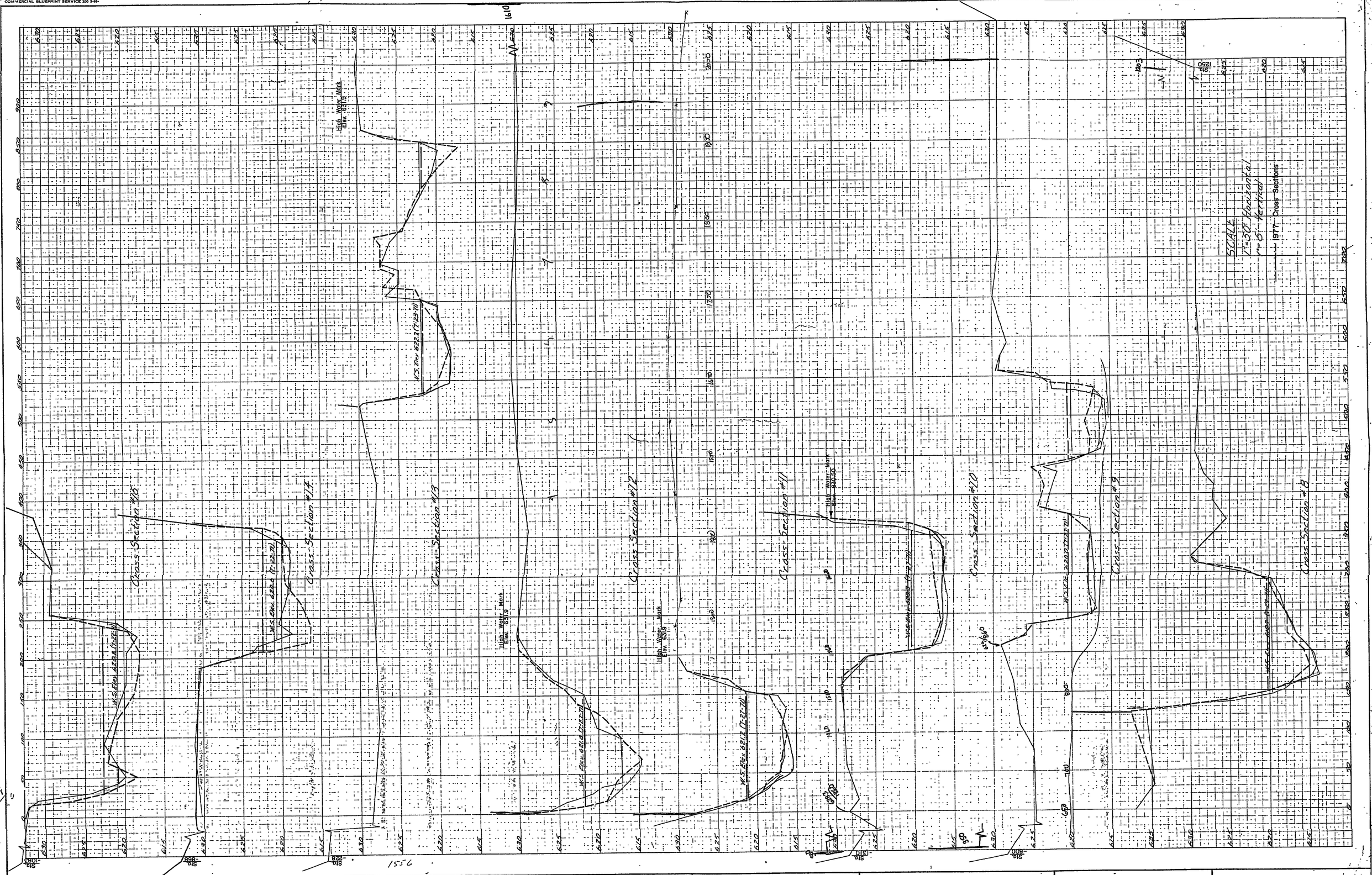
COMMERCIAL BLUEPRINT SERVICE 200 5-68



SURVEYED BY A.V. McCANN	7-71	DRAWN BY B. BROGREN	8-71	NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	MICHIGAN DEPARTMENT OF CONSERVATION	RIVER CROSS-SECTIONS MUSKEGON RIVER. SURVEY NEWAYGO COUNTY
DESIGNED BY		CHECKED BY M. STEVENS	8-71	1.	12/77	G.W.T.	1977 CROSS-SECTION RESURVEY	3.					
	DATE		DATE	2.				4.					

SHEET NO. ____ OF ____
FOR PROJECT NO. 34-8440
SHEET 9 OF 19 PLAN NO. Y62A-2

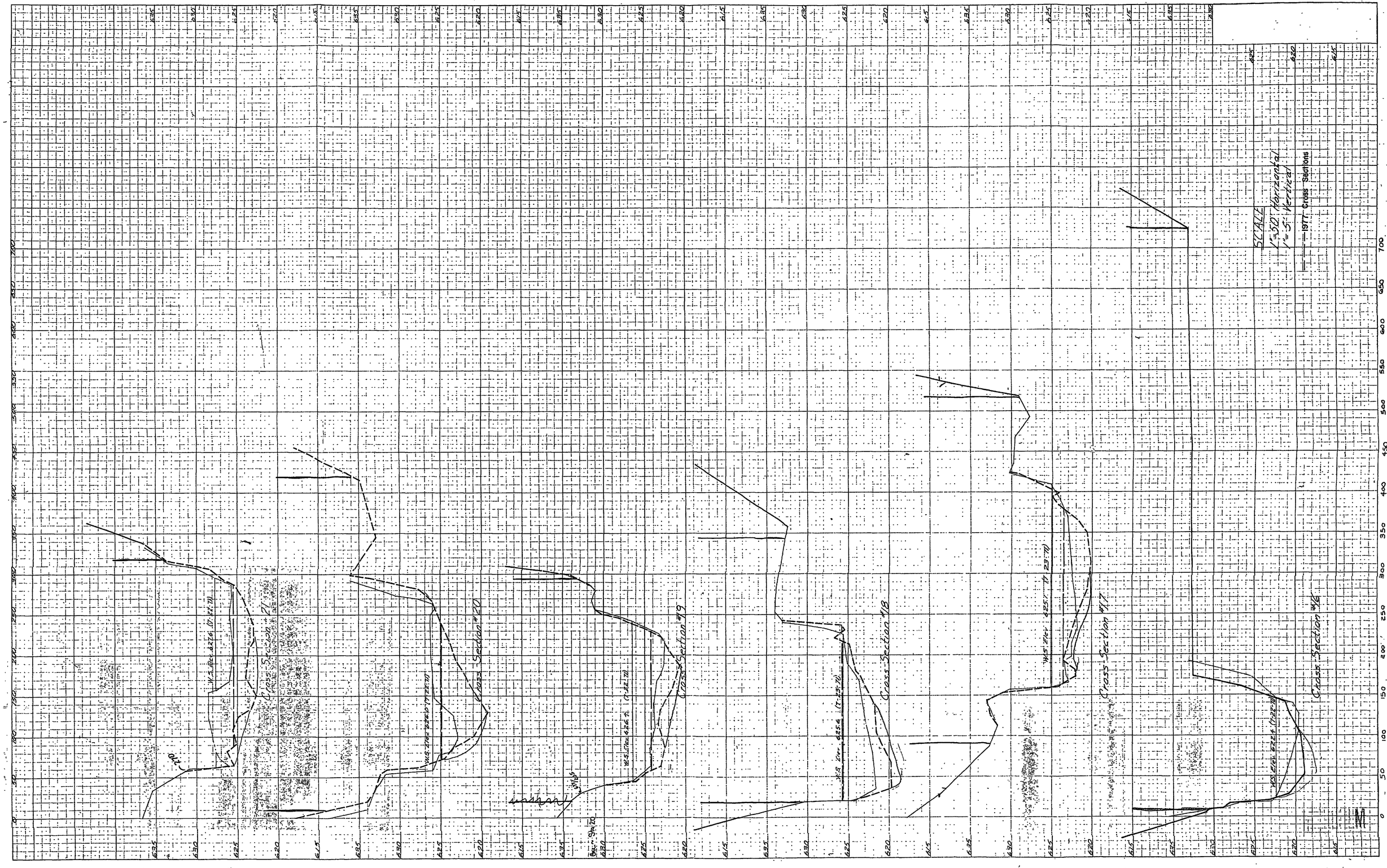
COMMERCIAL BLUEPRINT SERVICE 200 5-68



SURVEYED BY A.V. McCANN	7/71	DRAWN BY M. STEVENS	8/71	NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	MICHIGAN DEPARTMENT OF CONSERVATION	RIVER CROSS SECTIONS MUSKEGON RIVER SURVEY NEWAGO COUNTY
DESIGNED BY		CHECKED BY B. BROGREN	8/71	1.	12/77	G.W.T.	1977 CROSS-SECTION RESURVEY	3.					
	DATE		DATE	2.				4.					

SHEET NO. ____ OF ____
FOR PROJECT NO. 34-8840
SHEET 10 OF 19 | PLAN NO. Y62A-2

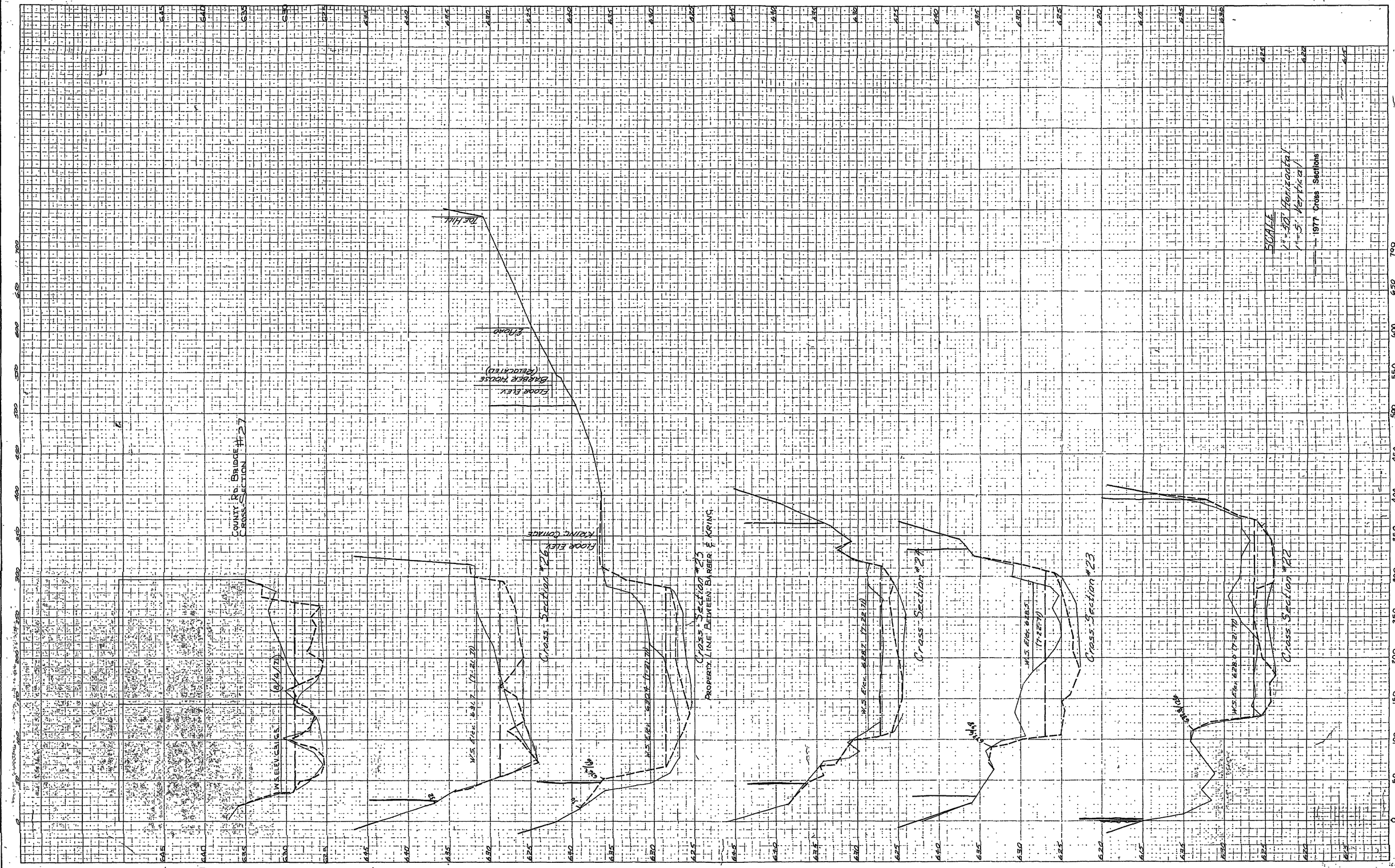
COMMERCIAL BLUEPRINT SERVICE 200 5-68



SURVEYED BY A.V. McCANN	7/71	DRAWN BY M. STEVENS	8/71	NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	MICHIGAN DEPARTMENT OF CONSERVATION	RIVER CROSS SECTIONS MUSKEGON RIVER SURVEY NEWAGO COUNTY
DESIGNED BY		CHECKED BY B. BROGREN	8/71	1.	12/77	G.W.T.	1977 CROSS-SECTION RESURVEY	3.					
	DATE		DATE	2.				4.					

SHEET NO. ____ OF ____
FOR PROJECT NO. 34-8840
SHEET 11 OF 19 PLAN NO. 162A-2

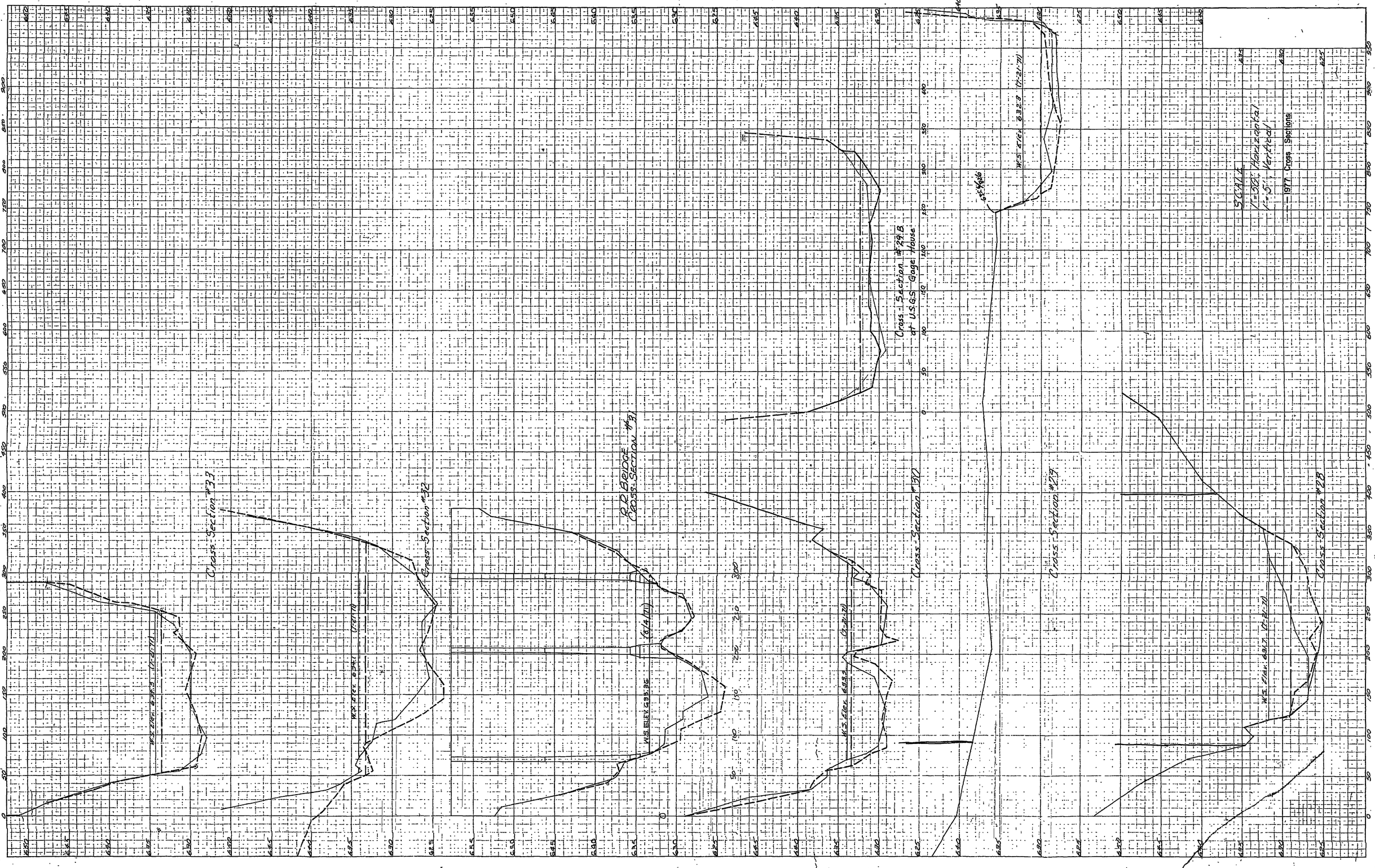
COMMERCIAL BLUEPRINT SERVICE 200 3-68



SURVEYED BY A. V. McCANN	7-71	DRAWN BY M. STEVENS	8/71	NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	MICHIGAN DEPARTMENT OF CONSERVATION	RIVER CROSS SECTIONS MUSKEGON RIVER SURVEY NEWAGO COUNTY
DESIGNED BY		CHECKED BY B. BROGREN	8/71	1.	12/77	G.W.T.	1977 CROSS-SECTION RESURVEY	3.					
	DATE		DATE	2.				4.					

SHEET NO. ____ OF ____
FOR PROJECT NO. 34-8840
SHEET 12 OF 19 | PLAN NO. Y62A-2

COMMERCIAL BLUEPRINT SERVICE 200 3-68

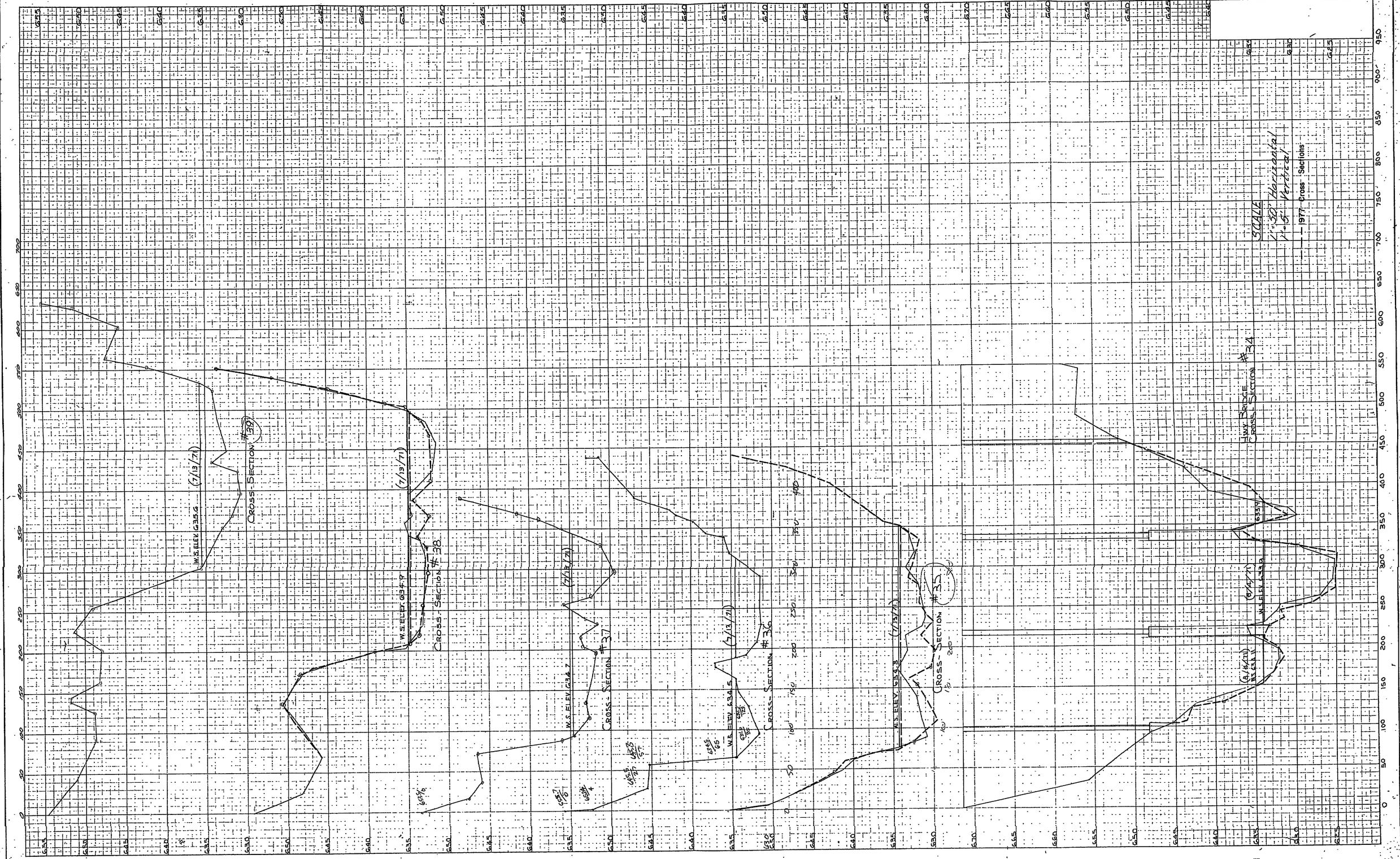


SURVEYED BY A. V. McCANN	7-71	DRAWN BY M. STEVENS	8/71	NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	MICHIGAN DEPARTMENT OF CONSERVATION	RIVER CROSS SECTIONS MUSKEGON RIVER SURVEY NEWAGO COUNTY
DESIGNED BY		CHECKED BY B. BROGREN	8-71	1.	12/77	G.W.T.	1977 CROSS-SECTION RESURVEY	3.					
	DATE		DATE	2.				4.					

SHEET NO. ____ OF ____ FOR PROJECT NO. 34-8840

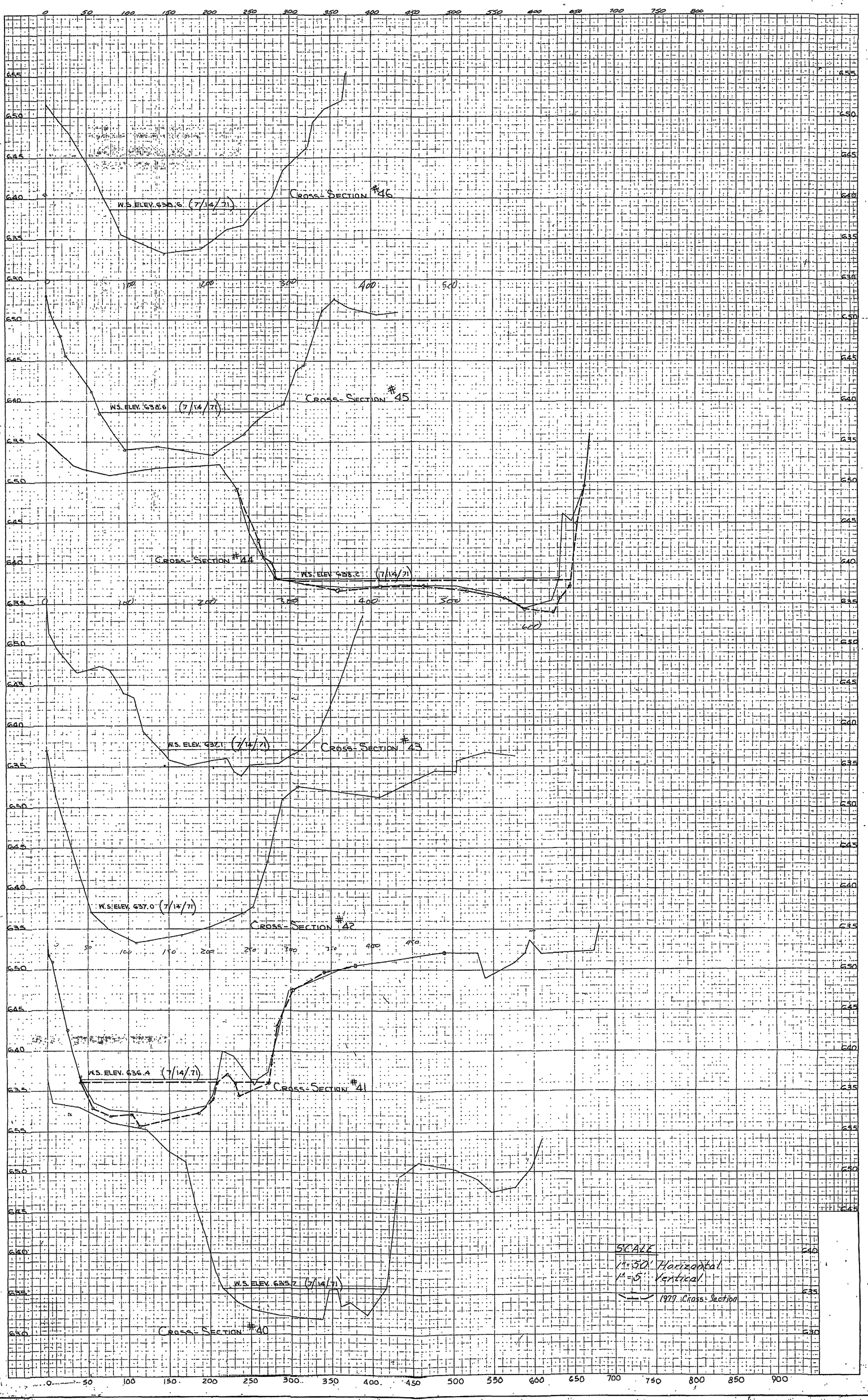
SHEET 13 OF 19 PLAN NO. Y624-2

COMMERCIAL BLUEPRINT SERVICE 200 5-69-



SURVEYED BY A. V. McCANN	7-71	DRAWN BY M. STEVENS	8/71	NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	MICHIGAN DEPARTMENT OF CONSERVATION	RIVER CROSS SECTIONS MUSKEGON RIVER SURVEY NEWAGO COUNTY
DESIGNED BY		CHECKED BY B. BROGREN	8-71	1.	12/77	G.W.T.	1977 CROSS-SECTION RESURVEY	3.					
	DATE		DATE	2.				4.					

SHEET NO. ____ OF ____
FOR PROJECT NO: 34-8840
SHEET 14 OF 19 PLAN NO. Y62A-2



SURVEYED BY A. V. McCANN 7-71
DESIGNED BY
DATE
DRAWN BY M. STEVENS 8/71
CHECKED BY B. BROGREN 8/71
DATE

NO.	DATE	BY	REVISIONS
1.	12/77	G.W.T.	1977 CROSS-SECTION RESURVEY
2.			

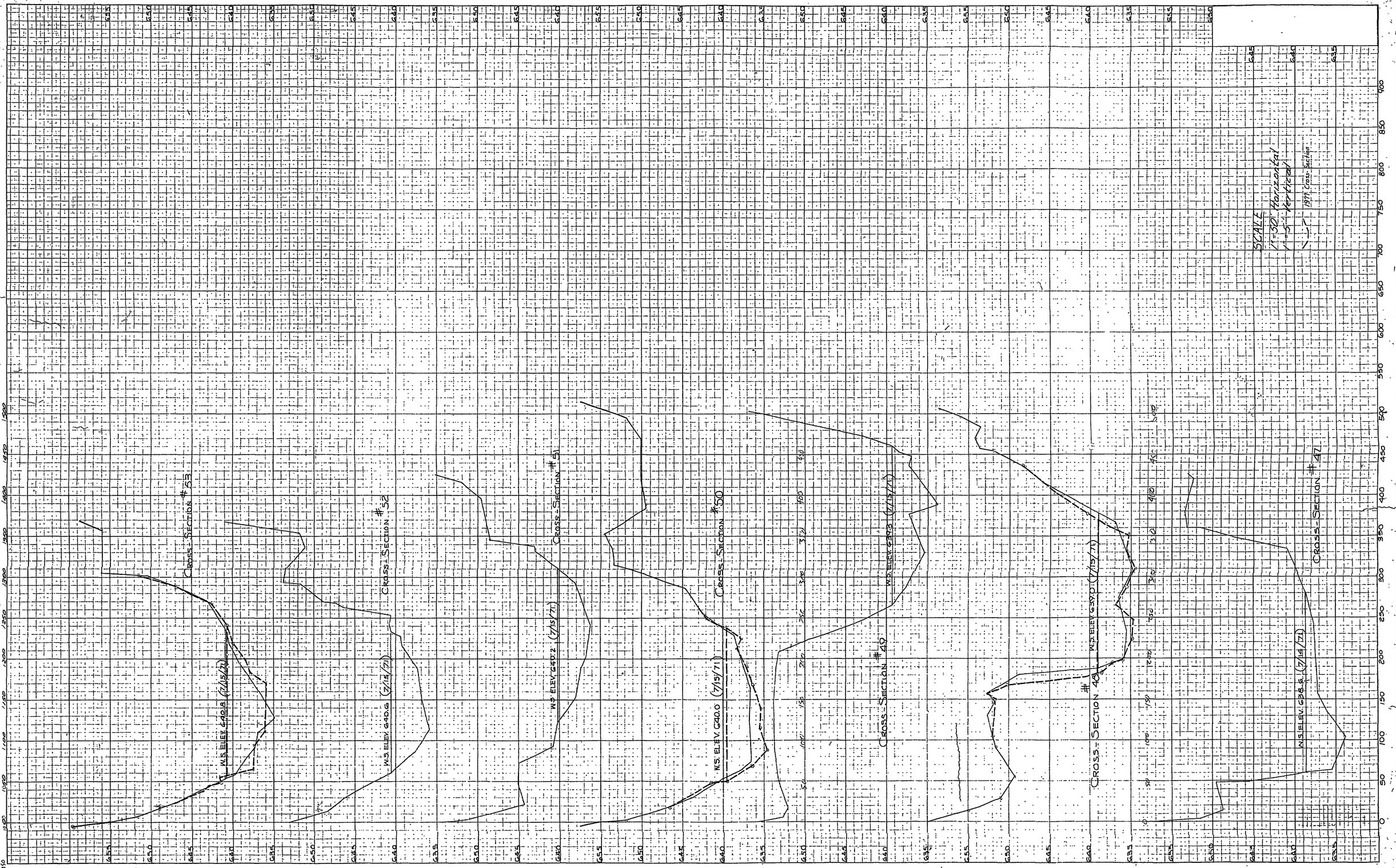
NO.	DATE	BY	REVISIONS
3.			
4.			

MICHIGAN
DEPARTMENT OF CONSERVATION

RIVER CROSS SECTIONS
MUSKEGON RIVER SURVEY
NEWAGO COUNTY

SHEET NO. ___ OF ___
FOR PROJECT NO. 34-8840
SHEET 15 OF 19
PLAN NO. 162A-2

COMMERCIAL BLUEPRINT SERVICE 299 5451



SURVEYED BY A. K. McCANN	7-71	DRAWN BY M. STEVENS	8/71	NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	MICHIGAN DEPARTMENT OF CONSERVATION	River Cross Sections Muskegon River Survey Newago County
DESIGNED BY		CHECKED BY B. BROGREN	8-71	1.	12/77	G.W.T.	1977 CROSS-SECTION RESURVEY	3.					SHEET NO. ____ OF ____ FOR PROJECT NO. 34-8.840
	DATE		DATE	2.				4.					SHEET 16 OF 19 PLAN NO. Y62A-2

COMMERCIAL BLUEPRINT SERVICE 220 S-69

SCALE
1"=50' Horizontal
1"=5' Vertical

Cross-Section #60 (7-16-71)
W.S. Elev. 644.0 (7-16-71)

Cross-Section #59 (7-16-71)
W.S. Elev. 644.0 (7-16-71)

Cross-Section #58 (7-16-71)
W.S. Elev. 644.0 (7-16-71)

Cross-Section #57 (7-16-71)
W.S. Elev. 644.0 (7-16-71)

Cross-Section #56 (7-16-71)
W.S. Elev. 644.0 (7-16-71)

Cross-Section #55 (7-15-71)
W.S. Elev. 644.0 (7-15-71)

Cross-Section #54 (7-15-71)
W.S. Elev. 644.0 (7-15-71)

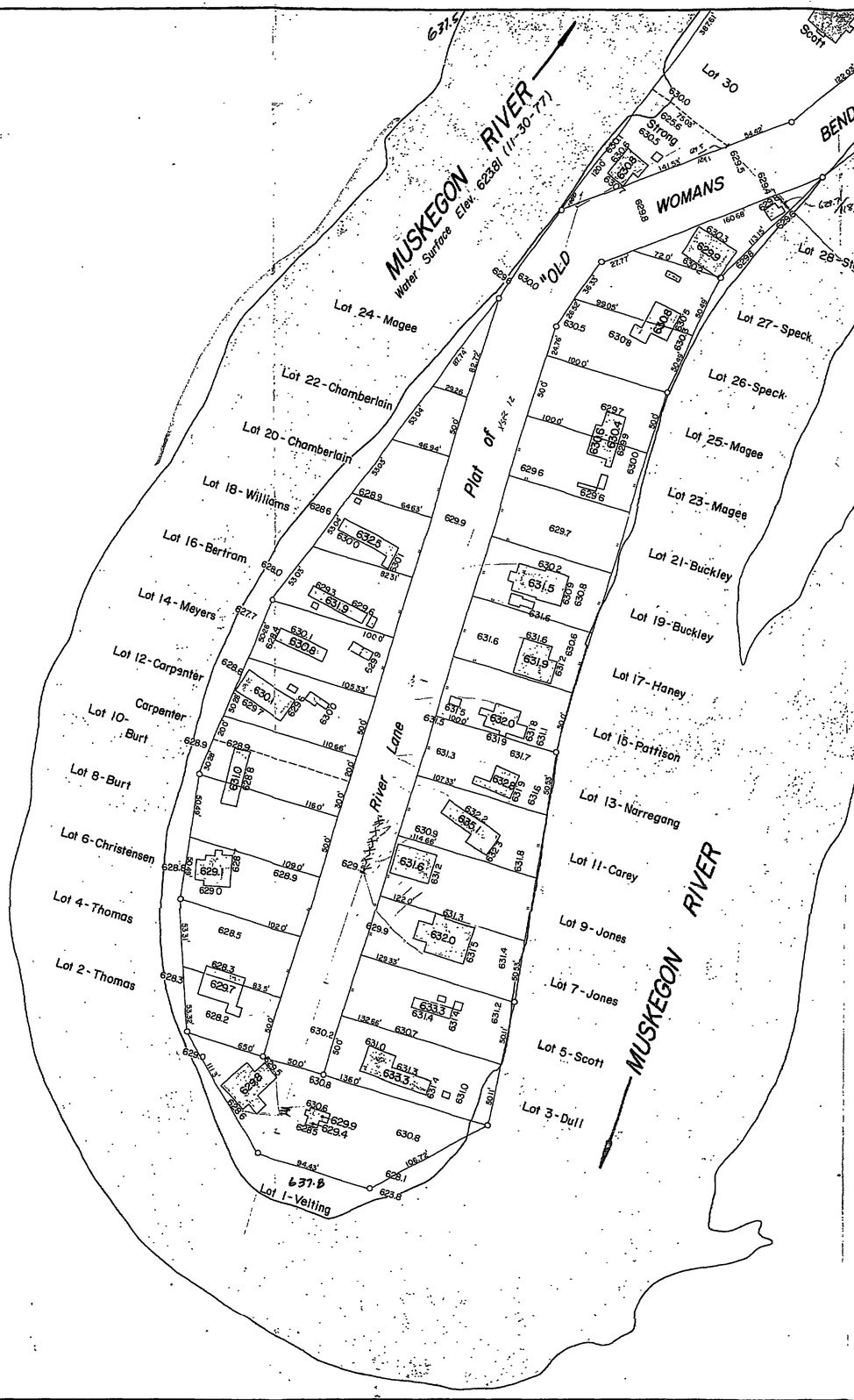
SURVEYED BY A.V. McCANN	7-71	DRAWN BY M. STEVENS	8/71	NO.	DATE	BY	REVISIONS	NO	DATE	BY	REVISIONS
DESIGNED BY		CHECKED BY B. BROGREN	8-71	1.	12/77	G.W.T.	1977 CROSS-SECTION RESURVEY	3.			
	DATE		DATE	2.				4.			

MICHIGAN
DEPARTMENT OF CONSERVATION

RIVER CROSS SECTIONS
MUSKEGON RIVER SURVEY
NEWAGO COUNTY

SHEET NO ____ OF ____
FOR PROJECT NO. 34-8840

SHEET 17 OF 19 | PLAN NO. Y62432



NOTE

This map is a composite of the recorded plats of "Old Womans Bend" and "Old Womans Bend No. 2" along with the location of existing residences or structures. It has been prepared to show the general topographic features of this subject area.

Property ownership is taken from Newaygo County deed data. The relative location of lot lines to buildings is for illustrative purposes only and is not intended to exactly fix boundary lines

Elevations are spotted throughout with the heavy figures within the structural outlines indicating floor elevations.

Dashed line represents elevation 631.9 and indicates the limits of maximum water height in 1975-1976. Upland easterly of this contour line was above high water stage. Elevations are tied to government bench marks and correspond to those used by US Geological Survey for Muskegon River hydro data.

BENCH MARK DATA — USC. & G.S. DATUM

BM 14 ELEV. 630.06
On left bank of Muskegon River at a Public Access Site opposite "Old Womans Bend" Sec. 35, T 12 N, R 13 W, in the E. root of a 30" Elm, a PK spike & BM tag.

BM O.W.B. ELEV. 628.91
On "Old Womans Bend" at its most narrow point, about 17 ft. E'ly of ℄ River Lane, on top of nut, S. end angle iron cap of steel sheet piling, a chiseled "X".

N

SCALE 1"=50'

BUILDING COMMITTEE APPROVAL
BY _____ CHAIRMAN DATE _____

RECOMMENDED FOR APPROVAL: [signature] ENGINEERING OR ARCHITECTURAL SUPERVISOR 5-31-78 DATE

RECOMMENDED FOR APPROVAL: _____ PROGRAM AND PLAN COORDINATOR DATE

DIVISION/REGION APPROVAL
BY: [signature] DIVISION CHIEF/REGIONAL MANAGER 5-29-78 DATE

ENGINEERING DIVISION
APPROVED: [signature] CHIEF ENGINEER 5-31-78 DATE

SURVEYED BY Alfred V. McCann REGISTERED LAND SURVEYOR	5/26/78	DRAWN BY Gary W. Taylor	Jan. '78	NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	MICHIGAN DEPARTMENT OF NATURAL RESOURCES	OLD WOMANS BEND
DESIGNED BY		CHECKED BY		1.				3.				SURVEY DATA MAP	AREA OR PARK SECTION 35, T12N, R13W
	DATE		DATE	2.				4.				SHEET TITLE	PROJECT MUSKEGON RIVER SURVEY

PROJECT NO. 34-8613
SHEET 18 OF 19 PLAN NO. Y 62 A-2

BRUNING 40-105 33930

NOTE

This map is a composite of the recorded plats of "Old Womans Bend" and "Old Womans Bend No. 2" along with the location of existing residences or structures. It has been prepared to show the general topographic features of this subject area.

Property ownership is taken from Newaygo County deed data. The relative location of lot lines to buildings is for illustrative purposes only and is not intended to exactly fix boundary lines.

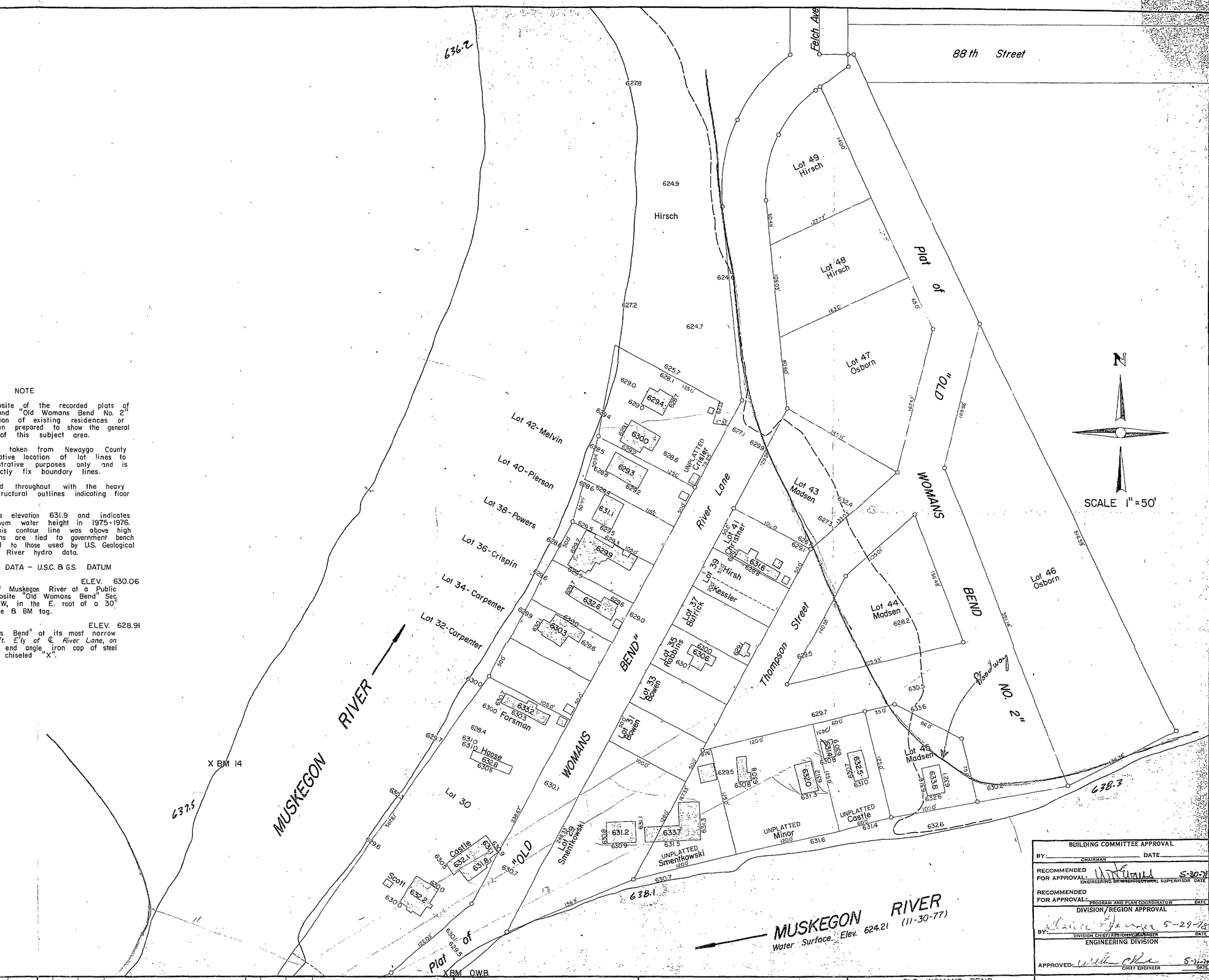
Elevations are spotted throughout with the heavy figures within the structural outlines indicating floor elevations.

Dashed line represents elevation 631.9 and indicates the limits of maximum water height in 1975-1976. Upland easterly of this contour line was above high water stage. Elevations are tied to government bench marks and correspond to those used by U.S. Geological Survey for Muskegon River hydro data.

BENCH MARK DATA – U.S.C. & G.S. DATUM

BM 14 ELEV. 630.06
On left bank of Muskegon River at a Public Access Site opposite "Old Womans Bend" Sec. 35 T12N, R13W, in the E. root of a 30" Elm, a PK spike & BM tag.

BM O.W.B. ELEV. 628.91
On "Old Womans Bend" at its most narrow point, about 17 ft. E'ly of ℄ River Lane, on top of nut, S. end angle, iron cap of steel sheet piling, a chiseled "X".



BUILDING COMMITTEE APPROVAL	
BY: CHAIRMAN	DATE
RECOMMENDED FOR APPROVAL: ENGINEERING OR ARCHITECTURAL SUPERVISOR	DATE 5-30-78
RECOMMENDED FOR APPROVAL: PROGRAM AND PLAN COORDINATOR	DATE
DIVISION/REGION APPROVAL	
BY: DIVISION CHIEF/REGIONAL MANAGER	DATE 5-29-78
ENGINEERING DIVISION	
APPROVED: CHIEF ENGINEER	DATE 5-30-78

SURVEYED BY Clifford V. McCann REGISTERED LAND SURVEYOR	5/24/78	DRAWN BY Gary W. Taylor	Jan. '78	NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS
DESIGNED BY		CHECKED BY		1.				3.			
	DATE		DATE	2.				4.			

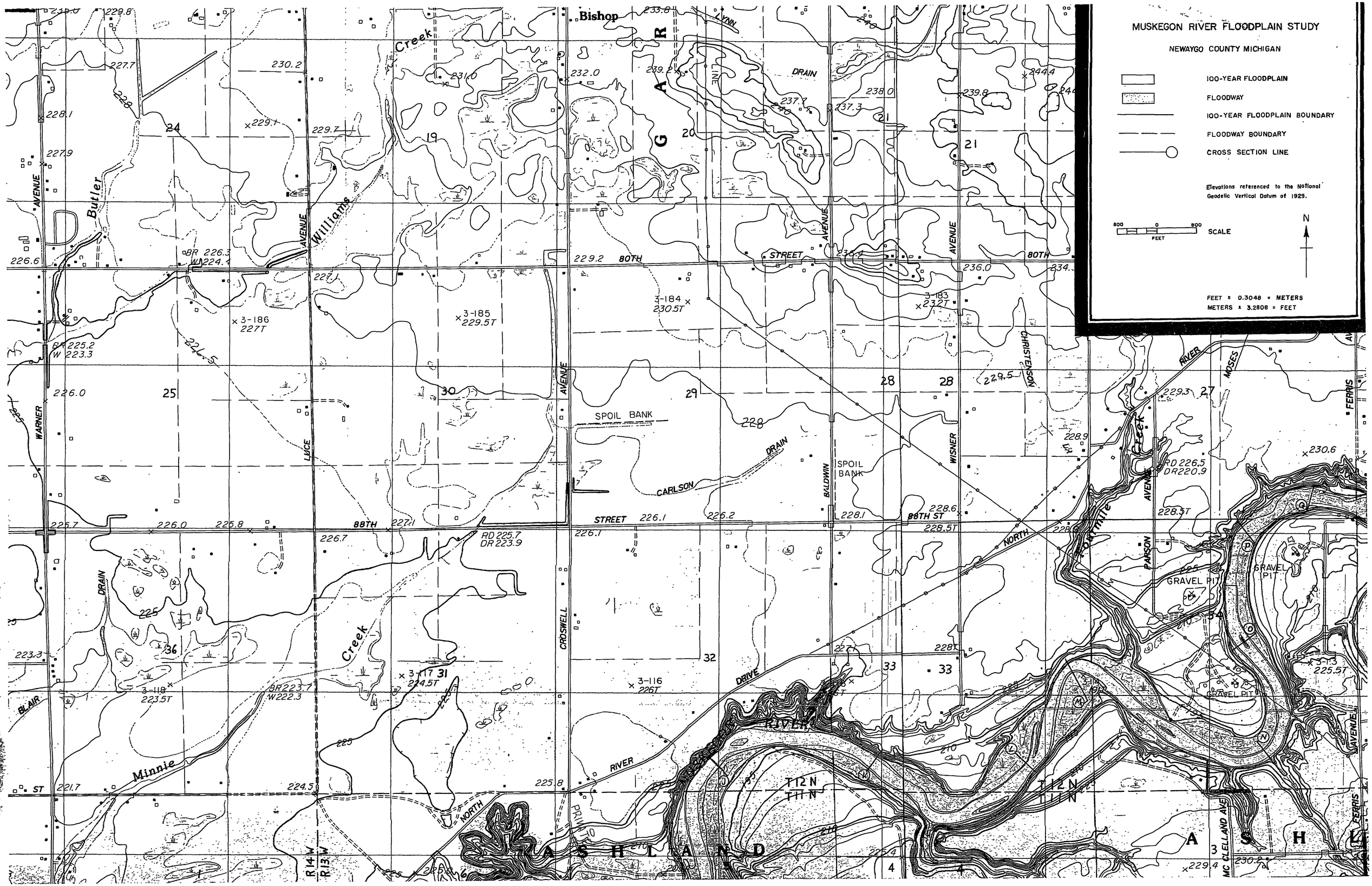
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

SURVEY DATA MAP
SHEET TITLE

AREA OR PARK: OLD WOMANS BEND SECTION 35, T12N, R13W
PROJECT: MUSKEGON RIVER SURVEY

PROJECT NO. 34-8613
SHEET 19 OF 19
PLAN NO. Y 62 A-2

BRUNING 40-105 32930


MUSKEGON RIVER FLOODPLAIN STUDY
NEWAYGO COUNTY MICHIGAN
100-YEAR FLOODPLAIN
FLOODWAY
100-YEAR FLOODPLAIN BOUNDARY
FLOODWAY BOUNDARY
CROSS SECTION LINE
Elevations referenced to the National Geodetic Vertical Datum of 1929.
800 0 800
FEET
SCALE
N
FEET x 0.3048 = METERS
METERS x 3.2808 = FEET
Bishop
Creek
Butler
Williams
AVENUE
80TH
STREET
88TH
88TH ST
CARLSON
DRAIN
SPOIL BANK
CROSWELL
WARNER
LUCE
BALDWIN
WISNER
CHRISTENSON
PARSON
MOSES
FERRIS
NORTH
DRIVE
RIVER
Minnie
BLAIR
GRAVEL PIT
MC CLELLAND AVE
T12N
T11N
R14W
R13W
A S H L A N D
A S H L

MUSKEGON RIVER FLOODPLAIN STUDY

NEWAYGO COUNTY MICHIGAN

100-YEAR FLOODPLAIN

FLOODWAY

100-YEAR FLOODPLAIN BOUNDAR

FLOODWAY BOUNDARY

CROSS SECTION LINE

Elevations referenced to the National Geodetic Vertical Datum of 1929.

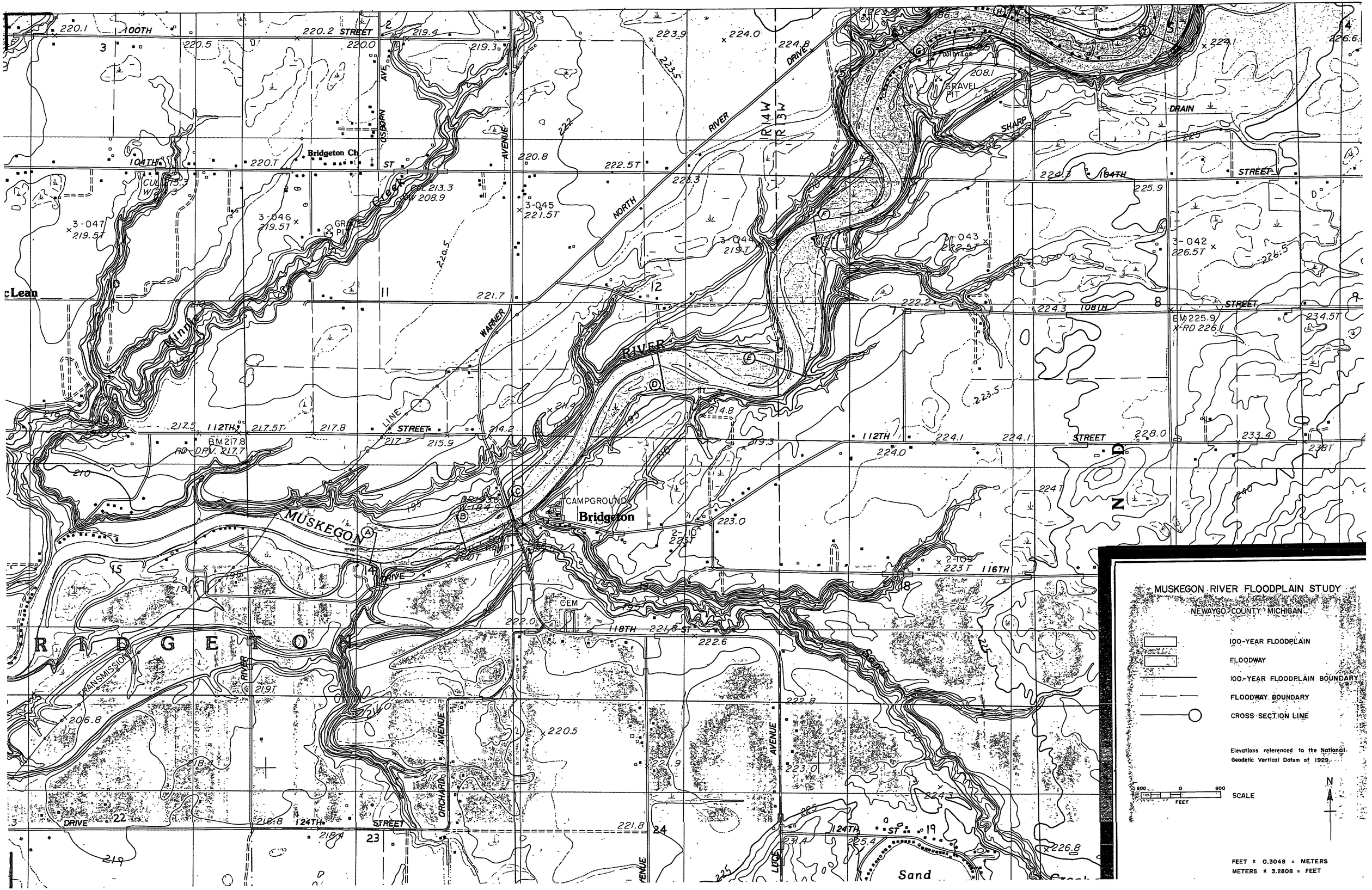
800 0 800 FEET SCALE

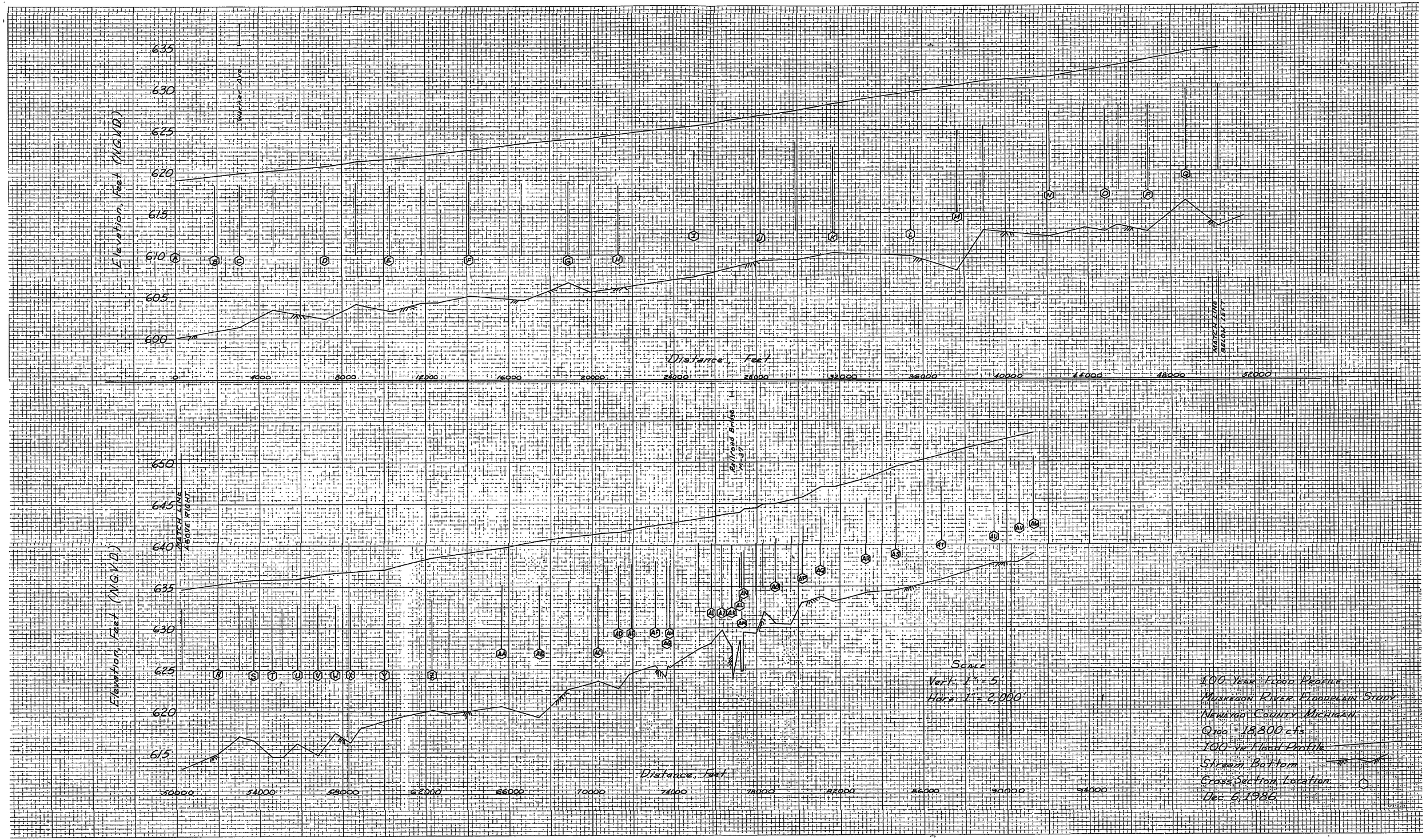
N

FEET X 0.3048 = METERS

METERS x 3.2808 = FEET

T.12 N.

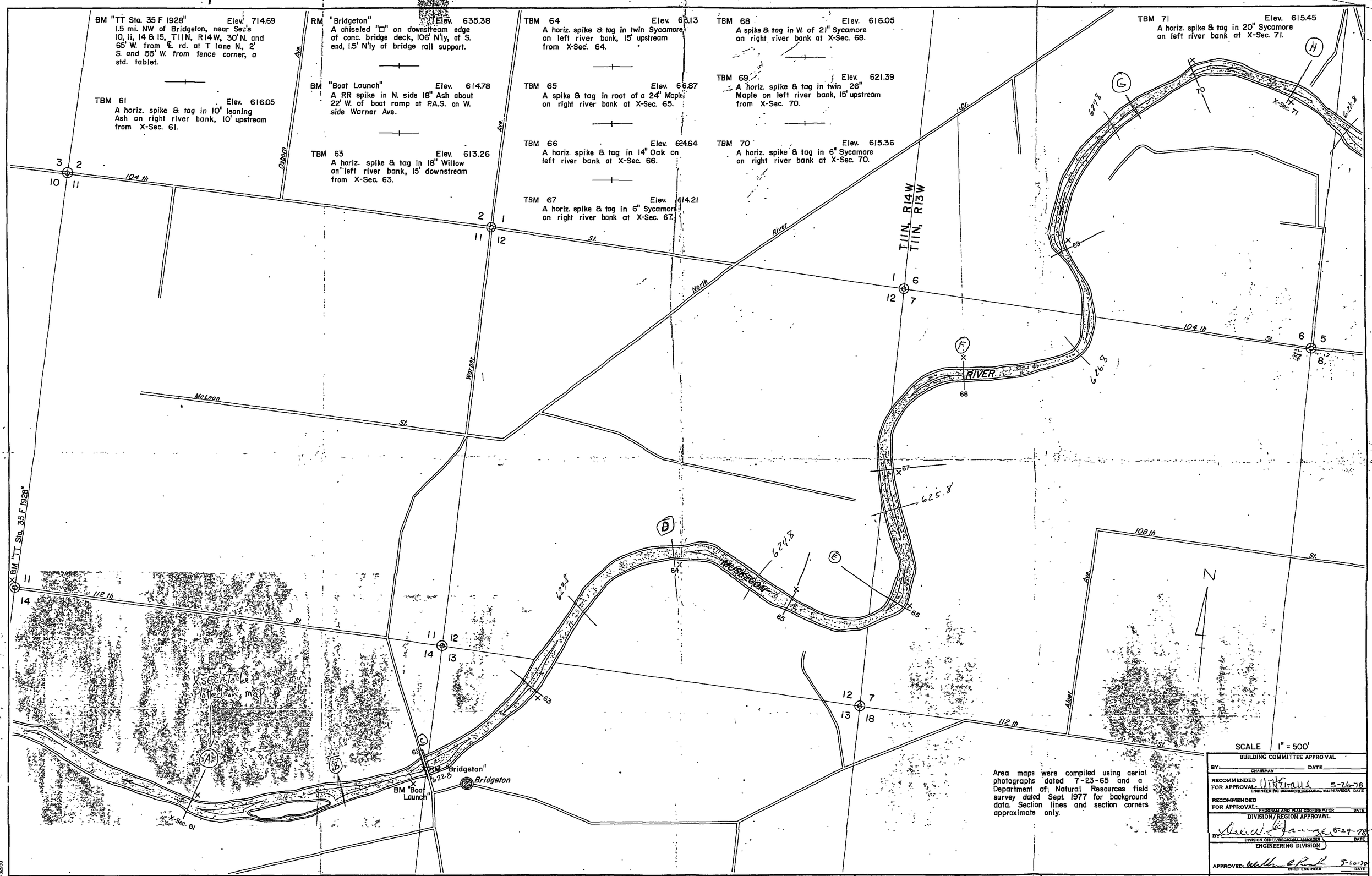

MUSKEGON RIVER FLOODPLAIN STUDY
NEWAYGO COUNTY MICHIGAN
100-YEAR FLOODPLAIN
FLOODWAY
100-YEAR FLOODPLAIN BOUNDARY
FLOODWAY BOUNDARY
CROSS SECTION LINE
Elevations referenced to the National Geodetic Vertical Datum of 1929.
SCALE
FEET
N
FEET × 0.3048 = METERS
METERS × 3.2808 = FEET
Bridgeton
Bridgeton Ch
CAMPGROUND
CEM
GRAVEL PIT
MUSKEGON
RIVER
NORTH
RIVER
DRIVE
WARNER
AVENUE
OSBORN
AVE
SHARP
DRAIN
104TH
108TH
112TH
116TH
118TH
124TH
STREET
ORCHARD
TRANSMISSION
LINE
Sand
R 14 W
R 13 W
100TH
STREET
Minnie
Creek
Lean



PRINTED IN U.S.A.

"PERFECT" CROSS SECTION
10 X 10 to ONE INCH
EUGENE DIETZGEN CO.

PRINTED IN U.S.A.



Area maps were compiled using aerial photographs dated 7-23-65 and a Department of Natural Resources field survey dated Sept. 1977 for background data. Section lines and section corners approximate only.

SCALE 1" = 500'

BUILDING COMMITTEE APPROVAL
BY: CHAIRMAN DATE
RECOMMENDED FOR APPROVAL: [signature] 5-26-78
ENGINEERING OR ARCHITECTURAL SUPERVISOR DATE
RECOMMENDED FOR APPROVAL: PROGRAM AND PLAN COORDINATOR DATE
DIVISION/REGION APPROVAL
BY: [signature] 5-29-78
DIVISION CHIEF/REGIONAL MANAGER DATE
ENGINEERING DIVISION
APPROVED: [signature] 5-30-78
CHIEF ENGINEER DATE

SURVEYED BY Alfred V. McLane, Registered Land Surveyor	5/26/78	DRAWN BY Gary W. Taylor	Oct. '77	NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS
DESIGNED BY		CHECKED BY		1.				3.			
	DATE		DATE	2.				4.			

MICHIGAN
DEPARTMENT OF NATURAL RESOURCES

AREA MAP
SHEET TITLE

AREA OR PARK NEWAYGO COUNTY
PROJECT MUSKEGON RIVER SURVEY

PROJECT NO. 34-8613
SHEET 1 OF 19
PLAN NO. Y 62 A-2

BRUNING 40-105 32930

TRIM | FOLD | A | B | C | D | E | F | G | H | J | FOLD | TRIM

1 2 3 4 5 6

ZONE X

ZONE X

ZONE X

ZONE X

ZONE X

ZONE X

ZONE X

ZONE X

ZONE X

ZONE AE

ZONE AE

ZONE AE

ZONE AE

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ZONE AE

ZONE

ZONE AE

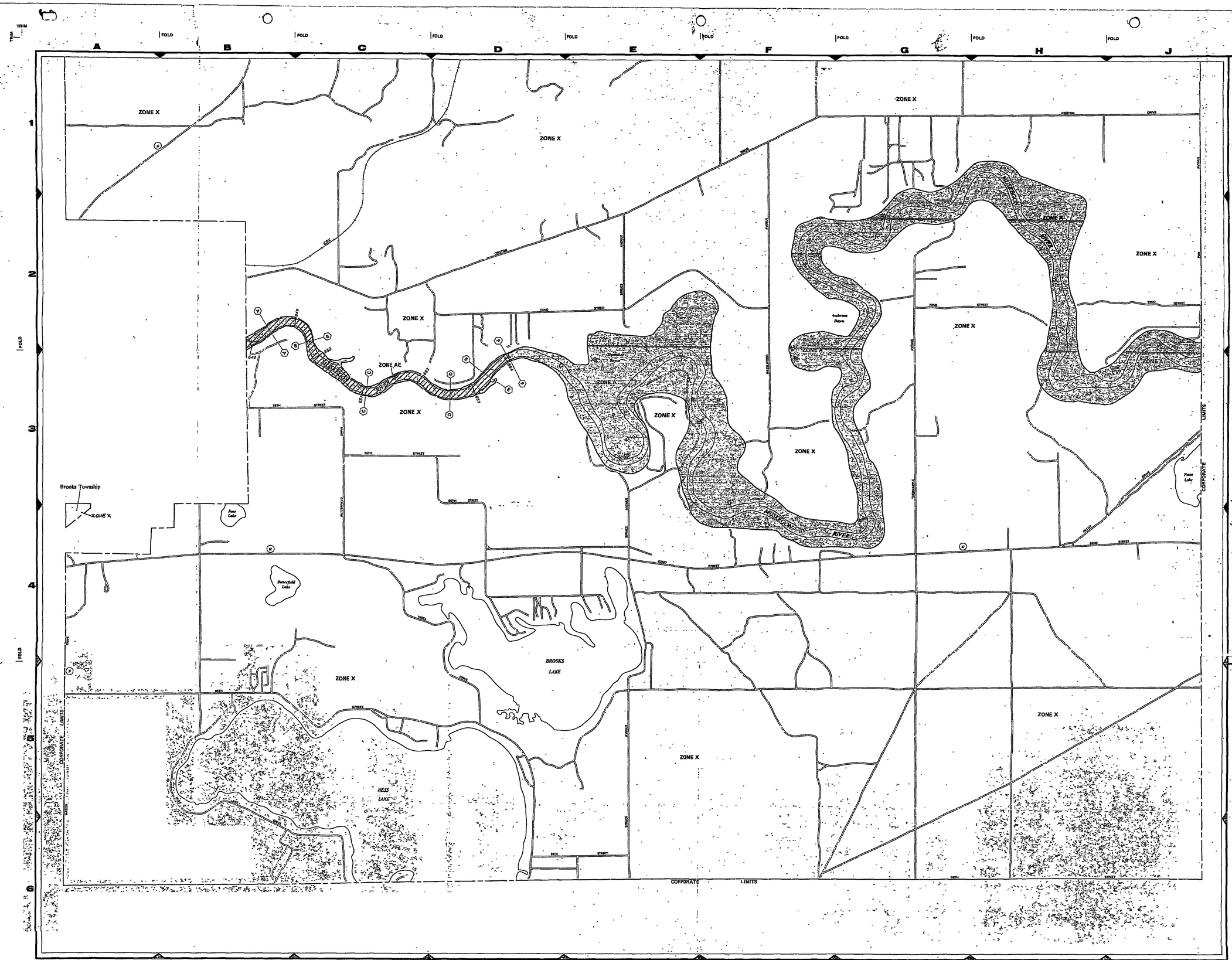
ZONE AE

ZONE AE

ZONE AE

ZONE AE

ZONE A


ZONE X
ZONE AE
ZONE A
ZONE A1
ZONE A2
ZONE A3
ZONE A4
ZONE A5
ZONE A6
ZONE A7
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ZONE A14
ZONE A15
ZONE A16
ZONE A17
ZONE A18
ZONE A19
ZONE A20
ZONE



1) COUNTY: Newaygo

2) STUDY NAME: Bridgeton, Ashland, Garfield and Brooks Twp

3) WATERCOURSE: Muskegon River

4) DOCUMENT TYPE: 100yr.



```
1*************************************************
 *  WATER SURFACE PROFILES                       *
 *  VERSION OF NOVEMBER 1976                     *
 *  UPDATED MAY 1984                             *
 *                                               *
*  RUN DATE          TIME                       *
 *************************************************
```


```
**************************************
*  U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER *
*  609 SECOND STREET, SUITE D        *
*  DAVIS, CALIFORNIA 95616           *
*  (916) 440-2105 (FTS) 448-2105     *
**************************************
```


Floodway Run

```
X      X  XXXXXXX   XXXXX                XXXXX
X      X  X         X     X            X     X
X      X  X         X                        X
XXXXXXXX  XXXX      X           XXXXX    XXXXX
X      X  X         X                  X
X      X  X         X     X            X
X      X  XXXXXXX   XXXXX              XXXXXXX
```

1


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

C
T1      FLOODPLAIN DELINEATION     USING 1986 HIGHWATER MARKS AS CALIBRATION
T2   CHANNEL XSEC FROM 1977 SURVEY     N INCREASED TO REFLECT MEANDER
T3      MUSKEGON RIVER  EXISITING COND      MODEL FROM 1978  1986 FLOW

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.       2.        0.        0.  0.000250      0.00       0.0   18800.   619.000     0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
    0.000     0.000    -1.000     0.000     0.000     1.350     0.000     0.000     0.000     0.000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT
  150.000   200.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

J5  IPRNT     NUMSEC                      ********REQUESTED SECTION NUMBERS********
    0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
```

NC	0.100	0.150	0.023	0.100	0.300	0.000	0.000	0.000	0.000	0.000
NH	7.000	0.100	22.000	0.023	242.000	0.100	298.000	0.035	447.000	0.050
NH	570.000	0.100	789.000	0.050	852.000	0.000	0.000	0.000	0.000	0.000
		XSEC 61								
X1	0.100	25.000	22.000	242.000	0.000	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	8.000	0.000	818.000	0.000	0.000	613.300	0.000
GR	624.100	0.000	613.200	22.000	606.100	47.000	603.700	63.000	600.000	106.000
GR	601.400	136.000	602.600	165.000	603.200	196.000	604.200	226.000	606.100	237.000
GR	609.600	242.000	610.300	252.000	613.900	262.000	614.800	298.000	616.300	326.000
GR	616.300	383.000	615.000	447.000	612.000	492.000	611.700	570.000	611.500	635.000
GR	611.200	685.000	611.000	735.000	612.200	789.000	623.500	830.000	629.400	852.000
NH	4.000	0.150	22.000	0.023	242.000	0.150	298.000	0.100	852.000	0.000
	SEC 61 MOVED US INVERT ADJ BY .94FT FLOOD FLOW SHIFTED FROM									
	ROB AS NOTED ON XSEC 61 TO APPROX AREA IN LOB FOR THIS XSEC									
X1	1920.000	0.000	0.000	0.000	2170.000	1740.000	1920.000	0.000	0.940	0.000
X3	10.000	0.000	0.000	22.000	0.000	763.000	0.000	0.000	613.300	0.000
NH	3.000	0.050	37.000	0.023	311.000	0.050	341.000	0.000	0.000	0.000
		XSEC 62								
X1	3050.000	20.000	37.000	311.000	1200.000	1200.000	1130.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	17.000	0.000	328.000	0.000	0.000	0.000	0.000
GR	635.400	0.000	629.100	4.000	615.670	25.000	608.600	37.000	607.000	40.000
GR	605.200	55.000	604.500	64.000	601.900	74.000	601.400	106.000	605.100	146.000
GR	606.500	163.000	604.300	170.000	603.500	173.000	605.200	199.000	605.400	241.000
GR	606.000	267.000	605.700	285.000	606.700	297.000	609.000	311.000	629.600	341.000
NH	3.000	0.017	37.000	0.023	311.000	0.017	341.000	0.000	0.000	0.000
	W EDGE OF BRIDGE DECK AT BRIDGETON 1976 HWM 615.7									
X1	3051.000	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	17.000	0.000	328.000	0.000	0.000	0.000	0.000
SB	0.900	1.250	2.500	1000.000	260.000	8.000	9000.000	1.430	604.500	604.500
X1	3100.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	635.400	638.000	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	17.000	0.000	328.000	0.000	0.000	0.000	0.000
NC	0.150	0.070	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	3101.000	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	17.000	0.000	328.000	0.000	0.000	0.000	0.000
NH	4.000	0.045	58.000	0.023	373.000	0.030	517.000	0.050	633.000	0.000
EI	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 63								
X1	4680.000	20.000	58.000	373.000	1500.000	1600.000	1579.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	617.800	0.000
GR	625.300	0.000	617.700	15.000	608.500	58.000	607.300	76.000	604.900	82.000
GR	603.500	102.000	603.900	129.000	603.800	172.000	604.000	205.000	605.000	248.000
GR	605.600	274.000	606.300	289.000	607.300	356.000	616.000	373.000	617.700	382.000
GR	617.800	404.000	614.500	435.000	614.600	517.000	616.000	605.000	625.300	633.000

NH	5.000	0.150	19.000	0.150	424.000	0.100	562.000	0.023	788.000	0.040
NH	819.000	0.000	0.000	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
	XSEC 64		XSEC CROSSES US OF OLD ROCK CRIBBING							
X1	7200.000	28.000	562.000	788.000	2200.000	2500.000	2520.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	619.600	0.000	0.000
GR	625.700	0.000	616.300	19.000	613.400	58.000	614.400	124.000	614.000	224.000
GR	615.400	314.000	613.600	336.000	614.200	371.000	617.100	424.000	619.600	499.000
GR	619.100	557.000	619.000	562.000	615.800	573.000	608.900	578.000	606.500	582.000
GR	604.000	584.000	602.300	611.000	603.100	638.000	602.600	667.000	602.500	695.000
GR	602.900	724.000	605.500	752.000	605.900	773.000	607.000	780.000	607.690	785.000
GR	610.400	788.000	616.500	801.000	625.700	819.000	0.000	0.000	0.000	0.000
NH	4.000	0.050	39.000	0.025	295.000	0.150	788.000	0.040	924.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 65		XSEC CROSSES 100FT US OF BOAT LAUNCH							
X1	8850.000	30.000	39.000	326.000	1400.000	1600.000	1650.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	619.800	0.000
GR	626.000	0.000	624.200	8.000	621.800	35.000	619.300	39.000	610.900	58.000
GR	608.040	69.000	605.100	95.000	604.200	140.000	604.700	175.000	604.900	210.000
GR	605.100	245.000	605.800	280.000	608.040	293.000	611.700	295.000	612.100	304.000
GR	619.100	317.000	619.800	326.000	619.500	338.000	616.400	365.000	613.500	413.000
GR	612.100	478.000	612.000	548.000	612.100	588.000	612.300	638.000	612.500	688.000
GR	612.500	738.000	612.400	788.000	613.800	843.000	617.300	906.000	626.000	924.000

1

NH	7.000	0.050	46.000	0.030	226.000	0.050	293.000	0.160	374.000	0.150
NH	564.000	0.080	1065.000	0.090	1244.000	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
	XSEC 66									
X1	10300.000	36.000	46.000	377.000	1500.000	700.000	1450.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	620.500	0.000
GR	626.500	0.000	620.600	29.000	612.500	38.000	611.100	46.000	608.200	50.000
GR	606.500	59.000	604.500	96.000	603.300	128.000	604.600	161.000	606.000	192.000
GR	607.100	210.000	607.800	225.000	609.300	226.000	610.200	241.000	610.000	249.000
GR	609.200	253.000	610.700	293.000	612.300	311.000	612.900	361.000	618.800	374.000
GR	620.600	377.000	618.900	385.000	618.600	443.000	616.800	529.000	611.500	564.000
GR	611.500	606.000	610.400	693.000	610.500	769.000	611.300	889.000	612.600	893.000
GR	612.700	1012.000	615.100	1065.000	615.500	1115.000	617.600	1165.000	620.400	1190.000
GR	626.500	1244.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.150	839.000	0.030	1059.000	0.150	1107.000	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
	XSEC 67									
X1	11800.000	25.000	816.000	1059.000	1600.000	1000.000	1500.000	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	626.700	0.000	620.500	108.000	618.700	155.000	613.700	255.000	613.500	355.000
GR	618.400	449.000	613.200	530.000	618.100	644.000	613.600	744.000	617.100	799.000
GR	619.800	813.000	619.600	816.000	612.500	825.000	612.100	839.000	608.730	842.000
GR	605.700	861.000	605.900	896.000	605.100	931.000	604.400	967.000	604.400	1002.000
GR	606.000	1037.000	608.730	1051.000	610.700	1059.000	617.400	1079.000	626.700	1107.000

ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	12600.000	0.000	0.000	0.000	800.000	800.000	800.000	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
NH	3.000	0.100	113.000	0.030	363.000	0.150	748.000	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
		XSEC 68								
X1	14100.000	25.000	113.000	382.000	900.000	1600.000	1500.000	0.000	0.000	0.000
GR	627.100	0.000	622.000	15.000	617.600	39.000	620.100	70.000	619.800	88.000
GR	614.200	97.000	611.800	113.000	609.140	125.000	608.000	164.000	607.400	191.000
GR	606.700	205.000	606.300	247.000	605.300	289.000	605.100	330.000	607.500	345.000
GR	608.800	359.000	612.200	363.000	614.700	376.000	618.400	382.000	619.200	435.000
GR	616.000	501.000	615.700	543.000	615.400	633.000	616.200	693.000	627.100	748.000
NH	3.000	0.150	922.000	0.022	1120.000	0.060	1143.000	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
		XSEC 69								
X1	16700.000	28.000	844.000	1120.000	300.000	1900.000	2600.000	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	627.600	0.000	618.800	35.000	616.900	133.000	615.200	230.000	614.100	323.000
GR	613.700	410.000	613.400	515.000	617.800	553.000	613.300	663.000	614.200	712.000
GR	617.800	785.000	621.800	844.000	620.300	868.000	619.800	902.000	618.900	909.000
GR	612.400	922.000	609.640	924.000	607.900	938.000	607.300	954.000	606.200	983.000
GR	604.600	1012.000	605.600	1041.000	607.200	1070.000	608.500	1074.000	609.640	1102.000
GR	613.800	1120.000	620.300	1131.000	627.600	1143.000	0.000	0.000	0.000	0.000

NC	0.040	0.060	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 1 FROM SUBDIVISION FILE F184 22 12								
X1	13990.000	24.000	257.000	570.000	1250.000	2500.000	2190.000	0.000	0.000	0.000
GR	633.400	0.000	629.500	30.000	628.200	106.000	619.400	130.000	617.400	180.000
GR	617.800	218.000	618.000	225.000	618.900	250.000	611.800	257.000	606.900	257.000
GR	607.500	300.000	608.100	325.000	607.900	350.000	606.900	375.000	606.800	475.000
GR	609.000	527.000	610.300	550.000	612.700	570.000	620.500	580.000	620.200	600.000
GR	618.700	625.000	619.300	640.000	623.700	660.000	630.000	677.000	0.000	0.000
NH	6.000	0.150	43.000	0.030	115.000	0.028	155.000	0.030	529.000	0.025
NH	703.000	0.150	756.000	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
		XSEC 70 THROUGH SUBDIV ON LEFT BANK CHANNEL INEFFECTIVE								
		1976 HSM ON BASEMENT WALL 619.8 HWM 800FT DS 619.98								
X1	19870.000	30.000	529.000	703.000	950.000	980.000	1000.000	0.000	0.000	0.000
GR	628.500	0.000	620.000	25.000	620.400	217.000	630.000	217.000	630.000	250.000
GR	620.400	250.000	621.500	306.000	621.500	306.100	621.500	306.200	621.500	306.300
GR	616.900	332.000	617.500	396.000	619.700	432.000	619.900	465.000	618.400	476.000
GR	619.800	499.000	619.300	503.000	613.800	519.000	612.400	529.000	608.700	558.000
GR	607.600	569.000	607.100	595.000	605.600	620.000	605.900	646.000	607.900	671.000
GR	610.500	697.000	612.800	703.000	614.200	713.000	621.400	735.000	628.500	756.000
NH	6.000	0.060	123.000	0.150	223.000	0.025	406.000	0.045	412.000	0.030
NH	603.000	0.100	800.000	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

XSEC 71 OLDER COTTAGES ON RT BANK SEAWALL PROTECTS RT BANK

X1	21370.000	27.000	223.000	412.000	1100.000	1600.000	1500.000	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	628.800	0.000	622.900	18.000	615.900	38.000	618.300	61.000	619.200	83.000
GR	619.300	101.000	613.900	123.000	614.400	153.000	611.200	205.000	612.400	223.000
GR	610.500	231.000	609.200	247.000	609.100	269.000	608.500	285.000	607.000	325.000
GR	606.200	366.000	606.600	406.000	619.800	412.000	617.700	472.000	616.000	542.000
GR	615.200	588.000	616.800	603.000	615.000	618.000	615.300	673.000	615.400	724.000
GR	617.900	756.000	628.800	800.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	7.000	0.100	27.000	0.150	125.000	0.150	464.000	0.030	663.000	0.050
NH	829.000	0.030	891.000	0.100	929.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 72

X1	24985.000	28.000	441.000	663.000	3700.000	3600.000	3615.000	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	629.900	0.000	620.800	27.000	616.000	56.000	614.700	125.000	615.100	191.000
GR	615.400	263.000	616.600	344.000	617.400	402.000	620.300	441.000	619.700	456.000
GR	615.000	459.000	613.500	464.000	609.200	488.000	607.500	500.000	608.600	531.000
GR	608.600	561.000	609.400	592.000	609.800	622.000	609.800	653.000	614.700	663.000
GR	614.900	690.000	619.200	705.000	619.200	709.000	617.100	744.000	618.800	772.000
GR	619.700	829.000	622.400	891.000	629.900	929.000	0.000	0.000	0.000	0.000

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NH	4.000	0.040	23.000	0.150	425.000	0.030	658.000	0.080	688.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 73

X1	28235.000	20.000	371.000	658.000	2300.000	3300.000	3200.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	623.500	0.000	0.000
GR	630.700	0.000	623.000	23.000	620.000	38.000	617.800	148.000	619.000	203.000
GR	620.700	242.000	622.300	309.000	623.500	371.000	619.300	402.000	619.500	425.000
GR	612.400	436.000	610.400	445.000	610.200	485.000	610.200	526.000	609.600	566.000
GR	609.300	608.000	612.500	648.000	616.700	658.000	619.100	665.000	630.700	688.000
NH	3.000	0.150	51.000	0.030	275.000	0.150	536.000	0.000	0.000	0.000
ET	0.000	0.000	5.100	0.000	45.000	490.000	0.000	0.000	0.000	0.000

XSEC 74 IN LINE WITH E SIDE OF COTTAGE ON TOP OF LFT BANK JUST DS OF POWERLINE

X1	29860.000	16.000	51.000	275.000	1500.000	1700.000	1625.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	622.800	0.000
GR	631.400	0.000	616.200	51.000	613.400	53.000	610.100	65.000	609.300	104.000
GR	610.100	143.000	610.600	183.000	611.300	222.000	612.300	235.000	611.900	256.000
GR	615.200	275.000	620.600	283.000	622.800	313.000	620.400	375.000	622.800	484.000
GR	631.400	536.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.150	220.000	0.100	279.000	0.030	545.000	0.080	633.000	0.000
ET	0.000	0.000	5.100	0.000	50.000	600.000	0.000	0.000	0.000	0.000

XSEC 75

X1	31660.000	23.000	279.000	545.000	1700.000	1800.000	1800.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	623.500	0.000	0.000
GR	632.100	0.000	623.900	49.000	621.600	74.000	621.500	112.000	622.100	178.000
GR	623.200	213.000	623.500	220.000	623.600	276.000	623.300	279.000	615.700	289.000

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 GR    614.100    292.000    610.600    300.000    611.200    328.000    610.200    376.000    611.100    420.000
 GR    612.000    477.000    612.500    529.000    614.100    535.000    617.100    545.000    620.200    576.000
 GR    622.300    585.000    624.200    609.000    632.100    633.000      0.000      0.000      0.000      0.000

 NH      5.000      0.155     33.000      0.035    238.000      0.150    383.000      0.120    785.000      0.060
 NH    819.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
 ET      0.000      7.100      5.100      0.000     20.000    790.000     20.000    790.000      0.000      0.000
                XSEC 75
 X1  35425.000     21.000     33.000    289.000   4300.000   3600.000   3760.000      0.000      0.000      0.000
 GR    633.200      0.000    626.400     20.000    621.200     33.000    615.100     38.000    611.200     51.000
 GR    610.300     90.000    609.800    123.000    611.000    157.000    610.800    180.000    615.200    207.000
 GR    617.000    217.000    621.600    238.000    625.300    289.000    625.200    316.000    620.400    383.000
 GR    619.800    482.000    620.200    583.000    620.100    683.000    620.900    760.000    621.900    785.000
 GR    633.200    819.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000

 NH      5.000      0.160     29.000      0.150    570.000      0.150    849.000      0.035   1017.000      0.150
 NH   1047.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
 ET      0.000      7.100      5.100      0.000     70.000   1025.000     20.000   1035.000      0.000      0.000
                XSEC 77
 X1  37570.000     31.000    849.000   1017.000   1900.000   2100.000   2150.000      0.000      0.000      0.000
 GR    633.800      0.000    624.300     19.000    620.600     29.000    619.300    128.000    619.000    224.000
 GR    619.100    314.000    619.300    391.000    621.400    419.000    619.700    468.000    620.200    570.000
 GR    621.600    607.000    625.100    657.000    625.800    712.000    626.700    761.000    621.900    792.000
 GR    621.900    816.000    625.300    823.000    625.200    839.000    624.500    844.000    622.700    849.000
 GR    618.200    856.000    615.800    864.000    613.800    886.000    611.300    916.000    608.000    944.000
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 GR    610.600    977.000    615.400   1009.000    619.100   1014.000    623.700   1017.000    630.100   1033.000
 GR    633.800   1047.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000

 NH      5.000      0.100     32.000      0.030    332.000      0.150    424.000      0.150    488.000      0.070
 NH    779.000      0.000      0.000      0.000      3.000      0.000      0.000      0.000      0.000      0.000
 ET      0.000      7.100      5.100      0.000     35.000    750.000     20.000    760.000      0.000      0.000
          XSEC 78  800FT DS OF ISLAND, POWERLINE CROSSING AND BOAT LAUNCH
                WEST END OF OLD GRAVEL OPERATION
 X1  38970.000     22.000     32.000    332.000    700.000   1300.000   1300.000      0.000      0.000      0.000
 X3      0.000     10.000      0.000      0.000      0.000      0.000      0.000      0.000    624.800      0.000
 GR    634.200      0.000    626.800     24.000    621.800     32.000    617.700     50.000    616.250     52.000
 GR    614.900     64.000    612.900    110.000    614.600    173.000    613.700    258.000    614.300    311.000
 GR    622.500    322.000    624.800    332.000    624.100    365.000    623.300    382.000    622.900    424.000
 GR    621.100    449.000    620.600    488.000    620.400    538.000    620.000    638.000    620.600    743.000
 GR    625.000    760.000    634.300    779.000      0.000      0.000      0.000      0.000      0.000      0.000

 NH      4.000      0.150     25.000      0.020    186.000      0.150    258.000      0.080    531.000      0.000
                XSEC 1
 X1  42170.000     27.000     25.000    186.000   3600.000   3000.000   3200.000      0.000      0.000      0.000
 X3     10.000      0.000      0.000     15.000      0.000    510.000      0.000      0.000    628.000      0.000
 GR    634.000      0.000    626.900     14.000    623.300     22.000    622.400     25.000    619.100     26.000
 GR    616.400     31.000    613.800     40.000    612.800     63.000    612.100     87.000    612.800     91.000
 GR    613.000    135.000    613.500    161.000    614.900    163.000    616.300    174.000    617.600    179.000
 GR    625.900    196.000    626.800    191.000    624.600    201.000    627.900    230.000    627.900    258.000
 GR    621.800    324.000    620.900    364.000    623.600    379.000    622.600    425.000    621.000    451.000
 GR    626.000    515.000    634.000    531.000      0.000      0.000      0.000      0.000      0.000      0.000
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NH	6.000	0.090	19.000	0.075	58.000	0.025	223.000	0.070	308.000	0.150
NH	373.000	0.080	479.000	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
		XSEC 2								
X1	40770.000	26.000	58.000	223.000	1200.000	1800.000	1600.000	0.000	0.000	0.000
GR	634.000	0.000	628.600	19.000	626.000	35.000	623.000	55.000	622.300	58.000
GR	619.700	59.000	616.800	62.000	613.800	75.000	613.900	105.000	613.800	133.000
GR	618.100	159.000	613.400	185.000	614.400	207.000	616.800	219.000	618.300	223.000
GR	618.300	250.000	619.900	258.000	619.200	266.000	619.300	288.000	619.500	295.000
GR	624.700	308.000	623.900	347.000	625.100	373.000	624.300	409.000	626.600	459.000
GR	639.100	479.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.150	12.000	0.150	214.000	0.035	317.000	0.065	357.000	0.035
NH	533.000	0.150	702.000	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
		XSEC 3 SECTION THRU ISLAND NE OF OLD GRAVEL OPERATION								
X1	44820.000	29.000	214.000	533.000	1100.000	1100.000	1050.000	0.000	0.000	0.000
GR	635.000	0.000	629.000	12.000	626.200	72.000	624.900	94.000	622.300	107.000
GR	622.900	145.000	623.300	186.000	624.400	199.000	624.700	214.000	618.000	226.000
GR	617.000	241.000	617.900	258.000	616.900	292.000	617.900	313.000	622.400	317.000
GR	624.400	342.000	622.000	357.000	616.900	361.000	615.100	402.000	613.900	430.000
GR	613.900	458.000	612.700	487.000	613.000	507.000	616.900	513.000	625.300	533.000
GR	627.500	554.000	623.300	660.000	628.100	680.000	635.000	702.000	0.000	0.000

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NH	4.000	0.150	22.000	0.150	252.000	0.035	478.000	0.150	626.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 4 OLD WOOD PILING ALONG EACH BANK								
X1	45470.000	28.000	252.000	478.000	550.000	650.000	650.000	0.000	0.000	0.000
GR	635.400	0.000	627.200	22.000	625.100	52.000	625.500	83.000	625.500	136.000
GR	627.800	157.000	625.300	180.000	626.700	223.000	628.200	248.000	627.700	252.000
GR	625.700	256.000	619.300	262.000	616.300	269.000	615.500	274.000	614.300	280.000
GR	615.000	312.000	615.600	341.000	614.700	371.000	614.800	395.000	615.400	417.000
GR	615.700	442.000	613.400	460.000	617.400	470.000	624.500	478.000	627.100	487.000
GR	628.600	508.000	632.100	558.000	640.000	626.000	0.000	0.000	0.000	0.000
NH	5.000	0.150	23.000	0.100	281.000	0.035	465.000	0.070	473.000	0.060
NH	497.000	0.000	0.000	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
		XSEC 5 HILL AT RIGHT BANK IS ERODING								
X1	46870.000	24.000	281.000	465.000	1280.000	1575.000	1300.000	0.000	0.000	0.000
GR	642.500	0.000	631.000	23.000	626.000	56.000	627.400	89.000	624.500	131.000
GR	626.300	179.000	629.300	237.000	628.100	250.000	627.700	259.000	623.100	270.000
GR	622.100	281.000	618.400	284.000	616.800	299.000	616.300	319.000	615.900	347.000
GR	615.300	370.000	613.900	395.000	612.600	421.000	615.600	447.000	618.200	461.000
GR	621.300	465.000	622.600	473.000	626.700	479.000	636.000	497.000	0.000	0.000
NH	4.000	0.100	36.000	0.030	91.000	0.036	352.000	0.100	458.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 6								
X1	48720.000	20.000	91.000	352.000	1500.000	2000.000	1850.000	0.000	0.000	0.000

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 GR    637.000      0.000    624.900     36.000    626.500     72.000    626.800     91.000    618.000    104.000
 GR    618.000    104.000    616.800    116.000    617.000    148.000    616.700    198.000    616.400    248.000
 GR    616.800    298.000    617.500    348.000    618.300    350.000    620.600    352.000    619.700    356.000
 GR    618.700    373.000    618.200    386.000    618.800    407.000    628.500    434.000    637.000    458.000

 NH      4.000      0.150     20.000      0.030    532.000      0.036    691.000      0.050    738.000      0.000
 ET      0.000      0.000      1.400      0.000      0.000      0.000      0.000      0.000      0.000      0.000
                XSEC 7
 X1  50220.000     23.000    532.000    691.000   1300.000   1300.000   1500.000      0.000      0.000      0.000
 GR    636.500      0.000    626.900     20.000    627.600    158.000    628.000    233.000    624.200    282.000
 GR    627.400    347.000    626.500    451.000    624.900    479.000    626.600    525.000    626.300    532.000
 GR    621.100    542.000    619.500    548.000    618.600    555.000    617.500    558.000    616.000    581.000
 GR    614.200    605.000    613.200    628.000    613.400    652.000    616.000    675.000    619.600    688.000
 GR    623.100    691.000    627.700    707.000    636.500    738.000      0.000      0.000      0.000      0.000

 NH      3.000      0.020    124.000      0.035    312.000      0.150   1290.000      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
          XSEC 8   VICS CAMPING ON RIGHT BANK  CAMPGROUND IS ON A HILL
                WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.
 X1  51945.000     27.000    124.000    312.000   1300.000   1500.000   1725.000      0.000      0.000      0.000
 GR    637.100      0.000    634.700     32.000    637.200    111.000    637.600    124.000    625.400    138.000
 GR    620.200    149.000    617.600    158.300    614.900    181.000    615.700    201.000    617.700    222.000
 GR    617.700    247.000    618.300    254.000    619.300    271.000    620.200    290.000    622.100    297.000
 GR    623.300    303.000    629.400    312.000    630.000    320.000    625.400    367.000    627.200    392.000
 GR    627.000    411.000    628.300    425.000    629.500    454.000    628.600    560.000    629.000    650.000
 GR    629.000   1250.000    639.000   1290.000      0.000      0.000      0.000      0.000      0.000      0.000

 NH      6.000      0.120    860.000      0.025    887.000      0.025   1032.000      0.100   1084.000      0.025
 NH   1192.000      0.125   1700.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
 ET      0.000      7.100      5.100      0.000    350.000   1650.000    350.000   1700.000      0.000      0.000
                XSEC 9  SECTION THROUGH ISLAND US OF VICS
             XSEC BENT 30DEG LFT AT 887  20DEG RT AT STA 1208
 X1  53000.000     39.000    887.000   1192.000   1200.000    500.000   1055.000      0.000      0.000      0.000
 X2      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000     15.000
 GR    638.500      0.000    628.500     50.000    625.000    100.000    624.700    650.000    624.900    705.000
 GR    624.900    728.000    626.700    760.000    627.500    815.000    629.000    860.000    626.200    872.000
 GR    625.000    887.000    620.400    892.000    617.400    898.000    617.700    922.000    618.000    947.000
 GR    618.100    974.000    617.700   1001.000    620.400   1025.000    623.600   1032.000    624.400   1035.000
 GR    623.600   1061.000    624.300   1078.000    625.200   1084.000    620.400   1093.000    617.900   1101.000
 GR    617.700   1122.000    618.300   1143.000    617.500   1165.000    617.100   1185.000    619.600   1190.000
 GR    623.000   1192.000    624.500   1203.000    629.600   1208.000    629.000   1226.000    628.200   1240.000
 GR    629.900   1290.000    629.100   1350.000    629.100   1650.000    638.500   1700.000      0.000      0.000

 NH      6.000      0.120   1340.000      0.060   1420.000     10.000   1480.000      0.060   1557.000      0.025
 NH   1730.000      0.125   1740.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
 ET      0.000      7.100      5.100      0.000    300.000   1730.000    300.000   1740.000      0.000      0.000
             XSEC 10  REDWOOD COTTAGE ON LEFT BANK  1976 HWM 630.5
             1986 HWM 638     XSEC BENT 45DEG LEFT AT STA 1360
 X1  53700.000     24.000   1557.000   1730.000    400.000    750.000    700.000      0.000      0.000      0.000
 X2      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000     15.000
 GR    639.000      0.000    628.500     50.000    625.000    100.000    625.000   1340.000    628.300   1360.000
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GR	627.200	1377.000	628.700	1420.000	628.800	1480.000	629.000	1500.000	629.200	1531.000
GR	627.400	1545.000	626.800	1550.000	626.200	1557.000	620.600	1563.000	617.900	1567.000
GR	616.600	1600.000	617.000	1624.000	617.600	1662.000	617.800	1688.000	618.100	1717.000
GR	620.700	1725.000	629.200	1730.000	632.100	1733.000	639.000	1740.000	0.000	0.000
NH	7.000	0.200	1399.000	0.050	1784.000	0.025	1957.000	10.000	1998.000	0.025
NH	2062.000	0.030	2221.000	0.040	2250.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	7.100	5.100	0.000	770.000	2250.000	780.000	2250.000	0.000	0.000
		XSEC 10A NEAR WHITE COTTAGE(BRONKEMA) 1976HWM 630.9 IN GARAGE								
		XSEC SENT 5DEG RT AT STA 139.9 RESTRICTED FOR HIGH GROUND AT								
		XSEC 11 US 1986 HWM 638								
X1	54600.000	35.000	2062.000	2221.000	500.000	1000.000	900.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	639.000	0.000	628.500	50.000	625.000	449.000	623.000	649.000	624.000	949.000
GR	623.000	1049.000	627.100	1352.000	628.200	1399.000	629.300	1508.000	626.700	1597.000
GR	630.100	1644.000	630.500	1755.000	628.100	1784.000	629.900	1846.000	628.500	1888.000
GR	628.600	1917.000	628.100	1957.000	629.600	1966.000	630.400	1998.000	629.800	2041.000
GR	629.100	2060.000	628.700	2062.000	625.300	2068.000	624.500	2074.000	621.000	2079.000
GR	620.500	2099.000	619.700	2119.000	618.200	2123.000	616.900	2145.000	615.300	2167.000
GR	614.500	2190.000	616.300	2215.000	621.000	2221.000	632.100	2238.000	639.000	2250.000
NH	6.000	0.013	600.000	0.025	700.000	10.000	750.000	0.025	817.000	0.030
NH	961.000	0.040	978.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 10B LOB IS FELCH ROAD								
X1	55080.000	21.000	817.000	961.000	250.000	550.000	480.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	640.000	0.000	633.100	100.000	631.300	200.000	631.600	300.000	631.400	400.000
GR	631.100	500.000	631.100	600.000	629.900	700.000	629.300	750.000	628.700	800.000
GR	625.300	806.000	624.500	812.000	621.000	817.000	619.700	857.000	616.900	885.000

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GR	615.300	907.000	614.500	930.000	616.300	955.000	621.300	961.000	632.100	978.000
GR	639.000	990.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.029	1169.000	0.080	1546.000	10.000	1651.000	0.080	1946.000	0.100
NH	2105.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 11 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD COMENS BEND								
X1	55900.000	23.000	1000.000	1169.000	150.000	450.000	720.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	0.000	0.000	1900.000	0.000	0.000	0.000	0.000
GR	627.700	1000.000	623.000	1014.000	621.400	1015.000	619.400	1026.000	618.800	1039.000
GR	617.000	1051.000	616.800	1075.000	616.200	1100.000	617.000	1125.000	618.400	1148.000
GR	621.400	1154.000	628.500	1169.000	630.100	1172.000	629.800	1185.000	630.200	1237.000
GR	629.500	1320.000	630.100	1454.000	630.700	1546.000	630.800	1651.000	629.700	1819.000
GR	629.600	1946.000	628.200	2070.000	640.000	2105.000	0.000	0.000	0.000	0.000
NH	6.000	0.070	22.000	0.035	220.000	0.080	457.000	10.000	560.000	0.080
NH	958.000	0.000	1592.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	7.100	5.100	0.000	0.000	1610.000	0.000	1630.000	0.000	0.000
		XSEC 12								
X1	56800.000	31.000	22.000	222.000	1200.000	50.000	1000.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	640.000	0.000	629.300	10.000	621.700	22.000	619.100	29.000	617.800	53.000

GR	614.600	81.000	617.100	107.000	619.100	131.000	620.300	141.000	621.600	147.000
GR	622.800	152.000	624.300	171.000	626.700	187.000	630.000	222.000	629.900	245.000
GR	628.800	350.000	630.100	457.000	630.700	560.000	630.600	660.000	629.900	758.000
GR	629.600	865.000	629.300	958.000	630.100	1010.000	629.500	1093.000	630.100	1227.000
GR	630.700	1319.000	630.800	1424.000	629.700	1592.000	629.600	1719.000	628.200	1843.000
GR	640.000	1878.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	10.000	0.070	30.000	0.045	857.000	0.030	987.000	0.080	1061.000	0.030
NH	1175.000	0.055	1189.000	10.000	1245.000	0.055	1606.000	10.000	1711.000	0.075
NH	2165.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	7.100	5.100	0.000	0.000	1880.000	0.000	1910.000	0.000	0.000
	XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD HOKENS BEND									
	1976 HWM 631.9									
X1	57650.000	32.000	857.000	1180.000	500.000	50.000	850.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	640.000	0.000	630.000	30.000	629.200	845.000	622.000	857.000	620.100	869.000
GR	619.800	879.000	618.500	914.000	621.900	968.000	622.700	987.000	627.000	991.000
GR	625.500	1007.000	627.300	1014.000	627.300	1045.000	628.000	1054.000	624.400	1061.000
GR	623.500	1087.000	622.000	1117.000	619.600	1144.000	617.400	1168.000	621.900	1175.000
GR	626.500	1180.000	629.700	1189.000	629.700	1245.000	630.200	1297.000	629.500	1380.000
GR	630.100	1514.000	630.700	1606.000	630.800	1711.000	629.700	1879.000	629.600	2006.000
GR	628.200	2130.000	640.000	2165.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.070	50.000	0.048	1106.000	0.036	1285.000	0.150	1300.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 14 XSEC BENT 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB									
X1	58350.000	20.000	1106.000	1285.000	500.000	400.000	700.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	640.500	0.000	633.000	50.000	630.100	100.000	628.600	400.000	630.300	731.000
GR	631.100	918.000	630.700	1077.000	630.500	1106.000	623.300	1125.000	621.600	1126.000
GR	616.400	1138.000	616.300	1158.000	617.500	1185.000	619.500	1212.000	619.900	1243.000
GR	619.900	1269.000	620.900	1277.000	622.400	1282.000	629.500	1285.000	640.500	1300.000

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NH	4.000	0.060	1150.000	0.034	1389.000	0.100	1513.000	0.100	1550.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 15									
X1	58900.000	21.000	1150.000	1389.000	450.000	700.000	550.000	0.000	0.000	0.000
GR	640.600	0.000	633.000	50.000	632.000	100.000	632.200	1130.000	632.000	1143.000
GR	631.800	1147.000	631.500	1150.000	627.000	1153.000	622.700	1162.000	618.400	1183.000
GR	622.100	1201.000	621.700	1225.000	620.900	1257.000	618.700	1289.000	618.100	1317.000
GR	618.000	1342.000	619.600	1367.000	629.000	1389.000	629.000	1447.000	631.300	1513.000
GR	640.600	1550.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.120	32.000	0.040	44.000	0.035	200.000	0.120	800.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 16									
X1	60000.000	17.000	44.000	200.000	1000.000	700.000	1100.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	641.400	0.000	631.000	32.000	630.500	36.000	628.800	38.000	628.000	44.000
GR	623.200	47.000	620.800	55.000	618.900	79.000	619.100	103.000	619.400	129.000
GR	620.700	154.000	621.200	168.000	623.300	175.000	626.500	187.000	632.600	200.000

GR	633.100	750.000	641.400	800.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.093	144.000	0.028	422.000	0.089	543.000	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
		XSEC 17	SUBDIVISION ON LEFT BANK							
X1	62250.000	28.000	144.000	422.000	2400.000	1700.000	2225.000	0.000	0.000	0.000
GR	642.800	0.000	638.600	26.000	632.600	88.000	631.600	113.000	632.500	125.000
GR	632.900	144.000	630.900	153.000	625.400	159.000	624.200	161.000	622.000	173.000
GR	622.100	181.000	623.600	193.000	622.100	243.000	620.600	280.000	620.200	313.000
GR	620.700	350.000	621.800	365.000	624.300	384.000	625.000	394.000	624.200	399.000
GR	629.100	422.000	630.300	424.000	629.700	435.000	629.500	468.000	627.800	492.000
GR	629.000	518.000	637.300	534.000	641.600	543.000	0.000	0.000	0.000	0.000
NH	3.000	0.089	32.000	0.028	256.000	0.110	448.000	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	63120.000	22.000	32.000	256.000	970.000	970.000	970.000	0.000	0.000	0.000
GR	643.800	0.000	638.500	14.000	631.400	30.000	630.400	32.000	624.700	34.000
GR	623.000	39.000	619.700	50.000	619.800	82.000	621.500	117.000	621.800	152.000
GR	623.400	187.000	624.100	194.000	624.900	227.000	626.700	235.000	625.400	245.000
GR	625.800	251.000	633.100	256.000	634.000	265.000	633.700	298.000	633.400	322.000
GR	632.300	372.000	643.800	448.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.074	175.000	0.110	216.000	0.028	421.000	0.089	485.000	0.000
X1	65620.000	27.000	216.000	421.000	1900.000	1900.000	1900.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	20.000	0.000	470.000	0.000	0.000	0.000	0.000
GR	642.200	0.000	631.500	53.000	632.000	98.000	634.500	153.000	635.700	175.000
GR	634.000	196.000	633.000	205.000	629.800	216.000	626.100	219.000	624.900	230.000
GR	623.100	238.000	622.500	261.000	623.400	290.000	623.100	307.000	621.600	333.000
GR	620.700	363.000	623.000	397.000	625.200	408.000	628.300	421.000	630.100	425.000
GR	631.000	431.000	631.400	442.000	630.900	455.000	631.800	462.000	634.200	474.000
GR	637.700	479.000	642.200	485.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	4.000	0.074	10.000	0.030	59.000	0.028	295.000	0.110	455.000	0.000
		XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK								
X1	67420.000	21.000	59.000	295.000	2400.000	2500.000	2500.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	10.000	0.000	420.000	0.000	0.000	0.000	0.000
GR	642.900	0.000	638.600	10.000	634.000	20.000	633.200	32.000	632.500	54.000
GR	631.800	59.000	627.800	62.000	624.500	73.000	623.600	86.000	621.000	100.000
GR	619.300	129.000	620.900	154.000	623.200	194.000	624.000	218.000	626.100	267.000
GR	627.700	281.000	633.700	295.000	636.100	299.000	633.000	345.000	634.900	415.000
GR	642.900	455.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.063	270.000	0.028	518.000	0.074	575.000	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
		XSEC 21 JS OF GREEN COTTAGE ON LEFT BANK.								
X1	68970.000	25.000	270.000	518.000	1400.000	1700.000	1550.000	0.000	0.000	0.000
GR	643.500	0.000	640.700	10.000	637.400	124.000	636.700	212.000	635.500	246.000
GR	633.700	255.000	631.500	270.000	625.500	277.000	626.300	293.000	625.100	303.000
GR	625.600	320.000	624.900	336.000	623.300	346.000	622.700	363.000	623.900	385.000
GR	623.500	421.000	623.000	429.000	623.000	450.000	624.200	481.000	625.800	499.000
GR	626.600	505.000	628.300	518.000	633.700	529.000	636.400	550.000	643.500	575.000

NH	3.000	0.037	126.000	0.028	408.000	0.037	426.000	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
		XSEC 22 BELOW POWER LINE CROSSING N VALUES ARE ATYPICAL								
X1	70300.000	25.000	126.000	408.000	1300.000	1300.000	1330.000	0.000	0.000	0.000
GR	644.400	0.000	640.000	15.000	635.000	24.000	631.600	40.000	632.700	54.000
GR	631.200	73.000	634.100	113.000	634.200	123.000	633.300	126.000	631.700	136.000
GR	625.700	144.000	624.400	160.000	624.500	183.000	623.700	194.000	625.300	214.000
GR	626.400	266.000	625.900	300.000	624.100	307.000	624.100	336.000	624.400	359.000
GR	626.200	383.000	628.600	389.000	632.300	408.000	639.400	417.000	644.400	426.000
NH	4.000	0.089	30.000	0.033	98.000	0.028	323.000	0.074	375.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	71300.000	22.000	98.000	323.000	1000.000	1000.000	1000.000	0.000	0.000	0.000
GR	645.100	0.000	636.000	30.000	633.300	71.000	633.900	79.000	633.600	98.000
GR	631.700	101.000	629.900	108.000	627.100	111.000	625.100	114.000	624.600	144.000
GR	625.000	154.000	623.900	163.000	622.700	193.000	623.600	217.000	623.600	235.000
GR	624.400	271.000	625.300	300.000	626.000	311.000	630.200	323.000	635.800	333.000
GR	637.600	354.000	645.100	375.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.074	67.000	0.035	100.000	0.030	320.000	0.089	408.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	71900.000	25.000	100.000	320.000	500.000	650.000	600.000	0.000	0.000	0.000
GR	646.100	0.000	638.500	21.000	636.100	48.000	634.200	56.000	634.500	67.000
GR	632.700	69.000	631.400	88.000	630.600	99.000	630.000	100.000	627.700	103.000
GR	625.800	109.000	625.500	118.000	624.600	150.000	624.600	178.000	625.500	225.000
GR	626.100	274.000	625.600	291.000	627.100	313.000	630.500	320.000	632.700	335.000
GR	630.900	343.000	632.400	355.000	633.200	361.000	639.400	389.000	645.200	408.000

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NH	4.000	0.074	66.000	0.031	311.000	0.028	757.000	0.059	767.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 25 BTWN BARBER AND KRING CABINS US OF PUB ACC SITE DS OF NEWYGO								
X1	73040.000	20.000	66.000	311.000	1200.000	1100.000	1140.000	0.000	0.000	0.000
GR	646.600	0.000	641.900	15.000	639.200	30.000	636.200	66.000	628.600	82.000
GR	626.400	124.000	625.600	147.000	627.300	215.000	627.200	268.000	628.000	301.000
GR	633.300	311.000	636.600	328.000	636.700	343.000	636.400	418.000	637.600	472.000
GR	639.500	526.000	641.300	559.000	644.800	620.000	650.800	757.000	655.800	767.000
NH	3.000	0.035	49.000	0.028	310.000	0.044	335.000	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
		XSEC 26 DS OF CO RD BRDG SEC BENT 45DEG RT OFF RD FILL AT STA 10								
		BENT 45DEG RT TO RD FILL AT STA 325								
X1	73390.000	21.000	49.000	310.000	660.000	500.000	550.000	0.000	0.000	0.000
GR	646.800	0.000	643.800	10.000	637.000	32.000	635.600	41.000	634.300	47.000
GR	632.900	49.000	628.200	65.000	624.100	82.000	626.000	105.000	626.800	113.000
GR	628.000	121.000	625.800	133.000	626.800	162.000	628.800	175.000	629.900	211.000
GR	626.600	244.000	627.000	272.000	628.400	304.000	632.400	310.000	632.700	325.000
GR	646.800	335.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.035	0.044	0.025	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

XSEC 27 CENTER OF BRDG ELLC AT 650.5

X1	73640.000	31.000	0.000	296.000	50.000	50.000	50.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	650.500	652.000	0.000	0.000	0.000	0.000	0.000
GR	652.000	0.000	638.800	0.000	631.300	35.000	629.200	36.000	628.870	43.000
GR	625.700	60.000	625.400	80.000	626.500	90.000	628.500	95.000	629.500	100.000
GR	628.200	107.000	627.100	117.000	626.600	128.000	627.300	138.000	628.700	146.000
GR	652.000	146.000	652.000	152.000	628.700	152.000	629.300	163.000	628.800	167.000
GR	625.800	182.000	625.600	197.000	627.500	208.000	627.000	215.000	626.300	240.000
GR	627.000	250.000	625.800	264.000	633.000	275.000	632.900	290.000	634.800	296.000
GR	652.000	296.000	0.000	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	73660.000	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	650.500	652.000	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	73720.000	21.000	110.000	353.000	60.000	60.000	60.000	0.000	0.000	0.000
GR	653.300	0.000	647.000	44.000	641.700	71.000	634.800	88.000	633.600	99.000
GR	634.700	110.000	631.500	120.000	629.100	123.000	628.500	153.000	626.900	168.000
GR	635.800	202.000	626.700	220.000	625.300	240.000	626.700	278.000	627.300	306.000
GR	639.000	336.000	632.300	353.000	635.400	373.000	640.000	414.000	645.500	492.000
GR	650.000	523.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.110	80.000	0.059	826.000	0.025	1066.000	0.067	1075.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 29 SEWAGE TREATMENT PLANT IN LOB

X1	75140.000	24.000	826.000	1066.000	1140.000	1440.000	1420.000	0.000	0.000	0.000
GR	645.200	0.000	640.400	80.000	638.400	170.000	636.000	286.000	636.700	390.000
GR	636.500	494.000	637.200	592.000	636.300	692.000	635.400	790.000	635.600	820.000
GR	635.600	826.000	632.600	838.000	630.600	843.000	630.100	850.000	628.700	857.000
GR	628.100	891.000	627.500	936.000	628.100	953.000	628.900	983.000	629.700	1048.000

1

GR	631.200	1063.000	634.500	1066.000	639.200	1068.000	646.700	1075.000	0.000	0.000
NC	0.074	0.074	0.025	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

XSEC 29A AT USGS CABLE

X1	75800.000	22.000	1005.000	1264.000	540.000	700.000	660.000	0.000	0.000	0.000
GR	636.000	1005.000	632.400	1011.000	631.700	1013.000	630.500	1019.000	628.500	1029.000
GR	628.800	1037.000	629.100	1048.000	629.200	1062.000	630.000	1080.000	629.900	1105.000
GR	629.400	1121.000	629.900	1139.000	629.700	1159.000	629.300	1177.000	629.100	1194.000
GR	628.900	1208.000	628.200	1227.000	628.700	1229.000	631.700	1241.000	633.700	1246.000
GR	633.300	1255.000	635.200	1264.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.080	16.000	0.025	57.000	0.028	327.000	0.075	400.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 29B AT USGS GAGE 1976 STAGE IS 639.2 1986 STAGE 645.4

X1	76350.000	24.000	24.000	333.000	550.000	550.000	550.000	0.000	0.000	0.000
GR	648.800	0.000	638.800	10.000	634.700	24.000	632.300	33.000	630.800	41.000
GR	630.900	65.000	629.800	86.000	630.600	103.000	631.100	110.000	630.900	132.000
GR	630.900	133.000	630.900	134.000	631.200	141.000	631.200	181.000	630.800	218.000
GR	631.200	243.000	630.700	255.000	629.800	284.000	631.100	306.000	632.500	326.000

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 GR    633.000    332.000    634.600    333.000    636.500    346.000    646.500    356.000      0.000      0.000
 NC      0.074      0.074      0.025      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
                XSEC 30  1975 HWM IS 638.6       1976 HWM IS 639.2
 X1  76760.000     27.000     57.000    327.000    350.000    450.000    410.000      0.000      0.000      0.000
 GR    654.000      0.000    645.800     16.000    638.600     32.000    637.900     43.000    636.500     57.000
 GR    633.200     62.000    631.000     77.000    629.000     84.000    629.000     98.000    629.600    118.000
 GR    629.000    147.000    628.300    167.000    630.400    188.000    633.000    197.000    632.600    203.000
 GR    627.600    217.000    629.000    221.000    629.800    232.000    629.600    279.000    631.700    287.000
 GR    631.100    298.000    633.300    315.000    636.000    327.000    638.300    341.000    636.900    355.000
 GR    638.900    360.000    651.300    400.000      0.000      0.000      0.000      0.000      0.000      0.000
 EJ      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WIN       ELMIN      SSTA
   SLOPE     XLOBI     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

*PROF 1

CCHV=   0.100 CEHV=   0.300
1490 NH CARD USED
*SECNO 0.100

3470 ENCROACHMENT STATIONS=        8.0      818.0  TYPE=      1  TARGET=      810.000
                XSEC 61
      0.10     19.00    619.00      0.00    619.00    619.29      0.29      0.00      0.00    613.20
     18800.       11.     15929.     2859.       34.     3406.     3336.        0.        0.    609.60
      0.00      0.33      4.63      0.86     0.135     0.031     0.095     0.000    600.00     10.29
  0.000251        0.        0.        0.         0         0         0      0.00    803.38    813.67
0
 1490 NH CARD USED
 *SECNO 1920.000

 3470 ENCROACHMENT STATIONS=       22.0      763.0  TYPE=      1  TARGET=      741.000
         SEC 61 MOVED US INVERT ADJ BY .94FT     FLOOD FLOW SHIFTED FROM
         ROB AS NOTED ON XSEC 61 TO APPROX AREA IN LOB FOR THIS XSEC
   1920.00     18.54    619.48      0.00      0.00    619.86      0.37      0.54      0.02    614.14
     18800.        0.     17011.     1789.        0.     3307.     2833.      272.      32.    610.54
      0.11      0.00      5.14      0.63     0.000     0.031     0.140     0.000    600.94     22.00
  0.000327     2170.     1920.     1740.         0         0         0      0.00    741.00    763.00
0
 1490 NH CARD USED
 *SECNO 3050.000

 3470 ENCROACHMENT STATIONS=       17.0      828.0  TYPE=      1  TARGET=      811.000
                XSEC 62
   3050.00     18.47    619.87      0.00      0.00    620.18      0.31      0.31      0.01    608.60
     18800.       118.     18603.       79.      107.     4148.       86.      410.       46.    609.00
      0.18      1.11      4.48      0.92     0.067     0.031     0.067     0.000    601.40     18.44
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  0.000237    1200.    1130.    1200.        2        0        0     0.00   308.38   326.82
0
 1490 NH CARD USED
 *SECNO 3051.000

 3470 ENCROACHMENT STATIONS=      17.0     328.0  TYPE=     1  TARGET=     311.000
        W EDGE OF BRIDGE DECK AT BRIDGETON  1976 HWM 615.7
   3051.00    18.48   619.88     0.00     0.00   620.18     0.29     0.00     0.00   608.60
    18800.     340.   18231.     228.     107.    4150.      86.     410.      46.   609.00
      0.18     3.19     4.39     2.65    0.023    0.031    0.023    0.000   601.40    18.43
  0.000227       1.       1.       1.        1        0        0     0.00   308.41   326.83
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST


 SPECIAL BRIDGE

 SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
      0.90      1.25      2.60   1000.00    260.00      8.00   9000.00      1.43    604.50    604.50

 *SECNO 3100.000
 CLASS A LOW FLOW

 3420 BRIDGE W.S.=    619.86 BRIDGE VELOCITY=      4.47     CALCULATED CHANNEL AREA=     4209.

  EGPRS      ESLEC      H3        QWEIR      QLOW      BAREA   TRAPEZOID      ELLC      ELTRD
                                                                  AREA
      0.00    620.18     0.01        0.    18800.     9000.     9152.      635.40    638.00


 3470 ENCROACHMENT STATIONS=      17.0     328.0  TYPE=     1  TARGET=     311.000
   3100.00    18.49   619.89     0.00     0.00   620.18     0.29     0.01     0.00   608.60
    18800.     341.   18230.     229.     107.    4155.      86.     415.      46.   609.00
      0.19     3.19     4.39     2.65    0.023    0.031    0.023    0.000   601.40    18.40
  0.000226      49.      49.      49.        0        0        0     0.00   308.45   326.86
0
 *SECNO 3101.000

 3470 ENCROACHMENT STATIONS=      17.0     328.0  TYPE=     1  TARGET=     311.000
   3101.00    18.48   619.88     0.00     0.00   620.19     0.31     0.00     0.01   608.60
    18800.      40.   18703.      57.     107.    4153.      86.     415.      46.   609.00
      0.19     0.37     4.50     0.66    0.202    0.031    0.095    0.000   601.40    18.41
  0.000238       1.       1.       1.        1        0        0     0.00   308.43   326.85
0
 1490 NH CARD USED
 *SECNO 4680.000
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                XSEC 63
  4680.00    16.82   620.32     0.00     0.00   620.51     0.19     0.31     0.01   608.50
   13800.     359.    17114.    1328.     317.    4669.    1159.     605.      63.   616.00
     0.31     1.13     3.67     1.15    0.061    0.031    0.048    0.000   603.50     9.83
 0.000163    1500.    1579.    1600.        2        0        0     0.00   608.16   618.00
0
 1490 NH CARD USED
 *SECNO 7200.000
        XSEC 64          XSEC CROSSES US OF OLD ROCK CRIBBING
1
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   SECNO     DEPTH     CWSEL     CRIUS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

  7200.00    18.42   620.72     0.00     0.00   621.06     0.34     0.51     0.04   619.00
   18800.    1086.    17556.     158.    2804.    3652.     112.     961.     101.   610.40
     0.47     0.39     4.81     1.41    0.198    0.031    0.054    0.000   602.30    10.06
 0.000257    2200.    2520.    2500.        2        0        0     0.00   799.20   809.26
0
 1490 NH CARD USED
 *SECNO 8850.000
        XSEC 65   XSEC CROSSES 100FT US OF BOAT LAUNCH
  8850.00    17.07   621.27     0.00     0.00   621.47     0.20     0.40     0.01   619.30
   18800.       1.    15790.    3009.       3.    4050.    4582.    1239.     131.   619.80
     0.60     0.30     3.90     0.66    0.067    0.033    0.140    0.000   604.20    35.84
 0.000232    1400.    1650.    1600.        2        0        0     0.00   878.38   914.22
0
 1490 NH CARD USED
 *SECNO 10300.000
                XSEC 66
 10300.00    18.40   621.70     0.00     0.00   621.79     0.09     0.31     0.01   611.10
   18800.     168.    12775.    5857.     129.    4452.    6493.    1471.     153.   620.60
     0.76     1.30     2.87     0.90    0.067    0.046    0.113    0.000   603.30    23.58
 0.000255    1500.    1450.     700.        2        0        0     0.00  1177.94  1201.53
0
 1490 NH CARD USED
 *SECNO 11800.000
                XSEC 67
 11800.00    17.63   622.03     0.00     0.00   622.26     0.23     0.42     0.04   619.60
   18800.    3038.    15570.      92.    5530.    3759.     192.    1793.     187.   610.70
     0.87     0.55     4.17     0.48    0.202    0.041    0.202    0.000   604.40    81.26
 0.000349    1600.    1500.    1000.        0        0        0     0.00  1011.70  1092.96
0
 *SECNO 12600.000
 12600.00    17.91   622.31     0.00     0.00   622.53     0.21     0.27     0.00   619.60
   18800.    3112.    15593.      95.    5735.    3827.     202.    1970.     205.   610.70
     0.94     0.54     4.07     0.47    0.202    0.041    0.202    0.000   604.40    76.42
 0.000326     800.     800.     800.        2        0        0     0.00  1017.37  1093.79
0
 1490 NH CARD USED
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*SECNO 14100.000
XSEC 68
1

SECNO	DEPTH	CWSEL	CRITS	WSELK	EG	HV	HL	QLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TRA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	ETN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CCRAR	TOPWID	ENDST
14100.00	17.68	622.78	0.00	0.00	623.05	0.26	0.50	0.02	611.80
18800.	298.	17541.	960.	453.	4105.	2020.	2211.	230.	618.40
1.04	0.66	4.27	0.48	0.135	0.041	0.202	0.000	605.10	12.73
0.000371	900.	1500.	1600.	1	0	0	0.00	713.43	726.16

0
1490 NH CARD USED
*SECNO 16700.000
XSEC 69

16700.00	18.88	623.48	0.00	0.00	623.75	0.26	0.70	0.00	621.80
18800.	2957.	15778.	66.	6426.	3506.	79.	2508.	257.	613.80
1.21	0.46	4.50	0.83	0.202	0.028	0.081	0.000	604.60	16.38
0.000239	300.	2600.	1900.	2	0	0	0.00	1119.85	1136.23

0
*SECNO 18990.000
XSEC 1 FROM SUBDIVISION FILE F184 22 12

18990.00	17.18	623.98	0.00	0.00	624.16	0.18	0.40	0.01	611.80
18800.	872.	17692.	236.	791.	5057.	384.	2840.	289.	612.70
1.38	1.10	3.49	0.61	0.054	0.034	0.081	0.000	606.80	117.52
0.000157	1250.	2190.	2500.	2	0	0	0.00	543.23	660.75

0
1490 NH CARD USED
*SECNO 19870.000

3265 DIVIDED FLOW

XSEC 70 THROUGH SUBDIV ON LEFT BANK CHANNEL INEFFECTIVE
1976 HWM ON BASEMENT WALL 619.8 HWM 800FT DS 619.98

19870.00	18.50	624.10	0.00	0.00	624.41	0.32	0.22	0.04	612.40
18800.	4408.	14262.	129.	2271.	2816.	255.	2971.	303.	612.80
1.45	1.94	5.06	0.51	0.041	0.034	0.202	0.000	605.60	12.95
0.000325	950.	1000.	980.	2	0	0	0.00	697.03	742.98

0
1490 NH CARD USED
*SECNO 21370.000
XSEC 71 OLDER COTTAGES ON RT BANK SEAWALL PROTECTS RT BANK

21370.00	18.41	624.61	0.00	0.00	624.81	0.21	0.39	0.01	612.40
18800.	1307.	13389.	4104.	1841.	3143.	2906.	3184.	3251.	619.80
1.56	0.71	4.26	1.41	0.142	0.038	0.054	0.000	606.20	12.80
0.000225	1100.	1500.	1600.	2	0	0	0.00	770.27	783.07

0
1

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

1490 NH CARD USED
*SECNO 24985.000
XSEC 72

24985.00	18.10	625.60	0.00	0.00	625.80	0.20	0.98	0.00	620.30
18800.	2379.	13837.	2584.	3944.	3388.	1592.	3887.	395.	614.70
1.87	0.60	4.08	1.62	0.202	0.040	0.062	0.000	607.50	12.74
0.000334	3700.	3615.	3600.	0	0	0	0.00	894.51	907.25

0
1490 NH CARD USED
*SECNO 28235.000
XSEC 73

28235.00	17.39	626.69	0.00	0.00	626.96	0.27	1.14	0.02	623.50
18800.	1201.	17493.	105.	2262.	4069.	119.	4389.	445.	616.70
2.08	0.53	4.30	0.89	0.200	0.040	0.108	0.000	609.30	11.96
0.000402	2300.	3200.	3300.	2	0	0	0.00	668.09	680.06

0
1490 NH CARD USED
*SECNO 29860.000
XSEC 74 IN LINE WITH E SIDE OF COTTAGE ON TOP OF LFT BANK
JUST US OF POWERLINE

29860.00	18.01	627.31	0.00	0.00	627.67	0.36	0.68	0.03	616.20
18800.	96.	18085.	618.	207.	3683.	1281.	4604.	466.	615.20
2.18	0.47	4.91	0.48	0.202	0.041	0.202	0.000	609.30	13.73
0.000434	1500.	1625.	1700.	2	0	0	0.00	497.52	511.25

0
1490 NH CARD USED
*SECNO 31660.000
XSEC 75

31660.00	17.89	628.09	0.00	0.00	628.34	0.25	0.66	0.01	623.30
18800.	592.	17749.	459.	1341.	4314.	493.	4836.	488.	617.10
2.31	0.44	4.11	0.93	0.186	0.040	0.108	0.000	610.20	23.98
0.000313	1700.	1800.	1800.	2	0	0	0.00	596.83	620.81

0
1490 NH CARD USED
*SECNO 35425.000

3470 ENCROACHMENT STATIONS= 20.0 790.0 TYPE= 1 TARGET= 770.000
XSEC 76

35425.00	19.71	629.51	0.00	0.00	629.72	0.20	1.38	0.00	621.20
18800.	29.	15299.	3471.	74.	3825.	4325.	5456.	548.	625.30
2.61	0.39	4.00	0.80	0.209	0.047	0.165	0.000	609.80	20.00
0.000436	4300.	3760.	3600.	2	0	0	0.00	770.00	790.00

0
1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV

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

 1490 NH CARD USED
 *SECNO 37670.000

 3470 ENCROACHMENT STATIONS=       20.0     1035.0  TYPE=      1  TARGET=     1015.000
                XSEC 77
  37670.00    22.44    630.44      0.00      0.00    630.66      0.22      0.94      0.00    622.70
    18800.     5485.    13295.       20.     7698.     2989.       57.     5899.      589.    623.70
      2.79      0.71      4.45      0.34     0.203     0.047     0.202     0.000    608.00     20.00
  0.000452     1900.     2150.     2100.         2         0         0      0.00   1014.28   1034.28
0
 1490 NH CARD USED
 *SECNO 38970.000

 3470 ENCROACHMENT STATIONS=       20.0      760.0  TYPE=      1  TARGET=      740.000
            XSEC 78  800FT DS OF ISLAND, POWERLINE CROSSING AND BOAT LAUNCH
                WEST END OF OLD GRAVEL OPERATION
  38970.00    17.98    630.88      0.00      0.00    631.01      0.13      0.34      0.01    621.80
    18800.       29.    15316.     3455.       66.     4797.     4108.     6140.      610.    624.80
      2.91      0.43      3.19      0.84     0.135     0.040     0.111     0.000    612.90     20.00
  0.000191      700.     1300.     1300.         2         0         0      0.00    740.00    760.00
0
 1490 NH CARD USED
 *SECNO 42170.000

 3470 ENCROACHMENT STATIONS=       15.0      510.0  TYPE=      1  TARGET=      495.000
                XSEC 1
  42170.00    19.25    631.35      0.00      0.00    631.84      0.50      0.73      0.11    622.40
    18800.      126.    16729.     2045.       71.     2798.     2396.     6649.      653.    625.90
      3.07      0.36      5.98      0.85     0.202     0.027     0.113     0.000    612.10     15.00
  0.000280     3600.     3200.     3000.         2         0         0      0.00    495.00    510.00
0
 1490 NH CARD USED
 *SECNO 43770.000
                XSEC 2
  43770.00    18.85    631.95      0.00      0.00    632.35      0.40      0.50      0.01    622.30
    18800.      248.    16072.     2479.      271.     2937.     2168.     6853.      672.    618.30
      3.16      0.92      5.47      1.14     0.102     0.034     0.109     0.000    613.10      7.20
  0.000343     1200.     1600.     1800.         2         0         0      0.00    460.37    467.57
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 1490 NH CARD USED
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 *SECNO 44820.000
                XSEC 3  SECTION THRU ISLAND NE OF OLD GRAVEL OPERATION
  44820.00     19.86    632.56      0.00      0.00    632.74      0.18      0.37      0.02    624.70
    18800.      877.    17403.      520.     1581.     4918.     1057.     7012.      686.    625.30
      3.25      0.55      3.54      0.49     0.202     0.048     0.202     0.000    612.70      4.88
  0.000350     1100.     1050.     1100.         2         0         0      0.00    689.34    694.22
0
 1490 NH CARD USED
 *SECNO 45470.000
                XSEC 4  OLD WOOD PILING ALONG EACH BANK
  45470.00     19.34    632.74      0.00      0.00    633.05      0.31      0.27      0.04    627.70
    18800.      915.    17763.      122.     1565.     3838.      286.     7107.      695.    624.50
      3.29      0.59      4.63      0.43     0.202     0.047     0.202     0.000    613.40      7.14
  0.000519      550.      650.      650.         2         0         0      0.00    556.36    563.50
0
 1490 NH CARD USED
 *SECNO 46870.000
                XSEC 5  HILL AT RIGHT BANK IS ERODING
  46870.00     20.82    633.42      0.00      0.00    633.78      0.37      0.71      0.02    622.10
    18800.     1660.    16838.      302.     1732.     3291.      188.     7270.      710.    621.30
      3.37      0.96      5.12      1.61     0.135     0.047     0.089     0.000    612.60     18.17
  0.000579     1280.     1300.     1575.         2         0         0      0.00    473.83    492.00
0
 1490 NH CARD USED
 *SECNO 48720.000
                XSEC 6
  48720.00     17.99    634.39      0.00      0.00    634.56      0.18      0.76      0.02    626.80
    18800.     1308.    16165.     1327.      594.     4504.     1196.     7508.      729.    620.60
      3.52      2.20      3.59      1.11     0.046     0.049     0.135     0.000    616.40      7.75
  0.000315     1500.     1850.     2000.         0         0         0      0.00    442.89    450.64
0
 1490 NH CARD USED
 *SECNO 50220.000
                XSEC 7
  50220.00     21.63    634.83      0.00      0.00    634.95      0.11      0.38      0.01    626.30
    18800.     9148.     9370.      281.     4207.     2377.      241.     7729.      747.    623.10
      3.67      2.17      3.15      1.17     0.041     0.049     0.067     0.000    613.20      3.47
  0.000221     1300.     1500.     1300.         2         0         0      0.00    728.66    732.13
0
1
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SECNO	DEPTH	CWSEL	CRICS	KSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TEA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	IOPWID	ENDST

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 1490 NH CARD USED
 *SECNO 51945.000

 3265 DIVIDED FLOW

                XSEC 8    WICS CAMPING ON RIGHT BANK  CAMPGROUND IS ON A HILL
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WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.

51945.00	20.37	635.27	0.00	0.00	635.57	0.31	0.57	0.06	637.60
18800.	4.	14763.	4033.	7.	2956.	6149.	8020.	780.	629.40
3.78	0.61	4.99	0.66	0.027	0.047	0.202	0.000	614.90	24.46
0.000664	1300.	1725.	1500.	2	0	0	0.00	1173.78	1275.06

0
1490 NH CARD USED
*SECNO 53000.000

3470 ENCROACHMENT STATIONS= 350.0 1700.0 TYPE= 1 TARGET= 1350.000
XSEC 9 SECTION THROUGH ISLAND US OF VICS
XSEC BENT 30DEG LFT AT 887 20DEG RT AT STA 1208

53000.00	18.53	635.73	0.00	0.00	635.83	0.10	0.24	0.02	625.00
18800.	3091.	14590.	1119.	5513.	4985.	3204.	8246.	802.	623.00
3.90	0.56	2.93	0.35	0.139	0.036	0.169	0.000	617.10	350.00
0.000126	1200.	1055.	500.	2	0	0	0.00	1335.26	1685.26

0
FLOW DISTRIBUTION FOR SECNO= 53000.00 CWSEL= 635.73

STA=	350.	650.	760.	887.	1192.	1650.	1685.
PER Q=	8.7	3.1	4.7	77.6	5.8	0.1	
AREA=	3284.1	1167.9	1060.6	4985.1	3087.0	116.9	
VEL=	0.5	0.5	0.8	2.9	0.4	0.2	

1490 NH CARD USED
*SECNO 53700.000

3470 ENCROACHMENT STATIONS= 300.0 1740.0 TYPE= 1 TARGET= 1440.000
XSEC 10 REDWOOD COTTAGE ON LEFT BANK 1976 HWM 630.5
1986 HWM 638 XSEC BENT 45DEG LEFT AT STA 1360

53700.00	19.20	635.80	0.00	0.00	635.93	0.13	0.09	0.01	626.20
18800.	7432.	11363.	5.	12870.	3085.	22.	8423.	818.	629.20
3.97	0.58	3.68	0.23	0.154	0.034	0.169	0.000	616.60	300.00
0.000160	400.	700.	750.	2	0	0	0.00	1436.75	1736.75

0
1

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

FLOW DISTRIBUTION FOR SECNO= 53700.00 CWSEL= 635.80

STA=	300.	1340.	1420.	1557.	1730.	1737.
PER Q=	33.8	3.3	2.6	60.4	0.0	
AREA=	11230.8	657.8	932.1	3085.2	22.4	
VEL=	0.6	0.9	0.5	3.7	0.2	

1490 NH CARD USED
*SECNO 54600.000

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3470 ENCROACHMENT STATIONS=      780.0     2250.0  TYPE=      1  TARGET=     1470.000
                XSEC 10A NEAR WHITE COTTAGE(BRONKEMA)  1976HWM 630.9 IN GARAGE
                XSEC BENT 5DEG RT AT STA 139.9  RESTRICTED FOR HIGH GROUND AT
                XSEC 11 US      1986 HWM 638
 54600.00    21.46   635.96     0.00     0.00   636.06     0.09     0.12     0.00   628.70
   18800.    9116.    9439.     245.   11566.    2820.     173.    8626.     836.    621.00
     4.07     0.79     3.35     1.42    0.115    0.040    0.054    0.000   614.50   780.00
 0.000186     500.     900.    1000.        2        0        0     0.00  1464.72  2244.72
0
FLOW DISTRIBUTION FOR SECNO=  54600.00          CWSEL=    635.96

STA=      780.     949.    1352.    1508.    1597.    1755.    1846.    1888.    1957.    2060.    2062.    2221.    2245.
  PER Q=      4.2      9.2      5.3      4.5      5.4      6.1      3.2      6.4      4.0      0.2     50.2      1.3
   AREA=   2069.5   4553.3   1177.1    708.8    984.2    625.0    284.1    519.6    630.8     14.1   2820.4    173.0
    VEL=      0.4      0.4      0.9      1.2      1.0      1.8      2.1      2.3      1.2      2.2      3.3      1.4

1490 NH CARD USED
*SECNO 55080.000
                XSEC 10B LOB IS FELCH ROAD
 55080.00    21.50   636.00     0.00     0.00   636.14     0.14     0.07     0.01   621.00
   18800.    9423.    9138.     239.    3717.    2663.     171.    8702.     844.    621.30
     4.10     2.54     3.43     1.40    0.024    0.041    0.054    0.000   614.50    57.99
 0.000182     250.     480.     550.        2        0        0     0.00   926.79   984.78
0
1490 NH CARD USED
*SECNO 55800.000

3470 ENCROACHMENT STATIONS=        0.0     1900.0  TYPE=      1  TARGET=     1899.999
                XSEC 11  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
 55800.00    19.82   636.02     0.00     0.00   636.35     0.33     0.16     0.06   627.70
   18800.       0.   14921.    3879.       0.    2888.    4313.    8778.     852.    628.60
     4.14     0.00     5.17     0.90    0.000    0.039    0.123    0.000   616.20  1000.00
 0.000521     150.     720.     450.        2        0        0     0.00   900.00  1900.00
0
1
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   SECNO    DEPTH    CWSEL    CRIWS    USELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA     LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST

FLOW DISTRIBUTION FOR SECNO=  55800.00          CWSEL=    636.02

STA=     1000.    1169.    1172.    1185.    1237.    1320.    1454.    1546.    1651.    1819.    1900.
  PER Q=     79.4      0.1      0.4      1.7      2.9      4.7      2.7      0.0      5.2      2.8
   AREA=   2888.4     20.0     78.9    313.1    512.2    833.7    517.2    553.5    969.6    514.6
    VEL=      5.2      1.0      1.0      1.0      1.1      1.1      1.0      0.0      1.0      1.0

1490 NH CARD USED
*SECNO 56800.000
                XSEC 12
 56800.00    21.95   636.55     0.00     0.00   636.69     0.14     0.32     0.02   621.70
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    18800.      143.    11756.     6900.      131.     3143.     8913.     8857.      858.    630.00
     4.21       1.09      3.74      0.77     0.095     0.048     0.128     0.000    614.60      4.19
 0.000367     1200.     1000.       50.         2         0         0      0.00   1587.82   1592.01
0
 FLOW DISTRIBUTION FOR SECNO=  56800.00          CWSEL=    636.55

 STA=        4.       22.      222.      350.      457.      758.      865.      958.     1093.     1227.     1424.     1592.
   PER Q=     0.8      62.5       4.7       3.9       5.7       3.7       3.2       3.6       3.6       4.3       3.9
    AREA=   131.4    3142.7     907.7     759.6    1840.5     727.5     636.9     903.3     904.3    1174.6    1058.2
     VEL=     1.1       3.7       1.0       1.0       0.6       0.9       1.0       0.7       0.8       0.7       0.7

 1490 NH CARD USED
 *SECNO 57650.000
            XSEC 13  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
                1976 HWM 631.9
  57650.00    19.36   636.76      0.00      0.00    636.81      0.05      0.11      0.01    622.00
    18800.     5935.    10301.     2564.     6034.     4683.     4640.     8976.      869.    626.50
      4.32      0.98      2.20      0.55     0.061     0.043     0.103     0.000    617.40      9.73
  0.000118     500.      850.       50.         0         0         0      0.00   1869.28   1879.01
0
 FLOW DISTRIBUTION FOR SECNO=  57650.00          CWSEL=    636.76

 STA=       10.      845.      857.     1180.     1380.     1514.     1879.
   PER Q=    30.7       0.9      54.8       4.2       3.9       5.5
    AREA=  5900.4     133.9    4683.1    1400.1     932.0    2308.3
     VEL=     1.0       1.2       2.2       0.6       0.8       0.4

 1490 NH CARD USED
 *SECNO 58350.000
          XSEC 14 XSEC BENT 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB
1
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    SECNO      DEPTH     CWSEL     CRIWS     WSELK      EG        HV        HL       OLOSS    BANK ELEV
    Q          QLOB      QCH       QROB      ALOB       ACH       AROB      VOL      TWA    LEFT/RIGHT
    TIME       VLOB      VCH       VROB      XNL        XNCH      XNR       WTN      ELMIN      SSTA
    SLOPE      XLOBL     XLCH      XLOBR     ITRIAL     IDC       ICONT     CORAR    TOPWID     ENDST


  58350.00     20.53   636.83      0.00      0.00    636.92      0.09      0.10      0.01    630.50
    18800.     9367.     9424.        9.     7274.     3072.       37.     9136.      887.    629.50
      4.39      1.29      3.07      0.24     0.065     0.049     0.202     0.000    616.30     24.44
  0.000242     500.      700.      400.         2         0         0      0.00   1270.56   1295.00
0
 FLOW DISTRIBUTION FOR SECNO=  58350.00          CWSEL=    636.83

 STA=       24.      400.      731.      918.     1077.     1106.     1285.     1295.
   PER Q=    17.9      17.6       7.3       5.9       1.2      50.1       0.0
    AREA=  2558.5    2444.3    1147.2     943.6     180.8    3071.6      36.7
     VEL=     1.3       1.4       1.2       1.2       1.2       3.1       0.2

 1490 NH CARD USED
 *SECNO 58900.000
          XSEC 15
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  58900.00     18.93    636.93      0.00      0.00    637.07      0.13      0.13      0.01    631.50
    18000.      4686.    13456.      658.      5353.    3908.      971.      9254.      903.     629.00
      4.44       0.88      3.44      0.68     0.081    0.046     0.135     0.000    618.00     24.10
  0.000282       450.      550.      700.         0        0         0      0.00   1511.32   1535.42
0
 1490 NH CARD USED
 *SECNO 60000.000
                XSEC 16
  60000.00     18.24    637.14      0.00      0.00    637.75      0.60      0.54      0.14    628.00
    18800.      373.    16446.      1981.      151.    2475.      2411.      9425.      927.     632.60
      4.49       2.47      6.64      0.82     0.065    0.047     0.162     0.000    618.90     13.10
  0.001169      1000.     1100.      700.         2        0         0      0.00   761.26    774.36
0
 FLOW DISTRIBUTION FOR SECNO=  60000.00          CWSEL=    637.14

 SIA=       13.       44.      200.      750.      774.
   PER Q=      2.0      87.5      10.4       0.1
    AREA=    151.1    2475.5    2361.5      49.3
     VEL=      2.5       6.6       0.8       0.5

 1490 NH CARD USED
 *SECNO 62250.000
               XSEC 17    SUBDIVISION ON LEFT BANK
  62250.00     18.42    638.62      0.00      0.00    638.85      0.23      1.07      0.04    632.90
    18800.      309.    17612.      880.      541.     4400.     1004.      9686.      955.     629.10
      4.65       0.57      4.00      0.88     0.126    0.038     0.120     0.000    620.20     25.90
  0.000266      2400.     2225.     1700.         2        0         0      0.00   510.85    536.75
0
1
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS    BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA    LEFT/RIGHT
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN       SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID      ENDST

 1490 NH CARD USED
 *SECNO 63120.000
  63120.00     19.13    638.83      0.00      0.00    639.21      0.38      0.32      0.04    630.40
    18800.       51.    18279.      470.       78.     3643.      779.      9802.      965.     633.10
      4.71       0.66      5.02      0.60     0.120    0.038     0.148     0.000    619.70     13.12
  0.000417       970.      970.      970.         2        0         0      0.00   402.04    415.16
0
 1490 NH CARD USED
 *SECNO 65620.000

 3470 ENCROACHMENT STATIONS=      20.0      470.0  TYPE=      1  TARGET=     450.000
  65620.00     18.92    639.62      0.00      0.00    639.99      0.37      0.77      0.00    629.80
    18800.      1145.    17251.      404.      1208.    3409.      413.      10010.     984.     628.30
      4.82       0.99      5.06      0.98     0.107    0.038     0.120     0.000    620.70     20.00
  0.000397      1900.     1900.     1900.         2        0         0      0.00   450.00    470.00
0
 1490 NH CARD USED
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  0.000405     1200.     1140.     1100.        2        0        0     0.00   564.88   578.26
0
 1490 NH CARD USED
 *SECNO 73590.000
          XSEC 26 DS OF CO RD BRDG  SEC BENT 45DEG RT OFF RD FILL AT STA 10
            BENT 45DEG RT TO RD FILL AT STA 325
  73590.00    18.47   642.57     0.00     0.00   642.89     0.32     0.22     0.02   632.90
    18800.      326.   18099.      376.      170.   3906.      185.   11012.     1072.   632.40
      5.40     1.91     4.63     2.03    0.047    0.038    0.059    0.000   624.10    13.97
  0.000383      660.      550.      500.        2        0        0     0.00   318.03   332.00
0
 *SECNO 73640.000

 3265 DIVIDED FLOW


 3370 NORMAL BRIDGE,NRD=  0 MIN ELTRD=  652.00 MAX ELLC=  650.50

                XSEC 27 CENTER OF BRDG   ELLC AT 650.5
1
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    SECNO     DEPTH    CWSEL    CRIWS    WSELK     EG       HV       HL       OLOSS   BANK ELEV
    Q         QLOB     QCH      QROB     ALOB      ACH      AROB     VOL      TWA   LEFT/RIGHT
    TIME      VLOB     VCH      VROB     XNL       XNCH     XNR      WTN      ELMIN      SSTA
    SLOPE     XLOBL    XLCH     XLOBR    ITRIAL    IDC      ICONT    CORAR    TOPWID     ENDST

  73640.00    17.19   642.59     0.00     0.00   642.92     0.33     0.02     0.00   652.00
    18800.       0.   18800.       0.       0.   4071.       0.   11017.     1072.   652.00
      5.41     0.00     4.62     0.00    0.000    0.034    0.000    0.000   625.40     0.00
  0.000395       50.      50.      50.        0        0        0     0.00   290.00   296.00
0
 *SECNO 73660.000

 3265 DIVIDED FLOW


 3370 NORMAL BRIDGE,NRD=  0 MIN ELTRD=  652.00 MAX ELLC=  650.50

  73660.00    17.19   642.59     0.00     0.00   642.92     0.33     0.01     0.00   652.00
    18800.       0.   18800.       0.       0.   4071.       0.   11019.     1072.   652.00
      5.41     0.00     4.62     0.00    0.000    0.034    0.000    0.000   625.40     0.00
  0.000395       20.      20.      20.        0        0        0     0.00   290.00   296.00
0
 *SECNO 73720.000
  73720.00    17.24   642.54     0.00     0.00   642.98     0.44     0.03     0.03   634.70
    18800.      687.   17329.      784.      259.   3144.      418.   11024.     1073.   632.30
      5.41     2.65     5.51     1.87    0.047    0.034    0.059    0.000   625.30    66.70
  0.000540       60.      60.      60.        2        0        0     0.00   383.36   450.07
0
 1490 NH CARD USED
 *SECNO 75140.000
          XSEC 29  SEWAGE TREATMENT PLANT IN LOB
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 75140.00    15.81   643.31     0.00     0.00   643.50     0.19     0.49     0.02   635.60
    18800.    4964.    13827.      9.     4851.    3404.      21.    11205.    1093.    634.50
     5.53     1.02     4.06     0.42    0.080    0.034    0.090    0.000   627.50    31.56
 0.000251     1140.    1420.    1440.        2        0        0     0.00  1040.27  1071.83
0
 *SECNO 75800.000
 3280 CROSS SECTION  75800.00 EXTENDED      8.15 FEET

                XSEC 29A  AT USGS CABLE
 75800.00    15.15   643.35     0.00     0.00   643.80     0.46     0.23     0.08   636.00
    18800.       0.    18800.       0.       0.    3466.       0.    11287.    1102.    635.20
     5.56     0.00     5.42     0.00    0.000    0.034    0.000    0.000   623.20  1005.00
 0.000522      540.     660.     700.        2        0        0     0.00   259.00  1264.00
0
1
```



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


 1490 NH CARD USED
 *SECNO 76350.000
          XSEC 29B AT USGS GAGE  1976 STAGE IS 639.2   1986 STAGE 645.4
 76350.00    13.96   643.76     0.00     0.00   644.09     0.33     0.27     0.01   634.70
    18800.     340.    18306.     153.     110.    3945.     133.    11336.    1106.    634.60
     5.59     3.08     4.64     1.15    0.035    0.038    0.101    0.000   629.80     5.04
 0.000473      550.     550.     550.        2        0        0     0.00   348.22   353.26
0
 *SECNO 76760.000
                XSEC 30  1975 HJM IS 638.6      1976 HJM IS 639.2
 76760.00    16.30   643.90     0.00     0.00   644.29     0.38     0.18     0.02   636.50
    18800.     176.    18383.     241.     187.    3667.     253.    11375.    1109.    636.00
     5.62     0.94     5.01     0.95    0.100    0.034    0.100    0.000   627.60    20.21
 0.000407      350.     410.     450.        2        0        0     0.00   355.93   376.14
0
1
```



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

T1      FLOODWAY RUN
T2      100YR FLOOD
T3      Q 18800CFS
```

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	3.	0.	0.	0.000000	0.00	0.0	18800.	619.000	0.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	15.000	0.000	-1.000	0.000	0.000	1.350	0.000	0.000	0.000	0.000

1

SECNO	DEPTH	CHSEL	CRIBS	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	EIMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 2

CCHV= 0.100 CEHV= 0.300
1490 NH CARD USED
*SECNO 0.100

3470 ENCROACHMENT STATIONS= 8.0 818.0 TYPE= 1 TARGET= 810.000

XSEC 61

0.10	19.00	619.00	0.00	619.00	619.29	0.29	0.00	613.20
18800.	11.	15929.	2859.	34.	3406.	3336.	0.	609.60
0.00	0.33	4.68	0.86	0.135	0.031	0.095	0.000	600.00	10.29
0.000251	0.	0.	0.	0	0	0	0.00	803.38	813.67

0
1490 NH CARD USED
*SECNO 1920.000

3470 ENCROACHMENT STATIONS= 22.0 763.0 TYPE= 1 TARGET= 741.000

SEC 61 MOVED US INVERT ADJ BY .94FT FLOOD FLOW SHIFTED FROM
ROB AS NOTED ON XSEC 61 TO APPROX AREA IN LOB FOR THIS XSEC

1920.00	18.54	619.48	0.00	0.00	619.86	0.37	0.54	0.02	614.14
18800.	0.	17011.	1789.	0.	3307.	2833.	272.	32.	610.54
0.11	0.00	5.14	0.63	0.000	0.031	0.140	0.000	600.94	22.00
0.000327	2170.	1920.	1740.	0	0	0	0.00	741.00	763.00

0
1490 NH CARD USED
*SECNO 3050.000

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000

XSEC 62

3050.00	18.47	619.87	0.00	0.00	620.18	0.31	0.31	0.01	608.60
18800.	118.	18603.	79.	107.	4148.	86.	410.	46.	609.00
0.18	1.11	4.48	0.92	0.067	0.031	0.067	0.000	601.40	18.44
0.000287	1200.	1130.	1200.	2	0	0	0.00	308.38	326.82

0
1490 NH CARD USED
*SECNO 3051.000

```
 3470 ENCROACHMENT STATIONS=      17.0     328.0  TYPE=      1  TARGET=      311.000
        W EDGE OF BRIDGE DECK AT BRIDGETON  1976 HWM 615.7
   3051.00     18.48    619.88      0.00      0.00    620.18      0.29      0.00      0.00    608.60
   18800.       340.    18231.       228.      107.     4150.       86.       410.       46.    609.00
      0.18      3.19      4.39      2.65     0.023     0.031     0.023     0.000    601.40     18.43
  0.000227        1.        1.        1.         1         0         0      0.00    308.41    326.83
0
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WIN       ELMIN      SSTA
    SLOPE     YLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST


 SPECIAL BRIDGE

 SB  XK        XKOR      COEQ      RDLEN     BWC       BWP       EAREA     SS        ELCHU     ELCHD
      0.90      1.25      2.60   1000.00    260.00      8.00   9000.00      1.43    604.50    604.50

 *SECNO 3100.000
 CLASS A LOW FLOW

 3420 BRIDGE W.S.=    619.86 BRIDGE VELOCITY=      4.47      CALCULATED CHANNEL AREA=     4209.

  EGPRS     EGLWC     H3        QWEIR     QLOB      BAREA     TRAPEZOID      ELLC      ELTRD
                                                              AREA
       0.00    620.18      0.01         0.    18800.     9000.      9152.      635.40    638.00


 3470 ENCROACHMENT STATIONS=      17.0     328.0  TYPE=      1  TARGET=      311.000
    3100.00     18.49    619.89      0.00      0.00    620.18      0.29      0.01      0.00    608.60
      18800.       341.    18230.       229.      107.     4155.       86.       415.       46.    609.00
       0.19      3.19      4.39      2.65     0.023     0.031     0.023     0.000    601.40     18.40
   0.000226        49.       49.       49.         0         0         0      0.00    308.45    326.86
0
 *SECNO 3101.000

 3470 ENCROACHMENT STATIONS=      17.0     328.0  TYPE=      1  TARGET=      311.000
    3101.00     18.48    619.88      0.00      0.00    620.19      0.31      0.00      0.01    608.60
      18800.       40.    18703.       57.      107.     4153.       86.       415.       46.    609.00
       0.19      0.37      4.50      0.66     0.202     0.031     0.095     0.000    601.40     18.41
   0.000238         1.        1.        1.         1         0         0      0.00    308.43    326.85
0
 1490 NH CARD USED
 *SECNO 4680.000
  2800 NAT Q1=   14728.32  WSEL=     620.32  ENC Q1=   14728.31  WSEL=     620.42  RATIO=  0.0000
  NAT Q1=   14920.  RATIOS LOB,CH,ROB=  0.0198   0.9087   0.0720  WSEL=     620.42

 3470 ENCROACHMENT STATIONS=      35.6     578.9  TYPE=      4  TARGET=        0.013
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                XSEC 63
  4680.00    16.81   620.31     0.00   620.32   620.51     0.20     0.31     0.01   608.50
   18800.     245.    17329.    1226.     211.    4668.    1012.     601.      62.   616.00
     0.31     1.16     3.71     1.21    0.061    0.031    0.046    0.000   603.50    35.60
 0.000167    1500.    1579.    1600.        2        0        0     0.00   543.28   578.87
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 1490 NH CARD USED
 *SECNO 7200.000
  2800 NAT Q1=  11717.94  WSEL=    620.72  ENC Q1=  11717.94  WSEL=    620.82  RATIO=  0.0000
  NAT Q1=  11855.  RATIOS LOB,CH,ROB=  0.0589  0.9326  0.0085  WSEL=    620.82

 3470 ENCROACHMENT STATIONS=      58.7     793.3  TYPE=     4  TARGET=       0.012
        XSEC 64          XSEC CROSSES US OF OLD ROCK CRIBBING
  7200.00    18.43   620.73     0.00   620.72   621.08     0.35     0.52     0.04   619.00
   18800.     992.    17758.      50.    2554.    3654.      49.     942.      97.   610.40
     0.46     0.39     4.86     1.04    0.197    0.031    0.054    0.000   602.30    58.66
 0.000263    2200.    2520.    2500.        2        0        0     0.00   734.68   793.34
0
 1490 NH CARD USED
 *SECNO 8850.000
  2800 NAT Q1=  12331.86  WSEL=    621.27  ENC Q1=  12331.86  WSEL=    621.37  RATIO=  0.0000
  NAT Q1=  12489.  RATIOS LOB,CH,ROB=  0.0001  0.8385  0.1614  WSEL=    621.37

 3470 ENCROACHMENT STATIONS=      39.0     873.1  TYPE=     4  TARGET=       0.013
        XSEC 65   XSEC CROSSES 100FT US OF BOAT LAUNCH
  8850.00    17.10   621.30     0.00   621.27   621.50     0.21     0.41     0.01   619.30
   18800.       0.    15971.    2829.       0.    4057.    4417.    1211.     125.   619.80
     0.59     0.00     3.94     0.64    0.000    0.033    0.148    0.000   604.20    39.00
 0.000239    1400.    1650.    1600.        2        0        0     0.00   834.08   873.08
0
 1490 NH CARD USED
 *SECNO 10300.000
  2800 NAT Q1=  11776.72  WSEL=    621.70  ENC Q1=  11776.71  WSEL=    621.80  RATIO=  0.0000
  NAT Q1=  11934.  RATIOS LOB,CH,ROB=  0.0090  0.6779  0.3131  WSEL=    621.80

 3470 ENCROACHMENT STATIONS=      40.5    1132.6  TYPE=     4  TARGET=       0.013
                XSEC 66
 10300.00    18.44   621.74     0.00   621.70   621.83     0.09     0.32     0.01   611.10
   18800.      47.    12934.    5819.      56.    4463.    6289.    1440.     145.   620.60
     0.75     0.84     2.90     0.93    0.067    0.046    0.113    0.000   603.30    40.50
 0.000259    1500.    1450.     700.        2        0        0     0.00  1092.10  1132.60
0
 1490 NH CARD USED
 *SECNO 11800.000
  2800 NAT Q1=  10067.54  WSEL=    622.03  ENC Q1=  10067.54  WSEL=    622.13  RATIO=  0.0000
```

NAT Q1= 10185. RATIOS LOB,CH,ROB= 0.1630 0.8321 0.0049 WSEL= 622.13
1

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

3470 ENCROACHMENT STATIONS= 176.8 1107.0 TYPE= 4 TARGET= 0.012

XSEC 67									
11800.00	17.67	622.07	0.00	622.03	622.30	0.23	0.43	0.04	619.60
18800.	2947.	15760.	93.	5246.	3768.	193.	1753.	176.	610.70
0.86	0.56	4.18	0.48	0.202	0.041	0.202	0.000	604.40	176.81
0.000350	1600.	1500.	1000.	2	0	0	0.00	916.25	1093.06

0
*SECNO 12600.000
2800 NAT Q1= 10408.97 WSEL= 622.31 ENC Q1= 10408.96 WSEL= 622.41 RATIO= 0.0000
NAT Q1= 10533. RATIOS LOB,CH,ROB= 0.1669 0.8280 0.0051 WSEL= 622.41

3470 ENCROACHMENT STATIONS= 173.9 1059.0 TYPE= 4 TARGET= 0.012

12600.00	17.95	622.35	0.00	622.31	622.57	0.22	0.27	0.00	619.60
18800.	3033.	15767.	0.	5440.	3834.	0.	1923.	193.	610.70
0.92	0.56	4.11	0.00	0.202	0.040	0.000	0.000	604.40	173.91
0.000331	800.	900.	800.	1	0	0	0.00	885.09	1059.00

0
1490 NH CARD USED
*SECNO 14100.000
2800 NAT Q1= 9766.71 WSEL= 622.78 ENC Q1= 9766.71 WSEL= 622.88 RATIO= 0.0000
NAT Q1= 9892. RATIOS LOB,CH,ROB= 0.0162 0.9319 0.0519 WSEL= 622.88

3470 ENCROACHMENT STATIONS= 86.3 673.0 TYPE= 4 TARGET= 0.013

XSEC 68									
14100.00	17.73	622.83	0.00	622.78	623.10	0.27	0.51	0.02	611.80
18800.	186.	17753.	861.	214.	4117.	1791.	2151.	214.	618.40
1.02	0.87	4.31	0.48	0.135	0.041	0.202	0.000	605.10	86.33
0.000376	900.	1500.	1600.	1	0	0	0.00	586.70	673.03

0
1490 NH CARD USED
*SECNO 16700.000
2800 NAT Q1= 12169.84 WSEL= 623.48 ENC Q1= 12169.84 WSEL= 623.58 RATIO= 0.0000
NAT Q1= 12318. RATIOS LOB,CH,ROB= 0.1586 0.8379 0.0035 WSEL= 623.58

3470 ENCROACHMENT STATIONS= 110.7 1143.0 TYPE= 4 TARGET= 0.012

XSEC 69									
16700.00	18.94	623.54	0.00	623.48	623.81	0.27	0.71	0.00	621.80
18800.	2834.	15899.	67.	5015.	3522.	80.	2441.	239.	613.80
1.19	0.47	4.51	0.34	0.202	0.028	0.081	0.000	604.60	110.65
0.000239	300.	2600.	1900.	2	0	0	0.00	1025.67	1136.32

0
1

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

*SECNO 18990.000
2800 NAT Q1= 15009.32 WSEL= 623.98 ENC Q1= 15009.31 WSEL= 624.08 RATIO= 0.0000
NAT Q1= 15182. RATIOS LOB,CH,ROB= 0.0472 0.9400 0.0129 WSEL= 624.08

3470 ENCROACHMENT STATIONS= 143.7 617.3 TYPE= 4 TARGET= 0.011
XSEC 1 FROM SUBDIVISION FILE F184 22 12

18990.00	17.24	624.04	0.00	623.98	624.22	0.18	0.40	0.01	611.80
18800.	788.	17877.	136.	703.	5067.	224.	2763.	268.	612.70
1.36	1.12	3.51	0.61	0.054	0.034	0.081	0.000	606.80	143.68
0.000158	1250.	2190.	2500.	2	0	0	0.00	473.63	617.31

0
1490 NH CARD USED
*SECNO 19870.000
2800 NAT Q1= 10421.45 WSEL= 624.10 ENC Q1= 10421.45 WSEL= 624.20 RATIO= 0.0000
NAT Q1= 10585. RATIOS LOB,CH,ROB= 0.2384 0.7546 0.0069 WSEL= 624.20

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 46.5 703.0 TYPE= 4 TARGET= 0.015
XSEC 70 THROUGH SUBDIV ON LEFT BANK CHANNEL INEFFECTIVE
1976 HWM ON BASEMENT WALL 619.8 HWM 800FT DS 619.98

19870.00	18.56	624.16	0.00	624.10	624.48	0.33	0.22	0.04	612.40
18800.	4352.	14448.	0.	2186.	2827.	0.	2888.	280.	612.80
1.43	1.99	5.11	0.00	0.040	0.032	0.000	0.000	605.60	46.53
0.000330	950.	1000.	980.	2	0	0	0.00	623.47	703.00

0
1490 NH CARD USED
*SECNO 21370.000
2800 NAT Q1= 12524.04 WSEL= 624.61 ENC Q1= 12524.04 WSEL= 624.71 RATIO= 0.0000
NAT Q1= 12688. RATIOS LOB,CH,ROB= 0.0700 0.7100 0.2201 WSEL= 624.71

3470 ENCROACHMENT STATIONS= 38.0 741.8 TYPE= 4 TARGET= 0.013
XSEC 71 OLDER COTTAGES ON RT BANK SEAWALL PROTECTS RT BANK

21370.00	18.48	624.68	0.00	624.61	624.89	0.21	0.39	0.01	612.40
18800.	1208.	13533.	4059.	1745.	3157.	2735.	3091.	301.	619.80
1.54	0.69	4.29	1.48	0.148	0.033	0.062	0.000	606.20	38.01
0.000227	1100.	1500.	1600.	2	0	0	0.00	703.81	741.82

0
1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	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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 1490 NH CARD USED
 *SECNO 24985.000
  2800 NAT Q1=  10275.24  WSEL=    625.60  ENC Q1=  10142.76  WSEL=    625.60  RATIO=  0.0129
  NAT Q1=  10275.  RATIOS LOB,CH,ROB=  0.1265  0.7361  0.1374  WSEL=    625.60

 3470 ENCROACHMENT STATIONS=      51.0     874.5  TYPE=     0  TARGET=       0.013
                XSEC 72
  24985.00     18.18    625.68      0.00    625.60    625.88      0.20      0.99      0.00    620.30
    18800.     2312.    13972.     2516.     3778.     3406.     1524.     3773.      365.     614.70
      1.84      0.61      4.10      1.65     0.202     0.040     0.063     0.000    607.50     51.04
  0.000335     3700.     3615.     3600.         1         0         0      0.00    823.44    874.48
0
 1490 NH CARD USED
 *SECNO 28235.000
  2800 NAT Q1=   9371.26  WSEL=    626.69  ENC Q1=   9371.26  WSEL=    626.79  RATIO=  0.0000
  NAT Q1=   9480.  RATIOS LOB,CH,ROB=  0.0648  0.9296  0.0057  WSEL=    626.79

 3470 ENCROACHMENT STATIONS=      47.6     658.0  TYPE=     4  TARGET=       0.011
                XSEC 73
  28235.00     17.48    626.78      0.00    626.69    627.05      0.27      1.15      0.02    623.50
    18800.     1121.    17679.       0.      2125.     4092.       0.      4262.      410.     616.70
      2.06      0.53      4.32      0.00     0.202     0.039     0.000     0.000    609.30     47.58
  0.000404     2300.     3200.     3300.         2         0         0      0.00    610.42    658.00
0
 1490 NH CARD USED
 *SECNO 29860.000

 3470 ENCROACHMENT STATIONS=      45.0     490.0  TYPE=     1  TARGET=     445.000
                XSEC 74 IN LINE WITH E SIDE OF COTTAGE ON TOP OF LFT BANK
                JUST US OF POWERLINE
  29860.00     18.09    627.39      0.00    627.34    627.75      0.36      0.68      0.03    616.20
    18800.       23.    18156.      621.       62.     3702.     1261.     4470.      430.     615.20
      2.15      0.38      4.90      0.49     0.202     0.041     0.202     0.000    609.30     45.00
  0.000430     1500.     1625.     1700.         2         0         0      0.00    445.00    490.00
0
 1490 NH CARD USED
 *SECNO 31660.000

 3470 ENCROACHMENT STATIONS=      50.0     600.0  TYPE=     1  TARGET=     550.000
                XSEC 75
1
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   SECNO      DEPTH     CWSEL     CRIWS     WSELK      EG        HV        HL       OLOSS    BANK ELEV
   Q          QLOB      QCH       QROB      ALOB       ACH       AROB      VOL      TRA    LEFT/RIGHT
   TIME       VLOB      VCH       VROB      XNL        XNCH      XNR       WIN      ELMIN      SSTA
   SLOPE      KLOBL     KLCH      KLOBR     LTRIAL     IDC       ICONT     CORAR    TOPWID     ENDST


  31660.00     17.97    628.17      0.00    628.09    628.41      0.25      0.65      0.01    623.30
    18800.      580.    17794.      422.      1302.     4335.      436.     4698.      450.     617.10
      2.28      0.45      4.10      0.97     0.186     0.041     0.108     0.000    610.20     50.00
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  0.000310     1700.     1800.     1800.        2         0         0     0.00   550.00   600.00
0
 1490 NH CARD USED
 *SECNO 35425.000

 3470 ENCROACHMENT STATIONS=      20.0     790.0  TYPE=     1  TARGET=     770.000
                XSEC 76
  35425.00     19.78    629.58      0.00    629.51    629.78      0.20      1.36      0.00    621.20
    18800.       30.     15284.     3487.       75.     3841.     4358.     5317.      507.     625.30
      2.59      0.39      3.98      0.80     0.209     0.047     0.165     0.000    609.80     20.00
  0.000430     4300.     3760.     3600.        2         0         0     0.00   770.00   790.00
0
 1490 NH CARD USED
 *SECNO 37670.000

 3470 ENCROACHMENT STATIONS=      70.0    1025.0  TYPE=     1  TARGET=     955.000
                XSEC 77
  37670.00     22.50    630.50      0.00    630.44    630.73      0.23      0.94      0.01    622.70
    18800.      5229.     13555.      15.     7257.     2999.       42.     5751.      547.     623.70
      2.76      0.72      4.52      0.36     0.202     0.047     0.202     0.000    608.00     70.00
  0.000465     1900.     2150.     2100.        2         0         0     0.00   955.00  1025.00
0
 1490 NH CARD USED
 *SECNO 38970.000

 3470 ENCROACHMENT STATIONS=      35.0     750.0  TYPE=     1  TARGET=     715.000
            XSEC 78  800FT DS OF ISLAND, POWERLINE CROSSING AND BOAT LAUNCH
                WEST END OF OLD GRAVEL OPERATION
  38970.00     18.06    630.96      0.00    630.88    631.09      0.13      0.35     0.01100000.00
    18800.        0.     15305.     3495.        0.     4794.     4071.     5987.      567.     624.80
      2.88      0.00      3.19      0.86     0.000     0.041     0.111     0.000    612.90     35.00
  0.000197      700.     1300.     1300.        2         0         0     0.00   715.00   750.00
0
 1490 NH CARD USED
 *SECNO 42170.000
1
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    SECNO      DEPTH     CWSEL     CRIWS     WSELK      EG        HV        HL       OLOSS    BANK ELEV
    Q          QLOB      QCH       QROB      ALOB       ACH       AROB      VOL      TWA    LEFT/RIGHT
    FINE       VLOB      VCH       VROB      XNL        XNCH      XNR       UTN      ELMIN      SSTA
    SLOPE      XLOBL     XLCH      XLOBR     ITRIAL     IDC       ICONT     CORAR    TOPWID     ENDST


 3470 ENCROACHMENT STATIONS=      15.0     510.0  TYPE=     1  TARGET=     495.000
                XSEC 1
  42170.00     19.34    631.44      0.00    631.35    631.93      0.49      0.73      0.11    622.40
    18800.       26.     16711.     2068.       72.     2813.     2426.     6494.      610.     625.90
      9.04      0.36      5.94      0.85     0.202     0.027     0.113    10.000    612.10     15.00
  0.000274     3600.     3200.     3000.        2         0         0     0.00   495.00   510.00
0
 1490 NH CARD USED
 *SECNO 43770.000
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 2800 NAT Q1=  10156.18  WSEL=    631.95  ENC Q1=  10156.18  WSEL=    632.05  RATIO=  0.0000
 NAT Q1=  10263.  RATIOS LOB,CH,ROB=  0.0134  0.8539  0.1327  WSEL=    632.05

3470 ENCROACHMENT STATIONS=      36.4     445.5  TYPE=     4  TARGET=       0.010
                XSEC 2
 43770.00     18.93    632.03      0.00    631.95    632.44      0.41      0.50      0.01    622.30
   18800.      157.     16223.     2420.      170.     2949.     2084.     6696.      627.     618.30
     3.13      0.92       5.50     1.16     0.101     0.034     0.109     0.000    613.10     36.36
 0.000344     1200.      1600.     1800.         2         0         0      0.00    409.10    445.46
0
 1490 NH CARD USED
 *SECNO 44820.000
 2800 NAT Q1=  10055.36  WSEL=    632.56  ENC Q1=  10055.36  WSEL=    632.66  RATIO=  0.0000
 NAT Q1=  10169.  RATIOS LOB,CH,ROB=  0.0471  0.9249  0.0280  WSEL=    632.66

3470 ENCROACHMENT STATIONS=      64.5     658.4  TYPE=     4  TARGET=       0.011
                XSEC 3  SECTION THRU ISLAND NE OF OLD GRAVEL OPERATION
 44820.00     19.94    632.64      0.00    632.56    632.82      0.18      0.37      0.02    624.70
   18800.      783.     17591.      426.     1329.     4943.      883.     6847.      640.     625.30
     3.22      0.59       3.56     0.48     0.202     0.048     0.202     0.000    612.70     64.51
 0.000351     1100.      1050.     1100.         2         0         0      0.00    593.86    658.37
0
 1490 NH CARD USED
 *SECNO 45470.000
 2800 NAT Q1=   8256.23  WSEL=    632.74  ENC Q1=   8256.23  WSEL=    632.84  RATIO=  0.0000
 NAT Q1=   8345.  RATIOS LOB,CH,ROB=  0.0494  0.9439  0.0067  WSEL=    632.84

3470 ENCROACHMENT STATIONS=      43.1     486.6  TYPE=     4  TARGET=       0.011
                XSEC 4  OLD WOOD FILING ALONG EACH BANK
 45470.00     19.42    632.82      0.00    632.74    633.14      0.32      0.27      0.04    627.70
   18800.      832.     17942.      26.      1407.     3856.      61.      6937.      647.     624.50
     3.26      0.59       4.65     0.43     0.202     0.047     0.202     0.000    613.40     43.15
 0.000521     550.       650.      650.         2         0         0      0.00    443.41    486.55
0
1
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   SECNO      DEPTH     CWSEL     CRIWS     WSELR     EG        HV        HL        OLOSS     BANK ELEV
   Q          QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       INA     LEFT/RIGHT
   TIME       VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE      XLOBL     XLCH      XLOBR     ICRIAL    IDC       ICONT     CORAR     TCPHIL      ENDST

1490 NH CARD USED
*SECNO 46870.000
 2800 NAT Q1=   7809.81  WSEL=    633.42  ENC Q1=   7809.80  WSEL=    633.52  RATIO=  0.0000
 NAT Q1=   7894.  RATIOS LOB,CH,ROB=  0.0895  0.8943  0.0162  WSEL=    633.52

3470 ENCROACHMENT STATIONS=      51.0     470.5  TYPE=     4  TARGET=       0.011
                XSEC 5  HILL AT RIGHT BANK IS FLOODING
 46870.00     20.90    633.50      0.00    633.42    633.87      0.37      0.72      0.02    622.10
   18800.      1588.    17005.      207.     1618.     3306.      126.     7092.      660.     621.30
     3.34      0.98       5.14     1.63     0.135     0.047     0.093     0.000    612.60     51.02
 0.000582     1280.      1300.     1575.         2         0         0      0.00    425.49    476.51
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0
 1490 NH CARD USED
 *SECNO 48720.000
  2800 NAT Q1=  10589.61  WSEL=    634.39  ENC Q1=  10589.60  WSEL=    634.49  RATIO=  0.0000
  NAT Q1=  10692.  RATIOS LOB,CH,ROB=  0.0702  0.8591  0.0707  WSEI=    634.49

 3470 ENCROACHMENT STATIONS=      32.1     428.8  TYPE=     4  TARGET=       0.010
                XSEC 6
  48720.00    18.07   634.47     0.00   634.39   634.65     0.18     0.76     0.02   626.80
    18800.     1268.    16276.    1255.     499.    4524.    1117.    7323.     676.    620.60
      3.49      2.54      3.60     1.12    0.041    0.049    0.135    0.000   616.40    32.14
  0.000315     1500.     1850.    2000.        2        0        0     0.00   396.67   428.81
0
 1490 NH CARD USED
 *SECNO 50220.000
  2800 NAT Q1=  12658.99  WSEL=    634.83  ENC Q1=  12658.98  WSEL=    634.93  RATIO=  0.0000
  NAT Q1=  12846.  RATIOS LOB,CH,ROB=  0.4894  0.4955  0.0151  WSEI=    634.93

 3470 ENCROACHMENT STATIONS=      22.1     705.1  TYPE=     4  TARGET=       0.015
                XSEC 7
  50220.00    21.72   634.92     0.00   634.83   635.04     0.12     0.38     0.01   626.30
    18800.     9190.     9458.     152.     4169.    2991.     138.    7541.     694.    623.10
      3.64      2.20      3.16     1.10    0.041    0.049    0.067    0.000   613.20    22.15
  0.000221     1300.     1500.    1300.        2        0        0     0.00   682.95   705.10
0
 1490 NH CARD USED
 *SECNO 51945.000
  2800 NAT Q1=   7298.00  WSEL=    635.27  ENC Q1=   7297.99  WSEL=    635.36  RATIO=  0.0000
  NAT Q1=   7396.  RATIOS LOB,CH,ROB=  0.0004  0.7825  0.2171  WSEL=    635.36
1
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    SECNO     DEPTH     CHSEL     CHIES     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       WIN       ELMIN      SSTA
    SLOPE     XLOBL     XLCH      XLOBR     IIRIAL    IDC       ICONT     CORAR     TOPWID     ENDST


 3470 ENCROACHMENT STATIONS=     124.0    1202.7  TYPE=     4  TARGET=       0.013
              XSEC 8    VICS CAMPING ON RIGHT BANK  CAMPGROUND IS ON A HILL
                   WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.
  51945.00    20.45   635.35     0.00   635.27   635.66     0.31     0.57     0.06   637.60
    18800.       0.    14914.    3886.       0.    2972.    5853.    7825.     724.    629.40
      3.75      0.00      5.02     0.66    0.000    0.047    0.202    0.000   614.90   126.58
  0.000566     1300.     1725.    1500.        2        0        0     0.00  1076.15  1202.73
0
 1490 NH CARD USED
 *SECNO 53000.000

 3470 ENCROACHMENT STATIONS=     350.0    1650.0  TYPE=     1  TARGET=    1300.000
              XSEC 9  SECTION THROUGH ISLAND US OF VICS
            XSEC BENT 30DEG LFT AT 887  20DEG RT AT STA 1208
  53000.00    18.72   635.82     0.00   635.73   635.98     0.10     0.24     0.02   625.00
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    18800.     3110.    14592.     1099.     5563.     5014.     3130.     8049.      745.     623.00
     3.86      0.56      2.91      0.35     0.189     0.036     0.169     0.000    617.10    350.00
 0.000124     1200.     1055.      500.         2         0         0      0.00   1300.00   1650.00
0
 FLOW DISTRIBUTION FOR SECNO=  53000.00          CWSEL=    635.82

 STA=     350.      650.      760.      887.     1192.     1650.
   PER Q=     8.7       3.1       4.7      77.6       5.8
    AREA=  3312.1    1178.1    1072.5    5013.5    3129.7
     VEL=     0.5       0.5       0.8       2.9       0.4

 1490 NH CARD USED
 *SECNO 53700.000

 3470 ENCROACHMENT STATIONS=      300.0    1730.0  TYPE=      1  TARGET=    1430.000
                XSEC 10  REDWOOD COTTAGE ON LEFT BANK  1976 HWM 630.5
                1986 HWM 638    XSEC BENT 45DEG LEFT AT STA 1360
  53700.00     19.29    635.89      0.00    635.80    636.02      0.12      0.09      0.01    626.20
    18800.     7573.    11227.        0.    12991.     3102.        0.      8227.      761.  100000.00
      3.93      0.58      3.62      0.00     0.154     0.034     0.000     0.000    616.60    300.00
  0.000161     400.      700.      750.         2         0         0      0.00   1430.00   1730.00
0
 FLOW DISTRIBUTION FOR SECNO=  53700.00          CWSEL=    635.89

 STA=     300.     1340.     1420.     1557.     1730.
   PER Q=    34.2       3.4       2.7      59.7
    AREA=  11330.6     655.0     995.3    3101.8
     VEL=     0.6       1.0       0.5       3.6

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


 1490 NH CARD USED
 *SECNO 54600.000

 3470 ENCROACHMENT STATIONS=    770.0    2250.0  TYPE=      1  TARGET=    1480.000
                XSEC 10A NEAR WHITE COTTAGE(BRONKEMA)  1976HWM 630.9 IN GARAGE
                XSEC BENT 50DEG RT AT STA 139.9  RESTRICTED FOR HIGH GROUND AT
                XSEC 11 US      1986 HWM 638
  54600.00     21.55    636.05      0.00    635.96    636.14      0.09      0.12      0.00    628.70
    18800.     9191.     9364.       245.    11809.     2835.       175.     8432.      779.    621.00
      4.03      0.78      3.30      1.40     0.115     0.041     0.054     0.000    614.50    770.00
  0.000180     500.      900.      1000.         2         0         0      0.00   1474.68   2244.68
0
 FLOW DISTRIBUTION FOR SECNO=  54600.00          CWSEL=    636.05

 STA=     770.      949.     1352.     1508.     1597.     1755.     1846.     1888.     1957.     2060.     2062.     2221.     2245.
   PER Q=     4.4       0.1       5.4       4.5       5.4       6.2       3.3       6.4       4.0       0.2      49.8       1.3
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AREA=	2211.2	4589.9	1191.2	716.9	998.5	633.3	287.9	525.8	640.1	14.3	2834.9	175.2
VEL=	0.4	0.4	0.8	1.2	1.0	1.8	2.1	2.3	1.2	2.2	3.3	1.4

1490 NH CARD USED
*SECNO 55080.000

XSEC 10B LOB IS FELCH ROAD

55080.00	21.59	636.09	0.00	636.00	636.22	0.14	0.07	0.01	621.00
18800.	9527.	9034.	238.	3785.	2676.	173.	8510.	787.	621.30
4.07	2.52	3.38	1.38	0.024	0.041	0.054	0.000	614.50	56.70
0.000175	250.	480.	550.	2	0	0	0.00	928.24	984.94

0
1490 NH CARD USED
*SECNO 55800.000

3470 ENCROACHMENT STATIONS= 0.0 1900.0 TYPE= 1 TARGET= 1899.999

XSEC 11 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD HOMENS BEND

55800.00	19.91	636.11	0.00	636.02	636.43	0.32	0.15	0.06	627.70
18800.	0.	14871.	3929.	0.	2903.	4376.	8586.	795.	628.60
4.10	0.00	5.12	0.90	0.000	0.039	0.123	0.000	616.20	1000.00
0.000510	150.	720.	450.	2	0	0	0.00	900.00	1900.00

0
FLOW DISTRIBUTION FOR SECNO= 55800.00 CHSEL= 636.11

STA=	1000.	1169.	1172.	1185.	1237.	1320.	1454.	1546.	1651.	1819.	1900.
PER Q=	79.1	0.1	0.4	1.8	2.9	4.8	2.8	0.0	5.3	2.8	
AREA=	2903.0	20.3	80.0	317.6	519.4	845.2	525.1	562.5	984.0	521.6	
VEL=	5.1	1.0	1.0	1.0	1.1	1.1	1.0	0.0	1.0	1.0	

1

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

1490 NH CARD USED
*SECNO 56800.000

XSEC 12

56800.00	22.02	636.62	0.00	636.55	636.76	0.14	0.31	0.02	621.70
18800.	144.	11707.	6949.	133.	3157.	9013.	8665.	800.	630.00
4.18	1.08	3.71	0.77	0.094	0.048	0.128	0.000	614.60	4.10
0.000359	1200.	1000.	50.	2	0	0	0.00	1587.91	1592.01

0
FLOW DISTRIBUTION FOR SECNO= 56800.00 CHSEL= 636.62

STA=	4.	22.	222.	350.	457.	758.	865.	958.	1093.	1227.	1424.	1592.
PER Q=	0.8	62.3	4.7	4.0	5.7	3.7	3.2	3.6	3.6	4.4	4.0	
AREA=	132.7	8157.4	917.1	767.4	1862.6	735.3	643.8	913.2	914.2	1189.1	1070.5	
VEL=	1.1	3.7	1.0	1.0	0.6	0.9	0.9	0.7	0.8	0.7	0.7	

1490 NH CARD USED
*SECNO 57650.000

XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
1976 HWM 631.9

57650.00	19.43	636.83	0.00	636.76	636.88	0.05	0.11	0.01	622.00
18800.	5962.	10260.	2578.	6093.	4706.	4689.	8785.	812.	626.50
4.28	0.98	2.18	0.55	0.061	0.043	0.103	0.000	617.40	9.53
0.000115	500.	850.	50.	0	0	0	0.00	1869.48	1879.01

0
FLOW DISTRIBUTION FOR SECNO= 57650.00 CHSEL= 636.83

STA=	10.	845.	857.	1180.	1380.	1514.	1879.
PER Q=	30.9	0.9	54.6	4.3	3.9	5.5	
AREA=	5958.3	134.7	4705.5	1414.0	941.3	2333.6	
VEL=	1.0	1.2	2.2	0.6	0.8	0.4	

1490 NH CARD USED
*SECNO 58350.000
2800 NAT Q1= 12087.68 ESEL= 636.83 ENC Q1= 12087.67 USEL= 636.93 RATIO= 0.0000
NAT Q1= 12293. RATIOS LOB,CH,ROB= 0.5018 0.4977 0.0005 WSEL= 636.93

3470 ENCROACHMENT STATIONS= 99.5 1300.0 TYPE= 4 TARGET= 0.017
XSEC 14 XSEC BENT 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB

58350.00	20.60	636.90	0.00	636.83	636.99	0.09	0.10	0.01	630.50
18800.	9256.	9535.	9.	7030.	3083.	37.	8945.	830.	629.50
4.36	1.32	3.09	0.24	0.065	0.049	0.202	0.000	616.30	99.53
0.000245	500.	700.	400.	2	0	0	0.00	1195.56	1295.09

0
1

SECNO	DEPTH	CHSEL	CRIBS	HSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	KLOBL	KLCH	KLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 58350.00 CHSEL= 636.90

STA=	100.	400.	731.	918.	1077.	1106.	1285.	1295.
PER Q=	16.6	17.9	7.5	6.0	1.2	50.7	0.0	
AREA=	2268.1	2465.9	1159.4	954.0	182.7	3083.3	37.3	
VEL=	1.4	1.4	1.2	1.2	1.2	3.1	0.2	

1490 NH CARD USED
*SECNO 58900.000
2800 NAT Q1= 11196.46 USEL= 636.93 ENC Q1= 11196.45 USEL= 637.03 RATIO= 0.0000
NAT Q1= 11382. RATIOS LOB,CH,ROB= 0.2536 0.7111 0.0352 WSEL= 637.03

3470 ENCROACHMENT STATIONS= 83.6 1484.4 TYPE= 4 TARGET= 0.016
XSEC 15

58900.00	19.00	637.00	0.00	636.93	637.14	0.14	0.14	0.02	631.50
18800.	4661.	13620.	518.	5227.	3924.	739.	9059.	844.	629.00
4.41	0.89	3.47	0.70	0.081	0.046	0.135	0.000	618.00	83.63
0.000285	450.	550.	700.	2	0	0	0.00	1400.82	1484.44

0

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 1490 NH CARD USED
 *SECNO 60000.000
  2800 NAT Q1=   5498.54  WSEL=    637.14  ENC Q1=   5498.53  WSEL=    637.24  RATIO=  0.0000
  NAT Q1=   5575.  RATIOS LOB,CH,ROB=  0.0200  0.8719  0.1080  WSEL=    637.24

 3470 ENCROACHMENT STATIONS=      34.9     722.3  TYPE=     4  TARGET=      0.014
                XSEC 16
  60000.00    18.31   637.21     0.00   637.14   637.83     0.62     0.54     0.14   628.00
     18800.     264.    16624.    1912.     75.    2486.    2283.    9225.     866.    632.60
      4.46     3.52     6.69     0.84    0.054    0.047    0.162    0.000   618.90    34.94
  0.001178    1000.    1100.     700.        2        0        0     0.00   687.35   722.29
0
 FLOW DISTRIBUTION FOR SECNO=  60000.00         CWSEL=    637.21

 STA=      35.      44.     200.     722.
   PER Q=      1.4     88.4     10.2
    AREA=     75.0   2485.7   2283.5
     VEL=      3.5      6.7      0.8

 1490 NH CARD USED
 *SECNO 62250.000
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WIN       ELMIN       SSTA
    SLOPE     XLCBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

  2800 NAT Q1=  11535.47  WSEL=    638.62  ENC Q1=  11535.47  WSEL=    638.72  RATIO=  0.0000
  NAT Q1=  11666.  RATIOS LOB,CH,ROB=  0.0168  0.9361  0.0471  WSEL=    638.72

 3470 ENCROACHMENT STATIONS=      90.7     517.5  TYPE=     4  TARGET=      0.011
                XSEC 17    SUBDIVISION ON LEFT BANK
  62250.00    18.50   638.70     0.00   638.62   638.94     0.24     1.07     0.04   632.90
     18800.     213.    17798.    789.     342.    4423.    918.    9475.     891.    629.10
      4.62     0.62     4.02     0.86    0.126    0.038    0.120    0.000   620.20    90.68
  0.000267    2400.    2225.     1700.        2        0        0     0.00   426.80   517.49
0
 1490 NH CARD USED
 *SECNO 63120.000
  2800 NAT Q1=   9209.38  WSEL=    638.83  ENC Q1=   9209.38  WSEL=    638.93  RATIO=  0.0000
  NAT Q1=   9310.  RATIOS LOB,CH,ROB=  0.0028  0.9717  0.0255  WSEL=    638.93

 3470 ENCROACHMENT STATIONS=      32.0     356.5  TYPE=     4  TARGET=      0.011
  63120.00    19.22   638.92     0.00   638.83   639.31     0.39     0.33     0.04   630.40
     18800.      0.    18459.    342.      0.    3663.    548.    9585.     899.    633.10
      4.67     0.00     5.34     0.62    0.000    0.038    0.148    0.000   619.70    32.00
  0.000438     970.     970.      970.       12        0        0     0.00   324.52   356.52
0
 1490 NH CARD USED
 *SECNO 65620.000
```

```
 3470 ENCROACHMENT STATIONS=      20.0     470.0  TYPE=      1  TARGET=     450.000
  65620.00     19.03    639.73      0.00    639.62    640.09      0.36      0.78      0.00    629.80
     18800.     1164.     17229.      407.     1230.     3432.      418.     9788.      916.    628.30
      4.78      0.95      5.02      0.97     0.107     0.038     0.120     0.000    620.70     20.00
  0.000387     1900.     1900.     1900.        2.         0         0      0.00    450.00    470.00
0
 1490 NH CARD USED
 *SECNO 67420.000

 3470 ENCROACHMENT STATIONS=      10.0     420.0  TYPE=      1  TARGET=     410.000
                XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK
  67420.00     21.35    640.65      0.00    640.56    640.93      0.28      0.83      0.01    631.80
     18800.      783.     17555.      461.      342.     4022.      799.    10080.      941.    633.70
      4.95      2.29      4.36      0.58     0.040     0.038     0.148     0.000    619.30     10.00
  0.000288     2400.     2500.     2500.        2.         0         0      0.00    410.00    420.00
0
1
```



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


 1490 NH CARD USED
 *SECNO 68970.000
  2800 NAT Q1=  10990.36  WSEL=    641.02  ENC Q1=  10990.36  WSEL=    641.12  RATIO=  0.0000
  NAT Q1=  11116.  RATIOS LOB,CH,ROB=  0.0397  0.9473  0.0130  WSEL=    641.12

 3470 ENCROACHMENT STATIONS=     121.1     532.8  TYPE=      4  TARGET=       0.011
                XSEC 21 US OF GREEN COTTAGE ON LEFT BANK
 68970.00     18.40    641.10      0.00    641.02    641.38      0.28      0.45      0.00    631.50
    18800.      642.     18022.      136.      722.     4129.      138.    10260.      955.    628.30
     5.05      0.89      4.36      0.98     0.085     0.038     0.100     0.000    622.70    121.13
 0.000294     1400.     1550.     1700.         0         0         0      0.00    411.63    532.76
0
 1490 NH CARD USED
 *SECNO 70300.000
  2800 NAT Q1=  11885.61  WSEL=    641.45  ENC Q1=  11889.61  WSEL=    641.55  RATIO=  0.0000
  NAT Q1=  12027.  RATIOS LOB,CH,ROB=  0.0969  0.8995  0.0035  WSEL=    641.55

 3470 ENCROACHMENT STATIONS=      29.3     426.0  TYPE=      4  TARGET=       0.011
                XSEC 22  BELOW POWER LINE CROSSING  N VALUES ARE ATYPICAL
 70300.00     17.83    641.53      0.00    641.45    641.75      0.21      0.36      0.01    633.80
    18800.     1689.     17044.       67.       867.     4421.       55.    10417.      967.    632.30
     5.15      1.95      3.85      1.21     0.050     0.038     0.050     0.000    623.70     28.25
 0.000249     1300.     1330.     1300.         2         0         0      0.00    392.58    420.84
0
 1490 NH CARD USED
 *SECNO 71300.000
  2800 NAT Q1=  10485.69  WSEL=    641.66  ENC Q1=  10485.68  WSEL=    641.76  RATIO=  0.0000
  NAT Q1=  10600.  RATIOS LOB,CH,ROB=  0.0626  0.9277  0.0097  WSEL=    641.76
```

```
 3470 ENCROACHMENT STATIONS=       31.8      334.6  TYPE=      4  TARGET=        0.011
  71300.00     19.04    641.74      0.00    641.66    642.06      0.31       0.28       0.03    633.60
     18800.     1088.    17619.       93.      497.     3818.       97.     10529.      975.     630.20
      5.21      2.19      4.61      0.96     0.045     0.038     0.100      0.000    622.70     31.85
  0.000322     1000.     1000.     1000.         2         0         0       0.00    302.75    334.60
0
 1490 NH CARD USED
 *SECNO 71900.000
  2800 NAT Q1=    9302.43  WSEL=     641.87  ENC Q1=    9302.43  WSEL=     641.97  RATIO=  0.0000
  NAT Q1=    9406.  RATIOS LOB,CH,ROB=  0.0667  0.9011  0.0321  USEL=     641.97
1
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS    BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA    LEFT/RIGHT
    TIME       VLOB       VCH        VROP       XNL        XNCH       XNR        WTN        ELMIN       SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID      ENDST


 3470 ENCROACHMENT STATIONS=       46.1      364.7  TYPE=      4  TARGET=        0.011
  71900.00     17.35    641.95      0.00    641.87    642.28      0.33       0.22       0.00    630.00
     18800.     1160.    17142.      498.      486.     3599.      446.     10590.      979.     630.50
      5.25      2.39      4.76      1.12     0.054     0.040     0.120      0.000    624.60     46.08
  0.000410      500.      600.      650.         0         0         0       0.00    318.64    364.71
0
 1490 NH CARD USED
 *SECNO 73040.000
  2800 NAT Q1=    9342.19  WSEL=     642.41  ENC Q1=    9342.19  WSEL=     642.51  RATIO=  0.0000
  NAT Q1=    9480.  RATIOS LOB,CH,ROB=  0.0084  0.8329  0.1586  USEL=     642.51

 3470 ENCROACHMENT STATIONS=       61.4      521.3  TYPE=      4  TARGET=        0.015
          XSEC 25 BTWN BARBEE AND KRING CABINS US OF PUB ACC SITE DS OF NEWYGO
  73040.00     16.89    642.49      0.00    642.41    642.75      0.26       0.47       0.01    636.20
     18800.       16.    15902.     2882.       28.     3678.     1156.     10713.      989.     633.30
      5.33      0.57      4.32      2.49     0.100     0.042     0.038      0.000    625.60     61.45
  0.000407     1200.     1140.     1100.         2         0         0       0.00    459.85    521.29
0
 1490 NH CARD USED
 *SECNO 73590.000
  2800 NAT Q1=    9612.02  WSEL=     642.57  ENC Q1=    9612.02  WSEL=     642.67  RATIO=  0.0000
  NAT Q1=    9723.  RATIOS LOB,CH,ROB=  0.0176  0.9623  0.0201  USEL=     642.67

 3470 ENCROACHMENT STATIONS=       33.1      326.1  TYPE=      4  TARGET=        0.011
          XSEC 26 DS OF CO RD BRDG  SEC BENT 45DEG RT OFF RD FILL AT STA 10
            BENT 45DEG RT TO RD FILL AT STA 325
  73590.00     18.56    642.66      0.00    642.57    642.98      0.33       0.21       0.02    632.90
     18800.      226.    18223.      351.      116.     3929.      162.     10769.      994.     632.40
      5.36      1.96      4.64      2.17     0.047     0.038     0.059      0.000    624.10     33.06
  0.000381       600.      550.      500.         2         0         0       0.00    293.08    326.14
0
 *SECNO 73640.000
  2800 NAT Q1=    9461.29  WSEL=     642.59  ENC Q1=    9559.97  WSEL=     642.69  RATIO= -0.0104
  NAT Q1=    9550.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  USEL=     642.69
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3265 DIVIDED FLOW

1

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

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 652.00 MAX ELLC= 650.50

XSEC 27 CENTER OF BRDG ELLC AT 650.5

73640.00	17.28	642.68	0.00	642.59	643.00	0.33	0.02	0.00	652.00
18300.	0.	18800.	0.	0.	4096.	0.	10774.	994.	652.00
5.37	0.00	4.59	0.00	0.000	0.034	0.000	0.000	625.40	0.00
0.000387	50.	50.	50.	0	0	0	0.00	290.00	296.00

0
*SECNO 73660.000
2800 NAT Q1= 9463.08 WSEL= 642.59 ENC Q1= 9568.19 WSEL= 642.69 RATIO= -0.0111
NAT Q1= 9568. RATIOS LOB,CH,ROB= 0.0000 1.0000 0.0000 WSEL= 642.69

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 652.00 MAX ELLC= 650.50

73660.00	17.28	642.68	0.00	642.59	643.01	0.33	0.01	0.00	652.00
18800.	0.	18800.	0.	0.	4098.	0.	10776.	995.	652.00
5.37	0.00	4.59	0.00	0.000	0.034	0.000	0.000	625.40	0.00
0.000387	20.	20.	20.	0	0	0	0.00	290.00	296.00

0
*SECND 73720.000
2800 NAT Q1= 8092.77 WSEL= 642.54 ENC Q1= 8092.77 WSEL= 642.64 RATIO= 0.0000
NAT Q1= 8206. RATIOS LOB,CH,ROB= 0.0369 0.9208 0.0423 WSEL= 642.64

3470 ENCROACHMENT STATIONS= 87.4 398.1 TYPE= 4 TARGET= 0.014

73720.00	17.32	642.62	0.00	642.54	643.08	0.45	0.03	0.04	634.70
18800.	565.	17557.	678.	190.	3163.	321.	10781.	995.	632.30
5.37	2.37	5.55	2.11	0.047	0.034	0.059	0.000	625.30	87.40
0.000543	60.	60.	60.	2	0	0	0.00	310.69	398.09

0
1490 NH CARD USED
*SECNO 75140.000
2800 NAT Q1= 11859.82 WSEL= 643.31 ENC Q1= 11859.82 WSEL= 643.41 RATIO= 0.0000
NAT Q1= 12044. RATIOS LOB,CH,ROB= 0.2667 0.7328 0.0005 WSEL= 643.41

3470 ENCROACHMENT STATIONS= 169.4 1075.0 TYPE= 4 TARGET= 0.015

KSEC 29 SEWAGE TREATMENT PLANT IN LOB

1

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

  75140.00     15.90    643.40      0.00    643.31    643.59      0.20      0.49      0.03    635.60
    18800.     4802.    13989.       9.      4491.     3426.       21.     10956.     1013.    634.50
      5.49      1.07      4.08      0.43      0.080     0.034     0.090     0.000    627.50    169.36
  0.000252     1140.     1420.     1440.         2         0         0      0.00    902.55   1071.92
0
 *SECNO 75800.000
  2800 NAT Q1=    8225.96  WSEL=     643.35  ENC Q1=    8324.75  WSEL=     643.45  RATIO= -0.0120
  NAT Q1=    8325.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=     643.45
 3280 CROSS SECTION  75800.00 EXTENDED       8.25 FEET


 3470 ENCROACHMENT STATIONS=     1005.0     1264.0  TYPE=      4  TARGET=        0.000
                XSEC 29A  AT USGS CABLE
  75800.00     15.25    643.45      0.00    643.35    643.90      0.45      0.23      0.08    636.00
    18800.        0.    18800.        0.        0.     3493.        0.     11036.     1021.    635.20
      5.52      0.00      5.38      0.00     0.000     0.034     0.000     0.000    628.20   1005.00
  0.000546      540.      660.      700.         2         0         0      0.00    259.00   1264.00
0
 1490 NH CARD USED
 *SECNO 76350.000
  2800 NAT Q1=    8645.69  WSEL=     643.76  ENC Q1=    8645.68  WSEL=     643.86  RATIO=  0.0000
  NAT Q1=    8761.  RATIOS LOB,CH,ROB=  0.0183  0.9735  0.0082  WSEL=     643.86

 3470 ENCROACHMENT STATIONS=       12.7      337.9  TYPE=      4  TARGET=        0.013
            XSEC 29B AT USGS GAGE  1976 STAGE IS 639.2   1986 STAGE 645.4
  76350.00     14.06    643.86      0.00    643.76    644.19      0.33      0.28      0.01    634.70
    18800.      231.    18539.       30.       85.     3974.       43.     11084.     1024.    634.60
      5.55      2.73      4.66      0.70     0.034     0.038     0.101     0.000    629.80     12.73
  0.000473      550.      550.      550.         2         0         0      0.00    325.14    337.86
0
 *SECNO 76750.000
  2800 NAT Q1=    9314.14  WSEL=     643.90  ENC Q1=    9314.14  WSEL=     644.00  RATIO=  0.0000
  NAT Q1=    9432.  RATIOS LOB,CH,ROB=  0.0095  0.9775  0.0130  WSEL=     644.00

 3470 ENCROACHMENT STATIONS=       45.7      347.7  TYPE=      4  TARGET=        0.012
                XSEC 30  1975 HWM IS 638.6      1976 HWM IS 639.2
  76760.00     16.40    644.00      0.00    643.90    644.39      0.39      0.18      0.02    636.50
    18800.        64.    18608.       128.       79.     3692.       136.    11122.     1027.    636.00
      5.57      0.81      5.04      0.94     0.100     0.034     0.100     0.000    627.60     45.67
  0.000408      350.      410.      450.         2         0         0      0.00    301.98    347.65
0
1
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00BREAK00

1) COUNTY: Newaygo

2) STUDY NAME: Bridgeton, Ashland, Garfield and Brooks Twp

3) WATERCOURSE: Muskegon River

4) DOCUMENT TYPE: 100yr. Encroached

00BREAK00

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

T1
T2    EST 1913 FLOOD
T3    Q 14950CFS

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
      0.        0.        0.        0.  0.000250      0.00      0.0     14950.   618.000    0.000
J2  NPROF      IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
    3.000      0.000    -1.000     0.000     0.000     1.350     0.000     0.000     0.000     0.000
1
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   SECNO      DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
   Q          QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME       VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE      XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

   *PROF 3

   CCHV=   0.100 CEHV=   0.300
   1490 NH CARD USED
   *SECNO 0.100

   3470 ENCROACHMENT STATIONS=      8.0     818.0  TYPE=     1  TARGET=     810.000
                XSEC 61
      0.10     17.37    617.37     0.00   618.00    617.63     0.26      0.00      0.00    613.20
     14950.       5.    13282.    1663.     18.      3047.     2409.       0.        0.     609.60
      0.00      0.27      4.36     0.69    0.135     0.031     0.101     0.000   600.00     13.58
  0.000253       0.        0.       0.        0         0         3      0.00    794.18    807.76
0
   1490 NH CARD USED
   *SECNO 1920.000

   3470 ENCROACHMENT STATIONS=     22.0     763.0  TYPE=     1  TARGET=     741.000
          SEC 61 MOVED US INVERT ADJ BY .94FT      FLOOD FLOW SHIFTED FROM
          ROB AS MOVED ON XSEC 61 TO APPROX AREA IN LOB FOR THIS XSEC
     1920.00    16.93    617.87     0.00      0.00    618.19     0.32      0.54      0.02    614.14
      14950.       0.    13900.    1050.        0.      2949.     1986.      220.      32.     610.54
        0.12     0.00      4.71     0.53     0.000     0.031     0.140     0.000   600.94     22.00
    0.000316    2170.     1920.     1740.         0         0         0      0.00    741.00    763.00
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0
1490 NH CARD USED
*SECNO 3050.000

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000
XSEC 62

3050.00	16.84	618.24	0.00	0.00	618.49	0.25	0.30	0.01	608.60
14950.	74.	14826.	49.	78.	3704.	62.	336.	46.	609.00
0.20	0.94	4.00	0.80	0.067	0.031	0.067	0.000	601.40	20.97
0.000219	1200.	1130.	1200.	2	0	0	0.00	303.49	324.46

0
1490 NH CARD USED
*SECNO 3051.000

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000
W EDGE OF BRIDGE DECK AT BRIDGETON 1976 HWM 615.7

3051.00	16.85	618.25	0.00	0.00	618.49	0.24	0.00	0.00	608.60
14950.	215.	14592.	143.	79.	3705.	62.	336.	46.	609.00
0.20	2.73	3.94	2.30	0.023	0.031	0.023	0.000	601.40	20.97
0.000212	1.	1.	1.	1	0	0	0.00	303.50	324.47

0
1

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

SPECIAL BRIDGE

SD	XK	XKOR	COEQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.90	1.25	2.60	1000.00	260.00	8.00	9000.00	1.43	604.50	604.50

*SECNO 3100.000
CLASS A LOW FLOW

3420 BRIDGE W.S.= 618.24 BRIDGE VELOCITY= 4.01 CALCULATED CHANNEL AREA= 3733.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
0.00	618.50	0.01	0.	14950.	9000.	9152.	635.40	638.00

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000

3100.00	16.86	618.26	0.00	0.00	618.50	0.24	0.01	0.00	608.60
14950.	215.	14591.	144.	79.	3708.	62.	340.	46.	609.00
0.20	2.73	3.93	2.30	0.023	0.031	0.023	0.000	601.40	20.95
0.000211	49.	49.	49.	0	0	0	0.00	303.53	324.48

0
*SECNO 3101.000

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 3470 ENCROACHMENT STATIONS=      17.0      328.0  TYPE=      1  TARGET=      311.000
    3101.00     16.85    618.25      0.00      0.00    618.50      0.25      0.00      0.00    608.60
     14950.       25.     14890.       36.       79.     3708.       62.      340.       46.    609.00
       0.20      0.32       4.02      0.57     0.202     0.031     0.095     0.000    601.40     20.95
   0.000220        1.         1.        1.         0         0         0      0.00    303.53    324.48
0
 1490 NH CARD USED
 *SECNO 4680.000
                XSEC 63
    4680.00     15.14    618.64      0.00      0.00    618.81      0.17      0.30      0.01    608.50
     14950.       230.     14043.       676.      239.     4140.       752.      503.       62.    616.00
       0.34      0.96       3.39      0.90     0.061     0.031     0.048     0.000    603.50     13.15
   0.000164      1500.      1579.     1600.         2         0         0      0.00    599.79    612.94
0
 1490 NH CARD USED
 *SECNO 7200.000
1
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    SECNO       DEPTH       CWSEL       CEIWS       WSELK       EG          HV          HL          OLOSS     BANK ELEV
    Q           QLOB        QCH         QROB        ALOB        ACH         AEOB        VOL         TWA    LEFT/RIGHT
    TIME        VLOB        VCH         VROB        XNL         XNCH        XNR         VTN         ELMIN        SSTA
    SLOPE       XLOBL       XLCH        XLOBR       ITRIAL      IDC         ICONT       CORAR       TOPWID       ENDST


 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=      619.60 ELREA=      610.40
          XSEC 64          XSEC CROSSES US OF OLD ROCK CREEING
    7200.00     16.75    619.05      0.00      0.00    619.37      0.32      0.52      0.04    619.00
     14950.       0.     14851.       99.       0.     3274.       79.      747.       87.    610.40
       0.49      0.00       4.54      1.26     0.000     0.031     0.054     0.000    602.30    562.00
   0.000265      2200.      2520.     2500.         2         0         0      0.00    243.99    805.99
0
 1490 NH CARD USED
 *SECNO 8850.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=      619.80 ELREA=      619.80
          XSEC 65   XSEC CROSSES 100FT US OF BOAT LAUNCH
    8850.00     15.37    619.57      0.00      0.00    619.85      0.27      0.47      0.00    619.30
     14950.       0.     14950.       0.        0.     3562.       0.       878.       97.    619.80
       0.60      0.00       4.20      0.00     0.067     0.033     0.000     0.000    604.20     38.57
   0.000311      1400.      1650.     1600.         2         0         0      0.00    284.50    323.06
0
 1490 NH CARD USED
 *SECNO 10300.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=      611.10 ELREA=      620.50
                XSEC 66
   10300.00     16.89    620.19      0.00      0.00    620.41      0.22      0.55      0.01    611.10
     14950.       165.     14785.       0.       100.     3952.       0.       1005.      107.    620.60
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      0.71      1.65      3.74      0.00     0.067     0.045     0.000     0.000    603.30     29.46
  0.000482     1500.     1450.      700.         2         0         0      0.00    346.86    376.32
0
 1490 NH CARD USED
 *SECNO 11800.000
                 XSEC    67
  11800.00     16.40    620.80      0.00      0.00    620.98      0.18      0.57      0.00    619.60
     14950.      2136.    12752.      62.      4632.     3458.      152.      1221.      131.     610.70
       0.84       0.46      3.69      0.41     0.202     0.041     0.202     0.000    604.40    102.86
  0.000302     1500.     1500.      1000.         2         0         0      0.00    986.36   1089.22
0
1
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    SECNO      DEPTH     CWSEL     CRIES     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q          QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME       VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
    SLOPE      XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 *SECNO 12600.000
  12600.00     16.64    621.04      0.00      0.00    621.21      0.17      0.23      0.00    619.60
     14950.      2193.    12692.      64.      4806.     3517.      160.      1375.      149.     610.70
       0.91       0.46      3.61      0.40     0.202     0.041     0.202     0.000    604.40     98.63
  0.000283      800.      800.       800.         2         0         0      0.00    991.32   1089.95
0
 1490 NH CARD USED
 *SECNO 14100.000
                 XSEC    68
  14100.00     16.35    621.45      0.00      0.00    621.66      0.21      0.44      0.01    611.80
     14950.      179.     14167.      604.      323.     3749.     1570.     1585.      173.     618.40
       1.02       0.55      3.78      0.38     0.135     0.041     0.202     0.000    605.10     17.99
  0.000324      900.     1500.      1600.         2         0         0      0.00    701.50    719.50
0
 1490 NH CARD USED
 *SECNO 16700.000
                 XSEC    69
  16700.00     17.47    622.07      0.00      0.00    622.30      0.23      0.63      0.01    621.80
     14950.      2050.    12059.      40.      5262.     3117.      58.       1844.      200.     613.80
       1.21       0.39      4.13      0.69     0.202     0.026     0.081     0.000    604.60     21.99
  0.000216      300.     2600.      1900.         2         0         0      0.00   1111.92   1133.91
0
 *SECNO 18990.000
                 XSEC 1 FROM SUBDIVISION FILE F184 22 12
  18990.00     15.73    622.53      0.00      0.00    622.67      0.14      0.36      0.01    611.80
     14950.      517.     14312.      121.      591.     4613.      256.      2132.      231.     612.70
       1.40       0.88      3.10      0.47     0.054     0.034     0.081     0.000    606.80    121.47
  0.000140     1250.     2190.      2500.         2         0         0      0.00    533.19    654.66
0
 1490 NH CARD USED
 *SECNO 19870.000

 3265 DIVIDED FLOW
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XSEC 70 THRCUGH SUBDIV ON LEFT BANK CHANNEL INEFFECTIVE
1976 HWM ON BASEMENT WALL 619.8 HWM 800FT DS 619.98

19870.00	17.02	622.62	0.00	0.00	622.92	0.30	0.21	0.05	612.40
14950.	2547.	12311.	92.	1560.	2559.	199.	2243.	245.	612.80
1.47	1.63	4.81	0.46	0.041	0.034	0.202	0.000	605.60	17.29
0.000334	950.	1000.	980.	2	0	0	0.00	668.31	738.61

0
1

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

1490 NH CARD USED
*SECNO 21370.000
XSEC 71 OLDER COTTAGES ON RT BANK SEAWALL PROTECTS RT BANK

21370.00	16.94	623.14	0.00	0.00	623.32	0.18	0.39	0.01	612.40
14950.	926.	11185.	2840.	1536.	2866.	2366.	2422.	267.	619.80
1.60	0.60	3.90	1.20	0.148	0.033	0.065	0.000	606.20	17.27
0.000213	1100.	1500.	1600.	2	0	0	0.00	759.88	777.15

0
1490 NH CARD USED
*SECNO 24985.000
XSEC 72

24985.00	16.59	624.09	0.00	0.00	624.26	0.17	0.94	0.00	620.30
14950.	1748.	11523.	1679.	3296.	3050.	1227.	3022.	336.	614.70
1.92	0.53	3.78	1.37	0.202	0.040	0.063	0.000	607.50	17.25
0.000323	3700.	3815.	3600.	2	0	0	0.00	882.29	899.54

0
1490 NH CARD USED
*SECNO 28235.000
XSEC 73

28235.00	15.83	625.13	0.00	0.00	625.36	0.22	1.08	0.01	623.50
14950.	741.	14142.	67.	1706.	3621.	87.	3448.	385.	616.70
2.15	0.43	3.91	0.77	0.202	0.039	0.108	0.000	609.30	16.62
0.000372	2300.	3200.	3300.	2	0	0	0.00	660.34	676.96

0
1490 NH CARD USED
*SECNO 29860.000
XSEC 74 IN LINE WITH E SIDE OF COTTAGE ON TOP OF LFT BANK
JUST DS OF POWERLINE

29860.00	16.41	625.71	0.00	0.00	626.00	0.29	0.62	0.02	616.20
14950.	61.	14547.	343.	151.	3324.	909.	3629.	406.	615.20
2.26	0.40	4.38	0.38	0.202	0.041	0.202	0.000	609.30	19.12
0.000395	1500.	1625.	1700.	1	0	0	0.00	482.43	501.55

0
1490 NH CARD USED
*SECNO 31660.000
XSEC 75

31660.00	16.21	626.41	0.00	0.00	626.62	0.20	0.61	0.01	623.30
14950.	313.	14843.	294.	922.	3869.	370.	3825.	427.	617.10

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     2.40      0.34      3.71      0.79     0.189     0.041     0.108     0.000    610.20     33.98
  0.000294    1700.     1800.     1800.         2         0         0      0.00    581.74    615.72
0
1
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   SECNO     DEPTH     CWSEL     CRINS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 1490 NH CARD USED
 *SECNO 35425.000

 3470 ENCROACHMENT STATIONS=       20.0      790.0  TYPE=      1  TARGET=      770.000
                 XSEC 76
  35425.00     17.95    627.75      0.00      0.00    627.93      0.18      1.31      0.00    621.20
    14950.       17.     12560.     2373.       51.     3374.     3442.     4344.      486.     625.30
      2.72      0.33      3.72      0.69     0.209     0.045     0.164     0.000    609.80     20.00
  0.000425     4300.     3760.     3600.         0         0         0      0.00    770.00    790.00
0
 1490 NH CARD USED
 *SECNO 37670.000

 3470 ENCROACHMENT STATIONS=       20.0     1035.0  TYPE=      1  TARGET=     1015.000
                 XSEC 77
  37670.00     20.66    628.66      0.00      0.00    628.86      0.20      0.92      0.00    622.70
    14950.     3892.    11050.        8.     6224.     2690.       31.     4714.      527.     623.70
      2.90      0.63      4.11      0.27     0.203     0.047     0.202     0.000    608.00     20.00
  0.000444     1900.     2150.     2100.         2         0         0      0.00   1009.40   1029.40
0
 1490 NH CARD USED
 *SECNO 38970.000

 3470 ENCROACHMENT STATIONS=       20.0      760.0  TYPE=      1  TARGET=      740.000
              XSEC 78  800FT DS OF ISLAND, POWERLINE CROSSING AND BOAT LAUNCH
                 WEST END OF OLD GRAVEL OPERATION
  38970.00     16.19    629.09      0.00      0.00    629.20      0.11      0.34      0.01    621.60
    14950.       16.     12458.     2476.       45.     4261.     3343.     4918.      548.     624.80
      3.04      0.35      2.92      0.74     0.135     0.041     0.110     0.000    612.90     20.00
  0.000188      700.     1300.     1300.         2         0         0      0.00    740.00    760.00
0
 1490 NH CARD USED
 *SECNO 42170.000

 3470 ENCROACHMENT STATIONS=       15.0      510.0  TYPE=      1  TARGET=      495.000
                 XSEC 1
  42170.00     17.48    629.58      0.00      0.00    630.00      0.42      0.70      0.09    622.40
    14950.       17.     13613.     1320.       53.     2513.     1823.     5349.      591.     625.90
      3.21      0.31      5.42      0.72     0.202     0.027     0.112     0.000    612.10     15.00
  0.000265     3600.     3200.     3000.         2         0         0      0.00    495.00    510.00
0
1
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO 43770.000
XSEC 2

43770.00	17.04	630.14	0.00	0.00	630.48	0.34	0.47	0.01	622.30
14950.	141.	13075.	1734.	185.	2638.	1727.	5520.	610.	618.30
3.31	0.76	4.96	1.00	0.101	0.034	0.107	0.000	613.10	13.58
0.000324	1200.	1600.	1800.	2	0	0	0.00	451.09	464.67

0
1490 NH CARD USED
*SECNO 44820.000
XSEC 3 SECTION THRU ISLAND NE OF OLD GRAVEL OPERATION

44820.00	17.99	630.69	0.00	0.00	630.85	0.16	0.35	0.02	624.70
14950.	565.	14080.	306.	1194.	4321.	762.	5653.	624.	625.30
3.41	0.47	3.26	0.40	0.202	0.047	0.202	0.000	612.70	8.62
0.000346	1100.	1050.	1100.	2	0	0	0.00	679.65	688.26

0
1490 NH CARD USED
*SECNO 45470.000
XSEC 4 OLD WOOD PILING ALONG EACH BANK

45470.00	17.48	630.88	0.00	0.00	631.15	0.26	0.27	0.03	627.70
14950.	520.	14379.	50.	1116.	3421.	147.	5732.	632.	624.50
3.45	0.47	4.20	0.34	0.202	0.047	0.202	0.000	613.40	12.10
0.000499	550.	650.	650.	1	0	0	0.00	528.62	540.72

0
1490 NH CARD USED
*SECNO 46870.000
XSEC 5 HILL AT RIGHT BANK IS ERODING

46870.00	18.94	631.54	0.00	0.00	631.85	0.31	0.69	0.02	622.10
14950.	965.	13783.	202.	1241.	2946.	141.	5867.	647.	621.30
3.53	0.78	4.68	1.43	0.135	0.047	0.090	0.000	612.60	21.93
0.000562	1280.	1300.	1575.	2	0	0	0.00	466.43	488.36

0
1490 NH CARD USED
*SECNO 48720.000
XSEC 6

48720.00	16.06	632.46	0.00	0.00	632.61	0.15	0.75	0.02	626.80
14950.	829.	13100.	1021.	440.	4002.	1011.	6070.	665.	620.60
3.70	1.89	3.27	1.01	0.045	0.049	0.135	0.000	616.40	13.47
0.000307	1500.	1850.	2000.	1	0	0	0.00	431.74	445.21

0
1

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

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

1490 NH CARD USED
*SECNO 50220.000

XSEC 7

50220.00	19.71	632.91	0.00	0.00	633.02	0.11	0.41	0.00	626.30
14950.	6304.	8456.	190.	3192.	2670.	168.	6256.	683.	623.10
3.85	1.97	3.17	1.13	0.041	0.049	0.067	0.000	613.20	7.49
0.000258	1300.	1500.	1300.	2	0	0	0.00	717.86	725.34

0
1490 NH CARD USED
*SECNO 51945.000

XSEC 8 VICS CAMPING ON RIGHT BANK CAMPGROUND IS ON A HILL
WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.

51945.00	18.52	633.42	0.00	0.00	633.73	0.30	0.65	0.06	637.60
14950.	0.	12563.	2387.	0.	2617.	4383.	6487.	715.	629.40
3.96	0.00	4.80	0.54	0.000	0.047	0.202	0.000	614.90	128.79
0.000708	1300.	1725.	1500.	2	0	0	0.00	1138.90	1267.70

0
1490 NH CARD USED
*SECNO 53000.000

3470 ENCROACHMENT STATIONS= 350.0 1700.0 TYPE= 1 TARGET= -350.000

XSEC 9 SECTION THROUGH ISLAND US OF VICS
XSEC BENT 30DEG LFT AT 887 20DEG RT AT STA 1208

53000.00	16.80	633.90	0.00	0.00	634.00	0.09	0.25	0.02	625.00
14950.	2226.	12064.	660.	4532.	4428.	2312.	6673.	737.	623.00
4.09	0.49	2.72	0.29	0.140	0.036	0.169	0.000	617.10	350.00
0.000126	1200.	1055.	500.	2	0	0	0.00	1325.55	1675.55

0
FLOW DISTRIBUTION FOR SECNO= 53000.00 CWSEL= 633.90

STA=	350.	650.	815.	887.	1192.	1650.	1676.
PER Q=	8.1	3.8	3.1	80.7	4.3	0.1	
AREA=	2736.5	1341.3	454.6	4428.4	2251.0	61.4	
VEL=	0.4	0.4	1.0	2.7	0.3	0.2	

1490 NH CARD USED
*SECNO 53700.000

3470 ENCROACHMENT STATIONS= 300.0 1740.0 TYPE= 1 TARGET= -300.000

XSEC 10 REDWOOD COTTAGE ON LEFT BANK 1976 HWM 630.5

1

1986 HWM 638 XSEC BENT 45DEG LEFT AT STA 1360

53700.00	17.37	633.97	0.00	0.00	634.09	0.12	0.09	0.01	626.20
14950.	5396.	9552.	2.	10576.	2769.	12.	6820.	753.	629.20
4.16	0.51	3.45	0.18	0.155	0.034	0.169	0.000	616.60	300.00
0.000162	400.	700.	750.	2	0	0	0.00	1434.90	1734.90

0
FLOW DISTRIBUTION FOR SECNO= 53700.00 CWSEL= 633.97

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STA=      300.     1340.     1500.     1557.     1730.     1735.
  PER Q=     31.3       3.2       1.6      63.9       0.0
   AREA=   9332.6     926.2     317.2    2769.5      11.8
    VEL=      0.5       0.5       0.7       3.4       0.2

1490 NH CARD USED
*SECNO 54600.000

3470 ENCROACHMENT STATIONS=      750.0     2250.0  TYPE=      1  TARGET=     -750.000
                XSEC 10A NEAR WHITE COTTAGE(BRONKEMA)  1976HWM 630.9 IN GARAGE
                XSEC BENT 5DEG RT AT STA 139.9  RESTRICTED FOR HIGH GROUND AT
                XSEC 11 US      1986 HWM 638
 54600.00     19.63    634.13      0.00      0.00    634.23      0.10      0.14      0.00    628.70
   14950.     6380.     8392.      178.     9541.     2529.      132.     6992.      771.    621.00
     4.25      0.67      3.32      1.35     0.128     0.041     0.054     0.000    614.50    750.00
 0.000211      500.      900.     1000.         2         0         0      0.00   1491.53   2241.53
0
FLOW DISTRIBUTION FOR SECNO=  54600.00          CWSEL=     634.13

STA=      750.      949.     1352.     1508.     1597.     1755.     1846.     1917.     1957.     2062.     2221.     2242.
  PER Q=      5.1       9.2       4.4       3.9       4.1       4.9       4.8       3.2       3.1      56.1       1.2
   AREA=   2082.5    3815.4     891.4     545.8     694.9     458.4     369.1     231.3     452.7    2529.3     132.5
    VEL=      0.4       0.4       0.7       1.1       0.9       1.6       1.9       2.1       1.0       3.3       1.3

1490 NH CARD USED
*SECNO 55080.000
                XSEC 10B LOB IS FELCH ROAD
 55080.00     19.67    634.17      0.00      0.00    634.35      0.18      0.09      0.02    621.00
   14950.     5325.     9426.      199.     2353.     2399.      131.     7055.      779.    621.30
     4.29      2.26      3.93      1.52     0.026     0.041     0.054     0.000    614.50     84.50
 0.000275      250.      480.      550.         2         0         0      0.00    897.10    981.60
0
1490 NH CARD USED
*SECNO 55800.000

3470 ENCROACHMENT STATIONS=        0.0     1900.0  TYPE=      1  TARGET=     1899.999
                XSEC 11  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
 55800.00     18.09    634.29      0.00      0.00    634.61      0.32      0.22      0.04    627.70
   14950.        0.    12742.     2208.        0.     2595.     3043.     7117.      737.    628.60
     4.33      0.00      4.91      0.73     0.000     0.039     0.121     0.000    616.20   1000.00
 0.000524      150.      720.      450.         1         0         0      0.00    900.00   1900.00
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA      LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

FLOW DISTRIBUTION FOR SECNO=  55800.00          CWSEL=     634.29
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STA=	1000.	1169.	1172.	1185.	1237.	1320.	1454.	1546.	1651.	1819.	1900.
PER Q=	85.2	0.1	0.3	1.2	2.1	3.4	1.9	0.0	3.6	2.1	
AREA=	2594.9	14.8	56.4	222.8	368.1	600.9	357.4	371.1	677.8	373.9	
VEL=	4.9	0.8	0.8	0.8	0.9	0.9	0.8	0.0	0.8	0.8	

1490 NH CARD USED
*SECNO 56800.000

3470 ENCROACHMENT STATIONS= 0.0 1630.0 TYPE= 1 TARGET= 1629.999
XSEC 12

56800.00	20.24	634.84	0.00	0.00	634.99	0.15	0.36	0.02	621.70
14950.	108.	10322.	4520.	103.	2802.	6772.	7186.	793.	630.00
4.40	1.05	3.68	0.67	0.095	0.047	0.128	0.000	614.60	6.27
0.000404	1200.	1000.	50.	2	0	0	0.00	1623.73	1630.00

0
FLOW DISTRIBUTION FOR SECNO= 56800.00 CHSEL= 634.84

STA=	6.	22.	222.	350.	457.	758.	958.	1227.	1424.	1592.	1630.
PER Q=	0.7	69.0	3.9	3.3	4.3	5.6	5.8	3.3	3.2	0.8	
AREA=	102.8	2801.6	669.4	577.1	1327.1	1023.3	1348.8	838.6	771.7	196.0	
VEL=	1.1	3.7	0.9	0.9	0.5	0.8	0.6	0.6	0.6	0.6	

1490 NH CARD USED
*SECNO 57650.000

3470 ENCROACHMENT STATIONS= 0.0 1910.0 TYPE= 1 TARGET= 1909.999
XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
1976 HWM 631.9

57650.00	17.69	635.09	0.00	0.00	635.14	0.05	0.14	0.01	622.00
14950.	4080.	9078.	1792.	4625.	4144.	3642.	7287.	804.	626.50
4.51	0.88	2.19	0.49	0.061	0.042	0.102	0.000	617.40	14.74
0.000134	500.	850.	50.	2	0	0	0.00	1895.26	1910.00

0
FLOW DISTRIBUTION FOR SECNO= 57650.00 CHSEL= 635.09

STA=	15.	845.	857.	1180.	1380.	1514.	1879.	1910.
PER Q=	26.4	0.9	60.7	3.6	3.3	4.5	0.5	
AREA=	4511.2	113.9	4144.3	1066.4	708.5	1699.4	167.4	
VEL=	0.9	1.1	2.2	0.5	0.7	0.4	0.5	

1

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

1490 NH CARD USED
*SECNO 58350.000
XSEC 14 XSEC BENT 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB

58350.00	18.87	635.17	0.00	0.00	635.26	0.09	0.11	0.01	630.50
14950.	6371.	8574.	5.	5484.	2774.	22.	7417.	822.	629.50

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     4.59      1.16      3.09      0.21     0.065     0.049     0.202     0.000    616.30     35.53
  0.000281     500.      700.      400.         2         0         0      0.00   1257.20   1292.73
0
 FLOW DISTRIBUTION FOR SECNO=  58350.00          CWSEL=    635.17

 STA=       36.      409.      731.      918.     1077.     1106.     1285.     1293.
   PER Q=    15.7      15.6       5.8       4.6       0.9      57.4       0.0
    AREA=  1942.8    1893.5     836.0     379.0     132.5    2773.8      21.9
     VEL=     1.2       1.2       1.0       1.0       1.1       3.1       0.2

 1490 NH CARD USED
 *SECNO 58900.000
              XSEC 15
  58900.00     17.29    635.29      0.00      0.00    635.44      0.15      0.16      0.02    631.50
     14950.     2480.    12016.      453.     3506.     3515.      735.     7509.      837.    629.00
      4.64      0.71      3.42      0.62     0.081     0.046     0.135     0.000    618.00     34.95
  0.000320      450.      550.      700.         0         0         0      0.00   1493.92   1528.87
0
 1490 NH CARD OSED
 *SECNO 60000.000
                XSEC 16
  60000.00     16.70    635.60      0.00      0.00    636.15      0.54      0.59      0.12    628.00
     14950.      249.    13769.      932.      107.     2235.     1532.     7642.      861.    632.60
      4.69      2.32      6.16      0.61     0.061     0.047     0.162     0.000    618.90     17.84
  0.001152     1000.     1100.      700.         2         0         0      0.00   747.22     765.06
0
 FLOW DISTRIBUTION FOR SECNO=  60000.00          CWSEL=    635.60

 STA=       18.       44.      200.      750.      765.
   PER Q=     1.7      92.1       6.2       0.0
    AREA=   107.1    2234.8    1512.9      18.8
     VEL=     2.3       6.2       0.6       0.4

 1490 NH CARD USED
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL       CLOSS   BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL      TWA   LEFT/RIGHT
    TIME      VLOB      VCH       VLOB      XNL       XNCH      XNR       WTN      ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR    TOPWID    ENDST

 *SECNO 62250.000
                XSEC 17     SUBDIVISION ON LEFT BANK
  62250.00     16.80    637.00      0.00      0.00    637.19      0.19      1.01      0.04    632.90
     14950.      169.    14167.      614.      364.     3952.      322.     7859.      889.    629.10
      4.87      0.46      3.58      0.75     0.126     0.038     0.120     0.000    620.20     42.49
  0.000246     2400.     2225.      1760.        2         0         0      0.00   490.93     533.43
0
 1490 NH CARD USED
 *SECNO 63120.000
  63120.00     17.52    637.22      0.00      0.00    637.52      0.30      0.29      0.03    630.40
     14950.       27.    14676.      247.       51.     3281.      530.     7959.      899.    633.10
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     4.93      0.54      4.47      0.47     0.120     0.038     0.148     0.000    619.70     16.89
  0.000381     970.      970.      970.         2         0         0      0.00    387.59    404.49
0
 1490 NH CARD USED
 *SECNO 65620.000

 3470 ENCROACHMENT STATIONS=      20.0      470.0  TYPE=      1  TARGET=      450.000
  65620.00     17.23    637.93      0.00      0.00    638.24      0.30      0.72      0.00    629.80
    14950.      671.    14006.      273.      877.     3063.      330.     8136.      917.     628.30
      5.05      0.76      4.57      0.83     0.107     0.038     0.120     0.000    620.70     21.13
  0.000374     1900.     1900.     1900.         2         0         0      0.00    448.86    470.00
0
 1490 NH CARD USED
 *SECNO 67420.000

 3470 ENCROACHMENT STATIONS=      10.0      420.0  TYPE=      1  TARGET=      410.000
                 XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK
  67420.00     19.51    638.81      0.00      0.00    639.04      0.23      0.80      0.01    631.80
    14950.      475.    14217.      258.      252.     3588.      569.     8384.      941.     633.70
      5.23      1.88      3.96      0.45     0.041     0.038     0.148     0.000    619.30     10.00
  0.000276     2400.     2500.     2500.         2         0         0      0.00    410.00    420.00
0
 1490 NH CARD USED
 *SECNO 68970.000
                 XSEC 21 US OF GREEN COTTAGE ON LEFT BANK
  68970.00     16.54    639.24      0.00      0.00    639.48      0.23      0.43      0.00    631.50
    14950.      315.    14488.      147.      499.     3669.      193.     8540.      957.     628.30
      5.34      0.63      3.95      0.76     0.085     0.038     0.100     0.000    622.70     60.45
  0.000282     1400.     1550.     1700.         2         0         0      0.00    499.55    560.00
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 1490 NH CARD USED
 *SECNO 70300.000
                 XSEC 22  BELOW POWER LINE CROSSING  N VALUES ARE ATYPICAL
  70300.00     15.95    639.65      0.00      0.00    639.83      0.18      0.35      0.01    633.80
    14950.     1211.    13705.       33.      724.     3891.       34.     8677.      971.     632.30
      5.45      1.67      3.52      0.97     0.050     0.038     0.050     0.000    623.70     15.63
  0.000247     1300.     1330.     1300.         2         0         0      0.00    401.82    417.45
0
 1490 NH CARD USED
 *SECNO 71300.000
  71300.00     17.17    639.87      0.00      0.00    640.13      0.26      0.27      0.02    633.60
    14950.      710.    14141.       98.      405.     3397.      143.     8776.      980.     630.20
      5.52      1.75      4.16      0.69     0.045     0.038     0.100     0.000    622.70     17.24
  0.000307     1000.     1000.     1000.         2         0         0      0.00    343.12    360.36
0
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1490 NH CARD USED
*SECNO 71900.000

71900.00	15.47	640.07	0.00	0.00	640.34	0.27	0.21	0.00	630.00
14950.	837.	13715.	398.	455.	3185.	444.	8830.	984.	630.50
5.56	1.84	4.31	0.90	0.056	0.041	0.120	0.000	624.60	16.66
0.000395	500.	600.	650.	2	0	0	0.00	374.53	391.19

0
1490 NH CARD USED
*SECNO 73040.000
XSEC 25 BTWN BARBER AND KRING CABINS US OF PUB ACC SITE DS OF NEWYGC

73040.00	14.97	640.57	0.00	0.00	640.82	0.25	0.48	0.00	636.20
14950.	67.	13344.	1539.	109.	3209.	769.	8937.	996.	633.30
5.64	0.62	4.16	2.00	0.100	0.042	0.038	0.000	625.60	22.37
0.000452	1200.	1140.	1100.	2	0	0	0.00	523.32	545.69

0
1490 NH CARD USED
*SECNO 73590.000
XSEC 26 DS OF CO RD BRDG SEC BENT 45DEG RT OFF RD FILL AT STA 10
BENT 45DEG RT TO RD FILL AT STA 325

73590.00	16.68	640.78	0.00	0.00	641.05	0.27	0.23	0.01	632.90
14950.	184.	14502.	264.	113.	3439.	147.	8986.	1001.	632.40
5.68	1.63	4.22	1.80	0.047	0.038	0.059	0.000	624.10	19.76
0.000375	660.	550.	500.	2	0	0	0.00	310.97	330.73

0
1

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

*SECNO 73640.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 652.00 MAX ELLC= 650.50

XSEC 27 CENTER OF BRDG ELLC AT 650.5

73640.00	15.40	640.80	0.00	0.00	641.07	0.28	0.02	0.00	652.00
14950.	0.	14950.	0.	0.	3552.	0.	8990.	1002.	652.00
5.68	0.00	4.21	0.00	0.000	0.034	0.000	0.000	625.40	0.00
0.000382	50.	50.	50.	0	0	0	0.00	290.00	296.00

0
*SECNO 73660.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 652.00 MAX ELLC= 650.50

73660.00	15.40	640.80	0.00	0.00	641.08	0.27	0.01	0.00	652.00

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   14950.       0.    14950.       0.       0.    3553.       0.    8992.    1002.    652.00
     5.68     0.00     4.21     0.00    0.000    0.034    0.000    0.000   625.40     0.00
 0.000382      20.      20.      20.        0        0        0     0.00   290.00   296.00
0
 *SECNO 73720.000
  73720.00    15.45   640.75     0.00     0.00   641.14     0.40     0.03     0.04   634.70
   14950.     449.    14042.     459.     188.    2707.     267.    8996.    1002.    632.30
     5.69     2.39     5.19     1.72    0.047    0.034    0.059    0.000   625.30    73.35
 0.000583      60.      60.      60.        2        0        0     0.00   351.26   424.61
0
 1490 NH CARD USED
 *SECNO 75140.000
          XSEC 29  SEWAGE TREATMENT PLANT IN LOB
  75140.00    14.02   641.52     0.00     0.00   641.72     0.20     0.55     0.02   635.60
   14950.    3117.    11829.       4.    3457.    2975.      12.    9141.    1022.    634.50
     5.80     0.90     3.98     0.38    0.080    0.034    0.090    0.000   627.50    61.36
 0.000288    1140.    1420.    1440.        2        0        0     0.00  1008.80  1070.16
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBE     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 *SECNO 75800.000
 3280 CROSS SECTION  75800.00 EXTENDED      6.43 FEET

                 XSEC 29A  AT USGS CABLE
  75800.00    13.43   641.63     0.00     0.00   642.01     0.38     0.24     0.05   636.00
   14950.       0.    14950.       0.       0.    3022.       0.    9208.    1030.    635.20
     5.84     0.00     4.95     0.00    0.000    0.034    0.000    0.000   628.20  1005.00
 0.000513     540.     650.     700.        2        0        0     0.00   259.00  1264.00
0
 1490 NH CARD USED
 *SECNO 76350.000
          XSEC 29B AT USGS GAGE  1976 STAGE IS 639.2   1986 STAGE 645.4
  76350.00    12.22   642.02     0.00     0.00   642.30     0.28     0.28     0.01   634.70
   14950.     214.    14634.     102.      79.    3406.      99.    9250.    1034.    634.60
     5.88     2.71     4.30     1.03    0.034    0.038    0.101    0.000   629.80     6.78
 0.000492     550.     550.     550.        2        0        0     0.00   344.73   351.52
0
 *SECNO 76760.000
                 XSEC 30  1975 HWM IS 638.6      1976 HWM IS 639.2
  76760.00    14.57   642.17     0.00     0.00   642.50     0.32     0.18     0.01   636.50
   14950.      99.    14713.     138.     127.    3200.     173.    9283.    1037.    636.00
     5.90     0.78     4.63     0.80    0.100    0.034    0.100    0.000   627.60    24.06
 0.000411     350.     410.     450.        2        0        0     0.00   346.49   370.56
0
1
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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
*****************************************************

T1
T2          1976 FLOOD
T3       Q 10800CFS

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.        0.        0.        0.  0.000185      0.00       0.0    10800.   617.000     0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     15.000     0.000    -1.000     0.000     0.000     1.150     0.000     0.000     0.000     0.000

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

*PROF 4

CCHV=   0.100 CEHV=   0.300
1490 NH CARD USED
*SECNO 0.100

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=        8.0      818.0  TYPE=      1  TARGET=      810.000
                XSEC 61
     0.10     15.25    615.25      0.00    617.00    615.47      0.23      0.00      0.00    613.20
   10800.        1.    10136.      653.        4.     2580.     1313.        0.        0.    609.60
     0.00      0.17      3.03      0.51     0.115     0.026     0.092     0.000    600.00     17.87
 0.000187        0.        0.        0.         0         0         3      0.00    653.55    800.05
0
1490 NH CARD USED
*SECNO 1920.000

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=       22.0      763.0  TYPE=      1  TARGET=      741.000
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SEC 61 MOVED OS INVERT ADJ BY .94FT FLOOD FLOW SHIFTED FROM
ROB AS NOTED ON XSEC 61 TO APPROX AREA IN LOB FOR THIS XSEC

1920.00	14.67	615.61	0.00	0.00	615.88	0.27	0.40	0.01	614.14
10800.	0.	10400.	400.	0.	2453.	992.	157.	26.	610.54
0.13	0.00	4.24	0.40	0.000	0.026	0.118	0.000	600.94	22.00
0.000234	2170.	1920.	1740.	0	0	0	0.00	581.71	763.00

0
1490 NH CARD USED
*SECNO 3050.000

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000

XSEC 62

3050.00	14.51	615.91	0.00	0.00	616.10	0.19	0.21	0.01	608.60
10800.	32.	10745.	23.	45.	3066.	35.	243.	37.	609.00
0.22	0.71	3.51	0.65	0.057	0.026	0.057	0.000	601.40	24.62
0.000157	1200.	1130.	1200.	2	0	0	0.00	296.45	321.07

0
1

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

1490 NH CARD USED
*SECNO 3051.000

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000

W EDGE OF BRIDGE DECK AT BRIDGETON 1976 HWM 615.7

3051.00	14.52	615.92	0.00	0.00	616.10	0.19	0.00	0.00	608.60
10800.	94.	10640.	66.	45.	3066.	35.	243.	37.	609.00
0.22	2.07	3.47	1.90	0.020	0.026	0.020	0.000	601.40	24.62
0.000154	1.	1.	1.	0	0	0	0.00	296.45	321.07

0

SPECIAL BRIDGE

SB	XK	XKOB	COFQ	BDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.90	1.25	2.60	1000.00	260.00	8.00	9000.00	1.43	604.50	604.50

*SECNO 3100.000
CLASS A LOW FLOW

3420 BRIDGE W.S.= 615.91 BRIDGE VELOCITY= 3.53 CALCULATED CHANNEL AREA= 3061.

EGPRS	EGLWC	H3	QFRIC	QLOB	BAREA	TRAPEZOID AREA	ELLC	ELTRD
0.00	616.11	0.00	0.	10800.	9000.	9152.	635.40	638.00

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000

```
  3100.00     14.52   615.92      0.00      0.00   616.11      0.18      0.00      0.00   608.60
    10800.       94.   10640.       66.       46.    3068.       35.      247.       38.   609.00
      0.22      2.07     3.47      1.89     0.020    0.026     0.020     0.000    601.40    24.60
  0.000153       49.      49.       49.         0        0         0      0.00    296.48   321.08
0
 *SECNO 3101.000

 3470 ENCROACHMENT STATIONS=       17.0      328.0  TYPE=      1  TARGET=      311.000
  3101.00     14.52   615.92      0.00      0.00   616.11      0.19      0.00      0.00   608.60
    10800.       11.   10773.       16.       46.    3068.       35.      247.       38.   609.00
      0.22      0.24     3.51      0.47     0.172    0.026     0.080     0.000    601.40    24.60
  0.000157        1.       1.        1.         0        0         0      0.00    296.48   321.08
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 1490 NH CARD USED
 *SECNO 4680.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=       608.50 ELREA=       617.80

                XSEC 63
  4680.00     12.69   616.19      0.00      0.00   616.35      0.15      0.23      0.00   608.50
    10800.      112.   10688.        0.      138.    3369.        0.      368.       49.   616.00
      0.36      0.81     3.17      0.00     0.052    0.026     0.000     0.000    603.50    22.05
  0.000137     1500.    1579.     1600.         2        0         0      0.00    350.95   373.00
0
 1490 NH CARD USED
 *SECNO 7200.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=       619.60 ELREA=       610.40

        XSEC 64          XSEC CROSSES US OF OLD ROCK CRIBBING
  7200.00     14.22   616.52      0.00      0.00   616.77      0.24      0.39      0.03   619.00
    10800.        0.   10766.       34.        0.    2713.       40.      548.       66.   610.40
      0.54      0.00     3.97      0.86     0.000    0.026     0.046     0.000    602.30   570.52
  0.000180     2200.    2520.     2500.         2        0         0      0.00    230.52   801.04
0
 1490 NH CARD USED
 *SECNO 8850.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=       619.30 ELREA=       619.80

        XSEC 65   XSEC CROSSES 100FT US OF BOAT LAUNCE
  8850.00     12.68   616.88      0.00      0.00   617.11      0.23      0.34      0.00   619.30
    10800.        0.   10800.        0.        0.    2824.        0.      654.       75.   619.80
      0.66      0.00     3.83      0.00     0.000    0.028     0.000     0.000    604.20    44.47
  0.000239     1400.    1650.     1600.         2        0         0      0.00    268.40   312.88
```

0
1490 NH CARD USED
*SECNO 10300.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 611.10 ELREA= 620.50

XSEC 66

10300.00	14.05	617.35	0.00	0.00	617.55	0.19	0.44	0.00	611.10
10800.	81.	10719.	0.	58.	3022.	0.	752.	86.	620.60
0.77	1.40	3.55	0.00	0.057	0.037	0.000	0.000	603.30	32.61
0.000393	1500.	1450.	700.	2	0	0	0.00	338.20	370.81

0
1

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

1490 NH CARD USED
*SECNO 11800.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 619.60 ELREA= 610.70

XSEC 67

11800.00	13.46	617.86	0.00	0.00	618.10	0.24	0.53	0.01	619.60
10800.	0.	10772.	28.	0.	2746.	76.	853.	96.	610.70
0.88	0.00	3.92	0.36	0.000	0.034	0.172	0.000	604.40	818.21
0.000325	1600.	1500.	1000.	2	0	0	0.00	262.16	1080.37

0
*SECNO 12600.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 619.60 ELREA= 610.70

12600.00	13.72	618.12	0.00	0.00	618.35	0.23	0.25	0.00	619.60
10800.	0.	10770.	30.	0.	2809.	82.	906.	101.	610.70
0.94	0.00	3.83	0.37	0.000	0.034	0.172	0.000	604.40	817.88
0.000302	800.	800.	800.	2	0	0	0.00	263.29	1081.16

0
1490 NH CARD USED
*SECNO 14100.000

3265 DIVIDED FLOW

XSEC 68

14100.00	13.49	618.59	0.00	0.00	618.78	0.19	0.43	0.00	611.80
10800.	66.	10559.	175.	114.	2979.	641.	1020.	115.	618.40
1.06	0.53	3.54	0.27	0.115	0.034	0.172	0.000	605.10	38.61
0.000273	900.	1500.	1600.	2	0	0	0.00	579.70	705.06

0
1490 NH CARD USED
*SECNO 16700.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 621.80 ELREA= 613.80

XSEC 69

16700.00	14.55	619.15	0.00	0.00	619.47	0.32	0.65	0.04	621.80
10800.	0.	10786.	14.	0.	2389.	24.	1195.	136.	613.80
1.22	0.00	4.52	0.57	0.000	0.025	0.069	0.000	604.60	907.06
0.000231	300.	2600.	1900.	2	0	0	0.00	222.00	1129.05

0
1

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

*SECNO 18990.000

3265 DIVIDED FLOW

XSEC 1 FROM SUBDIVISION FILE F184 22 12

18990.00	12.91	619.71	0.00	0.00	619.83	0.13	0.35	0.02	611.80
10800.	114.	10669.	17.	220.	3730.	51.	1354.	152.	612.70
1.43	0.52	2.86	0.34	0.046	0.029	0.069	0.000	606.80	129.17
0.000115	1250.	2190.	2500.	2	0	0	0.00	483.41	641.84

0
1490 NH CARD USED
*SECNO 19870.000

3265 DIVIDED FLOW

XSEC 70 THROUGH SUBDIV ON LEFT BANK CHANNEL INEFFECTIVE
1976 HWM ON BASEMENT WALL 619.8 HWM 800FT DS 619.98

19870.00	14.12	619.72	0.00	0.00	620.09	0.36	0.18	0.07	612.40
10800.	576.	10177.	48.	359.	2056.	109.	1429.	162.	612.80
1.49	1.61	4.95	0.44	0.034	0.029	0.172	0.000	605.60	316.22
0.000344	950.	1000.	980.	2	0	0	0.00	380.63	729.88

0
1490 NH CARD USED
*SECNO 21370.000

XSEC 71 OLDER COTTAGES ON RT BANK SEAWALL PROTECTS RT BANK

21370.00	14.09	620.29	0.00	0.00	620.49	0.20	0.39	0.02	612.40
10800.	476.	9066.	1258.	961.	2327.	1341.	1547.	180.	619.80
1.61	0.50	3.90	0.94	0.142	0.028	0.058	0.000	606.20	25.47
0.000202	1100.	1500.	1600.	2	0	0	0.00	740.17	765.64

0
1490 NH CARD USED
*SECNO 24985.000

XSEC 72

24985.00	13.69	621.19	0.00	0.00	621.39	0.19	0.90	0.00	620.30
10800.	965.	9200.	636.	2082.	2408.	576.	1952.	246.	614.70
1.91	0.46	3.82	1.10	0.172	0.033	0.057	0.000	607.50	25.84

0.000312	3700.	3615.	3600.	2	0	0	0.00	837.41	863.25

0
1

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

1490 NH CARD USED
*SECNO 28235.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 623.50 ELREA= 616.70

XSEC 73

28235.00	12.89	622.19	0.00	0.00	622.42	0.23	1.03	0.01	623.50
10800.	0.	10774.	26.	0.	2782.	39.	2221.	283.	616.70
2.14	0.00	3.87	0.66	0.000	0.033	0.092	0.000	609.30	380.67
0.000337	2300.	3200.	3300.	2	0	0	0.00	290.46	671.13

0
1490 NH CARD USED
*SECNO 29860.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 616.20 ELREA= 622.80

XSEC 74 IN LINE WITH E SIDE OF COTTAGE ON TOP OF LFT BANK
JUST OS OF POWERLINE

29860.00	13.42	622.72	0.00	0.00	622.97	0.26	0.54	0.01	616.20
10800.	24.	10776.	0.	71.	2654.	0.	2325.	293.	615.20
2.25	0.34	4.06	0.00	0.172	0.034	0.000	0.000	609.30	29.15
0.000333	1500.	1625.	1700.	0	0	0	0.00	245.85	275.00

0
1490 NH CARD USED
*SECNO 31660.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 623.50 ELREA= 617.10

XSEC 75

31660.00	13.12	623.32	0.00	0.00	623.51	0.19	0.53	0.01	623.30
10800.	0.	10686.	114.	0.	3045.	170.	2447.	305.	617.10
2.39	0.00	3.51	0.67	0.000	0.034	0.092	0.000	610.20	279.00
0.000263	1700.	1800.	1900.	1	0	0	0.00	318.84	597.84

0
1490 NH CARD USED
*SECNO 35425.000

3265 DIVIDED FLOW

1

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

3470 ENCROACHMENT STATIONS= 20.0 790.0 TYPE= 1 TARGET= 770.000

XSEC 76

35425.00	14.73	624.53	0.00	0.00	624.74	0.21	1.22	0.00	621.20
10800.	3.	9760.	1037.	14.	2554.	1851.	2773.	349.	625.30
2.69	0.23	3.82	0.56	0.178	0.037	0.139	0.000	609.80	24.67
0.000413	4300.	3760.	3600.	2	0	0	0.00	718.39	790.00

0
1490 NH CARD USED
*SECNO 37670.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 20.0 1035.0 TYPE= 1 TARGET= 1015.000

XSEC 77

37670.00	17.42	625.42	0.00	0.00	625.64	0.21	0.90	0.00	622.70
10800.	1997.	8803.	1.	3592.	2146.	4.	3012.	387.	623.70
2.86	0.56	4.10	0.15	0.173	0.040	0.172	0.000	608.00	20.00
0.000434	1900.	2150.	2100.	2	0	0	0.00	914.51	1021.31

0
1490 NH CARD USED
*SECNO 38970.000

3470 ENCROACHMENT STATIONS= 20.0 760.0 TYPE= 1 TARGET= 740.000

XSEC 78 800FT DS OF ISLAND, POWERLINE CROSSING AND BOAT LAUNCH
WEST END OF OLD GRAVEL OPERATION

38970.00	12.97	625.87	0.00	0.00	625.99	0.11	0.34	0.01	621.80
10800.	3.	9504.	1292.	13.	3298.	1970.	3152.	406.	624.80
2.99	0.25	2.88	0.66	0.115	0.035	0.090	0.000	612.90	25.47
0.000186	700.	1300.	1300.	1	0	0	0.00	734.53	760.00

0
1490 NH CARD USED
*SECNO 42170.000

3470 ENCROACHMENT STATIONS= 15.0 510.0 TYPE= 1 TARGET= 495.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 622.40 ELREA= 628.00

XSEC 1
1

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

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 42170.00     14.23    626.33      0.00      0.00    626.79      0.46      0.70      0.10    622.40
   10800.        5.     10795.       0.        21.     1991.       0.      3416.      439.     625.90
    3.16       0.24      5.42      0.00     0.172     0.023     0.000     0.000    612.10     15.26
 0.000263     3600.     3200.     3000.         2         0         0      0.00    170.74    186.00
0
 1490 NH CARD USED
 *SECNO 43770.000
                XSEC 2
 43770.00     13.83    626.93      0.00      0.00    627.24      0.31      0.44      0.01    622.30
   10800.       35.      9885.      879.       64.     2108.      959.      3512.      450.     618.30
    3.26       0.55      4.69      0.92     0.086     0.029     0.086     0.000    613.10     29.28
 0.000284     1200.     1600.     1800.         2         0         0      0.00    430.24    459.53
0
 1490 NH CARD USED
 *SECNO 44820.000

 3265 DIVIDED FLOW

                XSEC 3  SECTION THRU ISLAND NE OF OLD GRAVEL OPERATION
 44820.00     14.73    627.43      0.00      0.00    627.58      0.16      0.32      0.02    624.70
   10800.      218.     10515.       67.       558.     3280.      272.      3600.      463.     625.30
    3.35       0.39      3.21      0.25     0.172     0.039     0.172     0.000    612.70     45.70
 0.000334     1100.     1050.     1100.         2         0         0      0.00    628.96    677.20
0
 1490 NH CARD USED
 *SECNO 45470.000

 3265 DIVIDED FLOW

                XSEC 4  OLD WOOD PILING ALONG EACH BANK
 45470.00     14.21    627.61      0.00      0.00    627.86      0.25      0.25      0.03    627.70
   10800.       94.     10701.       4.       350.     2681.       18.      3653.      471.     624.50
    3.40       0.27      3.99      0.25     0.172     0.040     0.172     0.000    613.40     20.88
 0.000451      550.      650.      650.         0         0         0      0.00    456.14    494.24
0
 1490 NH CARD USED
 *SECNO 46870.000
1
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    SECNO       DEPTH      CNSEL      CHNS       WSELK      EG         HV         HL         OTOSS     BANK ELEV
    Q           QLOB       QCH        QROB       ALOB       ACH        AROB       VCL        TWA     LEFT/RIGHT
    TIME        VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN       SSTA
    SLOPE       XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID      ENDST


 3265 DIVIDED FLOW

                XSEC 5  HILL AT RIGHT BANK IS ERODING
 46870.00     15.60    628.20      0.00      0.00    628.50      0.30      0.63      0.02    622.10
   10800.      233.     10474.       92.       424.     2332.       78.      3740.      484.     621.30
    3.48       0.55      4.49      1.26     0.115     0.040     0.078     0.000    612.60     41.49
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0.000514	1280.	1300.	1575.	2	0	0	0.00	407.19	481.90

0
1490 NH CARD USED
*SECNO 48720.000

XSEC 6

48720.00	12.68	629.07	0.00	0.00	629.22	0.14	0.70	0.02	626.80
10800.	270.	9850.	681.	193.	3114.	710.	3885.	500.	620.60
3.65	1.40	3.16	0.96	0.037	0.041	0.115	0.000	616.40	23.60
0.000291	1500.	1850.	2000.	1	0	0	0.00	412.00	435.60

0
1490 NH CARD USED
*SECNO 50220.000

XSEC 7

50220.00	16.33	629.53	0.00	0.00	629.72	0.19	0.48	0.01	626.30
10800.	2452.	8262.	86.	1432.	2133.	72.	4011.	518.	623.10
3.77	1.71	3.87	1.19	0.035	0.041	0.057	0.000	613.20	14.53
0.000378	1300.	1500.	1300.	2	0	0	0.00	698.91	713.44

0
1490 NH CARD USED
*SECNO 51945.000

XSEC 8 VICS CAMPING ON RIGHT BANK CAMPGROUND IS ON A HILL
WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.

51945.00	15.36	630.26	0.00	0.00	630.65	0.38	0.87	0.06	637.60
10800.	0.	10340.	460.	0.	2044.	1383.	4140.	549.	629.40
3.87	0.00	5.06	0.33	0.000	0.040	0.172	0.000	614.90	132.42
0.000766	1300.	1725.	1500.	2	0	0	0.00	1122.64	1255.06

0
1490 NH CARD USED
*SECNO 53000.000

3470 ENCROACHMENT STATIONS= 350.0 1700.0 TYPE= 1 TARGET= -350.000
XSEC 9 SECTION THROUGH ISLAND US OF VICS

1

XSEC BENT 30DEG LFT AT 887 20DEG RT AT STA 1208

53000.00	13.73	630.83	0.00	0.00	630.93	0.10	0.26	0.03	625.00
10800.	1195.	9449.	157.	2882.	3491.	851.	4259.	570.	623.00
3.99	0.41	2.71	0.18	0.122	0.030	0.144	0.000	617.10	350.00
0.000118	1200.	1055.	500.	2	0	0	0.00	1309.20	1659.20

0
FLOW DISTRIBUTION FOR SECNO= 53000.00 CWSEL= 630.83

STA=	350.	650.	872.	887.	1192.	1659.
PER Q=	6.4	3.4	1.2	87.5	1.4	
AREA=	1814.3	968.9	78.4	3490.8	851.0	
VEL=	0.4	0.4	1.7	2.7	0.2	

1490 NH CARD USED
*SECNO 53700.000

3470 ENCROACHMENT STATIONS= 800.0 1740.0 TYPE= 1 TARGET= -300.000
XSEC 10 REDWOOD COTTAGE ON LEFT BANK 1976 HWM 630.5
1986 HWM 630 XSEC BENT 45DEG LEFT AT STA 1360

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 53700.00     14.29    630.89      0.00      0.00    631.03      0.14      0.09      0.01    626.20
   10800.     2974.     7826.        0.     6699.     2236.        1.     4357.      586.     629.20
     4.06      0.44      3.50      0.09     0.133     0.029     0.144     0.000    616.60    300.00
 0.000161      400.      700.      750.         2         0         0      0.00   1431.75   1731.75
0
 FLOW DISTRIBUTION FOR SECNO=  53700.00          CWSEL=    630.89

 STA=      300.     1340.     1557.     1730.     1732.
   PER Q=     25.2       2.4      72.5       0.0
    AREA=  6124.7     574.1    2235.9       1.5
     VEL=      0.4       0.4       3.5       0.1

 1490 NH CARD USED
 *SECNO 54600.000

 3470 ENCROACHMENT STATIONS=      750.0     2250.0  TYPE=       1  TARGET=     -750.000
                XSEC 10A NEAR WHITE COTTAGE(BRONKEMA)  1976HWM 630.9 IN GARAGE
                XSEC BENT 5DEG RT AT STA 139.9  RESTRICTED FOR HIGH GROUND AT
                XSEC 11 US      1986 HWM 638
 54600.00     16.53    631.03      0.00      0.00    631.20      0.17      0.16      0.01    628.70
   10800.     2811.     7881.       108.     5473.     2036.       77.     4472.      605.     621.00
     4.13      0.51      3.87      1.40     0.148     0.034     0.046     0.000    614.50    750.00
 0.000279      500.      900.      1000.         2         0         0      0.00   1486.36   2236.36
0
 FLOW DISTRIBUTION FOR SECNO=  54600.00          CWSEL=    631.03

 STA=      750.      949.     1352.     1597.     1846.     1957.     2062.     2221.     2236.
   PER Q=      5.4       8.9       4.3       3.1       3.6       0.7      73.0       1.0
    AREA=  1465.4    2565.7     677.5     381.2     256.2     127.1    2036.3      77.1
     VEL=      0.4       0.4       0.7       0.9       1.5       0.6       3.9       1.4
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   SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS     BANK ELEV
   Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VCL        TWA     LEFT/RIGHT
   TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        ETN        ELMIN       SSTA
   SLOPE      ILOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      IOPWID      ENDST

 1490 NH CARD USED
 *SECNO 55080.000
                XSEC 10B LOB IS FELCH ROAD
 55080.00     16.53    631.03      0.00      0.00    631.43      0.39      0.16      0.07    621.00
   10800.      582.    10086.       132.      329.     1948.       75.     4511.      611.     621.30
     4.16      1.77      5.18      1.77     0.034     0.034     0.046     0.000    614.50    605.59
 0.000457      250.      480.      550.         2         0         0      0.00    370.73    976.32
0
 1490 NH CARD USED
 *SECNO 55800.000

 3470 ENCROACHMENT STATIONS=        0.0     1900.0  TYPE=       1  TARGET=     1899.999
                XSEC 11  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
 55800.00     15.19    631.39      0.00      0.00    631.75      0.37      0.33      0.00    627.70
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10800.	0.	10418.	382.	0.	2105.	926.	4550.	618.	628.60
4.20	0.00	4.95	0.41	0.000	0.033	0.096	0.000	616.20	1000.00
0.000480	150.	720.	450.	2	0	0	0.00	900.00	1900.00

0
FLOW DISTRIBUTION FOR SECNO= 55800.00 CWSEL= 631.39

STA=	1000.	1169.	1172.	1185.	1237.	1320.	1454.	1546.	1819.	1900.
PER Q=	96.5	0.0	0.1	0.3	0.6	0.9	0.3	0.7	0.6	
AREA=	2105.3	6.1	18.7	72.2	127.6	212.7	90.9	258.1	139.3	
VEL=	4.9	0.5	0.5	0.4	0.5	0.5	0.4	0.3	0.5	

1490 NH CARD USED
*SECNO 56800.000

3470 ENCROACHMENT STATIONS= 0.0 1630.0 TYPE= 1 TARGET= 1629.999
XSEC 12

56800.00	17.37	631.97	0.00	0.00	632.21	0.24	0.45	0.01	621.70
10800.	71.	9386.	1343.	63.	2228.	2733.	4603.	623.	630.00
4.27	1.13	4.21	0.49	0.080	0.039	0.106	0.000	614.60	9.75
0.000487	1200.	1000.	50.	2	0	0	0.00	1620.25	1630.00

0
FLOW DISTRIBUTION FOR SECNO= 56800.00 CWSEL= 631.97

STA=	10.	22.	222.	457.	958.	1319.	1630.
PER Q=	0.7	36.9	3.6	3.9	3.1	1.9	
AREA=	62.6	2227.8	592.3	913.3	722.0	505.3	
VEL=	1.1	4.2	0.7	0.5	0.5	0.4	

1

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

1490 NH CARD USED
*SECNO 57650.000

3470 ENCROACHMENT STATIONS= 0.0 1910.0 TYPE= 1 TARGET= 1909.999
XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD HOMENS BEND
1976 HWM 631.9

57650.00	14.95	632.35	0.00	0.00	632.43	0.08	0.20	0.02	622.00
10800.	1760.	8374.	666.	2332.	3261.	1644.	4673.	634.	626.50
4.36	0.75	2.57	0.40	0.052	0.035	0.084	0.000	617.40	22.95
0.000172	500.	850.	50.	2	0	0	0.00	1887.05	1910.00

0
FLOW DISTRIBUTION FOR SECNO= 57650.00 CWSEL= 632.35

STA=	23.	845.	857.	1180.	1514.	1910.
PER Q=	15.4	0.9	77.5	3.8	2.3	
AREA=	2250.7	81.0	3260.5	861.1	783.8	
VEL=	0.7	1.2	2.6	0.5	0.3	

```
 1490 NH CARD USED
 *SECNO 58350.000
            XSEC 14 XSEC BENT 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB
  58350.00     16.15    632.45      0.00      0.00    632.61      0.16      0.16      0.02    630.50
    10800.     2548.     8251.       1.      2602.     2287.       6.       4753.     653.     629.50
      4.42      0.98      3.61      0.18      0.055     0.041     0.172     0.000   616.30     59.42
  0.000359     500.      700.      400.         2         0         0       0.00   1229.60   1289.03
0
 FLOW DISTRIBUTION FOR SECNO=  58350.00          CWSEL=    632.45

 STA=       59.      400.      731.     1077.     1106.     1285.     1289.
   PER Q=      9.6       9.8       3.8       0.4      76.4       0.0
    AREA=    978.7     994.1     574.9      53.8    2287.4       5.9
     VEL=      1.1       1.1       0.7       0.8       3.6       0.2

 1490 NH CARD USED
 *SECNO 58900.000
            XSEC 15
  58900.00     14.61    632.61      0.00      0.00    632.81      0.20      0.19      0.01    631.50
    10800.     139.     10471.      190.      546.     2874.      375.     4805.     667.     629.00
      4.47      0.25      3.64      0.51      0.069     0.039     0.115     0.000   618.00     69.56
  0.000345     450.      550.      700.         1         0         0       0.00   1448.65   1518.21
0
1
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    SECNO      DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        QLOSS     BANK ELEV
    Q          QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME       VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE      XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

 1490 NH CARD USED
 *SECNO 60000.000
                XSEC 16
  60000.00     14.08    632.98      0.00      0.00    633.51      0.53      0.60      0.10    628.00
    10800.     106.     10685.       9.       49.      1826.      80.      4875.     689.     632.60
      4.52      2.17      5.85      0.11      0.048     0.040     0.138     0.000   618.90     25.90
  0.000987     1000.     1100.      700.         2         0         0       0.00   594.12    620.02
0
 FLOW DISTRIBUTION FOR SECNO=  60000.00          CWSEL=    632.98

 STA=       26.       44.      200.      620.
   PER Q=      1.0      98.9       0.1
    AREA=     49.1    1826.2      80.2
     VEL=      2.2       5.9       0.1

 1490 NH CARD USED
 *SECNO 62250.000
                XSEC 17   SUBDIVISION ON DEPT BANK
  62250.00     14.03    634.23      0.00      0.00    634.39      0.16      0.84      0.04    632.90
    10800.     36.      10451.      313.      122.     3180.      520.     5019.     713.     629.10
      4.71      0.29      3.29      0.60      0.107     0.032     0.102     0.000   620.20     71.19
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  0.000200    2400.    2225.    1700.        2        0        0     0.00   456.89   528.08
0
 1490 NH CARD USED
 *SECNO 63120.000
  63120.00    14.70   634.40     0.00     0.00   634.65     0.26     0.24     0.03   630.40
    10800.       7.   10761.      32.      17.    2650.     138.    5093.     722.    633.10
      4.78     0.41     4.06     0.23    0.102    0.032    0.126    0.000   619.70    23.24
  0.000303     970.     970.     970.        2        0        0     0.00   362.63   385.87
0
 1490 NH CARD USED
 *SECNO 65620.000

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=      20.0     470.0  TYPE=     1  TARGET=     450.000
  65620.00    14.27   634.97     0.00     0.00   635.25     0.28     0.59     0.01   629.80
    10800.     178.   10505.     117.     330.    2457.     185.    5219.     739.    628.30
      4.90     0.54     4.28     0.63    0.090    0.032    0.102    0.000   620.70    35.79
  0.000319    1900.    1900.    1900.        2        0        0     0.00   411.92   470.00
0
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       DTN       ELMIN      SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST


 1490 NH CARD USED
 *SECNO 67420.000

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=      10.0     420.0  TYPE=     1  TARGET=     410.000
                XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK
  67420.00    16.43   635.73     0.00     0.00   635.94     0.21     0.68     0.01   631.80
    10800.     143.   10611.      46.     110.    2862.     186.    5395.     762.    633.70
      5.09     1.30     3.71     0.25    0.034    0.032    0.126    0.000   619.30    16.23
  0.000237    2400.    2500.    2500.        1        0        0     0.00   396.91   419.17
0
 1490 NH CARD USED
 *SECNO 68970.000
                XSEC 21 US OF GREEN COTTAGE ON LEFT BANK
  68970.00    13.40   636.10     0.00     0.00   636.32     0.21     0.38     0.00   631.50
    10800.      45.   10705.      49.      71.    2891.      79.    5505.     775.    628.30
      5.21     0.63     3.70     0.63    0.072    0.032    0.085    0.000   622.70   228.91
  0.000247    1400.    1550.    1700.        2        0        0     0.00   318.78   547.69
0
 1490 NH CARD USED
 *SECNO 70300.000
                XSEC 22  BELOW POWER LINE CROSSING  N VALUES ARE ATYPICAL
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 70300.00    12.77   636.47     0.00     0.00   636.64     0.18     0.32     0.00   633.80
   10800.     505.   10287.       8.     382.    2993.      11.    5603.     786.    632.30
     5.32     1.32     3.44     0.75    0.043    0.032    0.043    0.000   623.70    21.36
 0.000242    1300.    1330.    1300.        2        0        0     0.00   391.92   413.28
0
 1490 NH CARD USED
 *SECNO 71300.000
 71300.00    13.98   636.68     0.00     0.00   636.92     0.24     0.26     0.02   633.60
   10800.     195.   10531.      24.     164.    2679.      41.    5675.     794.    630.20
     5.39     1.18     3.95     0.58    0.038    0.032    0.085    0.000   622.70    27.75
 0.000275    1000.    1000.    1000.        2        0        0     0.00   315.53   343.28
0
 1490 NH CARD USED
 *SECNO 71900.000
 71900.00    12.26   636.86     0.00     0.00   637.11     0.25     0.19     0.00   630.00
   10800.     380.   10240.     180.     213.    2478.     236.    5715.     798.    630.50
     5.43     1.78     4.13     0.76    0.043    0.035    0.102    0.000   624.60    39.46
 0.000369     500.     600.     650.        2        0        0     0.00   338.07   377.53
0
1
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   SECNO    DEPTH    CWSEL    CRIBS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TEA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST

 1490 NH CARD USED
 *SECNO 73040.000
          XSEC 25 BTWN BARBER AND KRING CABINS US OF PUB ACC SITE DS OF NEWYGO
 73040.00    11.73   637.33     0.00     0.00   637.63     0.30     0.50     0.01   636.20
   10300.       2.   10647.     151.       8.    2415.     129.    5786.     808.    633.30
     5.51     0.28     4.41     1.17    0.085    0.036    0.032    0.000   625.60    52.42
 0.000539    1200.    1140.    1100.        2        0        0     0.00   407.50   459.92
0
 1490 NH CARD USED
 *SECNO 73590.000
          XSEC 26 DS OF CO RD BRDG  SEC BENT 45DEG RT OFF RD FILL AT STA 10
            BENT 45DEG RT TO RD FILL AT STA 325
 73590.00    13.52   637.62     0.00     0.00   637.88     0.25     0.24     0.00   632.90
   10800.      44.   10624.     132.      37.    2615.      85.    5820.     812.    632.40
     5.54     1.21     4.06     1.56    0.040    0.032    0.051    0.000   624.10    29.98
 0.000365     660.     550.     500.        2        0        0     0.00   298.51   328.49
0
 *SECNO 73640.000

 3265 DIVIDED FLOW

 3370 NORMAL BRIDGE,NRD=  0 MIN ELTRD=  652.00 MAX ELLC=  650.50

              XSEC 27 CENTER OF BRDG   ELLC AT 650.5
 73640.00    12.24   637.64     0.00     0.00   637.90     0.26     0.02     0.00   652.00
```

10800.	0.	10800.	0.	0.	2640.	0.	5823.	813.	652.00
5.55	0.00	4.09	0.00	0.000	0.029	0.000	0.000	625.40	5.39
0.000363	50.	50.	50.	0	0	0	0.00	284.61	296.00

0

*SECNO 73660.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 652.00 MAX ELLC= 650.50

73660.00	12.24	637.64	0.00	0.00	637.90	0.26	0.01	0.00	652.00
10800.	0.	10800.	0.	0.	2639.	0.	5824.	813.	652.00
5.55	0.00	4.09	0.00	0.000	0.029	0.000	0.000	625.40	5.40
0.000363	20.	20.	20.	0	0	0	0.00	284.60	296.00

0

1

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

*SECNO 73720.000

3265 DIVIDED FLOW

73720.00	12.24	637.54	0.00	0.00	637.99	0.44	0.03	0.06	634.70
10800.	172.	10476.	152.	83.	1934.	94.	5827.	313.	632.30
5.55	2.06	5.42	1.61	0.040	0.029	0.051	0.000	625.30	81.24
0.000692	60.	60.	60.	2	0	0	0.00	303.44	392.11

0

1490 NH CARD USED

*SECNO 75140.000

XSEC 29 SEWAGE TREATMENT PLANT IN LOB

75140.00	10.93	638.43	0.00	0.00	638.71	0.29	0.71	0.02	635.60
10800.	833.	9966.	1.	1229.	2233.	3.	5914.	831.	634.50
5.65	0.68	4.46	0.32	0.068	0.029	0.077	0.000	627.50	168.70
0.000386	1140.	1420.	1440.	2	0	0	0.00	898.97	1067.67

0

*SECNO 75800.000

3280 CROSS SECTION 75800.00 EXTENDED 3.47 FEET

XSEC 29A AT USGS CABLE

75800.00	10.47	638.67	0.00	0.00	639.02	0.36	0.29	0.02	636.00
10800.	0.	10800.	0.	0.	2254.	0.	5956.	839.	635.20
5.68	0.00	4.79	0.00	0.000	0.029	0.000	0.000	628.20	1005.00
0.000501	540.	660.	700.	2	0	0	0.00	259.00	1264.00

0

1490 NH CARD USED

*SECNO 76350.000

XSEC 29B AT USGS GAGE 1976 STAGE IS 639.2 1986 STAGE 645.4



1) COUNTY: Newaygo

2) STUDY NAME: Bridgeton, Ashland, Garfield and Black Twp

3) WATERCOURSE: Muskegan River

4) DOCUMENT TYPE: 100yr.



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

T1      FLCODWAY RUN
T2      100YR FLOOD
T3      Q 18800CFS

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
       0.        0.        0.        0.  0.000250      0.00      0.0    18800.   619.000     0.000

J2  NPROF      IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
     2.000     0.000    -1.000     0.000     0.000     1.350     0.000     0.000     0.000     0.000

1                                                                                    PAGE   30

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

    *PROF 2

    CCHV=    0.100 CEHV=    0.300
    1490 NH CARD USED
    *SECNO 0.100

    3470 ENCROACHMENT STATIONS=        8.0      818.0  TYPE=     1  TARGET=     810.000
                    XSEC 61
          0.10     19.00    619.00      0.00    619.00    619.29      0.29      0.00      0.00    613.20
         18800.      11.     15929.     2859.      34.     3406.     3336.       0.        0.     609.60
          0.00      0.33      4.68      0.86     0.135     0.031     0.095     0.000    600.00     10.29
      0.000251       0.        0.        0.         0         0         0      0.00    803.38     813.67
0
    1490 NH CARD USED
    *SECNO 1920.000

    3470 ENCROACHMENT STATIONS=       22.0      763.0  TYPE=     1  TARGET=     741.000
            SEC 61 MOVED US INVERT ADJ BY .9477    FLOOD FLOW SHIFTED FROM
          ROB AS NOTED ON XSEC 61 TO APPROX AREA IN LOB FOR THIS XSEC
       1920.00     18.54    619.48      0.00      0.00    619.86      0.37      0.54      0.02    614.14
        18800.       0.     17011.     1789.       0.     3307.     2833.      272.        32.    610.54
         0.11      0.00      5.14      0.63     0.000     0.031     0.140     0.000    600.94     22.00
      0.000327     2170.     1920.     1740.         0         0         0      0.00    741.00     763.00
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0
 1490 WH CARD USED
 *SECNO 3050.000

 3470 ENCROACHMENT STATIONS=      17.0     328.0  TYPE=     1  TARGET=     311.000
                  XSEC 62
   3050.00     18.47    619.87      0.00      0.00    620.18      0.31      0.31      0.01    608.60
    18800.      118.    18603.       79.       107.     4148.       86.       410.       46.    609.00
      0.18      1.11      4.48      0.92     0.067     0.031     0.067     0.000    601.40     18.44
  0.000237     1200.     1130.     1200.         2         0         0      0.00    308.38    326.82
0
 1490 WH CARD USED
 *SECNO 3051.000

 3470 ENCROACHMENT STATIONS=      17.0     328.0  TYPE=     1  TARGET=     311.000
         W EDGE OF BRIDGE DECK AT BRIDGETON  1976 HWM 615.7
   3051.00     18.48    619.88      0.00      0.00    620.18      0.29      0.00      0.00    608.60
    18800.      340.    18231.      228.       107.     4150.       86.       410.       46.    609.00
      0.18      3.19      4.39      2.65     0.023     0.031     0.023     0.000    601.40     18.43
  0.000227        1.        1.        1.         1         0         0      0.00    308.41    326.83
0
1
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    SECNO      DEPTH      CHSEL      CRIES      USELK      EG         HV         HL         OLOSS    BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TBA    LEFT/RIGHT
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN       SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TCPWID      ENDST

    SPECIAL BRIDGE

    SB  XK         XKOR       COEQ       RDLEN      BWC        BWP        BAREA      SS         ELCHU      ELCHD
         0.90       1.25       2.60    1000.00     260.00       8.00    9000.00       1.43     604.50     604.50

    *SECNO 3100.000
    CLASS A LOW FLOW

    3420 BRIDGE W.S.=     619.86 BRIDGE VELOCITY=      4.47     CALCULATED CHANNEL AREA=      4209.

     EGPRS      EGLWC      H3         QWEIR      QLOW       BAREA      TRAPEZOID AREA      ELLC       ELTRD
         0.00     620.18       0.01          0.      18800.      9000.      9152.       635.40     638.00


    3470 ENCROACHMENT STATIONS=      17.0     328.0  TYPE=     1  TARGET=     311.000
      3100.00     18.49    619.89      0.00      0.00    620.18      0.29      0.01      0.00    608.60
       18800.      341.    18230.      229.       107.     4155.       86.       415.       46.    609.00
         0.19      3.19      4.39      2.65     0.023     0.031     0.023     0.000    601.40     18.40
     0.000226        49.       49.       49.         0         0         0      0.00    308.45    326.86
0
    *SECNO 3101.000
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 3470 ENCROACHMENT STATIONS=        17.0      328.0  TYPE=      1  TARGET=      311.000
   3101.00     18.48    619.88      0.00       0.00    620.19      0.31       0.00       0.01    608.60
    18800.       40.    18703.       57.        107.     4153.       86.       415.        46.    609.00
      0.19      0.37      4.50      0.66      0.202     0.031     0.095      0.000     601.40     18.41
  0.000238        1.        1.        1.          1         0         0       0.00     308.43    326.85
0
 1490 NH CARD USED
 *SECNO 4680.000
                XSEC 63
   4680.00     16.82    620.32      0.00       0.00    620.51      0.19       0.31       0.01    608.50
    18800.      359.    17114.     1328.       317.     4669.     1159.       605.        63.    616.00
      0.31      1.13      3.67      1.15      0.061     0.031     0.048      0.000     603.50      9.83
  0.000163     1500.     1579.     1600.          2         0         0       0.00     608.16    618.00
0
 1490 NH CARD USED
 *SECNO 7200.000
        XSEC 64          XSEC CROSSES US OF OLD ROCK CRIBBING
1
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    SECNO     DEPTH     CUSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TCPWID     ENDST

   7200.00     18.42    620.72      0.00       0.00    621.06      0.34       0.51       0.04    619.00
    18800.     1086.    17556.      158.      2804.     3652.      112.       961.       101.    610.40
      0.47      0.39      4.31      1.41      0.198     0.031     0.054      0.000     602.30     10.06
  0.000257     2200.     2520.     2500.          2         0         0       0.00     799.20    809.26
0
 1490 NH CARD USED
 *SECNO 8850.000
        XSEC 65   XSEC CROSSES 100FT US OF BOAT LAUNCH
   8850.00     17.07    621.27      0.00       0.00    621.47      0.20       0.40       0.01    619.30
    18800.        1.    15790.     3009.         3.     4050.     4582.      1239.       131.    619.80
      0.60      0.30      3.90      0.66      0.067     0.033     0.140      0.000     604.20     35.84
  0.000232     1400.     1650.     1600.          2         0         0       0.00     878.38    914.22
0
 1490 NH CARD USED
 *SECNO 10300.000
                XSEC 66
  10300.00     18.40    621.70      0.00       0.00    621.79      0.09       0.31       0.01    611.10
    18800.      168.    12775.     5857.       129.     4452.     6493.      1471.       153.    620.60
      0.76      1.30      2.87      0.90      0.067     0.046     0.113      0.000     603.30     23.58
  0.000255     1500.     1450.      700.          2         0         0       0.00    1177.94   1201.53
0
 1490 NH CARD USED
 *SECNO 11800.000
                XSEC 67
  11800.00     17.63    622.03      0.00       0.00    622.26      0.23       0.42       0.04    619.60
    18800.     3038.    15670.       92.      5530.     3759.      192.      1793.       187.    610.70
      0.87      0.55      4.17      0.48      0.202     0.041     0.202      0.000     604.40     81.26
```

0.000349	1600.	1500.	1000.	0	0	0	0.00	1011.70	1092.96

0
*SECNO 12600.000

12600.00	17.91	622.31	0.00	0.00	622.53	0.21	0.27	0.00	619.60
18800.	3112.	15593.	95.	5735.	3827.	202.	1970.	205.	610.70
0.94	0.54	4.07	0.47	0.202	0.041	0.202	0.000	604.40	76.42
0.000326	800.	800.	800.	2	0	0	0.00	1017.37	1093.79

0
1490 NH CARD USED
*SECNO 14100.000
XSEC 68
1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VCL	T&A	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
14100.00	17.68	622.78	0.00	0.00	623.05	0.26	0.50	0.02	611.80
18800.	298.	17541.	960.	453.	4105.	2020.	2211.	230.	618.40
1.04	0.66	4.27	0.48	0.135	0.041	0.202	0.000	605.10	12.73
0.000371	900.	1500.	1600.	1	0	0	0.00	713.43	726.16

0
1490 NH CARD USED
*SECNO 16700.000
XSEC 69

16700.00	18.88	623.48	0.00	0.00	623.75	0.26	0.70	0.00	621.80
18800.	2957.	15778.	66.	6426.	3506.	79.	2508.	257.	613.80
1.21	0.46	4.50	0.83	0.202	0.028	0.081	0.000	604.60	16.38
0.000239	300.	2600.	1900.	2	0	0	0.00	1119.85	1136.23

0
*SECNO 18990.000
XSEC 1 FROM SUBDIVISION FILE F184 22 12

18990.00	17.18	623.98	0.00	0.00	624.16	0.18	0.40	0.01	611.80
18800.	872.	17692.	236.	771.	5067.	384.	2840.	289.	612.70
1.38	1.10	3.49	0.61	0.054	0.034	0.081	0.000	606.80	117.52
0.000157	1250.	2190.	2500.	2	0	0	0.00	543.23	660.75

0
1490 NH CARD USED
*SECNO 19870.000

3265 DIVIDED FLOW

XSEC 70 THROUGH SUBDIV ON LEFT BANK CHANNEL INEFFECTIVE
1976 HWM ON BASEMENT WALL 619.8 HWM 800FT DS 619.98

19870.00	18.50	624.10	0.00	0.00	624.41	0.32	0.22	0.04	612.40
18800.	4403.	14262.	129.	2271.	2816.	255.	2971.	305.	612.80
1.45	1.94	5.06	0.51	0.041	0.034	0.202	0.000	605.60	12.95
0.000325	950.	1000.	980.	2	0	0	0.00	697.03	742.98

0
1490 NH CARD USED
*SECNO 21370.000

XSEC 71 OLDER COTTAGES ON RT BANK SEAWALL PROTECTS RT BANK

21370.00	18.41	624.61	0.00	0.00	624.81	0.21	0.39	0.01	612.40
18800.	1307.	13389.	4104.	1841.	3143.	2906.	3184.	325.	619.80
1.56	0.71	4.26	1.41	0.142	0.033	0.064	0.000	606.20	12.80
0.000225	1100.	1500.	1600.	2	0	0	0.00	770.27	783.07

0
1

SECNO	DEPTH	CUSEL	CRIWS	ESELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALCH	ACH	AROB	VOL	THA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IBC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO 24985.000

XSEC 72

24985.00	18.10	625.60	0.00	0.00	625.80	0.20	0.98	0.00	620.30
18800.	2379.	13837.	2584.	3944.	3388.	1592.	3887.	395.	614.70
1.87	0.60	4.08	1.62	0.202	0.040	0.062	0.000	607.50	12.74
0.000334	3700.	3615.	3600.	0	0	0	0.00	894.51	907.25

0
1490 NH CARD USED
*SECNO 28235.000

XSEC 73

28235.00	17.39	626.69	0.00	0.00	626.96	0.27	1.14	0.02	623.50
18800.	1201.	17493.	105.	2262.	4069.	119.	4389.	445.	616.70
2.08	0.53	4.30	0.89	0.200	0.040	0.108	0.000	609.30	11.96
0.000402	2300.	3200.	3300.	2	0	0	0.00	668.09	680.06

0
1490 NH CARD USED
*SECNO 29860.000

XSEC 74 IN LINE WITH E SIDE OF COTTAGE ON TOP OF LFT BANK
JUST US OF POWERLINE

29860.00	18.01	627.31	0.00	0.00	627.67	0.36	0.68	0.03	616.20
18800.	96.	18085.	618.	207.	3683.	1281.	4604.	466.	615.20
2.18	0.47	4.91	0.48	0.202	0.041	0.202	0.000	609.30	13.73
0.000434	1500.	1625.	1700.	2	0	0	0.00	497.52	511.25

0
1490 NH CARD USED
*SECNO 31660.000

XSEC 75

31660.00	17.89	628.09	0.00	0.00	628.34	0.25	0.66	0.01	623.30
18800.	592.	17749.	459.	1341.	4314.	493.	4836.	488.	617.10
2.31	0.44	4.11	0.93	0.186	0.040	0.108	0.000	610.20	23.98
0.000313	1700.	1800.	1800.	2	0	0	0.00	596.83	620.81

0
1490 NH CARD USED
*SECNO 35425.000

3470 ENCROACHMENT STATIONS= 20.0 790.0 TYPE= 1 TARGET= 770.000

XSEC 76

35425.00	19.71	629.51	0.00	0.00	629.72	0.20	1.38	0.00	621.20

18800.	29.	15299.	3471.	74.	3825.	4325.	5456.	548.	625.30
2.61	0.39	4.00	0.80	0.209	0.047	0.165	0.000	609.80	20.00
0.000436	4300.	3760.	3600.	2	0	0	0.00	770.00	790.00

0
1

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

1490 NH CARD USED
*SECNO 37670.000

3470 ENCROACHMENT STATIONS= 20.0 1035.0 TYPE= 1 TARGET= 1015.000
XSEC 77

37670.00	22.44	630.44	0.00	0.00	630.66	0.22	0.94	0.00	622.70
18900.	5485.	13295.	20.	7698.	2989.	57.	5899.	589.	623.70
2.79	0.71	4.45	0.34	0.203	0.047	0.202	0.000	608.00	20.00
0.000452	1900.	2150.	2100.	2	0	0	0.00	1014.28	1034.28

0
1490 NH CARD USED
*SECNO 38970.000

3470 ENCROACHMENT STATIONS= 20.0 760.0 TYPE= 1 TARGET= 740.000
XSEC 78 800FT DS OF ISLAND, POWERLINE CROSSING AND BOAT LAUNCH
WEST END OF OLD GRAVEL OPERATION

38970.00	17.98	630.88	0.00	0.00	631.01	0.13	0.34	0.01	621.80
18800.	29.	15316.	3455.	66.	4797.	4108.	6140.	610.	624.80
2.91	0.43	3.19	0.84	0.135	0.040	0.111	0.000	612.90	20.00
0.000191	700.	1300.	1300.	2	0	0	0.00	740.00	760.00

0
1490 NH CARD USED
*SECNO 42170.000

3470 ENCROACHMENT STATIONS= 15.0 510.0 TYPE= 1 TARGET= 495.000
XSEC 1

42170.00	19.25	631.35	0.00	0.00	631.84	0.50	0.73	0.11	622.40
18800.	26.	16729.	2045.	71.	2798.	2396.	6649.	653.	625.90
3.07	0.36	5.98	0.35	0.202	0.027	0.113	0.000	612.10	15.00
0.000280	3600.	3200.	3000.	2	0	0	0.00	495.00	510.00

0
1490 NH CARD USED
*SECNO 43770.000
XSEC 2

43770.00	18.85	631.95	0.00	0.00	632.35	0.40	0.50	0.01	622.30
18800.	248.	16072.	2479.	271.	2937.	2168.	6853.	672.	618.30
3.16	0.92	5.47	1.14	0.102	0.034	0.109	0.000	613.10	7.20
0.000343	1200.	1600.	1800.	2	0	0	0.00	460.37	467.57

0
1

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

1490 NH CARD USED
*SECNO 44820.000
XSEC 3 SECTION THRU ISLAND NE OF OLD GRAVEL OPERATION

44820.00	19.86	632.56	0.00	0.00	632.74	0.18	0.37	0.02	624.70
18800.	877.	17403.	520.	1581.	4918.	1057.	7012.	686.	625.30
3.25	0.55	3.54	0.49	0.202	0.048	0.202	0.000	612.70	4.88
0.000350	1100.	1050.	1100.	2	0	0	0.00	689.34	694.22

0
1490 NH CARD USED
*SECNO 45470.000
XSEC 4 OLD WOOD PILING ALONG EACH BANK

45470.00	19.34	632.74	0.00	0.00	633.05	0.31	0.27	0.04	627.70
18800.	915.	17763.	122.	1565.	3838.	286.	7107.	695.	624.50
3.29	0.59	4.63	0.43	0.202	0.047	0.202	0.000	613.40	7.14
0.000519	550.	650.	650.	2	0	0	0.00	556.36	563.50

0
1490 NH CARD USED
*SECNO 46870.000
XSEC 5 HILL AT RIGHT BANK IS ERODING

46870.00	20.82	633.42	0.00	0.00	633.78	0.37	0.71	0.02	622.10
18800.	1660.	16838.	302.	1732.	3291.	188.	7270.	710.	621.30
3.37	0.96	5.12	1.61	0.135	0.047	0.089	0.000	612.60	18.17
0.000579	1280.	1300.	1575.	2	0	0	0.00	473.83	492.00

0
1490 NH CARD USED
*SECNO 48720.000
XSEC 6

48720.00	17.99	634.39	0.00	0.00	634.56	0.18	0.76	0.02	626.80
18800.	1308.	16165.	1327.	594.	4504.	1196.	7508.	729.	620.60
3.52	2.20	3.59	1.11	0.046	0.049	0.135	0.000	616.40	7.75
0.000315	1500.	1850.	2000.	0	0	0	0.00	442.89	450.64

0
1490 NH CARD USED
*SECNO 50220.000
XSEC 7

50220.00	21.63	634.83	0.00	0.00	634.95	0.11	0.38	0.01	626.30
18800.	9148.	9370.	281.	4207.	2977.	241.	7729.	747.	623.10
3.67	2.17	3.15	1.17	0.041	0.049	0.067	0.000	613.20	3.47
0.000221	1300.	1500.	1300.	2	0	0	0.00	728.66	732.13

0
1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA

SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO 51945.000

3265 DIVIDED FLOW

XSEC 8 VICS CAMPING ON RIGHT BANK CAMPGROUND IS ON A HILL
WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.

51945.00	20.37	635.27	0.00	0.00	635.57	0.31	0.57	0.06	637.60
18800.	4.	14763.	4033.	7.	2956.	6149.	8020.	780.	629.40
3.78	0.61	4.99	0.56	0.027	0.047	0.202	0.000	614.90	24.46
0.000664	1300.	1725.	1500.	2	0	0	0.00	1173.78	1275.06

0
1490 NH CARD USED
*SECNO 53000.000

3470 ENCROACHMENT STATIONS= 350.0 1700.0 TYPE= 1 TARGET= -350.000
XSEC 9 SECTION THROUGH ISLAND US OF VICS
XSEC BENT 30DEG LFT AT 887 20DEG RT AT STA 1208

53000.00	18.63	635.73	0.00	0.00	635.83	0.10	0.24	0.02	625.00
18800.	3091.	14590.	1119.	5513.	4985.	3204.	8246.	802.	623.00
3.90	0.56	2.93	0.35	0.139	0.036	0.169	0.000	617.10	350.00
0.000126	1200.	1055.	500.	2	0	0	0.00	1335.26	1685.26

0
FLOW DISTRIBUTION FOR SECNO= 53000.00 CWSEL= 635.73

STA=	350.	650.	760.	887.	1192.	1650.	1685.
PER Q=	8.7	3.1	4.7	77.6	5.8	0.1	
AREA=	3284.1	1167.9	1060.6	4985.1	3087.0	116.9	
VEL=	0.5	0.5	0.8	2.9	0.4	0.2	

1490 NH CARD USED
*SECNO 53700.000

3470 ENCROACHMENT STATIONS= 300.0 1740.0 TYPE= 1 TARGET= -300.000
XSEC 10 REDWOOD COTTAGE ON LEFT BANK 1976 BHW 630.5
1986 BHW 638 XSEC BENT 45DEG LEFT AT STA 1360

53700.00	19.20	635.80	0.00	0.00	635.93	0.13	0.09	0.01	626.20
18800.	7432.	11363.	5.	12870.	3085.	22.	8423.	818.	629.20
3.97	0.58	3.68	0.23	0.154	0.034	0.169	0.000	616.60	300.00
0.000160	400.	700.	750.	2	0	0	0.00	1436.75	1736.75

0
1

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

FLOW DISTRIBUTION FOR SECNO= 53700.00 CWSEL= 635.80

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STA=      300.     1340.     1420.     1557.     1730.     1737.
  PER Q=      33.6       3.3       2.6      60.4       0.0
   AREA=   11230.8     657.3     982.1    3085.2      22.4
    VEL=       0.6       0.9       0.5       3.7       0.2

1490 NH CARD USED
*SECNO 54600.000

3470 ENCROACHMENT STATIONS=      750.0     2250.0  TYPE=      1  TARGET=     -750.000
                XSEC 10A NEAR WHITE COTTAGE(BRONKEMA)  1976HWM 630.9 IN GARAGE
                XSEC BENT 5DEG RT AT STA 139.9  RESTRICTED FOR HIGH GROUND AT
                XSEC 11 US      1986 HWM 638
 54600.00     21.47    635.97      0.00      0.00    636.06      0.09      0.12      0.00    628.70
   18800.     9195.     9362.      243.    11946.     2821.      173.     8628.      837.    621.00
     4.07      0.77      3.32      1.40     0.117     0.040     0.054     0.000    614.50    750.00
 0.000183      500.      900.     1000.         2         0         0      0.00   1494.72   2244.72
0
FLOW DISTRIBUTION FOR SECNO=  54600.00          CWSEL=     635.97

STA=      750.      949.     1352.     1508.     1597.     1755.     1846.     1888.     1957.     2060.     2062.     2221.     2245.
  PER Q=       5.0       9.1       5.3       4.5       5.3       6.1       3.2       6.3       4.0       0.2      49.8       1.3
   AREA=    2447.1    4553.9    1177.3     708.9     984.4     625.1     284.1     519.7     630.9      14.1    2820.7     173.0
    VEL=       0.4       0.4       0.8       1.2       1.0       1.8       2.1       2.3       1.2       2.2       3.3       1.4

1490 NH CARD USED
*SECNO 55080.000
                XSEC 10B LOB IS FELCH ROAD
 55080.00     21.50    636.00      0.00      0.00    636.14      0.14      0.07      0.01    621.00
   18800.     9422.     9139.      239.     3716.     2663.      171.     8706.      844.    621.30
     4.10      2.54      3.43      1.40     0.024     0.041     0.054     0.000    614.50     58.00
 0.000182      250.      480.      550.         2         0         0      0.00    926.77    984.78
0
1490 NH CARD USED
*SECNO 55800.000

3470 ENCROACHMENT STATIONS=        0.0     1900.0  TYPE=      1  TARGET=     1899.999
                XSEC 11  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
 55800.00     19.82    636.02      0.00      0.00    636.35      0.33      0.16      0.06    627.70
   18800.        0.    14921.     3879.        0.     2888.     4312.     8781.      852.    628.60
     4.14      0.00      5.17      0.90     0.000     0.039     0.123     0.000    616.20   1000.00
 0.000521      150.      720.      450.         2         0         0      0.00    900.00   1900.00
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA      LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TCRWID      ENDST

FLOW DISTRIBUTION FOR SECNO=  55800.00          CWSEL=     636.02
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 STA=     1000.     1169.     1172.     1185.     1237.     1320.     1454.     1546.     1651.     1819.     1900.
   PER Q=     79.4       0.1       0.4       1.7       2.9       4.7       2.7       0.0       5.2       2.8
    AREA=   2888.3      20.0      78.9     313.1     512.2     833.6     517.1     553.4     969.5     514.6
     VEL=      5.2       1.0       1.0       1.0       1.1       1.1       1.0       0.0       1.0       1.0

 1490 NH CARD USED
 *SECNO 56800.000

 3470 ENCROACHMENT STATIONS=       0.0    1630.0  TYPE=     1  TARGET=    1629.999
                XSEC 12
  56800.00     21.95   636.55      0.00      0.00    636.68      0.14      0.31      0.02    621.70
     18800.      142.    11634.    7024.      131.     3142.     9172.     8860.      858.     630.00
       4.21      1.08      3.70      0.77     0.095     0.048     0.128     0.000    614.60      4.19
  0.000360     1200.     1000.       50.         2         0         0      0.00   1625.80   1630.00
0
 FLOW DISTRIBUTION FOR SECNO=  56800.00          CHSEL=    636.55

 STA=        4.       22.      222.      350.      457.      758.      865.      958.     1093.     1227.     1424.     1592.     1630.
   PER Q=      0.8      61.9       4.7       3.9       5.6       3.6       3.2       3.6       3.6       4.3       4.0       0.9
    AREA=    131.3    3142.5     907.5     759.5    1840.2     727.4     636.9     903.2     904.2    1174.4    1058.0     260.8
     VEL=      1.1       3.7       1.0       1.0       0.6       0.9       0.9       0.7       0.7       0.7       0.7       0.7

 1490 NH CARD USED
 *SECNO 57650.000

 3470 ENCROACHMENT STATIONS=       0.0    1910.0  TYPE=     1  TARGET=    1909.999
           XSEC 13  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
                1976 HWM 631.9
  57650.00     19.36   636.76      0.00      0.00    636.80      0.05      0.11      0.01    622.00
     18800.     5894.    10232.    2674.     6032.     4682.     4858.     8980.      869.     626.50
       4.32      0.98      2.19      0.55     0.061     0.043     0.103     0.000    617.40      9.74
  0.000116      500.      350.       50.         0         0         0      0.00   1900.26   1910.00
0
 FLOW DISTRIBUTION FOR SECNO=  57650.00          CHSEL=    636.76

 STA=       10.      845.      857.     1180.     1380.     1514.     1879.     1910.
   PER Q=     30.5       0.8      54.4       4.2       3.9       5.5       0.6
    AREA=   5898.6     133.9    6682.4    1399.7     931.8    2307.5     219.0
     VEL=      1.0       1.2       2.2       0.6       0.8       0.4       0.5

1
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    SECNO      DEPTH     CHSEL     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       EIMIN       SSTA
    SLOPE      XLOBL     XLCH      XLOBP     ITRIAL     IDC       ICONT     COBAR     TOPWID      ENDST


 1490 NH CARD USED
 *SECNO 58350.000
          XSEC 14 XSEC BENT 150FG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB
  58350.00     20.53   636.83      0.00      0.00    636.91      0.09      0.10      0.01    630.50
     18800.     9361.    9480.       9.      7265.     3070.       37.     9141.      888.     629.50
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      4.39      1.29      3.07      0.241     0.065     0.049     0.202     0.000   616.30    24.50
  0.000243     500.      700.      400.          2         0         0      0.00  1270.49  1294.99
0
 FLOW DISTRIBUTION FOR SECNO=  58350.00          CWSEL=    636.83

 STA=       24.      400.      731.      918.     1077.     1108.     1285.     1295.
   PER Q=    17.9      17.6       7.3       5.9       1.2      50.2       0.0
    AREA=  2555.2    2441.4    1145.5     942.2     180.5    3070.1      36.6
     VEL=     1.3       1.4       1.2       1.2       1.2       3.1       0.2

 1490 NH CARD USED
 *SECNO 58900.000
              XSEC 15
  58900.00    18.93    636.93      0.00      0.00    637.06      0.14      0.13      0.01   631.50
     18800.    4679.    13464.     658.     5343.     3906.     970.     9258.     903.     629.00
      4.45     0.88      3.45      0.68     0.081     0.046     0.135     0.000   618.00    24.16
  0.000283     450.      550.      700.         0         0         0      0.00  1511.23  1535.39
0
 1490 NH CARD USED
 *SECNO 60000.000
              XSEC 16
  60000.00    18.24    637.14      0.00      0.00    637.74      0.60      0.54      0.14   628.00
     18800.     373.    16450.     1978.     151.     2474.     2407.     9429.     927.     632.60
      4.50     2.47      6.65      0.82     0.065     0.047     0.162     0.000   618.90    13.12
  0.001171    1000.     1100.      700.         2         0         0      0.00   761.20   774.32
0
 FLOW DISTRIBUTION FOR SECNO=  60000.00          CWSEL=    637.14

 STA=       13.       44.      200.      750.      774.
   PER Q=    2.0      37.5      10.4       0.1
    AREA=  150.9    2474.4    2357.6      49.1
     VEL=     2.5       6.6       0.8       0.5

 1490 NH CARD USED
1
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   SECNO      DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q          QLOB      QCH       QROB      ALOB      ACH       AROB      VCL       TWA    LEFT/RIGHT
   TIME       VLOB      VCH       VROB      XNL       XNCH      XNR       UTN       ELMIN      SSTA
   SLOPE      XLOBL     KLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 *SECNO 62250.000
              XSEC 17     SUBDIVISION ON LEFT BANK
  62250.00    18.41    638.61      0.00      0.00    638.84      0.23      1.07      0.04   632.90
     18800.    308.    17612.     879.     540.     4399.     1004.     9690.     956.     629.10
      4.66     0.57      4.00      0.88     0.126     0.038     0.120     0.000   620.20    25.93
  0.000266    2400.     2225.     1700.         2         0         0      0.00  5101.81   536.74
0
 1490 NH CARD USED
 *SECNO 63120.000
  63120.00    19.13    638.93      0.00      0.00    639.21      0.38      0.32      0.04   630.40
     18800.     51.    18279.     470.      78.      3642.     778.      9806.     966.     633.10
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      4.71      0.66      5.02      0.60     0.120     0.038     0.148     0.000    619.70     13.13
  0.000417      970.      970.      970.         2         0         0      0.00    402.00    415.14
0
 1490 NH CARD USED
 *SECNO 65620.000

 3470 ENCROACHMENT STATIONS=      20.0     470.0  TYPE=      1  TARGET=     450.000
  65620.00     18.92    639.62      0.00      0.00    639.98      0.37      0.77      0.00    629.80
     18800.     1144.     17252.      403.     1207.     3408.      413.    10014.      984.    628.30
      4.82      0.95      5.06      0.98     0.107     0.038     0.120     0.000    620.70     20.00
  0.000398      1900.     1900.     1900.         2         0         0      0.00    450.00    470.00
0
 1490 NH CARD USED
 *SECNO 67420.000

 3470 ENCROACHMENT STATIONS=      10.0     420.0  TYPE=      1  TARGET=     410.000
                XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK
  67420.00     21.25    640.55      0.00      0.00    640.84      0.28      0.85      0.01    631.80
     18800.      774.     17571.      455.      338.     4000.      787.    10303.     1009.    633.70
      4.99      2.29      4.39      0.58     0.041     0.038     0.148     0.000    619.30     10.00
  0.000294      2400.     2500.     2500.         2         0         0      0.00    410.00    420.00
0
 1490 NH CARD USED
 *SECNO 68970.000
                XSEC 21 US OF GREEN COTTAGE ON LEFT BANK
  68970.00     18.31    641.01      0.00      0.00    641.29      0.28      0.45      0.00    631.50
     18800.      725.     17334.      242.      924.     4109.      273.    10489.     1026.    628.30
      5.09      0.78      4.34      0.89     0.085     0.038     0.100     0.000    622.70      8.88
  0.000293      1400.     1550.     1700.         2         0         0      0.00    557.37    566.25
0
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    SECNO      DEPTH     CWSEL     CRWS      WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q          QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME       VLOB      VCH       VROB      XNL       XNCH      XNR       WIN       ELMIN      SSTA
    SLOPE      XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST


 1490 NH CARD USED
 *SECNO 70300.000
                XSEC 22  BELOW POWER LINE CROSSING.  N VALUES ARE ATYPICAL
  70300.00     17.74    641.44      0.00      0.00    641.66      0.21      0.36      0.01    633.80
     18800.     1807.     16927.       65.      927.     4397.       54.    10651.     1040.    632.30
      5.19      1.95      3.85      1.20     0.050     0.038     0.050     0.000    623.70     10.07
  0.000250      1300.     1330.     1300.         2         0         0      0.00    410.61    420.68
0
 1490 NH CARD USED
 *SECNO 71300.000
  71300.00     18.96    641.66      0.00      0.00    641.97      0.31      0.28      0.03    630.60
     18800.     1153.     17458.      179.      555.     3799.      214.    10765.     1049.    630.20
      5.26      2.10      4.59      0.84     0.046     0.038     0.100     0.000    622.70     11.34
  0.000322      1000.     1000.     1000.         2         0         0      0.00    354.03    365.37
0
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 1490 NH CARD USED
 *SECNO 71900.000
  71900.00     17.27    641.87      0.00      0.00    642.19      0.32      0.21      0.00    630.00
    18800.     1245.     16957.     599.      610.     3580.     577.     10829.     1054.     630.50
      5.29      2.04      4.74      1.04     0.058     0.041     0.120     0.000    624.60     11.69
  0.000409     1500.     600.      650.         2         0         0      0.00     385.39    397.08
0
 1490 NH CARD USED
 *SECNO 73040.000
          XSEC 25 BTWN BARBER AND KRING CABINS US OF PUB ACC SITE DS OF NEWYGO
  73040.00     16.80    642.40      0.00      0.00    642.66      0.25      0.46      0.01    636.20
    18800.     154.      15716.     2930.     198.     3657.     1229.     10957.     1067.     633.30
      5.37      0.78      4.30      2.38     0.100     0.042     0.038     0.000    625.60     13.39
  0.000405     1200.     1140.     1100.         2         0         0      0.00     564.83    578.23
0
 1490 NH CARD USED
 *SECNO 73590.000
          XSEC 26 DS OF CO RD BRDG  SEC BENT 45DEG RT OFF RD FILL AT STA 10
            BENT 45DEG RT TO RD FILL AT STA 325
  73590.00     18.47    642.57      0.00      0.00    642.89      0.32      0.22      0.02    632.90
    18800.     325.      18099.     376.      170.     3906.     185.     11016.     1072.     632.40
      5.41      1.91      4.63      2.03     0.047     0.038     0.059     0.000    624.10     13.98
  0.000383     660.      350.      500.         2         0         0      0.00     318.02    332.00
0
1
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    SECNO      DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
    Q          QLOB      QCH       QEOB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
    TIME       VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE      XLOBL     XLCH      XLOBR     ITRIAL    IJC       ICONT     CORAR     TOPWID    ENDST

   *SECNO 73640.000

   3265 DIVIDED FLOW

   3370 NORMAL BRIDGE,NRD=   0 MIN ELTRD=  652.00 MAX ELLC=  650.50

                  XSEC 27 CENTER OF BRDG   ELLC AT 650.5
    73640.00     17.18    642.58      0.00      0.00    642.91      0.33      0.02      0.00    652.00
      18800.     0.        18800.     0.        0.       4070.     0.       11021.     1072.     652.00
        5.41     0.00      4.62      0.00     0.000     0.034     0.000     0.000    625.40     0.00
    0.000395     50.       50.       50.          0         0         0      0.00     290.00    296.00
   0
   *SECNO 73660.000

   3265 DIVIDED FLOW

   3370 NORMAL BRIDGE,NRD=   0 MIN ELTRD=  652.00 MAX ELLC=  650.50

    73660.00     17.19    642.59      0.00      0.00    642.92      0.33      0.01      0.00    652.00
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18800.	0.	18800.	0.	0.	4071.	0.	11023.	1073.	652.00
5.41	0.00	4.62	0.00	0.000	0.034	0.000	0.000	625.40	0.00
0.000395	20.	20.	20.	0	0	0	0.00	290.00	296.00

0

*SECNO 73720.000

73720.00	17.24	642.54	0.00	0.00	642.98	0.44	0.03	0.03	634.70
18800.	687.	17329.	784.	259.	3143.	418.	11028.	1073.	632.30
5.41	2.65	5.51	1.87	0.047	0.034	0.059	0.000	625.30	66.71
0.000540	60.	60.	60.	2	0	0	0.00	383.33	450.04

0

1490 NH CARD USED

*SECNO 75140.000

XSEC 29 SEWAGE TREATMENT PLANT IN LOB

75140.00	15.80	643.30	0.00	0.00	643.50	0.19	0.49	0.02	635.60
18800.	4963.	13828.	9.	4849.	3404.	21.	11209.	1094.	634.50
5.53	1.02	4.06	0.42	0.080	0.034	0.090	0.000	627.50	31.60
0.000251	1140.	1420.	1440.	2	0	0	0.00	1040.23	1071.83

0

1

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

*SECNO 75800.000

3280 CROSS SECTION 75800.00 EXTENDED 8.15 FEET

XSEC 29A AT USGS CABLE

75800.00	15.15	643.35	0.00	0.00	643.80	0.46	0.23	0.08	636.00
18800.	0.	18800.	0.	0.	3466.	0.	11291.	1102.	635.20
5.56	0.00	5.42	0.00	0.000	0.034	0.000	0.000	628.20	1005.00
0.000523	540.	660.	700.	2	0	0	0.00	259.00	1264.00

0

1490 NH CARD USED

*SECNO 76350.000

XSEC 29B AT USGS GAGE 1976 STAGE IS 639.2 1986 STAGE 645.4

76350.00	13.96	643.76	0.00	0.00	644.09	0.33	0.27	0.01	634.70
18800.	340.	18306.	153.	110.	3945.	133.	11339.	1106.	634.60
5.60	3.08	4.64	1.15	0.035	0.038	0.101	0.000	629.80	5.04
0.000473	550.	550.	550.	2	0	0	0.00	348.22	353.26

0

*SECNO 76760.000

XSEC 30 1975 HEM IS 638.6 1976 HEB IS 639.2

76760.00	16.30	643.90	0.00	0.00	644.28	0.38	0.18	0.02	636.50
18800.	176.	18384.	241.	187.	3667.	253.	11378.	1109.	636.00
5.62	0.94	5.01	0.95	0.100	0.034	0.100	0.000	627.60	20.22
0.000408	350.	410.	450.	2	0	0	0.00	355.91	376.13

0

1



1) COUNTY: Newaygo

2) STUDY NAME: Bridgeton, Ashland, Garfield and Brooks Twp

3) WATERCOURSE: Muskegon River

4) DOCUMENT TYPE: 100 yr.



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1*************************************************
 *  WATER SURFACE PROFILES                       *
 *  VERSION OF NOVEMBER 1976                     *
 *  UPDATED MAY 1984                             *
 *                                               *
*  RUN DATE              TIME                    *
 *************************************************
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*****************************************
*  U.S. ARMY CORPS OF ENGINEERS         *
*  THE HYDROLOGIC ENGINEERING CENTER    *
*  609 SECOND STREET, SUITE D           *
*  DAVIS, CALIFORNIA 95616              *
*  (916) 440-2105 (FTS) 448-2105        *
*****************************************
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X      X  XXXXXXX   XXXXX              XXXXX
X      X  X         X     X           X     X
X      X  X         X                       X
XXXXXXXX  XXXX      X          XXXXX    XXXXX
X      X  X         X                  X
X      X  X         X     X            X
X      X  XXXXXXX   XXXXX              XXXXXXX
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Info only

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*************************************************
  HEC2 RELEASE DATE: NOV 76 UPDATED MAY  1984
  ERROR CODE -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
*************************************************
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C
T1      EFFECTS OF ELIMINATING FLOW AREA THROUGH ANDERSON FLATS
T2      STARTING AT XSEC 6   USING WSEL FROM NATURAL CONDITIONS
T3      MUSKEGON RIVER  EXISITING COND

J1  ICHECK    INQ      NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.        3.        0.        0.  0.000000      0.00      0.0   13800.   634.390     0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
    0.000     0.000    -1.000     0.000     0.000     1.350     0.000     0.000     0.000     0.000

J5  LPRNT     NUMSEC                    ********REQUESTED SECTION NUMBERS********
    0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

NC    0.100     0.150     0.023     0.100     0.300     0.000     0.000     0.000     0.000     0.000
NH    4.000     0.100    36.000     0.030    91.000     0.036   352.000     0.100   458.000     0.000
ET    0.000     7.100     7.100     7.100     0.000     0.000     7.750   450.640     0.000     0.000
                XSEC 6
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X1  48720.000    20.000    91.000   352.000  1500.000  2000.000  1850.000     0.000     0.000     0.000
GR    637.000     0.000   624.900    36.000   626.500    72.000   626.800    91.000   618.000   104.000
GR    618.000   104.000   616.800   116.000   617.000   148.000   616.700   198.000   616.400   248.000
GR    616.800   298.000   617.500   348.000   618.300   350.000   620.600   352.000   619.700   356.000
GR    616.700   373.000   618.200   386.000   618.800   407.000   628.500   434.000   637.000   458.000

NH      4.000     0.150    20.000     0.030   532.000     0.036   691.000     0.050   738.000     0.000
ET      0.000     7.100     7.100     7.100     0.000     0.000     3.470   732.130     0.000     0.000
                XSEC 7
X1  50220.000    23.000   532.000   691.000  1300.000  1300.000  1500.000     0.000     0.000     0.000
GR    636.500     0.000   626.900    20.000   627.600   158.000   628.000   233.000   624.200   282.000
GR    627.400   347.000   626.500   451.000   624.900   479.000   626.600   525.000   626.300   532.000
GR    621.100   542.000   619.500   548.000   618.600   555.000   617.500   558.000   616.000   581.000
GR    614.200   605.000   613.200   628.000   613.400   652.000   616.000   675.000   619.600   688.000
GR    623.100   691.000   627.700   707.000   636.500   738.000     0.000     0.000     0.000     0.000

NH      3.000     0.020   124.000     0.035   312.000     0.150  1290.000     0.000     0.000     0.000
ET      0.000     7.100     7.100     7.100     0.000     0.000    24.460  1275.060     0.000     0.000
          XSEC 8    VICS CAMPING ON RIGHT BANK  CAMPGROUND IS ON A HILL
                WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.
X1  51945.000    27.000   124.000   312.000  1300.000  1500.000  1725.000     0.000     0.000     0.000
GR    637.100     0.000   634.700    32.000   637.200   111.000   637.600   124.000   625.400   138.000
GR    620.200   149.000   617.600   158.000   614.900   181.000   615.700   201.000   617.700   222.000
GR    617.700   247.000   618.300   254.000   619.300   271.000   620.200   290.000   622.100   297.000
GR    623.300   303.000   629.400   312.000   630.000   320.000   625.400   367.000   627.200   392.000
1
                                                                                        PAGE    2

GR    627.000   411.000   628.300   425.000   629.500   454.000   628.600   560.000   629.000   650.000
GR    629.000  1250.000   639.000  1290.000     0.000     0.000     0.000     0.000     0.000     0.000

NH      6.000     0.120   860.000     0.025   887.000     0.025  1032.000     0.100  1084.000     0.025
NH   1192.000     0.125  1700.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
ET      0.000     5.100     7.100     5.100   787.000  1700.000   350.000  1700.000     0.000     0.000
                XSEC 9  SECTION THROUGH ISLAND US OF VICS
              XSEC BENT 30DEG LFT AT 887  20DEG RT AT STA 1208
X1  53000.000    39.000   887.000  1192.000  1200.000   500.000  1055.000     0.000     0.000     0.000
X2      0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000    15.000
GR    638.500     0.000   628.500    50.000   625.000   100.000   624.700   650.000   624.900   705.000
GR    624.900   728.000   626.700   760.000   627.500   815.000   629.000   860.000   626.200   872.000
GR    625.000   887.000   620.400   892.000   617.400   898.000   617.700   922.000   618.000   947.000
GR    618.100   974.000   617.700  1001.000   620.400  1025.000   623.600  1032.000   624.400  1035.000
GR    623.600  1061.000   624.300  1078.000   625.200  1084.000   620.400  1093.000   617.900  1101.000
GR    617.700  1122.000   618.300  1143.000   617.500  1165.000   617.100  1185.000   619.600  1190.000
GR    623.000  1192.000   624.500  1203.000   629.600  1208.000   629.000  1226.000   628.200  1240.000
GR    629.900  1290.000   629.100  1350.000   629.100  1650.000   638.500  1700.000     0.000     0.000

NH      6.000     0.120  1340.000     0.060  1420.000    10.000  1480.000     0.060  1557.000     0.025
NH   1730.000     0.125  1740.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
ET      0.000     5.100     7.100     5.100  1500.000  1740.000   300.000  1740.000     0.000     0.000
                XSEC 10  REDWOOD COTTAGE ON LEFT BANK  1976 HWM 630.5
              1986 HWM 638   XSEC BENT 45DEG LEFT AT STA 1360
X1  53700.000    24.000  1557.000  1730.000   400.000   750.000   700.000     0.000     0.000     0.000
X2      0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000    15.000
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GR    639.000      0.000    628.500     50.000    625.000    100.000    625.000   1340.000    628.300   1360.000
GR    627.200   1377.000    628.700   1420.000    628.800   1480.000    629.000   1500.000    629.200   1531.000
GR    627.400   1545.000    626.800   1550.000    626.200   1557.000    620.600   1563.000    617.900   1567.000
GR    616.600   1600.000    617.000   1624.000    617.600   1662.000    617.800   1688.000    618.100   1717.000
GR    620.700   1725.000    629.200   1730.000    632.100   1733.000    639.000   1740.000      0.000      0.000

NH      7.000      0.200   1399.000      0.050   1784.000      0.025   1957.000     10.000   1998.000      0.025
NH   2062.000      0.030   2221.000      0.040   2250.000      0.000      0.000      0.000      0.000      0.000
ET      0.000      5.100      7.100      5.100   2012.000   2250.000    750.000   2250.000      0.000      0.000
                XSEC 10A NEAR WHITE COTTAGE(BRONKEMA)  1976HWM 630.9 IN GARAGE
                XSEC BENT 5DEG RT AT STA 139.9  RESTRICTED FOR HIGH GROUND AT
                XSEC 11 US      1986 HWM 638
X1  54600.000     35.000   2062.000   2221.000    500.000   1000.000    900.000      0.000      0.000      0.000
X2      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000     15.000
GR    639.000      0.000    628.500     50.000    625.000    449.000    623.000    649.000    624.000    949.000
GR    623.000   1049.000    627.100   1352.000    628.200   1399.000    629.300   1508.000    626.700   1597.000
GR    630.100   1644.000    630.500   1755.000    628.100   1784.000    629.900   1846.000    628.500   1888.000
GR    628.600   1917.000    628.100   1957.000    629.600   1966.000    630.400   1998.000    629.800   2041.000
GR    629.100   2060.000    628.700   2062.000    625.300   2068.000    624.500   2074.000    621.000   2079.000
GR    620.500   2099.000    619.700   2119.000    618.200   2123.000    616.900   2145.000    615.300   2167.000
GR    614.500   2190.000    616.300   2215.000    621.000   2221.000    632.100   2238.000    639.000   2250.000

NH      6.000      0.013    600.000      0.025    700.000     10.000    750.000      0.025    817.000      0.030
NH    961.000      0.040    978.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
ET      0.000      5.100      0.000      5.100    762.000    990.000      0.000      0.000      0.000      0.000
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                XSEC 10B LOB IS FELCH ROAD
X1  55080.000     21.000    817.000    961.000    250.000    550.000    480.000      0.000      0.000      0.000
X2      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
GR    640.000      0.000    633.100    100.000    631.300    200.000    631.600    300.000    631.400    400.000
GR    631.100    500.000    631.100    600.000    629.900    700.000    629.300    750.000    628.700    800.000
GR    625.300    806.000    624.500    812.000    621.000    817.000    619.700    857.000    616.900    885.000
GR    615.300    907.000    614.500    930.000    616.300    955.000    621.300    961.000    632.100    978.000
GR    639.000    990.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000

NH      5.000      0.029   1169.000      0.080   1546.000     10.000   1651.000      0.080   1946.000      0.100
NH   2105.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
ET      0.000      7.100      7.100      5.100   1000.000   1219.000   1000.000   1900.000      0.000      0.000
                XSEC 11  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
X1  55800.000     23.000   1000.000   1169.000    150.000    450.000    720.000      0.000      0.000      0.000
X2      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000     15.000
GR    627.700   1000.000    623.000   1014.000    621.400   1015.000    619.400   1026.000    618.800   1039.000
GR    617.000   1051.000    616.800   1075.000    616.200   1100.000    617.000   1125.000    618.400   1148.000
GR    621.400   1154.000    628.600   1169.000    630.100   1172.000    629.800   1185.000    630.200   1237.000
GR    629.500   1320.000    630.100   1454.000    630.700   1546.000    630.800   1651.000    629.700   1819.000
GR    629.600   1946.000    628.200   2070.000    640.000   2105.000      0.000      0.000      0.000      0.000

NH      6.000      0.070     22.000      0.035    220.000      0.080    457.000     10.000    560.000      0.080
NH    958.000      0.100   1592.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
ET      0.000      7.100      7.100      5.100      0.000    272.000      0.000   1630.000      0.000      0.000
                XSEC 12
X1  56800.000     31.000     22.000    222.000   1200.000     50.000   1000.000      0.000      0.000      0.000
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X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	640.000	0.000	629.300	13.000	621.700	22.000	619.100	29.000	617.800	53.000
GR	614.600	81.000	617.100	107.000	619.100	131.000	620.300	141.000	621.600	147.000
GR	622.800	152.000	624.300	171.000	626.700	187.000	630.000	222.000	629.900	245.000
GR	628.800	350.000	630.100	457.000	630.700	560.000	630.600	660.000	629.900	758.000
GR	629.600	865.000	629.800	958.000	630.100	1010.000	629.500	1093.000	630.100	1227.000
GR	630.700	1319.000	630.800	1424.000	629.700	1592.000	629.600	1719.000	628.200	1843.000
GR	640.000	1878.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	10.000	0.070	30.000	0.045	857.000	0.030	987.000	0.080	1061.000	0.030
NH	1175.000	0.055	1109.000	10.000	1245.000	0.055	1606.000	10.000	1711.000	0.075
NH	2165.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	7.100	7.100	5.100	0.000	1209.000	0.000	1910.000	0.000	0.000
	XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND									
	1976 HWM 631.9									
X1	57650.000	32.000	857.000	1180.000	500.000	50.000	850.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	640.000	0.000	630.000	30.000	629.200	845.000	622.000	857.000	620.100	869.000
GR	619.800	879.000	618.500	914.000	621.900	968.000	622.700	987.000	627.000	991.000
GR	625.500	1007.000	627.300	1014.000	627.300	1045.000	628.000	1054.000	624.400	1061.000
GR	623.500	1087.000	622.000	1117.000	619.600	1144.000	617.400	1168.000	621.900	1175.000
GR	626.500	1180.000	629.700	1189.000	629.700	1245.000	630.200	1297.000	629.500	1380.000
GR	630.100	1514.000	630.700	1606.000	630.800	1711.000	629.700	1879.000	629.600	2006.000
GR	628.200	2130.000	640.000	2165.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	4.000	0.070	50.000	0.048	1106.000	0.036	1285.000	0.150	1300.000	0.000
	XSEC 14 XSEC BENT 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB									
X1	58350.000	20.000	1106.000	1285.000	500.000	400.000	700.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	640.500	0.000	633.000	50.000	630.100	100.000	628.600	400.000	630.300	731.000
GR	631.100	918.000	630.700	1077.000	630.500	1106.000	623.300	1125.000	621.600	1126.000
GR	616.400	1138.000	616.300	1158.000	617.500	1185.000	619.500	1212.000	619.900	1243.000
GR	619.900	1269.000	620.900	1277.000	622.400	1282.000	629.500	1285.000	640.500	1300.000
NH	4.000	0.060	1150.000	0.034	1389.000	0.100	1513.000	0.100	1550.000	0.000
	XSEC 15									
X1	58900.000	21.000	1150.000	1389.000	450.000	700.000	550.000	0.000	0.000	0.000
GR	640.600	0.000	633.000	50.000	632.000	100.000	632.200	1130.000	632.000	1143.000
GR	631.800	1147.000	631.500	1150.000	627.000	1153.000	622.700	1162.000	618.400	1183.000
GR	622.100	1201.000	621.700	1225.000	620.900	1257.000	618.700	1289.000	618.100	1317.000
GR	618.000	1342.000	619.600	1367.000	629.000	1389.000	629.000	1447.000	631.300	1513.000
GR	640.600	1550.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.120	32.000	0.040	44.000	0.035	200.000	0.120	800.000	0.000
	XSEC 16									
X1	60000.000	17.000	44.000	200.000	1000.000	700.000	1100.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	641.400	0.000	631.000	32.000	630.500	36.000	628.800	38.000	628.000	44.000
GR	623.200	147.000	620.800	55.000	618.900	79.000	619.100	103.000	619.400	129.000
GR	620.700	154.000	621.200	168.000	623.300	175.000	626.500	187.000	632.600	200.000
GR	633.100	750.000	641.400	800.000	0.000	0.000	0.000	0.000	0.000	0.000

NH	3.000	0.093	144.000	0.028	422.000	0.089	543.000	0.000	0.000	0.000
		XSEC 17 SUBDIVISION ON LEFT BANK								
X1	62250.000	28.000	144.000	422.000	2400.000	1700.000	2225.000	0.000	0.000	0.000
GR	642.800	0.000	638.600	26.000	632.600	88.000	631.600	113.000	632.500	125.000
GR	632.900	144.000	630.900	153.000	625.400	159.000	624.200	161.000	622.000	173.000
GR	622.100	181.000	623.600	193.000	622.100	243.000	620.600	280.000	620.200	313.000
GR	620.700	350.000	621.800	365.000	624.300	384.000	625.000	394.000	624.200	399.000
GR	629.100	422.000	630.300	424.000	629.700	435.000	629.500	468.000	627.800	492.000
GR	629.000	518.000	637.300	534.000	641.600	543.000	0.000	0.000	0.000	0.000
NH	3.000	0.089	32.000	0.028	256.000	0.110	448.000	0.000	0.000	0.000
X1	63120.000	22.000	32.000	256.000	970.000	970.000	970.000	0.000	0.000	0.000
GR	643.800	0.000	638.500	14.000	631.400	30.000	630.400	32.000	624.700	34.000
GR	623.000	39.000	619.700	50.000	619.800	82.000	621.500	117.000	621.800	152.000
GR	623.400	187.000	624.100	194.000	624.900	227.000	626.700	235.000	625.400	245.000
GR	625.800	251.000	633.100	256.000	634.000	265.000	633.700	298.000	633.400	322.000
GR	632.300	372.000	643.800	448.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.074	175.000	0.110	216.000	0.028	421.000	0.089	485.000	0.000
X1	65620.000	27.000	216.000	421.000	1900.000	1900.000	1900.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	20.000	0.000	470.000	0.000	0.000	0.000	0.000
GR	642.200	0.000	631.500	53.000	632.000	98.000	634.500	153.000	635.700	175.000
GR	634.000	196.000	633.000	205.000	629.800	216.000	626.100	219.000	624.900	230.000
GR	623.100	238.000	622.500	261.000	623.400	290.000	623.100	307.000	621.600	333.000
GR	620.700	363.000	623.000	397.000	625.200	408.000	628.300	421.000	630.100	425.000
GR	631.000	431.000	631.400	442.000	630.900	455.000	631.800	462.000	634.200	474.000
GR	637.700	479.000	642.200	485.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.074	10.000	0.030	59.000	0.028	295.000	0.110	455.000	0.000
		XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK								
X1	67420.000	21.000	59.000	295.000	2400.000	2500.000	2500.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	10.000	0.000	420.000	0.000	0.000	0.000	0.000
GR	642.900	0.000	638.600	10.000	634.000	20.000	633.200	32.000	632.500	54.000
GR	631.800	59.000	627.800	62.000	624.500	73.000	623.600	86.000	621.000	100.000
GR	619.300	129.000	620.900	154.000	623.200	194.000	624.000	218.000	626.100	267.000
GR	627.700	281.000	633.700	295.000	636.100	299.000	633.000	345.000	634.900	415.000
GR	642.900	455.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.063	270.000	0.028	518.000	0.074	575.000	0.000	0.000	0.000
		XSEC 21 DS OF GREEN COTTAGE ON LEFT BANK								
X1	68970.000	25.000	270.000	518.000	1400.000	1700.000	1550.000	0.000	0.000	0.000
GR	643.500	0.000	640.700	10.000	637.400	124.000	636.700	212.000	635.500	246.000
GR	633.700	255.000	631.500	270.000	625.500	277.000	626.300	293.000	625.100	303.000
GR	625.600	320.000	624.900	336.000	623.300	346.000	622.700	363.000	623.900	385.000
GR	623.500	421.000	623.000	429.000	623.000	450.000	624.200	481.000	625.300	499.000
GR	626.600	505.000	628.300	518.000	633.700	529.000	636.400	550.000	643.500	575.000
NH	3.000	0.037	126.000	0.028	408.000	0.037	426.000	0.000	0.000	0.000
		XSEC 22 BELOW POWER LINE CROSSING N VALUES ARE ATYPICAL								
X1	70800.000	25.000	126.000	408.000	1300.000	1300.000	1330.000	0.000	0.000	0.000

GR	644.400	0.000	640.000	15.000	635.000	24.000	631.600	40.000	632.700	54.000
GR	631.200	73.000	634.100	113.000	634.200	123.000	633.800	126.000	631.700	136.000
GR	625.700	144.000	624.400	160.000	624.500	183.000	623.700	194.000	625.300	214.000
GR	626.400	266.000	625.900	300.000	624.100	307.000	624.100	336.000	624.400	359.000
GR	626.200	383.000	628.600	389.000	632.300	408.000	639.400	417.000	644.400	426.000
NH	4.000	0.089	30.000	0.033	98.000	0.028	323.000	0.074	375.000	0.000
X1	71300.000	22.000	98.000	323.000	1000.000	1000.000	1000.000	0.000	0.000	0.000
GR	645.100	0.000	636.000	30.000	633.300	71.000	633.900	79.000	633.600	98.000
GR	631.700	101.000	629.900	108.000	627.100	111.000	625.100	114.000	624.600	144.000
GR	625.000	154.000	623.900	163.000	622.700	193.000	623.600	217.000	623.600	235.000
GR	624.400	271.000	625.300	300.000	626.000	311.000	630.200	323.000	635.800	333.000
GR	637.600	354.000	645.100	375.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.074	67.000	0.035	100.000	0.030	320.000	0.089	408.000	0.000
X1	71900.000	25.000	100.000	320.000	500.000	650.000	600.000	0.000	0.000	0.000
GR	646.100	0.000	638.500	21.000	636.100	48.000	634.200	56.000	634.500	67.000
GR	632.700	69.000	631.400	88.000	630.600	99.000	630.000	100.000	627.700	103.000
GR	625.800	109.000	625.500	118.000	624.600	150.000	624.600	178.000	625.500	225.000
GR	626.100	274.000	625.600	291.000	627.100	313.000	630.500	320.000	632.700	335.000
GR	630.900	343.000	632.400	355.000	633.200	361.000	639.400	389.000	645.200	408.000
NH	4.000	0.074	66.000	0.031	311.000	0.028	757.000	0.059	767.000	0.000
	XSEC 25 BTWN BARBER AND KRING CABINS US OF PUB ACC SITE DS OF NEWYGO									
X1	73040.000	20.000	66.000	311.000	1200.000	1100.000	1140.000	0.000	0.000	0.000
GR	646.600	0.000	641.900	15.000	639.200	30.000	636.200	66.000	628.600	82.000
GR	626.400	124.000	625.600	147.000	627.300	215.000	627.200	268.000	628.000	301.000
GR	633.300	311.000	636.600	328.000	636.700	343.000	636.400	418.000	637.600	472.000
GR	639.500	526.000	641.300	559.000	644.800	620.000	650.800	757.000	655.800	767.000

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NH	3.000	0.035	49.000	0.028	310.000	0.044	335.000	0.000	0.000	0.000
	XSEC 26 DS OF CO RD BRDG SEC BENT 45DEG RT OFF RD FILL AT STA 10									
	BENT 45DEG RT TO RD FILL AT STA 325									
X1	73590.000	21.000	49.000	310.000	660.000	500.000	550.000	0.000	0.000	0.000
GR	646.800	0.000	643.800	10.000	637.000	32.000	635.600	41.000	634.300	47.000
GR	632.900	49.000	628.800	65.000	624.100	82.000	626.000	105.000	626.800	113.000
GR	628.000	121.000	625.800	133.000	626.800	162.000	628.800	175.000	629.900	211.000
GR	626.600	244.000	627.000	272.000	628.400	304.000	632.400	310.000	632.700	325.000
GR	646.800	335.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.035	0.044	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 27 CENTER OF BRDG ELLC AT 650.5									
X1	73640.000	31.000	0.000	296.000	50.000	50.000	50.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	650.500	652.000	0.000	0.000	0.000	0.000	0.000
GR	652.000	0.000	638.800	0.000	631.300	35.000	629.200	36.000	628.870	43.000
GR	625.700	60.000	625.400	30.000	626.500	90.000	628.500	95.000	629.500	100.000
GR	628.200	107.000	627.100	117.000	626.600	128.000	627.300	138.000	628.700	146.000
GR	652.000	146.000	652.000	152.000	628.700	152.000	629.300	163.000	628.800	167.000
GR	625.800	182.000	625.600	197.000	627.500	208.000	627.000	215.000	626.300	240.000
GR	627.000	250.000	625.800	264.000	633.000	275.000	632.900	290.000	634.800	296.000
GR	652.000	296.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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 X1  73660.000     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   650.500   652.000     0.000     0.000     0.000     0.000     0.000

 X1  73720.000    21.000   110.000   353.000    60.000    60.000    60.000     0.000     0.000     0.000
 GR    653.300     0.000   647.000    44.000   641.700    71.000   634.800    88.000   633.600    99.000
 GR    634.700   110.000   631.500   120.000   629.100   123.000   628.500   153.000   626.900   168.000
 GR    635.800   202.000   626.700   220.000   625.300   240.000   626.700   278.000   627.300   306.000
 GR    639.000   336.000   632.300   353.000   635.400   373.000   640.000   414.000   645.500   492.000
 GR    650.000   523.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

 NH      4.000     0.110    80.000     0.059   826.000     0.025  1066.000     0.067  1075.000     0.000
                XSEC 29  SEWAGE TREATMENT PLANT IN LOB
 X1  75140.000    24.000   826.000  1066.000  1140.000  1440.000  1420.000     0.000     0.000     0.000
 GR    645.200     0.000   640.400    80.000   638.400   170.000   636.000   286.000   636.700   390.000
 GR    636.500   494.000   637.200   592.000   636.300   692.000   635.400   790.000   635.600   820.000
 GR    635.600   826.000   632.600   838.000   630.600   843.000   630.100   850.000   628.700   857.000
 GR    628.100   891.000   627.500   936.000   628.100   953.000   628.900   983.000   629.700  1048.000
 GR    631.200  1063.000   634.500  1066.000   639.200  1068.000   646.700  1075.000     0.000     0.000

 NC      0.074     0.074     0.025     0.000     0.000     0.000     0.000     0.000     0.000     0.000
                XSEC 29A  AT USGS CABLE
 X1  75800.000    22.000  1005.000  1264.000   540.000   700.000   660.000     0.000     0.000     0.000
 GR    636.000  1005.000   632.400  1011.000   631.700  1013.000   630.500  1019.000   628.500  1029.000
 GR    628.800  1037.000   629.100  1048.000   629.200  1062.000   630.000  1080.000   629.900  1105.000
 GR    629.400  1121.000   629.900  1139.000   629.700  1159.000   629.300  1177.000   629.100  1194.000
 GR    628.900  1208.000   628.200  1227.000   628.700  1229.000   631.700  1241.000   633.700  1246.000
 GR    633.300  1255.000   635.200  1264.000     0.000     0.000     0.000     0.000     0.000     0.000
1
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 NH      4.000     0.080    16.000     0.025    57.000     0.028   327.000     0.075   400.000     0.000
                XSEC 29B AT USGS GAGE  1975 STAGE IS 639.2   1986 STAGE 645.4
 X1  76350.000    24.000    24.000   333.000   550.000   550.000   550.000     0.000     0.000     0.000
 GR    648.800     0.000   638.800    10.000   634.700    24.000   632.300    33.000   630.800    41.000
 GR    630.900    65.000   629.800    86.000   630.600   103.000   631.100   110.000   630.900   132.000
 GR    630.900   133.000   630.900   134.000   631.200   141.000   631.200   181.000   630.800   218.000
 GR    631.200   243.000   630.700   255.000   629.800   284.000   631.100   306.000   632.500   326.000
 GR    633.000   332.000   634.600   333.000   636.500   346.000   646.500   356.000     0.000     0.000

 NC      0.074     0.074     0.025     0.000     0.000     0.000     0.000     0.000     0.000     0.000
                XSEC 30  1975 HWM IS 639.6     1976 HWM IS 639.2
 X1  76760.000    27.000    57.000   327.000   350.000   450.000   410.000     0.000     0.000     0.000
 GR    654.000     0.000   645.800    16.000   638.500    32.000   637.900    43.000   636.500    57.000
 GR    633.200    62.000   631.000    77.000   629.000    84.000   629.000    98.000   629.600   118.000
 GR    629.000   147.000   628.300   167.000   630.400   188.000   633.000   197.000   632.600   203.000
 GR    627.600   217.000   629.000   221.000   629.800   232.000   629.600   279.000   631.700   287.000
 GR    631.100   298.000   633.800   315.000   636.000   327.000   638.300   341.000   636.900   355.000
 GR    638.900   360.000   651.300   400.000     0.000     0.000     0.000     0.000     0.000     0.000
 EJ      0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
1
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 1

CCHV= 0.100 CEHV= 0.300
1490 NH CARD USED
*SECNO 48720.000

3470 ENCROACHMENT STATIONS= 7.8 450.6 TYPE= 1 TARGET= 442.890
XSEC 6

48720.00	17.99	634.39	0.00	0.00	634.57	0.18	0.00	0.00	626.80
19800.	1308.	16166.	1326.	594.	4503.	1195.	0.	0.	620.60
0.00	2.20	3.59	1.11	0.046	0.049	0.135	0.000	616.40	7.77
0.000316	1500.	1850.	2000.	0	0	0	0.00	442.86	450.63

0
1490 NH CARD USED
*SECNO 50220.000

3470 ENCROACHMENT STATIONS= 3.5 732.1 TYPE= 1 TARGET= 728.660
XSEC 7

50220.00	21.64	634.84	0.00	0.00	634.95	0.11	0.38	0.01	626.30
18800.	9146.	9373.	281.	4205.	2976.	240.	222.	18.	623.10
0.15	2.18	3.13	1.17	0.041	0.049	0.067	0.000	613.20	3.48
0.000221	1300.	1500.	1300.	1	0	0	0.00	728.63	732.11

0
1490 NH CARD USED
*SECNO 51945.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 24.5 1275.1 TYPE= 1 TARGET= 1250.600
XSEC 8 VICS CAMPING ON RIGHT BANK CAMPGROUND IS ON A HILL
WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.

51945.00	20.37	635.27	0.00	0.00	635.58	0.31	0.57	0.06	637.60
18800.	4.	14761.	4035.	7.	2957.	6153.	512.	51.	629.40
0.26	0.61	4.99	0.66	0.027	0.047	0.202	0.000	614.90	24.46
0.000663	1300.	1725.	1500.	2	0	0	0.00	1173.92	1275.06

0
1490 NH CARD USED
*SECNO 53000.000
1

SECNO DEPTH CWSEL CRIWS WSELK EG HV HL OLOSS BANK ELEV
Q QLOB QCH QROB ALOB ACH AROB 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=      350.0     1700.0  TYPE=      1  TARGET=     1350.000
                  XSEC 9  SECTION THROUGH ISLAND US OF VICS
              XSEC BENT 30DEG LFT AT 887  20DEG RT AT STA 1208
  53000.00     18.63    635.73      0.00      0.00    635.84      0.10      0.24      0.02   625.00
     18800.     3091.    14589.     1120.     5515.    4986.     3206.      738.       73.    623.00
      0.38      0.56      2.93      0.35     0.139    0.036     0.169     0.000    617.10   350.00
  0.000126     1200.     1055.      500.         2        0         0      0.00   1335.28  1685.28
0
 FLOW DISTRIBUTION FOR SECNO=  53000.00          CWSEL=     635.73

 STA=      350.      650.      760.      887.     1192.     1650.     1685.
   PER Q=      8.7       3.1       4.7      77.6       5.8       0.1
    AREA=   3285.4    1168.3    1061.1    4986.4    3088.9     117.0
     VEL=      0.5       0.5       0.8       2.9       0.4       0.2

 1490 NH CARD USED
 *SECNO 53700.000

 3470 ENCROACHMENT STATIONS=      300.0     1740.0  TYPE=      1  TARGET=     1440.000
                  XSEC 10  REDWOOD COTTAGE ON LEFT BANK  1976 HWM 630.5
                  1986 HWM 638     XSEC BENT 45DEG LEFT AT STA 1360
  53700.00     19.20    635.80      0.00      0.00    635.93      0.13      0.09      0.01   626.20
     18800.     7433.    11362.        5.    12875.    3086.       22.       915.       89.    629.20
      0.45      0.58      3.68      0.23     0.154    0.034     0.169     0.000    616.60   300.00
  0.000160      400.      700.      750.         2        0         0      0.00   1436.76  1736.76
0
 FLOW DISTRIBUTION FOR SECNO=  53700.00          CWSEL=     635.80

 STA=      300.     1340.     1420.     1557.     1730.     1737.
   PER Q=     33.6       3.3       2.6      60.4       0.0
    AREA=  11234.8     657.6     982.7    3085.9      22.4
     VEL=      0.6       0.9       0.5       3.7       0.2

 1490 NH CARD USED
 *SECNO 54600.000

 3470 ENCROACHMENT STATIONS=      750.0     2250.0  TYPE=      1  TARGET=     1500.000
                  XSEC 10A NEAR WHITE COTTAGE(BRONKEMA)  1976HWM 630.9 IN GARAGE
                  XSEC BENT 5DEG RT AT STA 139.9  RESTRICTED FOR HIGH GROUND AT
                  XSEC 11 US     1986 HWM 638
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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
54600.00	21.47	635.97	0.00	0.00	636.06	0.09	0.12	0.00	628.70
18800.	9197.	9360.	243.	11953.	2821.	173.	1121.	108.	621.00
0.54	0.77	3.32	1.40	0.117	0.041	0.054	0.000	614.50	750.00

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  0.000183     500.      900.     1000.        2         0         0     0.00  1494.73  2244.73
0
 FLOW DISTRIBUTION FOR SECNO=  54600.00          CWSEL=    635.97

 STA=      750.      949.     1352.     1508.     1597.     1755.     1846.     1888.     1957.     2060.     2062.     2221.     2245.
   PER Q=     5.0       9.1       5.3       4.5       5.3       6.1       3.2       6.3       4.0       0.2      49.8       1.3
    AREA=  2447.8    4555.2    1177.8     709.2     985.0     625.5     284.3     519.9     631.3      14.1    2821.2     173.1
     VEL=     0.4       0.4       0.8       1.2       1.0       1.8       2.1       2.3       1.2       2.2       3.3       1.4

 1490 NH CARD USED
 *SECNO 55080.000
                XSEC 10B LOB IS FELCH ROAD
  55080.00     21.50   636.00      0.00      0.00    636.14      0.14      0.07      0.01    621.00
    18800.     9427.     9134.      239.      3719.     2663.      171.      1198.      116.     621.30
      0.58      2.53      3.43      1.39     0.024     0.041     0.054     0.000    614.50     57.95
  0.000182     250.      480.      550.        2         0         0     0.00    926.84    984.79
0
 1490 NH CARD USED
 *SECNO 55800.000

 3470 ENCROACHMENT STATIONS=     1000.0     1900.0  TYPE=       1  TARGET=      900.000
                XSEC 11  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
  55800.00     19.32   636.02      0.00      0.00    636.36      0.33      0.16      0.06    627.70
    18800.        0.     14919.     3881.        0.     2889.     4315.     1274.      123.     628.60
      0.61      0.00      5.16      0.90     0.000     0.039     0.123     0.000    616.20    1000.00
  0.000520     150.      720.      450.        2         0         0     0.00    900.00    1900.00
0
 FLOW DISTRIBUTION FOR SECNO=  55800.00          CWSEL=    636.02

 STA=     1000.     1169.     1172.     1185.     1237.     1320.     1454.     1546.     1651.     1819.     1900.
   PER Q=    79.4       0.1       0.4       1.7       2.9       4.7       2.7       0.0       5.2       2.8
    AREA=  2888.9      20.0      79.0     313.3     512.5     834.1     517.5     553.8     970.1     514.9
     VEL=     5.2       1.0       1.0       1.0       1.1       1.1       1.0       0.0       1.0       1.0

 1490 NH CARD USED
 *SECNO 56800.000
                XSEC 12
1
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    SECNO      DEPTH     CWSEL     CRIWS     WSELK      EG        HV        HL       OLOSS    BANK ELEV
    Q          QLOB      QCH       QROB      ALOB       ACH       AROB      VOL      TWA    LEFT/RIGHT
    TIME       VLOB      VCH       VROB      XNL        XNCH      XNR       WIN      ELMIN      SSTA
    SLOPE      XLOBL     XLCH      XLOBR     ITRIAL     IDC       ICONT     CORAR    TOPWID     ENDST


  56800.00     21.95   636.55      0.00      0.00    636.69      0.14      0.32      0.02    621.70
    18800.      143.     11754.     6902.      131.     3143.     8946.     1352.      129.     630.00
      0.69      1.09      3.74      0.77     0.095     0.048     0.128     0.000    614.60      4.19
  0.000367     1200.     1000.       50.        2         0         0     0.00   1587.82   1592.01
0
 FLOW DISTRIBUTION FOR SECNO=  56800.00          CWSEL=    636.55

 STA=        4.       22.      222.      350.      457.      758.      865.      958.     1093.     1227.     1424.     1592.
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PER Q=	0.8	62.5	4.7	3.9	5.7	3.7	3.2	3.6	3.6	4.3	3.9
AREA=	131.4	3143.2	908.0	759.9	1841.3	727.8	637.2	903.7	904.7	1175.1	1058.7
VEL=	1.1	3.7	1.0	1.0	0.6	0.9	1.0	0.7	0.8	0.7	0.7

1490 NH CARD USED
*SECNO 57650.000
XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
1976 HWM 631.9

57650.00	19.37	636.77	0.00	0.00	636.81	0.05	0.11	0.01	622.00
18800.	5936.	10299.	2565.	6037.	4684.	4642.	1472.	140.	626.50
0.79	0.98	2.20	0.55	0.061	0.043	0.103	0.000	617.40	9.73
0.000118	500.	850.	50.	0	0	0	0.00	1869.28	1879.01

0
FLOW DISTRIBUTION FOR SECNO= 57650.00 CWSEL= 636.77

STA=	10.	845.	857.	1180.	1380.	1514.	1879.
PER Q=	30.7	0.9	54.8	4.2	3.9	5.5	
AREA=	5902.6	133.9	4684.0	1400.6	932.4	2309.2	
VEL=	1.0	1.2	2.2	0.6	0.8	0.4	

1490 NH CARD USED
*SECNO 58350.000
XSEC 14 XSEC BENT 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB

58350.00	20.54	636.84	0.00	0.00	636.92	0.09	0.10	0.01	630.50
18800.	9369.	9423.	9.	7276.	3072.	37.	1632.	159.	629.50
0.87	1.29	3.07	0.24	0.065	0.049	0.202	0.000	616.30	24.42
0.000242	500.	700.	400.	2	0	0	0.00	1270.58	1295.00

0
FLOW DISTRIBUTION FOR SECNO= 58350.00 CWSEL= 636.84

STA=	24.	400.	731.	918.	1077.	1106.	1285.	1295.	
PER Q=	17.9	17.6	7.3	5.9	1.2	50.1	0.0		
AREA=	2559.3	2444.9	1147.5	943.9	180.9	3072.0	36.7		
VEL=	1.3	1.4	1.2	1.2	1.2	3.1	0.2		

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

1490 NH CARD USED
*SECNO 58900.000
XSEC 15

58900.00	18.94	636.94	0.00	0.00	637.07	0.13	0.13	0.01	631.50
18800.	4688.	13454.	658.	5356.	3909.	972.	1750.	174.	629.00
0.92	0.88	3.44	0.68	0.081	0.046	0.135	0.000	618.00	24.09
0.000282	450.	550.	700.	0	0	0	0.00	1511.34	1535.43

0
1490 NH CARD USED
*SECNO 60000.000

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                XSEC 16
 60000.00     18.25    637.15      0.00      0.00    637.75      0.60      0.54      0.14    628.00
    18800.      373.     16445.     1982.      151.     2476.     2412.     1921.      198.    632.60
     0.97      2.47      6.64      0.82     0.065     0.047     0.162     0.000    618.90     13.09
 0.001168     1000.     1100.      700.         2         0         0      0.00    761.28    774.37
0
 FLOW DISTRIBUTION FOR SECNO=  60000.00          CWSEL=    637.15

 STA=       13.       44.      200.      750.      774.
   PER Q=      2.0      87.5      10.4       0.1
    AREA=    151.2    2475.8    2362.7      49.3
     VEL=      2.5       6.6       0.8       0.5

 1490 NH CARD USED
 *SECNO 62250.000
                XSEC 17    SUBDIVISION ON LEFT BANK
 62250.00     18.42    638.62      0.00      0.00    638.85      0.23      1.07      0.04    632.90
    18800.      309.     17612.     880.      541.     4400.     1004.     2182.      227.    629.10
     1.13      0.57      4.00      0.88     0.126     0.038     0.120     0.000    620.20     25.90
 0.000266     2400.     2225.     1700.         2         0         0      0.00    510.85    536.75
0
 1490 NH CARD USED
 *SECNO 63120.000
 63120.00     19.13    638.83      0.00      0.00    639.21      0.38      0.32      0.04    630.40
    18800.       51.     18279.     470.       78.     3643.      779.     2298.      237.    633.10
     1.19      0.66      5.02      0.60     0.120     0.038     0.148     0.000    619.70     13.12
 0.000417      970.      970.      970.         2         0         0      0.00    402.05    415.17
0
1
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   SECNO      DEPTH     CWSEL     CRIWS     WSELK      EG        HV        HL       OLOSS    BANK ELEV
   Q          QLOB      QCH       QROB      ALOB       ACH       AROB      VOL      TWA    LEFT/RIGHT
   TIME       VLOB      VCH       VROB      XNL        XNCH      XNR       WTN      ELMIN       SSTA
   SLOPE      XLOBL     XLCH      XLOBR     ITRIAL     IDC       ICONT     CORAR    TOPWID      ENDST

 1490 NH CARD USED
 *SECNO 65620.000

 3470 ENCROACHMENT STATIONS=      20.0      470.0  TYPE=      1  TARGET=     450.000
 65620.00     19.92    639.62      0.00      0.00    639.99      0.37      0.77      0.00    629.80
    18800.     1145.     17251.     404.      1208.     3409.     413.      2506.      256.    628.30
     1.30      0.95      5.06      0.98     0.107     0.038     0.120     0.000    620.70     20.00
 0.000397     1900.     1900.     1900.         2         0         0      0.00    450.00    470.00
0
 1490 NH CARD USED
 *SECNO 67420.000

 3470 ENCROACHMENT STATIONS=      10.0      420.0  TYPE=      1  TARGET=     410.000
                XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK
 67420.00     21.26    640.56      0.00      0.00    640.84      0.28      0.85      0.01    631.80
    18800.      775.     17570.     455.      308.     4001.     787.      2790.      280.    633.70
     1.46      2.29      4.39      0.58     0.041     0.038     0.148     0.000    619.30     10.00
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 0.000294    2400.    2500.    2500.       2        0        0     0.00   410.00   420.00
0
 1490 NH CARD USED
 *SECNO 68970.000
                XSEC 21 US OF GREEN COTTAGE ON LEFT BANK
 68970.00    18.32   641.02     0.00     0.00   641.30     0.28     0.45     0.00   631.50
   18800.     725.   17833.     242.     925.    4110.     273.    2981.     297.    628.30
     1.57     0.78     4.34     0.89    0.085    0.038    0.100    0.000   622.70     8.86
 0.000293    1400.    1550.    1700.       2        0        0     0.00   557.40   566.26
0
 1490 NH CARD USED
 *SECNO 70300.000
                XSEC 22  BELOW POWER LINE CROSSING  N VALUES ARE ATYPICAL
 70300.00    17.75   641.45     0.00     0.00   641.66     0.21     0.36     0.01   633.80
   18800.    1808.   16927.      65.     927.    4398.      54.    3144.     312.    632.30
     1.67     1.95     3.85     1.20    0.050    0.038    0.050    0.000   623.70    10.06
 0.000250    1300.    1330.    1300.       2        0        0     0.00   410.62   420.69
0
 1490 NH CARD USED
 *SECNO 71300.000
 71300.00    18.96   641.66     0.00     0.00   641.97     0.31     0.28     0.03   633.60
   18800.    1164.   17457.     179.     555.    3800.     214.    3258.     320.    630.20
     1.73     2.10     4.59     0.84    0.046    0.038    0.100    0.000   622.70    11.33
 0.000321    1000.    1000.    1000.       2        0        0     0.00   354.05   365.38
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 1490 NH CARD USED
 *SECNO 71900.000
 71900.00    17.27   641.87     0.00     0.00   642.19     0.32     0.21     0.00   630.00
   18800.    1245.   16956.     599.     610.    3581.     578.    3321.     325.    630.50
     1.77     2.04     4.74     1.04    0.058    0.040    0.120    0.000   624.60    11.69
 0.000408     500.     600.     650.       2        0        0     0.00   385.41   397.09
0
 1490 NH CARD USED
 *SECNO 73040.000
          XSEC 25 BTWN BARBER AND KRING CABINS US OF PUB ACC SITE DS OF NEWYGO
 73040.00    16.81   642.41     0.00     0.00   642.66     0.25     0.46     0.01   636.20
   18800.     155.   15715.    2931.     198.    3658.    1229.    3450.     338.    633.30
     1.85     0.78     4.30     2.38    0.100    0.042    0.038    0.000   625.60    13.39
 0.000405    1200.    1140.    1100.       2        0        0     0.00   564.88   578.27
0
 1490 NH CARD USED
 *SECNO 73590.000
          XSEC 26 DS OF CO RD BRDG  SEC BENT 45DEG RT OFF RD FILL AT STA 10
            BENT 45DEG RT TO RD FILL AT STA 325
 73590.00    18.47   642.57     0.00     0.00   642.90     0.32     0.22     0.02   632.90
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    18800.      326.    13099.      376.      170.     3906.      185.     3508.      343.    632.40
     1.88       1.91      4.63      2.03     0.047     0.038     0.059     0.000    624.10     13.97
 0.000383       660.      550.      500.         2         0         0      0.00    318.03    332.00
0
 *SECNO 73640.000

 3265 DIVIDED FLOW


 3370 NORMAL BRIDGE,NRD=  0 MIN ELTRD=  652.00 MAX ELLC=  650.50

                XSEC 27 CENTER OF BRDG    ELLC AT 650.5
  73640.00     17.19    642.59      0.00      0.00    642.92      0.33      0.02      0.00    652.00
    18800.        0.     18800.        0.        0.     4071.        0.     3513.      343.    652.00
     1.88      0.00      4.62      0.00     0.000     0.034     0.000     0.000    625.40      0.00
 0.000395       50.       50.       50.         0         0         0      0.00    290.00    296.00
0
 *SECNO 73660.000
1
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    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


 3265 DIVIDED FLOW

 3370 NORMAL BRIDGE,NRD=  0 MIN ELTRD=  652.00 MAX ELLC=  650.50

  73660.00     17.19    642.59      0.00      0.00    642.92      0.33      0.01      0.00    652.00
    18800.        0.     18800.        0.        0.     4071.        0.     3515.      344.    652.00
     1.89      0.00      4.62      0.00     0.000     0.034     0.000     0.000    625.40      0.00
 0.000395       20.       20.       20.         0         0         0      0.00    290.00    296.00
0
 *SECNO 73720.000
  73720.00     17.24    642.54      0.00      0.00    642.98      0.44      0.03      0.03    634.70
    18800.       687.     17329.      784.      259.     3144.      418.     3521.      344.    632.30
     1.89      2.65      5.51      1.37     0.047     0.034     0.059     0.000    625.30     66.70
 0.000540       60.       60.       60.         2         0         0      0.00    383.37    450.07
0
 1490 NH CARD USED
 *SECNO 75140.000
            XSEC 29  SEWAGE TREATMENT PLANT IN LOB
  75140.00     15.81    643.31      0.00      0.00    643.50      0.19      0.49      0.02    635.60
    18800.     4964.     13827.        9.      485.     3404.       21.     3701.      365.    634.50
     2.01      1.02      4.06      0.42     0.080     0.034     0.090     0.000    627.50     31.56
 0.000251      1140.     1420.     1440.         2         0         0      0.00   1040.27   1071.83
0
 *SECNO 75600.000
 3280 CROSS SECTION 75600.00 EXTENDED      8.15 FEET
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                XSEC 29A  AT USGS CABLE
  75800.00     15.15   643.35     0.00     0.00   643.80     0.46     0.23     0.08   636.00
    18800.        0.   18800.       0.       0.    3466.       0.    3784.     373.    635.20
      2.04      0.00     5.42     0.00    0.000    0.034    0.000    0.000   628.20  1005.00
  0.000522      540.     660.     700.        2        0        0     0.00   259.00  1264.00
0
 1490 NH CARD USED
 *SECNO 76350.000
            XSEC 29B AT USGS GAGE  1976 STAGE IS 639.2   1986 STAGE 645.4
  76350.00     13.96   643.76     0.00     0.00   644.09     0.33     0.27     0.01   634.70
    18800.      340.   18306.     153.     110.    3945.     133.    3832.     377.    634.60
      2.07      3.08     4.64     1.15    0.035    0.038    0.101    0.000   629.80     5.04
  0.000473      550.     550.     550.        2        0        0     0.00   348.22   353.26
0
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     COHAR     TOPWID     ENDST

 *SECNO 76760.000
                XSEC 30  1975 HWM IS 638.6       1976 HWM IS 639.2
  76760.00     16.30   643.90     0.00     0.00   644.29     0.38     0.18     0.02   636.50
    18800.      176.   18383.     241.     187.    3667.     253.    3871.     381.    636.00
      2.10      0.94     5.01     0.95    0.100    0.034    0.100    0.000   627.60    20.21
  0.000407      350.     410.     450.        2        0        0     0.00   355.93   376.14
0
1
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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
*****************************************************

T1      NO FLOW THROUGH ANDERSON FLATS
T2      100YR FLOOD
T3      Q 18800CFS

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        2.        0.        0.   0.000000     0.00       0.0    18800.   634.390    0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
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2.000 0.000 -1.000 0.000 0.000 1.350 0.000 0.000 0.000 0.000

1

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

*PROF 2

CCHV= 0.100 CEHV= 0.300
1490 NH CARD USED
*SECNO 48720.000

3470 ENCROACHMENT STATIONS= 7.8 450.6 TYPE= 1 TARGET= 442.890
XSEC 6

48720.00	17.99	634.39	0.00	634.39	634.57	0.18	0.00	0.00	626.80
18800.	1308.	16166.	1326.	594.	4503.	1195.	0.	0.	620.60
0.00	2.20	3.59	1.11	0.046	0.049	0.135	0.000	616.40	7.77
0.000316	1500.	1850.	2000.	0	0	0	0.00	442.86	450.63

0
1490 NH CARD USED
*SECNO 50220.000

3470 ENCROACHMENT STATIONS= 3.5 732.1 TYPE= 1 TARGET= 728.660
XSEC 7

50220.00	21.64	634.84	0.00	634.84	634.95	0.11	0.38	0.01	626.30
18800.	9146.	9373.	281.	4205.	2976.	240.	222.	18.	623.10
0.15	2.18	3.15	1.17	0.041	0.049	0.067	0.000	613.20	3.48
0.000221	1300.	1500.	1300.	1	0	0	0.00	728.63	732.11

0
1490 NH CARD USED
*SECNO 51945.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 24.5 1275.1 TYPE= 1 TARGET= 1250.600
XSEC 8 VICS CAMPING ON RIGHT BANK CAMPGROUND IS ON A HILL
WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.

51945.00	20.37	635.27	0.00	635.27	635.58	0.31	0.57	0.06	637.60
18800.	4.	14761.	4035.	7.	2957.	6153.	512.	51.	629.40
0.26	0.61	4.99	0.66	0.027	0.047	0.202	0.000	614.90	24.46
0.000663	1300.	1725.	1500.	2	0	0	0.00	1173.92	1275.06

0
1490 NH CARD USED
*SECNO 53000.000

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	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= 787.0 1700.0 TYPE= 1 TARGET= 913.000
XSEC 9 SECTION THROUGH ISLAND US OF VICS
XSEC BENT 30DEG LFT AT 887 20DEG RT AT STA 1208

53000.00	18.62	635.72	0.00	635.73	635.88	0.15	0.29	0.02	625.00
18800.	866.	16657.	1277.	822.	4983.	3201.	673.	67.	623.00
0.35	1.05	3.34	0.40	0.070	0.036	0.169	0.000	617.10	787.00
0.000164	1200.	1055.	500.	2	0	0	0.00	898.23	1685.23

0
FLOW DISTRIBUTION FOR SECNO= 53000.00 CWSEL= 635.72

STA=	787.	887.	1192.	1650.	1685.
PER Q=	4.6	88.6	6.6	0.2	
AREA=	821.6	4983.3	3084.3	116.7	
VEL=	1.1	3.3	0.4	0.2	

1490 NH CARD USED
*SECNO 53700.000

3470 ENCROACHMENT STATIONS= 1500.0 1740.0 TYPE= 1 TARGET= 240.000
XSEC 10 REDWOOD COTTAGE ON LEFT BANK 1976 HWM 630.5
1986 HWM 638 XSEC BENT 45DEG LEFT AT STA 1360

53700.00	19.03	635.63	0.00	635.80	636.16	0.54	0.17	0.11	626.20
18800.	553.	18239.	8.	411.	3056.	21.	771.	76.	629.20
0.38	1.34	5.97	0.36	0.081	0.034	0.169	0.000	616.60	1500.00
0.000425	400.	700.	750.	2	0	0	0.00	236.58	1736.58

0
FLOW DISTRIBUTION FOR SECNO= 53700.00 CWSEL= 635.63

STA=	1500.	1557.	1740.	1737.
PER Q=	2.9	97.0	0.0	
AREA=	411.5	3055.6	21.2	
VEL=	1.3	6.0	0.4	

1490 NH CARD USED
*SECNO 54600.000

3470 ENCROACHMENT STATIONS= 2012.0 2250.0 TYPE= 1 TARGET= 238.000
XSEC 10A NEAR WHITE COTTAGE(BRONKEMA) 1976HWM 630.9 IN GARAGE
XSEC BENT 5DEG RT AT STA 139.9 RESTRICTED FOR HIGH GROUND AT
XSEC 11 US 1986 HWM 638

1

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

54600.00	21.57	636.07	0.00	635.97	636.61	0.54	0.45	0.00	628.70
18800.	1102.	17246.	452.	316.	12838.	176.	839.	80.	621.00
0.42	3.48	6.08	2.57	0.034	0.040	0.054	0.000	614.50	2012.00
0.000609	500.	900.	1000.	2	0	0	0.00	232.91	2244.91

0
FLOW DISTRIBUTION FOR SECNO= 54600.00 CWSEL= 636.07

STA=	2012.	2060.	2062.	2221.	2245.
PER Q=	5.6	0.3	91.7	2.4	
AREA=	301.8	14.3	2837.6	175.6	
VEL=	3.5	4.0	6.1	2.6	

1490 NH CARD USED
*SECNO 55080.000

3470 ENCROACHMENT STATIONS= 762.0 990.0 TYPE= 1 TARGET= 228.000
XSEC 10B LOB IS FELCH ROAD

55080.00	21.86	636.36	0.00	636.00	636.88	0.53	0.27	0.00	621.00
18800.	1936.	16418.	445.	475.	2714.	180.	874.	82.	621.30
0.45	4.07	6.05	2.48	0.034	0.041	0.054	0.000	614.50	762.00
0.000552	250.	480.	550.	2	0	0	0.00	223.40	985.40

0
1490 NH CARD USED
*SECNO 55800.000

3470 ENCROACHMENT STATIONS= 1000.0 1900.0 TYPE= 1 TARGET= 900.000
XSEC 11 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND

55800.00	20.75	636.95	0.00	636.02	637.22	0.27	0.31	0.03	627.70
18800.	0.	14406.	4394.	0.	3045.	4992.	949.	89.	628.60
0.49	0.00	4.73	0.88	0.000	0.039	0.123	0.000	616.20	1000.00
0.000415	150.	720.	450.	2	0	0	0.00	900.00	1900.00

0
FLOW DISTRIBUTION FOR SECNO= 55800.00 CWSEL= 636.95

STA=	1000.	1169.	1172.	1185.	1237.	1320.	1454.	1546.	1651.	1819.	1900.
PER Q=	76.6	0.1	0.5	2.0	3.2	5.3	3.1	0.0	6.0	3.1	
AREA=	3045.4	22.8	91.0	361.4	589.3	958.1	602.6	651.0	1125.6	589.9	
VEL=	4.7	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	

1

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

1490 NH CARD USED
*SECNO 56800.000
XSEC 12

56800.00	22.76	637.86	0.00	636.55	637.47	0.11	0.24	0.02	621.70

18800.	146.	11245.	7409.	146.	3306.	10029.	1033.	95.	630.00
0.58	1.00	3.40	0.74	0.094	0.048	0.128	0.000	614.60	3.20
0.000287	1200.	1000.	50.	2	0	0	0.00	1588.81	1592.01

0
FLOW DISTRIBUTION FOR SECNO= 56800.00 CWSEL= 637.36

STA=	3.	22.	222.	350.	457.	758.	865.	958.	1093.	1227.	1424.	1592.
PER Q=	0.8	59.8	5.0	4.2	6.2	3.9	3.4	3.9	3.9	4.7	4.3	
AREA=	146.3	3305.7	1012.0	846.8	2085.8	814.7	712.7	1013.3	1013.5	1335.1	1195.1	
VEL=	1.0	3.4	0.9	0.9	0.6	0.9	0.9	0.7	0.7	0.7	0.7	

1490 NH CARD USED
*SECNO 57650.000
XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
1973 HWM 631.9

57650.00	20.13	637.53	0.00	636.77	637.57	0.04	0.09	0.01	622.00
18800.	6215.	9373.	2712.	6689.	4932.	5180.	1161.	106.	626.50
0.69	0.93	2.00	0.52	0.061	0.043	0.103	0.000	617.40	7.42
0.000092	500.	850.	50.	0	0	0	0.00	1871.59	1879.01

0
FLOW DISTRIBUTION FOR SECNO= 57650.00 CWSEL= 637.53

STA=	7.	845.	857.	1180.	1380.	1514.	1879.
PER Q=	32.2	0.8	52.5	4.5	4.1	5.8	
AREA=	6545.9	143.1	4932.4	1554.4	1035.5	2589.9	
VEL=	0.9	1.1	2.0	0.5	0.8	0.4	

1490 NH CARD USED
*SECNO 58350.000
XSEC 14 XSEC BENT 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB

58350.00	21.28	637.58	0.00	636.84	637.65	0.07	0.08	0.01	630.50
18800.	9843.	8948.	10.	8086.	3206.	45.	1335.	124.	629.50
0.77	1.22	2.79	0.22	0.065	0.049	0.202	0.000	616.30	19.44
0.000189	500.	700.	400.	2	0	0	0.00	1276.58	1296.02

0
1

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

FLOW DISTRIBUTION FOR SECNO= 58350.00 CWSEL= 637.58

STA=	19.	400.	731.	918.	1077.	1106.	1285.	1296.
PER Q=	18.7	18.3	7.8	6.3	1.2	47.6	0.1	
AREA=	2841.7	2692.2	1287.2	1062.7	202.5	3205.7	44.6	
VEL=	1.2	1.3	1.1	1.1	1.2	2.8	0.2	

1490 NH CARD USED
*SECNO 58900.000
XSEC 15

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 58900.00    19.66   637.66     0.00   636.94   637.77     0.11     0.10     0.01   631.50
    18800.     5265.   12847.     688.    6173.    4082.    1079.    1464.     140.   629.00
      0.83     0.85     3.15     0.64    0.081    0.046    0.135    0.000   618.00    19.32
 0.000222     450.     550.     700.        0        0        0     0.00  1519.00  1538.32
0
 1490 NH CARD USED
 *SECNO 60000.000
                XSEC 16
 60000.00    18.90   637.80     0.00   637.15   638.32     0.52     0.43     0.12   628.00
    18800.     396.   16100.    2304.     172.    2578.    2790.    1652.     164.   632.60
      0.89     2.30     6.25     0.83    0.066    0.047    0.162    0.000   618.90    11.07
 0.000979     1000.    1100.     700.        2        0        0     0.00   767.25   778.32
0
 FLOW DISTRIBUTION FOR SECNO=  60000.00          CWSEL=    637.80

 STA=       11.      44.     200.     750.     778.
   PER Q=     2.1     85.6     12.1      0.2
    AREA=   172.1   2578.1   2723.1     66.6
     VEL=     2.3      6.2      0.8      0.5

 1490 NH CARD USED
 *SECNO 62250.000
                XSEC 17    SUBDIVISION ON LEFT BANK
 62250.00    18.87   639.07     0.00   638.62   639.29     0.22     0.94     0.03   632.90
    18800.     339.   17554.     907.     595.    4526.    1056.    1929.     193.   629.10
      1.05     0.57     3.88     0.86    0.126    0.038    0.120    0.000   620.20    23.11
 0.000240     2400.    2225.    1700.        0        0        0     0.00   514.59   537.70
0
 1490 NH CARD USED
1
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     SECNO     DEPTH     CWSEL     CRIWS     WSSLK     EG        HV        HL        OLOSS    BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 *SECNO 63120.000
  63120.00    19.56   639.26     0.00   638.83   639.62     0.36     0.29     0.04   630.40
     18800.     57.    18231.     512.     87.    3740.     848.    2050.     203.   633.10
       1.11     0.66     4.87     0.60    0.120    0.038    0.148    0.000   619.70    11.98
  0.000380     970.     970.     970.        2        0        0     0.00   406.05   418.03
 0
 1490 NH CARD USED
 *SECNO 65620.000

 3470 ENCROACHMENT STATIONS=      20.0     470.0  TYPE=      1  TARGET=     450.000
  65620.00    19.29   639.99     0.00   639.62   640.33     0.35     0.71     0.00   629.80
     18800.    1206.    17179.     415.    1279.    3484.     431.    2265.     222.   628.30
       1.22     0.94     4.93     0.96    0.107    0.038    0.120    0.000   620.70    20.00
  0.000366     1900.    1900.    1900.        2        0        0     0.00   450.00   470.00
 0
 1490 NH CARD USED
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 *SECNO 67420.000

 3470 ENCROACHMENT STATIONS=      10.0     420.0  TYPE=      1  TARGET=     410.000
                XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK
  67420.00     21.56   640.86      0.00   640.56   641.13     0.27     0.79     0.01   631.80
     18800.      802.    17522.     476.     352.     4071.     825.     2563.     246.   633.70
      1.39       2.28     4.30     0.58    0.040    0.038    0.149    0.000   619.30    10.00
  0.000275     2400.    2500.    2500.        2        0        0     0.00   410.00   420.00
0
 1490 NH CARD USED
 *SECNO 68970.000
                XSEC 21 US OF GREEN COTTAGE ON LEFT BANK
  68970.00     18.59   641.29      0.00   641.02   641.55     0.27     0.43     0.00   631.50
     18800.      783.    17767.     250.     996.     4177.     286.     2753.     263.   628.30
      1.50       0.79     4.25     0.87    0.085    0.038    0.100    0.000   622.70     7.90
  0.000275     1400.    1550.    1700.        2        0        0     0.00   559.31   567.21
0
 1490 NH CARD USED
 *SECNO 70300.000
                XSEC 22  BELOW POWER LINE CROSSING  N VALUES ARE ATYPICAL
  70300.00     17.99   641.69      0.00   641.45   641.90     0.21     0.34     0.01   633.80
     18800.     1843.    16888.      69.     956.     4467.      57.     2919.     278.   632.30
      1.60       1.93     3.78     1.20    0.050    0.038    0.050    0.000   623.70     9.23
  0.000236     1300.    1330.    1300.        2        0        0     0.00   411.90   421.13
0
1
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     SECNO      DEPTH     CWSEL     CRIWS     WSELK      EG         KV        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


 1490 NH CARD USED
 *SECNO 71300.000
  71300.00     19.20   641.90      0.00   641.66   642.19     0.30     0.27     0.03   633.60
     18800.     1196.    17417.     186.     575.     3852.     224.     3036.     287.   630.20
      1.66       2.08     4.52     0.83    0.046    0.038    0.100    0.000   622.70    10.57
  0.000306     1000.    1000.    1000.        2        0        0     0.00   355.46   366.03
0
 1490 NH CARD USED
 *SECNO 71900.000
  71900.00     17.49   642.09      0.00   641.87   642.40     0.31     0.20     0.00   630.00
     18800.     1267.    16923.     610.     630.     3630.     595.     3100.     292.   630.50
      1.70       2.01     4.66     1.33    0.059    0.041    0.120    0.000   624.60    11.07
  0.000389      500.     600.     650.        2        0        0     0.00   386.75   397.82
0
 1490 NH CARD USED
 *SECNO 73040.000
                XSEC 25  BTWN BARBER AND KRING CABINS US OF PUB ACC SITE DS OF NEWYGO
  73040.00     17.00   642.60      0.00   642.41   642.95     0.24     0.44     0.01   636.20
     18800.      162.    15605.    3033.     208.     3706.    1283.     3232.     304.   633.30
      1.78       0.78     4.21     2.36    0.100    0.042    0.038    0.000   625.60    12.75
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  0.000382    1200.    1140.    1100.       2        0        0     0.00   568.97   581.73
0
 1490 NH CARD USED
 *SECNO 73590.000
          XSEC 26 DS OF CO RD BRDG  SEC BENT 45DEG RT OFF RD FILL AT STA 10
            BENT 45DEG RT TO RD FILL AT STA 325
  73590.00    18.66   642.76     0.00   642.57   643.07     0.31     0.20     0.02   632.90
    18800.      335.    18084.     380.      177.     3955.      189.     3291.      310.   632.40
      1.82     1.90     4.57     2.01    0.047    0.038    0.059    0.000   624.10    13.37
  0.000367      660.     550.      500.        2        0        0     0.00   318.76   332.13
0
 *SECNO 73640.000

 3265 DIVIDED FLOW


 3370 NORMAL BRIDGE,NRD=  0 MIN ELTRD=  652.00 MAX ELLC=  650.50

                XSEC 27 CENTER OF BRDG   ELLC AT 650.5
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       APOB      VOL       TWA   LEFT/RIGHT
    TIME      VLOB      VCH       VROB      KNL       KNCH      KNR       WTN       ELMIN      SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

  73640.00    17.37   642.77     0.00   642.59   643.09     0.32     0.02     0.00   652.00
    18800.       0.    18800.       0.       0.     4125.       0.     3296.      310.   652.00
      1.82     0.00     4.56     0.00    0.000    0.034    0.000    0.000   625.40     0.00
  0.000379       50.      50.       50.        0        0        0     0.00   290.00   296.00
0
 *SECNO 73660.000

 3265 DIVIDED FLOW


 3370 NORMAL BRIDGE,NRD=  0 MIN ELTRD=  652.00 MAX ELLC=  650.50

  73660.00    17.38   642.78     0.00   642.59   643.10     0.32     0.01     0.00   652.00
    18800.       0.    18800.       0.       0.     4125.       0.     3298.      310.   652.00
      1.82     0.00     4.56     0.00    0.000    0.034    0.000    0.000   625.40     0.00
  0.000379       20.      20.       20.        0        0        0     0.00   290.00   296.00
0
 *SECNO 73720.000
  73720.00    17.43   642.73     0.00   642.54   643.16     0.43     0.03     0.03   634.70
    18300.      700.    17294.     806.      267.     3190.      437.     3304.      311.   632.30
      1.82     2.62     5.42     1.85    0.047    0.034    0.059    0.000   625.30    65.74
  0.000512       60.      60.       60.        2        0        0     0.00   387.01   452.75
0
 1490 NH CARD USED
 *SECNO 75140.000
          XSEC 29  SEWAGE TREATMENT PLANT IN LOO
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  75140.00     15.96    643.46      0.00    643.31    643.65      0.19      0.47      0.02    635.60
    18800.     5042.    13748.        9.     4974.     3441.       22.      3488.      331.     634.50
      1.94      1.01      4.00      0.42     0.080     0.034     0.090     0.000    627.50     28.97
  0.000240     1140.     1420.     1440.         2         0         0      0.00   1043.01   1071.98
0
 *SECNO 75800.000
 3280 CROSS SECTION  75800.00 EXTENDED       8.30 FEET

                XSEC 29A  AT USGS CABLE
  75800.00     15.30    643.50      0.00    643.35    643.94      0.45      0.22      0.08    636.00
    18800.        0.    18800.        0.        0.     3505.        0.      3571.      340.     635.20
      1.98      0.00      5.36      0.00     0.000     0.034     0.000     0.000    628.20    1005.00
  0.000504      540.      660.      700.         2         0         0      0.00    259.00    1264.00
0
1
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    SECNO      DEPTH     CWSEL     CRIWS     WSELK      EG        HV        HL       OLOSS    BANK ELEV
    Q          QLOB      QCH       QROB      ALOB       ACH       AROB      VOL      TWA    LEFT/RIGHT
    TIME       VLOB      VCH       VROB      XNL        XNCH      XNR       WTN      ELMIN      SSTA
    SLOPE      XLOBL     XLCH      XLOBR     ITRIAL     IDC       ICONT     CORAR    TOPWID     ENDST

 1490 NH CARD USED
 *SECNO 76350.000
          XSEC 29B AT USGS GAGE  1976 STAGE IS 639.2   1986 STAGE 645.4
  76350.00     14.10    643.90      0.00    643.76    644.22      0.32      0.26      0.01    634.70
    18800.      345.    18299.       155.      113.     3987.       136.     3620.      344.     634.60
      2.01      3.06      4.59      1.14     0.035     0.038     0.101     0.000    629.80      4.90
  0.000456      550.      550.      550.         2         0         0      0.00    348.49    353.40
0
 *SECNO 76760.000
                XSEC 30  1975 HWM IS 638.6       1976 HWM IS 639.2
  76760.00     16.43    644.03      0.00    643.90    644.41      0.37      0.17      0.02    636.50
    18800.      180.    18375.       246.      192.     3702.       260.     3660.      347.     636.00
      2.03      0.94      4.96      0.95     0.100     0.034     0.100     0.000    627.60     19.93
  0.000394      350.      410.      450.         2         0         0      0.00    356.63    376.56
0
1
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 ************************************************
   HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
   ERROR CORR -  01,02,03,04,05,06
   MODIFICATION -  50,51,52,53,54,55,56
 ************************************************

 T1
 T2   NO FLOW THROUGH ANDERSON FLATS AND OLD WOMANS BEND
 T3
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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	18800.	634.390	0.000
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IDW	CHNIM	ITRACE
	15.000	0.000	-1.000	0.000	0.000	1.350	0.000	0.000	0.000	0.000

1

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

*PROF 3

CCHV= 0.100 CEHV= 0.300
1490 NH CARD USED
*SECNO 48720.000

3470 ENCROACHMENT STATIONS= 7.8 450.6 TYPE= 1 TARGET= 442.890
XSEC 6

48720.00	17.99	634.39	0.00	634.39	634.57	0.18	0.00	0.00	626.80
18800.	1308.	16166.	1326.	594.	4503.	1195.	0.	0.	620.60
0.00	2.20	3.59	1.11	0.046	0.049	0.135	0.000	616.40	7.77
0.000316	1500.	1850.	2000.	0	0	0	0.00	442.86	450.63

0
1490 NH CARD USED
*SECNO 50220.000

3470 ENCROACHMENT STATIONS= 3.5 732.1 TYPE= 1 TARGET= 728.660
XSEC 7

50220.00	21.64	634.84	0.00	634.84	634.95	0.11	0.38	0.01	626.30
18800.	9146.	9373.	281.	4205.	2976.	240.	222.	18.	623.10
0.15	2.18	3.15	1.17	0.041	0.049	0.067	0.000	613.20	3.48
0.000221	1300.	1500.	1300.	1	0	0	0.00	728.63	732.11

0
1490 NH CARD USED
*SECNO 51945.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 24.5 1275.1 TYPE= 1 TARGET= 1250.600
XSEC 8 VICS CAMPING ON RIGHT BANK CAMPGROUND IS ON A HELL
WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.

51945.00	20.37	635.27	0.00	635.27	635.58	0.31	0.57	0.06	637.60
18800.	4.	14761.	4035.	7.	2957.	6153.	512.	51.	629.40
0.26	0.61	4.99	0.66	0.027	0.047	0.282	0.000	614.90	24.46
0.000663	1300.	1725.	1500.	2	0	0	0.00	1173.92	1275.06

0
 1490 NH CARD USED
 *SECNO 53000.000
1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	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= 787.0 1700.0 TYPE= 1 TARGET= 913.000
XSEC 9 SECTION THROUGH ISLAND US OF VICS
XSEC BENT 30DEG LFT AT 887 20DEG RT AT STA 1208

53000.00	18.62	635.72	0.00	635.73	635.88	0.15	0.29	0.02	625.00
18800.	866.	16657.	1277.	822.	4983.	3201.	673.	67.	623.00
0.35	1.05	3.34	0.40	0.070	0.036	0.169	0.000	617.10	787.00
0.000164	1200.	1055.	500.	2	0	0	0.00	898.23	1685.23

0
FLOW DISTRIBUTION FOR SECNO= 53000.00 CWSEL= 635.72

STA=	787.	887.	1192.	1650.	1685.
PER Q=		4.6	38.6	6.6	0.2
AREA=		821.6	4983.3	3084.3	116.7
VEL=		1.1	3.3	0.4	0.2

1490 NH CARD USED
*SECNO 53700.000

3470 ENCROACHMENT STATIONS= 1500.0 1740.0 TYPE= 1 TARGET= 240.000
XSEC 10 REDWOOD COTTAGE ON LEFT BANK 1976 HWM 630.5
1986 HWM 638 XSEC BENT 45DEG LEFT AT STA 1360

53700.00	19.03	635.63	0.00	635.80	636.16	0.54	0.17	0.11	626.20
18800.	553.	18239.	8.	411.	3056.	21.	771.	76.	629.20
0.38	1.34	5.97	0.36	0.081	0.034	0.169	0.000	616.60	1500.00
0.000425	400.	700.	750.	2	0	0	0.00	236.58	1736.58

0
FLOW DISTRIBUTION FOR SECNO= 53700.00 CWSEL= 635.63

STA=	1500.	1557.	1730.	1737.
PER Q=		2.9	97.0	0.0
AREA=		411.5	3055.6	21.2
VEL=		1.3	6.0	0.4

1490 NH CARD USED
*SECNO 54600.000

3470 ENCROACHMENT STATIONS= 2012.0 2250.0 TYPE= 1 TARGET= 238.000
XSEC 10A NEAR WHITE COTTAGE(BRONKEMA) 1976HWM 630.9 IN GARAGE
XSEC BENT 5DEG RT AT STA 139.9 RESTRICTED FOR HIGH GROUND AT
XSEC 11 US 1986 HWM 638
1

SECNO	DEPTH	CWSEL	CHNWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	TCONT	CORAR	TOPWID	ENDST
54600.00	21.57	636.07	0.00	635.97	636.61	0.54	0.45	0.00	628.70
18800.	1102.	17246.	452.	316.	2838.	176.	839.	80.	621.00
0.42	3.48	6.08	2.57	0.034	0.040	0.054	0.000	614.50	2012.00
0.000609	500.	900.	1000.	2	0	0	0.00	232.91	2244.91

0

FLOW DISTRIBUTION FOR SECNO= 54600.00 CWSEL= 636.07

STA=	2012.	2060.	2062.	2221.	2245.
PER Q=	5.6	0.3	91.7	2.4	
AREA=	301.8	14.3	2837.6	175.6	
VEL=	3.5	4.0	6.1	2.6	

1490 NH CARD USED
*SECNO 55080.000

3470 ENCROACHMENT STATIONS= 762.0 990.0 TYPE= 1 TARGET= 228.000
XSEC 10B LOB IS FELCH ROAD

SECNO	DEPTH	CWSEL	CHNWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	TCONT	CORAR	TOPWID	ENDST
55080.00	21.86	636.36	0.00	636.00	636.88	0.53	0.27	0.00	621.00
18800.	1936.	16418.	445.	475.	2714.	180.	874.	82.	621.30
0.45	4.07	6.05	2.48	0.034	0.041	0.054	0.000	614.50	762.00
0.000552	250.	480.	550.	2	0	0	0.00	223.40	985.40

0

1490 NH CARD USED
*SECNO 55800.000

3470 ENCROACHMENT STATIONS= 1000.0 1219.0 TYPE= 1 TARGET= 219.000
XSEC 11 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND

SECNO	DEPTH	CWSEL	CHNWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	TCONT	CORAR	TOPWID	ENDST
55800.00	20.55	636.75	0.00	636.02	637.32	0.57	0.42	0.01	627.70
18800.	0.	18387.	413.	0.	3012.	342.	925.	85.	628.60
0.48	0.00	6.11	1.21	0.000	0.039	0.108	0.000	616.20	1000.00
0.000598	150.	720.	450.	2	0	0	0.00	219.00	1219.00

0

FLOW DISTRIBUTION FOR SECNO= 55800.00 CWSEL= 636.75

STA=	1000.	1169.	1172.	1185.	1219.
PER Q=	97.8	0.2	0.6	1.4	
AREA=	3011.6	22.2	88.4	231.9	
VEL=	6.1	1.3	1.3	1.2	

1

SECNO	DEPTH	CWSEL	CHNWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA

SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO 56800.000
XSEC 12

56800.00	22.98	637.58	0.00	636.55	638.03	0.46	0.71	0.01	621.70
18800.	242.	18349.	209.	150.	3348.	175.	1000.	90.	630.00
0.53	1.61	5.48	1.19	0.095	0.048	0.108	0.000	614.60	2.94
0.000734	1200.	1000.	50.	2	0	0	0.00	242.07	245.01

0
FLOW DISTRIBUTION FOR SECNO= 56800.00 CWSEL= 637.58

STA=	3.	22.	222.	245.
PER Q=	1.3	97.6	1.1	
AREA=	150.3	3348.5	175.5	
VEL=	1.6	5.5	1.2	

1490 NH CARD USED
*SECNO 57650.000
XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
1976 HWM 631.9

57650.00	20.79	638.19	0.00	636.77	638.24	0.05	0.17	0.04	622.00
18800.	7540.	11206.	54.	7254.	5147.	91.	1126.	100.	626.50
0.65	1.04	2.18	0.60	0.061	0.043	0.074	0.000	617.40	5.42
0.000104	500.	850.	50.	2	0	0	0.00	1183.58	1189.00

0
FLOW DISTRIBUTION FOR SECNO= 57650.00 CWSEL= 638.19

STA=	5.	845.	857.	1180.	1189.			
PER Q=	39.1	1.0	59.6	0.3				
AREA=	7103.2	151.1	5147.0	90.8				
VEL=	1.0	1.2	2.2	0.6				

1490 NH CARD USED
*SECNO 58350.000
XSEC 14 XSEC BENT 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB

58350.00	21.96	638.26	0.00	636.84	638.32	0.06	0.08	0.00	630.50
18800.	10219.	8570.	11.	8825.	3327.	52.	1287.	115.	629.50
0.75	1.16	2.58	0.21	0.065	0.049	0.202	0.000	616.30	14.92
0.000153	500.	700.	400.	2	0	0	0.00	1282.03	1296.95

0
1

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

FLOW DISTRIBUTION FOR SECNO= 58350.00 CWSEL= 638.26

STA=	15.	400.	731.	918.	1077.	1106.	1285.	1297.

PER Q=	19.3	18.8	8.2	6.7	1.3	45.6	0.1
AREA=	3101.5	2916.9	1414.1	1170.6	222.2	3327.2	52.3
VEL=	1.2	1.2	1.1	1.1	1.1	2.6	0.2

1490 NH CARD USED
*SECNO 58900.000
XSEC 15

58900.00	20.32	638.32	0.00	636.94	638.41	0.09	0.08	0.01	631.50
18800.	5742.	12346.	712.	6929.	4242.	1179.	1426.	131.	629.00
0.81	0.83	2.91	0.60	0.081	0.046	0.135	0.000	618.00	14.94
0.000181	450.	550.	700.	1	0	0	0.00	1526.03	1540.97

0
1490 NH CARD USED
*SECNO 60000.000
XSEC 16

60000.00	19.52	638.42	0.00	637.15	638.88	0.46	0.35	0.11	628.00
18800.	416.	15793.	2591.	193.	2674.	3148.	1630.	155.	632.60
0.87	2.16	5.90	0.82	0.067	0.047	0.162	0.000	618.90	9.17
0.000833	1000.	1100.	700.	2	0	0	0.00	772.87	782.04

0
FLOW DISTRIBUTION FOR SECNO= 60000.00 CWSEL= 638.42

STA=	9.	44.	200.	750.	782.
PER Q=	2.2	84.0	13.6	0.2	
AREA=	193.0	2674.5	3063.1	85.2	
VEL=	2.2	5.9	0.8	0.5	

1490 NH CARD USED
*SECNO 62250.000
XSEC 17 SUBDIVISION ON LEFT BANK

62250.00	19.33	639.53	0.00	638.62	639.73	0.20	0.83	0.03	632.90
18800.	370.	17497.	933.	651.	4654.	1110.	1923.	184.	629.10
1.04	0.57	3.76	0.84	0.126	0.038	0.120	0.000	620.20	20.25
0.000217	2400.	2225.	1700.	2	0	0	0.00	518.41	538.66

0
1490 NH CARD USED
1

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

*SECNO 63120.000

63120.00	20.00	639.70	0.00	638.83	640.04	0.34	0.26	0.04	630.40
18800.	63.	18183.	554.	95.	3837.	919.	2048.	195.	633.10
1.10	0.66	4.74	0.60	0.120	0.038	0.148	0.000	619.70	10.83
0.000347	970.	970.	970.	2	0	0	0.00	410.06	420.89

0
1490 NH CARD USED
*SECNO 65620.000

```
 3470 ENCROACHMENT STATIONS=      20.0     470.0  TYPE=     1  TARGET=     450.000
  65620.00     19.66    640.36      0.00    639.62    640.69      0.33      0.65      0.00    629.80
     18800.     1266.    17107.      426.     1353.     3561.      449.     2271.      213.    628.30
      1.22      0.94      4.80      0.95     0.107     0.038     0.120     0.000    620.70     20.00
  0.000338     1900.     1900.     1900.         2         0         0      0.00    450.00    470.00
0
 1490 NH CARD USED
 *SECNO 67420.000

 3470 ENCROACHMENT STATIONS=      10.0     420.0  TYPE=     1  TARGET=     410.000
                XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK
  67420.00     21.87    641.17      0.00    640.56    641.43      0.26      0.73      0.01    631.80
     18800.      830.    17473.      497.      368.     4144.      863.     2577.      238.    633.70
      1.39      2.26      4.22      0.58     0.040     0.038     0.148     0.000    619.30     10.00
  0.000258     2400.     2500.     2500.         2         0         0      0.00    410.00    420.00
0
 1490 NH CARD USED
 *SECNO 68970.000
                XSEC 21 US OF GREEN COTTAGE ON LEFT BANK
  68970.00     18.87    641.57      0.00    641.02    641.83      0.25      0.40      0.00    631.50
     18800.      843.    17698.      259.     1070.     4248.      300.     2773.      255.    628.30
      1.50      0.79      4.17      0.86     0.085     0.038     0.100     0.000    622.70      6.88
  0.000258     1400.     1550.     1700.         2         0         0      0.00    561.33    568.21
0
 1490 NH CARD USED
 *SECNO 70300.000
                XSEC 22  BELOW POWER LINE CROSSING  N VALUES ARE ATYPICAL
  70300.00     18.25    641.95      0.00    641.45    642.15      0.20      0.32      0.01    633.80
     18800.     1880.    16848.        72.      986.     4540.        61.     2943.      269.    632.30
      1.60      1.91      3.71      1.19     0.050     0.038     0.050     0.000    623.70      8.34
  0.000223     1300.     1330.     1300.         2         0         0      0.00    413.26    421.60
0
1
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     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
     SLOPE     XLOBL     XLCH      XLOBP     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 1490 NH CARD USED
 *SECNO 71300.000
  71300.00     19.44    642.14      0.00    641.66    642.43      0.29      0.25      0.03    633.60
     18800.     1230.    17376.      194.      597.     3908.      235.     3061.      278.    630.20
      1.67      2.06      4.45      0.83     0.046     0.038     0.100     0.000    622.70      9.75
  0.000290     1000.     1000.     1000.         2         0         0      0.00    356.97    366.72
0
 1490 NH CARD USED
 *SECNO 71900.000
  71900.00     17.73    642.33      0.00    641.87    642.63      0.30      0.19      0.00    630.00
     18800.     1290.    16888.      622.      651.     3682.      613.     3127.      283.    630.50
      1.71      1.98      4.59      1.01     0.059     0.041     0.120     0.000    624.60     10.42
  0.000369      500.      600.      650.         2         0         0      0.00    388.18    398.60
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0
 1490 NH CARD USED
 *SECNO 73040.000
          XSEC 25 DWN BARBEP AND KBING CABINS US OF PUB ACC SITE DS OF NEWYGO
  73040.00     17.22    642.82      0.00    642.41    643.05      0.23      0.41      0.01    636.20
    18800.      171.    15489.      3140.     220.     3759.     1341.     3261.      296.    633.30
      1.79      0.78      4.12      2.34    0.100     0.042     0.038     0.000    625.60     12.07
  0.000359     1200.     1140.     1100.        2         0         0      0.00    573.38    585.45
0
 1490 NH CARD USED
 *SECNO 73590.000
            XSEC 26 DS OF CO RD BRDG  SEC BENT 45DEG RT OFF RD FILL AT STA 10
              BENT 45DEG RT TO RD FILL AT STA 325
  73590.00     18.86    642.96      0.00    642.57    643.26      0.31      0.19      0.02    632.90
    18800.      346.    18069.      385.      184.     4007.      193.     3322.      301.    632.40
      1.82      1.88      4.51      1.99    0.047     0.038     0.059     0.000    624.10     12.72
  0.000350      660.      550.      500.        2         0         0      0.00    319.55    332.28
0
 *SECNO 73640.000

 3265 DIVIDED FLOW


 3370 NORMAL BRIDGE,NRD=  0 MIN ELTRD=  652.00 MAX ELLC=  650.50

                XSEC 27 CENTER OF BRDG   ELLC AT 650.5
1
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     SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS    BANK ELEV
     Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA    LEFT/RIGHT
     TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
     SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


   73640.00     17.57    642.97      0.00    642.59    643.28      0.31      0.02      0.00    652.00
     18800.        0.    18800.        0.        0.     4183.        0.     3327.      302.    652.00
       1.83      0.00      4.49      0.00    0.000     0.034     0.000     0.000    625.40      0.00
   0.000363       50.       50.       50.        0         0         0      0.00    290.00    296.00
0
 *SECNO 73660.000

 3265 DIVIDED FLOW


 3370 NORMAL BRIDGE,NRD=  0 MIN ELTRD=  652.00 MAX ELLC=  650.50

   73660.00     17.58    642.98      0.00    642.59    643.29      0.31      0.01      0.00    652.00
     18800.        0.    18800.        0.        0.     4183.        0.     3329.      302.    652.00
       1.83      0.00      4.49      0.00    0.000     0.034     0.000     0.000    625.40      0.00
   0.000363       20.       20.       20.        0         0         0      0.00    290.00    296.00
0
 *SECNO 73720.000
   73720.00     17.64    642.94      0.00    642.54    643.35      0.41      0.03      0.03    634.70
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    18800.      714.    17256.      830.      276.     3239.      457.     3334.      302.     632.30
      1.83      2.58      5.33      1.82     0.047     0.034     0.059     0.000   625.30      64.71
 0.000484       60.       60.       60.         2         0         0      0.00   390.91     455.62
0
 1490 NH CARD USED
 *SECNO 75140.000
              XSEC 29  SEWAGE TREATMENT PLANT IN LOD
  75140.00     16.13    643.63      0.00    643.31    643.81      0.18      0.44      0.02    635.60
    18800.      5126.    13664.       9.      5110.     3482.      23.      3522.      323.     634.50
      1.95      1.00      3.92      0.42     0.080     0.034     0.090     0.000   627.50      26.13
 0.000228      1140.     1420.     1440.         2         0         0      0.00  1046.00    1072.14
0
 *SECNO 75800.000
 3280 CROSS SECTION   75800.00 EXTENDED       8.46 FEET

                  XSEC 29A  AT USGS CABLE
  75800.00     15.46    643.66      0.00    643.35    644.09      0.44      0.21      0.08    636.00
    18800.         0.    18800.         0.        0.     3547.         0.     3608.      332.     635.20
      1.99      0.00      5.30      0.00     0.000     0.034     0.000     0.000   628.20    1005.00
 0.000485       540.      660.      700.         2         0         0      0.00   259.00    1264.00
0
1
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    SECNO      DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q          QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME       VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE      XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 1490 NH CARD USED
 *SECNO 76350.000
              XSEC 29B AT USGS GAGE  1976 STAGE IS 639.2   1986 STAGE 645.4
  76350.00     14.25    644.05      0.00    643.76    644.36      0.31      0.25      0.01    634.70
    18800.      351.    18292.      157.      116.     4033.      139.     3657.      336.     634.60
      2.02      3.03      4.54      1.13     0.035     0.038     0.101     0.000   629.80      4.75
 0.000439       550.      550.      550.         2         0         0      0.00   348.79    353.55
0
 *SECNO 76760.000
                XSEC 30  1975 HWM IS 638.6       1976 HWM IS 639.2
  76760.00     16.58    644.18      0.00    643.90    644.54      0.37      0.17      0.02    636.50
    18800.      184.    18365.      251.      197.     3741.      267.     3697.      339.     636.00
      2.04      0.93      4.91      0.94     0.100     0.034     0.100     0.000   627.60      19.61
 0.000381       350.      410.      450.         2         0         0      0.00   357.41    377.02
0
1
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 ********************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
  ERROR CORR -  01,02,03,04,05,06
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00BREAK00

1) COUNTY: Newaygo

2) STUDY NAME: Bridgeton, Ashland, Garfield and Brooks Twp.

3) WATERCOURSE: Muskegon River

4) DOCUMENT TYPE: 100yr.

00BREAK00

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1*****************************************************
 *  WATER SURFACE PROFILES                           *
 *  VERSION OF NOVEMBER 1976                         *
 *  UPDATED MAY 1984                                 *
 *                                                   *
*  RUN DATE            TIME                          *
 *****************************************************
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*****************************************
*  U.S. ARMY CORPS OF ENGINEERS         *
*  THE HYDROLOGIC ENGINEERING CENTER    *
*  609 SECOND STREET, SUITE D           *
*  DAVIS, CALIFORNIA 95616              *
*  (916) 440-2105 (FTS) 448-2105        *
*****************************************
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Info only

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X     X  XXXXXXX   XXXXX              XXXXX
X     X  X         X     X            X     X
X     X  X         X                        X
XXXXXXX  XXXX      X          XXXXX    XXXXX
X     X  X         X                  X
X     X  X         X     X            X
X     X  XXXXXXX   XXXXX              XXXXXXX
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1

PAGE 1

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
*****************************************************
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C
T1      EFFECTS OF ELIMINATING FLOW AREA THROUGH ANDERSON FLATS
T2      STARTING AT XSEC 6   USING WSEL FROM NATURAL CONDITIONS
T3      MUSKEGON RIVER  EXISITING COND

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        3.        0.        0.  0.000000      0.00       0.0    18800.   634.390    0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

    0.000     0.000    -1.000     0.000     0.000     1.350     0.000     0.000     0.000     0.000

J5  LPRNT     NUMSEC                  ********REQUESTED SECTION NUMBERS********

    0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

NC      0.100     0.150     0.023     0.100     0.300     0.000     0.000     0.000     0.000     0.000
NH      4.000     0.100    36.000     0.030    91.000     0.036   352.000     0.100   458.000     0.000
ET      0.000     7.100     7.100     7.100     0.000     0.000     7.750   450.640     0.000     0.000
                XSEC 6
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 X1  48720.000    20.000    91.000   352.000  1500.000  2000.000  1850.000     0.000     0.000     0.000
 GR    637.000     0.000   624.900    36.000   626.500    72.000   626.800    91.000   618.000   104.000
 GR    618.000   104.000   616.800   116.000   617.000   148.000   616.700   198.000   616.400   248.000
 GR    616.800   298.000   617.500   348.000   618.300   350.000   620.600   352.000   619.700   356.000
 GR    618.700   373.000   618.200   386.000   618.800   407.000   628.500   434.000   637.000   458.000

 NH      4.000     0.150    20.000     0.030   532.000     0.036   691.000     0.050   738.000     0.000
 ET      0.000     7.100     7.100     7.100     0.000     0.000     3.470   732.130     0.000     0.000
                XSEC 7
 X1  50220.000    23.000   532.000   691.000  1300.000  1300.000  1500.000     0.000     0.000     0.000
 GR    636.500     0.000   626.900    20.000   627.600   158.000   628.000   233.000   624.200   282.000
 GR    627.400   347.000   626.500   451.000   624.900   479.000   626.600   525.000   626.300   532.000
 GR    621.100   542.000   619.500   548.000   618.600   555.000   617.500   558.000   616.000   581.000
 GR    614.200   605.000   613.200   628.000   613.400   652.000   616.000   675.000   619.600   688.000
 GR    623.100   691.000   627.700   707.000   636.500   738.000     0.000     0.000     0.000     0.000

 NH      3.000     0.020   124.000     0.035   312.000     0.150  1290.000     0.000     0.000     0.000
 ET      0.000     7.100     7.100     7.100     0.000     0.000    24.460  1275.060     0.000     0.000
          XSEC 8    VICS CAMPING ON RIGHT BANK  CAMPGROUND IS ON A HILL
          WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.
 X1  51945.000    27.000   124.000   312.000  1300.000  1500.000  1725.000     0.000     0.000     0.000
 GR    637.100     0.000   634.700    32.000   637.200   111.000   637.600   124.000   625.400   138.000
 GR    620.200   149.000   617.600   158.000   614.900   181.000   615.700   201.000   617.700   222.000
 GR    617.700   247.000   618.300   254.000   619.300   271.000   620.200   290.000   622.100   297.000
 GR    623.300   303.000   629.400   312.000   630.000   320.000   625.400   367.000   627.200   392.000
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 GR    627.000   411.000   628.300   425.000   629.500   454.000   628.600   560.000   629.000   650.000
 GR    629.000  1250.000   639.000  1290.000     0.000     0.000     0.000     0.000     0.000     0.000

 NH      6.000     0.120   860.000     0.025   887.000     0.025  1032.000     0.100  1094.000     0.025
 NH   1192.000     0.125  1700.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
 ET      0.000     5.100     7.100     5.100   787.000  1700.000   350.000  1700.000     0.000     0.000
                XSEC 9  SECTION THROUGH ISLAND US OF VICS
              XSEC BENT 30DEG LFT AT 887  20DEG RT AT STA 1208
 X1  53000.000    39.000   887.000  1192.000  1200.000   500.000  1055.000     0.000     0.000     0.000
 X2      0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000    15.000
 GR    638.500     0.000   628.500    50.000   625.000   100.000   624.700   650.000   624.900   705.000
 GR    624.900   728.000   626.700   760.000   627.500   815.000   629.000   860.000   626.200   872.000
 GR    625.000   887.000   620.400   892.000   617.400   898.000   617.700   922.000   618.000   947.000
 GR    618.100   974.000   617.700  1001.000   620.400  1025.000   623.600  1032.000   624.400  1035.000
 GR    623.600  1061.000   624.300  1078.000   625.200  1084.000   620.400  1093.000   617.900  1101.000
 GR    617.700  1122.000   618.300  1143.000   617.500  1165.000   617.100  1185.000   619.600  1190.000
 GR    623.000  1192.000   624.500  1203.000   629.600  1208.000   629.000  1226.000   628.200  1240.000
 GR    629.900  1290.000   629.100  1350.000   629.100  1650.000   638.500  1700.000     0.000     0.000

 NH      6.000     0.120  1340.000     0.060  1420.000    10.000  1480.000     0.060  1557.000     0.025
 NH   1730.000     0.125  1740.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
 ET      0.000     5.100     7.100     5.100  1500.000  1740.000   300.000  1740.000     0.000     0.000
          XSEC 10  REDWOOD COTTAGE ON LEFT BANK  1976 HWM 630.5
          1986 HWM 638    XSEC BENT 45DEG LEFT AT STA 1360
 X1  53700.000    24.000  1557.000  1730.000   400.000   750.000   700.000     0.000     0.000     0.000
 X2      0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000    15.000
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 GR     639.000       0.000     628.500      50.000     625.000     100.000     625.000    1340.000     628.300    1360.000
 GR     627.200    1377.000     628.700    1420.000     628.800    1480.000     629.000    1500.000     629.200    1531.000
 GR     627.400    1545.000     626.300    1550.000     626.200    1557.000     620.600    1563.000     617.900    1567.000
 GR     616.600    1600.000     617.000    1624.000     617.600    1662.000     617.800    1688.000     618.100    1717.000
 GR     620.700    1725.000     629.200    1730.000     632.100    1733.000     639.000    1740.000       0.000       0.000

 NH       7.000       0.200    1399.000       0.050    1784.000       0.025    1957.000      10.000    1998.000       0.025
 NH    2062.000       0.030    2221.000       0.040    2250.000       0.000       0.000       0.000       0.000       0.000
 ET       0.000       5.100       7.100       5.100    2012.000    2250.000     750.000    2250.000       0.000       0.000
                XSEC 10A NEAR WHITE COTTAGE(BRONKEMA)  1976HWM 630.9 IN GARAGE
                XSEC BENT 5DEG RT AT STA 139.9  RESTRICTED FOR HIGH GROUND AT
                XSEC 11 US      1986 HWM 638
 X1   54600.000      35.000    2062.000    2221.000     500.000    1000.000     900.000       0.000       0.000       0.000
 X2       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000      15.000
 GR     639.000       0.000     628.500      50.000     625.000     449.000     623.000     649.000     624.000     949.000
 GR     623.000    1049.000     627.100    1352.000     628.200    1399.000     629.300    1508.000     626.700    1597.000
 GR     630.100    1644.000     630.500    1755.000     628.100    1784.000     629.900    1846.000     628.500    1888.000
 GR     628.600    1917.000     628.100    1957.000     629.600    1966.000     630.400    1998.000     629.800    2041.000
 GR     629.100    2060.000     628.700    2062.000     625.300    2068.000     624.500    2074.000     621.000    2079.000
 GR     620.500    2099.000     619.700    2119.000     618.200    2123.000     616.900    2145.000     615.300    2167.000
 GR     614.500    2190.000     616.300    2215.000     621.000    2221.000     632.100    2238.000     639.000    2250.000

 NH       6.000       0.013     600.000       0.025     700.000      10.000     750.000       0.025     817.000       0.030
 NH     961.000       0.040     978.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000
 ET       0.000       5.100       0.000       5.100     762.000     990.000       0.000       0.000       0.000       0.000
1
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                XSEC 10B LOB IS FELCH ROAD
 X1   55080.000      21.000     817.000     961.000     250.000     550.000     480.000       0.000       0.000       0.000
 X2       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000
 GR     640.000       0.000     633.100     100.000     631.300     200.000     631.600     300.000     631.400     400.000
 GR     631.100     500.000     631.100     600.000     629.900     700.000     629.300     750.000     628.700     800.000
 GR     625.300     806.000     624.500     812.000     621.000     817.000     619.700     857.000     616.900     885.000
 GR     615.300     907.000     614.500     930.000     616.300     955.000     621.300     961.000     632.100     978.000
 GR     639.000     990.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000

 NH       5.000       0.029    1169.000       0.080    1546.000      10.000    1651.000       0.080    1946.000       0.100
 NH    2105.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000
 ET       0.000       7.100       7.100       5.100    1000.000    1219.000    1000.000    1900.000       0.000       0.000
                XSEC 11  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
 X1   55800.000      23.000    1000.000    1169.000     150.000     450.000     720.000       0.000       0.000       0.000
 X2       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000      15.000
 GR     627.700    1000.000     623.000    1014.000     621.400    1015.000     619.400    1026.000     618.800    1039.000
 GR     617.000    1051.000     616.800    1075.000     616.200    1160.000     617.000    1125.000     618.400    1148.000
 GR     621.400    1154.000     628.600    1169.000     630.100    1172.000     629.800    1185.000     630.200    1237.000
 GR     629.500    1320.000     630.100    1454.000     630.700    1546.000     630.800    1651.000     629.700    1819.000
 GR     629.600    1946.000     628.200    2070.000     640.000    2105.000       0.000       0.000       0.000       0.000

 NH       6.000       0.670      22.000       0.035     220.000       0.080     457.000      10.000     560.000       0.080
 NH     958.000       0.100    1592.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000
 ET       0.000       7.100       7.100       5.100       0.000     272.000       0.000    1630.000       0.000       0.000
                XSEC 12
 X1   55800.000      31.000      22.000     222.000    1200.000      50.000    1000.000       0.000       0.000       0.000
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X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	640.000	0.000	629.300	13.000	621.700	22.000	619.100	29.000	617.800	53.000
GR	614.600	81.000	617.100	107.000	619.100	131.000	620.300	141.000	621.600	147.000
GR	622.800	152.000	624.300	171.000	626.700	187.000	630.000	222.000	629.900	245.000
GR	628.800	350.000	630.100	457.000	630.700	560.000	630.600	660.000	629.900	758.000
GR	629.600	865.000	629.800	958.000	630.100	1010.000	629.500	1093.000	630.100	1227.000
GR	630.700	1319.000	630.800	1424.000	629.700	1592.000	629.600	1719.000	628.200	1843.000
GR	640.000	1878.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	10.000	0.070	30.000	0.045	857.000	0.030	987.000	0.080	1061.000	0.030
NH	1175.000	0.055	1189.000	10.000	1245.000	0.055	1606.000	10.000	1711.000	0.075
NH	2165.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	7.100	7.100	5.100	0.000	1209.000	0.000	1910.000	0.000	0.000

XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
1976 HUM 631.9

X1	57650.000	32.000	857.000	1180.000	500.000	50.000	850.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	640.000	0.000	630.000	30.000	629.200	845.000	622.000	857.000	620.100	869.000
GR	619.800	879.000	618.500	914.000	621.900	968.000	622.700	987.000	627.000	991.000
GR	625.500	1007.000	627.300	1014.000	627.300	1045.000	628.000	1054.000	624.400	1061.000
GR	623.500	1087.000	622.000	1117.000	619.600	1144.000	617.400	1168.000	621.900	1175.000
GR	626.500	1180.000	629.700	1189.000	629.700	1245.000	630.200	1297.000	629.500	1380.000
GR	630.100	1514.000	630.700	1606.000	630.800	1711.000	629.700	1879.000	629.600	2006.000
GR	628.200	2130.000	640.000	2165.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	4.000	0.070	50.000	0.048	1106.000	0.036	1285.000	0.150	1300.000	0.000

XSEC 14 XSEC BENT 15DEG LEFT AT SSA 1106 ABANDD TRAILER PARK IN LOB

X1	58350.000	20.000	1106.000	1285.000	500.000	400.000	700.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	640.500	0.000	633.000	50.000	630.100	100.000	628.600	400.000	630.300	731.000
GR	631.100	913.000	630.700	1077.000	630.500	1106.000	623.300	1125.000	621.600	1126.000
GR	616.400	1138.000	616.300	1158.000	617.500	1185.000	619.500	1212.000	619.900	1243.000
GR	619.900	1269.000	620.900	1277.000	622.400	1282.000	629.500	1285.000	640.500	1300.000
NH	4.000	0.060	1150.000	0.034	1389.000	0.100	1513.000	0.100	1550.000	0.000

XSEC 15

X1	58900.000	21.000	1150.000	1389.000	450.000	700.000	550.000	0.000	0.000	0.000
GR	640.600	0.000	633.000	50.000	632.000	100.000	632.200	1130.000	632.000	1143.000
GR	631.800	1147.000	631.500	1150.000	627.000	1153.000	622.700	1162.000	618.400	1183.000
GR	622.100	1201.000	621.700	1225.000	620.900	1257.000	618.700	1289.000	618.100	1317.000
GR	618.000	1342.000	619.600	1367.000	629.000	1389.000	629.000	1447.000	631.300	1513.000
GR	640.600	1550.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.120	32.000	0.040	44.000	0.035	200.000	0.120	800.000	0.000

XSEC 16

X1	60000.000	17.000	44.000	200.000	1000.000	700.000	1100.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	641.400	0.000	631.000	32.000	630.500	36.000	628.800	38.000	628.000	44.000
GR	628.200	47.000	620.800	55.000	618.900	79.000	619.100	103.000	619.400	129.000
GR	620.700	154.000	621.200	168.000	623.300	175.000	626.500	187.000	632.600	200.000
GR	633.100	750.000	641.400	800.000	0.000	0.000	0.000	0.000	0.000	0.000

NH	3.000	0.093	144.000	0.028	422.000	0.089	543.000	0.000	0.000	0.000
		XSEC 17 SUBDIVISION ON LEFT BANK								
X1	62250.000	28.000	144.000	422.000	2400.000	1700.000	2225.000	0.000	0.000	0.000
GR	642.800	0.000	638.600	26.000	632.600	88.000	631.600	113.000	632.500	125.000
GR	632.900	144.000	630.900	158.000	625.400	159.000	624.200	161.000	622.000	173.000
GR	622.100	181.000	623.600	193.000	622.100	243.000	620.600	280.000	620.200	313.000
GR	620.700	350.000	621.800	365.000	624.300	384.000	625.000	394.000	624.200	399.000
GR	629.100	422.000	630.300	424.000	629.700	435.000	629.500	468.000	627.800	492.000
GR	629.000	518.000	637.300	534.000	641.600	543.000	0.000	0.000	0.000	0.000
NH	3.000	0.089	32.000	0.028	256.000	0.110	448.000	0.000	0.000	0.000
X1	63120.000	22.000	32.000	256.000	970.000	970.000	970.000	0.000	0.000	0.000
GR	643.800	0.000	638.500	14.000	631.400	30.000	630.400	32.000	624.700	34.000
GR	623.000	39.000	619.700	50.000	619.800	82.000	621.500	117.000	621.800	152.000
GR	623.400	187.000	624.100	194.000	624.900	227.000	626.700	235.000	625.400	245.000
GR	625.800	251.000	633.100	256.000	634.000	265.000	633.700	298.000	633.400	322.000
GR	632.300	372.000	643.800	448.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.074	175.000	0.110	216.000	0.028	421.000	0.089	485.000	0.000
X1	65620.000	27.000	216.000	421.000	1900.000	1900.000	1900.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	20.000	0.000	470.000	0.000	0.000	0.000	0.000
GR	642.200	0.000	631.500	53.000	632.000	98.000	634.500	153.000	635.700	175.000
GR	634.000	196.000	633.000	205.000	629.800	216.000	626.100	219.000	624.900	230.000
GR	623.100	238.000	622.500	261.000	623.400	290.000	623.100	307.000	621.600	333.000
GR	620.700	363.000	623.000	397.000	625.200	408.000	628.300	421.000	630.100	425.000
GR	631.000	431.000	631.400	442.000	630.900	455.000	631.800	462.000	634.200	474.000

GR	637.700	479.000	642.200	485.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.074	10.000	0.030	59.000	0.028	295.000	0.110	455.000	0.000
		XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK								
X1	67420.000	21.000	59.000	295.000	2400.000	2500.000	2500.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	10.000	0.000	420.000	0.000	0.000	0.000	0.000
GR	642.900	0.000	638.600	10.000	634.000	20.000	633.200	32.000	632.500	54.000
GR	631.800	59.000	627.300	62.000	624.500	73.000	623.600	86.000	621.000	100.000
GR	619.300	129.000	620.900	154.000	623.200	194.000	624.000	218.000	626.100	267.000
GR	627.700	281.000	633.700	295.000	636.100	299.000	633.000	345.000	634.900	415.000
GR	642.900	455.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.068	270.000	0.028	518.000	0.074	575.000	0.000	0.000	0.000
		XSEC 21 US OF GREEN COTTAGE ON LEFT BANK								
X1	68970.000	25.000	270.000	518.000	1400.000	1700.000	1550.000	0.000	0.000	0.000
GR	643.500	0.000	640.700	10.000	637.400	124.000	636.700	212.000	635.500	246.000
GR	633.700	255.000	631.500	270.000	625.500	277.000	626.300	293.000	625.100	303.000
GR	625.600	320.000	624.900	336.000	623.300	348.000	622.700	363.000	623.900	385.000
GR	623.500	421.000	623.000	429.000	623.000	450.000	624.200	481.000	625.300	499.000
GR	626.600	505.000	628.300	518.000	633.700	529.000	636.400	550.000	643.500	575.000
NH	3.000	0.037	126.000	0.028	408.000	0.037	426.000	0.000	0.000	0.000
		XSEC 22 BELOW POWER LINE CROSSING N VALUES ARE ATYPICAL								
X1	70300.000	25.000	126.000	408.000	1300.000	1300.000	1300.000	0.000	0.000	0.000

GR	644.400	0.000	640.000	15.000	635.000	24.000	631.600	40.000	632.700	54.000
GR	631.200	73.000	634.100	113.000	634.200	123.000	633.800	126.000	631.700	136.000
GR	625.700	144.000	624.400	160.000	624.500	183.000	623.700	194.000	625.300	214.000
GR	626.400	266.000	625.900	300.000	624.100	307.000	624.100	336.000	624.400	359.000
GR	626.200	383.000	628.600	389.000	632.300	408.000	639.400	417.000	644.400	426.000
NH	4.000	0.089	30.000	0.033	98.000	0.028	323.000	0.074	375.000	0.000
X1	71300.000	22.000	98.000	323.000	1000.000	1000.000	1000.000	0.000	0.000	0.000
GR	645.100	0.000	636.000	30.000	633.300	71.000	633.900	79.000	633.600	98.000
GR	631.700	101.000	629.900	108.000	627.100	111.000	625.100	114.000	624.600	144.000
GR	625.000	154.000	623.900	163.000	622.700	193.000	623.600	217.000	623.600	235.000
GR	624.400	271.000	625.300	300.000	626.000	311.000	630.200	323.000	635.800	333.000
GR	637.600	354.000	645.100	375.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.074	67.000	0.035	100.000	0.030	320.000	0.089	408.000	0.000
X1	71900.000	25.000	100.000	320.000	500.000	650.000	600.000	0.000	0.000	0.000
GR	646.100	0.000	638.500	21.000	636.100	48.000	634.200	56.000	634.500	67.000
GR	632.700	69.000	631.400	88.000	630.600	99.000	630.000	100.000	627.700	103.000
GR	625.800	109.000	625.500	118.000	624.600	150.000	624.600	178.000	625.500	225.000
GR	626.100	274.000	625.600	291.000	627.100	313.000	630.500	320.000	632.700	335.000
GR	630.900	343.000	632.400	355.000	633.200	361.000	639.400	389.000	645.200	408.000
NH	4.000	0.074	66.000	0.031	311.000	0.028	757.000	0.059	767.000	0.000
	XSEC 25 BTWN BARBER AND KRING CABINS US OF PUB ACC SITE DS OF NEWYGO									
X1	73040.000	20.000	66.000	311.000	1200.000	1100.000	1140.000	0.000	0.000	0.000
GR	646.600	0.000	641.900	15.000	639.200	30.000	636.200	66.000	628.600	82.000
GR	626.400	124.000	625.600	147.000	627.300	215.000	627.200	268.000	628.000	301.000
GR	633.300	311.000	636.600	328.000	636.700	343.000	636.400	418.000	637.600	472.000
GR	639.500	526.000	641.300	559.000	644.800	620.000	650.800	757.000	655.800	767.000

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NH	3.000	0.035	49.000	0.028	310.000	0.044	335.000	0.000	0.000	0.000
	XSEC 26 DS OF CO RD BRDG SEC BENT 45DEG RT OFF RD FILL AT STA 10									
	BENT 45DEG RT CO RD FILL AT STA 325									
X1	73590.000	21.000	49.000	310.000	660.000	500.000	550.000	0.000	0.000	0.000
GR	646.800	0.000	643.800	10.000	637.000	32.000	635.600	41.000	634.300	47.000
GR	632.900	49.000	628.800	65.000	624.100	82.000	626.000	105.000	626.800	113.000
GR	628.000	121.000	625.800	133.000	626.800	162.000	628.800	175.000	629.500	211.000
GR	626.600	244.000	627.000	272.000	628.400	304.000	632.400	310.000	632.700	325.000
GR	646.800	335.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.035	0.044	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 27 CENTER OF BRDG ELEC AT 650.5									
X1	73640.000	31.000	0.000	296.000	50.000	50.000	50.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	650.500	652.000	0.000	0.000	0.000	0.000	0.000
GR	652.000	0.000	638.800	0.000	631.300	35.000	629.200	36.000	628.870	43.000
GR	625.700	60.000	625.400	80.000	626.500	90.000	628.500	95.000	629.500	100.000
GR	628.200	107.000	627.100	117.000	626.600	128.000	627.300	138.000	628.700	146.000
GR	652.000	146.000	652.000	152.000	623.700	152.000	629.300	163.000	628.800	167.000
GR	625.800	182.000	625.600	197.000	627.500	208.000	627.000	215.000	626.300	240.000
GR	627.000	250.000	625.800	264.000	633.000	275.000	632.900	290.000	634.800	296.000
GR	652.000	296.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	73660.000	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	650.500	652.000	0.000	0.000	0.000	0.000	0.000
X1	73720.000	21.000	110.000	353.000	60.000	60.000	60.000	0.000	0.000	0.000
GR	653.300	0.000	647.000	44.000	641.700	71.000	634.800	88.000	633.600	99.000
GR	634.700	110.000	631.500	120.000	629.100	123.000	628.500	153.000	626.900	168.000
GR	635.800	202.000	626.700	220.000	625.300	240.000	626.700	278.000	627.300	306.000
GR	639.000	336.000	632.300	353.000	635.400	373.000	640.000	414.000	645.500	492.000
GR	650.000	523.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.110	80.000	0.059	826.000	0.025	1066.000	0.067	1075.000	0.000
	XSEC 29 SEWAGE TREATMENT PLANT IN LOB									
X1	75140.000	24.000	826.000	1066.000	1140.000	1440.000	1420.000	0.000	0.000	0.000
GR	645.200	0.000	640.400	80.000	638.400	170.000	636.000	286.000	636.700	390.000
GR	636.500	494.000	637.200	592.000	636.300	692.000	635.400	790.000	635.600	820.000
GR	635.600	826.000	632.600	838.000	630.600	843.000	630.100	850.000	628.700	857.000
GR	628.100	891.000	627.500	936.000	628.100	953.000	628.900	983.000	629.700	1048.000
GR	631.200	1063.000	634.500	1065.000	639.200	1068.000	646.700	1075.000	0.000	0.000
NC	0.074	0.074	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 29A AT USGS CABLE									
X1	75800.000	22.000	1005.000	1264.000	540.000	700.000	660.000	0.000	0.000	0.000
GR	636.000	1005.000	632.400	1011.000	631.700	1013.000	630.500	1019.000	628.500	1029.000
GR	628.800	1037.000	629.100	1048.000	629.200	1062.000	630.000	1080.000	629.900	1105.000
GR	629.400	1121.000	629.900	1139.000	629.700	1159.000	629.300	1177.000	629.100	1194.000
GR	628.900	1208.000	628.200	1227.000	628.700	1229.000	631.700	1241.000	633.700	1246.000
GR	633.300	1255.000	635.200	1264.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	4.000	0.080	16.000	0.025	57.000	0.028	327.000	0.075	400.000	0.000
	XSEC 29B AT USGS GAGE 1976 STAGE IS 639.2 1986 STAGE 645.4									
X1	76350.000	24.000	24.000	333.000	550.000	550.000	550.000	0.000	0.000	0.000
GR	648.600	0.000	638.800	10.000	634.700	24.000	632.300	33.000	630.800	41.000
GR	630.900	65.000	629.800	86.000	630.600	103.000	631.100	110.000	630.900	132.000
GR	630.900	133.000	630.900	134.000	631.200	141.000	631.200	181.000	630.800	218.000
GR	631.200	243.000	630.700	255.000	629.800	284.000	631.100	306.000	632.500	326.000
GR	633.000	332.000	634.600	333.000	636.500	346.000	646.500	356.000	0.000	0.000
NC	0.074	0.074	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 30 1975 HWM IS 638.6 1976 HWM IS 639.2									
X1	76760.000	27.000	57.000	327.000	350.000	450.000	410.000	0.000	0.000	0.000
GR	654.000	0.000	645.800	16.000	638.600	32.000	637.900	43.000	636.500	57.000
GR	633.200	62.000	631.000	77.000	629.000	84.000	629.000	98.000	629.600	118.000
GR	629.000	147.000	628.300	167.000	630.400	188.000	633.000	197.000	632.600	208.000
GR	627.600	217.000	629.000	221.000	629.800	232.000	629.600	279.000	631.700	287.000
GR	631.100	298.000	633.300	315.000	636.000	327.000	638.300	341.000	636.900	355.000
GR	638.900	360.000	651.300	400.000	0.000	0.000	0.000	0.000	0.000	0.000
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1

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

*PRCF 1

CCHV= 0.100 CEHV= 0.300
1490 NH CARD USED
*SECNO 48720.000

3470 ENCROACHMENT STATIONS= 7.8 450.6 TYPE= 1 TARGET= 442.890
XSEC 6

43720.00	17.99	634.39	0.00	0.00	634.57	0.18	0.00	0.00	626.80
18900.	1308.	16166.	1326.	594.	4503.	1195.	0.	0.	620.60
0.00	2.20	3.59	1.11	0.046	0.049	0.135	0.000	616.40	7.77
0.000316	1500.	1850.	2000.	0	0	0	0.00	442.86	450.63

0
1490 NH CARD USED
*SECNO 50220.000

3470 ENCROACHMENT STATIONS= 3.5 732.1 TYPE= 1 TARGET= 728.660
XSEC 7

50220.00	21.64	634.84	0.00	0.00	634.95	0.11	0.38	0.01	626.30
18800.	9146.	9373.	281.	4205.	2976.	240.	222.	18.	623.10
0.15	2.18	3.15	1.17	0.041	0.049	0.067	0.000	613.20	3.48
0.000221	1300.	1500.	1300.	1	0	0	0.00	728.63	732.11

0
1490 NH CARD USED
*SECNO 51945.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 24.5 1275.1 TYPE= 1 TARGET= 1250.600
XSEC 8 VICS CAMPING ON RIGHT BANK; CAMPGROUND IS ON A HILL
WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.

51945.00	20.37	635.27	0.00	0.00	635.58	0.31	0.57	0.06	637.60
18800.	41.	14761.	4035.	7.	2957.	6153.	512.	51.	629.40
0.26	0.61	4.99	0.66	0.027	0.047	0.202	0.000	614.90	24.46
0.000663	1300.	1725.	1500.	2	0	0	0.00	1173.92	1275.06

0
1490 NH CARD USED
*SECNO 53000.000
1

SECNO DEPTH CWSEL CRIWS WSELK EG HV HL OLOSS BANK ELEV
Q QLOB QCH QROB ALOB ACH AROB 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=      350.0    1700.0  TYPE=     1  TARGET=    1350.000
                 XSEC 9  SECTION THROUGH ISLAND US OF VICS
              XSEC BENT 30DEG LFT AT 887  20DEG RT AT STA 1208
  53000.00     18.63   635.73     0.00     0.00   635.84     0.10     0.24     0.02   625.00
    18800.     3091.    14589.    1120.    5515.    4986.    3206.     738.     73.    623.00
      0.38      0.56     2.93     0.35    0.139    0.036    0.169    0.000   617.10   350.00
  0.000126     1200.    1055.     500.        2        0        0     0.00  1335.28  1685.28
0
 FLOW DISTRIBUTION FOR SECNO=  53000.00          CWSEL=    635.73

 STA=      350.      650.      760.      887.     1192.     1650.     1685.
   PER Q=      8.7       3.1       4.7      77.6       5.8       0.1
    AREA=   3285.4    1168.3    1061.1    4986.4    3088.9     117.0
     VEL=      0.5       0.5       0.8       2.9       0.4       0.2

 1490 NH CARD USED
 *SECNO 53700.000

 3470 ENCROACHMENT STATIONS=      300.0    1740.0  TYPE=     1  TARGET=    1440.000
                 XSEC 10  REDWOOD COTTAGE ON LEFT BANK  1976 HWM 630.5
                 1986 HWM 638    XSEC BENT 45DEG LEFT AT STA 1360
  53700.00     19.20   635.90     0.00     0.00   635.93     0.13     0.09     0.01   626.20
    18800.     7433.    11362.       5.    12875.    3086.      22.     915.      89.    629.20
      0.45      0.58     3.68     0.23    0.154    0.034    0.169    0.000   616.60   300.00
  0.000160      400.     700.     750.        2        0        0     0.00  1436.76  1736.76
0
 FLOW DISTRIBUTION FOR SECNO=  53700.00          CWSEL=    635.80

 STA=      300.     1340.     1420.     1557.     1730.     1737.
   PER Q=     33.6       3.3       2.6      60.4       0.0
    AREA=  11234.8     657.6     982.7    3085.9      22.4
     VEL=      0.6       0.9       0.5       3.7       0.2

 1490 NH CARD USED
 *SECNO 54600.000

 3470 ENCROACHMENT STATIONS=      750.0    2250.0  TYPE=     1  TARGET=    1500.000
                 XSEC 10A NEAR WHITE COTTAGE(BRONKEMA)  1976HWM 630.9 IN GARAGE
                 XSEC BENT 5DEG RT AT STA 139.9  RESTRICTED FOR HIGH GROUND AT
                 XSEC 11 US      1986 HWM 638
1
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    SECNO      DEPTH     CWSEL     CHNS      WSELR     EG        HV        HL        CLOSS    BANK ELEV
    Q          QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TRA    LEFT/RIGHT
    TIME       VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
    SLOPE      XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

  54600.30     21.47   635.97      0.00      0.00   636.06     0.09      0.12      0.00   628.70
    18800.     9197.     9360.      243.    11950.    2821.      173.     1121.      108.    621.00
      0.54      0.77     3.82      1.40     0.117    0.041    0.054     0.000   614.50   750.00
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  0.000183     500.      900.     1000.        2         0         0     0.00  1494.73  2244.73
0
 FLOW DISTRIBUTION FOR SECNO=  54600.00         CWSEI=    635.97

 STA=     750.     949.     1352.     1508.     1597.     1755.     1846.     1888.     1957.     2060.     2062.     2221.     2245.
   PER Q=     5.0      9.1       5.3       4.5       5.3       6.1       3.2       6.3       4.0       0.2      49.8       1.3
    AREA=  2447.8   4555.2    1177.8     709.2     985.0     525.5     284.3     519.9     631.3      14.1    2821.2     173.1
     VEL=     0.4      0.4       0.8       1.2       1.0       1.8       2.1       2.3       1.2       2.2       3.3       1.4

 1490 NH CARD USED
 *SECNO 55080.000
                XSEC 10B LOB IS FELCH ROAD
  55080.00    21.50   636.00      0.00      0.00    636.14      0.14      0.07      0.01    621.00
    18300.     9427.     9134.      239.     3719.     2663.      171.     1198.      116.    621.30
      0.58      2.53      3.43      1.39     0.024     0.041     0.054     0.000    614.50     57.95
  0.000182      250.      480.      550.         2         0         0     0.00    926.84    984.79
0
 1490 NH CARD USED
 *SECNO 55800.000

 3470 ENCROACHMENT STATIONS=     1000.0     1900.0  TYPE=       1  TARGET=      900.000
                XSEC 11  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
  55800.00    19.82   636.02      0.00      0.00    636.36      0.33      0.16      0.06    627.70
    18800.        0.    14919.     3881.        0.     2889.     4315.     1274.      123.    628.60
      0.61      0.00      5.16      0.90     0.000     0.039     0.123     0.000    616.20   1000.00
  0.000520      150.      720.      450.         2         0         0     0.00    900.00   1900.00
0
 FLOW DISTRIBUTION FOR SECNO=  55800.00         CWSEI=    636.02

 STA=    1000.    1169.    1172.    1185.    1237.    1320.    1454.    1546.    1651.    1819.    1900.
   PER Q=    79.4       0.1       0.4       1.7       2.9       4.7       2.7       0.0       5.2       2.8
    AREA=  2888.9      20.0      79.0     313.3     512.5     834.1     517.5     553.8     970.1     514.9
     VEL=     5.2       1.0       1.0       1.0       1.1       1.1       1.0       0.0       1.0       1.0

 1490 NH CARD USED
 *SECNO 56800.000
                XSEC 12
1
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    SECNO     DEPTH     CHSZL     CRIWS     WSELK      EG        HV        HL      CLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB       ACH       AROB      VOL     TWA    LEFT/RIGHT
    SINE      VLOB      VCH       VSOE      KNL        XNCH      XNR       WTN     ELMIN       SSTA
    SLOPE     KLOBL     XLCH      XLOBR     ITRIAL     IDC       ICONT     CORAR   TOPWID      ENDST

  56800.00    21.95   636.53      0.00      0.00    636.69      0.14      0.32      0.02    621.70
    18800.      143.    11054.     6902.      131.     3143.     8915.     1352.      129.    630.00
      0.69      1.09      8.74      6.77     0.095     0.048     0.128     0.000    614.60      4.19
  0.000367      1200.     1000.      50.         2         0         0     0.00   1587.82   1592.01
0
 FLOW DISTRIBUTION FOR SECNO=  56800.00         CWSEL=    636.55

 STA=       4.       22.      228.      350.      457.      758.      865.      958.     1093.     1227.     1424.     1592.
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PER Q=	0.8	62.5	4.7	3.9	5.7	3.7	3.2	3.6	3.6	4.3	3.9
AREA=	131.4	3143.2	908.0	759.9	1841.3	727.8	637.2	903.7	904.7	1175.1	1058.7
VEL=	1.1	3.7	1.0	1.0	0.6	0.9	1.0	0.7	0.8	0.7	0.7

1490 NH CARD USED
*SECNO 57650.000
XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
1976 HWM 631.9

57650.00	19.37	636.77	0.00	0.00	636.81	0.05	0.11	0.01	622.00
18800.	5936.	10299.	2565.	6037.	4684.	4642.	1472.	140.	626.50
0.79	0.98	2.20	0.55	0.061	0.043	0.103	0.000	617.40	9.73
0.000118	500.	850.	50.	0	0	0	0.00	1869.28	1879.01

0
FLOW DISTRIBUTION FOR SECNO= 57650.00 CWSEL= 636.77

STA=	10.	845.	857.	1180.	1380.	1514.	1879.
PER Q=	30.7	0.9	54.8	4.2	3.9	5.5	
AREA=	5902.6	133.9	4684.0	1400.6	932.4	2309.2	
VEL=	1.0	1.2	2.2	0.6	0.8	0.4	

1490 NH CARD USED
*SECNO 58350.000
XSEC 14 XSEC BENT 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB

58350.00	20.54	636.84	0.00	0.00	636.92	0.09	0.10	0.01	630.50
18800.	9369.	9423.	9.	7276.	3072.	37.	1632.	159.	629.50
0.87	1.29	3.07	0.24	0.065	0.049	0.202	0.000	616.30	24.42
0.000242	500.	700.	400.	2	0	0	0.00	1270.58	1295.00

0
FLOW DISTRIBUTION FOR SECNO= 58350.00 CWSEL= 636.84

STA=	24.	400.	731.	918.	1077.	1106.	1285.	1295.
PER Q=	17.9	17.6	7.3	5.9	1.2	50.1	0.0	
AREA=	2559.3	2444.9	1147.5	943.9	180.9	3072.0	36.7	
VEL=	1.3	1.4	1.2	1.2	1.2	3.1	0.2	

1

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

1490 NH CARD USED
*SECNO 58900.000
XSEC 15

58900.00	18.94	636.94	0.00	0.00	637.07	0.13	0.13	0.01	631.50
18800.	4688.	13454.	658.	5356.	3909.	9734.	1750.	174.	629.00
0.92	0.88	3.44	0.68	0.081	0.046	0.135	0.000	618.00	24.09
0.000282	450.	550.	700.	0	0	0	0.00	1511.34	1535.43

0
1490 NH CARD USED
*SECNO 60000.000

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                XSEC 16
 60000.00     18.25    637.15      0.00      0.00    637.75      0.60      0.54      0.14    628.00
    18800.      373.     16445.     1982.      151.     2476.     2412.     1921.      198.     632.60
     0.97       2.47       6.64      0.82     0.065     0.047     0.162     0.000    618.90     13.09
 0.001168     1000.     1100.      700.         2         0         0      0.00    761.28    774.37
0
 FLOW DISTRIBUTION FOR SECNO=  60000.00          CWSEL=    637.15

 STA=       13.       44.      200.      750.      774.
   PER Q=      2.0      87.5      10.4       0.1
    AREA=    151.2    2475.8    2362.7      49.3
     VEL=      2.5       6.6       0.8       0.5

 1490 NH CARD USED
 *SECNO 62250.000
                XSEC 17    SUBDIVISION ON LEFT BANK
 62250.00     18.42    638.62      0.00      0.00    638.85      0.23      1.07      0.04    632.90
    18800.      309.     17612.      880.      541.     4400.     1004.     2182.      227.     629.10
     1.13       0.57       4.00      0.88     0.126     0.038     0.120     0.000    620.20     25.90
 0.000266     2400.     2225.      1700.         2         0         0      0.00    510.85    536.75
0
 1490 NH CARD USED
 *SECNO 63120.000
 63120.00     19.13    638.83      0.00      0.00    639.21      0.38      0.32      0.04    630.40
    18800.       51.     18279.      470.       78.     3643.      779.     2298.      237.     633.10
     1.19       0.66       5.02      0.60     0.120     0.038     0.148     0.000    619.70     13.12
 0.000417      970.      970.       970.         2         0         0      0.00    402.05    415.17
0
1
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HI         OLOSS    BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA    LEFT/RIGHT
    TIME       VICB       VCH        VROB       XNL        XNCH       XNR        HTN        ELMIN        SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID       ENDST

 1490 NH CARD USED
 *SECNO 65620.000

 3470 ENCROACHMENT STATIONS=       20.0      470.0  TYPE=       1  TARGET=      450.000
 65620.00     13.92    639.62      0.00      0.00    639.99      0.37      0.77      0.00    629.80
    18800.     1145.     17251.      404.     1208.     3409.      413.     2506.      256.     628.30
     1.30       0.95       5.06      0.98     0.107     0.038     0.120     0.000    620.70     20.00
 0.000397     1900.     1900.      1900.         2         0         0      0.00    450.00    470.00
0
 1490 NH CARD USED
 *SECNO 67420.000

 3470 ENCROACHMENT STATIONS=       10.0      420.0  TYPE=       1  TARGET=      410.000
                XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK
 67420.00     21.26    640.56      0.00      0.00    640.84      0.28      0.85      0.01    631.80
    18800.      775.     17570.      455.      338.     4001.      787.     2796.      280.     633.70
     1.46       2.29       4.39      0.58     0.041     0.038     0.148     0.000    619.30     10.00
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  0.000294     2400.     2500.     2500.        2         0         0     0.00    410.00    420.00
0
 1490 NH CARD USED
 *SECNO 68970.000
                    XSEC 21 US OF GREEN COTTAGE ON LEFT BANK
  68970.00     18.32    641.02      0.00      0.00    641.30      0.28      0.45      0.00    631.50
     18800.      725.     17833.     242.      925.      4110.     273.      2981.     297.      628.30
       1.57      0.78       4.34     0.89     0.085     0.038     0.100     0.000   622.70      8.86
  0.000293     1400.     1550.     1700.        2         0         0     0.00    557.40    566.26
0
 1490 NH CARD USED
 *SECNO 70300.000
                    XSEC 22  BELOW POWER LINE CROSSING  N VALUES ARE ATYPICAL
  70300.00     17.75    641.45      0.00      0.00    641.66      0.21      0.36      0.01    633.80
     18800.      1808.     16927.     65.       927.      4398.     54.       3144.     312.      632.30
       1.67      1.95       3.85     1.20     0.050     0.038     0.050     0.000   623.70     10.06
  0.000250     1300.     1330.     1300.        2         0         0     0.00    410.62    420.69
0
 1490 NH CARD USED
 *SECNO 71300.000
  71300.00     18.96    641.66      0.00      0.00    641.97      0.31      0.28      0.03    633.60
     18800.      1164.     17457.     179.      555.      3800.     214.      3258.     320.      630.20
       1.73      2.10       4.59     0.84     0.046     0.038     0.100     0.000   622.70     11.33
  0.000321     1000.     1000.     1000.        2         0         0     0.00    354.05    365.38
0
1
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SECNO	DEPTH	CWSEL	CRWS	WSELR	EG	HV	EL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	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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 1490 NH CARD USED
 *SECNO 71900.000
  71900.00     17.27    641.87      0.00      0.00    642.19      0.32      0.21      0.00    630.00
     18800.      1245.     16956.     599.      610.      3581.     578.      3321.     325.      630.50
       1.77      2.04       4.74     1.04     0.058     0.040     0.120     0.000   624.60     11.69
  0.000408      500.      600.      650.         2         0         0     0.00    385.41    397.09
0
 1490 NH CARD USED
 *SECNO 73040.000
                    XSEC 25 BTWN BARBER AND KAING CABINS DS OF PUB ACC SIDE DS OF NEWYGO
  73040.00     16.81    642.41      0.00      0.00    642.66      0.25      0.46      0.01    636.20
     18800.      155.      15715.     2931.     198.      3658.     1229.     3450.     338.      633.30
       1.85      0.78       4.30     2.38     0.100     0.042     0.038     0.000   625.60     13.39
  0.000405     1200.     1140.     1100.        2         0         0     0.00    564.88    578.27
0
 1490 NH CARD USED
 *SECNO 73590.000
                    XSEC 26 DS OF CO RD BRDG  SEC DENT 45DEG RT OFF RD FILL AT STA 10
                    DENT 45DEG RT TO RD FILL AT STA 325
  73590.00     18.47    642.57      0.00      0.00    642.90      0.32      0.22      0.02    632.90
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18800.	326.	18099.	376.	170.	3906.	185.	3508.	343.	632.40
1.88	1.91	4.63	2.03	0.047	0.038	0.059	0.000	624.10	13.97
0.000383	660.	550.	500.	2	0	0	0.00	318.03	332.00

0
*SECNO 73640.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 652.00 MAX ELLC= 650.50

XSEC 27 CENTER OF BRDG ELLC AT 650.5

73640.00	17.19	642.59	0.00	0.00	642.92	0.33	0.02	0.00	652.00
18800.	0.	18800.	0.	0.	4071.	0.	3513.	343.	652.00
1.88	0.00	4.62	0.00	0.000	0.034	0.000	0.000	625.40	0.00
0.000395	50.	50.	50.	0	0	0	0.00	290.00	296.00

0
*SECNO 73660.000
1

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

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 652.00 MAX ELLC= 650.50

73660.00	17.19	642.59	0.00	0.00	642.92	0.33	0.01	0.00	652.00
18800.	0.	18800.	0.	0.	4071.	0.	3515.	344.	652.00
1.89	0.00	4.62	0.00	0.000	0.034	0.000	0.000	625.40	0.00
0.000395	20.	20.	20.	0	0	0	0.00	290.00	296.00

0
*SECNO 73720.000

73720.00	17.24	642.54	0.00	0.00	642.98	0.44	0.03	0.03	634.70
18800.	687.	17329.	784.	259.	3144.	418.	3521.	344.	632.30
1.89	2.65	5.51	1.87	0.047	0.034	0.059	0.000	625.30	66.70
0.000540	60.	60.	60.	2	0	0	0.00	383.37	450.07

0
1490 NR CARD USED
*SECNO 75140.000

XSEC 29 SEWAGE TREATMENT PLANT IN LOB

75140.00	15.81	643.31	0.00	0.00	643.50	0.19	0.49	0.02	635.60
18800.	4984.	13827.	9.	4651.	3404.	21.	3701.	365.	634.50
2.01	1.02	4.06	0.42	0.080	0.034	0.090	0.000	627.50	31.56
0.000251	1140.	1420.	1440.	2	0	0	0.00	1040.27	1071.83

0
*SECNO 75800.000
3280 CROSS SECTION 75800.00 EXTENDED 8.15 FEET

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                XSEC 29A  AT USGS CABLE
  75800.00    15.15   643.35     0.00     0.00   643.80     0.46     0.23     0.08   636.00
    18800.       0.   18800.       0.       0.    3466.       0.    3784.     373.    635.20
      2.04     0.00     5.42     0.00    0.000    0.034    0.000    0.000   628.20  1005.00
  0.000522     540.     660.     700.        2        0        0     0.00   259.00  1264.00
0
 1490 NH CARD USED
 *SECNO 76350.000
            XSEC 29B AT USGS GAGE  1976 STAGE IS 639.2   1986 STAGE 645.4
  76350.00    13.96   643.76     0.00     0.00   644.09     0.33     0.27     0.01   634.70
    18800.     340.   18306.     153.     110.    3945.     133.    3832.     377.    634.60
      2.07     3.08     4.64     1.15    0.035    0.038    0.101    0.000   629.80     5.04
  0.000473     550.     550.     550.        2        0        0     0.00   348.22   353.26
0
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITHIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 *SECNO 76760.000
                XSEC 30  1975 HWM IS 638.6       1976 HWM IS 639.2
  76760.00    16.30   643.90     0.00     0.00   644.29     0.38     0.18     0.02   636.50
    18800.     176.   18383.     241.     187.    3667.     253.    3871.     381.    636.00
      2.10     0.94     5.01     0.95    0.100    0.034    0.100    0.000   627.60    20.21
  0.000407     350.     410.     450.        2        0        0     0.00   355.93   376.14
0
1
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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
*****************************************************

T1       NO FLOW THROUGH ANDERSON FLATS
T2       100YR FLOOD
T3       Q 18800CFS

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
       0.        2.        0.        0.  0.000000      0.00       0.0   18800.   634.390     0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
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     2.000     0.000    -1.000     0.000     0.000     1.350     0.000     0.000     0.000     0.000
1
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   SECNO     DEPTH     CWSEL     CRIWS     USELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TLA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBP     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 *PROF 2

 CCHV=   0.100 CEHV=   0.300
 1490 NH CARD USED
 *SECNO 48720.000

 3470 ENCROACHMENT STATIONS=        7.8      450.6  TYPE=      1  TARGET=      442.890
                XSEC 6
  48720.00    17.99   634.39      0.00   634.39   634.57      0.18      0.00      0.00   626.80
    18800.    1308.   16166.     1326.     594.    4503.     1195.        0.        0.    620.60
      0.00     2.20     3.59      1.11    0.046    0.049     0.135     0.000    616.40     7.77
  0.000316    1500.    1850.     2000.        0        0         0      0.00    442.86   450.63
0
 1490 NH CARD USED
 *SECNO 50220.000

 3470 ENCROACHMENT STATIONS=        3.5      732.1  TYPE=      1  TARGET=      728.660
                XSEC 7
  50220.00    21.64   634.84      0.00   634.84   634.95      0.11      0.38      0.01   626.30
    18800.    9146.    9373.      281.    4205.    2976.      240.      222.       18.    623.10
      0.15     2.18     3.15      1.17    0.041    0.049     0.067     0.000    613.20     3.48
  0.000221    1300.    1500.     1300.        1        0         0      0.00    728.63   732.11
0
 1490 NH CARD USED
 *SECNO 51945.000

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=       24.5     1275.1  TYPE=      1  TARGET=     1250.600
            XSEC 8    VICS CAMPING ON RIGHT BANK  CAMPGROUND IS ON A HILL
                 WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.
  51945.00    20.37   635.27      0.00   635.27   635.58      0.31      0.57      0.06   637.60
    18800.       4.   14761.     4035.       7.    2957.     6153.      512.       51.    629.40
      0.26     0.61     4.99      0.66    0.027    0.047     0.202     0.000    614.90    24.46
  0.000663    1300.    1725.     1500.        2        0         0      0.00   1173.92  1275.06
0
 1490 NH CARD USED
 *SECNO 53000.000
1
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TRA	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= 787.0 1700.0 TYPE= 1 TARGET= 913.000
XSEC 9 SECTION THROUGH ISLAND US OF VICS
XSEC BENT 30DEG LFT AT 887 20DEG RT AT STA 1208

53000.00	18.62	635.72	0.00	635.73	635.88	0.15	0.29	0.02	625.00
18800.	866.	13657.	1277.	822.	4983.	3201.	673.	67.	623.00
0.35	1.05	3.34	0.40	0.070	0.036	0.169	0.000	617.10	787.00
0.000164	1200.	1055.	500.	2	0	0	0.00	898.23	1685.23

0
FLOW DISTRIBUTION FOR SECNO= 53000.00 CWSEL= 635.72

STA=	787.	887.	1192.	1650.	1685.
PER Q=	4.6	88.6	6.6	0.2	
AREA=	821.6	4983.3	3084.3	116.7	
VEL=	1.1	3.3	0.4	0.2	

1490 NH CARD USED
*SECNO 53700.000

3470 ENCROACHMENT STATIONS= 1500.0 1740.0 TYPE= 1 TARGET= 240.000
XSEC 10 REDWOOD COTTAGE ON LEFT BANK 1976 HWM 630.5
1986 HWM 638 XSEC BENT 45DEG LEFT AT STA 1360

53700.00	19.03	635.63	0.00	635.80	636.16	0.54	0.17	0.11	626.20
18800.	553.	18239.	8.	411.	3056.	21.	771.	76.	629.20
0.38	1.34	5.97	0.36	0.081	0.034	0.169	0.000	616.60	1500.00
0.000425	400.	700.	750.	2	0	0	0.00	236.58	1736.58

0
FLOW DISTRIBUTION FOR SECNO= 53700.00 CWSEL= 635.63

STA=	1500.	1557.	1730.	1737.
PER Q=	2.9	97.0	0.0	
AREA=	411.5	3055.5	21.2	
VEL=	1.3	6.0	0.4	

1490 NH CARD USED
*SECNO 54600.000

3470 ENCROACHMENT STATIONS= 2012.0 2250.0 TYPE= 1 TARGET= 238.000
XSEC 10A NEAR WHITE COTTAGE(BRONKEMA) 1976HWM 630.9 IN GARAGE
XSEC BENT 5DEG RT AT STA 139.9 RESTRICTED FOR HIGH GROUND AT
XSEC 11 US 1986 HWM 638

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TRA	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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 54600.00    21.57   636.07     0.00   635.97   635.61     0.54     0.45     0.00   628.70
   18800.    1102.    17246.     452.     316.    2838.     176.     839.      80.    621.00
     0.42     3.48     5.08     2.57    0.034    0.040    0.054    0.000   614.50  2012.00
 0.000609     500.     900.     1000.        2        0        0     0.00   232.91  2244.91
0
 FLOW DISTRIBUTION FOR SECNO=  54600.00          CWSEL=    636.07

 STA=    2012.    2060.    2062.    2221.    2245.
   PER Q=      5.6      0.3     91.7      2.4
    AREA=    301.8     14.3   2837.6    175.6
     VEL=      3.5      4.0      6.1      2.6

 1490 NH CARD USED
 *SECNO 55080.000

 3470 ENCROACHMENT STATIONS=     762.0     990.0  TYPE=     1  TARGET=     228.000
                XSEC 10B LOB IS FELCH ROAD
  55080.00    21.86   636.36     0.00   636.00   636.88     0.53     0.27     0.00   621.00
    18800.    1936.    16418.     445.     475.    2714.     180.     874.      82.    621.30
      0.45     4.07     6.05     2.48    0.034    0.041    0.054    0.000   614.50   762.00
  0.000552     250.     480.     550.        2        0        0     0.00   223.40   985.40
0
 1490 NH CARD USED
 *SECNO 55800.000

 3470 ENCROACHMENT STATIONS=    1000.0    1900.0  TYPE=     1  TARGET=     900.000
                XSEC 11  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOHENS BEND
  55800.00    20.75   635.95     0.00   636.02   637.22     0.27     0.31     0.03   627.70
    18800.       0.    14406.    4394.       0.    3045.    4992.     949.      89.    628.60
      0.49     0.00     4.73     0.88    0.000    0.039    0.123    0.000   616.20  1000.00
  0.000415     150.     720.     450.        2        0        0     0.00   900.00  1900.00
0
 FLOW DISTRIBUTION FOR SECNO=  55800.00          CWSEL=    636.95

 STA=    1000.    1169.    1172.    1185.    1237.    1320.    1454.    1546.    1651.    1819.    1900.
   PER Q=     76.6      0.1      0.5      2.0      3.2      5.3      3.1      0.0      6.0      3.1
    AREA=  3045.4     22.8     91.0     361.4    589.3    958.1    602.6    651.0   1125.6    589.9
     VEL=      4.7      1.0      1.0      1.0      1.0      1.0      1.0      0.0      1.0      1.0

1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        QLOSS   BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       UTN       ELMIN      SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST


 1490 NH CARD USED
 *SECNO 56800.000
                XSEC 12
  56800.00    22.76   637.36     0.00   636.55   637.47     0.11     0.24     0.02   621.70
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    18800.     146.    11245.     7409.      146.     3306.    10029.     1033.       95.     630.00
     0.58      1.00      3.40      0.74     0.094     0.048     0.128     0.000    614.60      3.20
 0.000287    1200.     1000.       50.         2         0         0      0.00   1588.81   1592.01
0
 FLOW DISTRIBUTION FOR SECNO=  56800.00          CWSEL=    637.36

 STA=        3.       22.      222.      350.      457.      758.      865.      958.     1093.     1227.     1424.     1592.
   PER Q=     0.8      59.8       5.0       4.2       6.2       3.9       3.4       3.9       3.9       4.7       4.3
    AREA=   146.3    3305.7    1012.0     846.8    2085.8     814.7     712.7    1013.3    1013.5    1335.1    1195.1
     VEL=     1.0       3.4       0.9       0.9       0.6       0.9       0.9       0.7       0.7       0.7       0.7

 1490 NH CARD USED
 *SECNO 57650.000
             XSEC 13  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
                  1976 HWM 631.9
  57650.00     20.13    637.53      0.00    636.77    637.57      0.04      0.09      0.01    622.00
     18800.    6215.     9873.     2712.     6689.     4932.     5180.     1161.      106.    626.50
      0.69      0.93      2.00      0.52     0.061     0.043     0.103     0.000    617.40      7.42
  0.000092     500.      850.       50.         0         0         0      0.00   1871.59   1879.01
0
 FLOW DISTRIBUTION FOR SECNO=  57650.00          CWSEL=    637.53

 STA=        7.      845.      857.     1180.     1380.     1514.     1879.
   PER Q=    32.2       0.8      52.5       4.5       4.1       5.8
    AREA=  6545.9     143.1    4932.4    1554.4    1035.5    2589.9
     VEL=     0.9       1.1       2.0       0.5       0.8       0.4

 1490 NH CARD USED
 *SECNO 58350.000
             XSEC 14 XSEC BENT 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB
  58350.00     21.28    637.58      0.00    636.84    637.65      0.07      0.08      0.01    630.50
     18800.    9843.     8948.       10.     8086.     3206.       45.     1335.      124.    629.50
      0.77      1.22      2.79      0.22     0.065     0.049     0.202     0.000    616.30     19.44
  0.000189     500.      700.      400.         2         0         0      0.00   1276.58   1296.02
0
1
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    SECNO      DEPTH     CWSEL     CRIWS     WSELK      EG        HV        HL       OLOSS    BANK ELEV
    Q          QLOB      QCH       QROB      ALOB       ACH       AROB      VOL      TWA    LEFT/RIGHT
    TIME       VLOB      VCH       VROB      XNL        XNCH      XNR       WTN      ELMIN      SSTA
    SLOPE      XLOBL     XLCH      XLOBR     ITRIAL     IBC       ICONT     CCHAB    TCPGID     ENDST

 FLOW DISTRIBUTION FOR SECNO=  58350.00          CWSEL=    637.58

 STA=       19.      400.      731.      918.     1077.     1106.     1285.     1296.
   PER Q=    18.7      18.3       7.8       6.3       1.2      47.6       0.1
    AREA=  2841.7    2692.2    1287.2    1062.7     202.5    3205.7      44.6
     VEL=     1.2       1.3       1.1       1.1       1.2       2.8       0.2

 1490 NH CARD USED
 *SECNO 58900.000
             XSEC 15
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  58900.00     19.66    637.66      0.00    636.94    637.77      0.11      0.10      0.01    631.50
    18800.     5265.    12847.      688.     6173.     4082.     1079.     1464.      140.     629.00
      0.83      0.85      3.15      0.64     0.081     0.046     0.135     0.000    618.00     19.32
  0.000222      450.      550.      700.         0         0         0      0.00   1519.00   1538.32
0
 1490 NH CARD USED
 *SECNO 60000.000
                XSEC 16
  60000.00     18.90    637.80      0.00    637.15    638.32      0.52      0.43      0.12    628.00
    18800.      396.    16100.     2304.      172.     2578.     2790.     1652.      164.     632.60
      0.89      2.30      6.25      0.83     0.066     0.047     0.162     0.000    618.90     11.07
  0.000979      1000.     1100.      700.         2         0         0      0.00    767.25    778.32
0
 FLOW DISTRIBUTION FOR SECNO=  60000.00          CUSEL=    637.80

 STA=       11.       44.      200.      750.      778.
   PER Q=      2.1      85.6      12.1       0.2
    AREA=    172.1    2578.1    2723.1      66.6
     VEL=      2.3       6.2       0.8       0.5

 1490 NH CARD USED
 *SECNO 62250.000
                XSEC 17    SUBDIVISION ON LEFT BANK
  62250.00     18.87    639.07      0.00    638.62    639.29      0.22      0.94      0.03    632.90
    18800.      339.    17554.      907.      595.     4526.     1056.     1929.      193.     629.10
      1.05      0.57      3.38      0.86     0.126     0.038     0.120     0.000    620.20     23.11
  0.000240     2400.     2225.     1700.         0         0         0      0.00    514.59    537.70
0
 1490 NH CARD USED
1
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     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     IDC       ICONT     CCRAB    TOPWID     ENDST

 *SECNO 63120.000
  63120.00     19.56    639.26      0.00    638.88    639.62      0.36      0.29      0.04    630.40
    18800.      57.     18231.      512.      87.      3740.      848.     2050.      203.     633.10
      1.11      0.66      4.87      0.60     0.120     0.038     0.148     0.000    619.70     11.98
  0.000380      970.      970.      970.         2         0         0      0.00    406.05    418.03
0
 1490 NH CARD USED
 *SECNO 65620.000

 3470 ENCROACHMENT STATIONS=      20.0      470.0   TYPE=     1   TARGET=    450.000
  65620.00     19.29    639.99      0.00    639.62    640.33      0.35      0.71      0.00    629.80
    18800.     1206.    17179.      415.     1279.     3484.      431.     2265.      222.     628.30
      1.22      0.94      4.93      0.96     0.107     0.038     0.120     0.000    620.70     20.00
  0.000366     1900.     1900.     1900.         2         0         0      0.00    450.00    470.00
0
 1490 NH CARD USED
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*SECNO 67420.000

3470 ENCROACHMENT STATIONS=      10.0     420.0  TYPE=     1  TARGET=     410.000
                XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK
 57420.00    21.56   640.86     0.00   640.56   641.13     0.27     0.79     0.01   631.80
   18800.     802.   17522.     476.     852.    4071.     825.    2563.     246.   633.70
     1.39     2.28     4.30     0.58    0.040    0.038    0.149    0.000   619.30    10.00
 0.000275    2400.    2500.    2500.        2        0        0     0.00   410.00   420.00
0
1490 NH CARD USED
*SECNO 68970.000
                XSEC 21 US OF GREEN COTTAGE ON LEFT BANK
 68970.00    18.59   641.29     0.00   641.02   641.55     0.27     0.43     0.00   631.50
   18800.     783.   17767.     250.     996.    4177.     286.    2753.     263.   628.30
     1.50     0.79     4.25     0.87    0.085    0.038    0.100    0.000   622.70     7.90
 0.000275    1400.    1550.    1700.        2        0        0     0.00   559.31   567.21
0
1490 NH CARD USED
*SECNO 70300.000
                XSEC 22  BELOW POWER LINE CROSSING  N VALUES ARE ATYPICAL
 70300.00    17.99   641.69     0.00   641.45   641.90     0.21     0.34     0.01   633.80
   18800.    1843.   16888.      69.     956.    4467.      57.    2919.     278.   632.30
     1.60     1.93     3.78     1.20    0.050    0.038    0.050    0.000   623.70     9.23
 0.000236    1300.    1330.    1300.        2        0        0     0.00   411.90   421.13
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

1490 NH CARD USED
*SECNO 71300.000
 71300.00    19.20   641.90     0.00   641.66   642.19     0.30     0.27     0.03   633.60
   18800.    1196.   17417.     186.     575.    3852.     224.    3036.     287.   630.20
     1.66     2.08     4.52     0.83    0.046    0.038    0.100    0.000   622.70    10.57
 0.000306    1000.    1000.    1000.        2        0        0     0.00   355.46   366.03
0
1490 NH CARD USED
*SECNO 71900.000
 71900.00    17.49   642.09     0.00   641.87   642.40     0.31     0.20     0.00   630.00
   18800.    1267.   16923.     610.     630.    3630.     595.    3100.     292.   630.50
     1.70     2.01     4.66     1.03    0.059    0.041    0.120    0.000   624.60    11.07
 0.000389     500.     600.     650.        2        0        0     0.00   386.75   397.82
0
1490 NH CARD USED
*SECNO 73040.000
          XSEC 25 BTWN BARBER AND KRING CABINS US OF PUB ACC SITE DS OF NEWYGO
 73040.00    17.00   642.60     0.00   642.41   642.85     0.24     0.44     0.01   636.20
   18800.     162.   15605.    3033.     208.    3706.    1283.    3232.     304.   633.30
     1.78     0.78     4.21     2.36    0.100    0.042    0.038    0.000   625.60    12.75
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 0.000382    1200.    1140.    1100.       2        0        0     0.00   568.97   581.73
0
 1490 NH CARD USED
 *SECNO 73590.000
            XSEC 26 DS OF CO RD BRDG  SEC BENT 45DEG RT OFF RD FILL AT STA 10
              BENT 45DEG RT TO RD FILL AT STA 325
 73590.00    18.66   642.76     0.00   642.57   643.07     0.31     0.20     0.02   632.90
   18800.      335.    18084.     380.     177.     3955.     189.     3291.     310.    632.40
    1.82     1.90      4.57     2.01    0.047    0.038    0.059    0.000   624.10    13.37
 0.000367     660.     550.     500.        2        0        0     0.00   318.76   332.13
0
 *SECNO 73640.000

 3265 DIVIDED FLOW


 3370 NORMAL BRIDGE,NRD=  0 MIN ELTRD=  652.00 MAX ELLC=  650.50

                XSEC 27 CENTER OF BRDG   ELLC AT 650.5
1
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    SECNO     DEPTH     CNSEL     CHISS     HSELK     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
 73640.00    17.37   642.77     0.00   642.59   643.09     0.32     0.02     0.00   652.00
   18800.       0.    18800.       0.       0.     4125.       0.     3296.     310.    652.00
    1.82     0.00      4.56     0.00    0.000    0.034    0.000    0.000   625.40     0.00
 0.000379       50.      50.      50.        0        0        0     0.00   290.00   296.00
0
 *SECNO 73660.000

 3265 DIVIDED FLOW


 3370 NORMAL BRIDGE,NRD=  0 MIN ELTRD=  652.00 MAX ELLC=  650.50

 73660.00    17.38   642.78     0.00   642.59   643.10     0.32     0.01     0.00   652.00
   18800.       0.    18800.       0.       0.     4125.       0.     3298.     310.    652.00
    1.82     0.00      4.56     0.00    0.000    0.034    0.000    0.000   625.40     0.00
 0.000379       20.      20.      20.        0        0        0     0.00   290.00   296.00
0
 *SECNO 73720.000
 73720.00    17.43   642.73     0.00   642.58   643.16     0.43     0.03     0.03   634.70
   18800.      700.    17294.     806.     267.     3190.     437.     3304.     311.    632.30
    1.82     2.62      5.42     1.35    0.047    0.034    0.059    0.000   625.30    65.74
 0.000312       60.      60.      60.        2        0        0     0.00   387.01   452.75
0
 1490 NH CARD USED
 *SECNO 75140.000
            XSEC 29  SEWAGE TREATMENT PLANT IN LOB
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  75140.00     15.96    643.46      0.00    643.31    643.65      0.19      0.47      0.02    635.60
    18800.     5042.     13748.       9.      4974.     3441.      22.      3488.      331.     634.50
      1.94      1.01      4.00      0.42     0.080     0.034     0.090     0.000    627.50     28.97
  0.000240     1140.     1420.     1440.        2         0         0      0.00   1043.01   1071.98
0
 *SECNO 75800.000
 3280 CROSS SECTION  75800.00 EXTENDED       8.30 FEET

                XSEC 29A  AT USGS CABLE
  75800.00     15.30    643.50      0.00    643.35    643.94      0.45      0.22      0.08    636.00
    18800.       0.     18800.       0.        0.     3505.       0.      3571.      340.     635.20
      1.98      0.00      5.36      0.00     0.000     0.034     0.000     0.000    628.20   1005.00
  0.000504      540.      660.      700.        2         0         0      0.00    259.00   1264.00
0
1
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    SECNO      DEPTH     CWSEL     CRIWS     WSELK      EG        HV        HL       OLOSS    BANK ELEV
    Q          QLOB      QCH       QROB      ALOB       ACH       AROB      VOL      TWA    LEFT/RIGHT
    TIME       VLOB      VCH       VROB      XNL        XNCH      XNR       WTN      ELMIN      SSTA
    SLOPE      XLOBL     XLCH      XLOBR     ITRIAL     IDC       ICONT     CORAR    TOPWID     ENDST


 1490 NH CARD USED
 *SECNO 76350.000
          XSEC 29B AT USGS GAGE  1976 STAGE IS 639.2   1986 STAGE 645.4
  76350.00     14.10    643.90      0.00    643.76    644.22      0.32      0.26      0.01    634.70
    18800.      345.     18299.      155.      113.     3987.      136.     3620.      344.     634.60
      2.01      3.06      4.59      1.14     0.035     0.038     0.101     0.000    629.80      4.90
  0.000456      550.      550.      550.        2         0         0      0.00    348.49    353.40
0
 *SECNO 76760.000
                XSEC 30  1975 HWM IS 638.6       1976 HWM IS 639.2
  76760.00     16.43    644.03      0.00    643.90    644.41      0.37      0.17      0.02    636.50
    18800.      180.     18375.      246.      192.     3702.      260.     3660.      347.     636.00
      2.03      0.94      4.66      0.95     0.100     0.034     0.100     0.000    627.60     19.93
  0.000394      350.      410.      450.        2         0         0      0.00    356.63    376.56
0
1
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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CODE -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
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T1
T2    NO FIOE THROUGH ANDERSON FLATS AND OLD HOMANS BEND
T3
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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	18800.	634.390	0.000
J2	NPROF	IPLOT	PRFVS	XSECV	XSDCH	FN	ALLDC	IBW	CHNIM	ITRACE
	15.000	0.000	-1.000	0.000	0.000	1.350	0.000	0.000	0.000	0.000

1

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

*PROF 3

CCHV= 0.100 CEHV= 0.300
1490 NH CARD USED
*SECNO 48720.000

3470 ENCROACHMENT STATIONS= 7.9 450.6 TYPE= 1 TARGET= 442.890

XSEC 6

48720.00	17.99	634.39	0.00	634.39	634.57	0.18	0.00	0.00	626.80
18800.	1308.	16166.	1326.	594.	4503.	1195.	0.	0.	620.60
0.00	2.20	3.59	1.11	0.046	0.049	0.135	0.000	616.40	7.77
0.000316	1500.	1850.	2000.	0	0	0	0.00	442.86	450.63

0
1490 NH CARD USED
*SECNO 50220.000

3470 ENCROACHMENT STATIONS= 3.5 732.1 TYPE= 1 TARGET= 728.660

XSEC 7

50220.00	21.64	634.84	0.00	634.84	634.95	0.11	0.38	0.01	626.30
18800.	9146.	9373.	281.	4205.	2976.	240.	222.	18.	623.10
0.15	2.18	3.15	1.17	0.041	0.049	0.067	0.000	613.20	3.48
0.000221	1300.	1500.	1300.	1	0	0	0.00	728.63	732.11

0
1490 NH CARD USED
*SECNO 51945.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 24.5 1275.1 TYPE= 1 TARGET= 1250.600

XSEC 8 VICS CAMPING ON RIGHT BANK CAMPGROUND IS ON A HILL
WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.

51945.00	20.37	635.27	0.00	635.27	635.58	0.31	0.57	0.06	637.60
18800.	4.	14761.	4035.	7.	2957.	6153.	512.	51.	629.40
0.26	0.61	4.99	0.66	0.027	0.047	0.202	0.000	614.90	24.46
0.000663	1300.	1725.	1500.	2	0	0	0.00	1173.92	1275.06

0
1490 NH CARD USED
*SECNO 53000.000
1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	EL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALCB	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= 787.0 1700.0 TYPE= 1 TARGET= 913.000
XSEC 9 SECTION THROUGH ISLAND US OF VICS
XSEC BENT 30DEG LFT AT 887 20DEG RT AT STA 1208

53000.00	18.62	635.72	0.00	635.73	635.88	0.15	0.29	0.02	625.00
18800.	866.	16657.	1277.	822.	4983.	3201.	673.	67.	623.00
0.35	1.05	3.34	0.40	0.070	0.036	0.169	0.000	617.10	787.00
0.000164	1200.	1055.	500.	2	0	0	0.00	898.23	1685.23

0
FLOW DISTRIBUTION FOR SECNO= 53000.00 CWSEL= 635.72

STA=	787.	887.	1192.	1650.	1685.
PER Q=		4.6	38.6	6.6	0.2
AREA=		821.6	4983.3	3084.3	116.7
VEL=		1.1	3.3	0.4	0.2

1490 NH CARD USED
*SECNO 53700.000

3470 ENCROACHMENT STATIONS= 1500.0 1740.0 TYPE= 1 TARGET= 240.000
XSEC 10 REDWOOD COTTAGE ON LEFT BANK 1976 HWM 630.5
1986 HWM 638 XSEC BENT 45DEG LEFT AT STA 1360

53700.00	19.03	635.63	0.00	635.80	636.16	0.54	0.17	0.11	626.20
18800.	553.	18239.	8.	411.	3056.	21.	771.	76.	629.20
0.38	1.34	5.97	0.36	0.081	0.034	0.169	0.000	616.60	1500.00
0.000425	400.	700.	750.	2	0	0	0.00	236.58	1736.58

0
FLOW DISTRIBUTION FOR SECNO= 53700.00 CWSEL= 635.63

STA=	1500.	1557.	1730.	1737.
PER Q=		2.9	97.0	0.0
AREA=		411.5	3056.6	21.2
VEL=		1.3	6.0	0.4

1490 NH CARD USED
*SECNO 54600.000

3470 ENCROACHMENT STATIONS= 2012.0 2250.0 TYPE= 1 TARGET= 238.000
XSEC 10A NEAR WHITE COTTAGE(BRONKEMA) 1976HWM 630.9 IN GARAGE
XSEC BENT 5DEG RT AT STA 139.9 RESTRICTED FOR HIGH GROUND AT
XSEC 11 US 1986 HWM 638
1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	AV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TBA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
54600.00	21.57	636.07	0.00	635.97	636.61	0.54	0.45	0.00	628.70
18800.	1102.	17246.	452.	316.	2838.	176.	839.	80.	621.00
0.42	3.48	6.08	2.57	0.034	0.040	0.054	0.000	614.50	2012.00
0.000609	500.	900.	1000.	2	0	0	0.00	232.91	2244.91

0

FLOW DISTRIBUTION FOR SECNO= 54600.00 CWSEL= 636.07

STA=	2012.	2060.	2062.	2221.	2245.
PER Q=	5.6	0.3	91.7	2.4	
AREA=	301.8	14.3	2837.6	175.6	
VEL=	3.5	4.0	6.1	2.6	

1490 NH CARD USED
*SECNO 55080.000

3470 ENCROACHMENT STATIONS= 762.0 990.0 TYPE= 1 TARGET= 228.000
XSEC 10B LOB IS FELCH ROAD

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	AV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TBA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
55080.00	21.86	636.36	0.00	636.00	636.88	0.53	0.27	0.00	621.00
18800.	1936.	16418.	445.	475.	2714.	180.	874.	82.	621.30
0.45	4.07	6.35	2.48	0.034	0.041	0.054	0.000	614.50	762.00
0.000552	250.	480.	550.	2	0	0	0.00	223.40	985.40

0

1490 NH CARD USED
*SECNO 55800.000

3470 ENCROACHMENT STATIONS= 1000.0 1219.0 TYPE= 1 TARGET= 219.000
XSEC 11 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	AV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TBA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
55800.00	20.55	636.75	0.00	636.02	637.32	0.57	0.42	0.01	627.70
18800.	0.	18387.	413.	0.	3012.	342.	925.	85.	628.60
0.48	0.00	6.11	1.21	0.000	0.039	0.108	0.000	616.20	1000.00
0.000698	150.	720.	450.	2	0	0	0.00	219.00	1219.00

0

FLOW DISTRIBUTION FOR SECNO= 55800.00 CWSEL= 636.75

STA=	1000.	1169.	1172.	1185.	1219.
PER Q=	97.8	0.2	0.6	1.4	
AREA=	3011.6	22.2	88.4	231.9	
VEL=	6.1	1.3	1.3	1.2	

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	AV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TBA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA

SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO 56800.000
XSEC 12

56800.00	22.98	637.58	0.00	636.55	638.03	0.46	0.71	0.01	621.70
18800.	242.	18349.	209.	150.	3348.	175.	1000.	90.	630.00
0.53	1.61	5.48	1.19	0.095	0.048	0.108	0.000	614.60	2.94
0.000734	1200.	1000.	50.	2	0	0	0.00	242.07	245.01

0
FLOW DISTRIBUTION FOR SECNO= 56800.00 CWSEL= 637.58

STA=	3.	22.	222.	245.
PER Q=	1.3	97.6	1.1	
AREA=	150.3	3348.5	175.5	
VEL=	1.6	5.5	1.2	

1490 NH CARD USED
*SECNO 57650.000
XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
1976 HWM 631.9

57650.00	20.79	638.19	0.00	636.77	638.24	0.05	0.17	0.04	622.00
18800.	7540.	11206.	54.	7254.	5147.	91.	1126.	100.	626.50
0.65	1.04	2.18	0.60	0.061	0.043	0.074	0.000	617.40	5.42
0.000104	500.	850.	50.	2	0	0	0.00	1183.58	1189.00

0
FLOW DISTRIBUTION FOR SECNO= 57650.00 CWSEL= 638.19

STA=	5.	845.	857.	1180.	1189.
PER Q=	39.1	1.0	59.3	0.3	
AREA=	7103.2	151.1	5147.0	90.8	
VEL=	1.0	1.2	2.2	0.6	

1490 NH CARD USED
*SECNO 58350.000
XSEC 14 XSEC BENT 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LCE

58350.00	21.96	638.26	0.00	636.84	638.32	0.06	0.08	0.00	630.50
18800.	10219.	8570.	11.	8825.	3327.	52.	1287.	115.	629.50
0.75	1.16	2.38	0.21	0.065	0.049	0.202	0.000	616.30	14.92
0.000153	500.	700.	400.	2	0	0	0.00	1282.03	1296.95

0
1

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

FLOW DISTRIBUTION FOR SECNO= 58350.00 CWSEL= 638.26

STA=	15.	400.	731.	918.	1077.	1106.	1285.	1297.

PER Q=	19.3	18.8	8.2	6.7	1.3	45.6	0.1
AREA=	3101.5	2916.9	1414.1	1170.6	222.2	3327.2	52.3
VEL=	1.2	1.2	1.1	1.1	1.1	2.6	0.2

1490 NH CARD USED
*SECNO 58900.000
XSEC 15

58900.00	20.32	638.32	0.00	636.94	638.41	0.09	0.08	0.01	631.50
18800.	5742.	12346.	712.	6929.	4242.	1179.	1426.	131.	629.00
0.81	0.83	2.91	0.50	0.081	0.046	0.135	0.000	618.00	14.94
0.000181	450.	550.	700.	1	0	0	0.00	1526.03	1540.97

0
1490 NH CARD USED
*SECNO 60000.000
XSEC 16

60000.00	19.52	638.42	0.00	637.15	638.88	0.46	0.35	0.11	628.00
18800.	416.	15793.	2591.	193.	2674.	3148.	1630.	155.	632.60
0.87	2.16	5.90	0.82	0.067	0.047	0.162	0.000	618.90	9.17
0.000833	1000.	1100.	700.	2	0	0	0.00	772.87	782.04

0
FLOW DISTRIBUTION FOR SECNO= 60000.00 CWSEL= 638.42

STA=	9.	44.	200.	750.	782.
PER Q=	2.2	84.0	13.6	0.2	
AREA=	193.0	2674.5	3063.1	85.2	
VEL=	2.2	5.9	0.8	0.5	

1490 NH CARD USED
*SECNO 62250.000
XSEC 17 SUBDIVISION ON LEFT BANK

62250.00	19.33	639.53	0.00	638.62	639.73	0.20	0.83	0.03	632.90
18800.	370.	17497.	933.	651.	4654.	1110.	1923.	184.	629.10
1.04	0.57	3.76	0.84	0.126	0.038	0.120	0.000	620.20	20.25
0.000217	2400.	2225.	1700.	2	0	0	0.00	518.41	538.66

0
1490 NH CARD USED
1

SECNO	DEPTH	CWSEL	CAIWS	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	WIN	ELMIN	SSTA	
SLOPE	XLOBL	XLCH	XLOBR	IIRIAL	IDC	ICONT	CORAR	TOPWID	ENDST	

*SECNO 63120.000

63120.00	20.00	639.70	0.00	638.83	640.04	0.34	0.26	0.04	630.40
18800.	63.	18183.	554.	95.	3837.	919.	2048.	195.	633.10
1.10	0.66	4.74	0.60	0.120	0.038	0.148	0.000	619.70	10.83
0.000347	970.	970.	970.	2	0	0	0.00	410.66	420.89

0
1490 NH CARD USED
*SECNO 65620.000

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 3470 ENCROACHMENT STATIONS=      20.0     470.0  TYPE=     1  TARGET=     450.000
  65620.00     19.66    640.36      0.00    639.62    640.69      0.33      0.65      0.00    629.80
    18800.      1266.     17107.      426.      1353.     3561.      449.     2271.      213.     628.30
      1.22      0.94      4.80      0.95     0.107     0.038     0.120     0.000    620.70     20.00
  0.000338     1900.     1900.     1900.         2         0         0      0.00    450.00    470.00
0
 1490 NH CARD USED
 *SECNO 67420.000

 3470 ENCROACHMENT STATIONS=      10.0     420.0  TYPE=     1  TARGET=     410.000
                XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK
  67420.00     21.87    641.17      0.00    640.56    641.43      0.26      0.73      0.01    631.80
    18800.      830.     17473.      497.      368.     4144.      863.     2577.      238.     633.70
      1.39      2.26      4.22      0.58     0.040     0.038     0.148     0.000    619.30     10.00
  0.000258     2400.     2500.     2500.         2         0         0      0.00    410.00    420.00
0
 1490 NH CARD USED
 *SECNO 68970.000
                XSEC 21 US OF GREEN COTTAGE ON LEFT BANK
  68970.00     18.87    641.57      0.00    641.02    641.83      0.25      0.40      0.00    631.50
    18800.      843.     17698.      259.     1070.     4248.      300.     2773.      255.     628.30
      1.50      0.79      4.17      0.86     0.085     0.038     0.100     0.000    622.70      6.88
  0.000258     1400.     1550.     1700.         2         0         0      0.00    561.33    568.21
0
 1490 NH CARD USED
 *SECNO 70300.000
                XSEC 22  BELOW POWER LINE CROSSING  N VALUES ARE ATYPICAL
  70300.00     18.25    641.95      0.00    641.45    642.15      0.20      0.32      0.01    633.80
    18800.      1880.     16848.       72.      986.     4540.       61.     2943.      269.     632.30
      1.60      1.91      3.71      1.19     0.050     0.038     0.050     0.000    623.70      8.34
  0.000223     1300.     1330.     1300.         2         0         0      0.00    413.26    421.60
D
1
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     SECNO      DEPTH     CWSEL     CRIWS     HSELK     EG        HV        HL        QLOSS     BANK ELEV
     Q          QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       LEFT/RIGHT
     TIME       VLOB      VCH       VROB      XML       XNCH      XNR       STN       ELMIN       SSTA
     SLOPE      KLOBL     KLCH      KLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

  1490 NH CARD USED
  *SECNO 71300.000
   71300.00     19.44    642.14      0.00    641.66    642.43      0.29      0.25      0.03    633.60
     18800.      1230.     17376.      194.      597.     3908.      235.     3061.      278.     630.20
       1.67      2.06      4.45      0.83     0.046     0.038     0.100     0.000    622.70      9.75
   0.000290     1000.     1000.     1000.         2         0         0      0.00    356.97    366.72
  0
  1490 NH CARD USED
  *SECNO 71900.000
   71900.00     17.73    642.33      0.00    641.37    642.63      0.30      0.19      0.00    630.00
     18800.      1290.     16888.      622.      651.     3682.      613.     3127.      283.     630.50
       1.71      1.98      4.59      1.01     0.059     0.041     0.120     0.000    624.60     10.42
   0.000369      500.      600.      650.         2         0         0      0.00    388.18    398.60
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0
1490 NH CARD USED
*SECNO 73040.000
XSEC 25 BTHN BARBER AND KRING CABINS US OF PUB ACC SITE DS OF NEWYGC

73040.00	17.22	642.82	0.00	642.41	643.05	0.23	0.41	0.01	636.20
18800.	171.	15489.	3140.	220.	3759.	1341.	3261.	296.	633.30
1.79	0.78	4.12	2.34	0.100	0.042	0.038	0.000	625.60	12.07
0.000359	1200.	1140.	1100.	2	0	0	0.00	573.38	585.45

0
1490 NH CARD USED
*SECNO 73590.000
XSEC 26 DS OF CO RD BRDG SEC BENT 45DEG RT OFF RD FILL AT STA 10
BENT 45DEG RT TO RD FILL AT STA 325

73590.00	18.86	642.96	0.00	642.57	643.26	0.31	0.19	0.02	632.90
18800.	346.	18069.	385.	184.	4007.	193.	3322.	301.	632.40
1.82	1.88	4.51	1.99	0.047	0.038	0.059	0.000	624.10	12.72
0.000350	660.	550.	500.	2	0	0	0.00	319.55	332.28

0
*SECNO 73640.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 652.00 MAX ELLC= 650.50

XSEC 27 CENTER OF BRDG ELLC AT 650.5

1

SECNO	DEPTH	CHSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TRA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
73640.00	17.57	642.97	0.00	642.59	643.28	0.31	0.02	0.00	652.00
18800.	0.	18800.	0.	0.	4183.	0.	3327.	302.	652.00
1.83	0.00	4.49	0.00	0.000	0.034	0.000	0.000	625.40	0.00
0.000363	50.	50.	50.	0	0	0	0.00	290.00	296.00

0
*SECNO 73660.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 652.00 MAX ELLC= 650.50

73660.00	17.58	642.98	0.00	642.59	643.29	0.31	0.01	0.00	652.00
18800.	0.	18800.	0.	0.	4188.	0.	3329.	302.	652.00
1.83	0.00	4.49	0.00	0.000	0.034	0.000	0.000	625.40	0.00
0.000363	20.	20.	20.	0	0	0	0.00	290.00	296.00

0
*SECNO 73720.000

73720.00	17.64	642.94	0.00	642.54	643.35	0.41	0.03	0.03	634.70

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    18800.     714.    17256.     830.     276.    3239.     457.    3334.     302.    632.30
      1.83     2.58      5.33     1.82    0.047    0.034    0.059    0.000   625.30     64.71
 0.000484      60.       60.       60.        2        0        0     0.00   390.91    455.62
0
 1490 NH CARD USED
 *SECNO 75140.000
            XSEC 29  SEWAGE TREATMENT PLANT IN LOB
  75140.00    16.13   643.63     0.00   643.31   643.81     0.18     0.44     0.02   635.60
    18800.     5126.    13664.      9.     5110.    3482.      23.    3522.     323.    634.50
      1.95     1.00      3.92     0.42    0.080    0.034    0.090    0.000   627.50     26.13
  0.000228     1140.     1420.     1440.        2        0        0     0.00  1046.00   1072.14
0
 *SECNO 75800.000
 3280 CROSS SECTION  75800.00 EXTENDED      8.46 FEET

                XSEC 29A  AT USGS CABLE
  75800.00    15.46   643.66     0.00   643.35   644.09     0.44     0.21     0.08   636.00
    18800.       0.    18800.       0.       0.    3547.       0.    3608.     332.    635.20
      1.99     0.00      5.30     0.00    0.000    0.034    0.000    0.000   628.20   1005.00
  0.000485      540.      660.      700.        2        0        0     0.00   259.00   1264.00
0
1
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    SECNO      DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q          QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME       VLOB      VCH       VROB      XNL       XNCH      XNR       WIN       ELMIN       SSTA
    SLOPE      XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 1490 NH CARD USED
 *SECNO 76350.000
            XSEC 29B AT USGS GAGE  1976 STAGE IS 639.2   1986 STAGE 645.4
  76350.00    14.25   644.05     0.00   643.76   644.36     0.31     0.25     0.01   634.70
    18800.      351.    18292.     157.      116.    4033.      139.    3657.     336.    634.60
      2.02     3.03      4.54     1.13    0.035    0.038    0.101    0.000   629.80     4.75
  0.000439      550.      550.      550.        2        0        0     0.00   348.79   353.55
0
 *SECNO 76760.000
                XSEC 30  1975 HWM IS 638.6      1976 HWM IS 639.2
  76760.00    16.58   644.18     0.00   643.90   644.54     0.37     0.17     0.02   636.50
    18800.      184.    18365.     251.      197.    3741.      267.    3697.     339.    636.00
      2.04     0.93      4.91     0.94    0.100    0.034    0.100    0.000   627.60     19.61
  0.000381      350.      410.      450.        2        0        0     0.00   357.41   377.02
0
1
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**************************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CODE =  01,02,03,04,05,06
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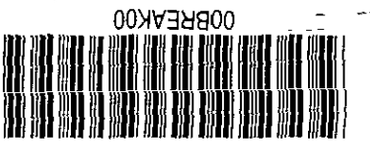
1) COUNTY: Newaygo

2) STUDY NAME: Bridgeton, ~~Athland~~, Garfield and Brooks Twp.

3) WATERCOURSE: Muskegon River

4) DOCUMENT TYPE: 100 yr



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

T1      FLOODWAY RUN
T2      100YR FLOOD
T3      Q 18800CFS

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0.       3.       0.       0.  0.000000    0.00      0.0   18800.   620.140   0.000

J2  NPROF     IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

    15.000    0.000   -1.000    0.000    0.000    1.350    0.000    0.000    0.000    0.000
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST

*PROF 2

CCHV=   0.100 CEHV=   0.300
1490 NH CARD USED
*SECNO 0.100

3470 ENCROACHMENT STATIONS=       8.0     818.0  TYPE=     1  TARGET=     810.000
                XSEC 61
     0.10    20.14   620.14     0.00   620.14   620.37     0.23     0.00     0.00   613.20
   18800.      16.   15438.    3346.      49.    3657.    3990.       0.       0.   609.60
     0.00     0.32     4.22     0.84    0.135    0.031    0.092    0.000   600.00     8.00
 0.000186       0.       0.       0.        0        0        0     0.00   809.81   817.81
0
1490 NH CARD USED
*SECNO 1920.000

3470 ENCROACHMENT STATIONS=      22.0     763.0  TYPE=     1  TARGET=     741.000
        SEC 61 MOVED US INVERT ADJ BY .94FT     FLOOD FLOW SHIFTED FROM
        ROB AS NOTED ON XSEC 61 TO APPROX AREA IN LOB FOR THIS XSEC
  1920.00    19.55   620.49     0.00     0.00   620.80     0.31     0.41     0.02   614.14
```

18800.	0.	16740.	2060.	0.	3530.	3361.	306.	32.	610.54
0.12	0.00	4.74	0.61	0.000	0.031	0.140	0.000	600.94	22.00
0.000256	2170.	1920.	1740.	0	0	0	0.00	741.00	763.00

0

1490 NH CARD USED
*SECNO 3050.000

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000
XSEC 62

3050.00	19.39	620.79	0.00	0.00	621.06	0.27	0.25	0.00	608.60
18800.	132.	18579.	89.	124.	4400.	101.	459.	46.	609.00
0.20	1.06	4.22	0.88	0.067	0.031	0.067	0.000	601.40	17.00
0.000194	1200.	1130.	1200.	2	0	0	0.00	311.00	328.00

0

1490 NH CARD USED
*SECNO 3051.000

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000
EDGE OF BRIDGE DECK AT BRIDGETON 1976 HWM 615.7

3051.00	19.40	620.80	0.00	0.00	621.06	0.26	0.00	0.00	608.60
18800.	379.	18164.	257.	124.	4402.	101.	459.	46.	609.00
0.20	3.05	4.13	2.53	0.023	0.031	0.023	0.000	601.40	17.00
0.000185	1.	1.	1.	1	0	0	0.00	311.00	328.00

0

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	FV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TRA	LEFT/RIGHT
TIME	VLOB	VCH	VROP	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IBC	ICONT	CORAR	TOPWID	ENLST

SPECIAL BRIDGE

SB	XK	KKOR	COEP	RDLEN	BEC	BWP	AREA	SS	ELCHU	ELCHD
	0.90	1.25	2.60	1000.00	260.00	8.00	9000.00	1.43	604.50	604.50

*SECNO 3100.000
CLASS A LOW FLOW

3420 BRIDGE W.S.= 620.79 BRIDGE VELOCITY= 4.19 CALCULATED CHANNEL AREA= 4483.

EGPRS	EGLWC	FB	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTBD
0.00	621.07	0.01	0.	18800.	9000.	9152.	635.40	638.00

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000

3100.00	19.41	620.81	0.00	0.00	621.07	0.26	0.01	0.00	608.60
18800.	380.	18163.	257.	125.	4406.	101.	464.	46.	609.00
0.20	3.05	4.12	2.53	0.023	0.031	0.023	0.000	601.40	17.00

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 0.000184      49.      49.      49.       0        0        0      0.00   311.00   328.00
0
 *SECNO 3101.000

 3470 ENCROACHMENT STATIONS=      17.0     328.0  TYPE=     1  TARGET=     311.000
   3101.00    19.39   620.79     0.00     0.00   621.07     0.28     0.00     0.01   608.60
    18800.      44.    18692.      64.      125.     4404.     101.     464.      46.   609.00
      0.20     0.36     4.24     0.63     0.202    0.031    0.095    0.000   601.40    17.00
 0.000196        1.       1.       1.        1        0        0      0.00   311.00   328.00
0
 1490 NH CARD USED
 *SECNO 4680.000
  2800 NAT Q1=  16405.66  WSEL=    621.17  ENC Q1=  16405.65  WSEL=    621.27  RATIO=  0.0000
  NAT Q1=  16609.  RATIOS LOB,CH,ROB=  0.0209  0.8952  0.0839  WSEL=    621.27

 3470 ENCROACHMENT STATIONS=      31.4     586.7  TYPE=     4  TARGET=       0.012
              XSEC 63
   4680.00    17.67   621.17     0.00   621.17   621.34     0.17     0.25     0.01   608.50
    18800.      287.    17054.    1458.     261.     4936.    1231.     664.      62.   616.00
      0.34     1.10     3.45     1.18    0.061    0.031    0.047    0.000   603.50    31.45
 0.000134      1500.    1579.    1600.        2        0        0      0.00   555.22   586.67
0
1
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    SECNO      DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q          QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME       VLOB      VCH       VROB      XNL       XNCH      XNR       STN       ELMIN       SSTA
    SLOPE      XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


 1490 NH CARD USED
 *SECNO 7200.000
  2800 NAT Q1=  12785.07  WSEL=    621.49  ENC Q1=  12785.07  WSEL=    621.59  RATIO=  0.0000
  NAT Q1=  12928.  RATIOS LOB,CH,ROB=  0.0672  0.9234  0.0095  WSEL=    621.59

 3470 ENCROACHMENT STATIONS=      57.5     795.4  TYPE=     4  TARGET=       0.011
              XSEC 64          XSEC CROSSES US OF OLD ROCK CRIBBING
   7200.00    19.20   621.50     0.00   621.49   621.80     0.31     0.43     0.04   619.00
    18800.     1153.    17571.     76.     2949.    3827.     70.     1036.     98.   610.40
      0.50     0.39     4.59     1.10     0.195    0.031    0.054    0.000   602.30    57.49
 0.000221      2200.    2520.    2500.        2        0        0      0.00   737.95   795.44
0
 1490 NH CARD USED
 *SECNO 8850.000
  2800 NAT Q1=  13432.97  WSEL=    621.96  ENC Q1=  13432.96  WSEL=    622.06  RATIO=  0.0000
  NAT Q1=  13597.  RATIOS LOB,CH,ROB=  0.0001  0.8292  0.1706  WSEL=    622.06

 3470 ENCROACHMENT STATIONS=      39.0     879.2  TYPE=     4  TARGET=       0.012
              XSEC 65          XSEC CROSSES 100FT DS OF BOAT LAUNCH
   8850.00    17.78   621.98     0.00   621.96   622.16     0.18     0.35     0.01   619.30
    18800.        0.    15777.    3023.        0.    4253.    4829.    1327.     126.   619.80
      0.64     0.00     3.71     0.63     0.000    0.034    0.146    0.000   604.20    39.00
 0.000202      1400.    1650.    1800.        2        0        0      0.00   840.15   879.15
```

0
1490 NH CARD USED
*SECNO 10300.000
2800 NAT Q1= 12770.52 WSEL= 622.33 ENC Q1= 12770.51 WSEL= 622.43 RATIO= 0.0000
NAT Q1= 12934. RATIOS LOB,CH,ROB= 0.0095 0.6682 0.3223 WSEL= 622.43

3470 ENCROACHMENT STATIONS= 39.3 1141.2 TYPE= 4 TARGET= 0.013
XSEC 66

10300.00	19.06	622.36	0.00	622.33	622.44	0.08	0.27	0.01	611.10
18800.	61.	12740.	5999.	72.	4668.	6808.	1570.	147.	620.60
0.80	0.86	2.73	0.88	0.067	0.047	0.114	0.000	603.30	39.29
0.000220	1500.	1450.	700.	2	0	0	0.00	1101.94	1141.23

0
1490 NH CARD USED
*SECNO 11800.000
2800 NAT Q1= 10776.33 WSEL= 622.60 ENC Q1= 10776.33 WSEL= 622.70 RATIO= 0.0000
NAT Q1= 10897. RATIOS LOB,CH,ROB= 0.1708 0.8239 0.0053 WSEL= 622.70
1

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

3470 ENCROACHMENT STATIONS= 164.6 1059.0 TYPE= 4 TARGET= 0.011
XSEC 67

11800.00	18.24	622.64	0.00	622.60	622.85	0.21	0.37	0.04	619.60
18800.	3123.	15677.	0.	5687.	3905.	0.	1901.	177.	610.70
0.92	0.55	4.01	0.00	0.202	0.040	0.000	0.000	604.40	164.56
0.000309	1600.	1500.	1000.	2	0	0	0.00	894.44	1059.00

0
*SECNO 12600.000
2800 NAT Q1= 11082.31 WSEL= 622.85 ENC Q1= 11082.30 WSEL= 622.95 RATIO= 0.0000
NAT Q1= 11210. RATIOS LOB,CH,ROB= 0.1740 0.8205 0.0054 WSEL= 622.95

3470 ENCROACHMENT STATIONS= 162.9 1107.0 TYPE= 4 TARGET= 0.011

12600.00	18.49	622.89	0.00	622.85	623.09	0.20	0.24	0.00	619.60
18800.	3165.	15533.	102.	5857.	3965.	222.	2082.	194.	610.70
0.99	0.54	3.92	0.46	0.202	0.041	0.202	0.000	604.40	162.92
0.000289	800.	800.	800.	1	0	0	0.00	932.58	1095.50

0
1490 NH CARD USED
*SECNO 14100.000
2800 NAT Q1= 10324.83 WSEL= 623.26 ENC Q1= 10324.83 WSEL= 623.36 RATIO= 0.0000
NAT Q1= 10453. RATIOS LOB,CH,ROB= 0.0177 0.9268 0.0555 WSEL= 623.36

3470 ENCROACHMENT STATIONS= 68.3 677.2 TYPE= 4 TARGET= 0.012
XSEC 68

14100.00	18.20	623.30	0.00	623.26	623.55	0.25	0.45	0.02	611.80
18800.	220.	17646.	934.	287.	4246.	1960.	2327.	216.	618.40
1.09	0.76	4.16	0.48	0.135	0.041	0.202	0.000	605.10	68.32

0.000336	900.	1500.	1600.	0	0	0	0.00	608.87	677.19

0

1490 NH CARD USED
*SECNO 16700.000
2800 NAT Q1= 12780.20 WSEL= 623.89 ENC Q1= 12623.77 WSEL= 623.89 RATIO= 0.0122
NAT Q1= 12780. RATIOS LOB,CH,ROB= 0.1625 0.8337 0.0037 WSEL= 623.89

3470 ENCROACHMENT STATIONS= 106.7 1120.0 TYPE= 0 TARGET= 0.012
XSEC 69

16700.00	19.37	623.97	0.00	623.89	624.21	0.25	0.66	0.00	621.80
13800.	3027.	15773.	0.	6353.	3640.	0.	2628.	242.	613.80
1.27	0.48	4.33	0.00	0.202	0.028	0.000	0.000	604.60	106.66
0.000230	300.	2600.	1900.	2	0	0	0.00	1013.34	1120.00

0

1

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	WIN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	COMAN	TOPWID	ENDST

1490 NH CARD USED
*SECNO 19870.000
2800 NAT Q1= 11246.35 WSEL= 624.59 ENC Q1= 11246.35 WSEL= 624.69 RATIO= 0.0000
NAT Q1= 11416. RATIOS LOB,CH,ROB= 0.2574 0.7355 0.0071 WSEL= 624.69

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 42.3 756.0 TYPE= 4 TARGET= 0.015
XSEC 70 THROUGH SUBDIV ON LEFT BANK CHANNEL INEFFECTIVE
1975 RUN ON BASEMENT WALL 619.8 AVG 800FT DS 619.98

19870.00	19.09	624.69	0.00	624.59	624.97	0.28	0.75	0.01	612.40
18800.	4719.	13946.	195.	2449.	2921.	280.	3100.	290.	612.80
1.47	1.93	4.77	0.48	0.040	0.034	0.202	0.000	605.60	42.26
0.000276	2200.	3170.	3500.	1	0	0	0.00	669.50	744.76

0

1490 NH CARD USED
*SECNO 21370.000
2800 NAT Q1= 13227.54 WSEL= 625.03 ENC Q1= 13227.53 WSEL= 625.13 RATIO= 0.0000
NAT Q1= 13396. RATIOS LOB,CH,ROB= 0.0719 0.7009 0.2272 WSEL= 625.13

3470 ENCROACHMENT STATIONS= 36.7 744.1 TYPE= 4 TARGET= 0.013
XSEC 71 OLDER COTTAGES ON RT BANK SEAWALL PROTECTS RT BANK

21370.00	19.92	625.12	0.00	625.03	625.32	0.19	0.34	0.01	612.40
20800.	1276.	13326.	4198.	1839.	3241.	2901.	3319.	311.	619.80
1.60	0.69	4.11	1.45	0.144	0.033	0.062	0.000	606.20	136.70
0.000202	1100.	1500.	1600.	2	0	0	0.00	707.38	744.06

0

1490 NH CARD USED
*SECNO 24985.000
2800 NAT Q1= 10124.87 WSEL= 625.93 ENC Q1= 10589.80 WSEL= 625.93 RATIO= 0.0126

NAT Q1= 10725. RATIOS LOB,CH,ROB= 0.1283 0.7294 0.1423 WSEL= 625.93

3470 ENCROACHMENT STATIONS= 55.4 877.1 TYPE= 0 TARGET= 0.013

XSEC 72									
24985.00	18.52	626.02	0.00	625.93	626.21	0.19	0.89	0.00	620.30
18800.	2329.	13855.	2616.	3866.	3480.	1606.	4026.	375.	614.70
1.91	0.60	3.96	1.63	0.202	0.040	0.063	0.000	607.50	55.43
0.000308	3700.	3615.	3600.	2	0	0	0.00	821.67	877.11

0
1

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

1490 NH CARD USED
*SECNO 28235.000
2800 NAT Q1= 9641.07 WSEL= 626.94 ENC Q1= 9641.06 WSEL= 627.04 RATIO= 0.0000
NAT Q1= 9752. RATIOS LOB,CH,ROB= 0.0669 0.9272 0.0059 WSEL= 627.04

3470 ENCROACHMENT STATIONS= 45.5 658.8 TYPE= 4 TARGET= 0.011

XSEC 73									
28235.00	17.74	627.04	0.00	626.94	627.30	0.26	1.07	0.02	623.50
18800.	1164.	17634.	2.	2221.	4164.	8.	4529.	421.	616.70
2.12	0.52	4.23	0.22	0.202	0.040	0.108	0.000	609.30	45.48
0.000382	2300.	3200.	3300.	1	0	0	0.00	613.33	658.82

0
1490 NH CARD USED
*SECNO 29860.000
2800 NAT Q1= 9236.46 WSEL= 627.52 ENC Q1= 9236.46 WSEL= 627.62 RATIO= 0.0000
NAT Q1= 9335. RATIOS LOB,CH,ROB= 0.0053 0.9599 0.0348 WSEL= 627.62

3470 ENCROACHMENT STATIONS= 50.8 453.4 TYPE= 4 TARGET= 0.011
XSEC 74 IN LINE WITH E SIDE OF COTTAGE ON TOP OF LFT BANK
JUST US OF POWERLINE

29860.00	18.32	627.62	0.00	627.52	627.97	0.36	0.65	0.03	616.20
18800.	0.	18238.	562.	2.	3753.	1126.	4737.	439.	615.20
2.22	0.05	4.86	0.50	0.202	0.040	0.203	0.000	609.30	50.83
0.000415	1500.	1625.	1700.	2	0	0	0.00	402.62	453.45

0
1490 NH CARD USED
*SECNO 31660.000
2800 NAT Q1= 10844.70 WSEL= 628.27 ENC Q1= 10844.70 WSEL= 628.37 RATIO= 0.0000
NAT Q1= 10966. RATIOS LOB,CH,ROB= 0.0332 0.9416 0.0252 WSEL= 628.37

3470 ENCROACHMENT STATIONS= 81.4 586.3 TYPE= 4 TARGET= 0.011

XSEC 75									
31660.00	18.17	628.37	0.00	628.27	628.61	0.25	0.68	0.01	623.30
18800.	526.	17890.	383.	1162.	4388.	373.	4958.	458.	617.10
2.35	0.45	4.08	1.03	0.183	0.041	0.108	0.000	610.20	81.36
0.000300	1700.	1800.	1800.	2	0	0	0.00	504.95	586.31

0
1490 NH CARD USED
*SECNO 35425.000
1

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

3470 ENCROACHMENT STATIONS= 20.0 790.0 TYPE= 1 TARGET= 770.000

XSEC 76

35425.00	19.94	629.74	0.00	629.64	629.93	0.20	1.31	0.01	621.20
18800.	30.	15241.	3528.	77.	3885.	4441.	5576.	513.	625.30
2.66	0.39	3.92	0.79	0.209	0.047	0.165	0.000	609.80	20.00
0.000414	4300.	3760.	3600.	1	0	0	0.00	770.00	790.00

0
1490 NH CARD USED
*SECNO 37670.000

3470 ENCROACHMENT STATIONS= 20.0 1035.0 TYPE= 1 TARGET= 1015.000

XSEC 77

37670.00	22.62	630.62	0.00	630.54	630.83	0.21	0.89	0.01	622.70
18300.	5538.	18241.	21.	7846.	3019.	60.	6027.	554.	623.70
2.84	0.71	4.39	0.35	0.203	0.047	0.202	0.000	608.00	20.00
0.000434	1900.	2150.	2100.	2	0	0	0.00	1014.95	1034.95

0
1490 NH CARD USED
*SECNO 38970.000

3470 ENCROACHMENT STATIONS= 20.0 760.0 TYPE= 1 TARGET= 740.000

XSEC 78 800FT DS OF ISLAND, POWERLINE CROSSING AND BOAT LAUNCH
WEST END OF OLD GRAVEL OPERATION

38970.00	18.14	631.04	0.00	630.97	631.17	0.13	0.33	0.01	621.80
18800.	29.	15289.	3482.	68.	4845.	4177.	6271.	575.	624.80
2.96	0.43	3.16	0.83	0.135	0.041	0.111	0.000	612.90	20.00
0.000184	700.	1300.	1300.	2	0	0	0.00	740.00	760.00

0
1490 NH CARD USED
*SECNO 42170.000

3470 ENCROACHMENT STATIONS= 15.0 510.0 TYPE= 1 TARGET= 495.000

XSEC 1

42170.00	19.39	631.49	0.00	631.43	631.98	0.48	0.70	0.11	622.40
18800.	26.	16701.	2073.	72.	2821.	2442.	6787.	618.	625.90
3.12	0.36	5.92	0.85	0.202	0.027	0.113	0.000	612.10	15.00
0.000272	3600.	3200.	3000.	2	0	0	0.00	495.00	510.00

0
1

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

1490 NH CARD USED
*SECNO 43770.000
2800 NAT Q1= 10234.29 WSEL= 632.03 ENC Q1= 10234.29 WSEL= 632.13 RATIO= 0.0000
NAT Q1= 10341. RATIOS LOB,CH,ROB= 0.0136 0.8532 0.1333 WSEL= 632.13

3470 ENCROACHMENT STATIONS= 36.0 445.9 TYPE= 4 TARGET= 0.010
XSEC 2
43770.00 18.97 632.07 0.00 632.03 632.47 0.41 0.49 0.01 622.30
18800. 160. 16212. 2428. 174. 2956. 2097. 6990. 636. 618.30
3.22 0.92 5.48 1.16 0.101 0.034 0.109 0.000 613.10 35.96
0.000341 1200. 1600. 1800. 2 0 0 0.00 409.98 445.94
0

1490 NH CARD USED
*SECNO 44820.000
2800 NAT Q1= 10128.54 WSEL= 632.63 ENC Q1= 10128.54 WSEL= 632.73 RATIO= 0.0000
NAT Q1= 10242. RATIOS LOB,CH,ROB= 0.0473 0.9244 0.0283 WSEL= 632.73

3470 ENCROACHMENT STATIONS= 63.5 658.7 TYPE= 4 TARGET= 0.011
XSEC 3 SECTION THRU ISLAND NE OF OLD GRAVEL OPERATION
44820.00 19.98 632.68 0.00 632.63 632.86 0.18 0.36 0.02 624.70
18800. 788. 17583. 429. 1340. 4955. 891. 7142. 649. 625.30
3.30 0.59 3.55 0.48 0.202 0.048 0.202 0.000 612.70 63.56
0.000348 1100. 1050. 1100. 2 0 0 0.00 595.15 658.71
0

1490 NH CARD USED
*SECNO 45470.000
2800 NAT Q1= 8310.62 WSEL= 632.80 ENC Q1= 8310.61 WSEL= 632.90 RATIO= 0.0000
NAT Q1= 8400. RATIOS LOB,CH,ROB= 0.0498 0.9434 0.0068 WSEL= 632.90

3470 ENCROACHMENT STATIONS= 42.7 487.2 TYPE= 4 TARGET= 0.011
XSEC 4 OLD WOOD PILING ALONG EACH BANK
45470.00 19.45 632.85 0.00 632.80 633.17 0.32 0.27 0.04 627.70
18800. 837. 17925. 38. 1417. 3864. 65. 7233. 656. 624.50
3.34 0.59 4.64 0.59 0.202 0.047 0.202 0.000 613.40 42.71
0.000516 550. 650. 650. 2 0 0 0.00 444.50 487.22
0

1490 NH CARD USED
*SECNO 46870.000
2800 NAT Q1= 7854.52 WSEL= 633.47 ENC Q1= 7854.51 WSEL= 633.57 RATIO= 0.0000
NAT Q1= 7939. RATIOS LOB,CH,ROB= 0.0901 0.8936 0.0163 WSEL= 633.57
1

SECNO	DEPTH	CWSEL	CRIBS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	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=      50.6     476.7  TYPE=      4  TARGET=       0.011
                  XSEC 5  HILL AT RIGHT BANK IS ERODING
  46870.00     20.93    633.53      0.00    633.47    633.90      0.37      0.71      0.02    622.10
     18800.     1596.     16995.      209.     1627.     3312.      128.     7388.      669.    621.30
      3.42      0.98      5.13      1.63     0.135     0.047     0.092     0.000    612.60     50.58
  0.000578     1280.     1300.     1575.         2         0         0      0.00    426.10    476.68
0
 1490 NH CARD USED
 *SECNO 48720.000
  2800 NAT Q1=   10635.04  WSEL=     634.43  ENC Q1=   10635.04  WSEL=     634.53  RATIO=  0.0000
  NAT Q1=   10740.  RATIOS LOB,CH,ROB=  0.0705  0.8588  0.0707  WSEL=     634.53

 3470 ENCROACHMENT STATIONS=      32.2     428.6  TYPE=      4  TARGET=       0.010
                  XSEC 6
  48720.00     18.10    634.50      0.00    634.43    634.68      0.18      0.76      0.02    626.80
     18800.     1271.     16274.     1254.      500.     4530.     1118.     7620.      685.    620.60
      3.57      2.54      3.59      1.12     0.041     0.049     0.135     0.000    616.40     32.17
  0.000313     1500.     1850.     2000.         2         0         0      0.00    396.48    428.65
0
 1490 NH CARD USED
 *SECNO 50220.000
  2800 NAT Q1=   12731.59  WSEL=     634.87  ENC Q1=   12731.59  WSEL=     634.97  RATIO=  0.0000
  NAT Q1=   12919.  RATIOS LOB,CH,ROB=  0.4905  0.4944  0.0151  WSEL=     634.97

 3470 ENCROACHMENT STATIONS=      22.1     705.2  TYPE=      4  TARGET=       0.015
                  XSEC 7
  50220.00     21.74    634.94      0.00    634.87    635.06      0.11      0.37      0.01    626.30
     18800.     9202.     9445.      153.     4181.     2994.      139.     7838.      702.    623.10
      3.72      2.20      3.15      1.10     0.041     0.049     0.067     0.000    613.20     22.08
  0.000220     1300.     1500.     1300.         2         0         0      0.00    683.13    705.21
0
 1490 NH CARD USED
 *SECNO 51945.000
  2800 NAT Q1=    7331.06  WSEL=     635.30  ENC Q1=    7331.05  WSEL=     635.40  RATIO=  0.0000
  NAT Q1=    7429.  RATIOS LOB,CH,ROB=  0.0004  0.7816  0.2180  WSEL=     635.40

 3470 ENCROACHMENT STATIONS=     124.0    1203.5  TYPE=      4  TARGET=       0.013
                  XSEC 8    VICS CAMBING ON RIGHT BANK  CAMPGROUND IS ON A HILL
                       WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.
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   SECNO      DEPTH      CWSEL      CRIWS      WSELK       EG         HV         HL        OLOSS    BANK ELEV
     Q        CLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA     LEFT/RIGHT
    TIME      VLOB       VCH        VROB       XNL        XNCH       XNR        WTN       ELMIN       SSTA
   SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        TCONT      CORAR     TOPWID      ENDST

  51945.00     20.47    635.37      0.00    635.30    635.68      0.31      0.57      0.06    637.60
     18800.        0.     14903.     3897.        0.     2976.     5874.     8122.      732.    629.40
      3.83      0.00      5.01      0.66     0.000     0.047     0.202     0.000    614.90    126.56
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 0.000662    1300.    1725.    1500.        2        0        0     0.00  1076.96  1203.51
0
 1490 NH CARD USED
 *SECNO 53000.000

 3470 ENCROACHMENT STATIONS=      350.0    1700.0  TYPE=      1  TARGET=     -350.000
                 XSEC 9  SECTION THROUGH ISLAND US OF VICS
              XSEC BENT 30DEG LFT AT 887  20DEG RT AT STA 1208
  53000.00    18.74   635.84     0.00   635.76   635.94     0.10     0.24     0.02   625.00
    18800.    3106.   14559.    1136.    5572.    5019.    3258.    8348.     754.   623.00
      3.95     0.56     2.90     0.35    0.139    0.036    0.169    0.000   617.10   350.00
  0.000123    1200.    1055.     500.        2        0        0     0.00  1335.84  1685.84
0
 FLOW DISTRIBUTION FOR SECNO=  53000.00          CWSEL=     635.84

 STA=      350.     650.     760.     887.    1192.    1650.    1686.
   PER Q=      8.7      3.1      4.7     77.4      5.9      0.1
    AREA=   3317.1   1180.0   1074.6   5018.7   3137.4    120.8
     VEL=      0.5      0.5      0.8      2.9      0.4      0.2

 1490 NH CARD USED
 *SECNO 53700.000

 3470 ENCROACHMENT STATIONS=      300.0    1740.0  TYPE=      1  TARGET=     -300.000
                 XSEC 10  REDWOOD COTTAGE ON LEFT BANK  1976 HWM 630.5
                 1986 HWM 638    XSEC BENT 45DEG LEFT AT STA 1360
  53700.00    19.34   635.94     0.00   635.86   636.01     0.08     0.07     0.00   626.20
    18800.    9271.    9525.       5.   13041.    3109.      23.    8527.     770.   629.20
      4.03     0.71     3.06     0.20    0.104    0.034    0.162    0.000   616.60   300.00
  0.000110     400.     700.     750.        2        0        0     0.00  1436.89  1736.89
0
 FLOW DISTRIBUTION FOR SECNO=  53700.00          CWSEL=     635.94

 STA=      300.    1340.    1420.    1500.    1557.    1730.    1737.
   PER Q=     37.9      4.8      3.7      2.9     50.7      0.0
    AREA=  11372.5    668.2    571.8    429.0   3108.8     23.3
     VEL=      0.6      1.4      1.2      1.3      3.1      0.2

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

 1490 NH CARD USED
 *SECNO 54600.000

 3470 ENCROACHMENT STATIONS=      750.0    2250.0  TYPE=      1  TARGET=     -750.000
                 XSEC 10A NEAR WHITE COTTAGE(BRONKEMA)  1976HWM 630.9 IN GARAGE
                 XSEC BENT 5DEG RT AT STA 139.9  RESTRICTED FOR HIGH GROUND AT
                 XSEC 11 US      1986 HWM 638
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 54600.00    21.54   636.04     0.00   635.97   636.09     0.05     0.07     0.00   628.70
   18800.   11544.    7071.     185.   12038.    2832.     175.    8734.     789.    621.00
     4.16     0.96     2.50     1.06    0.071    0.040    0.054    0.000   614.50   750.00
 0.000103     500.     900.    1000.        1        0        0     0.00  1494.84  2244.84
0
 FLOW DISTRIBUTION FOR SECNO=  54600.00          CWSEL=    636.04

 STA=     750.     949.    1049.    1352.    1508.    1597.    1755.    1846.    1917.    1966.    2041.    2062.    2221.
   PER Q=      8.5      4.6     11.1      7.0      5.7      6.8      5.2      4.4      3.4      3.5      1.2     37.6
    AREA=   2461.1   1253.5   3328.6   1188.2    715.2    995.5    631.5    504.2    372.1    448.4    139.4   2831.8
     VEL=      0.7      0.7      0.6      1.1      1.5      1.3      1.5      1.7      1.7      1.5      1.6      2.5
 STA=    2221.    2245.
   PER Q=      1.0
    AREA=    174.7
     VEL=      1.1

 1490 NH CARD USED
 *SECNO 55800.000

 3470 ENCROACHMENT STATIONS=        0.0    1900.0  TYPE=      1  TARGET=    1899.999
                 XSEC 11  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
 55800.00    19.84   636.04     0.00   635.97   636.35     0.30     0.18     0.08   627.70
   18800.       0.   14505.    4295.       0.    2892.    4327.    8920.     808.    628.60
     4.22     0.00     5.02     0.99    0.000    0.039    0.108    0.000   616.20  1000.00
 0.000490     400.    1200.    1000.        2        0        0     0.00   900.00  1900.00
0
 FLOW DISTRIBUTION FOR SECNO=  55800.00          CWSEL=    636.04

 STA=    1000.    1169.    1172.    1185.    1237.    1320.    1454.    1546.    1651.    1819.    1900.
   PER Q=     77.2      0.1      0.4      1.7      2.8      4.6      2.7      2.7      5.1      2.7
    AREA=   2891.8     20.1     79.2    314.1    513.9    836.3    519.0    555.6    972.9    516.2
     VEL=      5.0      1.0      1.0      1.0      1.0      1.0      1.0      0.9      1.0      1.0

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

 1490 NH CARD USED
 *SECNO 56800.000

 3470 ENCROACHMENT STATIONS=        0.0    1630.0  TYPE=      1  TARGET=    1629.999
                 XSEC 12
 56800.00    21.93   636.53     0.00   636.46   636.65     0.13     0.29     0.02   621.70
   18800.     138.   11319.    7343.     131.    3138.    9141.    8999.     814.    630.00
     4.30     1.05     3.61     0.80    0.094    0.047    0.119    0.000   614.60     4.22
 0.000342    1200.    1000.      50.        2        0        0     0.00  1625.78  1630.00
0
 FLOW DISTRIBUTION FOR SECNO=  56800.00          CWSEL=    636.53
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STA=      4.      22.     222.     350.     457.     660.     865.     958.    1093.    1227.    1424.    1592.    1630.
  PER Q=    0.7     60.2      4.5      3.8      5.4      6.3      3.1      3.5      3.5      4.2      3.9      0.9
   AREA=  130.9   3138.0    904.7    757.1   1218.5   1340.0    634.8    900.2    901.2   1170.0   1054.3    259.9
    VEL=    1.1      3.6      0.9      0.9      0.8      0.9      0.9      0.7      0.7      0.7      0.7      0.7

1490 NH CARD USED
*SECNO 57650.000

3470 ENCROACHMENT STATIONS=      0.0    1910.0  TYPE=     1  TARGET=    1909.999
          XSEC 13  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
                1976 HWM 631.9
 57650.00    19.32   636.72     0.00   636.66   636.76     0.04     0.10     0.01   622.00
   18800.    5654.    9856.    3291.    6004.    4672.    4833.    9118.     825.   626.50
     4.40     0.94     2.11     0.68    0.061    0.043    0.080    0.000   617.40     9.84
 0.000109     500.     850.      50.        0        0        0     0.00  1900.16  1910.00
0
FLOW DISTRIBUTION FOR SECNO=  57650.00          CWSEL=    636.72

STA=      10.     845.     857.    1180.    1297.    1514.    1711.    1879.    1910.
  PER Q=    29.3      0.8     52.4      3.3      6.0      4.5      3.1      0.6
   AREA=  5870.4    133.4   4671.5    822.7   1497.4   1208.2   1086.9    218.0
    VEL=     0.9      1.1      2.1      0.8      0.8      0.7      0.5      0.5

1490 NH CARD USED
*SECNO 58350.000
 2800 NAT Q1=  11855.37  WSEL=    636.72  ENC Q1=  11855.37  WSEL=    636.82  RATIO=  0.0000
 NAT Q1=  12060.  RATIOS LOB,CH,ROB=  0.4978  0.5018  0.0005  WSEL=    636.82

3470 ENCROACHMENT STATIONS=      95.6    1285.0  TYPE=     4  TARGET=       0.017
1
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          XSEC 14 XSEC BENT 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB
 58350.00    20.48   636.78     0.00   636.72   636.87     0.09     0.09     0.01   630.50
   18800.    9190.    9610.       0.    6934.    3062.       0.    9277.     843.   629.50
     4.48     1.33     3.14     0.00    0.065    0.046    0.000    0.000   616.30    95.57
 0.000254     500.     700.     400.        2        0        0     0.00  1189.43  1285.01
0
FLOW DISTRIBUTION FOR SECNO=  58350.00          CWSEL=    636.78

STA=      96.     400.     731.     918.    1077.    1106.    1285.    1285.
  PER Q=    16.6     17.8      7.4      5.9      1.2     51.1      0.0
   AREA=  2257.6   2425.9   1136.7    934.7    179.2   3061.7      0.1
    VEL=     1.4      1.4      1.2      1.2      1.2      3.1      3.1

1490 NH CARD USED
*SECNO 58900.000
 2800 NAT Q1=  10985.72  WSEL=    636.82  ENC Q1=  10985.72  WSEL=    636.92  RATIO=  0.0000
 NAT Q1=  11175.  RATIOS LOB,CH,ROB=  0.2487  0.7163  0.0350  WSEL=    636.92

3470 ENCROACHMENT STATIONS=      86.6    1482.4  TYPE=     4  TARGET=       0.017
          XSEC 15
 58900.00    18.88   636.88     0.00   636.82   637.03     0.14     0.14     0.02   631.50
   18800.    4558.   13735.     507.    5088.    3896.     714.    9389.     857.   629.00
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     4.53      0.90      3.53      0.71     0.081     0.046     0.135     0.000    618.00     86.60
 0.000297      450.      550.      700.         2         0         0      0.00   1395.79   1482.39
0
 1490 NH CARD USED
 *SECNO 60000.000
  2800 NAT Q1=   5425.57  WSEL=    637.05  ENC Q1=   5425.57  WSEL=    637.15  RATIO=  0.0000
  NAT Q1=   5501.  RATIOS LOB,CH,ROB=  0.0199  0.8747  0.1055  WSEL=    637.15

 3470 ENCROACHMENT STATIONS=       35.1      720.6  TYPE=      4  TARGET=        0.014
                 XSEC 16
  60000.00     18.21    637.11      0.00    637.05    637.74      0.63      0.56      0.15    628.00
    18800.      261.    16680.     1859.       73.     2470.     2224.     9552.      879.    632.60
      4.58      3.57      6.75      0.84     0.054     0.047     0.162     0.000    618.90     35.11
  0.001212     1000.     1100.      700.         2         0         0      0.00    685.52    720.64
0
 FLOW DISTRIBUTION FOR SECNO=  60000.00          CWSEL=    637.11

 STA=       35.       44.      200.      721.
   PER Q=       1.4      88.7       9.9
    AREA=      73.0    2469.8    2223.5
     VEL=       3.6       6.8       0.8

 1490 NH CARD USED
1
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   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       NTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 *SECNO 62250.000
  2800 NAT Q1=  11453.05  WSEL=    638.55  ENC Q1=  11453.04  WSEL=    638.65  RATIO=  0.0000
  NAT Q1=  11582.  RATIOS LOB,CH,ROB=  0.0165  0.9366  0.0469  WSEL=    638.65

 3470 ENCROACHMENT STATIONS=       91.2      517.4  TYPE=      4  TARGET=        0.011
                 XSEC 17    SUBDIVISION ON LEFT BANK
  62250.00     18.43    638.63      0.00    638.55    638.87      0.24      1.09      0.04    632.90
    18800.      209.    17806.      785.      335.     4404.      911.     9800.      904.    629.10
      4.73      0.62      4.04      0.86     0.126     0.038     0.120     0.000    620.20     91.20
  0.000271     2400.     2225.     1700.         2         0         0      0.00    426.20    517.41
0
 1490 NH CARD USED
 *SECNO 63120.000
  2800 NAT Q1=   9149.92  WSEL=    638.77  ENC Q1=   9149.92  WSEL=    638.87  RATIO=  0.0000
  NAT Q1=   9249.  RATIOS LOB,CH,ROB=  0.0028  0.9720  0.0252  WSEL=    638.87

 3470 ENCROACHMENT STATIONS=       32.0      356.1  TYPE=      4  TARGET=        0.011
  63120.00     19.16    638.86      0.00    638.77    639.25      0.39      0.33      0.04    630.40
    18800.        0.    18464.      335.        0.     3649.      539.     9909.      912.    633.10
      4.79      0.00      5.06      0.62     0.000     0.038     0.148     0.000    619.70     32.00
  0.000444      970.      970.      970.         2         0         0      0.00    324.12    356.12
0
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 1490 NH CARD USED
 *SECNO 65620.000

 3470 ENCROACHMENT STATIONS=     20.0     470.0  TYPE=      1  TARGET=     450.000
  65620.00     18.93   639.68     0.00   639.57   640.04     0.36     0.79     0.00   629.80
     18800.     1155.    17240.     405.    1219.    3421.     416.    10111.     929.    628.30
       4.90      0.95      5.04     0.98    0.107    0.038    0.120    0.000   620.70    20.00
  0.000392     1900.     1900.     1900.        2        0        0     0.00   450.00   470.00
0
 1490 NH CARD USED
 *SECNO 67420.000

 3470 ENCROACHMENT STATIONS=     10.0     420.0  TYPE=      1  TARGET=     410.000
                  XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK
  67420.00     21.31   640.61     0.00   640.52   640.89     0.28     0.84     0.01   631.80
     18800.      779.    17563.     458.     340.    4012.     793.    10402.     954.    633.70
       5.06      2.29      4.38     0.58    0.041    0.038    0.149    0.000   619.30    10.00
  0.000291     2400.     2500.     2500.        2        0        0     0.00   410.00   420.00
0
1
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    SECNO     DEPTH     CNSEL     CRINS     WSELK     EG        HV        HL        QLOSS   BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VCL       TWA   LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 1490 NH CARD USED
 *SECNO 68970.000
  2800 NAT Q1=   10943.55  WSEL=     640.98  ENC Q1=   10943.55  WSEL=     641.08  RATIO=   0.0000
  NAT Q1=   11069.  RATIOS LOB,CH,ROB=  0.0393  0.9477  0.0130  WSEL=     641.08

 3470 ENCROACHMENT STATIONS=     122.5     532.5  TYPE=      4  TARGET=       0.011
                  XSEC 21 US OF GREEN COTTAGE ON LEFT BANK
  68970.00     18.36   641.06     0.00   640.98   641.34     0.29     0.45     0.00   631.50
     18800.      634.    18032.     134.     711.    4119.     135.    10582.     968.    628.30
       5.17      0.89      4.38     0.99    0.085    0.038    0.100    0.000   622.70   122.54
  0.000297     1400.     1550.     1700.        0        0        0     0.00   409.92   532.46
0
 1490 NH CARD USED
 *SECNO 70300.000
  2800 NAT Q1=   11842.41  WSEL=     641.41  ENC Q1=   11842.41  WSEL=     641.51  RATIO=   0.0000
  NAT Q1=   11981.  RATIOS LOB,CH,ROB=  0.0967  0.8998  0.0035  WSEL=     641.51

 3470 ENCROACHMENT STATIONS=      28.3     426.0  TYPE=      4  TARGET=       0.012
                  XSEC 22  BELOW POWER LINE CROSSING  N VALUES ARE ATYPICAL
  70300.00     17.20   641.50     0.00   641.41   641.71     0.22     0.36     0.01   633.80
     18800.     1682.    17052.      66.      862.    4411.      55.    10738.     980.    632.30
       5.27      1.95      3.87     1.21    0.050    0.038    0.050    0.000   623.70    28.48
  0.000251     1800.     1930.     1300.        2        0        0     0.00   392.29   420.77
0
 1490 NH CARD USED
 *SECNO 71300.000
```

2800 NAT Q1= 10147.00 WSEL= 641.36 ENC Q1= 10147.00 WSEL= 641.46 RATIO= 0.0000
NAT Q1= 10259. RATIOS LOB,CH,ROB= 0.0604 0.9304 0.0092 WSEL= 641.46

3470 ENCROACHMENT STATIONS=		32.6	333.4	TYPE=	4	TARGET=	0.011		
71300.00	18.74	641.44	0.00	641.36	641.77	0.33	0.02	0.03	633.60
18800.	1044.	17668.	89.	473.	3750.	87.	10755.	982.	630.20
5.27	2.21	4.71	1.02	0.045	0.038	0.100	0.000	622.70	32.61
0.000344	1000.	0.	1000.	2	0	0	0.00	300.83	333.44

0
1490 NH CARD USED
*SECNO 71900.000
2800 NAT Q1= 9008.24 WSEL= 641.58 ENC Q1= 9008.24 WSEL= 641.68 RATIO= 0.0000
NAT Q1= 9110. RATIOS LOB,CH,ROB= 0.0652 0.9034 0.0313 WSEL= 641.68
1

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

3470 ENCROACHMENT STATIONS=		46.0	363.2	TYPE=	4	TARGET=	0.011		
71900.00	17.06	641.66	0.00	641.58	642.00	0.34	0.23	0.00	630.00
18800.	1139.	17179.	482.	471.	3535.	421.	10814.	987.	630.50
5.31	2.42	4.86	1.15	0.054	0.041	0.120	0.000	624.60	46.03
0.000438	500.	600.	650.	0	0	0	0.00	317.13	363.16

0
1490 NH CARD USED
*SECNO 73040.000
2300 NAT Q1= 8997.53 WSEL= 642.15 ENC Q1= 8997.52 WSEL= 642.25 RATIO= 0.0000
NAT Q1= 9133. RATIOS LOB,CH,ROB= 0.0079 0.8404 0.1517 WSEL= 642.25

3470 ENCROACHMENT STATIONS=		64.1	516.5	TYPE=	4	TARGET=	0.015		
XSEC 25 BTWN BARBED AND KRENS CABINS DS OF PUB ACC SITE DS OF NEWYGO									
73040.00	16.63	642.23	0.00	642.15	642.51	0.28	0.50	0.01	636.20
18800.	5.	16049.	2746.	12.	3615.	1087.	10934.	997.	633.30
5.58	0.40	4.44	2.53	0.100	0.042	0.038	0.000	625.60	64.06
0.000439	1200.	1140.	1100.	2	0	0	0.00	452.48	516.54

0
1490 NH CARD USED
*SECNO 73590.000
2800 NAT Q1= 9350.59 WSEL= 642.33 ENC Q1= 9350.59 WSEL= 642.43 RATIO= 0.0000
NAT Q1= 9460. RATIOS LOB,CH,ROB= 0.0169 0.9632 0.0198 WSEL= 642.43

3470 ENCROACHMENT STATIONS=		33.9	325.9	TYPE=	4	TARGET=	0.012		
XSEC 26 DS OF CO RD BRDG SEC BENT 45DEG RT OFF ED FILL AT STA 10									
BENT 45DEG RT TO RD FILL AT STA 325									
73590.00	18.32	642.42	0.00	642.33	642.75	0.34	0.23	0.02	632.90
18800.	212.	18243.	345.	107.	3866.	156.	10989.	1001.	632.40
5.41	1.98	4.72	2.21	0.047	0.038	0.059	0.000	624.10	33.90
0.000402	660.	550.	500.	2	0	0	0.00	291.99	325.89

0

*SECNO 73640.000
2800 NAT Q1= 9215.89 WSEL= 642.35 ENC Q1= 9313.49 WSEL= 642.45 RATIO= -0.0106
NAT Q1= 9313. RATIOS LOB,CH,ROB= 0.0000 1.0000 0.0000 WSEL= 642.45

3265 DIVIDED FLOW

1

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

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 652.00 MAX ELLC= 650.50

XSEC 27 CENTER OF BRDG ELLC AT 650.5

73640.00	17.04	642.44	0.00	642.35	642.78	0.34	0.02	0.00	652.00
18800.	0.	18800.	0.	0.	4026.	0.	10994.	1002.	652.00
5.42	0.00	4.67	0.00	0.000	0.034	0.000	0.000	625.40	0.00
0.000409	50.	50.	50.	0	0	0	0.00	290.00	296.00

0
*SECNO 73660.000
2800 NAT Q1= 9217.91 WSEL= 642.36 ENC Q1= 9322.15 WSEL= 642.46 RATIO= -0.0113
NAT Q1= 9322. RATIOS LOB,CH,ROB= 0.0000 1.0000 0.0000 WSEL= 642.46

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 652.00 MAX ELLC= 650.50

73660.00	17.04	642.44	0.00	642.36	642.78	0.34	0.01	0.00	652.00
18800.	0.	18800.	0.	0.	4028.	0.	10996.	1002.	652.00
5.42	0.00	4.67	0.00	0.000	0.034	0.000	0.000	625.40	0.00
0.000408	20.	20.	20.	0	0	0	0.00	290.00	296.00

0
*SECNO 73720.000
2800 NAT Q1= 7824.45 WSEL= 642.30 ENC Q1= 7824.45 WSEL= 642.40 RATIO= 0.0000
NAT Q1= 7936. RATIOS LOB,CH,ROB= 0.0360 0.9231 0.0408 WSEL= 642.40

3470 ENCROACHMENT STATIONS= 85.0 395.4 TYPE= 4 TARGET= 0.014

73720.00	17.08	642.38	0.00	642.30	642.85	0.47	0.03	0.04	634.70
18800.	581.	17575.	644.	202.	3104.	299.	11001.	1002.	632.30
5.42	2.88	5.66	2.15	0.047	0.034	0.059	0.000	625.30	84.95
0.000579	60.	60.	60.	2	0	0	0.00	310.49	395.44

0
1490 NR CARD USED
*SECNO 75140.000
2800 NAT Q1= 11503.56 WSEL= 643.11 ENC Q1= 11503.55 WSEL= 643.21 RATIO= 0.0000
NAT Q1= 11685. RATIOS LOB,CH,ROB= 0.2614 0.7381 0.0005 WSEL= 643.21

3470 ENCROACHMENT STATIONS= 170.1 1066.0 TYPE= 4 TARGET= 0.016

XSEC 29 SEWAGE TREATMENT PLANT IN LOB

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TCPWID	ENDST
75140.00	15.70	643.20	0.00	643.11	643.40	0.21	0.52	0.03	635.60
18800.	4698.	14102.	0.	4355.	3377.	0.	11171.	1020.	634.50
5.53	1.08	4.18	0.00	0.080	0.033	0.000	0.000	627.50	170.10
0.000268	1140.	1420.	1440.	2	0	0	0.00	895.90	1066.00

0

*SECNO 75800.000

2800 NAT Q1= 8044.65 WSEL= 643.16 ENC Q1= 8142.43 WSEL= 643.26 RATIO= -0.0122

NAT Q1= 8142. RATIOS LOB,CH,ROB= 0.0000 1.0000 0.0000 WSEL= 643.26

3280 CROSS SECTION 75800.00 EXTENDED 8.06 FEET

3470 ENCROACHMENT STATIONS= 1005.0 1264.0 TYPE= 4 TARGET= 0.000

XSEC 29A AT USGS CABLE

75800.00	15.06	643.26	0.00	643.16	643.72	0.46	0.24	0.08	636.00
18800.	0.	13800.	0.	0.	3444.	0.	11250.	1027.	635.20
5.57	0.00	5.46	0.00	0.000	0.034	0.000	0.000	628.20	1005.00
0.000571	540.	660.	700.	2	0	0	0.00	259.00	1264.00

0

1490 NH CARD USED

*SECNO 76350.000

2800 NAT Q1= 8452.32 WSEL= 643.59 ENC Q1= 8452.32 WSEL= 643.69 RATIO= 0.0000

NAT Q1= 8566. RATIOS LOB,CH,ROB= 0.0160 0.9739 0.0081 WSEL= 643.69

3470 ENCROACHMENT STATIONS= 13.0 337.3 TYPE= 4 TARGET= 0.013

XSEC 29B AT USGS GAGE 1976 STAGE IS 639.2 1986 STAGE 645.4

76350.00	13.88	643.68	0.00	643.59	644.03	0.34	0.29	0.01	634.70
18800.	223.	18552.	25.	81.	3921.	33.	11297.	1031.	634.60
5.60	2.75	4.73	0.67	0.084	0.038	0.101	0.000	629.80	13.04
0.000496	550.	550.	550.	2	0	0	0.00	324.25	337.29

0

*SECNO 76760.000

2800 NAT Q1= 9125.12 WSEL= 643.74 ENC Q1= 9125.11 WSEL= 643.84 RATIO= 0.0000

NAT Q1= 9242. RATIOS LOB,CH,ROB= 0.0093 0.9781 0.0127 WSEL= 643.84

3470 ENCROACHMENT STATIONS= 46.5 346.5 TYPE= 4 TARGET= 0.013

XSEC 30 1975 HWM IS 638.6 1976 HWM IS 639.2

76760.00	16.23	643.83	0.00	643.74	644.23	0.40	0.19	0.02	636.50
18800.	58.	18622.	120.	721.	3648.	126.	11334.	1034.	636.00
5.62	0.80	5.11	0.96	0.100	0.084	0.100	0.000	627.60	46.49
0.000426	350.	410.	450.	2	0	0	0.00	300.05	346.55

0

1

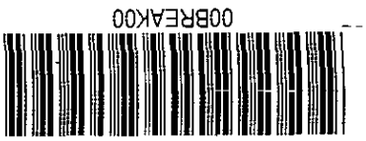


1) COUNTY: Newaygo

2) STUDY NAME: Bridgeton, Ashland, Garfield, Brooks Twp.

3) WATERCOURSE: Muskegan River

4) DOCUMENT TYPE: Flood Analysis Info only



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1**************************************************
 *  WATER SURFACE PROFILES                        *
 *  VERSION OF NOVEMBER 1976                      *
 *  UPDATED MAY 1984                              *
 *                                                *
 *  RUN DATE          TIME                        *
 **************************************************
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X      X  XXXXXXX   XXXXX                XXXXX
X      X  X        X     X             X     X
X      X  X        X                   X     X
XXXXXXX   XXXX     X           XXXXX    XXXXX
X      X  X        X                   X
X      X  X        X     X             X
X      X  XXXXXXX   XXXXX              XXXXXXX
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1


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**************************************
*  U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER *
*  609 SECOND STREET, SUITE D        *
*  DAVIS, CALIFORNIA 95616           *
*  (916) 440-2105 (FTS) 448-2105     *
**************************************
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Info only, not for flood profile


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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
**************************************************
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C
T1      FLOODPLAIN DELINEATION     USING 1986 HIGHWATER MARKS AS CALIBRATION
T2   CHANNEL XSEC FROM 1977 SURVEY    N INCREASED TO REFLECT MEANDER
T3      MUSKEGON RIVER  ESTIMATED CHANNEL EROSION  OVERY XSEC
```

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	0.	0.	0.	0.000250	0.00	0.0	18800.	619.000	0.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	0.000	0.000	-1.000	0.000	0.000	1.350	0.000	0.000	0.000	0.000

NC	0.100	0.150	0.023	0.100	0.300	0.000	0.000	0.000	0.000	0.000
KH	7.000	0.130	22.000	0.023	242.000	0.100	298.000	0.035	447.000	0.050
NH	570.000	0.100	789.000	0.050	852.000	0.000	0.000	0.000	0.000	0.000
		XSEC 51								
X1	0.100	25.000	22.000	242.000	0.000	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	818.000	0.000	0.000	613.300	0.000
GR	624.100	0.000	613.200	22.000	606.100	47.000	603.700	63.000	598.500	106.000

GR	601.000	136.000	602.600	166.000	603.200	196.000	604.200	226.000	606.100	237.000
GR	609.600	242.000	610.600	252.000	613.900	262.000	614.800	298.000	616.300	326.000
GR	616.300	383.000	615.000	447.000	612.000	492.000	611.700	570.000	611.500	635.000
GR	611.200	685.000	611.000	735.000	612.200	789.000	623.500	830.000	629.400	852.000
NH	4.000	0.150	22.000	0.023	242.000	0.150	298.000	0.100	852.000	0.000
	SEC 61 MOVED US INVERT ADJ BY .94FT FLOOD FLOW SHIFTED FROM									
	ROB AS NOTED ON XSEC 61 TO APPROX AREA IN LOB FOR THIS XSEC									
X1	1920.000	0.000	0.000	0.000	2170.000	1740.000	1920.000	0.000	0.940	0.000
X3	10.000	0.000	0.000	22.000	0.000	763.000	0.000	0.000	613.300	0.000
NH	3.000	0.050	37.000	0.023	311.000	0.050	341.000	0.000	0.000	0.000
	XSEC 62									
X1	3050.000	20.000	37.000	311.000	1200.000	1200.000	1130.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	17.000	0.000	328.000	0.000	0.000	0.000	0.000
GR	635.400	0.000	629.100	4.000	615.670	25.000	608.600	37.000	607.000	40.000
GR	605.200	55.000	604.000	64.000	600.400	74.000	601.000	106.000	605.100	146.000
GR	606.500	163.000	604.300	170.000	603.500	173.000	605.200	199.000	605.400	241.000
GR	606.000	267.000	605.700	285.000	606.700	297.000	609.000	311.000	629.600	341.000

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NH	3.000	0.017	37.000	0.023	311.000	0.017	341.000	0.000	0.000	0.000
	W EDGE OF BRIDGE DECK AT BRIDGETON 1976 HWM 615.7									
X1	3051.000	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	17.000	0.000	328.000	0.000	0.000	0.000	0.000
S3	0.900	1.250	2.600	1000.000	260.000	8.000	9000.000	1.430	604.500	604.500
X1	3100.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	635.400	638.000	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	17.000	0.000	328.000	0.000	0.000	0.000	0.000
NC	0.150	0.070	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	3101.000	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	17.000	0.000	328.000	0.000	0.000	0.000	0.000
NH	4.000	0.045	58.000	0.023	373.000	0.030	517.000	0.050	638.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 63									
X1	4680.000	20.000	58.000	373.000	1500.000	1600.000	1579.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	617.800	0.000
GR	625.300	0.000	617.700	15.000	608.500	58.000	607.300	76.000	604.400	82.000
GR	602.000	102.000	603.400	129.000	603.300	172.000	604.000	205.000	605.000	248.000
GR	605.600	274.000	606.300	289.000	607.300	356.000	616.000	373.000	617.700	382.000
GR	617.800	404.000	614.500	435.000	614.600	517.000	615.000	605.000	625.300	633.000
NH	5.000	0.150	19.000	0.150	424.000	0.100	562.000	0.023	788.000	0.040
NH	819.000	0.000	0.000	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
	XSEC 64		XSEC CROSSES US OF OLD ROCK CRIBBING							
X1	7200.000	28.000	562.000	788.000	2200.000	2500.000	2520.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	619.600	0.000	0.000
GR	625.700	0.000	616.300	19.000	613.400	58.000	614.400	124.000	614.000	224.000

GR	615.400	314.000	613.600	336.000	614.200	371.000	617.100	424.000	619.600	499.000
GR	619.100	557.000	619.000	562.000	615.800	573.000	608.900	578.000	606.500	582.000
GR	604.000	584.000	600.800	611.000	602.100	638.000	602.100	667.000	602.500	695.000
GR	602.900	724.000	605.500	752.000	605.900	773.000	607.000	780.000	607.690	785.000
GR	610.400	788.000	616.500	801.000	625.700	819.000	0.000	0.000	0.000	0.000
NH	4.000	0.050	39.000	0.025	295.000	0.150	788.000	0.040	924.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 65	XSEC CROSSES 100FT US OF BOAT LAUNCH								
X1	8850.000	30.000	39.000	326.000	1400.000	1600.000	1650.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	619.800	0.000
GR	626.000	0.000	624.200	8.000	621.800	35.000	619.300	39.000	610.900	58.000
GR	608.040	69.000	605.100	95.000	602.700	140.000	603.600	175.000	604.900	210.000
GR	605.100	245.000	605.800	260.000	608.040	293.000	611.700	295.000	612.100	304.000
GR	619.100	317.000	619.800	326.000	619.500	338.000	616.400	365.000	613.500	413.000
GR	612.100	478.000	612.000	548.000	612.100	588.000	612.300	638.000	612.500	688.000
GR	612.500	738.000	612.400	788.000	613.800	843.000	617.300	906.000	626.000	924.000

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NH	7.000	0.050	46.000	0.030	226.000	0.050	293.000	0.160	374.000	0.150
NH	564.000	0.080	1065.000	0.090	1244.000	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
		XSEC 66								
X1	10300.000	36.000	46.000	377.000	1500.000	700.000	1450.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	620.500	0.000
GR	526.500	0.000	620.600	29.000	612.500	38.000	611.100	46.000	608.200	50.000
GR	606.000	59.000	603.200	96.000	603.000	128.000	604.600	161.000	606.000	192.000
GR	607.100	210.000	607.800	225.000	609.300	226.000	610.200	241.000	610.000	249.000
GR	609.200	253.000	610.700	293.000	612.300	311.000	612.900	361.000	618.800	374.000
GR	620.600	377.000	618.900	385.000	618.600	443.000	616.800	529.000	611.500	564.000
GR	611.500	606.000	610.400	693.000	610.500	769.000	611.300	889.000	612.600	893.000
GR	612.700	1012.000	615.100	1065.000	615.500	1115.000	617.600	1165.000	620.400	1190.000
GR	626.500	1244.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.150	839.000	0.030	1059.000	0.150	1107.000	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
		XSEC 67								
X1	11800.000	25.000	816.000	1059.000	1600.000	1000.000	1500.000	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	626.700	0.000	620.500	108.000	616.700	155.000	613.700	255.000	613.500	355.000
GR	613.400	449.000	613.200	530.000	613.100	644.000	613.600	744.000	617.100	799.000
GR	619.800	813.000	619.600	813.000	612.500	825.000	612.100	839.000	608.730	842.000
GR	606.700	861.000	605.900	896.000	605.000	931.000	604.000	967.000	602.900	1002.000
GR	605.500	1037.000	608.730	1051.000	610.700	1059.000	617.400	1079.000	626.700	1107.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	12600.000	0.000	0.000	0.000	800.000	800.000	800.000	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
NH	3.000	0.100	113.000	0.030	363.000	0.150	748.000	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
		XSEC 68								

X1	14100.000	25.000	113.000	382.000	900.000	1600.000	1500.000	0.000	0.000	0.000
GR	627.100	0.000	622.000	15.000	617.600	39.000	620.100	70.000	619.800	88.000
GR	614.200	97.000	611.800	110.000	609.140	125.000	608.000	164.000	607.400	191.000
GR	606.700	205.000	606.300	247.000	604.000	320.000	605.000	330.000	607.500	345.000
GR	608.800	359.000	612.200	363.000	614.700	376.000	618.400	382.000	619.200	435.000
GR	616.000	501.000	615.700	543.000	615.400	633.000	616.200	693.000	627.100	748.000
NH	3.000	0.150	922.000	0.022	1120.000	0.060	1143.000	0.000	0.000	0.000
ET	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 69								
X1	16700.000	28.000	844.000	1120.000	300.000	1900.000	2600.000	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	627.600	0.000	618.800	35.000	616.900	133.000	615.200	230.000	614.100	323.000
GR	613.700	410.000	613.400	515.000	617.800	553.000	613.300	663.000	614.200	712.000
GR	617.800	785.000	621.800	844.000	620.300	868.000	619.800	902.000	618.900	909.000
GR	612.400	922.000	609.640	924.000	607.900	938.000	607.300	954.000	604.700	983.000
GR	604.000	1012.000	605.600	1041.000	607.200	1070.000	608.500	1074.000	609.640	1102.000
GR	613.800	1120.000	620.300	1131.000	627.600	1143.000	0.000	0.000	0.000	0.000

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NC	0.040	0.060	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 1 FROM SUBDIVISION FILE F184 22 12								
X1	18990.000	24.000	257.000	570.000	1250.000	2500.000	2190.000	0.000	0.000	0.000
GR	633.400	0.000	629.500	30.000	628.200	106.000	619.400	130.000	617.400	180.000
GR	617.300	218.000	618.000	225.000	618.900	250.000	611.800	257.000	606.900	257.000
GR	606.000	300.000	606.600	325.000	606.900	350.000	606.400	375.000	606.800	475.000
GR	609.000	527.000	610.300	550.000	612.700	570.000	620.500	580.000	620.200	600.000
GR	618.700	625.000	619.300	640.000	623.700	660.000	630.000	677.000	0.000	0.000
NH	6.000	0.150	43.000	0.030	115.000	0.028	155.000	0.030	529.000	0.025
NH	703.000	0.150	756.000	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
		XSEC 70 THROUGH SUBDIV ON LEFT BANK CHANNEL INEFFECTIVE								
		1976 HWM ON BASEMENT WALL 619.8 H&H 300FT DS 619.98								
X1	19870.000	30.000	529.000	703.000	950.000	980.000	1000.000	0.000	0.000	0.000
GR	628.500	0.000	620.000	25.000	620.400	217.000	630.000	217.000	630.000	250.000
GR	620.400	250.000	621.500	306.000	621.500	306.100	621.500	306.200	621.500	306.300
GR	616.900	332.000	617.500	396.000	619.700	432.000	619.900	465.000	618.400	476.000
GR	619.800	489.000	619.300	503.000	613.800	519.000	612.400	529.000	608.700	558.000
GR	607.600	569.000	607.100	595.000	605.600	620.000	605.200	646.000	606.500	671.000
GR	610.500	697.000	612.800	703.000	614.200	713.000	621.400	735.000	628.500	756.000
NH	6.000	0.060	125.000	0.150	223.000	0.025	406.000	0.045	412.000	0.030
NH	503.000	0.100	800.000	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
		XSEC 71 OLDER COTTAGES ON RT BANK SEAWALL PROTECTS RT BANK								
X1	21370.000	27.000	223.000	412.000	1100.000	1600.000	1500.000	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	628.800	0.000	622.900	18.000	615.900	38.000	616.300	61.000	619.200	83.000
GR	619.300	101.000	613.900	123.000	614.400	153.000	611.200	205.000	612.400	223.000
GR	610.500	231.000	609.200	247.000	609.100	269.000	608.000	285.000	607.000	325.000
GR	605.700	366.000	605.100	406.000	619.800	412.000	617.700	472.000	616.000	542.000

GR	615.200	588.000	616.800	603.000	615.000	618.000	615.300	673.000	615.400	724.000
GR	617.900	756.000	628.800	800.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	7.000	0.100	27.000	0.150	125.000	0.150	464.000	0.030	663.000	0.050
NH	829.000	0.030	891.000	0.100	929.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 72								
X1	24985.000	28.000	441.000	663.000	3700.000	3600.000	3615.000	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	629.900	0.000	620.800	27.000	616.000	56.000	614.700	125.000	615.100	191.000
GR	615.400	253.000	616.600	344.000	617.400	402.000	620.300	441.000	619.700	456.000
GR	615.000	459.000	613.500	464.000	609.200	488.000	607.500	500.000	607.100	531.000
GR	607.100	561.000	609.400	592.000	609.800	622.000	609.800	653.000	614.700	663.000
GR	614.900	690.000	619.200	705.000	619.200	709.000	617.100	744.000	618.800	772.000
GR	619.700	829.000	622.400	891.000	629.900	929.000	0.000	0.000	0.000	0.000

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NH	4.000	0.040	23.000	0.150	425.000	0.030	658.000	0.080	688.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 73								
X1	28235.000	20.000	371.000	658.000	2300.000	3300.000	3200.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	623.500	0.000	0.000
GR	630.700	0.000	623.000	23.000	620.000	38.000	617.800	148.000	619.000	203.000
GR	620.700	242.000	622.300	309.000	623.500	371.000	619.300	402.000	619.500	425.000
GR	612.400	436.000	610.400	445.000	610.200	485.000	610.200	526.000	609.000	566.000
GR	608.000	630.000	612.500	643.000	616.700	658.000	619.100	665.000	630.700	688.000
NH	3.000	0.150	51.000	0.030	275.000	0.150	536.000	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
		XSEC 74 IN LINE WITH E SIDE OF COTTAGE ON TOP OF LFT BANK JUST US OF POWERLINE								
X1	29860.000	16.000	51.000	275.000	1500.000	1700.000	1625.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	622.800	0.000
GR	631.400	0.000	616.200	51.000	613.400	53.000	610.100	65.000	608.100	104.000
GR	609.500	143.000	610.600	183.000	611.300	222.000	612.300	235.000	611.900	256.000
GR	615.200	275.000	620.600	293.000	622.800	313.000	620.400	375.000	622.800	484.000
GR	631.400	516.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.150	220.000	0.100	279.000	0.030	545.000	0.080	633.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 75								
X1	31660.000	23.000	279.000	545.000	1700.000	1800.000	1800.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	623.500	0.000	0.000
GR	632.100	0.000	623.900	49.000	621.600	74.000	621.500	112.000	622.100	178.000
GR	623.200	213.000	623.500	220.000	623.600	276.000	623.300	279.000	615.700	289.000
GR	614.100	292.000	610.600	300.000	609.700	328.000	608.700	376.000	610.500	420.000
GR	612.000	477.000	612.500	529.000	614.100	585.000	617.100	545.000	620.200	576.000
GR	622.300	585.000	624.200	609.000	662.100	633.000	0.000	0.000	0.000	0.000
NH	5.000	0.155	33.000	0.035	238.000	0.150	383.000	0.120	785.000	0.060
NH	819.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 76								

X1	35425.000	21.000	33.000	289.000	4300.000	3600.000	3760.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	20.000	0.000	790.000	0.000	0.000	0.000	0.000
GR	633.200	0.000	626.400	20.000	621.200	33.000	615.100	38.000	611.200	51.000
GR	610.000	90.000	609.000	123.000	609.200	157.000	610.800	180.000	615.200	207.000
GR	617.000	217.000	621.600	238.000	625.300	289.000	625.200	316.000	620.400	383.000
GR	619.800	482.000	620.200	583.000	620.100	683.000	620.900	760.000	621.900	785.000
GR	633.200	819.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.150	29.000	0.150	570.000	0.150	849.000	0.035	1017.000	0.150
NH	1047.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 77								
X1	37670.000	31.000	349.000	1017.000	1900.000	2100.000	2150.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	20.000	0.000	1035.000	0.000	0.000	0.000	0.000
GR	633.800	0.000	624.300	19.000	620.600	29.000	619.300	128.000	619.000	224.000
GR	619.100	314.000	619.300	391.000	621.400	419.000	619.700	468.000	620.200	570.000
GR	621.600	607.000	625.100	657.000	625.800	712.000	626.700	761.000	621.900	792.000
GR	621.900	816.000	625.300	823.000	625.200	839.000	624.500	844.000	622.700	849.000
GR	618.200	856.000	615.800	864.000	613.800	886.000	611.300	916.000	608.000	944.000

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GR	609.100	977.000	615.400	1009.000	619.100	1014.000	623.700	1017.000	630.100	1033.000
GR	633.800	1047.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.100	32.000	0.030	332.000	0.150	424.000	0.150	488.000	0.070
NH	779.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 78 800FT DS OF ISLAND, POWERLINE CROSSING AND BOAT LAUNCH								
		WEST END OF OLD GRAVEL OPERATION								
X1	38970.000	22.000	32.000	332.000	700.000	1300.000	1300.000	0.000	0.000	0.000
X3	0.000	10.000	0.000	20.000	0.000	760.000	0.000	0.000	624.800	0.000
GR	634.200	0.000	626.800	24.000	621.800	32.000	617.700	50.000	616.250	52.000
GR	614.400	64.000	611.900	110.000	612.600	173.000	613.700	258.000	614.300	311.000
GR	622.500	322.000	624.800	332.000	624.100	365.000	623.300	382.000	622.900	424.000
GR	621.100	449.000	620.600	488.000	620.400	538.000	620.000	638.000	620.600	743.000
GR	625.000	760.000	634.300	779.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.150	25.000	0.020	186.000	0.150	258.000	0.080	531.000	0.000
		XSEC 1								
X1	42170.000	27.000	25.000	186.000	3600.000	3000.000	3200.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	15.000	0.000	510.000	0.000	0.000	628.000	0.000
GR	634.000	0.000	626.900	14.000	623.300	22.000	622.400	25.000	619.100	26.000
GR	616.400	31.000	613.800	40.000	612.800	63.000	611.000	87.000	611.000	91.000
GR	612.000	135.000	613.500	161.000	614.900	163.000	616.300	174.000	617.600	179.000
GR	625.900	186.000	626.800	191.000	624.600	201.000	627.900	230.000	627.900	258.000
GR	621.800	324.000	620.900	364.000	623.600	379.000	622.600	425.000	621.000	451.000
GR	626.000	516.000	634.000	531.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.090	19.000	0.075	58.000	0.025	223.000	0.070	308.000	0.150
NH	373.000	0.080	479.000	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
		XSEC 2								
X1	43770.000	26.000	58.000	223.000	1200.000	1800.000	1600.000	0.000	0.000	0.000
GR	634.000	0.000	628.600	19.000	626.000	35.000	623.000	55.000	622.300	58.000
GR	619.700	59.000	616.800	62.000	613.800	75.000	612.400	105.000	612.400	133.000

GR	613.100	159.000	613.500	185.000	614.400	207.000	616.800	219.000	618.300	223.000
GR	618.300	250.000	619.900	258.000	619.200	266.000	619.300	288.000	619.500	295.000
GR	624.700	308.000	623.900	347.000	625.100	373.000	624.300	409.000	626.600	459.000
GR	639.100	479.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.150	12.000	0.150	214.000	0.035	317.000	0.065	357.000	0.035
NH	533.000	0.150	702.000	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
		XSEC 3 SECTION THRU ISLAND NE OF OLD GRAVEL OPERATION								
X1	44820.000	29.000	214.000	533.000	1100.000	1100.000	1050.000	0.000	0.000	0.000
GR	635.000	0.000	629.000	12.000	626.200	72.000	624.900	94.000	622.300	107.000
GR	622.900	145.000	623.300	186.000	624.400	199.000	624.700	214.000	618.000	226.000
GR	617.000	241.000	616.500	258.000	616.900	292.000	617.900	313.000	622.400	317.000
GR	624.400	342.000	622.000	357.000	616.900	361.000	615.100	402.000	613.900	430.000
GR	612.200	458.000	612.200	487.000	613.000	507.000	616.900	513.000	625.300	533.000
GR	627.500	554.000	623.300	660.000	628.100	680.000	635.000	702.000	0.000	0.000

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NH	4.000	0.150	22.000	0.150	252.000	0.035	478.000	0.150	626.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 4 OLD WOOD PILING ALONG EACH BANK								
X1	45470.000	28.000	252.000	478.000	550.000	650.000	650.000	0.000	0.000	0.000
GR	635.400	0.000	627.200	22.000	625.100	52.000	625.500	83.000	625.500	136.000
GR	627.800	157.000	625.300	180.000	626.700	223.000	628.200	248.000	627.700	252.000
GR	625.700	256.000	619.300	262.000	616.300	269.000	615.000	274.000	614.300	280.000
GR	614.300	312.000	614.300	341.000	614.300	371.000	614.100	395.000	614.000	417.000
GR	613.600	442.000	613.400	460.000	617.400	470.000	624.500	478.000	627.100	487.000
GR	628.600	508.000	632.100	558.000	640.000	626.000	0.000	0.000	0.000	0.000
NH	5.000	0.150	23.000	0.100	281.000	0.035	465.000	0.070	473.000	0.060
NH	497.000	0.000	0.000	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
		XSEC 5 SILL AT RIGHT BANK IS ERODING								
X1	46870.000	24.000	281.000	465.000	1280.000	1575.000	1300.000	0.000	0.000	0.000
GR	642.500	0.000	631.000	23.000	626.000	56.000	627.400	89.000	624.500	131.000
GR	626.300	179.000	629.300	237.000	628.100	250.000	627.700	259.000	623.100	270.000
GR	622.100	281.000	618.400	284.000	616.800	299.000	616.300	319.000	614.400	347.000
GR	614.000	370.000	612.600	395.000	612.500	421.000	615.600	447.000	618.200	461.000
GR	621.300	465.000	622.600	473.000	626.700	479.000	636.000	497.000	0.000	0.000
NH	4.000	0.100	36.000	0.030	91.000	0.036	352.000	0.100	458.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 6								
X1	48720.000	20.000	91.000	352.000	1500.000	2000.000	1850.000	0.000	0.000	0.000
GR	637.000	0.000	624.900	36.000	626.500	72.000	626.800	91.000	618.000	104.000
GR	618.000	104.000	616.800	116.000	615.500	148.000	615.200	198.000	615.500	248.000
GR	616.000	298.000	617.500	348.000	618.300	350.000	620.600	352.000	619.700	356.000
GR	617.200	373.000	616.700	386.000	617.300	407.000	628.500	434.000	637.000	458.000
NH	4.000	0.150	20.000	0.030	532.000	0.036	691.000	0.050	738.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 7								

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X1  50220.000    23.000   532.000   691.000  1300.000  1300.000  1500.000     0.000     0.000     0.000
GR    636.500     0.000   626.900    20.000   627.600   158.000   628.000   233.000   624.200   282.000
GR    627.400   347.000   626.500   451.000   624.900   479.000   626.600   525.000   626.300   532.000
GR    621.100   542.000   619.500   548.000   618.600   555.000   617.500   558.000   616.000   581.000
GR    612.700   605.000   611.700   628.000   611.900   652.000   616.000   675.000   619.600   688.000
GR    623.100   691.000   627.700   707.000   636.500   738.000     0.000     0.000     0.000     0.000

NH      3.000     0.020   124.000     0.035   312.000     0.150  1290.000     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
          XSEC 8    VICS CAMPING ON RIGHT BANK  CAMPGROUND IS ON A HILL
                WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.
X1  51945.000    27.000   124.000   312.000  1300.000  1500.000  1725.000     0.000     0.000     0.000
GR    637.100     0.000   634.700    32.000   637.200   111.000   637.600   124.000   625.400   138.000
GR    620.200   149.000   617.600   158.000   613.400   181.000   614.900   201.000   616.600   222.000
GR    616.600   247.000   618.300   254.000   619.300   271.000   620.200   290.000   622.100   297.000
GR    623.300   303.000   629.400   312.000   630.000   320.000   625.400   367.000   627.200   392.000
GR    627.000   411.000   628.300   425.000   629.500   454.000   628.600   560.000   629.000   650.000
GR    629.000  1250.000   639.000  1290.000     0.000     0.000     0.000     0.000     0.000     0.000
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NH      6.000     0.120   860.000     0.025   887.000     0.025  1032.000     0.100  1084.000     0.025
NH   1192.000     0.125  1700.000     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
          XSEC 9  SECTION THROUGH ISLAND US OF VICS
        XSEC BENT 30DEG LFT AT 887  20DEG RT AT STA 1208
X1  53000.000    39.000   887.000  1192.000  1200.000   500.000  1055.000     0.000     0.000     0.000
X2      0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000    15.000
X3      0.000     0.000     0.000   350.000     0.000     0.000     0.000     0.000     0.000     0.000
GR    638.500     0.000   628.500    50.000   625.000   100.000   624.700   650.000   624.900   705.000
GR    624.900   728.000   626.700   760.000   627.500   815.000   629.000   860.000   626.200   872.000
GR    625.000   887.000   620.400   892.000   616.900   893.000   616.700   922.000   617.500   947.000
GR    617.600   974.000   617.700  1001.000   620.400  1025.000   623.600  1032.000   624.400  1035.000
GR    623.600  1061.000   624.300  1078.000   625.200  1084.000   620.400  1093.000   617.900  1101.000
GR    616.200  1122.000   616.800  1143.000   616.000  1165.000   615.600  1185.000   619.600  1190.000
GR    623.000  1192.000   624.500  1203.000   629.500  1208.000   629.000  1226.000   628.200  1240.000
GR    629.900  1290.000   629.100  1350.000   629.100  1650.000   638.500  1700.000     0.000     0.000

NH      6.000     0.120  1340.000     0.060  1420.000    10.000  1480.000     0.060  1557.000     0.025
NH   1730.000     0.125  1740.000     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
          XSEC 10  REDWOOD COTTAGE ON LEFT BANK  1976 HWM 630.5
          1986 HWM 638    XSEC BENT 45DEG LEFT AT STA 1360
X1  53700.000    24.000  1557.000  1730.000   400.000   750.000   700.000     0.000     0.000     0.000
X2      0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000    15.000
X3      0.000     0.000     0.000   300.000     0.000     0.000     0.000     0.000     0.000     0.000
GR    639.000     0.000   628.500    50.000   625.000   100.000   625.000  1340.000   628.300  1360.000
GR    627.200  1377.000   628.700  1420.000   628.800  1480.000   629.000  1500.000   629.200  1531.000
GR    627.400  1545.000   626.800  1550.000   626.200  1557.000   620.600  1568.000   617.900  1567.000
GR    616.800  1600.000   616.500  1624.000   616.100  1662.000   616.500  1688.000   618.100  1717.000
GR    620.700  1725.000   629.200  1730.000   632.100  1733.000   639.000  1740.000     0.000     0.000

NH      7.000     0.200  1399.000     0.050  1784.000     0.025  1957.000    10.000  1998.000     0.025
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 NH   2062.000     0.030   2221.000     0.040   2250.000     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
                XSEC 10A NEAR WHITE COTTAGE(BRONKEMA)  1976HWM 630.9 IN GARAGE
                XSEC BENT 5DEG RT AT STA 139.9  RESTRICTED FOR HIGH GROUND AT
                XSEC 11 US      1986 HWM 638
 X1  54600.000    35.000   2062.000   2221.000   500.000  1000.000   900.000     0.000     0.000     0.000
 X2      0.000     0.000      0.000      0.000     0.000     0.000     0.000     0.000     0.000    15.000
 X3      0.000     0.000      0.000    750.000     0.000     0.000     0.000     0.000     0.000     0.000
 GR    639.000     0.000    628.500     50.000   625.000   449.000   623.000   649.000   624.000   949.000
 GR    623.000  1049.000    627.100   1352.000   628.200  1399.000   629.300  1508.000   626.700  1597.000
 GR    630.100  1644.000    630.500   1755.000   628.100  1784.000   629.900  1846.000   628.500  1888.000
 GR    628.600  1917.000    628.100   1957.000   629.600  1966.000   630.400  1998.000   629.800  2041.000
 GR    629.100  2060.000    628.700   2062.000   625.300  2068.000   624.500  2074.000   621.000  2079.000
 GR    620.500  2099.000    617.500   2119.000   617.000  2123.000   615.500  2145.000   614.000  2167.000
 GR    613.000  2190.000    616.300   2215.000   621.000  2221.000   632.100  2238.000   639.000  2250.000
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                                                                                          PAGE    9

 NH      6.000     0.013    600.000      0.025   700.000    10.000   750.000     0.025   817.000     0.030
 NH    961.000     0.040    978.000      0.000     0.000     0.000     0.000     0.000     0.000     0.000
                XSEC 10B LOB IS FELCH ROAD
 X1  55080.000    21.000    817.000    961.000   250.000   550.000   480.000     0.000     0.000     0.000
 X2      0.000     0.000      0.000      0.000     0.000     0.000     0.000     0.000     0.000     0.000
 GR    640.000     0.000    633.100    100.000   631.300   200.000   631.600   300.000   631.400   400.000
 GR    631.100   500.000    631.100    600.000   629.900   700.000   629.300   750.000   628.700   800.000
 GR    625.300   806.000    624.500    812.000   621.000   817.000   619.700   857.000   615.400   885.000
 GR    613.300   907.000    614.000    930.000   615.800   955.000   621.300   961.000   632.100   978.000
 GR    639.000   990.000      0.000      0.000     0.000     0.000     0.000     0.000     0.000     0.000

 NH      5.000     0.029   1169.000      0.080  1546.000    10.000  1651.000     0.080  1946.000     0.100
 NH   2105.000     0.030      0.000      0.000     0.000     0.000     0.000     0.000     0.000     0.000
                XSEC 11  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
 X1  55800.000    23.000   1000.000   1169.000   150.000   450.000   720.000     0.000     0.000     0.000
 X2      0.000     0.000      0.000      0.000     0.000     0.000     0.000     0.000     0.000    15.000
 X3      0.000     0.000      0.000      0.000     0.000  1900.000     0.000     0.000     0.000     0.000
 GR    627.700  1000.000    623.000   1014.000   621.400  1015.000   619.400  1026.000   618.800  1039.000
 GR    618.500  1051.000    616.500   1075.000   615.700  1100.000   616.500  1125.000   618.400  1148.000
 GR    621.400  1154.000    628.600   1169.000   630.100  1172.000   629.800  1185.000   630.200  1237.000
 GR    629.500  1320.000    630.100   1454.000   630.700  1546.000   630.800  1651.000   629.700  1819.000
 GR    629.600  1946.000    628.200   2070.000   640.000  2105.000     0.000     0.000     0.000     0.000

 NH      6.000     0.070     22.000      0.035   220.000     0.080   457.000    10.000   560.000     0.080
 NH    958.000     0.100   1592.000      0.000     0.000     0.000     0.000     0.000     0.000     0.000
                XSEC 12
 X1  56800.000    31.000     22.000    222.000  1200.000    50.000  1000.000     0.000     0.000     0.000
 X2      0.000     0.000      0.000      0.000     0.000     0.000     0.000     0.000     0.000    15.000
 X3      0.000     0.000      0.000      0.000     0.000  1630.000     0.000     0.000     0.000     0.000
 GR    640.000     0.000    629.300     13.000   621.700    22.000   619.100    29.000   616.300    53.000
 GR    614.600    81.000    617.100    107.000   619.100   131.000   620.300   141.000   621.600   147.000
 GR    622.800   152.000    624.300    171.000   626.700   187.000   630.000   222.000   629.900   245.000
 GR    628.800   350.000    630.100    457.000   630.700   560.000   630.600   660.000   629.900   758.000
 GR    629.600   865.000    629.800    958.000   630.100  1010.000   629.500  1093.000   630.100  1227.000
 GR    630.700  1319.000    630.800   1424.000   629.700  1592.000   629.600  1719.000   628.200  1843.000
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GR	640.000	1878.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	10.000	0.070	30.000	0.045	857.000	0.030	987.000	0.080	1061.000	0.030
NH	1175.000	0.055	1189.000	10.000	1245.000	0.055	1606.000	10.000	1711.000	0.075
NH	2165.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND									
	1976 HHM 631.9									
X1	57650.000	32.000	857.000	1180.000	500.000	50.000	850.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	0.000	0.000	1910.000	0.000	0.000	0.000	0.000
GR	640.000	0.000	630.000	30.000	629.200	845.000	622.000	857.000	618.500	869.000
GR	618.500	879.000	618.500	914.000	620.000	968.000	622.700	987.000	627.000	991.000
GR	625.500	1007.000	627.300	1014.000	627.300	1045.000	628.000	1054.000	624.400	1061.000
GR	623.500	1087.000	622.000	1117.000	618.100	1144.000	615.900	1168.000	620.400	1175.000
GR	626.500	1180.000	629.700	1189.000	629.700	1245.000	630.200	1297.000	629.500	1380.000
GR	630.100	1514.000	630.700	1606.000	630.800	1711.000	629.700	1879.000	629.600	2006.000
GR	628.200	2130.000	640.000	2165.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	4.000	0.070	50.000	0.048	1106.000	0.036	1285.000	0.150	1300.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 14 XSEC BENT 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB									
X1	58350.000	20.000	1106.000	1285.000	500.000	400.000	700.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	640.500	0.000	633.000	50.000	630.100	100.000	628.600	400.000	630.300	731.000
GR	631.100	918.000	630.700	1077.000	630.500	1106.000	623.300	1125.000	621.600	1126.000
GR	616.400	1138.000	616.300	1158.000	617.500	1185.000	619.500	1212.000	619.900	1243.000
GR	619.900	1269.000	620.900	1277.000	622.400	1282.000	629.500	1285.000	640.500	1300.000
NH	4.000	0.060	1150.000	0.034	1389.000	0.100	1513.000	0.100	1550.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 15									
X1	58900.000	21.000	1150.000	1389.000	450.000	700.000	550.000	0.000	0.000	0.000
GR	640.600	0.000	633.000	50.000	632.000	100.000	632.200	1130.000	632.000	1143.000
GR	631.800	1187.000	631.500	1150.000	627.000	1153.000	622.700	1162.000	618.400	1183.000
GR	620.600	1201.000	620.700	1225.000	619.900	1257.000	618.700	1289.000	616.600	1317.000
GR	616.500	1342.000	618.100	1367.000	629.000	1389.000	629.000	1447.000	631.300	1513.000
GR	640.600	1550.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.120	32.000	0.040	44.000	0.035	200.000	0.120	800.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 16									
X1	60000.000	17.000	44.000	200.000	1000.000	700.000	1100.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	641.400	0.000	631.000	32.000	630.500	36.000	628.800	38.000	628.000	44.000
GR	623.200	47.000	620.300	55.000	617.400	79.000	617.600	103.000	619.000	129.000
GR	620.700	154.000	621.200	168.000	623.300	175.000	626.500	187.000	632.600	200.000
GR	633.100	750.000	641.400	800.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.098	144.000	0.028	422.000	0.089	543.000	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
	XSEC 17 SUBDIVISION ON LEFT BANK									

X1	62250.000	28.000	144.000	422.000	2400.000	1700.000	2225.000	0.000	0.000	0.000
GR	642.800	0.000	638.600	26.000	632.600	88.000	631.600	113.000	632.500	125.000
GR	632.900	144.000	630.900	153.000	625.400	159.000	624.200	161.000	622.000	173.000
GR	621.800	181.000	622.100	193.000	621.400	243.000	620.500	280.000	619.700	313.000
GR	620.200	350.000	621.800	365.000	624.300	384.000	625.000	394.000	624.200	399.000
GR	629.100	422.000	630.300	424.000	629.700	435.000	629.500	468.000	627.800	492.000
GR	629.000	518.000	637.300	534.000	641.600	543.000	0.000	0.000	0.000	0.000
NH	3.000	0.089	32.000	0.028	256.000	0.110	448.000	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	63120.000	22.000	32.000	256.000	970.000	970.000	970.000	0.000	0.000	0.000
GR	643.800	0.000	638.500	14.000	631.400	30.000	630.400	32.000	624.700	34.000
GR	623.000	39.000	618.500	50.000	618.400	82.000	620.000	117.000	621.800	152.000
GR	623.400	187.000	624.100	194.000	624.900	227.000	626.700	235.000	625.400	245.000
GR	625.800	251.000	633.100	256.000	634.000	265.000	633.700	298.000	633.400	322.000
GR	632.300	372.000	643.800	448.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	4.000	0.074	175.000	0.110	216.000	0.028	421.000	0.089	485.000	0.000
X1	65620.000	27.000	216.000	421.000	1900.000	1900.000	1900.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	20.000	0.000	470.000	0.000	0.000	0.000	0.000
GR	642.200	0.000	631.500	53.000	632.000	98.000	634.500	153.000	635.700	175.000
GR	634.000	196.000	633.000	205.000	629.800	216.000	626.100	219.000	624.900	230.000
GR	623.100	238.000	622.500	261.000	621.900	290.000	621.400	307.000	620.900	333.000
GR	620.700	363.000	623.000	397.000	625.200	408.000	628.300	421.000	630.100	425.000
GR	631.000	431.000	631.400	442.000	630.900	455.000	631.800	462.000	634.200	474.000
GR	637.700	479.000	642.200	485.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.074	10.000	0.030	59.000	0.028	295.000	0.110	455.000	0.000

XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK

X1	67420.000	21.000	59.000	295.000	2400.000	2500.000	2500.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	10.000	0.000	420.000	0.000	0.000	0.000	0.000
GR	642.900	0.000	638.600	10.000	634.000	20.000	633.200	32.000	632.500	54.000
GR	631.800	59.000	627.800	62.000	624.500	73.000	621.300	86.000	620.200	100.000
GR	619.300	129.000	620.900	154.000	623.200	194.000	624.000	218.000	626.100	267.000
GR	627.700	281.000	633.700	295.000	636.100	299.000	633.000	345.000	634.900	415.000
GR	642.900	455.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.063	270.000	0.028	518.000	0.074	575.000	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

XSEC 21 US OF GREEN COTTAGE ON LEFT BANK

X1	68970.000	25.000	270.000	518.000	1400.000	1700.000	1550.000	0.000	0.000	0.000
GR	643.500	0.000	640.700	10.000	637.400	124.000	635.700	212.000	635.500	246.000
GR	633.700	255.000	631.500	270.000	625.500	277.000	626.300	293.000	625.100	303.000
GR	625.600	320.000	623.800	336.000	622.500	346.000	622.500	363.000	622.400	385.000
GR	622.500	421.000	622.500	429.000	623.000	450.000	622.700	481.000	625.300	499.000
GR	626.600	505.000	628.300	518.000	633.700	529.000	636.400	550.000	643.500	575.000
NH	3.000	0.037	126.000	0.028	408.000	0.037	426.000	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

XSEC 22 BELOW POWER LINE CROSSING N VALUES ARE ATYPICAL

X1	70300.000	25.000	126.000	408.000	1300.000	1300.000	1330.000	0.000	0.000	0.000

GR	644.400	0.000	640.000	15.000	635.000	24.000	631.600	40.000	632.700	54.000
GR	631.200	73.000	634.100	113.000	634.200	123.000	633.800	126.000	631.700	136.000
GR	625.200	144.000	624.400	160.000	624.500	183.000	623.700	194.000	624.000	214.000
GR	624.900	266.000	624.400	300.000	624.100	307.000	624.100	336.000	624.400	359.000
GR	626.200	383.000	628.600	389.000	632.300	408.000	639.400	417.000	644.400	426.000
NH	4.000	0.089	30.000	0.033	98.000	0.028	323.000	0.074	375.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	71300.000	22.000	98.000	328.000	1000.000	1000.000	1000.000	0.000	0.000	0.000
GR	645.100	0.000	636.000	30.000	633.300	71.000	633.900	79.000	633.600	98.000
GR	631.700	101.000	629.900	108.000	627.100	111.000	625.100	114.000	624.600	144.000
GR	625.000	154.000	623.900	163.000	622.700	193.000	622.100	217.000	622.100	235.000
GR	623.200	271.000	624.500	300.000	626.000	311.000	630.200	323.000	635.800	333.000
GR	637.600	354.000	645.100	375.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	4.000	0.074	67.000	0.035	100.000	0.030	320.000	0.089	408.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	71900.000	25.000	100.000	320.000	500.000	650.000	600.000	0.000	0.000	0.000
GR	646.100	0.000	638.500	21.000	636.100	48.000	634.200	56.000	634.500	67.000
GR	632.700	69.000	631.400	88.000	630.600	99.000	630.000	100.000	627.700	103.000
GR	625.800	109.000	625.500	118.000	624.600	150.000	624.600	178.000	624.000	225.000
GR	624.700	274.000	625.600	291.000	627.100	313.000	630.500	320.000	632.700	335.000
GR	630.900	343.000	632.400	355.000	633.200	361.000	639.400	389.000	645.200	408.000
NH	4.000	0.074	66.000	0.031	311.000	0.028	757.000	0.059	767.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 25 BTWN BARBER AND KRING CABINS US OF PUB ACC SITE DS OF NEWYGO

X1	73040.000	20.000	66.000	311.000	1200.000	1100.000	1140.000	0.000	0.000	0.000
GR	646.600	0.000	641.900	15.000	639.200	30.000	636.200	66.000	627.100	82.000
GR	626.400	124.000	625.600	147.000	625.400	215.000	626.000	268.000	628.000	301.000
GR	633.300	311.000	636.600	328.000	636.700	343.000	636.400	418.000	637.600	472.000
GR	639.500	526.000	641.300	559.000	644.800	520.000	650.800	757.000	655.800	767.000
NH	3.000	0.035	49.000	0.028	310.000	0.044	335.000	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

XSEC 26 DS OF CO RD BRDG SEC BENT 45DEG RT OFF RD FILL AT STA 10
BENT 45DEG RT TO RD FILL AT STA 325

X1	73590.000	21.000	49.000	310.000	660.000	500.000	550.000	0.000	0.000	0.000
GR	646.800	0.000	643.800	10.000	637.000	32.000	635.600	41.000	634.300	47.000
GR	632.900	49.000	628.800	65.000	624.100	82.000	626.000	105.000	625.000	113.000
GR	625.500	121.000	625.800	133.000	625.800	162.000	625.800	175.000	628.400	211.000
GR	626.600	244.000	627.000	272.000	628.400	304.000	632.400	310.000	632.700	325.000
GR	646.800	335.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.035	0.044	0.025	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

XSEC 27 CENTER OF BRDG ELLC AT 650.5

X1	73640.000	31.000	0.000	296.000	50.000	50.000	50.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	650.500	652.000	0.000	0.000	0.000	0.000	0.000
GR	652.000	0.000	638.800	0.000	631.300	35.000	629.200	36.000	628.870	43.000
GR	625.700	60.000	625.500	80.000	625.500	90.000	627.500	95.000	628.000	100.000

GR	626.700	107.000	625.600	117.000	625.100	128.000	625.800	138.000	628.000	146.000
GR	652.000	146.000	652.000	152.000	628.000	152.000	627.800	163.000	627.300	167.000
GR	625.800	182.000	625.600	197.000	625.500	208.000	625.500	215.000	624.800	240.000
GR	625.500	250.000	625.500	264.000	633.000	275.000	632.900	290.000	634.800	296.000
GR	652.000	296.000	0.000	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	73660.000	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	650.500	652.000	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	73720.000	21.000	110.000	353.000	60.000	60.000	60.000	0.000	0.000	0.000
GR	653.300	0.000	647.000	44.000	641.700	71.000	634.800	88.000	633.600	99.000
GR	634.700	110.000	631.500	120.000	629.100	123.000	627.000	153.000	625.400	168.000
GR	625.800	202.000	625.200	220.000	624.300	240.000	626.700	278.000	627.300	306.000
GR	639.000	336.000	632.300	353.000	635.400	373.000	640.000	414.000	645.500	492.000
GR	650.000	523.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	4.000	0.110	30.000	0.059	826.000	0.025	1066.000	0.067	1075.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 29 SEWAGE TREATMENT PLANT IN LOB								
X1	75140.000	24.000	826.000	1066.000	1140.000	1440.000	1420.000	0.000	0.000	0.000
GR	645.200	0.000	640.400	80.000	638.400	170.000	636.000	286.000	636.700	390.000
GR	636.500	494.000	637.200	592.000	636.300	692.000	635.400	790.000	635.600	820.000
GR	635.600	826.000	632.600	838.000	629.100	843.000	628.600	850.000	628.500	857.000
GR	627.800	891.000	627.500	936.000	628.100	953.000	628.900	983.000	629.700	1048.000
GR	631.200	1063.000	634.500	1066.000	639.200	1068.000	646.700	1075.000	0.000	0.000
NC	0.074	0.074	0.025	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
		XSEC 29A AT USGS CABLE								
X1	75800.000	22.000	1005.000	1264.000	540.000	700.000	660.000	0.000	0.000	0.000
GR	636.000	1005.000	632.400	1011.000	631.700	1013.000	630.500	1019.000	628.500	1029.000
GR	629.800	1037.000	629.100	1048.000	629.200	1062.000	630.000	1080.000	629.900	1105.000
GR	629.400	1121.000	629.900	1139.000	629.700	1159.000	629.300	1177.000	629.100	1194.000
GR	628.900	1208.000	628.200	1227.000	628.700	1229.000	631.700	1241.000	633.700	1246.000
GR	633.300	1255.000	635.200	1264.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.080	16.000	0.025	57.000	0.028	327.000	0.075	400.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 29B AT USGS GAGE 1976 STAGE IS 639.2 1986 STAGE 645.4								
X1	76350.000	24.000	24.000	333.000	550.000	550.000	550.000	0.000	0.000	0.000
GR	648.800	0.000	638.800	10.000	634.700	24.000	632.300	33.000	630.800	41.000
GR	630.900	65.000	629.800	86.000	630.600	103.000	631.100	110.000	630.900	132.000
GR	630.900	133.000	630.900	134.000	631.200	141.000	631.200	181.000	630.800	218.000
GR	631.200	243.000	630.700	255.000	629.800	284.000	631.100	306.000	632.500	326.000
GR	633.000	332.000	634.600	331.000	636.500	346.000	646.500	356.000	0.000	0.000
NC	0.074	0.074	0.025	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
		XSEC 30 1975 HWM IS 638.6			1976 HWM IS 639.2					

X1	76760.000	27.000	57.000	327.000	350.000	450.000	410.000	0.000	0.000	0.000
GR	654.000	0.000	645.800	16.000	638.600	32.000	637.900	43.000	636.500	57.000
GR	633.200	62.000	631.000	77.000	629.000	84.000	629.000	98.000	629.600	118.000
GR	629.000	147.000	628.300	167.000	630.400	188.000	633.000	197.000	632.600	203.000
GR	627.600	217.000	629.000	221.000	629.800	232.000	629.600	279.000	631.700	287.000
GR	631.100	298.000	633.300	315.000	636.000	327.000	638.300	341.000	636.900	355.000
GR	638.900	360.000	651.300	400.000	0.000	0.000	0.000	0.000	0.000	0.000
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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

*PROF 1

CCHV= 0.100 CEHV= 0.300
1490 NH CARD USED
*SECNO 0.100

3470 ENCROACHMENT STATIONS= 8.0 818.0 TYPE= 1 TARGET= 810.000
XSEC 61

0.10	20.31	618.81	0.00	619.00	619.10	0.29	0.00	0.00	613.20
18800.	10.	16092.	2698.	32.	3431.	3227.	0.	0.	609.60
0.00	0.32	4.69	0.84	0.135	0.031	0.095	0.000	598.50	10.68
0.000251	0.	0.	0.	0	0	3	0.00	802.30	812.98

0
1490 NH CARD USED
*SECNO 1920.000

3470 ENCROACHMENT STATIONS= 22.0 763.0 TYPE= 1 TARGET= 741.000
SEC 61 MOVED US INVERT ADJ BY .94FT FLOOD FLOW SHIFTED FROM
ROB AS NOTED ON XSEC 61 TO APPROX AREA IN LOB FOR THIS XSEC

1920.00	19.85	619.29	0.00	0.00	619.66	0.37	0.54	0.02	614.14
18800.	0.	17116.	1684.	0.	3331.	2732.	269.	32.	610.54
0.11	0.00	5.14	0.62	0.000	0.031	0.140	0.000	599.44	22.00
0.000323	2170.	1920.	1740.	0	0	0	0.00	741.00	763.00

0
1490 NH CARD USED
*SECNO 3050.000

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000
XSEC 62

3050.00	19.27	619.67	0.00	0.00	619.98	0.31	0.31	0.01	608.60
18800.	113.	18612.	76.	103.	4146.	83.	406.	46.	609.00
0.18	1.10	4.49	0.91	0.067	0.031	0.067	0.000	600.40	18.74
0.000238	1200.	1130.	1200.	2	0	0	0.00	307.80	326.54

0
1490 NH CARD USED
*SECNO 3051.000

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000
U EDGE OF BRIDGE DECK AT BRIDGETON 1976 H&M 615.7

3051.00	19.29	619.69	0.00	0.00	619.98	0.30	0.00	0.00	608.60
18800.	326.	18256.	218.	103.	4148.	83.	406.	46.	609.00
0.18	3.16	4.40	2.63	0.023	0.031	0.023	0.000	600.40	18.73
0.000228	1.	1.	1.	1	0	0	0.00	307.82	326.55

0
1

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

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	BRLEN	BLC	BWP	BAREA	SS	ELCHU	ELCHD
	0.90	1.25	2.60	1000.00	260.00	8.00	9000.00	1.43	604.50	604.50

*SECNO 3100.000
CLASS A LOW FLOW

3420 BRIDGE W.S.= 619.67 BRIDGE VELOCITY= 4.53 CALCULATED CHANNEL AREA= 4152.

WSPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
0.00	619.99	0.01	0.	18800.	9000.	9152.	635.40	638.00

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000

3100.00	19.30	619.70	0.00	0.00	619.99	0.30	0.01	0.00	608.60
18800.	327.	18255.	219.	103.	4152.	83.	411.	46.	609.00
0.19	3.16	4.40	2.63	0.023	0.031	0.023	0.000	600.40	18.71
0.000227	49.	49.	49.	0	0	0	0.00	307.87	326.57

0
*SECNO 3101.000

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000

3101.00	19.28	619.68	0.00	0.00	620.00	0.31	0.00	0.01	608.60
18800.	38.	18708.	54.	103.	4150.	83.	411.	46.	609.00
0.19	0.37	4.51	0.65	0.202	0.031	0.035	0.000	600.40	18.72
0.000239	1.	1.	1.	1	0	0	0.00	307.85	326.57

0
1490 NH CARD USED
*SECNO 4680.000

KSEC 63

4680.00	18.12	620.12	0.00	0.00	620.32	0.19	0.31	0.01	608.50
18800.	343.	17214.	1243.	308.	4686.	1112.	500.	63.	616.00
0.31	1.11	3.67	1.12	0.061	0.031	0.048	0.000	602.00	10.22
0.000163	1500.	1575.	1500.	2	0	0	0.00	607.20	617.42

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0
 1490 NH CARD USED
 *SECNO 7200.000
        XSEC 64          XSEC CROSSES US OF OLD ROCK CRIBBING
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VCL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

  7200.00     19.73    620.53      0.00      0.00    620.86      0.33      0.50      0.04    619.00
   18800.      1009.    17642.      149.     2696.     3691.      108.      953.      101.    610.40
     0.47      0.37      4.78      1.38     0.198     0.031     0.054     0.000    600.80     10.46
 0.000251      2200.     2520.     2500.         2         0         0      0.00    798.42    808.88
0
 1490 NH CARD USED
 *SECNO 8850.000
        XSEC 65   XSEC CROSSES 100FT US OF BOAT LAUNCH
  8850.00     18.36    621.06      0.00      0.00    621.27      0.20      0.39      0.01    619.30
   18800.        1.    15950.     2849.        2.     4089.     4459.     1228.      131.    619.80
     0.60      0.27      3.90      0.64     0.067     0.033     0.141     0.000    602.70     36.18
 0.000228      1400.     1650.     1600.         2         0         0      0.00    877.61    913.79
0
 1490 NH CARD USED
 *SECNO 10300.000
                XSEC 66
  10300.00     18.49    621.49      0.00      0.00    621.59      0.10      0.31      0.01    611.10
   18800.      161.    12970.     5669.      124.     4449.     6321.     1459.      153.    620.60
     0.76      1.30      2.92      0.90     0.067     0.046     0.113     0.000    603.00     24.61
 0.000258      1500.     1450.      700.         2         0         0      0.00   1175.06   1199.67
0
 1490 NH CARD USED
 *SECNO 11800.000
                XSEC    67
  11300.00     18.92    621.82      0.00      0.00    622.05      0.23      0.42      0.04    619.60
   18800.      2888.    15825.       87.     5375.     3790.      185.     1776.      187.    610.70
     0.87      0.54      4.17      0.47     0.202     0.041     0.202     0.000    602.90     84.93
 0.000345      1600.     1500.     1000.         0         0         0      0.00   1007.39   1092.32
0
 *SECNO 12600.000
  12600.00     19.20    622.10      0.00      0.00    622.32      0.22      0.27      0.00    619.60
   18800.      2963.    15747.       90.     5579.     3858.      194.     1951.      205.    610.70
     0.93      0.53      4.08      0.46     0.202     0.041     0.202     0.000    602.90     80.10
 0.000323      800.      800.      800.         2         0         0      0.00   1013.06   1093.16
0
 1490 NH CARD USED
 *SECNO 14100.000
                XSEC 68
1
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA     LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST

 14100.00    18.57   622.57     0.00     0.00   622.84     0.27     0.51     0.02   611.80
   18800.     283.   17600.     918.     433.    4087.    1951.    2189.     229.    618.40
     1.03     0.65     4.31     0.47    0.135    0.041    0.202    0.000   604.00    13.32
 0.000378     900.    1500.    1600.        2        0        0     0.00   711.82   725.14
0
 1490 NH CARD USED
 *SECNO 16700.000
                XSEC 69
 16700.00    19.28   623.28     0.00     0.00   623.55     0.27     0.71     0.00   621.80
   18800.    2930.   15909.      62.    6258.    3511.      76.    2483.     257.    613.80
     1.20     0.45     4.53     0.82    0.202    0.027    0.081    0.000   604.00    17.19
 0.000238     300.    2600.    1900.        2        0        0     0.00  1118.70  1135.89
0
 *SECNO 18990.000
                XSEC 1 FROM SUBDIVISION FILE F184 22 12
 18990.00    17.77   623.77     0.00     0.00   623.95     0.18     0.39     0.01   611.80
   18800.     806.   17781.     214.     763.    5149.     365.    2814.     288.    612.70
     1.37     1.06     3.45     0.58    0.054    0.034    0.081    0.000   606.00   118.07
 0.000150    1250.    2190.    2500.        2        0        0     0.00   542.13   660.20
0
 1490 NH CARD USED
 *SECNO 19870.000

 3265 DIVIDED FLOW

                XSEC 70  THROUGH SUBDIV ON LEFT BANK  CHANNEL INEFFECTIVE
                1976 HWM ON BASEMENT WALL 619.8  HWM 800FT DS 619.98
 19870.00    18.68   623.88     0.00     0.00   624.21     0.33     0.21     0.05   612.40
   18800.    4142.   14534.     125.    2166.    2832.     247.    2944.     302.    612.80
     1.44     1.91     5.13     0.51    0.041    0.034    0.202    0.000   605.20    13.59
 0.000332     950.    1000.     980.        2        0        0     0.00   695.74   742.33
0
 1490 NH CARD USED
 *SECNO 21370.000
                XSEC 71 OLDER COTTAGES ON RT BANK  SEAWALL PROTECTS RT BANK
 21370.00    19.30   624.40     0.00     0.00   624.61     0.21     0.39     0.01   612.40
   18800.    1256.   13608.    3936.    1798.    3173.    2830.    3154.     325.    619.80
     1.55     0.70     4.29     1.39    0.143    0.033    0.064    0.000   605.10    13.42
 0.000226    1100.    1500.    1600.        2        0        0     0.00   768.82   782.24
0
1
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA     LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST
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 1490 NH CARD USED
 *SECNO 24985.000
                  XSEC 72
  24985.00    18.29   625.39     0.00     0.00   625.60     0.20     0.98     0.00   620.30
    18800.     2276.    14089.    2435.    3853.    3432.    1540.    3849.     394.   614.70
      1.85      0.59     4.10     1.58    0.202    0.040    0.062    0.000   607.10    13.37
  0.000330    3700.    3615.    3600.        2        0        0     0.00   892.80   906.17
0
 1490 NH CARD USED
 *SECNO 28235.000
                  XSEC 73
  28235.00    18.46   626.46     0.00     0.00   626.73     0.27     1.11     0.02   623.50
    18800.     1109.    17593.     99.    2179.    4119.     114.    4348.     444.   616.70
      2.07      0.51     4.27     0.86    0.201    0.040    0.108    0.000   608.00    12.65
  0.000387    2300.    3200.    3300.        2        0        0     0.00   666.95   679.60
0
 1490 NH CARD USED
 *SECNO 29860.000
                  XSEC 74 IN LINE WITH E SIDE OF COTTAGE ON TOP OF LFT BANK
                  JUST US OF POWERLINE
  29860.00    18.96   627.06     0.00     0.00   627.42     0.36     0.66     0.03   616.20
    18800.      90.    18138.    571.     197.    3696.    1220.    4561.     465.   615.20
      2.16      0.46     4.91     0.47    0.202    0.041    0.202    0.000   608.10    14.60
  0.000432    1500.    1625.    1700.        1        0        0     0.00   495.10   509.70
0
 1490 NH CARD USED
 *SECNO 31660.000
                  XSEC 75
  31660.00    19.13   627.83     0.00     0.00   628.07     0.24     0.64     0.01   623.30
    18800.     530.    17849.    421.    1274.    4401.     473.    4792.     487.   617.10
      2.29      0.42     4.06     0.89    0.186    0.041    0.108    0.000   608.70    25.54
  0.000296    1700.    1800.    1800.        2        0        0     0.00   594.48   620.02
0
 1490 NH CARD USED
 *SECNO 35425.000

 3470 ENCROACHMENT STATIONS=     20.0     790.0  TYPE=      1  TARGET=     770.000
                  XSEC 76
  35425.00    20.20   629.20     0.00     0.00   629.41     0.21     1.34     0.00   621.20
    18800.      27.    15496.   3277.      70.    3834.    4168.    5406.     547.   625.30
      2.59      0.39     4.04     0.79    0.209    0.046    0.165    0.000   609.00    20.00
  0.000438    4300.    3760.    3600.        2        0        0     0.00   770.00   790.00
0
1
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SECNO	DEPTH	QWSEL	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	LDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO 37670.000

3470 ENCROACHMENT STATIONS= 20.0 1035.0 TYPE= 1 TARGET= 1015.000
XSEC 77

37670.00	22.14	630.14	0.00	0.00	630.37	0.23	0.95	0.01	622.70
18900.	5293.	13490.	17.	7451.	2988.	52.	5840.	588.	623.70
2.76	0.71	4.52	0.33	0.203	0.047	0.202	0.000	608.00	20.00
0.003467	1900.	2150.	2100.	2	0	0	0.00	1013.16	1033.16

0
1490 NH CARD USED
*SECNO 38970.000

3470 ENCROACHMENT STATIONS= 20.0 760.0 TYPE= 1 TARGET= 740.000
XSEC 70 800FT DS OF ISLAND, POWERLINE CROSSING AND BOAT LAUNCH
WEST END OF OLD GRAVEL OPERATION

38970.00	18.68	630.58	0.00	0.00	630.71	0.13	0.33	0.01	621.80
19800.	26.	15573.	3201.	63.	4926.	3983.	6078.	608.	624.80
2.99	0.41	3.16	0.80	0.135	0.041	0.111	0.000	611.90	20.00
0.000181	700.	1300.	1300.	2	0	0	0.00	740.00	760.00

0
1490 NH CARD USED
*SECNO 42170.000

3470 ENCROACHMENT STATIONS= 15.0 510.0 TYPE= 1 TARGET= 495.000
XSEC 1

42170.00	20.03	631.03	0.00	0.00	631.52	0.49	0.70	0.11	622.40
18800.	24.	16994.	1883.	68.	2840.	2291.	6585.	652.	625.90
3.05	0.35	5.95	0.82	0.202	0.027	0.113	0.000	611.00	15.00
0.000272	3600.	3200.	3000.	2	0	0	0.00	495.00	510.00

0
1490 NH CARD USED
*SECNO 43770.000
XSEC 2

43770.00	19.21	631.61	0.00	0.00	632.02	0.41	0.49	0.01	622.30
18800.	226.	16239.	2335.	254.	2960.	2085.	6786.	671.	618.30
3.14	0.89	5.49	1.12	0.102	0.034	0.108	0.000	612.40	8.39
0.000341	1200.	1600.	1800.	2	0	0	0.00	458.63	467.02

0
1

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

1490 NH CARD USED
*SECNO 44820.000
XSEC 3 SECTION THRU ISLAND NE OF OLD GRAVEL OPERATION

44820.00	20.03	632.23	0.00	0.00	632.41	0.18	0.37	0.02	624.70
18800.	822.	17497.	481.	1511.	4907.	1003.	6943.	685.	625.30
3.23	0.54	3.57	0.48	0.202	0.048	0.202	0.000	612.20	5.55

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 0.000354     1100.     1050.     1100.        2         0         0      0.00    687.60    693.15
0
 1490 NH CARD USED
 *SECNO 45470.000
                XSEC 4  OLD WOOD PILING ALONG EACH BANK
 45470.00     19.01    632.41      0.00      0.00    632.71      0.31      0.27      0.04    627.70
   18900.      812.    17886.      102.     1483.     3930.      258.     7037.      694.    624.50
     3.27      0.55      4.55      0.40     0.202     0.047     0.202     0.000    613.40      8.03
 0.000485      550.      650.      650.         2         0         0      0.00    552.60    560.63
0
 1490 NH CARD USED
 *SECNO 46870.000
                XSEC 5  HILL AT RIGHT BANK IS ERODING
 46870.00     20.55    633.05      0.00      0.00    633.41      0.37      0.68      0.02    622.10
   18800.     1502.    17019.      279.     1635.     3329.      178.     7199.      709.    621.30
     3.35      0.92      5.11      1.57     0.135     0.047     0.089     0.000    612.50     18.91
 0.000570     1280.     1300.     1575.         2         0         0      0.00    472.37    491.28
0
 1490 NH CARD USED
 *SECNO 48720.000
                XSEC 6
 48720.00     18.79    633.99      0.00      0.00    634.16      0.17      0.73      0.02    626.80
   18800.     1160.    15271.     1370.      561.     4619.     1240.     7438.      727.    620.60
     3.50      2.07      3.52      1.10     0.045     0.049     0.135     0.000    615.20      8.97
 0.000294     1500.     1850.     2000.         0         0         0      0.00    440.53    449.49
0
 1490 NH CARD USED
 *SECNO 50220.000
                XSEC 7
 50220.00     22.72    634.42      0.00      0.00    634.55      0.12      0.38      0.01    626.30
   18800.     8660.     9875.      264.     3991.     3017.      224.     7659.      746.    623.10
     3.65      2.17      3.27      1.18     0.041     0.049     0.067     0.000    611.70      4.33
 0.000235     1300.     1500.     1300.         2         0         0      0.00    726.36    730.69
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     CSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      KNL       KNCH      KNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 1490 NH CARD USED
 *SECNO 51945.000

 3265 DIVIDED FLOW

            XSEC 8    VICS CAMPING ON RIGHT BANK  CAMPGROUND IS ON A HILL
                 WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.
 51945.00     21.48    634.88      0.00      0.00    635.20      0.32      0.60      0.06    637.60
   18800.        0.    15116.     3684.        1.     2976.     5778.     7941.      778.    629.40
     3.75      0.29      5.08      0.64     0.027     0.047     0.202     0.000    613.40     29.60
 0.000679     1300.     1725.     1500.         2         0         0      0.00   1154.48   1273.52
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0
 1490 NH CARD USED
 *SECNO 53000.000

 3470 ENCROACHMENT STATIONS=     350.0    1700.0  TYPE=     1  TARGET=    -350.000
                XSEC 9  SECTION THROUGH ISLAND US OF VICS
              XSEC BENT 30DEG LFT AT 887  20DEG RT AT STA 1208
  53000.00    19.76   635.36     0.00      0.00   635.47     0.11     0.24     0.02   625.00
     18800.    2895.    14891.    1014.    5315.    5045.    3023.    8162.     800.    623.00
      3.87     0.54      2.95     0.34    0.140    0.036    0.169    0.000   615.60   350.00
  0.000125    1200.    1055.     500.        2        0        0     0.00  1333.30  1683.30
0
 FLOW DISTRIBUTION FOR SECNO=  53000.00          CWSEL=    635.36

 STA=      350.      650.      815.      887.     1192.     1650.     1683.
   PER Q=     8.2       3.9       3.3      79.2       5.3       0.1
    AREA=  3173.7    1581.8     559.5   5045.4    2918.4     104.2
     VEL=     0.5       0.5       1.1       3.0       0.3       0.2

 1490 NH CARD USED
 *SECNO 53700.000

 3470 ENCROACHMENT STATIONS=     300.0    1740.0  TYPE=     1  TARGET=    -300.000
                XSEC 10  REDWOOD COTTAGE ON LEFT BANK  1976 HWM 630.5
                1986 HWM 639    XSEC BENT 45DEG LEFT AT STA 1360
  53700.00    19.33   635.43     0.00      0.00   635.57     0.14     0.09     0.01   626.20
     18800.    7056.    11740.       4.   12404.    3129.      20.    8335.     816.    629.20
      3.94     0.57      3.75     0.22    0.154    0.034    0.169    0.000   616.10   300.00
  0.000163     400.     700.      750.        2        0        0     0.00  1436.38  1736.38
0
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     LOB       ROB       HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 FLOW DISTRIBUTION FOR SECNO=  53700.00          CWSEL=    635.43

 STA=      300.     1340.     1420.     1557.     1730.     1736.
   PER Q=    32.0       8.1       2.4      62.4       0.0
    AREA= 10345.1     627.6     931.3   3128.9     20.0
     VEL=     0.6       0.9       0.5       3.8       0.2

 1490 NH CARD USED
 *SECNO 54600.000

 3470 ENCROACHMENT STATIONS=     750.0    2250.0  TYPE=     1  TARGET=    -750.000
                XSEC 10A NEAR WHITE COTTAGE(BRONKEMA)  1976HWM 630.9 IN GARAGE
                XSEC BENT 5DEG RT AT STA 139.9  RESTRICTED FOR HIGH GROUND AT
                XSEC 11 US      1986 HWM 638
  54600.00    22.60   635.60     0.00      0.00   635.70     0.10     3.13     0.00   628.70
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```
  18900.    8620.    9950.     230.   11462.    2900.     164.    8536.     834.    621.00
   4.03      0.75     3.43     1.40     0.119    0.040    0.054    0.000   613.00   750.00
0.000189     500.     900.    1000.         2        0        0     0.00  1494.08  2244.08
0
 FLOW DISTRIBUTION FOR SECNO=  54600.00          CWSEL=    635.60

 STA=      750.     949.    1352.    1508.    1597.    1755.    1846.    1917.    1957.    2060.    2062.    2221.    2244.
   PER Q=    4.8      8.7      4.9      4.2      4.9      5.6      5.4      3.5      3.6      0.2     52.9      1.2
    AREA=  2373.8   4405.4   1119.8    676.1    926.2    591.6    473.0    289.9    593.0     13.4   2900.1    164.4
     VEL=     0.4      0.4      0.8      1.2      1.0      1.8      2.1      2.3      1.2      2.1      3.4      1.4

 1490 NH CARD USED
 *SECNO 55080.000
                XSEC 10B LOB IS FELCH ROAD
  55080.00    22.33   635.63     0.00     0.00   635.79     0.15     0.07     0.02   621.00
    18800.     8689.    9877.     234.    3440.    2712.     163.    8612.     842.    621.30
      4.06      2.53     3.64     1.44    0.024    0.041    0.054    0.000   613.30    63.30
  0.000201     250.     480.     550.         2        0        0     0.00   920.84   984.14
0
 1490 NH CARD USED
 *SECNO 55800.000

 3470 ENCROACHMENT STATIONS=       0.0    1900.0  TYPE=      1  TARGET=    1899.999
                XSEC 11  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
  55800.00    19.97   635.67     0.00     0.00   636.03     0.36     0.18     0.06   627.70
    18800.       0.    15140.    3660.       0.    2833.    4053.    8685.     850.    628.60
      4.10      0.00     5.34     0.90    0.000    0.039    0.122    0.000   615.70  1000.00
  0.000568     150.     720.     450.         2        0        0     0.00   900.00  1900.00
0
1
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   SECNO     DEPTH     CUSEL     CRIWS     USELK     EG        JV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TRA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 FLOW DISTRIBUTION FOR SECNO=  55800.00          CUSEL=    635.67

 STA=     1000.    1169.    1172.    1185.    1237.    1320.    1454.    1546.    1651.    1819.    1900.
   PER Q=   80.5      0.1      0.4      1.6      2.7      4.5      2.6      0.0      4.9      2.7
    AREA=  2833.2    18.9     74.3    294.6    482.7    786.0    484.5    516.2    909.9    485.8
     VEL=     5.3      1.0      1.0      1.0      1.1      1.1      1.0      0.0      1.0      1.0

 1490 NH CARD USED
 *SECNO 56800.000

 3470 ENCROACHMENT STATIONS=       0.0    1630.0  TYPE=      1  TARGET=    1629.999
                XSEC 12
  56800.00    21.64   636.24     0.00     0.00   636.39     0.15     0.34     0.02   621.70
    18800.     139.    11945.    6716.     126.    3120.    8741.    8763.     856.    630.00
      4.17      1.10     3.83     0.77    0.094    0.047    0.128    0.000   614.60     4.57
  0.000386     1200.    1000.     50.          2        0        0     0.00  1625.43  1630.00
```

0
FLOW DISTRIBUTION FOR SECNO= 56800.00 CWSEL= 636.24

STA=	5.	22.	222.	350.	457.	758.	865.	958.	1093.	1227.	1424.	1592.	1630.
PER Q=	0.7	63.5	4.5	3.7	5.3	3.5	3.1	3.4	3.4	4.1	3.8	0.9	
AREA=	125.9	3120.2	868.3	726.7	1748.0	694.6	608.4	861.8	863.1	1114.0	1006.6	249.1	
VEL=	1.1	3.8	1.0	1.0	0.6	0.9	0.9	0.7	0.7	0.7	0.7	0.7	

1490 NH CARD USED
*SECNO 57650.000

3470 ENCROACHMENT STATIONS= 0.0 1910.0 TYPE= 1 TARGET= 1909.999
XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
1976 HWM 631.9

57650.00	20.57	636.47	0.00	0.00	636.52	0.05	0.12	0.01	622.00
18800.	5547.	10748.	2505.	5787.	4775.	4646.	8881.	867.	626.50
4.27	0.96	2.25	0.54	0.061	0.042	0.102	0.000	615.90	10.61
0.000118	500.	850.	50.	0	0	0	0.00	1899.39	1910.00

0
FLOW DISTRIBUTION FOR SECNO= 57650.00 CWSEL= 636.47

STA=	11.	845.	857.	1180.	1380.	1514.	1879.	1910.
PER Q=	28.7	0.8	57.2	4.0	3.7	5.2	0.6	
AREA=	5656.2	130.4	4775.3	1341.6	892.9	2201.5	210.0	
VEL=	1.0	1.2	2.3	0.6	0.8	0.4	0.5	

1

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

1490 NH CARD USED
*SECNO 58350.000
XSEC 14 XSEC BENT 15033 LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB

58350.00	20.24	636.54	0.00	0.00	636.63	0.09	0.10	0.01	630.50
18800.	9159.	9633.	8.	6955.	3019.	34.	9039.	886.	629.50
4.35	1.82	3.19	0.24	0.065	0.049	0.202	0.000	616.30	26.41
0.000288	500.	700.	400.	2	0	0	0.00	1268.19	1294.60

0
FLOW DISTRIBUTION FOR SECNO= 58350.00 CWSEL= 636.54

STA=	26.	400.	731.	918.	1077.	1106.	1285.	1295.
PER Q=	17.6	17.3	7.1	5.7	1.1	51.2	0.0	
AREA=	2447.8	2346.4	1091.9	896.6	172.2	3018.7	33.8	
VEL=	1.3	1.4	1.2	1.2	1.2	3.2	0.2	

1490 NH CARD USED
*SECNO 58900.000
XSEC 15

58900.00	20.14	636.64	0.00	0.00	636.79	0.14	0.14	0.01	631.50

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   18800.     4167.    14028.      605.     5028.     4043.      929.     9153.      901.     629.00
     4.40      0.83      3.47      0.65     0.081     0.046     0.135     0.000    616.50     26.01
 0.000274      450.      550.      700.         0         0         0      0.00   1508.27   1534.27
0
 1490 NH CARD USED
 *SECNO 60000.000
                XSEC 16
  60000.00     19.44    636.84      0.00      0.00    637.45      0.61      0.53      0.14    628.00
   18800.      343.    16725.     1732.      142.     2520.     2237.     9321.      925.     632.60
     4.45      2.42      6.64      0.77     0.064     0.047     0.162     0.000    617.40     14.03
  0.001142     1000.     1100.      700.         2         0         0      0.00    758.51    772.54
0
 FLOW DISTRIBUTION FOR SECNO=  60000.00          CUSEL=     636.84

 STA=       14.       44.      200.      750.      773.
   PER Q=       1.8      89.0       9.1       0.1
    AREA=     141.9    2520.0    2195.3      42.2
     VEL=       2.4       6.6       0.8       0.5

 1490 NH CARD USED
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HI        OLOSS   BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       DTN       ELMIN      SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 *SECNO 62250.000
                XSEC 17    SUBDIVISION ON LEFT BANK
  62250.00     18.61    638.31      0.00      0.00    638.54      0.23      1.05      0.04    632.90
   18800.      278.    17695.      326.      505.     4429.      969.     9578.      953.     629.10
     4.61      0.55      4.00      0.85     0.126     0.038     0.120     0.000    619.70     29.02
  0.000262     2400.     2225.     1700.         2         0         0      0.00    507.08    536.11
0
 1490 NH CARD USED
 *SECNO 63120.000
  63120.00     20.12    638.52      0.00      0.00    638.89      0.37      0.31      0.04    630.40
   18800.       45.    18339.      416.       72.     3699.      730.     9694.      963.     633.10
     4.66      0.62      4.95      0.57     0.120     0.038     0.148     0.000    618.40     13.94
  0.000400      970.      970.      970.         2         0         0      0.00    399.17    413.11
0
 1490 NH CARD USED
 *SECNO 65620.000

 3470 ENCROACHMENT STATIONS=       20.0      470.0  TYPE=      1  TARGET=      450.000
  65620.00     18.58    639.28      0.00      0.00    639.65      0.37      0.76      0.00    629.80
   18800.     1042.    17381.      377.     1141.     3430.      396.     9901.      982.     628.30
     4.77      0.91      5.07      0.95     0.107     0.038     0.120     0.000    620.70     20.00
  0.000395     1900.     1900.     1900.         2         0         0      0.00    450.00    470.00
0
 1490 NH CARD USED
 *SECNO 67420.000
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3470 ENCROACHMENT STATIONS= 10.0 420.0 TYPE= 1 TARGET= 410.000

XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK

67420.00	20.93	640.23	0.00	0.00	640.52	0.29	0.86	0.01	631.80
18800.	729.	17647.	424.	321.	3971.	746.	10186.	1006.	633.70
4.94	2.27	4.44	0.57	0.041	0.038	0.148	0.000	619.30	10.00
0.000304	2400.	2500.	2500.	2	0	0	0.00	410.00	420.00

0

1490 NH CARD USED

*SECNO 68970.000

XSEC 21 US OF GREEN COTTAGE ON LEFT BANK

68970.00	18.30	640.70	0.00	0.00	640.97	0.28	0.45	0.00	631.50
18800.	624.	17955.	220.	841.	4169.	258.	10369.	1023.	628.30
5.04	3.74	4.31	0.85	0.085	0.038	0.100	0.000	622.40	10.10
0.000283	1400.	1550.	1700.	2	0	0	0.00	555.03	565.13

0

1

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

1490 NH CARD USED

*SECNO 70300.000

XSEC 22 BELOW POWER LINE CROSSING N VALUES ARE ATYPICAL

70300.00	17.42	641.11	0.00	0.00	641.33	0.21	0.35	0.01	633.80
18800.	1671.	17071.	58.	839.	4452.	50.	10531.	1038.	632.30
5.14	1.88	3.83	1.15	0.050	0.038	0.050	0.000	623.70	11.20
0.000244	1300.	1330.	1300.	2	0	0	0.00	408.89	420.09

0

1490 NH CARD USED

*SECNO 71300.000

71300.00	19.22	641.32	0.00	0.00	641.63	0.31	0.27	0.03	633.60
18800.	1059.	17581.	160.	526.	3851.	200.	10646.	1047.	630.20
5.21	2.01	4.57	0.80	0.046	0.038	0.100	0.000	622.10	12.45
0.000312	1000.	1000.	1000.	2	0	0	0.00	351.98	364.43

0

1490 NH CARD USED

*SECNO 71900.000

71900.00	17.52	641.52	0.00	0.00	641.84	0.32	0.21	0.00	630.00
18800.	1151.	17097.	553.	579.	3623.	551.	10709.	1051.	630.50
5.24	1.99	4.72	1.00	0.058	0.041	0.120	0.000	624.00	12.64
0.000399	500.	600.	650.	2	0	0	0.00	383.32	395.96

0

1490 NH CARD USED

*SECNO 73040.000

XSEC 25 BTWN BARBER AND KRING CABINS US OF PUB ACC SITE DS OF NEWYGO

73040.00	16.64	642.04	0.00	0.00	642.30	0.25	0.45	0.01	636.20
18800.	180.	15140.	2531.	179.	3779.	1133.	10838.	1064.	633.30
5.32	0.72	4.27	2.23	0.100	0.042	0.038	0.000	625.40	14.55
0.000385	1200.	1140.	1100.	2	0	0	0.00	557.38	571.93

```
0
 1490 NH CARD USED
 *SECNO 73590.000
          XSEC 26 DS OF CO RD BRDG  SEC BENT 45DEG RT OFF RD FILL AT STA 10
            BENT 45DEG RT TO RD FILL AT STA 325
  73590.00    18.10   642.20     0.00     0.00   642.52     0.31     0.20     0.02   632.90
    18800.      283.    18177.     340.     158.    3996.     177.    10897.    1069.   632.40
      5.36      1.80      4.55     1.92    0.047    0.038    0.059    0.000   624.10    15.16
  0.000357     660.      550.     500.        2        0        0     0.00   316.58   331.74
0
1
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

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 *SECNO 73640.000

 3265 DIVIDED FLOW

 3370 NORMAL BRIDGE,NRD=  0 MIN ELTRD=  652.00 MAX ELLC=  650.50

              XSEC 27 CENTER OF BRDG   ELLC AT 650.5
  73640.00    17.42   642.22     0.00     0.00   642.54     0.32     0.02     0.00   652.00
    18800.       0.    18300.       0.       0.    4164.       0.    10902.    1070.   652.00
      5.36      0.00      4.52     0.00    0.000    0.034    0.000    0.000   624.80     0.00
  0.000366      50.       50.       50.        0        0        0     0.00   290.00   296.00
0
 *SECNO 73660.000

 3265 DIVIDED FLOW

 3370 NORMAL BRIDGE,NRD=  0 MIN ELTRD=  652.00 MAX ELLC=  650.50

  73660.00    17.43   642.23     0.00     0.00   642.54     0.32     0.01     0.00   652.00
    18800.       0.    18300.       0.       0.    4165.       0.    10904.    1070.   652.00
      5.36      0.00      4.51     0.00    0.000    0.034    0.000    0.000   624.80     0.00
  0.000365      20.       20.       20.        0        0        0     0.00   290.00   296.00
0
 *SECNO 73720.000
  73720.00    17.90   642.20     0.00     0.00   642.59     0.38     0.02     0.02   634.70
    19800.      547.    17640.     613.     244.    3449.     386.    10909.    1070.   632.30
      5.36      2.24      5.12     1.59    0.047    0.034    0.059    0.000   624.30    68.45
  0.000404      60.       60.       60.        2        0        0     0.00   376.77   445.22
0
 1490 NH CARD USED
 *SECNO 75140.000
          XSEC 29  SEWAGE TREATMENT PLANT IN LOB
  75140.00    15.35   642.85     0.00     0.00   643.07     0.21     0.46     0.02   635.60
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   18800.    4667.   14125.      8.    4492.    3331.      18.   11088.    1090.    634.50
     5.48     1.04     4.24    0.43    0.080    0.034   0.090    0.000   627.50    39.12
 0.000283    1140.    1420.   1440.        2        0       0     0.00  1032.29  1071.41
0
1
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      HTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST

 *SECNO 75800.000
 3280 CROSS SECTION  75800.00 EXTENDED      7.71 FEET

                 XSEC 29A  AT USGS CABLE
  75800.00    14.71   642.91     0.00     0.00   643.40     0.49     0.25     0.08   636.00
    18800.       0.   18800.       0.       0.    3354.       0.   11167.    1099.   635.20
      5.51     0.00     5.61     0.00    0.000    0.034    0.000    0.000   628.20  1005.00
  0.000580     540.     660.     700.        2        0        0     0.00   259.00  1264.00
0
 1490 NH CARD USED
 *SECNO 76350.000
           XSEC 29B AT USGS GAGE  1976 STAGE IS 639.2   1986 STAGE 645.4
  76350.00    13.57   643.37     0.00     0.00   643.72     0.35     0.30     0.01   634.70
    18800.     325.   18326.     148.     103.    3824.     125.   11214.    1103.   634.60
      5.54     3.16     4.79     1.18    0.035    0.038    0.101    0.000   629.80     5.43
  0.000526     550.     550.     550.        2        0        0     0.00   347.44   352.87
0
 *SECNO 76760.000
                 XSEC 30  1975 HWM IS 638.6      1976 HWM IS 639.2
  76760.00    15.93   643.53     0.00     0.00   643.93     0.41     0.20     0.02   636.50
    18800.     165.   18403.     226.     174.    3566.     235.   11252.    1106.   636.00
      5.56     0.95     5.16     0.96    0.100    0.034    0.100    0.000   627.60    21.05
  0.000449     350.     410.     450.        2        0        0     0.00   353.88   374.93
0
0IFY218I VSIOS : I/O ERROR, FILE FT93F001,     DMSSVT120S OUTPUT ERROR 013 ON FT93F001,.
         VSIOS : LAST EXECUTED FORTRAN STATEMENT IN PROGRAM H2MAIN AT ISN 1331 (OFFSET 0092C6).
0*** START OF BUFFER CONTENTS ***
                646.60      633.30      636.20        0.00      625.40      642.04      642.30    73040.00    72985.00
                                646.80      632.40      632.90        0.00      624.10      642.20      642.52    73590.00    73535.
                 00                                 652.00      652.00      652.00        0.00      624.80      642.22      642.54     7
                 3640.00    73585.00                                 652.00      652.00      652.00        0.00      624.80      642.23
                       642.54    73660.00    73605.00                                 650.00      632.30      634.70        0.00      6
                 24.30      642.20      642.59    73720.00    73665.00                                 645.20      634.50      635.60
                       0.00      627.50      642.85      643.07    75140.00    75085.00                                 635.20      635
                 .20      636.00        0.00      628.20      642.91      643.40    75800.00    75745.00
                   646.50      634.60      634.70        0.00      629.80      643.37      643.72    76350.00    76295.00
                                   651.30      636.00      636.50        0.00      627.60      643.53      643.93    76760.00     76
                 705.00
0*** END OF BUFFER CONTENTS ***
0TRACEBACK OF CALLING ROUTINES; MODULE ENTRY ADDRESS = 020000.
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```
 IFYVSIOS (091708) CALLED BY VFCR# (095022) FROM LOCATION 09507C.
 ----------------------------------------------------------------------
  VFCR# (095022) CALLED BY H2MAIN (020380) AT ISN 1331 AT OFFSET 0092C6.
 ----------------------------------------------------------------------
  H2MAIN (020380) CALLED BY MAIN (020000) AT ISN 7 AT OFFSET 000222.
   NO ARGUMENTS PASSED TO SUBROUTINE.
 ----------------------------------------------------------------------
  MAIN (020000) CALLED BY OPERATING SYSTEM.
 ----------------------------------------------------------------------
0STANDARD CORRECTIVE ACTION TAKEN. EXECUTION CONTINUING.
1
```



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


0 MESSAGE SUMMARY: MESSAGE NUMBER - COUNT
0                   218       1
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1*****************************************************
 *  WATER SURFACE PROFILES                           *
 *  VERSION OF NOVEMBER 1976                         *
 *  UPDATED MAY 1984                                 *
 *                                                   *
 *  RUN DATE            TIME                         *
 *****************************************************
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*  U.S. ARMY CORPS OF ENGINEERS         *
*  THE HYDROLOGIC ENGINEERING CENTER    *
*  609 SECOND STREET, SUITE D           *
*  DAVIS, CALIFORNIA 95616              *
*  (916) 440-2105 (FTS) 448-2105        *
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X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX             XXXXXXX
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*************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
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C
T1      FLOODPLAIN DELINEATION     USING 1986 HIGHWATER MARKS AS CALIBRATION
T2   CHANNEL XSEC FROM 1977 SURVEY     N INCREASED TO REFLECT MEANDER
T3      MUSKEGON RIVER  ESTIMATED CHANNEL EROSION  EVERY XSEC

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        0.        0.        0.   0.000250     0.00       0.0    23100.   621.000     0.000

J2  NPROF     IPLOT     PRFVS     KSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     0.000     0.000    -1.000     0.000     0.000     1.350     0.000     0.000     0.000     0.000

NC      0.100      0.150      0.023      0.100      0.300      0.000      0.000      0.000      0.000      0.000
NH      7.000      0.100     22.000      0.023    242.000      0.100    298.000      0.035    447.000      0.050
NH    570.000      0.130    789.000      0.050    852.000      0.000      0.000      0.000      0.000      0.000
                XSEC 61
X1      0.100     25.000     22.000    242.000      0.000      0.000      0.000      0.000      0.000      0.000
X3     10.000      0.000      0.000      8.000      0.000    818.000      0.000      0.000    613.300      0.000
GR    624.100      0.000    613.200     22.000    606.100     47.000    603.700     63.000    598.500    106.000
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 GR   601.000   136.000   602.600   166.000   603.200   196.000   604.200   226.000   606.100   237.000
 GR   609.600   242.000   610.600   252.000   613.900   262.000   614.800   298.000   616.300   326.000
 GR   616.300   383.000   615.000   447.000   612.000   492.000   611.700   570.000   611.500   635.000
 GR   611.200   685.000   611.000   735.000   612.200   789.000   623.500   830.000   629.400   852.000

 NH     4.000     0.150    22.000     0.023   242.000     0.150   298.000     0.100   852.000     0.000
        SEC 61 MOVED US INVERT ADJ BY .94FT      FLOOD FLOW SHIFTED FROM
        ROB AS NOTED ON XSEC 61 TO APPROX AREA IN LOB FOR THIS XSEC
 X1  1920.000     0.000     0.000     0.000  2170.000  1740.000  1920.000     0.000     0.940     0.000
 X3    10.000     0.000     0.000    22.000     0.000   763.000     0.000     0.000   613.300     0.000

 NH     3.000     0.050    37.000     0.023   311.000     0.050   341.000     0.000     0.000     0.000
                XSEC 62
 X1  3050.000    20.000    37.000   311.000  1200.000  1200.000  1130.000     0.000     0.000     0.000
 X3     0.000     0.000     0.000    17.000     0.000   328.000     0.000     0.000     0.000     0.000
 GR   635.400     0.000   629.100     4.000   615.670    25.000   608.600    37.000   607.000    40.000
 GR   605.200    55.000   604.000    64.000   600.400    74.000   601.000   106.000   605.100   146.000
 GR   606.500   163.000   604.300   170.000   603.500   173.000   605.200   199.000   605.400   241.000
 GR   606.000   267.000   605.700   285.000   606.700   297.000   609.000   311.000   629.600   341.000
1
                                                                                      PAGE     2


 NH     3.000     0.017    37.000     0.023   311.000     0.017   341.000     0.000     0.000     0.000
        W EDGE OF BRIDGE DECK AT BRIDGETON  1976 HWM 615.7
 X1  3051.000     0.300     0.000     0.000     1.000     1.000     1.000     0.000     0.000     0.000
 X3     0.000     0.000     0.000    17.000     0.000   328.000     0.000     0.000     0.000     0.000

 SB     0.900     1.250     2.600  1000.000   260.000     8.000  9000.000     1.430   604.500   604.500
 X1  3100.000     0.000     0.000     0.000    49.000    49.000    49.000     0.000     0.000     0.000
 X2     0.000     0.000     1.000   635.400   638.000     0.000     0.000     0.000     0.000     0.000
 X3     0.000     0.000     0.000    17.000     0.000   328.000     0.000     0.000     0.000     0.000

 NC     0.150     0.070     0.023     0.000     0.000     0.000     0.000     0.000     0.000     0.000
 X1  3101.000     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    17.000     0.000   328.000     0.000     0.000     0.000     0.000

 NH     4.000     0.045    58.000     0.023   373.000     0.030   517.000     0.050   633.000     0.000
 ET     0.000     0.000     1.400     0.000     0.000     0.000     0.000     0.000     0.000     0.000
                XSEC 63
 X1  4680.000    20.000    58.000   373.000  1500.000  1600.000  1579.000     0.000     0.000     0.000
 X3    10.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000   617.800     0.000
 GR   625.300     0.000   617.700    15.000   608.500    58.000   607.300    76.000   604.400    82.000
 GR   602.000   102.000   603.400   129.000   603.300   172.000   604.000   205.000   605.000   248.000
 GR   605.600   274.000   606.300   289.000   607.300   356.000   616.000   373.000   617.700   382.000
 GR   617.300   404.000   614.500   435.000   614.600   517.000   616.000   605.000   625.300   633.000

 NH     5.000     0.150    19.000     0.150   424.000     0.100   562.000     0.023   788.000     0.040
 NH   819.000     0.000     0.000     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
        XSEC 64          XSEC CROSSES US OF OLD ROCK CRIBBING
 X1  7200.000    28.000   562.000   788.000  2200.000  2500.000  2520.000     0.000     0.000     0.000
 X3    10.000     0.000     0.000     0.000     0.000     0.000     0.000   619.600     0.000     0.000
 GR   625.700     0.000   616.300    19.000   613.400    58.000   614.400   124.000   614.000   224.000
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 GR    615.400   314.000   613.600   336.000   614.200   371.000   617.100   424.000   619.600   499.000
 GR    619.100   557.000   619.000   562.000   615.800   573.000   608.900   578.000   606.500   582.000
 GR    604.000   584.000   600.800   611.000   602.100   638.000   602.100   667.000   602.500   695.000
 GR    602.900   724.000   605.500   752.000   605.900   773.000   607.000   780.000   607.690   785.000
 GR    610.400   788.000   616.500   801.000   625.700   819.000     0.000     0.000     0.000     0.000

 NH      4.000     0.050    39.000     0.025   295.000     0.150   788.000     0.040   924.000     0.000
 ET      0.000     0.000     1.400     0.000     0.000     0.000     0.000     0.000     0.000     0.000
         XSEC 65   XSEC CROSSES 100FT US OF BOAT LAUNCH
 X1   8850.000    30.000    39.000   325.000  1400.000  1600.000  1650.000     0.000     0.000     0.000
 X3     10.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000   619.800     0.000
 GR    626.000     0.000   624.200     8.000   621.800    35.000   619.300    39.000   610.900    58.000
 GR    608.040    69.000   605.100    95.000   602.700   140.000   603.600   175.000   604.900   210.000
 GR    605.100   245.000   605.800   280.000   608.040   293.000   611.700   295.000   612.100   304.000
 GR    619.100   317.000   619.800   326.000   619.500   338.000   616.400   365.000   613.500   413.000
 GR    612.100   478.000   612.000   548.000   612.100   588.000   612.300   638.000   612.500   688.000
 GR    612.500   738.000   612.400   788.000   613.800   843.000   617.300   906.000   626.000   924.000
1

 NH      7.000     0.050    46.000     0.030   226.000     0.050   293.000     0.160   374.000     0.150
 NH    564.000     0.080  1065.000     0.090  1244.000     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
               XSEC 66
 X1  10300.000    36.000    46.000   377.000  1500.000   700.000  1450.000     0.000     0.000     0.000
 X3     10.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000   620.500     0.000
 GR    626.500     0.000   620.600    29.000   612.500    38.000   611.100    46.000   608.200    50.000
 GR    606.000    59.000   603.200    96.000   603.000   128.000   604.600   161.000   606.000   192.000
 GR    607.100   210.000   607.800   225.000   609.300   226.000   610.200   241.000   610.000   249.000
 GR    609.200   253.000   610.700   293.000   612.300   311.000   612.900   361.000   618.800   374.000
 GR    620.600   377.000   618.900   385.000   618.600   443.000   616.800   529.000   611.500   564.000
 GR    611.500   606.000   610.400   693.000   610.500   769.000   611.300   889.000   612.600   893.000
 GR    612.700  1012.000   615.100  1065.000   615.500  1115.000   617.600  1165.000   620.400  1190.000
 GR    626.500  1244.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

 NH      3.000     0.150   839.000     0.030  1059.000     0.150  1107.000     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
               XSEC   67
 X1  11300.000    25.000   816.000  1059.000  1600.000  1000.000  1500.000     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    626.700     0.000   620.500   108.000   616.700   155.000   613.700   255.000   613.500   355.000
 GR    613.400   449.000   613.200   530.000   613.100   644.000   613.600   744.000   617.100   799.000
 GR    619.800   813.000   619.600   816.000   612.500   825.000   612.100   839.000   608.730   842.000
 GR    606.700   861.000   605.900   895.000   605.000   931.000   604.000   967.000   602.900  1002.000
 GR    605.500  1037.000   608.730  1051.000   610.700  1059.000   617.400  1079.000   626.700  1107.000

 ET      0.000     0.000     1.400     0.000     0.000     0.000     0.000     0.000     0.000     0.000
 X1  12600.000     0.000     0.000     0.000   800.000   800.000   800.000     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

 NH      3.000     0.100   113.000     0.030   363.000     0.150   748.000     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
               XSEC 68
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 X1  14100.000     25.000    113.000    382.000    900.000   1600.000   1500.000      0.000      0.000      0.000
 GR    627.100      0.000    622.000     15.000    617.600     39.000    620.100     70.000    619.800     88.000
 GR    614.200     97.000    611.800    113.000    609.140    125.000    608.000    164.000    607.400    191.000
 GR    606.700    205.000    606.300    247.000    604.000    320.000    605.000    330.000    607.500    345.000
 GR    608.800    359.000    612.200    363.000    614.700    376.000    618.400    382.000    619.200    435.000
 GR    616.000    501.000    615.700    543.000    615.400    633.000    616.200    693.000    627.100    748.000

 NH      3.000      0.150    922.000      0.022   1120.000      0.060   1143.000      0.000      0.000      0.000
 ET      0.000      0.000      1.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
                XSEC 69
 X1  16700.000     28.000    844.000   1120.000    300.000   1900.000   2600.000      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    627.600      0.000    618.800     35.000    616.900    133.000    615.200    230.000    614.100    323.000
 GR    513.700    410.000    613.400    515.000    617.800    553.000    613.300    663.000    614.200    712.000
 GR    617.800    785.000    621.800    844.000    620.300    868.000    619.800    902.000    618.900    909.000
 GR    612.400    922.000    609.640    924.000    607.900    938.000    607.300    954.000    604.700    983.000
 GR    604.000   1012.000    605.600   1041.000    607.200   1070.000    608.500   1074.000    609.640   1102.000
 GR    613.800   1120.000    620.300   1131.000    627.600   1143.000      0.000      0.000      0.000      0.000
1
                                                                                                  PAGE    4


 NC      0.040      0.060      0.025      0.000      0.000      0.000      0.000      0.000      0.000      0.000
                XSEC 1 FROM SUBDIVISION FILE F184 22 12
 X1  18990.000     24.000    257.000    570.000   1250.000   2500.000   2190.000      0.000      0.000      0.000
 GR    633.400      0.000    629.500     30.000    628.200    106.000    619.400    130.000    617.400    180.000
 GR    617.800    218.000    618.000    225.000    618.900    250.000    611.800    257.000    606.900    257.000
 GR    606.000    300.000    606.600    325.000    606.900    350.000    606.400    375.000    606.800    475.000
 GR    609.000    527.000    610.300    550.000    612.700    570.000    620.500    580.000    620.200    600.000
 GR    618.700    625.000    619.300    640.000    623.700    660.000    630.000    677.000      0.000      0.000

 NH      6.000      0.150     43.000      0.030    115.000      0.028    155.000      0.030    529.000      0.025
 NH    703.000      0.150    756.000      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
                XSEC 70  THROUGH SUBDIV ON LEFT BANK  CHANNEL INEFFECTIVE
                1976 HWM ON BASEMENT WALL 619.8  HWM 800FT DS 619.98
 X1  19870.000     30.000    529.000    703.000    950.000    980.000   1000.000      0.000      0.000      0.000
 GR    628.500      0.000    620.000     25.000    620.400    217.000    630.000    217.000    630.000    250.000
 GR    520.400    250.000    521.500    306.000    621.500    306.100    621.500    306.200    621.500    306.300
 GR    616.900    332.000    617.500    396.000    619.700    432.000    619.900    465.000    618.400    476.000
 GR    619.800    489.000    619.300    503.000    613.800    519.000    612.400    529.000    608.700    558.000
 GR    607.600    569.000    607.100    595.000    605.600    620.000    605.200    646.000    606.500    671.000
 GR    610.500    697.000    612.800    703.000    614.200    713.000    621.400    735.000    628.500    756.000

 NH      6.000      0.060    123.000      0.150    223.000      0.025    406.000      0.045    412.000      0.030
 NH    503.000      0.100    800.000      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
                XSEC 71 OLDER COTTAGES ON RT BANK  SEAWALL PROTECTS RT BANK
 X1  21370.000     27.000    223.000    412.000   1100.000   1600.000   1500.000      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    628.800      0.000    622.900     18.000    615.900     38.000    618.300     61.000    619.200     83.000
 GR    619.300    101.000    613.900    123.000    614.400    153.000    611.200    205.000    612.400    223.000
 GR    610.500    231.000    609.200    247.000    609.100    269.000    608.000    285.000    607.000    325.000
 GR    605.700    366.000    605.100    406.000    619.800    412.000    617.700    472.000    616.000    542.000
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GR	615.200	588.000	616.800	603.000	615.000	618.000	615.300	673.000	615.400	724.000
GR	617.900	756.000	628.900	800.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	7.000	0.100	27.000	0.150	125.000	0.150	464.000	0.030	663.000	0.050
NH	829.000	0.030	891.000	0.100	929.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 72								
X1	24985.000	28.000	441.000	663.000	3700.000	3600.000	3615.000	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	629.900	0.000	620.800	27.000	616.000	56.000	614.700	125.000	615.100	191.000
GR	615.400	263.000	616.600	344.000	617.400	402.000	620.300	441.000	619.700	456.000
GR	615.000	459.000	613.500	464.000	609.200	488.000	607.500	500.000	607.100	531.000
GR	607.100	561.000	609.400	592.000	609.800	622.000	609.800	653.000	614.700	663.000
GR	614.900	690.000	619.200	705.000	619.200	709.000	617.100	744.000	618.800	772.000
GR	619.700	829.000	622.400	891.000	629.900	929.000	0.000	0.000	0.000	0.000

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NH	4.000	0.040	23.000	0.150	425.000	0.030	658.000	0.080	688.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 73								
X1	28235.000	20.000	371.000	653.000	2300.000	3300.000	3200.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	623.500	0.000	0.000
GR	630.700	0.000	623.000	23.000	620.000	38.000	617.800	148.000	619.000	203.000
GR	620.700	242.000	622.300	309.000	623.500	371.000	619.300	402.000	619.500	425.000
GR	612.400	436.000	610.400	445.000	610.200	485.000	610.200	526.000	609.000	566.000
GR	608.000	630.000	612.500	648.000	616.700	658.000	619.100	665.000	630.700	688.000
NH	3.000	0.150	51.000	0.030	275.000	0.150	536.000	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
		XSEC 74 IN LINE WITH E SIDE OF COTTAGE ON TOP OF LFT BANK JUST US OF POWERLINE								
X1	29860.000	16.000	51.000	275.000	1500.000	1700.000	1625.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	622.800	0.000
GR	631.400	0.000	616.200	51.000	613.400	53.000	610.100	65.000	608.100	104.000
GR	609.500	143.000	610.600	183.000	611.300	222.000	612.300	235.000	611.900	256.000
GR	615.200	275.000	620.600	283.000	622.800	313.000	620.400	375.000	622.800	484.000
GR	631.400	536.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.150	220.000	0.100	279.000	0.030	545.000	0.080	633.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 75								
X1	31660.000	23.000	279.000	545.000	1700.000	1800.000	1800.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	623.500	0.000	0.000
GR	632.100	0.000	623.900	49.000	621.600	74.000	621.500	112.000	622.100	178.000
GR	623.200	213.000	623.500	220.000	623.600	276.000	623.300	279.000	615.700	289.000
GR	614.100	292.000	610.600	300.000	609.700	328.000	608.700	376.000	610.500	420.000
GR	612.000	477.000	612.500	529.000	614.100	535.000	617.100	545.000	620.200	576.000
GR	622.300	585.000	624.200	609.000	632.100	638.000	0.000	0.000	0.000	0.000
NH	5.000	0.155	33.000	0.035	288.000	0.150	383.000	0.120	785.000	0.060
NH	819.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 76

X1	35425.000	21.000	33.000	289.000	4300.000	3600.000	3760.000	0.000	0.000	0.000
XB	0.000	0.000	0.000	20.000	0.000	790.000	0.000	0.000	0.000	0.000
GR	633.200	0.000	626.400	20.000	621.200	33.000	615.100	38.000	611.200	51.000
GR	610.000	90.000	609.000	123.000	609.200	157.000	610.800	180.000	615.200	207.000
GR	617.000	217.000	621.600	238.000	625.300	289.000	625.200	316.000	620.400	383.000
GR	619.800	482.000	620.200	583.000	620.100	683.000	620.900	760.000	621.900	785.000
GR	633.200	819.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.160	29.000	0.150	570.000	0.150	849.000	0.035	1017.000	0.150
NH	1047.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 77								
X1	37670.000	31.000	849.000	1017.000	1900.000	2100.000	2150.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	20.000	0.000	1035.000	0.000	0.000	0.000	0.000
GR	633.800	0.000	624.300	19.000	620.600	29.000	619.300	128.000	619.000	224.000
GR	619.100	314.000	619.300	391.000	621.400	419.000	619.700	468.000	620.200	570.000
GR	621.600	607.000	625.100	657.000	625.800	712.000	626.700	761.000	621.900	792.000
GR	621.900	816.000	625.300	823.000	625.200	839.000	624.500	844.000	622.700	849.000
GR	618.200	856.000	615.800	864.000	613.800	886.000	611.300	916.000	608.000	944.000

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GR	609.100	977.000	615.400	1009.000	619.100	1014.000	623.700	1017.000	630.100	1033.000
GR	633.800	1047.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.100	32.000	0.030	332.000	0.150	424.000	0.150	488.000	0.070
NH	779.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 78 800FT DS OF ISLAND, POWERLINE CROSSING AND BOAT LAUNCH								
		WEST END OF OLD GRAVEL OPERATION								
X1	38970.000	22.000	32.000	332.000	700.000	1300.000	1300.000	0.000	0.000	0.000
X3	0.000	10.000	0.000	20.000	0.000	760.000	0.000	0.000	624.800	0.000
GR	634.200	0.000	626.800	24.000	621.800	32.000	617.700	50.000	616.250	52.000
GR	614.400	64.000	611.900	110.000	612.600	173.000	613.700	258.000	614.300	311.000
GR	622.500	322.000	624.800	332.000	624.100	365.000	623.300	382.000	622.900	424.000
GR	621.100	449.000	620.600	488.000	620.400	538.000	620.000	638.000	620.600	743.000
GR	625.000	760.000	634.300	779.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.150	25.000	0.020	186.000	0.150	258.000	0.080	531.000	0.000
		XSEC 1								
X1	42170.000	27.000	25.000	186.000	3600.000	3000.000	3200.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	15.000	0.000	510.000	0.000	0.000	628.000	0.000
GR	634.000	0.000	626.900	14.000	623.300	22.000	622.400	25.000	619.100	26.000
GR	616.400	31.000	613.800	40.000	612.800	63.000	611.000	87.000	611.000	91.000
GR	612.000	135.000	613.500	161.000	614.900	163.000	616.300	174.000	617.600	179.000
GR	625.900	188.000	626.800	191.000	624.600	201.000	627.900	230.000	627.900	258.000
GR	621.300	324.000	620.900	364.000	623.600	379.000	622.600	425.000	621.000	451.000
GR	626.000	516.000	634.000	531.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.090	19.000	0.075	58.000	0.025	223.000	0.070	308.000	0.150
NH	378.000	0.080	479.000	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
		XSEC 2								
X1	43770.000	26.000	58.000	223.000	1200.000	1800.000	1600.000	0.000	0.000	0.000
GR	634.000	0.000	628.600	19.000	626.000	35.000	623.000	55.000	622.300	58.000
GR	619.700	59.000	616.800	62.000	613.800	75.000	612.400	105.000	612.400	133.000

GR	613.100	159.000	613.500	185.000	614.400	207.000	616.800	219.000	618.300	223.000
GR	618.300	250.000	619.900	258.000	619.200	266.000	619.300	288.000	619.500	295.000
GR	624.700	308.000	623.900	347.000	625.100	373.000	624.300	409.000	626.600	459.000
GR	639.100	479.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.150	12.000	0.150	214.000	0.035	317.000	0.065	357.000	0.035
NH	533.000	0.150	702.000	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

XSEC 3 SECTION THRU ISLAND NE OF OLD GRAVEL OPERATION

X1	44820.000	29.000	214.000	533.000	1100.000	1100.000	1050.000	0.000	0.000	0.000
GR	635.000	0.000	629.000	12.000	626.200	72.000	624.900	94.000	622.300	107.000
GR	622.900	145.000	623.300	186.000	624.400	199.000	624.700	214.000	618.000	226.000
GR	617.000	241.000	616.500	258.000	616.900	292.000	617.900	313.000	622.400	317.000
GR	624.400	342.000	622.000	357.000	616.900	361.000	615.100	402.000	613.900	430.000
GR	612.200	458.000	612.200	487.000	613.000	507.000	616.900	513.000	625.300	533.000
GR	627.500	554.000	623.300	660.000	628.100	680.000	635.000	702.000	0.000	0.000

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NH	4.000	0.150	22.000	0.150	252.000	0.035	478.000	0.150	626.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 4 OLD WOOD PILING ALONG EACH BANK

X1	45470.000	28.000	252.000	478.000	550.000	650.000	650.000	0.000	0.000	0.000
GR	635.400	0.000	627.200	22.000	625.100	52.000	625.500	83.000	625.500	136.000
GR	627.800	157.000	625.300	180.000	625.700	223.000	628.200	248.000	627.700	252.000
GR	625.700	256.000	619.300	262.000	616.300	269.000	615.000	274.000	614.300	280.000
GR	614.300	312.000	614.300	341.000	614.300	371.000	614.100	395.000	614.000	417.000
GR	613.600	442.000	613.400	460.000	617.400	470.000	624.500	478.000	627.100	487.000
GR	628.600	508.000	632.100	558.000	640.000	626.000	0.000	0.000	0.000	0.000

NH	5.000	0.150	23.000	0.100	281.000	0.035	465.000	0.070	473.000	0.060
NH	497.000	0.000	0.000	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

XSEC 5 HILL AT RIGHT BANK IS ERODING

X1	46870.000	24.000	281.000	465.000	1280.000	1575.000	1300.000	0.000	0.000	0.000
GR	642.500	0.000	631.000	23.000	626.000	56.000	627.400	89.000	624.500	131.000
GR	626.300	179.000	629.300	237.000	628.100	250.000	627.700	259.000	623.100	270.000
GR	622.100	281.000	618.400	284.000	615.800	299.000	616.300	319.000	614.400	347.000
GR	614.000	370.000	612.600	395.000	612.500	421.000	615.600	447.000	618.200	461.000
GR	621.300	465.000	622.600	473.000	626.700	479.000	636.000	497.000	0.000	0.000

NH	4.000	0.100	36.000	0.030	91.000	0.036	352.000	0.100	458.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 6

X1	48720.000	20.000	91.000	352.000	1500.000	2000.000	1850.000	0.000	0.000	0.000
GR	637.000	0.000	624.900	36.000	626.500	72.000	626.800	91.000	618.000	104.000
GR	618.000	104.000	616.800	116.000	615.500	148.000	615.200	198.000	615.500	248.000
GR	616.000	298.000	617.500	348.000	618.300	350.000	620.600	352.000	619.700	356.000
GR	617.200	373.000	616.700	386.000	617.300	407.000	628.500	434.000	637.000	458.000

NH	4.000	0.150	20.000	0.030	532.000	0.036	691.000	0.050	738.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 7

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X1  50220.000    23.000   532.000   691.000  1300.000  1300.000  1500.000     0.000     0.000     0.000
GR    636.500     0.000   626.900    20.000   627.600   158.000   628.000   233.000   624.200   282.000
GR    627.400   347.000   626.500   451.000   624.900   479.000   626.600   525.000   626.300   532.000
GR    621.100   542.000   619.500   548.000   618.500   555.000   617.500   558.000   616.000   581.000
GR    612.700   605.000   611.700   628.000   611.900   652.000   616.000   675.000   619.600   688.000
GE    623.100   691.000   627.700   707.000   636.500   738.000     0.000     0.000     0.000     0.000

NH      3.000     0.020   124.000     0.035   312.000     0.150  1290.000     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
                XSEC 8   VICS CAMPING ON RIGHT BANK  CAMPGROUND IS ON A HILL
                WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.
X1  51945.000    27.000   124.000   312.000  1300.000  1500.000  1725.000     0.000     0.000     0.000
GR    637.100     0.000   634.700    32.000   637.200   111.000   637.600   124.000   625.400   138.000
GR    620.200   149.000   617.600   158.000   613.400   181.000   614.900   201.000   616.600   222.000
GR    616.600   247.000   618.300   254.000   619.300   271.000   620.200   290.000   622.100   297.000
GR    623.300   303.000   629.400   312.000   630.000   320.000   625.400   367.000   627.200   392.000
GR    627.000   411.000   628.300   425.000   629.500   454.000   628.600   560.000   629.000   650.000
GR    629.000  1250.000   639.000  1290.000     0.000     0.000     0.000     0.000     0.000     0.000
1
                                                                                        PAGE     8


NH      6.000     0.120   860.000     0.025   887.000     0.025  1032.000     0.100  1084.000     0.025
NH   1192.000     0.125  1700.000     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
                XSEC 9  SECTION THROUGH ISLAND US OF VICS
              XSEC BENT 30DEG LFT AT 887  20DEG RT AT STA 1208
X1  53000.000    39.000   887.000  1192.000  1200.000   500.000  1055.000     0.000     0.000     0.000
X2      0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000    15.000
X3      0.000     0.000     0.000   350.000     0.000     0.000     0.000     0.000     0.000     0.000
GR    638.500     0.000   628.500    50.000   625.000   100.000   624.700   650.000   624.900   705.000
GR    624.900   728.000   626.700   760.000   627.500   815.000   629.000   860.000   626.200   872.000
GR    625.000   887.000   620.400   892.000   616.900   898.000   616.700   922.000   617.500   947.000
GR    617.600   974.000   617.700  1001.000   620.400  1025.000   623.600  1032.000   624.400  1035.000
GR    623.600  1061.000   624.300  1078.000   625.200  1084.000   620.400  1093.000   617.900  1101.000
GR    616.200  1122.000   616.800  1143.000   616.000  1165.000   615.600  1185.000   619.600  1190.000
GR    623.000  1192.000   624.500  1203.000   629.600  1208.000   629.000  1226.000   628.200  1240.000
GR    629.900  1290.000   629.100  1350.000   629.100  1650.000   638.500  1700.000     0.000     0.000

NH      6.000     0.120  1340.000     0.060  1420.000    10.000  1480.000     0.060  1557.000     0.025
NH   1730.000     0.125  1740.000     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
                XSEC 10  REDWOOD COTTAGE ON LEFT BANK  1976 HWM 630.5
                1986 HWM 632    XSEC BENT 45DEG LEFT AT STA 1360
X1  53700.000    24.000  1557.000  1730.000   400.000   750.000   700.000     0.000     0.000     0.000
X2      0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000    15.000
X3      0.000     0.000     0.000   300.000     0.000     0.000     0.000     0.000     0.000     0.000
GR    639.000     0.000   628.500    50.000   625.000   100.000   625.000  1340.000   628.300  1360.000
GR    627.200  1377.000   628.700  1420.000   628.800  1480.000   629.000  1500.000   629.200  1531.000
GR    627.400  1545.000   626.800  1550.000   626.200  1557.000   620.600  1563.000   617.900  1567.000
GR    618.300  1600.000   616.500  1624.000   616.100  1662.000   616.500  1688.000   618.100  1717.000
GR    620.700  1725.000   629.200  1730.000   632.100  1733.000   639.000  1740.000     0.000     0.000

NH      7.000     0.200  1399.000     0.050  1784.000     0.025  1957.000    10.000  1998.000     0.025
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 NH   2062.000     0.030   2221.000     0.040   2250.000     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
                XSEC 10A NEAR WHITE COTTAGE(BRONKEMA)  1976HWM 630.9 IN GARAGE
                XSEC BENT 5DEG RT AT SIA 139.9  RESTRICTED FOR HIGH GROUND AT
                XSEC 11 US      1986 HWM 638
 X1   54600.000    35.000   2062.000   2221.000    500.000   1000.000    900.000     0.000     0.000     0.000
 X2       0.000     0.000      0.000      0.000      0.000      0.000      0.000     0.000     0.000    15.000
 X3       0.000     0.000      0.000    750.000      0.000      0.000      0.000     0.000     0.000     0.000
 GR     639.000     0.000    628.500     50.000    625.000    449.000    623.000   649.000   624.000   949.000
 GR     623.000  1049.000    627.100   1352.000    628.200   1399.000    629.300  1508.000   626.700  1597.000
 GR     630.100  1644.000    630.500   1755.000    628.100   1784.000    629.900  1846.000   628.500  1888.000
 GR     628.600  1917.000    628.100   1957.000    629.600   1966.000    630.400  1998.000   629.800  2041.000
 GR     629.100  2060.000    628.700   2062.000    625.300   2068.000    624.500  2074.000   621.000  2079.000
 GR     620.500  2099.000    617.500   2119.000    617.000   2123.000    615.500  2145.000   614.000  2167.000
 GR     613.000  2190.000    616.300   2215.000    621.000   2221.000    632.100  2238.000   639.000  2250.000
1
                                                                                              PAGE     9


 NH       6.000     0.013    600.000     0.025    700.000     10.000    750.000     0.025    817.000     0.030
 NH     961.000     0.040    978.000     0.000      0.000      0.000      0.000     0.000     0.000     0.000
                XSEC 10B LOB IS PELCH ROAD
 X1   55080.000    21.000    817.000   961.000    250.000    550.000    480.000     0.000     0.000     0.000
 X2       0.000     0.000      0.000     0.000      0.000      0.000      0.000     0.000     0.000     0.000
 GR     640.000     0.000    633.100   100.000    631.300    200.000    631.600   300.000   631.400   400.000
 GR     631.100   500.000    631.100   600.000    629.900    700.000    629.300   750.000   628.700   800.000
 GR     625.300   806.000    624.500   812.000    621.000    817.000    619.700   857.000   615.400   885.000
 GR     613.300   907.000    614.000   930.000    615.800    955.000    621.300   961.000   632.100   978.000
 GR     639.000   990.000      0.000     0.000      0.000      0.000      0.000     0.000     0.000     0.000

 NH       5.000     0.029   1169.000     0.080   1546.000     10.000   1651.000     0.080   1946.000     0.100
 NH    2105.000     0.000      0.000     0.000      0.000      0.000      0.000     0.000     0.000     0.000
                XSEC 11   EXTENDED PARALLEL TO XSEC 12 ACROSS OLD DOMENS BEND
 X1   55800.000    23.000   1000.000  1169.000    150.000    450.000    720.000     0.000     0.000     0.000
 X2       0.000     0.000      0.000     0.000      0.000      0.000      0.000     0.000     0.000    15.000
 X3       0.000     0.000      0.000     0.000      0.000   1900.000      0.000     0.000     0.000     0.000
 GR     627.700  1000.000    623.000  1014.000    621.400   1015.000    619.400  1026.000   618.800  1039.000
 GR     618.500  1051.000    616.500  1075.000    615.700   1100.000    616.500  1125.000   618.400  1148.000
 GR     621.400  1154.000    628.600  1169.000    630.100   1172.000    629.800  1185.000   630.200  1237.000
 GR     629.500  1320.000    630.100  1454.000    630.700   1546.000    630.800  1651.000   629.700  1819.000
 GR     629.600  1948.000    628.200  2070.000    640.000   2105.000      0.000     0.000     0.000     0.000

 NH       6.000     0.070     22.000     0.035    220.000      0.080    457.000    10.000   560.000     0.080
 NH     958.000     0.100   1592.000     0.000      0.000      0.000      0.000     0.000     0.000     0.000
                KSEC 12
 X1   55800.000    31.000     22.000   222.000   1200.000     50.000   1000.000     0.000     0.000     0.000
 X2       0.000     0.000      0.000     0.000      0.000      0.000      0.000     0.000     0.000    15.000
 X3       0.000     0.000      0.000     0.000      0.000   1630.000      0.000     0.000     0.000     0.000
 GR     640.000     0.000    629.300    13.000    621.700     22.000    619.100    29.000   616.300    53.000
 GR     614.600    81.000    617.100   107.000    619.100    131.000    620.800   141.000   621.600   147.000
 GR     622.800   152.000    624.300   171.000    626.700    187.000    630.000   222.000   629.900   245.000
 GR     628.800   350.000    630.100   457.000    630.700    560.000    630.600   660.000   629.900   758.000
 GR     629.600   865.000    629.800   958.000    630.100   1010.000    629.500  1093.000   630.100  1227.000
 GR     630.700  1319.000    630.800  1424.000    629.700   1592.000    629.600  1719.000   629.200  1843.000
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GR	640.000	1878.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	10.000	0.070	30.000	0.045	857.000	0.030	987.000	0.080	1061.000	0.030
NH	1175.000	0.055	1189.000	10.000	1245.000	0.055	1606.000	10.000	1711.000	0.075
NH	2165.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND									
	1976 HWM 631.9									
X1	57650.000	32.000	857.000	1180.000	500.000	50.000	850.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	0.000	0.000	1910.000	0.000	0.000	0.000	0.000
GR	640.000	0.000	630.000	30.000	629.200	845.000	622.000	857.000	618.500	869.000
GR	618.500	879.000	618.500	914.000	620.000	968.000	622.700	987.000	627.000	991.000
GR	625.500	1007.000	627.300	1014.000	627.300	1045.000	628.000	1054.000	624.400	1061.000
GR	623.500	1087.000	622.000	1117.000	618.100	1144.000	615.900	1168.000	620.400	1175.000
GR	626.500	1180.000	629.700	1189.000	629.700	1245.000	630.200	1297.000	629.500	1380.000
GR	630.100	1514.000	630.700	1606.000	630.800	1711.000	629.700	1879.000	629.600	2006.000
GR	628.200	2130.000	640.000	2165.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	4.000	0.070	50.000	0.048	1106.000	0.036	1285.000	0.150	1300.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 14 XSEC BENT 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB									
X1	58350.000	20.000	1106.000	1285.000	500.000	400.000	700.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	640.500	0.000	633.000	50.000	630.100	100.000	628.600	400.000	630.300	731.000
GR	631.100	918.000	630.700	1077.000	630.500	1106.000	623.300	1125.000	621.600	1126.000
GR	616.400	1138.000	616.300	1158.000	617.500	1185.000	619.500	1212.000	619.900	1243.000
GR	619.900	1269.000	620.900	1277.000	622.400	1282.000	629.500	1285.000	640.500	1300.000
NH	4.000	0.060	1150.000	0.034	1389.000	0.100	1513.000	0.100	1550.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 15									
X1	58900.000	21.000	1150.000	1389.000	450.000	700.000	550.000	0.000	0.000	0.000
GR	640.600	0.000	633.000	50.000	632.000	100.000	632.200	1130.000	632.000	1143.000
GR	631.800	1147.000	631.500	1150.000	627.000	1153.000	622.700	1162.000	618.400	1183.000
GR	620.500	1201.000	620.700	1225.000	619.900	1257.000	618.700	1289.000	616.600	1317.000
GR	616.500	1342.000	618.100	1367.000	629.000	1389.000	629.000	1447.000	631.300	1513.000
GR	640.600	1550.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.120	32.000	0.040	44.000	0.035	200.000	0.120	800.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 16									
X1	60000.000	17.000	44.000	200.000	1000.000	700.000	1100.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	641.400	0.000	631.000	32.000	630.500	36.000	628.800	38.000	628.000	44.000
GR	623.200	47.000	620.300	55.000	617.400	79.000	617.600	103.000	619.000	129.000
GR	620.700	154.000	621.200	168.000	623.300	175.000	626.500	187.000	632.600	200.000
GR	633.100	750.000	641.400	800.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.093	144.000	0.028	422.000	0.089	543.000	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
	XSEC 17 SUBDIVISION ON LEFT BANK									

X1	62250.000	28.000	144.000	422.000	2400.000	1700.000	2225.000	0.000	0.000	0.000
GR	642.800	0.000	638.600	26.000	632.600	88.000	631.600	113.000	632.500	125.000
GR	632.900	144.000	630.900	153.000	625.400	159.000	624.200	161.000	622.000	173.000
GR	621.800	181.000	622.100	193.000	621.400	243.000	620.500	280.000	619.700	313.000
GR	620.200	350.000	621.800	365.000	624.300	384.000	625.000	394.000	624.200	399.000
GR	629.100	422.000	630.300	424.000	629.700	435.000	629.500	468.000	627.800	492.000
GR	629.000	518.000	637.300	534.000	641.600	543.000	0.000	0.000	0.000	0.000
NH	3.000	0.089	32.000	0.028	256.000	0.110	448.000	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	63120.000	22.000	32.000	256.000	970.000	970.000	970.000	0.000	0.000	0.000
GR	643.800	0.000	638.500	14.000	631.400	30.000	630.400	32.000	624.700	34.000
GR	623.000	39.000	618.500	50.000	618.400	82.000	620.000	117.000	621.800	152.000
GR	623.400	187.000	624.100	194.000	624.900	227.000	626.700	235.000	625.400	245.000
GR	625.800	251.000	633.100	256.000	634.000	265.000	633.700	298.000	633.400	322.000
GR	632.300	372.000	643.800	448.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	4.000	0.074	175.000	0.110	216.000	0.028	421.000	0.089	485.000	0.000
X1	65620.000	27.000	216.000	421.000	1900.000	1900.000	1900.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	20.000	0.000	470.000	0.000	0.000	0.000	0.000
GR	642.200	0.000	631.500	53.000	632.000	98.000	634.500	153.000	635.700	175.000
GR	634.000	196.000	633.000	205.000	629.800	216.000	626.100	219.000	624.900	230.000
GR	623.100	238.000	622.500	261.000	621.900	290.000	621.400	307.000	620.900	333.000
GR	620.700	363.000	623.000	397.000	625.200	408.000	628.300	421.000	630.100	425.000
GR	631.000	431.000	631.400	442.000	630.900	455.000	631.800	462.000	634.200	474.000
GR	637.700	479.000	642.200	485.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.074	10.000	0.030	59.000	0.028	295.000	0.110	455.000	0.000

XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK

X1	67420.000	21.000	59.000	295.000	2400.000	2500.000	2500.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	10.000	0.000	420.000	0.000	0.000	0.000	0.000
GR	642.900	0.000	638.500	10.000	634.000	20.000	633.200	32.000	632.500	54.000
GR	631.800	59.000	627.800	62.000	624.500	73.000	621.300	86.000	620.200	100.000
GR	619.300	129.000	620.900	154.000	623.200	194.000	624.000	218.000	626.100	267.000
GR	627.700	281.000	633.700	295.000	636.100	299.000	633.000	345.000	634.900	415.000
GR	642.900	455.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.063	270.000	0.028	518.000	0.074	575.000	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

XSEC 21 US OF GREEN COTTAGE ON LEFT BANK

X1	68970.000	25.000	270.000	518.000	1400.000	1700.000	1550.000	0.000	0.000	0.000
GR	643.500	0.000	640.700	10.000	637.400	124.000	636.700	212.000	635.500	246.000
GR	633.700	256.000	631.500	270.000	625.500	277.000	626.300	293.000	625.100	303.000
GR	625.600	320.000	623.800	336.000	622.500	346.000	622.500	363.000	622.400	385.000
GR	622.500	421.000	622.500	429.000	623.000	450.000	622.700	481.000	625.300	499.000
GR	626.500	505.000	628.300	518.000	633.700	529.000	636.400	550.000	643.500	575.000
NH	3.000	0.037	126.000	0.028	408.000	0.037	426.000	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

XSEC 22 BELOW POWER LINE CROSSING N VALUES ARE ATYPICAL

X1	70330.000	25.000	126.000	408.000	1300.000	1300.000	1330.000	0.000	0.000	0.000

GR	644.400	0.000	640.000	15.000	635.000	24.000	631.600	40.000	632.700	54.000
GR	631.200	73.000	634.100	113.000	634.200	123.000	633.800	126.000	631.700	136.000
GR	625.200	144.000	624.400	160.000	624.500	183.000	623.700	194.000	624.000	214.000
GR	624.900	266.000	624.400	300.000	624.100	307.000	624.100	336.000	624.400	359.000
GR	626.200	383.000	628.600	389.000	632.300	408.000	639.400	417.000	644.400	426.000
NH	4.000	0.089	30.000	0.033	98.000	0.028	323.000	0.074	375.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	71300.000	22.000	98.000	323.000	1000.000	1000.000	1000.000	0.000	0.000	0.000
GR	645.100	0.000	636.000	30.000	633.300	71.000	633.900	79.000	633.600	98.000
GR	631.700	101.000	629.900	108.000	627.100	111.000	625.100	114.000	624.600	144.000
GR	625.000	154.000	623.900	163.000	622.700	193.000	622.100	217.000	622.100	235.000
GR	623.200	271.000	624.500	300.000	626.000	311.000	630.200	323.000	635.800	333.000
GR	637.600	354.000	645.100	375.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	4.000	0.074	67.000	0.035	100.000	0.030	320.000	0.089	408.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	71900.000	25.000	100.000	320.000	500.000	650.000	600.000	0.000	0.000	0.000
GR	646.100	0.000	638.500	21.000	636.100	48.000	634.200	56.000	634.500	67.000
GR	632.700	69.000	631.400	88.000	630.600	99.000	630.000	100.000	627.700	103.000
GR	625.800	109.000	625.500	118.000	624.600	150.000	624.600	178.000	624.000	225.000
GR	624.700	274.000	625.600	291.000	627.100	313.000	630.500	320.000	632.700	335.000
GR	630.900	343.000	632.400	355.000	633.200	361.000	639.400	389.000	645.200	408.000
NH	4.000	0.074	66.000	0.031	311.000	0.028	757.000	0.059	767.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 25 BTWN BARBER AND KRING CABINS DS OF PUB ACC SITE DS OF NENYGO

X1	73040.000	20.000	66.000	311.000	1200.000	1100.000	1140.000	0.000	0.000	0.000
GR	646.600	0.000	641.900	15.000	639.200	30.000	636.200	66.000	627.100	82.000
GR	626.400	124.000	625.600	147.000	625.400	215.000	626.000	268.000	628.000	301.000
GR	633.300	311.000	636.500	328.000	636.700	343.000	636.400	418.000	637.600	472.000
GR	639.500	526.000	641.300	559.000	644.800	620.000	650.800	757.000	655.800	767.000
NH	3.000	0.035	49.000	0.028	310.000	0.044	335.000	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

XSEC 26 DS OF CO RD BRDG SEC BENT 45DEG RT OFF PD FILL AT STA 10
BENT 45DEG RT TO RD FILL AT STA 325

X1	73590.000	21.000	49.000	310.000	660.000	500.000	550.000	0.000	0.000	0.000
GR	646.800	0.000	643.800	10.000	637.000	32.000	635.600	41.000	634.300	47.000
GR	632.900	49.000	628.800	65.000	624.100	82.000	626.000	105.000	625.000	113.000
GR	625.500	121.000	625.800	133.000	625.800	162.000	625.800	175.000	628.400	211.000
GR	626.600	244.000	627.000	272.000	628.400	304.000	632.400	310.000	632.700	325.000
GR	646.800	335.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.035	0.048	0.025	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

XSEC 27 CENTER OF BRDG ELLC AT 650.5

X1	73640.000	31.000	0.000	296.000	50.000	50.000	50.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	650.500	652.000	0.000	0.000	0.000	0.000	0.000
GR	652.000	0.000	638.800	0.000	681.300	35.000	629.200	36.000	628.870	43.000
GR	625.700	60.000	625.500	80.000	625.500	90.000	627.500	95.000	628.000	100.000

GR	626.700	107.000	625.600	117.000	625.100	128.000	625.800	138.000	628.000	146.000
GR	652.000	146.000	652.000	152.000	628.000	152.000	627.800	163.000	627.300	167.000
GR	625.800	182.000	625.600	197.000	625.500	208.000	625.500	215.000	624.800	240.000
GR	625.500	250.000	625.500	264.000	633.000	275.000	632.900	290.000	634.800	296.000
GR	652.000	296.000	0.000	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	73660.000	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	650.500	652.000	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	73720.000	21.000	110.000	353.000	60.000	60.000	60.000	0.000	0.000	0.000
GR	653.300	0.000	647.000	44.000	641.700	71.000	634.800	88.000	633.600	99.000
GR	634.700	110.000	631.500	120.000	629.100	123.000	627.000	153.000	625.400	168.000
GR	625.800	202.000	625.200	220.000	624.300	240.000	626.700	278.000	627.300	306.000
GR	639.000	336.000	632.300	353.000	635.400	373.000	640.000	414.000	645.500	492.000
GR	650.000	523.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	4.000	0.110	80.000	0.059	826.000	0.025	1066.000	0.067	1075.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 29 SEWAGE TREATMENT PLANT IN LOO								
X1	75140.000	24.000	826.000	1066.000	1140.000	1440.000	1420.000	0.000	0.000	0.000
GR	645.200	0.000	640.400	80.000	638.400	170.000	636.000	286.000	636.700	390.000
GR	636.500	494.000	637.200	592.000	636.300	692.000	635.400	790.000	635.600	820.000
GR	635.600	826.000	632.600	838.000	629.100	843.000	628.600	850.000	628.500	857.000
GR	627.800	891.000	627.500	936.000	628.100	953.000	628.900	983.000	629.700	1048.000
GR	631.200	1063.000	634.500	1066.000	639.200	1068.000	646.700	1075.000	0.000	0.000
NC	0.074	0.074	0.025	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
		XSEC 29A AT USGS CABLE								
X1	75800.000	22.000	1005.000	1264.000	540.000	700.000	660.000	0.000	0.000	0.000
GR	636.000	1005.000	632.400	1011.000	631.700	1013.000	630.500	1019.000	628.500	1029.000
GR	628.800	1037.000	629.100	1048.000	629.200	1062.000	630.000	1080.000	629.900	1105.000
GR	629.400	1121.000	629.900	1139.000	629.700	1159.000	629.300	1177.000	629.100	1194.000
GR	628.900	1208.000	628.200	1227.000	628.700	1229.000	631.700	1241.000	633.700	1246.000
GR	633.300	1255.000	635.200	1264.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.080	16.000	0.025	57.000	0.028	327.000	0.075	400.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 29B AT USGS GAGE 1976 STAGE IS 639.2			1986 STAGE 645.4					
X1	76350.000	24.000	24.000	333.000	550.000	550.000	550.000	0.000	0.000	0.000
GR	648.800	0.000	638.800	10.000	634.700	24.000	632.300	33.000	630.800	41.000
GR	630.900	65.000	629.800	86.000	630.600	103.000	631.100	110.000	630.900	132.000
GR	630.900	133.000	630.900	134.000	631.200	141.000	631.200	181.000	630.800	218.000
GR	631.200	243.000	630.700	255.000	629.800	284.000	631.100	306.000	632.500	326.000
GR	633.000	332.000	634.800	833.000	636.500	346.000	646.500	356.000	0.000	0.000
NC	0.074	0.074	0.025	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
		XSEC 30 1975 HWM IS 638.6			1976 HWM IS 639.2					

X1	76760.000	27.000	57.000	327.000	350.000	450.000	410.000	0.000	0.000	0.000
GR	654.000	0.000	645.800	16.000	638.600	32.000	637.900	43.000	636.500	57.000
GR	633.200	62.000	631.000	77.000	629.000	84.000	629.000	98.000	629.600	118.000
GR	629.000	147.000	628.300	167.000	630.400	188.000	633.000	197.000	632.600	203.000
GR	627.600	217.000	629.000	221.000	629.800	232.000	629.600	279.000	631.700	287.000
GR	631.100	298.000	633.300	315.000	636.000	327.000	638.300	341.000	636.900	355.000
GR	638.900	360.000	651.300	400.000	0.000	0.000	0.000	0.000	0.000	0.000
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1

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

*PROF 1

CCHV= 0.100 CEHV= 0.300
1490 NH CARD USED
*SECNO 0.100

3470 ENCROACHMENT STATIONS= 8.0 818.0 TYPE= 1 TARGET= 810.000

XSEC 61									
0.10	21.89	620.39	0.00	621.00	620.72	0.32	0.00	0.00	613.20
23100.	20.	18941.	4139.	52.	3779.	4137.	0.	0.	609.60
0.00	0.39	5.01	1.00	0.135	0.031	0.091	0.000	598.50	8.00
0.000252	0.	0.	0.	0	0	3	0.00	810.00	818.00

0
1490 NH CARD USED
*SECNO 1920.000

3470 ENCROACHMENT STATIONS= 22.0 763.0 TYPE= 1 TARGET= 741.000
SEC 61 MOVED US INVERT ADJ BY .94FT FLOOD FLOW SHIFTED FROM
ROB AS NOTED ON XSEC 61 TO APPROX AREA IN LOB FOR THIS XSEC

1920.00	21.43	620.87	0.00	0.00	621.30	0.43	0.55	0.03	614.14
23100.	0.	20522.	2578.	0.	3678.	3555.	319.	32.	610.54
0.10	0.00	5.58	0.73	0.000	0.031	0.140	0.000	599.44	22.00
0.000337	2170.	1920.	1740.	1	0	0	0.00	741.00	763.00

0
1490 NH CARD USED
*SECNO 3050.000

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000

XSEC 62									
3050.00	20.85	621.25	0.00	0.00	621.63	0.38	0.33	0.00	608.60
23100.	168.	22818.	115.	134.	4579.	109.	479.	46.	609.00
0.17	1.26	4.98	1.95	0.067	0.031	0.067	0.000	600.40	17.00
0.000256	1200.	1130.	1200.	2	0	0	0.00	311.00	328.00

0
1490 NH CARD USED
*SECNO 3051.000

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000
W EDGE OF BRIDGE DECK AT BRIDGETON 1976 HWM 615.7

3051.00	20.88	621.28	0.00	0.00	621.64	0.36	0.00	0.00	608.60
23100.	483.	22286.	330.	134.	4585.	109.	479.	46.	609.00
0.17	3.51	4.86	3.02	0.023	0.031	0.023	0.000	600.40	17.00
0.000244	1.	1.	1.	2	0	0	0.00	311.00	328.00

0
1

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

SPECIAL BRIDGE

SB	KK	XKOF	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.90	1.25	2.60	1000.00	260.00	8.00	9000.00	1.43	604.50	604.50

*SECNO 3100.000
CLASS A LOW FLOW

3420 BRIDGE W.S.= 621.25 BRIDGE VELOCITY= 5.00 CALCULATED CHANNEL AREA= 4623.

EGPRS	SGLNC	H3	OWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
0.00	621.64	0.01	0.	23100.	9000.	9152.	635.40	638.00

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000

3100.00	20.89	621.29	0.00	0.00	621.64	0.36	0.01	0.00	608.60
23100.	484.	22286.	331.	134.	4588.	110.	484.	46.	609.00
0.17	3.50	4.86	3.02	0.023	0.031	0.023	0.000	600.40	17.00
0.000243	49.	49.	49.	0	0	0	0.00	311.00	328.00

0
*SECNO 3101.000

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000

3101.00	20.87	621.27	0.00	0.00	621.65	0.39	0.00	0.01	608.60
23100.	56.	22961.	83.	134.	4585.	109.	484.	46.	609.00
0.17	0.42	5.01	0.75	0.202	0.031	0.095	0.000	600.40	17.00
0.000259	1.	1.	1.	1	0	0	0.00	311.00	328.00

0
1490 NH CARD USED
*SECNO 4680.000
KSEC 63

4680.00	19.77	621.77	0.00	0.00	621.99	0.22	0.32	0.02	608.50
23100.	493.	20560.	2047.	339.	5205.	1519.	701.	63.	616.00
0.29	1.27	3.95	1.35	0.061	0.031	0.048	0.000	602.00	6.96
0.000164	1500.	1579.	1600.	2	0	0	0.00	615.41	622.38

0
1490 NH CARD USED
*SECNO 7200.000
XSEC 64 XSEC CROSSES US OF OLD ROCK CRIBBING
1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	FV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AFOB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	ENCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	COBAR	TOPWID	ENDST
7200.00	21.37	622.17	0.00	0.00	622.56	0.39	0.51	0.05	619.00
23100.	1640.	21233.	227.	3602.	4061.	145.	1117.	102.	610.40
0.43	0.46	5.23	1.57	0.195	0.031	0.054	0.000	600.80	7.14
0.000265	2200.	2520.	2500.	2	0	0	0.00	804.94	812.08

0
1490 NH CARD USED
*SECNO 8850.000
XSEC 65 XSEC CROSSES 100FT US OF BOAT LAUNCH

8850.00	20.05	622.75	0.00	0.00	622.98	0.22	0.40	0.02	619.30
23100.	5.	19080.	4014.	14.	4573.	5454.	1442.	132.	619.80
0.56	0.40	4.17	0.74	0.067	0.034	0.138	0.000	602.70	24.29
0.000230	1400.	1650.	1600.	2	0	0	0.00	892.99	917.28

0
1490 NH CARD USED
*SECNO 10300.000
XSEC 66

10300.00	20.19	623.19	0.00	0.00	623.29	0.10	0.31	0.01	611.10
23100.	228.	15329.	7543.	167.	5011.	7732.	1710.	155.	620.60
0.71	1.36	3.06	0.98	0.067	0.047	0.114	0.000	603.00	16.26
0.000254	1500.	1450.	700.	2	0	0	0.00	1198.46	1214.72

0
1490 NH CARD USED
*SECNO 11800.000
XSEC 67

11800.00	20.61	623.51	0.00	0.00	623.77	0.26	0.42	0.05	619.60
23100.	4072.	18900.	129.	6636.	4201.	246.	2085.	189.	610.70
0.81	0.61	4.50	0.52	0.202	0.041	0.202	0.000	602.90	55.48
0.000354	1600.	1500.	1000.	1	0	0	0.00	1041.93	1097.41

0
*SECNO 12600.000

12600.00	20.89	623.79	0.00	0.00	624.04	0.25	0.27	0.00	619.60
23100.	4150.	18818.	132.	6849.	4269.	256.	2292.	208.	610.70
0.87	0.61	4.41	0.52	0.202	0.041	0.202	0.000	602.90	50.62
0.000333	800.	800.	800.	2	0	0	0.00	1047.63	1098.25

0
1490 NH CARD USED
*SECNO 14100.000
XSEC 68
1

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
14100.00	20.27	624.27	0.00	0.00	624.58	0.31	0.52	0.02	611.80
23100.	464.	21223.	1413.	605.	4541.	2537.	2572.	233.	618.40
0.97	0.77	4.67	0.56	0.135	0.041	0.202	0.000	604.00	8.35
0.000390	900.	1500.	1600.	1	0	0	0.00	725.31	733.67

0
1490 NH CARD USED
*SECNO 16700.000
XSEC 69

16700.00	21.00	625.00	0.00	0.00	625.30	0.29	0.71	0.00	621.80
23100.	3968.	19034.	98.	7690.	3987.	106.	2912.	261.	613.80
1.13	0.52	4.77	0.93	0.202	0.028	0.081	0.000	604.00	10.33
0.000242	300.	2600.	1900.	2	0	0	0.00	1128.40	1138.73

0
*SECNO 18990.000
XSEC 1 FROM SUBDIVISION FILE F184 22 12

18990.00	19.50	625.50	0.00	0.00	625.71	0.21	0.40	0.01	611.80
23100.	1281.	21434.	385.	1006.	5688.	525.	3299.	293.	612.70
1.29	1.27	3.77	0.73	0.054	0.034	0.081	0.000	606.00	113.37
0.000157	1250.	2190.	2500.	2	0	0	0.00	551.49	664.85

0
1490 NH CARD USED
*SECNO 19870.000

3265 DIVIDED FLOW
XSEC 70 THROUGH SUBDIV ON LEFT BANK CHANNEL INEFFECTIVE
1976 HWM ON BASEMENT WALL 619.8 HWM 800FT DS 619.98

19870.00	20.43	625.63	0.00	0.00	625.95	0.32	0.21	0.03	612.40
23100.	6561.	16369.	170.	3014.	3136.	320.	3453.	307.	612.80
1.36	2.18	5.22	0.53	0.041	0.034	0.202	0.000	605.20	8.45
0.000300	950.	1000.	980.	2	0	0	0.00	706.06	747.50

0
1490 NH CARD USED
*SECNO 21370.000
XSEC 71 OLDER COTTAGES ON RT BANK SEAWALL PROTECTS RT BANK

21370.00	21.00	626.10	0.00	0.00	626.33	0.23	0.37	0.01	612.40
23100.	1719.	15903.	5473.	2158.	3494.	3464.	3702.	330.	619.80
1.47	0.80	4.55	1.58	0.137	0.033	0.063	0.000	605.10	8.24
0.000225	1100.	1500.	1600.	2	0	0	0.00	780.85	789.09

0
1

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

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1490 NH CARD USED
*SECNO 24985.000
                 XSEC 72
 24985.00     19.99   627.09     0.00     0.00   627.30     0.22     0.97     0.00   620.30
   23100.     3002.   16547.    3551.    4581.    3808.    1959.    4515.     400.   614.70
     1.76      0.66     4.35     1.81    0.202    0.041    0.062    0.000   607.10     8.35
 0.000328     3700.    3615.    3600.        2        0        0     0.00   906.39   914.74
0
1490 NH CARD USED
*SECNO 28235.000
                 XSEC 73
 28235.00     20.16   628.16     0.00     0.00   628.46     0.31     1.13     0.03   623.50
   23100.     1689.   21263.     147.    2790.    4604.     153.    5099.     451.   616.70
     1.96      0.61     4.62     0.96    0.199    0.041    0.108    0.000   608.00     7.60
 0.000404     2300.    3200.    3300.        2        0        0     0.00   675.36   682.96
0
1490 NH CARD USED
*SECNO 29860.000
                 XSEC 74 IN LINE WITH E SIDE OF COTTAGE ON TOP OF LFT BANK
                 JUST US OF POWERLINE
 29860.00     20.66   628.76     0.00     0.00   629.20     0.43     0.70     0.04   616.20
   23100.      138.   22031.     931.     265.    4081.    1632.    5348.     472.   615.20
     2.04      0.52     5.40     0.57    0.202    0.041    0.202    0.000   608.10     8.84
 0.000458     1500.    1625.    1700.        2        0        0     0.00   511.22   520.06
0
1490 NH CARD USED
*SECNO 31660.000
                 XSEC 75
 31660.00     20.90   629.59     0.00     0.00   629.88     0.29     0.67     0.01   623.30
   23100.      886.   21591.     623.    1732.    4872.     611.    5619.     495.   617.10
     2.16      0.51     4.43     1.02    0.185    0.041    0.108    0.000   608.70    14.97
 0.000309     1700.    1800.    1800.        2        0        0     0.00   610.42   625.39
0
1490 NH CARD USED
*SECNO 35425.000

3470 ENCROACHMENT STATIONS=      20.0     790.0  TYPE=     1  TARGET=     770.000
                 XSEC 76
 35425.00     22.03   631.03     0.00     0.00   631.26     0.23     1.38     0.01   621.20
   23100.       41.   18505.    4554.      94.    4303.    5085.    6340.     555.   625.30
     2.45      0.44     4.30     0.90    0.209    0.047    0.165    0.000   609.00    20.00
 0.000444     4300.    3760.    3600.        2        0        0     0.00   770.00   790.00
0
1
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ATH       AROB      VOL       TWA     LEFT/RIGHT
TIME      VLOB      VCH       VROB      KNL       WNCH      KNR       WTN       ELMIN      SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST
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1490 NH CARD USED
*SECNO 37670.000

3470 ENCROACHMENT STATIONS= 20.0 1035.0 TYPE= 1 TARGET= 1015.000
XSEC 77

37670.00	23.98	631.98	0.00	0.00	632.23	0.25	0.96	0.01	622.70
23100.	7138.	15925.	37.	8974.	3296.	84.	6850.	597.	623.70
2.62	0.80	4.83	0.44	0.203	0.047	0.202	0.000	608.00	20.00
0.000469	1900.	2150.	2100.	2	0	0	0.00	1015.00	1035.00

0
1490 NH CARD USED
*SECNO 38970.000

3470 ENCROACHMENT STATIONS= 20.0 760.0 TYPE= 1 TARGET= 740.000
XSEC 78 800FT DS OF ISLAND, POWERLINE CROSSING AND BOAT LAUNCH
WEST END OF OLD GRAVEL OPERATION

38970.00	20.53	632.43	0.00	0.00	632.58	0.15	0.34	0.01	621.80
23100.	40.	18758.	4301.	85.	5479.	4772.	7126.	617.	624.80
2.73	0.48	3.42	0.90	0.135	0.041	0.112	0.000	611.90	20.00
0.000184	700.	1300.	1300.	2	0	0	0.00	740.00	760.00

0
1490 NH CARD USED
*SECNO 42170.000

3470 ENCROACHMENT STATIONS= 15.0 510.0 TYPE= 1 TARGET= 495.000
XSEC 1

42170.00	21.84	632.84	0.00	0.00	633.42	0.58	0.72	0.13	622.40
23100.	34.	20332.	2734.	86.	3133.	2880.	7713.	661.	625.90
2.88	0.40	6.49	0.95	0.202	0.027	0.114	0.000	611.00	15.00
0.000284	3600.	3200.	3000.	2	0	0	0.00	495.00	510.00

0
1490 NH CARD USED
*SECNO 43770.000
XSEC 2

43770.00	21.07	633.47	0.00	0.00	633.95	0.47	0.51	0.01	622.30
23100.	364.	19536.	3200.	352.	3266.	2541.	7949.	680.	618.30
2.97	1.03	5.98	1.26	0.102	0.034	0.110	0.000	612.40	1.86
0.000355	1200.	1600.	1800.	2	0	0	0.00	468.14	470.00

0
1

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

1490 NH CARD USED
*SECNO 44820.000
XSEC 3 SECTION THRU ISLAND NE OF OLD GRAVEL OPERATION

44820.00	21.94	634.14	0.00	0.00	634.35	0.21	0.38	0.03	624.70
23100.	1193.	21165.	742.	1813.	5517.	1315.	8132.	694.	625.80
3.05	0.62	3.84	0.56	0.202	0.048	0.202	0.000	612.20	1.73

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 0.000355    1100.    1050.    1100.        2        0        0     0.00   697.52   699.25
0
 1490 NH CARD USED
 *SECNO 45470.000
                XSEC 4  OLD WOOD PILING ALONG EACH BANK
 45470.00    20.90   634.30     0.00     0.00   634.66     0.36     0.27     0.04   627.70
   23100.    1286.   21602.     213.    1951.    4359.     431.     8243.     703.    624.50
     3.09     0.66     4.96     0.49    0.202    0.047    0.202    0.000   613.40     2.94
 0.000501     550.     550.     650.        2        0        0     0.00   574.03   576.97
0
 1490 NH CARD USED
 *SECNO 46870.000
                XSEC 5  HILL AT RIGHT BANK IS ERODING
 46870.00    22.46   634.96     0.00     0.00   635.38     0.42     0.70     0.02   622.10
   23100.    2338.   20361.     401.    2141.    3681.     232.     8435.     719.    621.30
     3.16     1.09     5.53     1.73    0.135    0.047    0.088    0.000   612.50    15.07
 0.000584    1280.    1300.    1575.        2        0        0     0.00   479.92   494.99
0
 1490 NH CARD USED
 *SECNO 48720.000
                XSEC 6
 48720.00    20.75   635.95     0.00     0.00   636.15     0.20     0.75     0.02   626.80
   23100.    1713.   19665.    1722.     727.    5131.    1436.     8710.     738.    620.60
     3.30     2.35     3.83     1.20    0.046    0.049    0.135    0.000   615.20     3.13
 0.000302    1500.    1850.    2000.        2        0        0     0.00   451.91   455.03
0
 1490 NH CARD USED
 *SECNO 50220.000
                XSEC 7
 50220.00    24.69   636.39     0.00     0.00   636.51     0.12     0.35     0.01   626.30
   23100.   11833.   10890.     376.    5033.    3330.     309.     8967.     756.    623.10
     3.45     2.35     3.27     1.22    0.041    0.049    0.067    0.000   611.70     0.23
 0.000206    1300.    1500.    1300.        2        0        0     0.00   737.39   737.62
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 1490 NH CARD USED
 *SECNO 51945.000

 3265 DIVIDED FLOW

            XSEC 8    VICS CAMPING ON RIGHT BANK  CAMPGROUND IS ON A HILL
                 WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.
 51945.00    23.38   636.78     0.00     0.00   637.10     0.32     0.53     0.06   637.60
   23100.     137.   17384.    5579.      97.    3328.    7606.     9312.     790.    629.40
     3.55     1.42     5.22     0.73    0.027    0.047    0.202    0.000   613.40     4.35
 0.000631    1300.    1725.    1500.        0        0        0     0.00  1249.32  1281.09
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0
 1490 NH CARD USED
 *SECNO 53000.000

 3470 ENCROACHMENT STATIONS=     350.0    1700.0  TYPE=      1  TARGET=     -350.000
                XSEC 9  SECTION THROUGH ISLAND US OF VICS
             XSEC BENT 30DEG LFT AT 887  20DEG RT AT STA 1208
  53000.00    21.64   637.24     0.00     0.00   637.36     0.12     0.23     0.02   625.00
    23100.     3867.    17668.    1565.    6323.    5618.    3954.    9575.     813.    623.00
      3.66      0.61      3.14     0.40    0.139    0.036    0.169    0.000   615.60   350.00
  0.000125     1200.     1055.     500.        2        0        0     0.00  1343.29  1693.29
0
 FLOW DISTRIBUTION FOR SECNO=  53000.00          CWSEL=     637.24

 STA=      350.      650.      760.      872.      887.     1192.     1650.     1693.
   PER Q=      8.7       3.1       3.0       1.9      76.5       6.6       0.2
    AREA=   3736.9    1333.9    1077.7     174.6    5617.9    3778.2     176.1
     VEL=      0.5       0.5       0.6       2.5       3.1       0.4       0.2

 1490 NH CARD USED
 *SECNO 53700.000

 3470 ENCROACHMENT STATIONS=     300.0    1740.0  TYPE=      1  TARGET=     -300.000
                XSEC 10  REDWOOD COTTAGE ON LEFT BANK  1976 HWM 630.5
                1936 HWM 638    XSEC BENT 45DEG LEFT AT STA 1360
  53700.00    21.20   637.30     0.00     0.00   637.45     0.15     0.09     0.01   626.20
    23100.     9357.    13734.       9.    14762.    3453.      34.    9779.     830.    629.20
      3.73      0.63      3.98     0.26    0.153    0.034    0.169    0.000   616.10   300.00
  0.000160      400.      700.      750.        2        0        0     0.00  1438.28  1738.28
0
1
```

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

```
 FLOW DISTRIBUTION FOR SECNO=  53700.00          CWSEL=     637.30

 STA=      300.     1340.     1420.     1557.     1730.     1738.
   PER Q=     34.0       3.6       2.9      59.5       0.0
    AREA=  12795.9     777.7    1168.3    3453.4      33.7
     VEL=      0.6       1.1       0.6       4.0       0.3

 1490 NH CARD USED
 *SECNO 54600.000

 3470 ENCROACHMENT STATIONS=     750.0    2250.0  TYPE=      1  TARGET=     -750.000
                XSEC 10A NEAR WHITE COTTAGE(BRONXENA)  1976 HWM 630.9 IN GARAGE
                XSEC BENT 5DEG RT AT STA 139.9  RESTRICTED FOR HIGH GROUND AT
                XSEC 11 US      1986 HWM 638
  54600.00    24.48   637.48     0.00     0.00   637.58     0.09     0.12     0.01   628.70
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```
    23100.    11773.    11022.      305.    13935.     3200.      211.    10015.      848.     621.00
      3.82      0.84      3.44      1.44     0.112     0.041     0.054     0.000    613.00    750.00
 0.000167      500.      900.     1000.         2         0         0      0.00   1497.36   2247.36
0
 FLOW DISTRIBUTION FOR SECNO=  54600.00          CWSEL=    637.48

 STA=      750.     949.    1352.    1508.    1597.    1755.    1846.    1883.    1957.    2060.    2062.    2221.    2247.
   PER Q=    4.7      8.7      5.6      4.7      5.9      6.6      3.5      6.7      4.5      0.2     47.7      1.3
    AREA=  2748.8   5164.9   1413.8    843.8   1224.0    763.1    347.8    624.3    787.1     17.2   3199.8    211.0
     VEL=    0.4      0.4      0.9      1.3      1.1      2.0      2.3      2.5      1.3      2.4      3.4      1.4

 1490 NH CARD USED
 *SECNO 55080.000
                XSEC 10B LOB IS FELCH ROAD
  55080.00    24.21   637.51     0.00     0.00   637.64     0.13     0.05     0.01   621.00
    23100.    13113.    9709.     278.    4879.    2982.     209.    10106.     856.    621.30
      3.86      2.69      3.26     1.33    0.023    0.041    0.054    0.000   613.30    36.11
 0.000142      250.      480.     550.         2         0         0      0.00   951.29   987.41
0
 1490 NH CARD USED
 *SECNO 55800.000

 3470 ENCROACHMENT STATIONS=       0.0    1900.0  TYPE=     1  TARGET=    1899.999
                XSEC 11  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
  55800.00    21.78   637.48     0.00     0.00   637.84     0.36     0.13     0.07   627.70
    23100.       0.    17379.    5721.       0.    3139.    5378.    10194.     864.    628.60
      3.89      0.00      5.54     1.06    0.000    0.039    0.123    0.000   615.70  1000.00
 0.000551      150.      720.     450.         2         0         0      0.00   900.00  1900.00
0
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


 FLOW DISTIBUTION FOR SECNO=  55800.00          CWSEL=    637.48

 STA=     1000.    1169.    1172.    1185.    1237.    1320.    1454.    1546.    1651.    1819.    1900.
   PER Q=   75.2      0.1      0.5      2.1      3.4      5.6      3.4      0.0      6.3      3.3
    AREA=  3139.5    24.9     97.9    388.9    633.1   1028.8    651.2    706.4   1214.3    632.6
     VEL=    5.5      1.2      1.2      1.2      1.3      1.3      1.2      0.0      1.2      1.2

 1490 NH CARD USED
 *SECNO 56800.000

 3470 ENCROACHMENT STATIONS=       0.0    1630.0  TYPE=     1  TARGET=    1629.999
                XSEC 12
  56800.00    21.42   638.02     0.00     0.00   638.16     0.14     0.29     0.02   621.70
    23100.     178.    13928.    9594.     159.    3476.    11245.    10282.     870.    630.00
      3.96      1.12      3.83     0.85    0.094    0.048    0.129    0.000   614.60     2.41
 0.000343     1200.     1300.      50.         2         0         0      0.00  1627.59  1630.00
```

0
FLOW DISTRIBUTION FOR SECNO= 56800.00 CWSEL= 638.02

STA=	2.	22.	222.	350.	457.	660.	758.	865.	958.	1093.	1227.	1424.	1592.
PER Q=	0.8	57.7	5.1	4.2	3.1	3.3	4.0	3.5	3.9	4.0	4.9	4.5	
AREA=	158.9	3476.0	1096.0	917.0	1521.9	761.5	884.9	773.8	1101.9	1101.5	1464.5	1305.4	
VEL=	1.1	3.8	1.1	1.1	0.5	1.0	1.0	1.0	0.8	0.8	0.8	0.8	
STA=	1592.	1630.											
PER Q=	1.0												
AREA=	316.7												
VEL=	0.7												

1490 NH CARD USED
*SECNO 57650.000

3470 ENCROACHMENT STATIONS= 0.0 1910.0 TYPE= 1 TARGET= 1909.999
XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
1976 HEM 631.9

57650.00	22.32	638.22	0.00	0.00	638.26	0.05	0.10	0.01	622.00
23100.	7591.	12006.	3503.	7280.	5344.	5930.	10420.	881.	626.50
4.06	1.04	2.25	0.59	0.061	0.043	0.103	0.000	615.90	5.33
0.000104	500.	850.	50.	1	0	0	0.00	1904.67	1910.00

0
FLOW DISTRIBUTION FOR SECNO= 57650.00 CWSEL= 638.22

STA=	5.	845.	857.	1180.	1380.	1514.	1879.	1910.
PER Q=	32.1	0.8	52.0	4.5	4.1	6.0	0.6	
AREA=	7128.8	151.5	5343.6	1693.5	1128.6	2843.6	264.6	
VEL=	1.0	1.2	2.2	0.6	0.8	0.5	0.5	

1

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

1490 NH CARD USED
*SECNO 58350.000

XSEC 14 XSEC BENT 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB

58350.00	21.98	638.28	0.00	0.00	638.36	0.09	0.09	0.01	630.50
23100.	12565.	10522.	14.	3840.	3330.	53.	10610.	900.	629.50
4.13	1.42	3.15	0.26	0.065	0.049	0.202	0.000	616.30	14.83
0.000230	500.	700.	400.	2	0	0	0.00	1282.14	1296.97

0
FLOW DISTRIBUTION FOR SECNO= 58350.00 CWSEL= 638.28

STA=	15.	400.	731.	918.	1077.	1106.	1285.	1297.
PER Q=	19.4	18.8	8.2	5.7	1.3	45.5	0.1	
AREA=	3106.8	2921.4	1416.7	1172.8	222.6	3329.6	52.5	
VEL=	1.4	1.5	1.3	1.3	1.4	3.2	0.3	

1490 NH CARD USED
*SECNO 58900.000

	XSEC 15								
58900.00	21.87	618.37	0.00	0.00	638.50	0.13	0.12	0.01	631.50
23100.	6736.	15531.	833.	6974.	4455.	1185.	10751.	915.	629.00
4.19	0.97	3.49	0.70	0.081	0.046	0.135	0.000	616.50	14.67
0.000243	450.	550.	700.	0	0	0	0.00	1526.46	1541.13

0
1490 NH CARD USED
*SECNO 60000.000

3301 HV CHANGED MORE THAN HVINS

	XSEC 16								
60000.00	21.08	638.48	0.00	0.00	639.13	0.66	0.48	0.16	628.00
23100.	491.	19539.	3071.	195.	2775.	3181.	10959.	939.	632.60
4.24	2.52	7.04	0.97	0.068	0.047	0.162	0.000	617.40	9.00
0.001130	1000.	1100.	700.	2	0	0	0.00	773.39	782.39

0
FLOW DISTRIBUTION FOR SECNO= 60000.00 CWSEL= 638.48

STA=	9.	44.	200.	750.	782.
PER Q=	2.1	84.6	13.1	0.2	
AREA=	195.0	2775.1	3094.4	87.1	
VEL=	2.5	7.0	1.0	0.6	

1

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

1490 NH CARD USED
*SECNO 62250.000

	XSEC 17	SUBDIVISION ON LEFT BANK							
62250.00	20.27	639.97	0.00	0.00	640.25	0.28	1.08	0.04	632.90
23100.	474.	21492.	1134.	707.	4892.	1162.	11265.	969.	629.10
4.38	0.67	4.39	0.98	0.126	0.038	0.120	0.000	619.70	17.50
0.000278	2400.	2225.	1700.	2	0	0	0.00	522.09	539.59

0
1490 NH CARD USED
*SECNO 63120.000

63120.00	21.78	640.18	0.00	0.00	640.64	0.45	0.33	0.05	630.40
23100.	31.	22317.	702.	106.	4071.	1000.	11398.	979.	633.10
4.43	0.77	5.48	0.70	0.120	0.038	0.149	0.000	618.40	9.55
0.000430	970.	970.	970.	2	0	0	0.00	414.55	424.10

0
1490 NH CARD USED
*SECNO 65620.000

3470 ENCROACHMENT STATIONS= 20.0 470.0 TYPE= 1 TARGET= 450.000

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 65620.00    20.30   641.00     0.00     0.00   641.44     0.43     0.80     0.00   629.80
   23100.     1619.   20955.     526.    1479.    3784.     481.   11636.     998.    628.30
     4.54      1.09     5.54     1.10    0.107    0.038    0.120    0.000   620.70    20.00
 0.000414     1900.    1900.    1900.        2        0        0     0.00   450.00   470.00
0
 1490 NH CARD USED
 *SECNO 67420.000

 3470 ENCROACHMENT STATIONS=      10.0     420.0  TYPE=      1  TARGET=     410.000
                XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK
 67420.00    22.70   642.00     0.00     0.00   642.35     0.34     0.90     0.01   631.80
   23100.     1089.   21344.     666.     409.    4390.     968.   11964.    1022.    633.70
     4.68      2.67     4.80     0.69    0.041    0.038    0.148    0.000   619.30    10.00
 0.000318     2400.    2500.    2500.        2        0        0     0.00   410.00   420.00
0
 1490 NH CARD USED
 *SECNO 68970.000
                XSEC 21 US OF GREEN COTTAGE ON LEFT BANK
 68970.00    20.10   642.50     0.00     0.00   642.82     0.32     0.47     0.00   631.50
   23100.     1220.   21543.     337.    1317.    4617.     349.   12178.    1039.    628.30
     4.78      0.93     4.67     0.97    0.085    0.038    0.100    0.000   622.40     3.56
 0.000290     1400.    1550.    1700.        2        0        0     0.00   567.93   571.49
0
1
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SECNO	DEPTH	CHSEL	CRIES	USELR	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	EIMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

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 1490 NH CARD USED
 *SECNO 70300.000
                XSEC 22  BELOW POWER LINE CROSSING  N VALUES ARE ATYPICAL
 70300.00    19.24   642.94     0.00     0.00   643.18     0.25     0.36     0.01   633.80
   23100.     2362.   20637.     101.    1104.    4965.      75.   12366.    1054.    632.30
     4.88      2.14     4.16     1.34    0.050    0.038    0.050    0.000   623.70     4.99
 0.000248     1300.    1330.    1300.        2        0        0     0.00   418.37   423.36
0
 1490 NH CARD USED
 *SECNO 71300.000
 71300.00    21.04   643.14     0.00     0.00   643.50     0.36     0.28     0.03   633.60
   23100.     1597.   21240.     264.     687.    4259.     280.   12497.    1063.    630.20
     4.93      2.33     4.99     0.94    0.047    0.038    0.100    0.000   622.10     6.47
 0.000326     1000.    1000.    1000.        2        0        0     0.00   363.04   369.51
0
 1490 NH CARD USED
 *SECNO 71900.000
 71900.00    19.35   643.35     0.00     0.00   643.72     0.37     0.22     0.00   630.00
   23100.     1628.   20683.     789.     743.    4024.     695.   12569.    1068.    630.50
     4.97      2.19     5.14     1.14    0.060    0.041    0.120    0.000   624.00     7.61
 0.000412      500.     600.     650.        2        0        0     0.00   394.32   401.93
0
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 1490 NH CARD USED
 *SECNO 73040.000
          XSEC 25 BTWN BARBER AND KRING CABINS DS OF PUB ACC SITE DS OF NEWYGO
  73040.00    18.50    643.90      0.00      0.00    644.16      0.26      0.43      0.01    636.20
    23100.      242.    18649.    4209.      280.    4234.    1649.    12721.    1081.     633.30
      5.05     0.87      4.40      2.55     0.100    0.042    0.038     0.000   625.40      8.61
  0.000351    1200.    1140.     1100.         2        0        0      0.00   595.73    604.34
0
 1490 NH CARD USED
 *SECNO 73590.000
          XSEC 26 DS OF CO RD BRDG  SEC BENT 45DEG RT OFF RD FILL AT STA 10
            BENT 45DEG RT TO RD FILL AT STA 325
  73590.00    19.92    644.02      0.00      0.00    644.39      0.37      0.20      0.03    632.90
    23100.      464.    22170.     466.      225.    4471.     218.    12791.    1087.     632.40
      5.08     2.07      4.96      2.14     0.047    0.038    0.059     0.000   624.10      9.26
  0.000365     660.     550.      500.         2        0        0      0.00   323.77    333.03
0
1
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	CLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

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 *SECNO 73640.000

 3265 DIVIDED FLOW

 3370 NORMAL BRIDGE,NRD=  0 MIN ELTRD=  652.00 MAX ELLC=  650.50

                XSEC 27 CENTER OF BRDG   ELLC AT 650.5
  73640.00    19.24    644.04      0.00      0.00    644.41      0.38      0.02      0.00    652.00
    23100.       0.    23100.       0.        0.    4691.       0.     12796.    1087.     652.00
      5.08     0.00      4.92      0.00     0.000    0.034    0.000     0.000   624.80      0.00
  0.000382       50.      50.       50.         0        0        0      0.00   290.00    296.00
0
 *SECNO 73660.000

 3265 DIVIDED FLOW

 3370 NORMAL BRIDGE,NRD=  0 MIN ELTRD=  652.00 MAX ELLC=  650.50

  73660.00    19.24    644.04      0.00      0.00    644.42      0.38      0.01      0.00    652.00
    23100.       0.    23100.       0.        0.    4692.       0.     12798.    1087.     652.00
      5.08     0.00      4.92      0.00     0.000    0.034    0.000     0.000   624.80      0.00
  0.000382       20.      20.       20.         0        0        0      0.00   290.00    296.00
0
 *SECNO 73720.000
  73720.00    19.73    644.03      0.00      0.00    644.46      0.43      0.02      0.02    634.70
    23100.     815.    21286.     999.      329.    3892.     578.     12805.    1088.     632.30
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      5.09      2.48      5.47      1.73     0.047     0.034     0.059     0.000    624.30     59.15
  0.000393      60.       60.       60.         2         0         0      0.00    411.95    471.10
0
 1490 NH CARD USED
 *SECNO 75140.000
            XSEC 29   SEWAGE TREATMENT PLANT IN LOB
  75140.00     17.20    644.70      0.00      0.00    644.90      0.21      0.42      0.02    635.60
    23100.      6821.    16265.      14.      5971.     3773.      30.     13022.     1109.     634.50
      5.20      1.14      4.31      0.47     0.080     0.034     0.090     0.000    627.50      8.41
  0.000248      1140.     1420.     1440.         2         0         0      0.00   1064.72   1073.13
0
1
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     SECNO     DEPTH     CHSEL     CRIWS     USELK     EG        HV        HL        OLOSS    BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
     SLOPE     XLOBL     XLCH      XLOBR     INITIAL   IDC       ICONT     CORAR     TOPWID     ENDST

 *SECNO 75800.000
 3280 CROSS SECTION  75800.00 EXTENDED      9.48 FEET

                  XSEC 29A  AT USGS CABLE
  75800.00     16.48    644.68      0.00      0.00    645.25      0.57      0.23      0.11    636.00
    23100.       0.     23100.       0.        0.      3810.       0.     13117.     1118.     635.20
      5.23      0.00      6.06      0.00     0.000     0.034     0.000     0.000    628.20   1005.00
  0.000583      540.      660.      700.         2         0         0      0.00    259.00   1264.00
0
 1490 NH CARD USED
 *SECNO 76350.000
            XSEC 29B AT USGS GAGE  1976 STAGE IS 639.2   1986 STAGE 645.4
  76350.00     15.36    645.16      0.00      0.00    645.56      0.40      0.30      0.02    634.70
    23100.      478.     22412.      210.      138.     4378.      162.     13171.     1122.     634.60
      5.26      3.46      5.12      1.29     0.035     0.038     0.101     0.000    629.80      3.64
  0.000502      550.      550.      550.         2         0         0      0.00    351.02    354.66
0
 *SECNO 76760.000
                  XSEC 30  1975 HWM IS 638.6      1976 HWM IS 639.2
  76760.00     17.71    645.31      0.00      0.00    645.77      0.47      0.19      0.02    636.50
    23100.      264.     22477.      359.      241.     4046.      325.     13214.     1125.     636.00
      5.28      1.09      5.56      1.10     0.100     0.034     0.100     0.000    627.60     17.10
  0.000439      350.      410.      450.         2         0         0      0.00    363.57    380.66
0
OIFY218I VSIOS : I/O ERROR, FILE FT93F001,     DHSSVT120S OUTPUT ERROR 013 ON FT93F001,.
         VSIOS : LAST EXECUTED FORTRAN STATEMENT IN PROGRAM H2MAIN AT ISN 1331 (OFFSET 0092C6).
0*** START OF BUFFER CONTENTS ***
                 646.60      633.30      636.20        0.00      625.40      643.90      644.16   73040.00   72985.00
                       646.80      632.40      632.90        0.00      624.10      644.02      644.39   73590.00   73535.
                  00                  652.00      652.00      652.00        0.00      624.80      644.04      644.41   7
                  3640.00   73585.00                  652.00      652.00      652.00        0.00      624.80      644.04
                        644.42    73660.00   73605.00                  650.00      632.30      634.70        0.00        6
                  24.30       644.03      644.46    73720.00   73665.00                  645.20      634.50      635.60
                        0.00      627.50      644.70      644.90   75140.00   75085.00                  635.20      635
```

```
                .20      636.00        0.00      628.20      644.68      645.25    75800.00    75745.00
                  646.50      634.60      634.70        0.00      629.80      645.16      645.56    76350.00    76295.00
                              651.30      636.00      636.50        0.00      627.60      645.31      645.77    76760.00    76
              705.00
0*** END OF BUFFER CONTENTS ***
0TRACEBACK OF CALLING ROUTINES; MODULE ENTRY ADDRESS = 020000.
 ------------------------------------------------------------------------
  IFYVSIOS (091708) CALLED BY VFCR# (095022) FROM LOCATION 09507C.
 ------------------------------------------------------------------------
  VFCR# (095022) CALLED BY H2MAIN (020380) AT ISN 1331 AT OFFSET 0092C6.
 ------------------------------------------------------------------------
  H2MAIN (020380) CALLED BY MAIN (020000) AT ISN 7 AT OFFSET 000222.
   NO ARGUMENTS PASSED TO SUBROUTINE.
 ------------------------------------------------------------------------
  MAIN (020000) CALLED BY OPERATING SYSTEM.
 ------------------------------------------------------------------------
0STANDARD CORRECTIVE ACTION TAKEN. EXECUTION CONTINUING.
1
```



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

```
0 MESSAGE SUMMARY: MESSAGE NUMBER - COUNT
0                   218       1
```

00BREAK00

1) COUNTY: Newaygo

2) STUDY NAME: Bridgeton, Ashland, Garfield and Brooks Twp

3) WATERCOURSE: Muskegan River

4) DOCUMENT TYPE: Floodway Analysis

00BREAK00

Submitted to FEMA 12/12/86

```
1*************************************************
 *  LATER SURFACE PROFILES                       *
 *  VERSION OF NOVEMBER 1976                     *
 *  UPDATED MAY 1984                             *
 *                                               *
 *  RUN DATE            TIME                     *
 *************************************************
```

```
*************************************
*  U.S. ARMY CORPS OF ENGINEERS     *
*  THE HYDROLOGIC ENGINEERING CENTER*
*  609 SECOND STREET, SUITE D       *
*  DAVIS, CALIFORNIA 95616          *
*  (916) 440-2105 (FTS) 448-2105    *
*************************************
```

Floodway Analysis
Bridgeton to Newaygo

$Q_{100} = 18800$ cfs

Minor revisions made to floodway encroachments, re submittal made.

```
X      X  XXXXXXX   XXXXX                XXXXX
X      X  X        X     X              X     X
X      X  X        X                          X
XXXXXXX   XXXX     X           XXXXX    XXXXX
X      X  X        X                    X
X      X  X        X     X              X
X      X  XXXXXXX   XXXXX               XXXXXXX
```



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

```
C
T1      FLOODPLAIN DELINEATION     USING 1986 HIGHWATER MARKS AS CALIBRATION
T2    CHANNEL XSEC FROM 1977 SURVEY     N INCREASED TO REFLECT MEANDER
T3      MUSKEGON RIVER  EXISTING COND     MODEL FROM 1978 Q100
```

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	0.	0.	0.	0.000185	0.00	0.0	18800.	619.000	0.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	0.000	0.000	-1.000	0.000	0.000	1.350	0.000	0.000	0.000	0.000

J5	LSENG	NUMSEC	********REQUESTED SECTION NUMBERS********								
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NC	0.100	0.150	0.023	0.100	0.300	0.000	0.000	0.000	0.000	0.000
NH	7.300	0.100	22.000	0.023	242.000	0.100	298.000	0.035	447.000	0.050
NH	570.000	0.100	789.000	0.050	852.000	0.000	0.000	0.000	0.000	0.000

XSEC 61

```
 X1     0.100    25.000    22.000   242.000     0.000     0.000     0.000     0.000     0.000     0.000
 X3    10.000     0.000     0.000     8.000     0.000   818.000     0.000     0.000   613.300     0.000
 GR   624.100     0.000   613.200    22.000   606.100    47.000   603.700    63.000   600.000   106.000
 GR   601.400   136.000   602.600   166.000   603.200   196.000   604.200   226.000   606.100   237.000
 GR   609.600   242.000   610.600   252.000   613.900   262.000   614.800   298.000   616.300   326.000
 GR   616.300   333.000   615.000   447.000   612.000   492.000   611.700   570.000   611.500   635.000
 GR   611.200   685.000   611.000   735.000   612.200   789.000   623.500   830.000   629.400   852.000

 NH     4.000     0.150    22.000     0.023   242.000     0.150   298.000     0.100   852.000     0.000
        SEC 61 MOVED US INVERT ADJ BY .94FT     FLOOD FLOW SHIFTED FROM
        ROB AS NOTED ON XSEC 61 TO APPROX AREA IN LOB FOR THIS XSEC
 X1  1920.000     0.000     0.000     0.000  2170.000  1740.000  1920.000     0.000     0.940     0.000
 X3    10.000     0.000     0.000    22.000     0.000   763.000     0.000     0.000   613.300     0.000

 NH     3.000     0.050    37.000     0.023   311.000     0.050   341.000     0.000     0.000     0.000
                XSEC 62
 X1  3050.000    20.000    37.000   311.000  1200.000  1200.000  1130.000     0.000     0.000     0.000
 X3     0.000     0.000     0.000    17.000     0.000   328.000     0.000     0.000     0.000     0.000
 GR   635.400     0.000   629.100     4.000   615.670    25.000   608.600    37.000   607.000    40.000
 GR   605.200    55.000   604.500    64.000   601.900    74.000   601.400   106.000   605.100   146.000
 GR   606.500   163.000   604.300   170.000   603.500   173.000   605.200   199.000   605.400   241.000
 GR   606.000   267.000   605.700   285.000   606.700   297.000   609.000   311.000   629.600   341.000
```



```
 NH     3.000     0.017    37.000     0.023   311.000     0.017   341.000     0.000     0.000     0.000
        W EDGE OF BRIDGE DECK AT BRIDGEPON  1976 HWM 615.7
 X1  3051.000     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    17.000     0.000   328.000     0.000     0.000     0.000     0.000

 SE     0.900     1.250     2.600  1003.000   260.000     8.000  9000.000     1.430   604.500   604.500
 X1  3100.000     0.000     0.000     0.000    49.000    49.000    49.000     0.000     0.000     0.000
 X2     0.000     0.000     1.000   635.400   638.000     0.000     0.000     0.000     0.000     0.000
 X3     0.000     0.000     0.000    17.000     0.000   328.000     0.000     0.000     0.000     0.000

 NC     0.150     0.070     0.023     0.000     0.000     0.000     0.000     0.000     0.000     0.000
 X1  3101.000     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    17.000     0.000   328.000     0.000     0.000     0.000     0.000

 NH     4.000     0.045    58.000     0.023   373.000     0.030   517.000     0.050   633.000     0.000
 ET     0.000     0.000     1.400     0.000     0.000     0.000     0.000     0.000     0.000     0.000
                XSEC 63
 X1  4880.000    20.000    58.000   373.000  1500.000  1600.000  1579.000     0.000     0.000     0.000
 X3    10.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000   617.800     0.000
 GR   625.300     0.000   617.700    15.000   608.500    58.000   607.300    76.000   604.900    82.000
 GR   603.500   102.000   603.900   129.000   603.800   172.000   604.000   205.000   605.000   246.000
 GR   605.600   274.000   606.300   289.000   607.300   356.000   616.000   373.000   617.700   382.000
 GR   617.800   404.000   614.500   435.000   614.600   517.000   616.000   605.000   625.300   633.000

 NH     5.000     0.150    19.000     0.150   424.000     0.100   562.000     0.023   788.000     0.040
 N3   819.000     0.000     0.000     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
        XSEC 64          XSEC CROSSES US OF OLD ROCK CRIBBING
```

X1	7200.000	28.000	562.000	788.000	2200.000	2500.000	2520.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	619.600	0.000	0.000
GR	625.700	0.000	616.300	19.000	613.400	58.000	614.400	124.000	614.000	224.000
GR	615.400	314.000	613.600	336.000	614.200	371.000	617.100	424.000	619.600	499.600
GR	619.100	557.000	619.000	562.000	615.800	573.000	608.900	578.000	606.500	582.000
GR	604.000	584.000	602.300	611.000	603.100	638.000	602.600	667.000	602.500	695.000
GR	602.900	724.000	605.500	752.000	605.900	773.000	607.000	780.000	607.690	785.000
GR	610.400	788.000	616.500	801.000	625.700	819.000	0.000	0.000	0.000	0.000
NH	4.000	0.050	39.000	0.025	295.000	0.150	788.000	0.040	924.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	KSEC 65	XSEC CROSSES 100FT US OF BOAT LAUNCH								
X1	8850.000	30.000	39.000	326.000	1400.000	1600.000	1650.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	619.800	0.000
GR	626.000	0.000	624.200	8.000	621.800	35.000	619.300	39.000	610.900	58.000
GR	608.040	69.000	605.100	95.000	604.200	140.000	604.700	175.000	604.900	210.000
GR	605.100	245.000	605.800	280.000	608.040	293.000	611.700	295.000	612.100	304.000
GR	619.100	317.000	619.800	326.000	619.500	338.000	616.400	365.000	613.500	413.000
GR	612.100	478.000	612.000	548.000	612.100	588.000	612.300	638.000	612.500	688.000
GR	612.500	738.000	612.400	788.000	613.800	843.000	617.300	906.000	626.000	924.000

1

NH	7.000	0.050	46.000	0.030	226.000	0.050	293.000	0.160	374.000	0.150
NH	564.000	0.080	1065.000	0.090	1244.000	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
		XSEC 66								
X1	10300.000	36.000	46.000	377.000	1500.000	700.000	1450.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	620.500	0.000
GR	626.500	0.000	620.600	29.000	612.500	38.000	611.100	46.000	608.200	50.000
GR	606.500	59.000	604.500	96.000	603.300	128.000	604.600	161.000	606.000	192.000
GR	607.100	210.000	607.800	225.000	609.300	226.000	610.200	241.000	610.000	249.000
GR	609.200	253.000	610.700	293.000	612.300	311.000	612.900	361.000	618.800	374.000
GR	620.600	377.000	618.900	386.000	618.600	443.000	616.800	529.000	611.500	564.000
GR	611.500	606.000	610.400	693.000	610.500	769.000	611.300	889.000	612.600	893.000
GR	612.700	1012.000	615.100	1065.000	615.500	1115.000	617.600	1165.000	620.400	1190.000
GR	626.500	1244.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.150	839.000	0.030	1059.000	0.150	1107.000	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
		XSEC 67								
X1	11800.000	25.000	816.000	1059.000	1600.000	1000.000	1500.000	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	626.700	0.000	620.500	108.000	616.700	155.000	613.700	255.000	613.500	355.000
GR	613.400	449.000	613.200	530.000	613.100	644.000	613.600	744.000	617.100	799.000
GR	619.800	813.000	619.600	816.000	612.500	825.000	612.100	839.000	608.730	842.000
GR	606.700	861.000	605.900	896.000	605.100	931.000	604.400	967.000	604.400	1002.000
GR	606.000	1037.000	608.730	1051.000	610.700	1059.000	617.400	1079.000	626.700	1107.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	12600.000	0.000	0.000	0.000	800.000	800.000	800.000	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

NH	3.000	0.100	113.000	0.030	363.000	0.150	748.000	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
		XSEC 68								
X1	14100.000	25.000	113.000	882.000	900.000	1600.000	1500.000	0.000	0.000	0.000
GR	627.100	0.000	622.000	15.000	617.600	39.000	620.100	70.000	619.800	88.000
GR	614.200	97.000	611.800	113.000	609.140	125.000	608.000	164.000	607.400	191.000
GR	606.700	205.000	606.300	247.000	605.300	289.000	605.100	330.000	607.500	345.000
GR	608.800	359.000	612.200	363.000	614.700	376.000	618.400	382.000	619.200	435.000
GR	616.000	501.000	615.700	543.000	615.400	633.000	616.200	693.000	627.100	748.000
NH	3.000	0.150	922.000	0.022	1120.000	0.060	1143.000	0.000	0.000	0.000
ET	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 69								
X1	16700.000	28.000	844.000	1120.000	300.000	1900.000	2600.000	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	627.600	0.000	618.800	35.000	616.900	133.000	615.200	230.000	614.100	323.000
GR	613.700	410.000	613.400	515.000	617.800	553.000	613.300	663.000	614.200	712.000
GR	617.800	785.000	621.800	844.000	620.300	868.000	619.800	902.000	618.900	909.000
GR	612.400	922.000	609.640	924.000	607.900	938.000	607.300	954.000	606.200	983.000
GR	604.600	1012.000	605.600	1041.000	607.200	1070.000	608.500	1074.000	609.640	1102.000
GR	613.800	1120.000	620.300	1131.000	627.600	1143.000	0.000	0.000	0.000	0.000

NH	6.000	0.150	43.000	0.030	115.000	0.028	155.000	0.030	529.000	0.025
NJ	703.000	0.150	756.000	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
		XSEC 70 THROUGH SUBDIV ON LEFT BANK CHANNEL INEFFECTIVE								
		1976 HWM ON BASEMENT WALL 619.8 HWM 800FT DS 619.98								
X1	19870.000	30.000	529.000	703.000	2200.000	3500.000	3170.000	0.000	0.000	0.000
GR	628.500	0.000	620.000	25.000	620.400	217.000	630.000	217.000	630.000	250.000
GR	620.400	250.000	621.500	306.000	621.500	306.100	621.500	306.200	621.500	306.300
GR	616.900	332.000	617.500	396.000	619.700	432.000	619.900	465.000	618.400	476.000
GR	619.800	439.000	619.300	503.000	613.800	519.000	612.400	529.000	608.700	558.000
GR	607.600	569.000	607.100	595.000	605.600	620.000	605.900	646.000	607.900	671.000
GR	610.500	697.000	612.800	703.000	614.200	713.000	621.400	735.000	628.500	756.000
NH	6.000	0.060	123.000	0.150	223.000	0.025	406.000	0.045	412.000	0.030
NH	603.000	0.100	800.000	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
		XSEC 71 OLDER COTTAGES ON RT BANK, SEAWALL PROTECTS RT BANK								
X1	21370.000	27.000	223.000	412.000	1100.000	1600.000	1500.000	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	628.800	0.000	622.900	18.000	615.900	38.000	618.800	61.000	619.200	83.000
GR	619.300	101.000	613.900	123.000	614.400	153.000	611.200	205.000	612.400	223.000
GR	610.500	231.000	609.200	247.000	609.100	269.000	608.500	285.000	607.000	325.000
GR	606.200	366.000	606.600	406.000	619.800	412.000	617.700	472.000	616.000	542.000
GR	615.200	588.000	610.800	603.000	615.000	618.000	615.300	673.000	615.400	724.000
GR	617.900	756.000	628.800	800.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	7.000	0.100	27.000	0.150	126.000	0.150	464.000	0.030	663.000	0.050
NJ	829.000	0.030	891.000	0.100	929.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 72

X1	24985.000	28.000	441.000	663.000	3700.000	3600.000	3615.000	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	629.900	0.000	620.800	27.000	616.000	56.000	614.700	125.000	615.100	191.000
GR	615.400	263.000	616.600	344.000	617.400	402.000	620.300	441.000	619.700	456.000
GR	615.000	459.000	613.500	464.000	609.200	488.000	607.500	500.000	608.600	531.000
GR	608.600	561.000	609.400	592.000	609.800	622.000	609.800	653.000	614.700	663.000
GR	614.900	690.000	619.200	705.000	619.200	709.000	617.100	744.000	618.800	772.000
GR	619.700	829.000	622.400	891.000	629.900	929.000	0.000	0.000	0.000	0.000
NH	4.000	0.040	23.000	0.150	425.000	0.030	658.000	0.080	688.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 73

X1	28235.000	20.000	371.000	658.000	2300.000	3300.000	3200.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	623.500	0.000	0.000
GR	630.700	0.000	623.000	23.000	620.000	38.000	617.800	148.000	619.000	203.000
GR	620.700	242.000	622.300	309.000	623.500	371.000	619.300	402.000	619.500	425.000
GR	612.400	436.000	610.400	445.000	610.200	485.000	610.200	526.000	609.600	566.000
GR	609.300	608.000	612.500	648.000	616.700	658.000	619.100	665.000	630.700	688.000

NH	3.000	0.150	51.000	0.030	275.000	0.150	536.000	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

XSEC 74 IN LINE WITH E SIDE OF COTTAGE ON TOP OF LFT BANK
JUST US OF POWERLINE

X1	29860.000	16.000	51.000	275.000	1500.000	1700.000	1625.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	622.800	0.000
GR	631.400	0.000	616.200	51.000	613.400	53.000	610.100	65.000	609.300	104.000
GR	610.100	143.000	610.600	183.000	611.300	222.000	612.300	235.000	611.900	256.000
GR	615.200	275.000	620.600	283.000	622.800	313.000	620.400	375.000	622.800	484.000
GR	631.400	536.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.150	220.000	0.100	279.000	0.030	545.000	0.080	633.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 75

X1	31660.000	23.000	279.000	545.000	1700.000	1800.000	1800.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	623.500	0.000	0.000
GR	632.100	0.000	623.900	49.000	621.600	74.000	621.500	112.000	622.100	178.000
GR	623.200	213.000	623.500	220.000	623.600	276.000	623.300	279.000	615.700	289.000
GR	614.100	292.000	610.600	300.000	611.200	328.000	610.200	376.000	611.100	420.000
GR	612.000	477.000	612.500	529.000	614.100	535.000	617.100	545.000	620.200	576.000
GR	622.300	585.000	624.200	609.000	632.100	633.000	0.000	0.000	0.000	0.000
NH	5.000	0.155	33.000	0.035	238.000	0.150	383.000	0.120	785.000	0.060
NR	819.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 76

X1	35425.000	21.000	33.000	289.000	4300.000	3600.000	3760.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	20.000	0.000	790.000	0.000	0.000	0.000	0.000
GR	633.200	0.000	626.400	20.000	621.200	33.000	615.100	38.000	611.200	51.000
GR	610.300	90.000	609.800	123.000	611.000	157.000	610.800	180.000	615.200	207.000
GR	617.000	217.000	621.600	238.000	625.300	289.000	625.200	316.000	620.400	383.000
GR	619.800	482.000	620.200	583.000	620.100	683.000	620.900	760.000	621.900	785.000

GR	633.200	819.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.160	29.000	0.150	570.000	0.150	849.000	0.035	1017.000	0.150
NH	1047.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 77								
X1	37670.000	31.000	849.000	1017.000	1900.000	2100.000	2150.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	20.000	0.000	1035.000	0.000	0.000	0.000	0.000
GR	633.800	0.000	624.800	19.000	620.600	29.000	619.300	128.000	619.000	224.000
GR	619.100	314.000	619.300	391.000	621.400	419.000	619.700	468.000	620.200	570.000
GR	621.600	607.000	625.100	657.000	625.800	712.000	626.700	761.000	621.900	792.000
GR	621.900	816.000	625.300	823.000	625.200	839.000	624.500	844.000	622.700	849.000
GR	618.200	856.000	615.800	864.000	613.800	886.000	611.300	916.000	608.000	944.000
GR	610.600	977.000	615.400	1009.000	619.100	1014.000	623.700	1017.000	630.100	1033.000
GR	633.800	1047.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.100	32.000	0.030	332.000	0.150	424.000	0.150	488.000	0.070
NH	779.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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XSEC 78 800FT DS OF ISLAND, POWERLINE CROSSING AND BOAT LAUNCH
WEST END OF OLD GRAVEL OPERATION

X1	38970.000	22.000	32.000	332.000	700.000	1300.000	1300.000	0.000	0.000	0.000
X3	0.000	10.000	0.000	20.000	0.000	760.000	0.000	0.000	624.800	0.000
GR	634.200	0.000	626.800	24.000	621.800	32.000	617.700	50.000	616.250	52.000
GR	614.900	64.000	612.900	110.000	614.600	173.000	613.700	258.000	614.300	311.000
GR	622.500	322.000	624.800	332.000	624.100	365.000	623.300	382.000	622.900	424.000
GR	621.100	449.000	620.600	488.000	620.400	538.000	620.000	638.000	620.600	743.000
GR	625.000	760.000	634.300	779.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.150	25.000	0.020	186.000	0.150	258.000	0.080	531.000	0.000
		XSEC 1								
X1	42170.000	27.000	25.000	186.000	3600.000	3000.000	3200.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	15.000	0.000	510.000	0.000	0.000	628.000	0.000
GR	634.000	0.000	626.900	14.000	623.300	22.000	622.400	25.000	619.100	26.000
GR	616.400	31.000	613.800	40.000	612.800	63.000	612.100	87.000	612.800	91.000
GR	613.000	135.000	613.500	161.000	614.900	163.000	616.300	174.000	617.600	179.000
GR	625.900	186.000	626.800	191.000	624.600	201.000	627.900	230.000	627.900	258.000
GR	621.800	324.000	620.900	364.000	623.600	379.000	622.600	425.000	621.000	451.000
GR	626.000	516.000	634.000	531.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.090	19.000	0.075	58.000	0.025	223.000	0.070	308.000	0.150
NH	373.000	0.080	479.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 2								
X1	43770.000	26.000	58.000	223.000	1200.000	1800.000	1600.000	0.000	0.000	0.000
GR	634.000	0.000	628.600	19.000	626.000	35.000	623.000	55.000	622.300	58.000
GR	619.700	59.000	616.800	62.000	613.800	75.000	613.900	105.000	613.800	133.000
GR	618.100	159.000	613.400	165.000	614.400	207.000	616.800	219.000	618.300	223.000
GR	618.300	250.000	619.900	258.000	619.200	266.000	619.300	288.000	619.500	295.000
GR	624.700	308.000	623.900	347.000	625.100	373.000	624.300	409.000	626.600	459.000
GR	639.100	479.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.150	12.000	0.150	214.000	0.035	317.000	0.065	357.000	0.035

NH	533.000	0.150	702.000	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
		XSEC 3 SECTION THRU ISLAND NE OF OLD GRAVEL OPERATION								
X1	44820.000	29.000	214.000	533.000	1100.000	1100.000	1050.000	0.000	0.000	0.000
GR	635.000	0.000	629.000	12.000	626.200	72.000	624.900	94.000	622.300	107.000
GR	622.900	145.000	623.300	186.000	624.400	199.000	624.700	214.000	618.000	226.000
GR	617.000	241.000	617.900	258.000	616.900	292.000	617.900	313.000	622.400	317.000
GR	624.400	342.000	622.000	357.000	616.900	361.000	615.100	402.000	613.900	430.000
GR	613.900	458.000	612.700	487.000	613.000	507.000	616.900	513.000	625.300	533.000
GR	627.500	554.000	623.300	660.000	628.100	680.000	635.000	702.000	0.000	0.000
NH	4.000	0.150	22.000	0.150	252.000	0.035	478.000	0.150	626.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 4 OLD WOOD PILING ALONG EACH BANK								
X1	45470.000	28.000	252.000	478.000	550.000	650.000	650.000	0.000	0.000	0.000
GR	635.400	0.000	627.200	22.000	625.100	52.000	625.500	83.000	625.500	136.000
GR	627.800	157.000	625.300	180.000	626.700	223.000	628.200	248.000	627.700	252.000
GR	625.700	256.000	619.300	262.000	616.300	269.000	615.500	274.000	614.300	280.000
GR	615.000	312.000	615.600	341.000	614.700	371.000	614.800	395.000	615.400	417.000
GR	615.700	442.000	613.400	460.000	617.400	470.000	624.500	478.000	627.100	487.000

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GR	628.600	508.000	632.100	558.000	640.000	626.000	0.000	0.000	0.000	0.000
NH	5.000	0.150	23.000	0.100	281.000	0.035	465.000	0.070	473.000	0.060
NH	497.000	0.000	0.000	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
		XSEC 5 HILL AT RIGHT BANK IS ERODING								
X1	46870.000	24.000	281.000	465.000	1280.000	1575.000	1300.000	0.000	0.000	0.000
GR	642.500	0.000	631.000	23.000	626.000	56.000	627.400	89.000	624.500	131.000
GR	626.300	179.000	629.300	237.000	628.100	250.000	627.700	259.000	623.100	270.000
GR	622.100	281.000	618.400	284.000	616.800	299.000	616.300	319.000	615.900	347.000
GR	615.300	370.000	613.900	395.000	612.600	421.000	615.600	447.000	618.200	461.000
GR	621.300	465.000	622.600	473.000	626.700	479.000	636.000	497.000	0.000	0.000
NH	4.000	0.100	36.000	0.030	91.000	0.036	352.000	0.100	458.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 6								
X1	48720.000	20.000	91.000	352.000	1500.000	2000.000	1850.000	0.000	0.000	0.000
GR	637.000	0.000	624.900	38.000	626.500	72.000	626.800	91.000	618.000	104.000
GR	618.000	104.000	616.800	116.000	617.000	148.000	616.700	198.000	616.400	248.000
GR	616.800	298.000	617.500	348.000	618.300	350.000	620.600	352.000	619.700	356.000
GR	618.700	373.000	618.200	386.000	618.800	407.000	628.500	434.000	637.000	458.000
NH	4.000	0.150	20.000	0.030	532.000	0.036	691.000	0.050	738.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 7								
X1	50220.000	23.000	532.000	691.000	1300.000	1300.000	1500.000	0.000	0.000	0.000
GR	636.500	0.000	626.900	20.000	627.600	158.000	628.000	233.000	624.200	282.000
GR	627.400	347.000	626.500	451.000	624.900	479.000	626.600	525.000	626.300	532.000
GR	621.100	542.000	619.500	548.000	618.600	555.000	617.500	558.000	616.000	581.000
GR	614.200	605.000	618.200	628.000	613.400	652.000	616.000	675.000	619.600	688.000
GR	623.100	691.000	627.700	707.000	636.500	738.000	0.000	0.000	0.000	0.000

NH	3.000	0.020	124.000	0.035	312.000	0.150	1290.000	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

XSEC 8 VICS CAMPING ON RIGHT BANK CAMPGROUND IS ON A HILL
WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.

X1	51945.000	27.000	124.000	312.000	1300.000	1500.000	1725.000	0.000	0.000	0.000
GR	637.100	0.000	634.700	32.000	637.200	111.000	637.600	124.000	625.400	138.000
GR	620.200	149.000	617.600	158.000	614.900	181.000	615.700	201.000	617.700	222.000
GR	617.700	247.000	618.300	254.000	619.300	271.000	620.200	290.000	622.100	297.000
GR	623.300	303.000	629.400	312.000	630.000	320.000	625.400	367.000	627.200	392.000
GR	627.000	411.000	628.300	425.000	629.500	454.000	628.600	560.000	629.000	650.000
GR	629.000	1250.000	639.000	1290.000	0.000	0.000	0.000	0.000	0.000	0.000

NH	6.000	0.120	860.000	0.025	887.000	0.025	1032.000	0.100	1084.000	0.025
NH	1192.000	0.125	1700.000	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

XSEC 9 SECTION THROUGH ISLAND 3S OF VICS
XSEC BENT 30DEG LFT AT 887 20DEG RT AT STA 1208

X1	53000.000	39.000	887.000	1192.000	1200.000	500.000	1055.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	350.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	638.500	0.000	628.500	50.000	625.000	100.000	624.700	650.000	624.900	705.000
GR	624.900	728.000	626.700	760.000	627.500	815.000	629.000	860.000	626.200	872.000

GR	625.000	887.000	620.400	892.000	617.400	898.000	617.700	922.000	618.000	947.000
GR	618.100	974.000	617.700	1001.000	620.400	1025.000	623.600	1032.000	624.400	1035.000
GR	623.600	1061.000	624.300	1078.000	625.200	1084.000	620.400	1093.000	617.900	1101.000
GR	617.700	1122.000	618.300	1143.000	617.500	1165.000	617.100	1185.000	619.600	1190.000
GR	623.000	1192.000	624.500	1203.000	629.600	1208.000	629.000	1226.000	628.200	1240.000
GR	629.900	1290.000	629.100	1350.000	629.100	1650.000	638.500	1700.000	0.000	0.000

NH	4.000	0.090	1340.000	0.035	1557.000	0.025	1730.000	0.120	1740.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 10 REDWOOD COTTAGE ON LEFT BANK 1976 HWM 630.5
1986 HWM 630 XSEC BENT 45DEG LEFT AT STA 1360

X1	53700.000	24.000	1557.000	1730.000	400.000	750.000	700.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	300.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	639.000	0.000	628.500	50.000	625.000	100.000	625.000	1340.000	628.300	1360.000
GR	627.200	1377.000	628.700	1420.000	628.800	1480.000	629.000	1500.000	629.200	1531.000
GR	627.400	1545.000	626.800	1550.000	626.200	1557.000	620.600	1563.000	617.900	1567.000
GR	616.600	1600.000	617.000	1624.000	617.600	1662.000	617.800	1688.000	618.100	1717.000
GR	620.700	1725.000	629.200	1730.000	632.100	1733.000	639.000	1740.000	0.000	0.000

NH	5.000	0.088	1399.000	0.030	1784.000	0.025	2662.000	0.030	2221.000	0.040
NH	2250.000	0.000	0.000	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

XSEC 10A NEAR WHITE COTTAGE(BRONKEMA) 1976HWM 630.9 IN GARAGE
XSEC BENT 60DEG RT AT STA 139.9 RESTRICTED FOR HIGH GROUND AT
XSEC 11 US 1986 HWM 630

X1	54800.000	35.000	2062.000	2221.000	500.000	1000.000	900.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000

X3	0.000	0.000	0.000	750.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	639.000	0.000	628.500	50.000	625.000	449.000	623.000	649.000	624.000	949.000
GR	623.000	1049.000	627.100	1352.000	628.200	1399.000	629.300	1508.000	626.700	1597.000
GR	630.100	1644.000	630.500	1755.000	628.100	1784.000	629.900	1846.000	628.500	1888.000
GR	628.600	1917.000	628.100	1957.000	629.600	1966.000	630.400	1998.000	629.800	2041.000
GR	629.100	2060.000	628.700	2062.000	625.300	2068.000	624.500	2074.000	621.000	2079.000
GR	620.500	2099.000	619.700	2119.000	618.200	2123.000	616.900	2145.000	615.300	2167.000
GR	614.500	2190.000	616.300	2215.000	621.000	2221.000	632.100	2238.000	639.000	2250.000
NH	3.000	0.029	1169.000	0.080	1946.000	0.100	2105.000	0.000	0.000	0.000

XSEC 11 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND

X1	56800.000	23.000	1000.000	1169.000	400.000	1000.000	1200.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	0.000	0.000	1900.000	0.000	0.000	0.000	0.000
GR	627.700	1000.000	623.000	1014.000	621.400	1015.000	619.400	1026.000	618.800	1039.000
GR	617.000	1051.000	616.800	1075.000	616.200	1100.000	617.000	1125.000	618.400	1148.000
GR	621.400	1154.000	628.600	1169.000	630.100	1172.000	629.800	1185.000	630.200	1237.000
GR	629.500	1320.000	630.100	1454.000	630.700	1546.000	630.800	1651.000	629.700	1819.000
GR	629.600	1946.000	628.200	2070.000	640.000	2105.000	0.000	0.000	0.000	0.000
NH	4.000	0.070	22.000	0.035	220.000	0.080	958.000	0.100	1592.000	0.000

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XSEC 12

X1	56800.000	31.000	22.000	222.000	1200.000	50.000	1000.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	0.000	0.000	1630.000	0.000	0.000	0.000	0.000
GR	640.000	0.000	629.300	13.000	621.700	22.000	619.100	29.000	617.800	53.000
GR	614.600	81.000	617.100	107.000	619.100	131.000	620.300	141.000	621.600	147.000
GR	622.800	152.000	624.300	171.000	626.700	187.000	630.000	222.000	629.900	245.000
GR	628.800	350.000	630.100	457.000	630.700	560.000	630.600	660.000	629.900	758.000
GR	629.600	865.000	629.800	958.000	630.100	1010.000	629.500	1093.000	630.100	1227.000
GR	630.700	1319.000	630.800	1424.000	629.700	1592.000	629.600	1719.000	628.200	1843.000
GR	640.000	1878.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	7.000	0.070	30.000	0.045	857.000	0.030	987.000	0.080	1061.000	0.030
NH	1175.000	0.055	1711.000	0.075	2165.000	0.000	0.000	0.000	0.000	0.000

XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
1976 MM 631.9

X1	57650.000	32.000	857.000	1180.000	500.000	50.000	850.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	0.000	0.000	1910.000	0.000	0.000	0.000	0.000
GR	640.000	0.000	630.000	30.000	629.200	845.000	622.000	857.000	620.100	869.000
GR	619.800	879.000	618.500	914.000	621.900	968.000	622.700	987.000	627.000	991.000
GR	625.500	1007.000	627.300	1014.000	627.300	1045.000	628.000	1054.000	624.400	1061.000
GR	623.500	1087.000	622.000	1117.000	619.600	1144.000	617.400	1168.000	621.900	1175.000
GR	626.500	1180.000	629.700	1189.000	629.700	1245.000	630.200	1297.000	629.500	1380.000
GR	630.100	1514.000	630.700	1606.000	630.800	1711.000	629.700	1879.000	629.600	2006.000
GR	628.200	2130.000	640.000	2165.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.070	50.000	0.048	1106.000	0.036	1285.000	0.150	1300.000	0.000
NH	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 14 XSEC BEND 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK LN LOB

X1	58350.000	20.000	1106.000	1285.000	500.000	400.000	700.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	640.500	0.000	633.000	50.000	630.100	100.000	628.600	400.000	630.300	731.000
GR	631.100	918.000	630.700	1077.000	630.500	1106.000	623.300	1125.000	621.600	1126.000
GR	616.400	1138.000	616.300	1158.000	617.500	1185.000	619.500	1212.000	619.900	1243.000
GR	619.900	1269.000	620.900	1277.000	622.400	1282.000	629.500	1285.000	640.500	1300.000
NH	4.000	0.050	1150.000	0.034	1389.000	0.100	1513.000	0.100	1550.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 15

X1	58900.000	21.000	1150.000	1389.000	450.000	700.000	550.000	0.000	0.000	0.000
GR	640.600	0.000	633.000	50.000	632.000	100.000	632.200	1130.000	632.000	1143.000
GR	631.800	1147.000	631.500	1150.000	627.000	1153.000	622.700	1162.000	618.400	1183.000
GR	622.100	1201.000	621.700	1225.000	620.900	1257.000	618.700	1289.000	618.100	1317.000
GR	618.000	1342.000	619.600	1367.000	629.000	1389.000	629.000	1447.000	631.300	1513.000
GR	640.600	1550.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.120	32.000	0.040	44.000	0.035	200.000	0.120	800.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 16

X1	60000.000	17.000	44.000	200.000	1000.000	700.000	1100.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	641.400	0.000	631.000	32.000	630.500	36.000	628.800	38.000	628.000	44.000
GR	623.200	47.000	620.800	55.000	618.900	79.000	619.100	103.000	619.400	129.000
GR	620.700	154.000	621.200	168.000	623.300	175.000	626.500	187.000	632.600	200.000
GR	633.100	750.000	641.400	800.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.093	144.000	0.028	422.000	0.089	543.000	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

XSEC 17 SUBDIVISION ON LEFT BANK

X1	62250.000	28.000	144.000	422.000	2400.000	1700.000	2225.000	0.000	0.000	0.000
GR	642.800	0.000	638.600	26.000	632.600	88.000	631.600	113.000	632.500	125.000
GR	632.900	144.000	630.900	153.000	625.400	159.000	624.200	161.000	622.000	173.000
GR	622.100	181.000	623.600	193.000	622.100	243.000	620.600	280.000	620.200	313.000
GR	620.700	350.000	621.800	365.000	624.300	384.000	625.000	394.000	624.200	399.000
GR	629.100	422.000	630.300	424.000	629.700	435.000	629.500	468.000	627.800	492.000
GR	629.000	518.000	637.300	534.000	641.600	543.000	0.000	0.000	0.000	0.000
NH	3.000	0.089	32.000	0.028	256.000	0.110	448.000	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	63120.000	22.000	32.000	256.000	970.000	970.000	970.000	0.000	0.000	0.000
GR	643.800	0.000	638.500	14.000	631.400	30.000	630.400	32.000	624.700	34.000
GR	623.000	39.000	619.700	50.000	619.800	82.000	621.500	117.000	621.800	152.000
GR	623.400	187.000	624.100	194.000	624.900	227.000	626.700	235.000	625.400	245.000
GR	625.300	251.000	638.100	256.000	634.000	265.000	633.700	298.000	633.400	322.000
GR	632.300	372.000	643.800	448.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.074	175.000	0.110	216.000	0.028	421.000	0.089	485.000	0.000
X1	65620.000	27.000	216.000	421.000	1900.000	1900.000	1900.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	20.000	0.000	470.000	0.000	0.000	0.000	0.000
GR	642.200	0.000	631.500	53.000	632.000	98.000	634.500	153.000	635.700	175.000

GR	634.000	196.000	633.000	205.000	629.800	216.000	626.100	219.000	624.900	230.000
GR	623.100	238.000	622.500	261.000	623.400	290.000	623.100	307.000	621.600	333.000
GR	620.700	363.000	623.000	397.000	625.200	408.000	628.300	421.000	630.100	425.000
GR	631.000	431.000	631.400	442.000	630.900	455.000	631.800	462.000	634.200	474.000
GR	637.700	479.000	642.200	485.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.074	10.000	0.030	59.000	0.028	295.000	0.110	455.000	0.000

XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK

X1	67420.000	21.000	59.000	295.000	2400.000	2500.000	2500.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	10.000	0.000	420.000	0.000	0.000	0.000	0.000
GR	642.900	0.000	638.600	10.000	634.000	20.000	633.200	32.000	632.500	54.000
GR	631.800	59.000	627.800	62.000	624.500	73.000	623.600	86.000	621.000	100.000
GR	619.300	129.000	620.900	154.000	623.200	194.000	624.000	218.000	626.100	267.000
GR	627.700	281.000	633.700	295.000	636.100	299.000	633.000	345.000	634.900	415.000
GR	642.900	455.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.063	270.000	0.028	518.000	0.074	575.000	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

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XSEC 21 US OF GREEN COTTAGE ON LEFT BANK

X1	68970.000	25.000	270.000	518.000	1400.000	1700.000	1550.000	0.000	0.000	0.000
GR	643.500	0.000	640.700	10.000	637.400	124.000	636.700	212.000	635.500	246.000
GR	633.700	255.000	631.500	270.000	625.500	277.000	626.300	293.000	625.100	303.000
GR	625.600	320.000	624.900	336.000	623.300	346.000	622.700	363.000	623.900	385.000
GR	623.500	421.000	623.000	429.000	623.000	450.000	624.200	481.000	625.300	499.000
GR	626.600	505.000	628.300	518.000	633.700	529.000	636.400	550.000	643.500	575.000
NH	3.000	0.037	126.000	0.028	408.000	0.037	426.000	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

XSEC 22 BELOW POWER LINE CROSSING N VALUES ARE ATYPICAL

X1	70300.000	25.000	126.000	408.000	1300.000	1300.000	1330.000	0.000	0.000	0.000
GR	644.400	0.000	640.000	15.000	635.000	24.000	631.600	40.000	632.700	54.000
GR	631.200	73.000	634.100	113.000	634.200	123.000	633.800	126.000	631.700	136.000
GR	625.700	144.000	624.400	160.000	624.500	183.000	623.700	194.000	625.300	214.000
GR	626.400	266.300	625.900	300.000	624.100	307.000	624.100	336.000	624.400	359.000
GR	626.200	383.000	628.600	389.000	632.300	408.000	639.400	417.000	644.400	426.000
NH	4.000	0.089	30.000	0.033	98.000	0.028	323.000	0.074	375.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	71300.000	22.000	98.000	323.000	1000.000	1000.000	0.000	0.000	0.000	0.000
GR	645.100	0.000	636.000	30.000	633.300	71.000	633.900	79.000	633.600	98.000
GR	631.700	101.000	629.900	108.000	627.100	111.000	625.100	114.000	624.600	144.000
GR	625.000	154.000	623.900	163.000	622.700	193.000	623.600	217.000	623.600	235.000
GR	624.400	271.000	625.300	300.000	626.000	311.000	630.200	328.000	635.800	333.000
GR	637.600	354.000	645.100	375.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.074	67.000	0.035	100.000	0.030	320.000	0.089	408.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	71900.000	25.000	100.000	320.000	500.000	550.000	600.000	0.000	0.000	0.000
GR	646.100	0.000	638.500	21.000	636.100	48.000	634.200	56.000	634.500	67.000
GR	632.700	69.000	631.400	88.000	630.600	99.000	630.000	100.000	627.700	103.000
GR	625.800	109.000	625.500	118.000	624.600	150.000	624.600	178.000	625.500	225.000

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GR    626.100    274.000    625.600    291.000    627.100    313.000    630.500    320.000    632.700    335.000
GR    630.900    343.000    632.400    355.000    633.200    361.000    639.400    389.000    645.200    408.000

NH      4.000      0.074     66.000      0.031    311.000      0.028    757.000      0.059    767.000      0.000
ET      0.000      0.000      1.400      0.000      0.000      0.000      0.000      0.000      0.000      0.000
        XSEC 25 BTWN BARBER AND KRING CABINS US OF PUB ACC SITE DS OF NEWYGO
X1  73040.000     20.000     66.000    311.000   1200.000   1100.000   1140.000      0.000      0.000      0.000
GR    646.600      0.000    641.900     15.000    639.200     30.000    636.200     66.000    628.600     82.000
GR    626.400    124.000    625.600    147.000    627.300    215.000    627.200    268.000    628.000    301.000
GR    633.300    311.000    636.600    328.000    636.700    343.000    636.400    418.000    637.600    472.000
GR    639.500    526.000    641.300    559.000    644.800    620.000    650.800    757.000    655.800    767.000

NH      3.000      0.035     49.000      0.028    310.000      0.044    335.000      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
        XSEC 26 DS OF CO RD BRDG  SEC BENT 45DEG RT OFF RD FILL AT STA 10
          BENT 45DEG RT TO RD FILL AT STA 325
X1  73590.000     21.000     49.000    310.000    660.000    500.000    550.000      0.000      0.000      0.000
GR    646.800      0.000    643.800     10.000    637.000     32.000    635.600     41.000    634.300     47.000
GR    632.900     49.000    628.800     65.000    624.100     82.000    626.000    105.000    626.800    113.000
GR    628.000    121.000    625.800    133.000    626.800    162.000    628.800    175.000    629.900    211.000
GR    626.600    244.000    627.000    272.000    628.400    304.000    632.400    310.000    632.700    325.000
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GR    646.800    335.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000

NC      0.035      0.044      0.025      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
        XSEC 27 CENTER OF BRDG   ELLC AT 650.5
X1  73640.000     31.000      0.000    296.000     50.000     50.000     50.000      0.000      0.000      0.000
X2      0.000      0.000      0.000    650.500    652.000      0.000      0.000      0.000      0.000      0.000
GR    652.000      0.000    638.800      0.000    631.300     35.000    629.200     36.000    628.870     43.000
GR    625.700     60.000    625.400     80.000    626.500     90.000    628.500     95.000    629.500    100.000
GR    628.200    107.000    627.100    117.000    626.600    128.000    627.300    138.000    628.700    146.000
GR    652.000    146.000    652.000    152.000    628.700    152.000    629.300    163.000    628.800    167.000
GR    625.800    182.000    625.600    197.000    627.500    208.000    627.000    215.000    626.300    240.000
GR    627.000    250.000    625.800    264.000    633.000    275.000    632.900    290.000    634.800    296.000
GR    652.000    296.000      0.000      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  73660.000      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    650.500    652.000      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  73720.000     21.000    110.000    353.000     60.000     60.000     60.000      0.000      0.000      0.000
GR    653.300      0.000    647.000     44.000    641.700     71.000    634.800     88.000    633.600     99.000
GR    634.700    110.000    631.500    120.000    629.100    123.000    628.500    153.000    626.900    168.000
GR    635.800    202.000    626.700    220.000    625.300    240.000    626.700    278.000    627.300    306.000
GR    639.000    336.000    632.300    353.000    635.400    373.000    640.000    414.000    645.500    492.000
GR    650.000    523.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000

NH      4.000      0.110     80.000      0.059    826.000      0.025   1066.000      0.067   1075.000      0.000
ET      0.000      0.000      1.400      0.000      0.000      0.000      0.000      0.000      0.000      0.000
        XSEC 29  SEWAGE TREATMENT PLANT IN LOB
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X1	75140.000	24.000	826.000	1066.000	1140.000	1440.000	1420.000	0.000	0.000	0.000
GR	645.200	0.000	640.400	80.000	638.400	170.000	636.000	286.000	636.700	390.000
GR	636.500	494.000	637.200	592.000	636.300	692.000	635.400	790.000	635.600	820.000
GR	635.600	826.000	632.600	838.000	630.600	843.000	630.100	850.000	628.700	857.000
GR	628.100	891.000	627.500	936.000	628.100	953.000	628.900	983.000	629.700	1048.000
GR	631.200	1063.000	634.500	1066.000	639.200	1068.000	646.700	1075.000	0.000	0.000
NC	0.074	0.074	0.025	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

XSEC 29A AT USGS CABLE

X1	75800.000	22.000	1005.000	1264.000	540.000	700.000	660.000	0.000	0.000	0.000
GR	636.000	1005.000	632.400	1011.000	631.700	1013.000	630.500	1019.000	628.500	1029.000
GR	628.800	1037.000	629.100	1048.000	629.200	1062.000	630.000	1080.000	629.900	1105.000
GR	629.400	1121.000	629.900	1139.000	629.700	1159.000	629.300	1177.000	629.100	1194.000
GR	628.900	1208.000	628.200	1227.000	628.700	1229.000	631.700	1241.000	633.700	1246.000
GR	633.300	1255.000	635.200	1264.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.080	16.000	0.025	57.000	0.028	327.000	0.075	400.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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XSEC 29B AT USGS GAGE 1976 STAGE IS 639.2 1986 STAGE 645.4

X1	76350.000	24.000	24.000	333.000	550.000	550.000	550.000	0.000	0.000	0.000
GR	648.800	0.000	638.800	10.000	634.700	24.000	632.300	33.000	630.800	41.000
GR	630.900	65.000	629.800	86.000	630.600	103.000	631.100	110.000	630.900	132.000
GR	630.900	133.000	630.900	134.000	631.200	141.000	631.200	181.000	630.800	218.000
GR	631.200	243.000	630.700	255.000	629.800	284.000	631.100	306.000	632.500	326.000
GR	633.000	332.000	634.600	333.000	636.500	346.000	646.500	356.000	0.000	0.000
NC	0.074	0.074	0.025	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

XSEC 30 1975 HWM IS 638.6 1976 HWM IS 639.2

X1	76760.000	27.000	57.000	327.000	350.000	450.000	410.000	0.000	0.000	0.000
GR	654.000	0.000	645.800	16.000	638.600	32.000	637.900	43.000	636.500	57.000
GR	633.200	62.000	631.000	77.000	629.000	84.000	629.000	98.000	629.600	116.000
GR	629.000	147.000	628.300	167.000	630.400	188.000	633.000	197.000	632.600	203.000
GR	627.600	217.000	629.000	221.000	629.800	232.000	629.600	279.000	631.700	287.000
GR	631.100	298.000	633.300	315.000	636.000	327.000	638.300	341.000	636.900	355.000
GR	638.900	360.000	651.300	400.000	0.000	0.000	0.000	0.000	0.000	0.000
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	AV	HL	OLOSS	BANK ELEV	
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TEA	LEFT/RIGHT	
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	UTN	ELMIN	SSTA	
SLOPE	XLOCL	XLCH	XLOBF	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST	

*PROP 1

CCHV= 0.100 CEHV= 0.300

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1490 NH CARD USED
*SECNO 0.100

3470 ENCROACHMENT STATIONS=        8.0      818.0  TYPE=      1  TARGET=      810.000
                XSEC 61
     0.10     20.14    620.14      0.00    619.00    620.37      0.23      0.00      0.00    613.20
   18800.       16.     15440.     3345.       49.     3656.     3988.        0.        0.    609.60
     0.00      0.32      4.22      0.84     0.135     0.031     0.092     0.000    600.00      8.00
 0.000187        0.        0.        0.         0         0         3      0.00    809.79    817.79
0
1490 NH CARD USED
*SECNO 1920.000

3470 ENCROACHMENT STATIONS=       22.0      763.0  TYPE=      1  TARGET=      741.000
        SEC 61 MOVED US INVERT ADJ BY .94FT     FLOOD FLOW SHIFTED FROM
        ROB AS NOTED ON XSEC 61 TO APPROX AREA IN LOB FOR THIS XSEC
   1920.00     19.55    620.49      0.00      0.00    620.80      0.31      0.41      0.02    614.14
   18800.        0.     16741.     2059.        0.     3529.     3359.      306.       32.    610.54
     0.12      0.00      4.74      0.61     0.000     0.031     0.140     0.000    600.94     22.00
 0.000256     2170.     1920.     1740.         0         0         0      0.00    741.00    763.00
0
1490 NH CARD USED
*SECNO 3050.000

3470 ENCROACHMENT STATIONS=       17.0      328.0  TYPE=      1  TARGET=      311.000
                XSEC 62
   3050.00     19.38    620.78      0.00      0.00    621.06      0.27      0.25      0.00    608.60
   18800.      132.     18579.       89.      124.     4400.      101.      458.       46.    609.00
     0.20      1.06      4.22      0.88     0.067     0.031     0.067     0.000    601.40     17.00
 0.000194     1200.     1130.     1200.         2         0         0      0.00    310.99    328.00
0
1490 NH CARD USED
*SECNO 3051.000

3470 ENCROACHMENT STATIONS=       17.0      328.0  TYPE=      1  TARGET=      311.000
        U EDGE OF BRIDGE DECK AT BRIDGETON  1976 HWM 615.7
   3051.00     19.40    620.80      0.00      0.00    621.06      0.26      0.00      0.00    608.60
   18800.      379.     18154.      256.      124.     4402.      101.      459.       46.    609.00
     0.20      3.05      4.13      2.53     0.023     0.031     0.023     0.000    601.40     17.00
 0.000185        1.        1.        1.         1         0         0      0.00    311.00    328.00
0
1
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   SECNO     DEPTH     CNSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

SPECIAL BRIDGE

SB  XR        XKOR      COFQ      PDLEN     EWC       BWP       BAREA     SS        ELCHU     ELCHD
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0.90	1.25	2.60	1000.00	260.00	8.00	9000.00	1.43	604.50	604.50	

*SECNO 3100.000
CLASS A LOW FLOW

3420 BRIDGE W.S.= 620.78 BRIDGE VELOCITY= 4.19 CALCULATED CHANNEL AREA= 4483.

EGRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
0.00	621.06	0.01	0.	18800.	9000.	9152.	635.40	638.00

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000

3100.00	19.40	620.80	0.00	0.00	621.06	0.26	0.01	0.00	608.60
18800.	380.	18163.	257.	125.	4406.	101.	464.	46.	609.00
0.20	3.05	4.12	2.53	0.023	0.031	0.023	0.000	601.40	17.00
0.000184	49.	49.	49.	0	0	0	0.00	311.00	328.00

0
*SECNO 3101.000

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000

3101.00	19.39	620.79	0.00	0.00	621.07	0.28	0.00	0.01	608.60
18800.	44.	18692.	64.	125.	4404.	101.	464.	46.	609.00
0.20	0.36	4.24	0.63	0.202	0.031	0.095	0.000	601.40	17.00
0.000196	1.	1.	1.	1	0	0	0.00	311.00	328.00

0
1490 NH CARD USED
*SECNO 4680.000
XSEC 63

4680.00	17.67	621.17	0.00	0.00	621.33	0.16	0.25	0.01	608.50
18800.	390.	18859.	1551.	359.	4936.	1369.	669.	65.	616.00
0.34	1.09	3.42	1.13	0.061	0.031	0.048	0.000	603.50	8.16
0.000131	1500.	1579.	1600.	2	0	0	0.00	612.40	620.55

0
1490 NH CARD USED
*SECNO 7200.000
XSEC 64 XSEC CROSSES US OF OLD ROCK CRIBBING

1

SECNO	DEPTH	CHSEL	CRIBS	USELK	EG	HV	HL	QLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
ELWS	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XRCH	ELOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
7200.00	14.19	621.49	0.00	0.00	621.79	0.30	0.42	0.04	619.00
18800.	1243.	17302.	175.	1228.	3826.	129.	1055.	102.	610.40
0.50	0.38	4.54	1.36	0.196	0.031	0.054	0.000	602.30	8.51
0.000216	2200.	2520.	2500.	2	0	0	0.00	802.25	810.76

0
1490 NH CARD USED
*SECNO 8850.000

```
        XSEC 65   XSEC CROSSES 100FT US OF BOAT LAUNCH
  8850.00    17.76   621.96     0.00     0.00   622.14     0.18     0.34     0.01   619.30
   18300.       2.   15614.    3184.       6.    4247.    4986.    1354.     132.    619.80
     0.65     0.34     3.68     0.64    0.067    0.034    0.139    0.000   604.20    33.21
 0.000196    1400.    1650.    1600.        2        0        0     0.00   882.43   915.64
0
 1490 NH CARD USED
 *SECNO 10300.000
                XSEC 66
 10300.00    19.03   622.33     0.00     0.00   622.41     0.08     0.26     0.01   611.10
   18800.     176.   12591.    6032.     143.    4658.    7009.    1601.     154.    620.60
     0.82     1.23     2.70     0.86    0.067    0.047    0.114    0.000   603.30    20.52
 0.000217    1500.    1450.     700.        2        0        0     0.00  1186.52  1207.04
0
 1490 NH CARD USED
 *SECNO 11800.000
                XSEC    67
 11800.00    18.20   622.60     0.00     0.00   622.81     0.20     0.36     0.04   619.60
   18800.    3187.   15515.      98.    5953.    3898.     212.    1944.     188.    610.70
     0.93     0.54     3.98     0.46    0.202    0.041    0.202    0.000   604.40    71.29
 0.000304    1600.    1500.    1000.        0        0        0     0.00  1023.38  1094.68
0
 *SECNO 12600.000
 12600.00    18.45   622.85     0.00     0.00   623.04     0.20     0.24     0.00   619.60
   18800.    3243.   15452.     101.    6133.    3957.     221.    2131.     207.    610.70
     1.00     0.53     3.91     0.46    0.202    0.041    0.202    0.000   604.40    67.09
 0.000288     800.     800.     800.        2        0        0     0.00  1028.32  1095.40
0
 1490 NH CARD USED
 *SECNO 14100.000
                XSEC 68
1
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   SECNO     DEPTH    CMSEL    CRIMS    USELK    EG       HV       HL       OLOSS   BANK ELEV
   Q         QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA     LEFT/RIGHT
   TIME      VLOBL    VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
   SLOPE     XLOBL    XCCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST

 14100.00    18.16   623.26     0.00     0.00   623.50     0.24     0.45     0.01   611.80
   18800.     326.   17446.    1029.     501.    4234.    2186.    2384.     231.    618.40
     1.10     0.65     4.12     0.47    0.135    0.041    0.202    0.000   605.10    11.32
 0.000332     900.    1500.    1600.        1        0        0     0.00   717.26   728.58
0
 1490 NH CARD USED
 *SECNO 16700.000
                XSEC 69
 16700.00    19.29   623.89     0.00     0.00   624.13     0.24     0.63     0.00   621.80
   18800.    3056.   15674.      70.    6764.    3619.      86.    2693.     259.    613.80
     1.28     0.45     4.38     0.32    0.202    0.028    0.031    0.000   604.60    14.76
 0.000216     300.    2600.    1900.        2        0        0     0.00  1122.14  1136.90
0
 1490 NH CARD USED
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*SECNO 19870.000

3265 DIVIDED FLOW

XSEC 70 THROUGH SUBDIV ON LEFT BANK CHANNEL INEFFECTIVE
1976 HWM ON BASEMENT WALL 619.8 HWM 800FT DS 619.98

19870.00	18.93	624.59	0.00	0.00	624.87	0.28	0.73	0.01	612.40
18800.	4765.	13898.	133.	2511.	2903.	275.	3179.	311.	612.80
1.49	1.90	4.79	0.48	0.041	0.034	0.202	0.000	605.60	11.49
0.000279	2200.	3170.	3500.	2	0	0	0.00	699.96	744.45

0

1490 NH CARD USED
*SECNO 21370.000

XSEC 71 OLDER COTTAGES ON RT BANK SEAWALL PROTECTS RT BANK

21370.00	18.83	625.03	0.00	0.00	625.22	0.19	0.34	0.01	612.40
18800.	1344.	13216.	4240.	1930.	3224.	3063.	3402.	333.	619.80
1.61	0.70	4.10	1.38	0.140	0.033	0.064	0.000	606.20	11.50
0.000202	1100.	1500.	1600.	2	0	0	0.00	773.28	784.78

0

1490 NH CARD USED
*SECNO 24985.000

XSEC 72

24985.00	18.43	625.53	0.00	0.00	626.11	0.18	0.89	0.00	620.30
18800.	2412.	13713.	2675.	4082.	3460.	1671.	4131.	403.	614.70
1.93	0.59	3.96	1.60	0.202	0.040	0.062	0.000	607.50	11.78
0.000307	3700.	3515.	3600.	2	0	0	0.00	897.10	908.88

0

1

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

1490 NH CARD USED
*SECNO 28205.000

XSEC 73

28235.00	17.64	626.94	0.00	0.00	627.20	0.26	1.06	0.02	623.50
18800.	1242.	17449.	109.	2351.	4139.	124.	4648.	453.	616.70
2.15	0.53	4.22	0.88	0.200	0.040	0.108	0.000	609.30	11.23
0.000380	2300.	3200.	3300.	2	0	0	0.00	669.32	680.55

0

1490 NH CARD USED
*SECNO 29860.000

XSEC 74 IN LINE WITH E SIDE OF COTTAGE ON TOP OF LFT BANK
JUST US OF ROADLINE

29860.00	18.22	627.52	0.00	0.00	627.87	0.35	0.64	0.03	616.20
18800.	99.	18058.	643.	215.	3731.	1331.	4867.	474.	615.20
2.24	0.46	4.84	0.48	0.202	0.041	0.262	0.000	609.30	13.02
0.000414	1500.	1625.	1700.	2	0	0	0.00	499.53	512.54

0

1490 NH CARD USED

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 *SECNO 31660.000
                    XSEC 75
  31660.00    18.07   628.27     0.00     0.00   628.51     0.24     0.63     0.01   623.30
    18800.      612.    17719.    468.    1387.    4362.    507.     5103.    497.    617.10
      2.37     0.44     4.06     0.92    0.186    0.041    0.108    0.000   610.20    22.89
  0.000301    1700.    1800.    1800.        2        0        0     0.00   598.47   621.36
0
 1490 NH CARD USED
 *SECNO 35425.000

 3470 ENCROACHMENT STATIONS=      20.0      790.0  TYPE=      1  TARGET=     770.000
                    XSEC 76
  35425.00    19.84   629.64     0.00     0.00   629.84     0.20     1.33     0.00   621.20
    18800.      30.    15265.    3505.      76.    3860.    4394.    5733.     556.    625.30
      2.68     0.39     3.95     0.80    0.209    0.047    0.165    0.000   609.80    20.00
  0.000423    4300.    3760.    3600.        1        0        0     0.00   770.00   790.00
0
 1490 NH CARD USED
 *SECNO 37670.000

 3470 ENCROACHMENT STATIONS=      20.0     1035.0  TYPE=      1  TARGET=    1015.000
1
                                                                          PAGE   19

                    XSEC 77
  37670.00    22.54   630.54     0.00     0.00   630.76     0.22     0.91     0.00   622.70
    18800.    5516.    13263.      20.    7784.    3006.      59.    6181.     598.    623.70
      2.86     0.71     4.41     0.35    0.203    0.047    0.202    0.000   608.00    20.00
  0.000441    1900.    2150.    2100.        2        0        0     0.00  1014.67  1034.67
0
 1490 NH CARD USED
 *SECNO 38970.000

 3470 ENCROACHMENT STATIONS=      20.0      760.0  TYPE=      1  TARGET=     740.000
                KSEC 78  300FT DS OF ISLAND, POWERLINE CROSSING AND BOAT LAUNCH
                    WEST END OF OLD GRAVEL OPERATION
  38970.00    18.07   630.97     0.00     0.00   631.10     0.13     0.33     0.01   621.80
    18800.      29.    15300.    3471.      68.    4825.    4143.    5424.     618.    624.80
      2.98     0.43     3.17     0.84    0.135    0.041    0.111    0.000   612.90    20.00
  0.000187     700.    1300.    1300.        2        0        0     0.00   740.00   760.00
0
 1490 NH CARD USED
 *SECNO 42170.000

 3470 ENCROACHMENT STATIONS=      15.0      510.0  TYPE=      1  TARGET=     495.000
                    XSEC 1
  42170.00    19.33   631.43     0.00     0.00   631.92     0.49     0.71     0.11   622.40
    18800.      26.    16713.    2061.      72.    2812.    2423.    6936.     662.    625.90
      3.14     0.38     5.94     0.85    0.202    0.027    0.113    0.000   612.10    15.00
  0.000275    3600.    3200.    3000.        2       10       01     0.00   495.00   510.00
0
 1490 NH CARD USED
 *SECNO 43770.000
                    XSEC 2
```

43770.00	18.93	632.03	0.00	0.00	632.42	0.40	0.49	0.01	622.30
18800.	251.	16058.	2490.	275.	2949.	2186.	7142.	680.	618.30
3.24	0.91	5.45	1.14	0.102	0.034	0.109	0.000	613.10	6.94
0.000337	1200.	1600.	1800.	2	0	0	0.00	460.74	467.68

0

1490 NH CARD USED
*SECNO 44820.000
XSEC 3 SECTION THRU ISLAND NE OF OLD GRAVEL OPERATION

44820.00	19.93	632.63	0.00	0.00	632.80	0.18	0.36	0.02	624.70
18800.	882.	17394.	524.	1594.	4938.	1068.	7302.	695.	625.30
3.33	0.55	3.52	0.49	0.202	0.048	0.202	0.000	612.70	4.75
0.000345	1100.	1050.	1100.	2	0	0	0.00	689.68	694.43

0
1

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

1490 NH CARD USED
*SECNO 45470.000
XSEC 4 OLD WOOD PILING ALONG EACH BANK

45470.00	19.40	632.80	0.00	0.00	633.11	0.31	0.27	0.04	627.70
18800.	923.	17752.	124.	1579.	3852.	292.	7398.	703.	624.50
3.37	0.58	4.61	0.43	0.202	0.047	0.202	0.000	613.40	6.97
0.000512	550.	650.	650.	2	0	0	0.00	557.05	564.03

0

1490 NH CARD USED
*SECNO 46870.000
XSEC 5 HILL AT RIGHT BANK IS ERODING

46870.00	20.87	633.47	0.00	0.00	633.83	0.36	0.70	0.02	622.10
18800.	1672.	16825.	303.	1746.	3301.	189.	7562.	719.	621.30
3.45	0.96	5.10	1.50	0.135	0.047	0.089	0.000	612.60	18.06
0.000573	1280.	1300.	1575.	2	0	0	0.00	474.04	492.10

0

1490 NH CARD USED
*SECNO 48720.000
XSEC 6

48720.00	18.03	634.43	0.00	0.00	634.61	0.18	0.76	0.02	626.80
18800.	1313.	16139.	1327.	598.	4515.	1200.	7800.	737.	620.60
3.60	2.20	3.58	1.11	0.046	0.049	0.135	0.000	616.40	7.63
0.000312	1500.	1850.	2000.	0	0	0	0.00	443.13	450.76

0

1490 NH CARD USED
*SECNO 50220.000
XSEC 7

50220.00	21.67	634.87	0.00	0.00	634.98	0.11	0.37	0.01	626.30
18800.	9169.	9349.	282.	4228.	2983.	242.	8023.	756.	623.10
3.75	2.17	3.15	1.16	0.041	0.049	0.067	0.000	613.20	5.39
0.000218	1300.	1500.	1300.	2	0	0	0.00	728.88	732.27

0

1490 NH CARD USED
*SECNO 51945.000

3265 DIVIDED FLOW

XSEC 8 VICS CAMPING ON RIGHT BANK CAMPGROUND IS ON A HILL
WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CONAR	TOPWID	ENDST
51945.00	20.40	635.30	0.00	0.00	635.60	0.30	0.56	0.06	637.60
18800.	5.	14746.	4049.	8.	2962.	6181.	8314.	788.	629.40
3.86	0.63	4.98	0.66	0.027	0.047	0.202	0.000	614.90	24.02
0.000658	1300.	1725.	1500.	2	0	0	0.00	1175.46	1275.20

0

1490 NH CARD USED
*SECNO 53000.000

3470 ENCROACHMENT STATIONS= 350.0 1700.0 TYPE= 1 TARGET= -350.000

XSEC 9 SECTION THROUGH ISLAND US OF VICS
XSEC BENT 30DEG LFT AT 887 20DEG RT AT STA 1208

53000.00	18.66	635.76	0.00	0.00	635.86	0.10	0.24	0.02	625.00
18800.	3095.	14581.	1124.	5529.	4994.	3219.	8541.	810.	623.00
3.98	0.56	2.92	0.35	0.139	0.036	0.169	0.000	617.10	350.00
0.000125	1200.	1055.	500.	2	0	0	0.00	1335.42	1685.42

0

FLOW DISTRIBUTION FOR SECNO= 53000.00 CWSEL= 635.76

STA=	350.	650.	760.	887.	1192.	1650.	1685.
PER Q=	8.7	3.1	4.7	77.6	5.8	0.1	
AREA=	3293.1	1171.2	1064.4	4994.2	3100.7	117.9	
VEL=	0.5	0.5	0.8	2.9	0.4	0.2	

1490 NH CARD USED
*SECNO 53700.000

3470 ENCROACHMENT STATIONS= 300.0 1740.0 TYPE= 1 TARGET= -300.000

XSEC 10 REDWOOD COTTAGE ON LEFT BANK 1976 HWM 630.5
1986 HWM 630 XSEC BENT 45DEG LEFT AT STA 1360

53700.00	19.26	635.86	0.00	0.00	635.94	0.08	0.07	0.00	626.20
18800.	9243.	9552.	4.	12943.	3095.	23.	8719.	827.	629.20
4.06	0.71	3.09	0.20	0.104	0.034	0.162	0.000	616.60	300.00
0.000112	400.	700.	750.	2	0	0	0.00	1436.81	1736.81

0

FLOW DISTRIBUTION FOR SECNO= 53700.00 CWSEL= 635.86

STA=	300.	1340.	1420.	1600.	1657.	1730.	1737.	
PER Q=	37.8	4.8	3.7	2.9	50.8	0.0		

AREA=	11290.7	661.9	565.5	424.5	3095.2	22.8
VEL=	0.6	1.4	1.2	1.3	3.1	0.2

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	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

1490 NH CARD USED
*SECNO 54600.000

3470 ENCROACHMENT STATIONS= 750.0 2250.0 TYPE= 1 TARGET= -750.000
XSEC 10A NEAR WHITE COTTAGE(BRONKEMA) 1976HWM 630.9 IN GARAGE
XSEC DENT 5DEG RT AT STA 139.9 RESTRICTED FOR HIGH GROUND AT
XSEC 11 US 1986 HWM 638

54600.00	21.47	635.97	0.00	0.00	636.01	0.05	0.07	0.00	628.70
18800.	11509.	7107.	184.	11937.	2820.	173.	8925.	845.	621.00
4.13	0.96	2.52	1.07	0.071	0.040	0.054	0.000	614.50	750.00
0.000106	500.	900.	1000.	1	0	0	0.00	1494.71	2244.71

0
FLOW DISTRIBUTION FOR SECNO= 54600.00 CWSEL= 635.97

STA=	750.	949.	1049.	1352.	1508.	1597.	1755.	1846.	1917.	1966.	2041.	2062.	2221.
PER Q=	8.5	4.6	11.1	7.0	5.7	6.7	5.2	4.4	3.4	3.5	1.2	37.8	
AREA=	2445.9	1245.9	3305.4	1176.3	708.3	983.4	624.6	498.7	368.3	442.6	137.8	2819.6	
VEL=	0.7	0.7	0.6	1.1	1.5	1.3	1.6	1.7	1.7	1.5	1.6	2.5	

STA=	2221.	2245.
PER Q=	1.0	
AREA=	172.9	
VEL=	1.1	

1490 NH CARD USED
*SECNO 55800.000

3470 ENCROACHMENT STATIONS= 0.0 1900.0 TYPE= 1 TARGET= 1899.999
XSEC 11 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND

55800.00	19.77	635.97	0.00	0.00	636.28	0.31	0.18	0.08	627.70
18800.	0.	14553.	4247.	0.	2879.	4272.	9109.	864.	628.60
4.25	0.00	5.05	0.99	0.000	0.039	0.108	0.000	616.20	1000.00
0.000500	400.	1200.	1000.	2	0	0	0.00	900.00	1900.00

0
FLOW DISTRIBUTION FOR SECNO= 55800.00 CWSEL= 635.97

STA=	1000.	1169.	1172.	1185.	1237.	1320.	1454.	1546.	1651.	1819.	1900.	
PER Q=	77.4	0.1	0.4	1.7	2.8	4.5	2.6	2.7	5.0	2.7		
AREA=	2879.0	19.8	78.2	310.2	507.6	826.2	512.1	547.7	960.3	510.1		
VEL=	5.1	1.0	1.0	1.0	1.0	1.0	1.0	0.9	1.0	1.0		

1

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

1490 NH CARD USED
*SECNO 56800.000

3470 ENCROACHMENT STATIONS= 0.0 1630.0 TYPE= 1 TARGET= 1629.999

XSEC 12

56800.00	21.36	636.46	0.00	0.00	636.59	0.13	0.29	0.02	621.70
18900.	138.	11365.	7298.	130.	3125.	9049.	9187.	870.	630.00
4.33	1.06	3.64	0.81	0.094	0.047	0.119	0.000	614.60	4.30
0.000349	1200.	1000.	50.	2	0	0	0.00	1625.70	1630.00

0
FLOW DISTRIBUTION FOR SECNO= 56800.00 CWSEL= 636.46

STA=	4.	22.	222.	350.	457.	660.	865.	958.	1093.	1227.	1424.	1592.	1630.
PER Q=	0.7	60.4	4.5	3.8	5.4	6.3	3.1	3.4	3.5	4.1	3.9	0.9	
AREA=	129.8	8125.0	896.4	750.1	1205.3	1326.7	628.7	891.4	892.5	1157.2	1043.4	257.5	
VEL=	1.1	3.6	0.9	0.9	0.8	0.9	0.9	0.7	0.7	0.7	0.7	0.7	

1490 NH CARD USED
*SECNO 57650.000

3470 ENCROACHMENT STATIONS= 0.0 1910.0 TYPE= 1 TARGET= 1909.999

XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
1976 SWM 631.9

57650.00	19.26	636.66	0.00	0.00	636.70	0.04	0.10	0.01	622.00
19800.	5632.	9894.	3274.	5952.	4652.	4789.	9306.	881.	626.50
4.43	0.95	2.13	0.68	0.061	0.043	0.080	0.000	617.40	10.02
0.000111	500.	850.	50.	0	0	0	0.00	1899.98	1910.00

0
FLOW DISTRIBUTION FOR SECNO= 57650.00 CWSEL= 636.66

STA=	10.	845.	857.	1180.	1297.	1514.	1711.	1879.	1910.
PER Q=	29.1	0.8	52.6	3.3	6.0	4.5	3.1	0.6	
AREA=	5819.5	132.7	4651.8	815.6	1484.2	1196.2	1076.7	216.1	
VEL=	0.9	1.2	2.1	0.8	0.8	0.7	0.5	0.5	

1490 NH CARD USED
*SECNO 58350.000
XSEC 14 XSEC BEND 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK EN LOB

58350.00	20.42	636.72	0.00	0.00	636.81	0.09	0.10	0.01	630.50
18800.	9289.	9503.	8.	7151.	3051.	36.	9465.	900.	629.50
4.50	1.30	3.11	0.24	0.065	0.049	0.202	0.000	616.30	25.20
0.000251	500.	700.	400.	2	0	0	0.00	1269.65	1294.85

0

SECNO	DEPTH	CWSEL	CHNS	NSELK	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

FLOW DISTRIBUTION FOR SECNO= 58350.00 CWSEL= 636.72

STA=	25.	400.	731.	918.	1077.	1106.	1285.	1295.
PER Q=	17.8	17.5	7.2	5.8	1.1	50.5	0.0	
AREA=	2515.9	2406.6	1125.9	925.5	177.5	3051.3	35.5	
VEL=	1.3	1.4	1.2	1.2	1.2	3.1	0.2	

1490 NH CARD USED
*SECNO 58900.000
XSEC 15

58900.00	18.82	636.82	0.00	0.00	636.96	0.14	0.14	0.02	631.50
18800.	4590.	13557.	653.	5226.	3882.	955.	9581.	915.	629.00
4.56	0.88	3.49	0.68	0.081	0.046	0.135	0.000	618.00	24.85
0.000293	450.	550.	700.	0	0	0	0.00	1510.13	1534.97

0
1490 NH CARD USED
*SECNO 60000.000
XSEC 16

60000.00	18.15	637.05	0.00	0.00	637.66	0.62	0.56	0.14	628.00
18800.	370.	16498.	1932.	148.	2460.	2355.	9749.	939.	632.60
4.60	2.49	6.71	0.82	0.065	0.047	0.162	0.000	618.90	13.39
0.001201	1000.	1100.	700.	2	0	0	0.00	760.38	773.78

0
FLOW DISTRIBUTION FOR SECNO= 60000.00 CWSEL= 637.05

STA=	13.	44.	200.	750.	774.
PER Q=	2.0	87.8	10.2	0.1	
AREA=	148.1	2460.4	2308.4	46.9	
VEL=	2.5	6.7	0.8	0.5	

1490 NH CARD USED
*SECNO 62250.000
XSEC 17 SUBDIVISION ON LEFT BANK

62250.00	18.35	638.55	0.00	0.00	638.79	0.24	1.09	0.04	632.90
18800.	305.	17620.	876.	534.	4383.	997.	10008.	968.	629.10
4.76	0.57	4.02	0.88	0.126	0.038	0.120	0.000	620.20	26.50
0.000269	2400.	2225.	1700.	2	0	0	0.00	510.12	536.62

0
1490 NH CARD USED
1

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

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 *SECNO 63120.000
 63120.00    19.07    638.77     0.00     0.00    639.15     0.38     0.32     0.04    630.40
    18800.      50.     18285.     464.      77.     3630.     769.    10124.     978.    633.10
     4.82     0.66      5.04     0.60    0.120     0.038    0.148    0.000   619.70     13.28
 0.000422      970.      970.      970.        2         0        0     0.00   401.49    414.77
0
 1490 NH CARD USED
 *SECNO 65620.000

 3470 ENCROACHMENT STATIONS=      20.0     470.0  TYPE=      1  TARGET=     450.000
 65620.00    18.87    639.57     0.00     0.00    639.94     0.37     0.78     0.00    629.80
    18800.    1136.     17252.     402.     1198.     3399.     410.    10331.     996.    628.30
     4.93     0.95      5.08     0.98    0.107     0.038    0.120    0.000   620.70     20.00
 0.000402     1900.      1900.     1900.        2         0        0     0.00   450.00    470.00
0
 1490 NH CARD USED
 *SECNO 67420.000

 3470 ENCROACHMENT STATIONS=      10.0     420.0  TYPE=      1  TARGET=     410.000
                  XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK
 67420.00    21.22    640.52     0.00     0.00    640.80     0.29     0.86     0.01    631.80
    18800.     771.     17577.     452.     336.     3991.     782.    10619.    1021.    633.70
     5.09     2.30      4.40     0.58    0.041     0.038    0.149    0.000   619.30     10.00
 0.000296     2400.      2500.     2500.        2         0        0     0.00   410.00    420.00
0
 1490 NH CARD USED
 *SECNO 68970.000
                  XSEC 21 US OF GREEN COTTAGE ON LEFT BANK
 68970.00    18.28    640.98     0.00     0.00    641.26     0.28     0.46     0.00    631.50
    18800.     717.     17842.     241.     915.     4101.     271.    10804.    1038.    628.30
     5.20     0.78      4.35     0.89    0.085     0.038    0.100    0.000   622.70      9.00
 0.000295     1400.      1550.     1700.        2         0        0     0.00   557.13    566.13
0
 1490 NH CARD USED
 *SECNO 70300.000
                  XSEC 22  BELOW POWER LINE CROSSING  N VALUES ARE ATYPICAL
 70300.00    17.71    641.41     0.00     0.00    641.63     0.21     0.36     0.01    633.80
    18800.    1803.     16932.      65.     923.     4388.      54.    10966.    1052.    632.30
     5.30     1.95      3.86     1.21    0.050     0.038    0.050    0.000   623.70     10.18
 0.000252     1300.      1330.     1300.        2         0        0     0.00   410.45    420.63
0
1
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	TV	HL	CLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VCL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	ITN	ELMIN	SSTA
SLOPE	ELOBL	YLCH	XLOBR	ITRIAL	EDC	ICONT	CORAR	TOPWID	ENDST

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 1490 NH CARD USED
 *SECNO 71300.000
 71300.00    18.66    641.36     0.00     0.00    641.69     0.32     0.02     0.03    633.60
    18800.    1121.     17509.     170.     529.     3732.     201.    10985.    1055.    630.20
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     5.30      2.12      4.69      0.84     0.046     0.038     0.100     0.000    622.70     12.32
 0.000343     1000.        0.     1000.         2         0         0      0.00    352.21    364.54
0
 1490 NH CARD USED
 *SECNO 71900.000
  71900.00     16.98    641.58      0.00      0.00    641.92      0.33      0.23      0.00    630.00
    18800.     1216.    17000.      584.      585.     3518.      556.    11047.     1060.    630.50
      5.34      2.08      4.83      1.05     0.058     0.040     0.120     0.000    624.60     12.48
  0.000436      500.      600.      650.         2         0         0      0.00    383.68    396.16
0
 1490 NH CARD USED
 *SECNO 73040.000
          XSEC 25 BTWN BARBER AND KRING CABINS US OF PUB ACC SITE DS OF NEWYGC
  73040.00     16.55    642.15      0.00      0.00    642.42      0.27      0.50      0.01    636.20
    18800.      145.    15857.     2799.      184.     3596.     1162.    11173.     1073.    633.30
      5.42      0.78      4.41      2.41     0.100     0.042     0.038     0.000    625.60     14.20
  0.000437     1200.     1140.     1100.         2         0         0      0.00    559.64    573.84
0
 1490 NH CARD USED
 *SECNO 73590.000
          XSEC 26 DS OF CO RD BRDG  SEC BENT 45DEG RT OFF RD FILL AT STA 10
            BENT 45DEG RT TO RD FILL AT STA 325
  73590.00     18.23    642.33      0.00      0.00    642.67      0.33      0.23      0.02    632.90
    18800.      313.    18117.      371.      162.     3845.      180.    11230.     1078.    632.40
      5.45      1.93      4.71      2.06     0.047     0.038     0.059     0.000    624.10     14.74
  0.000404      660.      550.      500.         2         0         0      0.00    317.09    331.83
0
 *SECNO 73640.000

 3265 DIVIDED FLOW

 3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 652.00 MAX ELLC= 650.50

              XSEC 27 CENTER OF BRDG   ELLC AT 650.5
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

  73640.00     16.95    642.35      0.00      0.00    642.69      0.34      0.02      0.00    652.00
    18800.        0.    18800.        0.        0.     4003.        0.    11235.     1078.    652.00
      5.45      0.00      4.70      0.00     0.000     0.034     0.000     0.000    625.40      0.00
  0.000416       50.       50.       50.         0         0         0      0.00    290.00    296.00
0
 *SECNO 73660.000

 3265 DIVIDED FLOW
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3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 652.00 MAX ELLC= 650.50

73660.00	16.96	642.36	0.00	0.00	642.70	0.34	0.01	0.00	652.00
18800.	0.	18800.	0.	0.	4003.	0.	11237.	1079.	652.00
5.45	0.00	4.70	0.00	0.000	0.034	0.000	0.000	625.40	0.00
0.000416	20.	20.	20.	0	0	0	0.00	290.00	296.00

0

*SECNO 73720.000

73720.00	17.00	642.30	0.00	0.00	642.77	0.46	0.03	0.04	634.70
18800.	671.	17374.	756.	249.	3085.	395.	11242.	1079.	632.30
5.46	2.70	5.63	1.91	0.047	0.034	0.059	0.000	625.30	67.92
0.000577	60.	60.	60.	2	0	0	0.00	378.75	446.67

0

1490 NH CARD USED

*SECNO 75140.000

XSEC 29 SEWAGE TREATMENT PLANT IN LOB

75140.00	15.61	643.11	0.00	0.00	643.31	0.20	0.52	0.03	635.60
18800.	4863.	13929.	8.	4695.	3357.	20.	11419.	1099.	634.50
5.57	1.04	4.15	0.43	0.080	0.034	0.090	0.000	627.50	34.83
0.000267	1140.	1420.	1440.	2	0	0	0.00	1036.82	1071.65

0

*SECNO 75800.000

3280 CROSS SECTION 75800.00 EXTENDED 7.96 FEET

XSEC 29A AT USGS CABLE

75800.00	14.96	643.16	0.00	0.00	643.63	0.47	0.24	0.08	636.00
18800.	0.	18800.	0.	0.	3418.	0.	11499.	1108.	635.20
5.60	0.00	5.50	0.00	0.000	0.034	0.000	0.000	628.20	1005.00
0.000546	540.	660.	700.	2	0	0	0.00	259.00	1264.00

0

1

SECNO	DEPTH	CHSEL	CRIWS	WS2LK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOI	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	HTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED

*SECNO 76350.000

XSEC 29B AT USGS GAGE 1976 STAGE IS 639.2 1986 STAGE 645.4

76350.00	13.79	643.59	0.00	0.00	643.93	0.34	0.29	0.01	634.70
18800.	334.	18315.	151.	107.	3893.	130.	11547.	1112.	634.60
5.64	3.11	4.70	1.17	0.035	0.038	0.101	0.000	629.80	5.21
0.000495	550.	550.	550.	2	0	0	0.00	347.89	353.09

0

*SECNO 76760.000

XSEC 30 1976 HWM IS 638.6 1976 HWM IS 639.2

76760.00	16.14	643.74	0.00	0.00	644.13	0.39	0.19	0.02	636.50
18800.	171.	18394.	235.	181.	3624.	245.	11585.	1115.	636.00
5.66	0.94	5.08	0.86	0.100	0.034	0.100	0.000	627.60	20.57
0.000424	350.	410.	450.	2	0	0	0.00	355.05	375.62

0



1) COUNTY: Newaygo

2) STUDY NAME: Bridgeton, Ashland, Garfield and Brooks Twp

3) WATERCOURSE: Muskegon River

4) DOCUMENT TYPE: Floodway



THIS RUN EXECUTED 12/30/86 16:09:00

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 HEC2 RELEASE DATED NOV 76 UPDATED MAY  1981
 ERROR CORR - 01,02,03,04,05,06
 MODIFICATION - 50,51,52,53,54,55,56
 IBM-PC-XT VERSION 1.1
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T1      PROFILE UPSTREAM OF NEWAYGO     STARTING WSEL FROM DS PROFILE
T2      XSEC 31 THROUGH 60   SURVEYED IN 1977
T3      MUSKEGON RIVER  EXISTING COND   100YR FLOW

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0.       2.       0.       0.   .000000     .00       .0   18800.   643.900    .000

J2  NPROF     IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

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

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    150.000  200.000     .000     .000     .000     .000     .000     .000     .000     .000

NC      .090     .090     .030     .100     .300     .000     .000     .000     .000     .000
ET      .000     .000    5.100     .000   45.670  347.650     .000     .000     .000     .000
                XSEC 30   START WSEL FROM DS STUDY
X1  76760.000   27.000   57.000  327.000  330.000  450.000  410.000     .000     .000     .000
GR    654.000     .000  645.800   16.000  638.600   32.000  637.900   43.000  636.500   57.000
GR    637.700   62.000  631.000   77.000  629.000   84.000  629.000   98.000  629.600  118.000
GR    629.000  147.000  628.300  167.000  630.400  188.000  633.000  197.000  632.600  203.000
GR    627.600  217.000  629.000  221.000  629.800  272.000  629.600  279.000  631.700  287.000
GR    631.100  298.000  633.300  315.000  636.000  327.000  638.300  341.000  636.900  356.000
GR    636.900  360.000  651.300  400.000     .000     .000     .000     .000     .000     .000

NC      .090     .090     .030     .300     .500     .000     .000     .000     .000     .000
ET      .000     .000    5.100     .000   28.990  352.150     .000     .000     .000     .000
                XSEC 31   RR BRIDGE W/PIERS MODELED AS NORMAL XSEC
X1  768[illegible].000   36.000   65.000  326.000   50.000   50.000   50.000     .000     .000     .000
X2      .000     .000     .000  657.900  658.500     .000     .000     .000     .000     .000
GR    657.900     .000  652.400     .000  651.500   12.000  638.500   41.000  637.000  106.000
GR    637.200   60.000  636.300   67.000  657.900   67.000  657.900   72.000  635.700   75.000
GR    633.000   79.000  629.500   93.000  629.400  109.000  624.500  130.000  624.000  160.000
GR    629.300  194.000  635.600  199.000  657.900  202.000  657.900  207.000  635.600  209.000
GR    631.800  213.000  629.400  229.000  627.800  247.000  628.900  268.000  632.200  286.000
GR    635.600  291.000  657.900  294.000  657.900  300.000  635.600  301.000  634.000  304.000
GR    635.500  310.000  637.700  326.000  642.800  350.000  652.900  370.000  654.300  380.000
GR    657.900  380.000     .000     .000     .000     .000     .000     .000     .000     .000
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NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	5.100	.000	30.900	352.160	.000	.000	.000	.000
		U/S OF RR BRIDGE								
X1	76825.000	.000	.000	.000	15.000	15.000	15.000	.000	.000	.000
X2	.000	.000	.000	657.900	658.500	.000	.000	.000	.000	.000
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	5.100	.000	30.000	263.000	.000	.000	.000	.000
		XSEC 33 OLD DAM SITE								
X1	77175.000	17.000	40.000	253.000	350.000	350.000	350.000	.000	.000	.000
BR	630.000	5.000	647.500	15.000	640.000	40.000	629.300	61.000	628.600	100.000
BR	629.200	136.000	630.600	155.000	629.200	200.000	632.000	226.000	631.700	237.000
BR	631.400	245.000	633.300	253.000	637.400	263.000	639.400	265.000	644.800	286.000
BR	647.600	289.000	650.000	289.000	.000	.000	.000	.000	.000	.000
NC	.000	.000	.000	.100	.300	.000	.000	.000	.000	.000
ET	.000	.000	5.100	.000	131.000	400.000	.000	.000	.000	.000
		M 37 BRIDGE W/PIERS MODELED AS NORMAL XSEC								
X1	77225.000	30.000	152.000	330.000	50.000	50.000	50.000	.000	.000	.000
BR	650.000	79.000	648.300	93.000	648.300	95.000	651.000	93.000	650.000	101.000
BR	643.400	105.000	643.600	107.000	643.000	123.000	639.000	130.000	634.000	152.000
BR	631.500	185.000	632.200	198.000	633.900	206.000	633.900	211.000	650.000	214.000
BR	650.000	220.000	633.200	223.000	631.400	233.000	631.900	262.000	628.600	251.000
BR	625.000	270.000	624.900	312.000	635.000	330.000	650.000	333.000	650.000	339.000
BR	637.000	342.000	631.000	360.000	633.900	375.000	635.600	396.000	650.000	448.000
ET	.000	.000	5.100	.000	131.000	400.000	.000	.000	.000	.000
		U/S OF M 37 BRIDGE								
X1	77295.000	.000	.000	.000	70.000	70.000	70.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	5.100	.000	63.000	376.000	.000	.000	.000	.000
		XSEC 35								
X1	77375.000	26.000	75.000	357.000	80.000	80.000	80.000	.000	.000	.000
BR	655.000	.000	650.000	9.000	647.000	30.000	642.300	46.000	641.000	61.000
BR	636.500	71.000	634.500	73.000	632.500	85.000	629.600	100.000	630.900	136.000
BR	632.000	154.000	633.000	161.000	630.300	175.000	629.300	197.000	631.500	215.000
BR	629.900	230.000	630.900	240.000	631.300	255.000	631.600	276.000	630.000	287.000
BR	631.200	292.000	634.000	350.000	636.200	357.000	642.600	405.000	648.000	474.000
BR	655.000	496.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	5.100	.000	80.000	280.000	.000	.000	.000	.000
		XSEC 37								
X1	78065.000	22.000	93.000	300.000	590.000	640.000	650.000	.000	.000	.000
BR	651.500	.000	647.700	16.000	646.000	17.000	646.500	71.000	638.000	82.000
BR	634.700	93.000	634.200	96.000	635.100	124.000	637.800	157.000	653.400	165.000
BR	633.800	214.000	631.500	231.000	633.000	268.000	670.700	254.000	652.400	265.000
BR	633.500	296.000	631.400	330.000	636.000	350.000	638.900	363.000	641.600	369.000
BR	648.400	386.000	655.000	406.000	.000	.000	.000	.000	.000	.000

ET	.000	.000	5.100	.000	190.000	540.000	.000	.000	.000	.000
		XSEC 38								
XI	78385.000	19.000	209.000	496.000	390.000	380.000	360.000	.000	.000	.000
GR	650.500	135.000	648.400	172.000	639.000	199.000	634.900	209.000	633.600	328.000
GR	633.100	246.000	632.500	296.000	632.700	329.000	633.900	341.000	632.500	304.000
GR	634.400	387.000	632.200	410.000	632.300	468.000	633.300	485.000	634.700	496.000
GR	635.200	503.000	637.800	508.000	645.900	535.000	651.800	540.000	.000	.000
ET	.000	.000	5.100	.000	385.000	545.000	.000	.000	.000	.000
		XSEC 39								
XI	78895.000	23.000	303.000	534.000	510.000	560.000	510.000	.000	.000	.000
GR	654.600	.000	649.700	43.000	648.900	125.000	651.700	138.000	651.700	145.000
GR	648.300	163.000	647.900	202.000	651.400	236.000	649.200	258.000	636.600	303.000
GR	632.900	353.000	631.700	369.000	630.700	395.000	631.000	423.000	634.200	435.000
GR	632.400	449.000	634.000	521.000	635.600	534.000	642.000	503.000	647.400	564.000
GR	645.800	604.000	651.200	626.000	655.000	633.000	.000	.000	.000	.000
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	5.100	.000	18.000	280.000	.000	.000	.000	.000
		XSEC 41								
XI	79638.000	19.000	40.000	272.000	750.000	750.000	740.000	.000	.000	.000
GR	651.000	7.000	642.500	24.000	636.800	39.000	636.000	49.000	632.800	56.000
GR	632.000	77.000	632.200	103.000	630.600	114.000	632.300	186.000	633.900	204.000
GR	636.000	209.000	637.100	221.000	636.000	230.000	634.400	236.000	636.000	272.000
GR	643.000	283.000	647.500	302.000	649.000	341.000	650.500	380.000	.000	.000
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	5.100	.000	27.000	265.000	.000	.000	.000	.000
		XSEC 42	BOAT RAMP	1786 HWM 647.2						
XI	80205.000	13.000	11.000	275.000	630.000	670.000	670.000	.000	.000	.000
GR	657.000	.000	652.000	10.000	648.000	21.000	637.000	30.000	635.000	75.000
GR	633.300	110.000	634.300	156.000	635.200	200.000	637.000	241.000	637.700	250.000
GR	643.300	271.000	650.900	290.000	652.500	310.000	.000	.000	.000	.000
NC	.000	.100	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	5.100	.000	277.000	650.000	.000	.000	.000	.000
		XSEC 44								
XI	81035.000	39.000	282.000	640.000	1040.000	790.000	900.000	.000	.000	.000
GR	652.300	214.000	649.000	235.000	642.800	262.000	640.700	268.000	640.000	272.000
GR	639.100	281.000	638.200	282.000	636.800	286.000	637.400	412.000	637.800	468.000
GR	636.700	519.000	635.700	565.000	634.400	550.000	634.000	625.000	635.800	634.000
GR	637.300	645.000	645.000	655.000	649.500	664.000	655.000	669.000	.000	.000
NC	.000	.100	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	5.100	.000	51.000	270.000	.000	.000	.000	.000
		XSEC 45								
XI	81756.000	7.000	65.000	470.000	810.000	700.000	650.000	.000	.000	.000
GR	651.000	7.000	651.000	5.000	648.000	18.000	645.000	24.000	641.000	56.000
GR	630.600	65.000	634.000	98.000	636.400	107.000	635.400	205.000	636.000	243.000
GR	637.500	259.000	638.600	272.000	639.500	273.000	643.800	309.000	644.400	317.000
GR	654.200	341.000	653.700	355.000	.000	.000	.000	.000	.000	.000

UT	.000	.000	5.100	.000	175.000	415.000	000	.000	.000	.000
		XSEC 48								
XT	83285.000	27.000	180.000	364.000	1500.000	1490.000	1530.000	.000	.000	.000
GR	655.000	13.000	651.000	29.000	667.300	56.000	651.600	91.000	652.000	106.000
GR	651.600	150.000	652.500	154.000	650.100	168.000	638.500	183.000	647.300	194.000
GR	635.000	199.000	634.300	225.000	634.600	248.000	636.800	266.000	635.500	287.000
GR	634.500	310.000	635.500	332.000	635.300	350.000	638.200	364.000	640.400	378.000
GR	644.300	405.000	640.600	437.000	651.900	454.000	653.600	457.000	654.200	470.000
GR	653.500	483.000	656.000	496.000	.000	.000	.000	.000	.000	.000
ET	.000	7.100	5.100	.000	33.000	270.000	.000	352.000	.000	.000
		XSEC 50								
XT	84775.000	26.000	48.000	250.000	1310.000	1700.000	1490.000	.000	.000	.000
GR	655.000	.000	652.000	3.000	646.500	18.000	641.400	48.000	639.500	50.000
GR	636.300	69.000	634.600	89.000	635.300	115.000	635.400	140.000	636.300	169.000
GR	637.100	190.000	638.300	213.000	637.800	225.000	637.500	238.000	640.600	241.000
GR	642.000	250.000	642.500	262.000	644.600	245.000	651.400	210.000	653.500	313.000
GR	653.700	335.000	650.500	350.000	649.600	384.000	650.100	469.000	651.800	493.000
GR	657.500	515.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	5.100	.000	1044.000	1274.000	.000	.000	.000	.000
		XSEC 52								
XT	86885.000	23.000	1049.000	1269.000	2250.000	2020.000	2110.000	.000	.000	.000
GR	659.600	995.000	655.000	1000.000	632.700	1007.000	649.000	1017.000	643.600	1038.000
GR	647.000	1043.000	641.500	1049.000	641.600	1055.000	637.500	1064.000	637.300	1094.000
GR	636.100	1111.000	635.900	1170.000	637.900	1183.000	638.400	1200.000	640.400	1219.000
GR	640.700	1241.000	642.500	1269.000	645.000	1280.000	647.700	1269.000	651.400	1302.000
GR	656.000	1305.000	656.000	1357.000	658.300	1369.000	.000	.000	.000	.000
ET	.000	.000	5.100	.000	1018.000	1343.000	.000	.000	.000	.000
		XSEC 57								
XT	89443.000	13.000	1027.000	1238.000	2360.000	2150.000	2340.000	.000	.000	.000
GR	659.400	996.000	655.000	1000.000	651.600	1002.000	646.000	1023.000	639.300	1050.000
GR	639.300	1048.000	638.000	1097.000	635.500	1104.000	638.400	1188.000	639.700	1172.000
GR	640.300	1232.000	641.300	1233.000	649.800	1250.000	651.200	1264.000	653.300	1265.000
GR	653.400	1336.000	655.300	1403.000	659.400	417.000	.000	.000	.000	.000
ET	.000	.000	5.100	.000	1150.000	1419.000	.000	.000	.000	.000
		XSEC 59								
XT	90645.000	20.000	1168.000	1414.000	1300.000	1100.000	1200.000	.000	.000	.000
GR	660.000	974.000	647.800	1000.000	651.000	1028.000	651.600	1004.000	651.000	1082.000
GR	641.500	1119.000	654.000	1104.000	651.400	1157.000	650.500	1143.000	648.300	1143.000
GR	641.100	1174.000	639.800	1193.000	638.100	1268.000	641.000	1258.000	641.900	1252.000
GR	641.400	1311.000	641.000	1360.000	644.500	1395.000	650.500	1414.000	661.800	1439.000
ET	.000	.000	5.100	.000	44.000	327.000	.000	.000	.000	.000
		XSEC 60								
XT	91285.000	13.000	54.000	317.000	700.000	783.000	740.000	.000	.000	.000
GR	650.000	.000	652.400	5.000	649.000	82.000	648.000	34.000	646.000	39.000
GR	644.300	54.000	642.100	80.000	638.000	14.000	637.600	174.000	641.800	200.000
GR	641.800	214.000	641.500	240.000	651.000	44.000	660.100	250.000	.000	.000
ET	.000	.000	5.100	.000	1.000	.000	.000	.000	.000	.000

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

*PROF

CCHV= .100 CEHV= .300
SECNO 76760.000
XSEC 30 START WSEL FROM DS STUDY

76760.00	16.30	643.90	.00	643.90	644.28	.38	.00	.00	636.50
18800.	174.	18389.	237.	187.	3666.	253.	0.	0.	676.00
.00	.93	5.02	.94	.090	.030	.090	.000	627.60	39.22
.000352	350.	410.	450.	0	0	0	.00	355.91	376.13

CCHV= .300 CEHV= .500
*SECNO 76810.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 658.50 MAX ELLC= 657.90

XSEC 31 RR BRIDGE W/PIERS MODELED AS NORMAL XSEC

76810.00	19.83	643.68	.00	.00	644.34	.45	.02	.03	637.20
18600	206.	18523.	72.	185.	3410.	88.	4.	0	637.70
.00	1.11	5.43	.81	.090	.030	.090	.000	624.90	28.98
.000453	50.	50.	50.	2	0	0	.00	299.61	352.15

*SECNO 76825.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 658.50 MAX ELLC= 657.90

US OF RR BRIDGE

76825.00	19.89	643.59	.00	.00	644.34	.45	.01	.00	637.20
18600.	206.	18522.	72.	186.	3411.	89.	5.	0.	637.70
.00	1.11	5.43	.81	.090	.030	.090	.000	624.90	28.98
.000453	15.	15.	15.	0	0	0	.00	299.64	352.14

*SECNO 77175.000
XSEC 32 OLD DAM SITE

77175.00	15.57	643.97	.00	.00	644.60	.64	.17	.09	640.00
18800.	15.	18420.	165.	26.	1902.	137.	33.	3.	633.80
.02	.58	4.45	1.20	.090	.030	.090	.000	628.60	28.76
.000525	35.	55.	340.	2	0	0	.00	354.01	382.78

SECNO	DEPTH	QWSEL	CRIWS	WSELN	SG	HV	HL	QLOSS	BANK ELEV
Q	QLOB	QCH	QRUE	ALOB	AOM	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROE	XNL	XPCH	XNP	NTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= .100 CEHV= .300
*SECNO 77325.000

3265 DIVIDED FLOW

M 37 BRIDGE W/PIERS MODELED AS NORMAL XSEC

77325.00	19.03	643.93	.00	.00	644.56	.73	.03	.03	634.00
18800.	289.	17267.	1244.	194.	2418.	683.	37.	3.	635.00
.02	1.49	7.14	1.82	.090	.030	.090	.000	624.90	106.63
.000706	50.	50.	50.	2	0	0	.00	302.53	426.09

*SECNO 77295.000

326F DIVIDED FLOW

US OF M 37 BRIDGE

77295.00	19.09	643.99	.00	.00	644.71	.73	.05	.00	634.00
18800.	291.	17261.	1248.	196.	2426.	687.	42.	4.	635.00
.02	1.48	7.12	1.82	.090	.030	.090	.000	624.90	106.58
.000678	70.	70.	70.	2	0	0	.00	302.90	426.27

*SECNO 77375.000

XSEC 35

77375.00	11.86	644.40	.00	.00	644.77	.39	.04	.03	636.50
18800.	80.	18499.	220.	110.	3676.	261.	49.	4.	636.20
.03	.73	5.03	.85	.090	.030	.090	.000	629.60	134.39
.000347	80.	80.	80.	2	0	0	.00	393.60	427.99

*RECNO 78005.000

326F DIVIDED FLOW

XSEC 37

78005.00	15.50	644.50	.00	.00	645.19	.69	.31	.09	634.70
18800.	148.	18465.	187.	100.	2745.	129.	99.	9.	638.00
.05	1.41	8.73	1.46	.090	.030	.090	.000	629.50	75.17
.000770	590.	630.	640.	2	0	0	.00	284.75	374.87

SECNO	DEPTH	CWSEL	CRIWS	WSELK	ES	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	WRCB	ALOB	ACH	ARDB	VCL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VRCB	XNL	XNCH	XHR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLCBR	ITRIAL	IDC	ICONT	COBAR	TCRNID	ENDST

*SECNO 78385.000

XSEC 38

78385.00	12.79	644.99	.00	.00	645.43	.44	.21	.03	634.90
18800.	139.	18453.	207.	132.	3447.	167.	129.	12.	634.70
.07	1.06	5.35	1.24	.090	.030	.090	.000	632.20	181.79
.000425	390.	380.	380.	2	0	0	.00	341.30	523.09

*SECNO 78895.000

XSEC 39

78895.00	14.40	645.10	.00	.00	645.75	.65	.26	.07	635.60
18800.	181.	18451.	168.	159.	2817.	129.	169.	16.	635.60
.10	1.14	6.55	1.30	.090	.030	.090	.000	630.70	269.47
.000626	310.	510.	560.	2	0	0	.00	289.85	559.32

*SECNO 79635.000

XSEC 41

79635.00	14.97	645.57	.00	.00	646.21	.64	.45	.00	636.00
18800.	130.	18583.	87.	107.	3880.	81.	222.	20.	636.00
.13	1.21	6.45	1.06	.090	.030	.090	.000	630.60	17.86
.000595	750.	740.	750.	2	0	0	.00	276.55	294.41

*SECNO 80205.000

XSEC 42 BOAT RAMP 1986 HWM 647.2

80205.00	12.48	645.73	.00	.00	646.79	1.01	.47	.11	643.00
18800.	0.	18397.	203.	0.	2296.	97.	257.	24.	637.70
.15	.00	8.10	2.09	.090	.030	.070	.000	633.30	27.45
.001239	630.	570.	470.	2	0	0	.00	250.43	277.08

*SECNO 81105.000

*301 HV CHANGED MORE THAN HVINS

XSEC 44

81105.00	13.10	647.10	.00	.00	647.46	.36	.61	.06	638.20
18800.	174.	18573.	52.	171.	3820.	64.	324.	31.	637.30
.20	1.02	4.88	.82	.090	.030	.100	.000	634.00	243.29
.000422	1040.	900.	790.	2	0	0	.00	415.90	659.19

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	QLOSS	RANK 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	COMAR	TOPWID	ENDST

*SECNO 81755.000

XSEC 45

81755.00	13.77	647.17	.00	.00	647.94	.77	.36	.12	638.60
18800.	236.	18146.	418.	187.	2526.	296.	376.	36.	638.60
.23	1.26	7.18	1.41	.090	.030	.100	.000	633.40	20.08
.000751	610.	650.	700.	2	0	0	.00	306.29	326.37

*SECNO 83285.000

XSEC 48

83285.00	13.78	648.28	.00	.00	649.22	.94	1.23	.05	638.50
18800.	74.	18236.	490.	67.	2307.	340.	476.	46.	638.20
.28	1.19	7.90	1.44	.090	.030	.100	.000	634.50	170.35
.000862	1500.	1530.	1490.	2	0	0	.00	265.65	436.00

*SECNO 84775.000

XSEC 50

84775.00	15.03	649.63	.00	.00	650.38	.75	1.14	.02	641.40
18800.	239.	18234.	727.	184.	2590.	268.	376.	56.	642.00
.34	1.30	7.04	1.22	.090	.030	.100	.000	634.60	9.46
.000680	1310.	1490.	1700.	2	0	0	.00	294.05	303.50

*SECNO 86885.000

XSEC 53

86885.00	15.17	651.07	.00	.00	651.70	.64	1.31	.01	641.30
18800.	260.	18374.	166.	260.	2834.	150.	727.	70.	642.50
.43	1.30	6.48	1.11	.090	.030	.100	.000	635.90	1009.35
.000572	2250.	2110.	2020.	2	0	0	.00	291.67	1301.01

*SECNO 89445.000

XSEC 57

89445.00	14.54	652.54	.00	.00	653.24	.69	1.52	.02	646.00
18800.	76.	18409.	116.	79.	2770.	113.	907.	86.	641.30
.54	.96	6.72	1.02	.090	.030	.100	.000	638.00	1001.45
.000613	2560.	2560.	2330.	2	0	0	.00	361.19	1264.64

*SECNO 90645.000

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

3263 DIVIDED FLOW

XSEC 59

90645.00	15.26	653.36	.00	.00	654.03	.67	.80	.00	648.50
18800.	226.	18571.	3.	316.	2603.	7.	991.	96.	650.90
.59	.71	6.63	.43	.090	.030	.100	.000	638.10	990.92
.000717	1300.	1200.	1100.	2	0	0	.00	418.16	1419.80

*SECNO 91385.000

XSEC 60

91385.00	14.69	65[illegible].69	.00	.00	654.74	1.05	.59	.11	644.30
18800.	455.	18169.	176.	272.	2178.	182.	1040.	101.	644.30
.62	1.67	8.34	1.33	.090	.030	.100	.000	649.00	4.02
.000900	700.	740.	780.	2	0	0	.00	239.96	243.98

TI S RUN EXECUTED 12/30/86 .8:13:54

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*****************************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -   50,51,52,53,54,55,56
  IBM-PC-XT VERSION 1.1
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T1
T2 FLOODWAY RUN
T3

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	3.	0.	0.	.000000	.00	.0	18800.	644.000	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	15.000	.000	-1.000	.000	.000	.000	.000	.000	.000	.000

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

*PROF 2

CCHV=    .100 CEHV=    .300
*SECNO 76760.000

3470 ENCROACHMENT STATIONS=      45.7     347.6  TYPE=     1  TARGET=     301.980
                XSEC 30   START WSEL FROM DS STUDY
 76760.00    16.40   644.00      .00   643.90   644.39      .39      .00      .00   636.50
   18600.      63.   18610.      127.      79.    3693.     136.       0.       0.   636.00
      .00      .80     5.04      .93     .090     .030     .090     .000   627.60    45.67
  .000322     350.     410.     450.        0        0        0      .00   301.98   347.65

CCHV=    .300 CEHV=    .500
*SECNO 76810.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD=  0 MIN ELTRD=  658.50 MAX ELLC=  657.90

3470 ENCROACHMENT STATIONS=      29.0     352.1  TYPE=     1  TARGET=     323.160
                XSEC 31  RR BRIDGE W/PIERS MODELED AS NORMAL XSEC
 76810.00    19.99   643.99      .00   643.88   644.44      .44      .02      .03   637.20
   18800.     210.   18516.      74.     189.    3435.      91.       4.       0.   637.70
      .00     1.11     5.39      .82     .090     .030     .090     .000   624.00    28.99
  .000443      50.      50.      50.        2        0        0      .00   299.67   352.15

*SECNO 76825.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD=  0 MIN ELTRD=  658.50 MAX ELLC=  657.90

3470 ENCROACHMENT STATIONS=      29.0     352.2  TYPE=     1  TARGET=     323.180
                US OF RR BRIDGE
 76825.00    20.00   644.00      .00   643.89   644.44      .44      .01      .00   637.20
   18800.     210.   18516.      75.     189.    3435.      91.       6.       0.   637.70
      .00     1.11     5.39      .82     .090     .030     .090     .000   624.00    28.98
  .000442      15.      15.      15.        0        0        0      .00   299.69   352.16
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SECNO	DEPTH	CWSEL	CRIWS	VOLELK	EG	MV	HL	QLOBS	BANK ELEV
Q	QLOB	QCH	SAQB	ALOB	AOH	QACT	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VOL	VSOB	KNL	XNCH	XWR	WTP	CUMCN	SSTA
SLOPE	XLOBL	XLOB	XLOBR	ITRIAL	IDC	JCONT	CORAR	TOPWID	ENDST

*SECNO 77175.000

X470 ENCROACHMENT STATIONS= 30.0 263.0 TYPE= 1 TARGET= 233.000

77175.00	15.47	644.07	.00	643.97	644.70	.63	.17	.09	640.00
18800.	17.	16689.	94.	26.	2924.	86.	33.	3.	633.50
.02	.64	6.39	1.09	.090	.030	.090	.000	628.60	30.00
.000516	350.	350.	350.	2	0	0	.00	233.00	263.00

CC.IV= .100 CEKV= .300
*SECNO 77225.000

X65 DIVIDED FLOW

X470 ENCROACHMENT STATIONS= 131.0 400.0 TYPE= 1 TARGET= 269.000
M 37 BRIDGE W/PIERS MODELED AS NORMAL XSEC

77225.00	19.13	644.03	.00	643.93	644.77	.74	.03	.03	634.00
18800.	232.	17421.	1148.	160.	2433.	594.	36.	3.	635.00
.02	1.44	7.16	1.93	.090	.030	.090	.000	624.90	131.00
.000704	50.	50.	50.	2	0	0	.00	252.24	400.00

*SECNO 77295.000

X65 DIVIDED FLOW

X470 ENCROACHMENT STATIONS= 131.0 400.0 TYPE= 1 TARGET= 269.000
LS OF M 37 BRIDGE

77295.00	19.18	644.08	.00	643.99	644.82	.74	.05	.00	634.00
18800.	233.	17417.	1151.	161.	2442.	597.	44.	3.	635.00
.02	1.44	7.13	1.93	.090	.030	.090	.000	624.90	131.00
.000696	70.	70.	70.	1	0.	0	.00	252.28	400.00

*SECNO 77375.000

X470 ENCROACHMENT STATIONS= 92.0 376.0 TYPE= 1 TARGET= 311.000
XSEC 36

77375.00	14.00	644.34	.00	644.24	644.82	.59	.04	.03	636.50
18800.	41.	18436.	125.	54.	2703.	134.	63.	4.	636.20
.02	.76	5.03	.94	.090	.030	.090	.000	629.60	62.00
.000114	20.	80.	80.	2	0	0	.00	314.00	376.00

SECNO	DEPTH	SWSEL	DRIWB	WSELK	ES	HV	HL	OLOSS	DAMP ELEV
Q	QLOB	RCH	QRCB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VRCB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLCBR	LTRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 78005.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 80.0 380.0 TYPE= 1 TARGET= 300.000

XSEC 37

78005.00	15.10	644.60	.00	644.50	645.28	.68	.31	.09	634.70
18800.	142.	18463.	190.	94.	2771.	131.	98.	8.	636.00
.05	1.51	6.67	1.45	.090	.030	.090	.000	629.50	80.00
.000748	590.	630.	660.	2	0	0	.00	282.40	377.15

*SECNO 78385.000

3470 ENCROACHMENT STATIONS= 190.0 510.0 TYPE= 1 TARGET= 320.000

XSEC 38

78385.00	12.88	645.08	.00	644.99	645.51	.43	.21	.02	634.90
18800.	135.	18491.	174.	122.	3473.	127.	127.	11.	634.70
.07	1.11	5.37	1.37	.090	.030	.090	.000	632.20	190.00
.000417	390.	380.	380.	2	0	0	.00	320.00	510.00

*SECNO 78895.000

3470 ENCROACHMENT STATIONS= 285.0 545.0 TYPE= 1 TARGET= 260.000

XSEC 39

78895.00	14.48	645.18	.00	645.10	645.84	.65	.26	.07	635.60
18800.	161.	18539.	100.	127.	2336.	80.	167.	24.	635.60
.10	1.27	6.54	1.18	.090	.030	.090	.000	630.70	285.00
.000618	510.	510.	560.	2	0	0	.00	260.00	545.00

*SECNO 79635.000

3470 ENCROACHMENT STATIONS= 18.0 280.0 TYPE= 1 TARGET= 262.000

XSEC 41

79635.00	15.08	645.85	.00	645.57	646.28	.43	.44	.00	636.00
18800.	132.	18610.	58.	109.	2899.	57.	214.	09.	636.00
.13	1.21	6.42	1.01	.090	.030	.090	.000	630.60	18.00
.000583	750.	740.	750.	2	0	0	.00	262.00	280.00

SECNO	DEPTH	CWSEL	CRIWE	WSEL	EG	HV	HL	GLOBS	BANK ELEV
Q	QLCR	QCH	QROB	ALCB	ACH	AROB	VCL	TWA	LEFT/RIGHT
TIME	VLCR	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLCBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CGRAR	TOPWID	ENDET

*SECNO 80205.000

3470 ENCROACHMENT STATIONS= 27.0 265.0 TYPE= 1 TARGET= 238.000
XSEC 42 BOAT RAMP 1986 HWM 647.2

80205.00	12.55	645.85	.00	645.78	646.86	1.01	.46	.11100000.00	
18800.	0.	18674.	126.	0.	2312.	65.	254.	22.	637.70
.15	.00	8.08	1.94	.090	.030	.070	.000	633.30	27.24
.001221	630.	570.	470.	2	0	0	.00	237.76	265.00

*SECNO 81105.000

3301 HV CHANGED MORE THAN HVING

3470 ENCROACHMENT STATIONS= 277.0 650.0 TYPE= 1 TARGET= 373.000
XSEC 44

81105.00	13.16	647.16	.00	647.10	647.53	.37	.60	.06	638.20
18800.	41.	18733.	26.	38.	3832.	40.	319.	26.	637.30
.20	1.07	4.89	.66	.090	.030	.100	.000	634.00	277.00
.000421	1040.	900.	790.	2	0	0	.00	373.00	650.00

*SECNO 81755.000

3470 ENCROACHMENT STATIONS= 51.0 277.0 TYPE= 1 TARGET= 226.000
XSEC 45

81755.00	13.80	647.20	.00	647.17	648.03	.83	.36	.14	638.60
18800.	35.	18627.	38.	93.	2532.	42.	368.	33.	638.60
.22	1.45	7.36	.70	.090	.030	.100	.000	633.40	51.00
.000795	610.	650.	700.	2	0	0	.00	226.00	277.00

*SECNO 83285.000

3470 ENCROACHMENT STATIONS= 175.0 415.0 TYPE= 1 TARGET= 240.000
XSEC 48

83285.00	13.87	648.37	.00	646.28	649.20	.93	.24	.03	638.50
18800.	45.	18252.	484.	54.	2324.	318.	462.	41.	638.20
.28	1.19	7.8[illegible]	1.52	.090	.030	.100	.000	634.00	175.00
.000343	1500.	1570.	149[illegible]	2	0	0	.00	240.00	415.00

SECNO	DEPTH	CHSEL	CRIMS	WSELK	EG	MV	FR	CLOSS	BANK ELEV
Q	WLOB	WCH	WPCB	XNL	XNCH	XNR	WTR	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VPCB	XNL	XNCH	XNR	WTR	E.MIN	SSTA
S.OFF	XLOBL	XLCH	XLOBR	ITRIAL	IBC	IPCNT	CORAR	TOPWID	ENDST

*SECNO 94775.000

7470 ENCROACHMENT STATIONS= 53.0 270.0 TYPE= 1 TARGET= 237.000

XSEC 50

94775.00	15.08	649.68	.00	649.63	650.46	.77	1.14	.02	641.40
16800.	134.	18492.	175.	105.	2600.	139.	556.	49.	642.00
.34	1.27	7.11	1.26	.090	.030	.100	.000	634.60	53.00
.000691	1310.	1490.	1700.	2	0	0	.00	237.00	270.00

*SECNO 96855.000

7470 ENCROACHMENT STATIONS= 1044.0 1274.0 TYPE= 1 TARGET= 230.000

XSEC 33

96885.00	10.33	651.13	.00	651.07	651.80	.67	1.54	.01	641.50
18800.	40.	18729.	71.	45.	2849.	40.	698.	60.	642.50
.45	.89	6.57	.78	.090	.030	.100	.000	635.90	1044.00
.000534	2250.	2110.	2020.	2	0	0	.00	230.00	1274.00

*SECNO 89445.000

7470 ENCROACHMENT STATIONS= 1016.0 1260.0 TYPE= 1 TARGET= 235.000

XSEC 57

89445.00	14.54	650.64	.00	652.54	653.73	.70	1.52	.01	646.00
18800.	24.	18736.	40.	30.	2790.	48.	668.	74.	641.30
.53	.83	6.72	.83	.090	.030	.100	.000	638.00	1018.00
.000607	2060.	2560.	2550.	2	0	0	.00	225.00	1243.00

*SECNO 90645.000

7470 ENCROACHMENT STATIONS= 1150.0 1419.0 TYPE= 1 TARGET= 269.000

XSEC 59

90645.00	15.34	653.44	.00	653.34	654.13	.62	.79	.00	648.50
18800.	31.	13763.	5.	37.	2823.	7.	947.	80.	650.90
.59	.91	6.68	.16	.090	.030	.100	.000	638.10	1154.65
.000715	1700.	1700.	1150.	2	0	0	.00	264.35	1419.00

*SECNO 91265.000

7470 ENCROACHMENT STATIONS= 64.0 227.0 TYPE= 1 TARGET= 163.000

	XSEC 60								
51585.00	14.74	653.74	.00	653.69	654.35	.11	.60	.17	641.30
11800.	126.	18574.	99.	89.	3186.	73.	972.	84.	641.30
.61	1.44	0.50	1.27	.760	.030	.100	.000	639.00	94.00
.000928	700.	740.	780.	2	0	0	.00	183.30	224.00

THIS RUN EXECUTED 12/30/86 18:16:30

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION 1.1
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NOTE ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

MUSKEGON RIVER EXISTING

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	IOPTS	VCH	AREA	.01K
	76760.000	.00	.00	.00	627.60	18800.00	643.90	.00	644.28	3.22	5.02	4106.59	10470.59
	76760.000	.00	.00	.00	627.60	18800.00	644.00	.00	644.39	3.22	5.04	3907.97	10470.26
AK	76810.000	50.00	658.50	657.90	624.00	18800.00	643.88	.00	644.34	4.53	5.43	3685.36	8832.89
	76810.000	50.00	658.50	657.90	624.00	18800.00	643.99	.00	644.44	4.43	5.39	3715.49	8933.23
	76825.000	15.00	658.50	657.90	624.00	18800.00	643.89	.00	644.34	4.52	5.43	3685.09	8830.30
	76825.000	15.00	658.50	657.90	624.00	18800.00	644.00	.00	644.44	4.42	5.39	3717.26	8938.78
AL	77175.000	350.00	.00	.00	628.60	18800.00	643.97	.00	644.60	5.25	6.42	3065.48	8241.35
	77175.000	350.00	.00	.00	628.60	18800.00	644.07	.00	644.70	5.16	6.39	3055.78	8272.44
	77225.000	50.00	.00	.00	624.90	18800.00	643.93	.00	644.66	7.06	7.14	3274.57	7076.43
	77225.000	50.00	.00	.00	624.90	18800.00	644.03	.00	644.77	7.04	7.16	3187.83	7033.44
AM	77295.000	70.00	.00	.00	624.90	18800.00	643.99	.00	644.71	6.93	7.12	3309.38	7117.04
	77295.000	70.00	.00	.00	624.90	18800.00	644.08	.00	644.82	6.96	7.13	3200.10	7124.63
AN	77375.000	80.00	.00	.00	629.60	18800.00	644.40	.00	644.79	3.47	5.03	4046.87	10096.33
	77375.000	80.00	.00	.00	629.60	18800.00	644.50	.00	644.89	3.43	5.03	3892.89	10122.89
	78005.000	630.00	.00	.00	629.50	18800.00	644.50	.00	645.19	7.70	6.73	2974.13	6773.59
	78005.000	630.00	.00	.00	629.50	18800.00	644.60	.00	645.28	7.48	6.67	2996.01	6871.79
	78385.000	380.00	.00	.00	632.20	18800.00	644.99	.00	645.43	4.25	5.35	3746.25	9114.42
	78385.000	380.00	.00	.00	632.20	18800.00	645.08	.00	645.51	4.27	5.32	3729.66	9210.52
AO	78895.000	510.00	.00	.00	630.70	18800.00	645.10	.00	645.75	6.26	6.55	3115.60	7514.90
	78895.000	510.00	.00	.00	630.70	18800.00	645.18	.00	645.84	6.18	6.54	3047.42	7514.32
	79635.000	740.00	.00	.00	630.60	18800.00	645.57	.00	646.21	5.95	6.45	3068.83	7708.13
	79635.000	740.00	.00	.00	630.60	18800.00	645.65	.00	646.28	5.83	6.42	3065.18	7783.22

	SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSFL	CRIWS	EG	10K*S	VC/I	AREA	.01K
AP	80205.000	570.00	.00	.00	633.30	18800.00	645.78	.00	646.79	12.39	8.10	2392.67	5341.02
	80205.000	570.00	.00	.00	633.30	18800.00	645.85	.00	646.86	13.21	8.08	2377.18	5379.59
AQ	81105.000	900.00	.00	.00	634.00	18800.00	647.10	.00	647.46	4.22	4.88	4044.53	9151.72
	81105.000	900.00	.00	.00	634.00	18800.00	647.16	.00	647.53	4.21	4.89	3909.73	9160.47
	81755.000	650.00	.00	.00	633.40	18800.00	647.17	.00	647.94	7.51	7.18	3009.21	6858.95
	81755.000	650.00	.00	.00	633.40	18800.00	647.20	.00	648.03	7.85	7.36	2667.32	6708.33
AR	83285.000	1530.00	.00	.00	634.50	18800.00	648.23	.00	649.22	8.62	7.90	2706.45	6403.18
	83285.000	1530.00	.00	.00	634.50	18800.00	648.37	.00	649.30	8.43	7.85	2695.77	6475.36
AS	84775.000	1490.00	.00	.00	634.60	18800.00	649.63	.00	650.38	6.80	7.04	3041.93	7208.79
	84775.000	1490.00	.00	.00	634.60	18800.00	649.68	.00	650.46	6.91	7.11	2843.65	7153.50
AT	86885.000	2110.00	.00	.00	635.90	18800.00	651.07	.00	651.70	5.72	6.48	3184.08	7863.73
	86885.000	2110.00	.00	.00	635.90	18800.00	651.13	.00	651.80	5.84	6.57	2934.18	7782.77
AU	89445.000	2560.00	.00	.00	638.00	18800.00	652.54	.00	653.24	6.13	6.72	2761.57	7591.15
	89445.000	2560.00	.00	.00	638.00	18800.00	652.64	.00	653.33	6.07	6.72	2847.73	7631.90
AV	90645.000	1200.00	.00	.00	638.10	18800.00	653.36	.00	654.03	7.17	6.63	3125.81	7018.87
	90645.000	1200.00	.00	.00	638.10	18800.00	653.44	.00	654.13	7.15	6.65	2866.97	7028.99
AW	91385.000	740.00	.00	.00	639.00	18800.00	653.69	.00	654.74	9.00	8.37	2582.18	6266.51
	91385.000	740.00	.00	.00	639.00	18800.00	653.74	.00	654.85	9.28	8.50	2352.74	6170.58

MUSKEGON RIVER EXISTING

SUMMARY PRINTOUT TABLE 150

SECNO	Q	ENSEL	DIFNSE	DIFMEX	DIFMWE	TOPWID	XLOK
76760.000	18800.00	643.90	.00	.00	.00	355.91	.00
76760.000	18800.00	644.00	.10	.00	.10	301.98	.00
76810.000	18800.00	643.88	.00	-.02	.00	299.61	50.00
76810.000	18800.00	643.99	.11	-.01	.11	299.67	50.00
76825.000	18800.00	643.89	.00	.01	.00	299.64	15.00
76825.000	18800.00	644.00	.11	.01	.11	299.69	15.00
77175.000	18800.00	643.97	.00	.08	.00	256.01	350.00
77175.000	18800.00	644.07	.10	.07	.10	233.80	350.00
77275.000	18800.00	643.91	.00	-.04	.00	302.63	50.00
77275.000	18800.00	644.03	.09	-.05	.09	252.24	50.00
77295.000	18800.00	643.99	.00	.06	.00	302.90	70.00
77295.000	18800.00	644.08	.09	.06	.09	252.28	70.00
77375.000	18800.00	644.40	.00	.41	.00	393.60	80.00
77375.000	18800.00	644.50	.10	.42	.10	314.00	80.00
78005.000	18800.00	644.50	.00	.10	.00	286.75	630.00
78005.000	18800.00	644.60	.10	.11	.10	282.10	630.00
78385.000	18800.00	644.99	.00	.49	.00	341.30	380.00
78385.000	18800.00	645.08	.09	.48	.09	320.00	380.00
78895.000	18800.00	645.10	.00	.11	.00	289.85	510.00
78895.000	18800.00	645.18	.08	.10	.08	260.00	510.00
79635.000	18800.00	645.57	.00	.47	.00	276.55	740.00
79635.000	18800.00	645.65	.08	.47	.08	262.00	740.00
80205.000	18800.00	645.78	.00	.21	.00	250.43	570.00
80205.000	18800.00	645.85	.07	.20	.07	237.76	570.00
81105.000	18800.00	647.10	.00	1.31	.00	415.90	900.00
81105.000	18800.00	647.16	.06	1.30	.06	373.00	900.00
81755.000	18800.00	647.17	.00	.07	.00	306.29	650.00
81755.000	18800.00	647.20	.03	.04	.03	326.00	650.00
83285.000	18800.00	648.23	.00	1.11	.00	265.65	1530.00
83285.000	18800.00	648.32	.09	1.18	.09	240.00	1530.00
84725.000	18800.00	649.63	.00	1.25	.00	206.05	1490.00
84725.000	18800.00	649.68	.05	1.31	.05	237.00	1490.00

SECNO	G	QUBEL	DIFMSP	DIFMSX	DIFMWR	TOPWID	XLCH
86885.000	18800.00	651.07	.00	1.43	.00	291.67	2110.00
86885.000	18800.00	651.17	.07	1.45	.07	230.00	2110.00
89445.000	18800.00	652.54	.00	1.48	.00	263.19	2560.00
89445.000	18800.00	652.64	.09	1.50	.09	225.00	2560.00
90645.000	18800.00	653.36	.00	.82	.00	418.16	1200.00
90645.000	18800.00	653.44	.08	.80	.08	264.35	1200.00
91385.000	18800.00	653.69	.00	.33	.00	239.96	740.00
91385.000	18800.00	653.74	.05	.30	.05	183.00	740.00

SUMMARY OF ERRORS AND SPECIAL NOTES

FLOODWAY DATA, MILSTREGON RIVER EXISTING
PROFILE NO. 2

	STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
	76760.000	302.	3908.	4.8	644.0	643.9	.1
AK	76810.000	323.	3715.	5.1	644.0	643.9	.1
	76825.000	323.	3717.	5.1	644.0	643.9	.1
AL	77175.000	233.	3056.	6.2	644.1	644.0	.1
	77225.000	269.	3188.	5.9	644.0	643.9	.1
AM	77225.000	269.	3200.	5.9	644.1	644.0	.1
AN	77375.000	314.	3692.	4.8	644.5	644.4	.1
	78005.000	297.	2976.	6.3	644.6	644.5	.1
	78585.000	320.	3723.	5.1	645.1	645.0	.1
AO	78891.000	260.	3048	6.2	645.2	645.1	.1
	79635.000	262.	3045.	6.1	645.7	645.6	.1
AP	80205.000	238.	2577.	7.9	645.9	645.8	.1
AQ	81105.000	373.	3910.	4.8	647.2	647.1	.1
	81755.000	326.	2667.	7.0	647.2	647.2	.0
AR	83265.000	240.	2696.	7.0	649.4	649.3	.1
AS	84771.000	337.	2844.	6.6	647.6	649.6	.0
AT	86585.000	230.	2934.	6.4	651.2	651.1	.1
AU	87447.000	225.	2868.	6.6	652.6	652.5	.1
AV	90625.000	264.	2847.	6.6	653.3	653.4	.1
AW	91305.000	163.	2353.	8.0	653.8	653.7	.1

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1*****************************************************
 *  WATER SURFACE PROFILES                           *
 *  VERSION OF NOVEMBER 1976                         *
 *  UPDATED MAY 1984                                 *
 *                                                   *
*  RUN DATE            TIME                          *
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*  U.S. ARMY CORPS OF ENGINEERS     *
*  THE HYDROLOGIC ENGINEERING CENTER *
*  609 SECOND STREET, SUITE D       *
*  DAVIS, CALIFORNIA 95616          *
*  (916) 440-2105 (FTS) 448-2105    *
*************************************
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Multiple Run
1986 Flow
100-yr
1913 Flow
1976 Flow

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                                   X     X  XXXXXXX   XXXXX              XXXXX
                                   X     X  X        X     X            X     X
                                   X     X  X        X                        X
                                   XXXXXXX  XXXX     X          XXXXX    XXXXX
                                   X     X  X        X                  X
                                   X     X  X        X     X            X
                                   X     X  XXXXXXX   XXXXX             XXXXXXX
1
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PAGE 1

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

C
T1      FLOODPLAIN DELINEATION     USING 1986 HIGHWATER MARKS AS CALIBRATION
T2   CHANNEL XSEC FROM 1977 SURVEY    N INCREASED TO REFLECT MEANDER
T3      MUSKEGON RIVER  EXISITING COND    MODEL FROM 1978  1986 FLOW

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        0.        0.        0.   0.000250     0.00      0.0    23100.   621.000    0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     0.000     0.000    -1.000     0.000     0.000     1.350     0.000     0.000     0.000     0.000

J5  LPRNT     NUMSEC                  ********REQUESTED SECTION NUMBERS********

     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

NC      0.100     0.150     0.023     0.100     0.300     0.000     0.000     0.000     0.000     0.000
NH      7.000     0.100    22.000     0.023   242.000     0.100   298.000     0.035   447.000     0.050
NH    570.000     0.100   789.000     0.050   852.000     0.000     0.000     0.000     0.000     0.000
                XSEC 61
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X1	0.100	25.000	22.000	242.000	0.000	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	8.000	0.000	B18.000	0.000	0.000	613.300	0.000
GR	624.100	0.000	613.200	22.000	606.100	47.000	603.700	63.000	600.000	106.000
GR	601.400	136.000	602.600	166.000	603.200	196.000	604.200	226.000	606.100	237.000
GR	609.600	242.000	610.600	252.000	613.900	262.000	614.800	298.000	616.300	326.000
GR	616.300	383.000	615.300	447.000	612.000	492.000	611.700	570.000	611.500	635.000
GR	611.200	685.000	611.000	735.000	612.200	789.000	623.500	830.000	629.400	852.000
NH	4.000	0.150	22.000	0.023	242.000	0.150	298.000	0.100	852.000	0.000

SEC 61 MOVED US INVERT ADJ BY .94FT FLOOD FLOW SHIFTED FROM ROB AS NOTED ON XSEC 61 TO APPROX AREA IN LOB FOR THIS XSEC

X1	1920.000	0.000	0.000	0.000	2170.000	1740.000	1920.000	0.000	0.940	0.000
X3	10.000	0.000	0.000	22.000	0.000	763.000	0.000	0.000	613.300	0.000
NH	3.000	0.050	37.000	0.023	311.000	0.050	341.000	0.000	0.000	0.000

XSEC 62

X1	3050.000	20.000	37.000	311.000	1200.000	1200.000	1130.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	17.000	0.000	328.000	0.000	0.000	0.000	0.000
GR	635.400	0.000	629.100	4.000	615.670	25.000	608.600	37.000	607.000	40.000
GR	605.200	55.000	604.500	64.000	601.900	74.000	601.400	106.000	605.100	146.000
GR	606.500	163.000	604.300	170.000	603.500	173.000	605.200	199.000	605.400	241.000
GR	606.000	267.000	605.700	285.000	606.700	297.000	609.000	311.000	629.600	341.000

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NH	3.000	0.017	37.000	0.023	311.000	0.017	341.000	0.000	0.000	0.000

W EDGE OF BRIDGE DECK AT BRIDGETON 1976 HWM 615.7

X1	3051.000	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	17.000	0.000	328.000	0.000	0.000	0.000	0.000
SB	0.900	1.250	2.600	1000.000	260.000	8.000	9000.000	1.430	604.500	604.500
X1	3100.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	635.400	638.000	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	17.000	0.000	328.000	0.000	0.000	0.000	0.000
NC	0.150	0.070	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	3101.000	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	17.000	0.000	328.000	0.000	0.000	0.000	0.000
NH	4.000	0.045	58.000	0.023	373.000	0.030	517.000	0.050	633.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 63

X1	4680.000	20.000	58.000	373.000	1500.000	1600.000	1579.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	617.800	0.000
GR	625.300	0.000	617.700	15.000	608.500	58.000	607.300	76.000	604.900	82.000
GR	603.500	102.000	603.900	129.000	603.800	172.000	604.000	205.000	605.000	248.000
GR	605.600	274.000	606.300	289.000	607.300	356.000	616.000	373.000	617.700	382.000
GR	617.800	404.000	614.500	435.000	614.600	517.000	616.000	605.000	625.300	638.000
NH	5.000	0.150	19.000	0.150	424.000	0.100	562.000	0.023	788.000	0.040
NH	819.000	0.000	0.000	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

XSEC 64 XSEC CROSSES US OF OLD ROCK CRIBBING

X1	7200.000	28.000	562.000	788.000	2200.000	2500.000	2520.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	619.600	0.000	0.000
GR	625.700	0.000	616.300	19.000	613.400	58.000	614.400	124.000	614.000	224.000
GR	615.400	314.000	613.600	336.000	614.200	371.000	617.100	424.000	619.600	499.000
GR	619.100	557.000	619.000	562.000	615.800	573.000	608.900	578.000	606.500	582.000
GR	604.000	584.000	602.300	611.000	603.100	638.000	602.600	667.000	602.500	695.000
GR	602.900	724.000	605.500	752.000	605.900	773.000	607.000	780.000	607.690	785.000
GR	610.400	788.000	616.500	801.000	625.700	819.000	0.000	0.000	0.000	0.000
NH	4.000	0.050	39.000	0.025	295.000	0.150	788.000	0.040	924.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 65	XSEC CROSSES 100FT US OF BOAT LAUNCH								
X1	8850.000	30.000	39.000	326.000	1400.000	1600.000	1650.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	619.800	0.000
GR	626.000	0.000	624.200	8.000	621.800	35.000	619.300	39.000	610.900	58.000
GR	608.040	69.000	605.100	95.000	604.200	140.000	604.700	175.000	604.900	210.000
GR	605.100	245.000	605.800	280.000	608.040	293.000	611.700	295.000	612.100	304.000
GR	619.100	317.000	619.800	326.000	619.500	338.000	616.400	365.000	613.500	413.000
GR	612.100	478.000	612.000	548.000	612.100	588.000	612.300	638.000	612.500	688.000
GR	612.500	738.000	612.400	788.000	613.800	843.000	617.300	906.000	626.000	924.000

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NH	7.000	0.050	46.000	0.030	226.000	0.050	293.000	0.160	374.000	0.150
NH	564.000	0.090	1065.000	0.090	1244.000	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
		XSEC 66								
X1	10300.000	36.000	46.000	377.000	1500.000	700.000	1450.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	620.500	0.000
GR	626.500	0.000	620.600	29.000	612.500	38.000	611.100	46.000	608.200	50.000
GR	606.500	59.000	604.500	96.000	603.300	128.000	604.600	161.000	606.000	192.000
GR	607.100	210.000	607.800	225.000	609.300	226.000	610.200	241.000	610.000	249.000
GR	609.200	253.000	610.700	293.000	612.300	311.000	612.900	361.000	618.800	374.000
GR	620.600	377.000	618.900	385.000	618.600	443.000	616.800	529.000	611.500	564.000
GR	611.500	606.000	610.400	693.000	610.500	769.000	611.300	889.000	612.600	893.000
GR	612.700	1012.000	615.100	1065.000	615.500	1115.000	617.600	1165.000	620.400	1190.000
GR	626.500	1244.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.150	889.000	0.030	1059.000	0.150	1107.000	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
		XSEC 67								
X1	11800.000	25.000	816.000	1059.000	1600.000	1000.000	1500.000	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	626.700	0.000	620.500	108.000	616.700	155.000	613.700	255.000	613.500	355.000
GR	613.400	449.000	613.200	530.000	613.100	644.000	613.600	744.000	617.100	799.000
GR	619.800	813.000	619.600	816.000	612.500	825.000	612.100	839.000	608.730	842.000
GR	606.700	861.000	605.900	896.000	605.100	931.000	604.400	967.000	604.400	1002.000
GR	606.000	1037.000	608.730	1051.000	610.700	1059.000	617.400	1079.000	626.700	1107.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	12600.000	0.000	0.000	0.000	800.000	800.000	800.000	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

NH	3.000	0.100	113.000	0.030	363.000	0.150	748.000	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
		XSEC 68								
X1	14100.000	25.000	113.000	382.000	900.000	1600.000	1500.000	0.000	0.000	0.000
GR	627.100	0.000	622.000	15.000	617.600	39.000	620.100	70.000	619.800	88.000
GR	614.200	97.000	611.800	113.000	609.140	125.000	608.000	164.000	607.400	191.000
GR	606.700	205.000	608.300	247.000	605.300	289.000	605.100	330.000	607.500	345.000
GR	608.800	359.000	612.200	363.000	614.700	376.000	618.400	382.000	619.200	435.000
GR	616.000	501.000	615.700	543.000	615.400	633.000	616.200	693.000	627.100	748.000
NH	3.000	0.150	922.000	0.022	1120.000	0.060	1143.000	0.000	0.000	0.000
ET	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 69								
X1	16700.000	28.000	844.000	1120.000	300.000	1900.000	2600.000	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	627.600	0.000	618.800	35.000	616.900	133.000	615.200	230.000	614.100	323.000
GR	613.700	410.000	613.400	515.000	617.800	553.000	613.300	663.000	614.200	712.000
GR	617.800	785.000	621.800	844.000	620.300	868.000	619.800	902.000	618.900	909.000
GR	612.400	922.000	609.640	924.000	607.900	938.000	607.300	954.000	606.200	983.000
GR	604.600	1012.000	605.600	1041.000	607.200	1070.000	608.500	1074.000	609.640	1102.000
GR	613.800	1120.000	620.300	1131.000	627.600	1143.000	0.000	0.000	0.000	0.000

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NC	0.040	0.060	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 1 FROM SUBDIVISION FILE F184 22 12								
X1	18990.000	24.000	257.000	570.000	1250.000	2500.000	2190.000	0.000	0.000	0.000
GR	633.400	0.000	629.500	30.000	628.200	106.000	619.400	130.000	617.400	180.000
GR	617.800	218.000	618.000	225.000	618.900	250.000	611.800	257.000	606.900	257.000
GR	607.500	300.000	608.100	325.000	607.900	350.000	606.900	375.000	606.800	475.000
GR	609.000	527.000	610.300	550.000	612.700	570.000	620.500	580.000	620.200	600.000
GR	618.700	625.000	619.300	640.000	623.700	660.000	630.000	677.000	0.000	0.000
NH	6.000	0.150	43.000	0.030	115.000	0.028	155.000	0.030	529.000	0.025
NB	703.000	0.150	756.000	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
		XSEC 70 THROUGH SUBDIV ON LEFT BANK CHANNEL INEFFECTIVE								
		1976 HWM ON BASEMENT WALL 619.8 HWM 800FT DS 619.98								
X1	19870.000	30.000	529.000	703.000	950.000	980.000	1000.000	0.000	0.000	0.000
GR	628.500	0.000	620.000	25.000	620.400	217.000	630.000	217.000	630.000	250.000
GR	620.400	250.000	621.500	306.000	621.500	306.100	621.500	306.200	621.500	306.300
GR	616.900	332.000	617.500	396.000	619.700	432.000	619.900	465.000	618.400	476.000
GR	619.800	489.000	619.300	503.000	613.800	519.000	612.400	529.000	608.700	558.000
GR	607.600	569.000	607.100	595.000	605.600	620.000	605.900	648.000	607.900	671.000
GR	610.500	697.000	612.800	703.000	614.200	713.000	621.400	735.000	628.500	756.000
NH	6.000	0.060	123.000	0.150	223.000	0.025	406.000	0.045	412.000	0.030
NH	603.000	0.100	800.000	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
		XSEC 71 OLDER COTTAGES ON RT BANK SEAWALL PROTECTS RT BANK								
X1	21870.000	27.000	223.000	412.000	1100.000	1600.000	1500.000	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	628.800	0.000	622.900	18.000	615.900	88.000	618.300	61.000	619.200	83.000

GR	619.300	101.000	613.900	123.000	614.400	153.000	611.200	205.000	612.400	223.000
GR	610.500	231.000	609.200	247.000	609.100	269.000	608.500	285.000	607.000	325.000
GR	606.200	366.000	606.600	406.000	619.800	412.000	617.700	472.000	616.000	542.000
GR	615.200	588.000	616.800	603.000	615.000	618.000	615.300	673.000	615.400	724.000
GR	617.900	756.000	628.800	800.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	7.000	0.100	27.000	0.150	125.000	0.150	464.000	0.030	663.000	0.050
NH	829.000	0.030	891.000	0.100	929.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 72								
X1	24985.000	28.000	441.000	663.000	3700.000	3600.000	3615.000	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	629.900	0.000	620.800	27.000	616.000	56.000	614.700	125.000	615.100	191.000
GR	615.400	263.000	616.600	344.000	617.400	402.000	620.300	441.000	619.700	456.000
GR	615.000	459.000	613.500	464.000	609.200	488.000	607.500	500.000	608.600	531.000
GR	608.600	561.000	609.400	592.000	609.800	622.000	609.800	653.000	614.700	663.000
GR	614.900	690.000	619.200	705.000	619.200	709.000	617.100	744.000	618.800	772.000
GR	619.700	829.000	622.400	891.000	629.900	929.000	0.000	0.000	0.000	0.000

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NH	4.000	0.040	23.000	0.150	425.000	0.030	658.000	0.080	688.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 73								
X1	28235.000	20.000	371.000	658.000	2300.000	3300.000	3200.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	623.500	0.000	0.000
GR	630.700	0.000	623.000	23.000	620.000	38.000	617.800	148.000	619.000	203.000
GR	620.700	242.000	622.300	309.000	623.500	371.000	619.300	402.000	619.500	425.000
GR	612.400	436.000	610.400	445.000	610.200	485.000	610.200	526.000	609.600	566.000
GR	609.300	608.000	612.500	648.000	616.700	658.000	619.100	665.000	630.700	688.000
NH	3.000	0.150	51.000	0.030	275.000	0.150	536.000	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
		XSEC 74 IN LINE WITH E SIDE OF COTTAGE ON TOP OF BFI BANK								
		JUST US OF POWERLINE								
X1	29860.000	16.000	51.000	275.000	1500.000	1700.000	1625.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	622.800	0.000
GR	631.400	0.000	616.200	51.000	613.400	53.000	610.100	65.000	609.300	104.000
GR	610.100	143.000	610.600	183.000	611.300	222.000	612.300	235.000	611.900	256.000
GR	615.200	275.000	620.600	283.000	622.800	313.000	620.400	375.000	622.800	484.000
GR	631.400	536.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.150	220.000	0.100	279.000	0.030	545.000	0.080	633.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 75								
X1	31660.000	23.000	279.000	545.000	1700.000	1800.000	1800.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	623.500	0.000	0.000
GR	632.100	0.000	623.900	49.000	621.600	74.000	621.500	112.000	622.100	178.000
GR	623.200	218.000	623.500	220.000	623.600	276.000	623.300	279.000	615.700	289.000
GR	614.100	292.000	610.600	300.000	611.200	328.000	610.200	376.000	611.100	420.000
GR	612.000	477.000	612.500	529.000	614.100	535.000	617.100	545.000	620.200	576.000
GR	622.300	585.000	624.200	609.000	632.100	633.000	0.000	0.000	0.000	0.000

NH	5.000	0.155	33.000	0.035	238.000	0.150	383.000	0.120	785.000	0.060
NH	819.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 76								
X1	35425.000	21.000	33.000	289.000	4300.000	3600.000	3760.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	20.000	0.000	790.000	0.000	0.000	0.000	0.000
GR	633.200	0.000	626.400	20.000	621.200	33.000	615.100	38.000	611.200	51.000
GR	610.300	90.000	609.800	123.000	611.000	157.000	610.800	180.000	615.200	207.000
GR	617.000	217.000	621.600	238.000	625.300	289.000	625.200	316.000	620.400	383.000
GR	619.800	482.000	620.200	583.000	620.100	683.000	620.900	760.000	621.900	785.000
GR	633.200	819.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.160	29.000	0.150	570.000	0.150	849.000	0.035	1017.000	0.150
NH	1047.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 77								
X1	37670.000	31.000	849.000	1017.000	1900.000	2100.000	2150.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	20.000	0.000	1035.000	0.000	0.000	0.000	0.000
GR	633.800	0.000	624.300	19.000	620.600	29.000	619.300	128.000	619.000	224.000
GR	619.100	314.000	619.300	391.000	621.400	419.000	619.700	468.000	620.200	570.000
GR	621.600	607.000	625.100	657.000	625.800	712.000	626.700	761.000	621.900	792.000
GR	621.900	816.000	625.300	823.000	625.200	839.000	624.500	844.000	622.700	849.000
GR	618.200	856.000	615.800	864.000	613.800	886.000	611.300	916.000	608.000	944.000

GR	610.600	977.000	615.400	1009.000	619.100	1014.000	623.700	1017.000	630.100	1033.000
GR	633.800	1047.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.100	32.000	0.030	332.000	0.150	424.000	0.150	488.000	0.070
NH	779.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 78 800FT DS OF ISLAND, POWERLINE CROSSING AND BOAT LAUNCH								
		WEST END OF OLD GRAVEL OPERATION								
X1	38970.000	22.000	32.000	332.000	700.000	1300.000	1300.000	0.000	0.000	0.000
X3	0.000	10.000	0.000	20.000	0.000	760.000	0.000	0.000	624.800	0.000
GR	634.200	0.000	626.800	24.000	621.800	32.000	617.700	50.000	616.250	52.000
GR	614.900	64.000	612.900	110.000	614.600	173.000	613.700	258.000	614.300	311.000
GR	622.500	322.000	624.800	332.000	624.100	365.000	623.300	382.000	622.900	424.000
GR	621.100	449.000	620.600	488.000	620.400	538.000	620.000	638.000	620.600	743.000
GR	625.000	760.000	634.300	779.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.150	25.000	0.020	186.000	0.150	258.000	0.080	531.000	0.000
		XSEC 1								
X1	42170.000	27.000	25.000	186.000	3600.000	3000.000	3200.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	15.000	0.000	510.000	0.000	0.000	628.000	0.000
GR	634.000	0.000	626.900	14.000	623.300	22.000	622.400	25.000	619.100	26.000
GR	616.400	31.000	613.800	40.000	612.800	63.000	612.100	87.000	612.800	91.000
GR	613.000	135.000	613.500	161.000	614.900	163.000	616.300	174.000	617.600	179.000
GR	625.900	186.000	626.800	191.000	624.600	201.000	627.900	230.000	627.900	258.000
GR	621.800	324.000	620.900	364.000	623.600	379.000	622.600	425.000	621.000	451.000
GR	626.000	516.000	634.000	531.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.090	19.000	0.075	58.000	0.025	223.000	0.070	308.000	0.150
NH	373.000	0.080	479.000	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
		XSEC 2								

X1	43770.000	26.000	58.000	223.000	1200.000	1800.000	1600.000	0.000	0.000	0.000
GR	634.000	0.000	628.600	19.000	626.000	35.000	623.000	55.000	622.300	58.000
GR	619.700	59.000	616.800	62.000	613.800	75.000	613.900	105.000	613.800	133.000
GR	613.100	159.000	613.400	185.000	614.400	207.000	616.800	219.000	618.300	223.000
GR	618.300	250.000	619.900	258.000	619.200	266.000	619.300	288.000	619.500	295.000
GR	624.700	308.000	623.900	347.000	625.100	373.000	624.300	409.000	626.600	459.000
GR	639.100	479.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.150	12.000	0.150	214.000	0.035	317.000	0.065	357.000	0.035
NH	533.000	0.150	702.000	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
		XSEC 3 SECTION THRU ISLAND NE OF OLD GRAVEL OPERATION								
X1	44820.000	29.000	214.000	533.000	1100.000	1100.000	1050.000	0.000	0.000	0.000
GR	635.000	0.000	629.000	12.000	626.200	72.000	624.900	94.000	622.300	107.000
GR	622.900	145.000	623.300	186.000	624.400	199.000	624.700	214.000	618.000	226.000
GR	617.000	241.000	617.900	258.000	616.900	292.000	617.900	313.000	622.400	317.000
GR	624.400	342.000	622.000	357.000	616.900	361.000	615.100	402.000	613.900	430.000
GR	613.900	458.000	612.700	487.000	613.000	507.000	616.900	513.000	625.300	533.000
GR	627.500	554.000	623.300	660.000	628.100	680.000	635.000	702.000	0.000	0.000

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NH	4.000	0.150	22.000	0.150	252.000	0.035	478.000	0.150	626.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 4 OLD WOOD PILING ALONG EACH BANK								
X1	45470.000	28.000	252.000	478.000	550.000	650.000	650.000	0.000	0.000	0.000
GR	635.400	0.000	627.200	22.000	625.100	52.000	625.500	83.000	625.500	136.000
GR	627.800	157.000	625.300	180.000	626.700	223.000	628.200	248.000	627.700	252.000
GR	625.700	256.000	619.300	262.000	616.300	269.000	615.500	274.000	614.300	280.000
GR	615.000	312.000	615.600	341.000	614.700	371.000	614.800	395.000	615.400	417.000
GR	615.700	442.000	613.400	460.000	617.400	470.000	624.500	478.000	627.100	487.000
GR	628.600	508.000	632.100	558.000	640.000	626.000	0.000	0.000	0.000	0.000
NH	5.000	0.150	23.000	0.100	281.000	0.035	465.000	0.070	473.000	0.060
NH	497.000	0.000	0.000	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
		XSEC 5 HILL AT RIGHT BANK IS ERODING								
X1	46870.000	24.000	281.000	465.000	1280.000	1575.000	1300.000	0.000	0.000	0.000
GR	642.500	0.000	631.000	23.000	626.000	56.000	627.400	89.000	624.500	131.000
GR	626.300	179.000	629.300	237.000	628.100	250.000	627.700	259.000	623.100	270.000
GR	622.100	281.000	618.400	284.000	616.800	299.000	616.300	319.000	615.900	347.000
GR	615.300	370.000	613.900	395.000	612.600	421.000	615.600	447.000	618.200	461.000
GR	621.300	465.000	622.600	473.000	626.700	479.000	636.000	497.000	0.000	0.000
NH	4.000	0.100	36.000	0.030	91.000	0.036	352.000	0.100	458.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 6								
X1	48720.000	20.000	91.000	352.000	1500.000	2000.000	1850.000	0.000	0.000	0.000
GR	637.000	0.000	624.900	36.000	626.500	72.000	626.800	91.000	618.000	104.000
GR	618.000	104.000	616.800	116.000	617.000	148.000	616.700	198.000	616.400	248.000
GR	616.800	298.000	617.500	348.000	618.300	350.000	620.600	352.000	619.700	356.000
GR	618.700	373.000	618.200	386.000	618.800	407.000	628.500	434.000	637.000	458.000

NH	4.000	0.150	20.000	0.030	532.000	0.036	691.000	0.050	738.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 7								
X1	50220.000	23.000	532.000	691.000	1300.000	1300.000	1500.000	0.000	0.000	0.000
GR	636.500	0.000	626.900	20.000	627.600	158.000	628.000	233.000	624.200	282.000
GR	627.400	347.000	626.500	451.000	624.900	479.000	626.600	525.000	626.300	532.000
GR	621.100	542.000	619.500	548.000	618.600	555.000	617.500	558.000	616.000	581.000
GR	614.200	605.000	613.200	628.000	613.400	652.000	616.000	675.000	619.600	688.000
GR	623.100	691.000	627.700	707.000	636.500	738.000	0.000	0.000	0.000	0.000
NH	3.000	0.020	124.000	0.035	312.000	0.150	1290.000	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
		XSEC 8 VICS CAMPING ON RIGHT BANK CAMPGROUND IS ON A HILL								
		WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.								
X1	51945.000	27.000	124.000	312.000	1300.000	1500.000	1725.000	0.000	0.000	0.000
GR	637.100	0.000	634.700	32.000	637.200	111.000	637.600	124.000	625.400	138.000
GR	620.200	149.000	617.600	158.000	614.900	181.000	615.700	201.000	617.700	222.000
GR	617.700	247.000	618.300	254.000	619.300	271.000	620.200	290.000	622.100	297.000
GR	623.300	303.000	629.400	312.000	630.000	320.000	625.400	367.000	627.200	392.000
GR	627.000	411.000	628.300	425.000	629.500	454.000	628.600	560.000	629.000	650.000
GR	629.000	1250.000	639.000	1290.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	6.000	0.120	860.000	0.025	887.000	0.025	1032.000	0.100	1084.000	0.025
NH	1192.000	0.125	1700.000	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
		XSEC 9 SECTION THROUGH ISLAND US OF VICS								
		XSEC BENT 30DEG LFT AT 887 20DEG RT AT STA 1208								
X1	53000.000	39.000	887.000	1192.000	1200.000	500.000	1055.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	350.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	638.500	0.000	628.500	50.000	625.000	100.000	624.700	650.000	624.900	705.000
GR	624.900	728.000	626.700	760.000	627.500	815.000	629.000	860.000	626.200	872.000
GR	625.000	887.000	620.400	892.000	617.400	898.000	617.700	922.000	618.000	947.000
GR	618.100	974.000	617.700	1001.000	620.400	1025.000	623.600	1032.000	624.400	1035.000
GR	623.600	1061.000	624.300	1078.000	625.200	1084.000	620.400	1093.000	617.900	1101.000
GR	617.700	1122.000	618.300	1143.000	617.500	1165.000	617.100	1185.000	619.600	1190.000
GR	623.000	1192.000	624.500	1203.000	629.600	1208.000	629.000	1226.000	628.200	1240.000
GR	629.900	1290.000	629.100	1350.000	629.100	1650.000	638.500	1700.000	0.000	0.000
NH	6.000	0.120	1340.000	0.060	1420.000	10.000	1480.000	0.060	1557.000	0.025
NH	1730.000	0.125	1740.000	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
		XSEC 10 REDWOOD COTTAGE ON LEFT BANK 1976 HWM 630.5								
		1986 HWM 638 XSEC BENT 45DEG LEFT AT STA 1360								
X1	53700.000	24.000	1557.000	1730.000	400.000	750.000	700.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	300.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	639.000	0.000	628.500	50.000	625.000	100.000	625.000	1340.000	628.300	1360.000
GR	627.200	1377.000	628.700	1420.000	628.800	1480.000	629.000	1500.000	629.200	1531.000
GR	627.400	1545.000	626.800	1560.000	626.200	1557.000	620.600	1563.000	617.900	1567.000
GR	616.600	1600.000	617.000	1624.000	617.600	1682.000	617.800	1688.000	618.100	1717.000

GR	620.700	1725.000	629.200	1730.000	632.100	1733.000	639.000	1740.000	0.000	0.000
NH	7.000	0.200	1399.000	0.050	1784.000	0.025	1957.000	10.000	1998.000	0.025
NH	2062.000	0.030	2221.000	0.040	2250.000	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
		XSEC 10A NEAR WHITE COTTAGE(BRONKEMA) 1976HWM 630.9 IN GARAGE								
		KSEC BENT 5DEG RT AT STA 139.9 RESTRICTED FOR HIGH GROUND AT								
		XSEC 11 US 1986 HWM 638								
X1	54600.000	35.000	2062.000	2221.000	500.000	1000.000	900.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	750.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	639.000	0.000	628.500	50.000	625.000	449.000	623.000	649.000	624.000	949.000
GR	623.000	1049.000	627.100	1352.000	628.200	1399.000	629.300	1508.000	626.700	1597.000
GR	630.100	1644.000	630.500	1755.000	628.100	1784.000	629.900	1846.000	628.500	1888.000
GR	628.600	1917.000	628.100	1957.000	629.600	1966.000	630.400	1998.000	629.800	2041.000
GR	629.100	2060.000	628.700	2062.000	625.300	2068.000	624.500	2074.000	621.000	2079.000
GR	620.500	2099.000	619.700	2119.000	618.200	2123.000	616.900	2145.000	615.300	2167.000
GR	614.500	2190.000	616.300	2215.000	621.000	2221.000	632.100	2238.000	639.000	2250.000

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NH	6.000	0.013	600.000	0.025	700.000	10.000	750.000	0.025	817.000	0.030
NH	961.000	0.040	978.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 10B LOB IS FELCH ROAD								
X1	55080.000	21.000	817.000	961.000	250.000	550.000	480.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	640.000	0.000	633.100	100.000	631.300	200.000	631.600	300.000	631.400	400.000
GR	631.100	500.000	631.100	600.000	629.900	700.000	629.300	750.000	628.700	800.000
GR	625.300	806.000	624.500	812.000	621.000	817.000	619.700	857.000	616.900	885.000
GR	615.300	907.000	614.500	930.000	616.300	955.000	621.300	961.000	632.100	978.000
GR	639.000	990.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.029	1169.000	0.080	1546.000	10.000	1651.000	0.080	1946.000	0.100
NH	2105.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 11 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND								
X1	55800.000	23.000	1000.000	1169.000	150.000	450.000	720.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	0.000	0.000	1900.000	0.000	0.000	0.000	0.000
GR	627.700	1000.000	623.000	1014.000	621.400	1015.000	619.400	1026.000	618.800	1039.000
GR	617.000	1051.000	616.800	1075.000	616.200	1100.000	617.000	1125.000	618.400	1148.000
GR	621.400	1154.000	628.600	1169.000	630.100	1172.000	629.800	1185.000	630.200	1237.000
GR	629.500	1320.000	630.100	1454.000	630.700	1546.000	630.800	1651.000	629.700	1819.000
GR	629.600	1946.000	628.200	2070.000	640.000	2105.000	0.000	0.000	0.000	0.000
NH	6.000	0.070	22.000	0.035	220.000	0.080	457.000	10.000	560.000	0.080
NH	958.000	0.100	1592.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 12								
X1	56800.000	31.000	22.000	222.000	1200.000	50.000	1000.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	0.000	0.000	1630.000	0.000	0.000	0.000	0.000
GR	640.000	0.000	629.300	13.000	621.700	22.000	619.100	29.000	617.800	53.000
GR	614.600	81.000	617.100	107.000	619.100	131.000	620.300	141.000	621.600	147.000
GR	622.800	152.000	624.300	171.000	626.700	187.000	630.000	222.000	629.900	245.000

GR	628.800	350.000	630.100	457.000	630.700	560.000	630.600	660.000	629.900	758.000
GR	629.600	865.000	629.800	958.000	630.100	1010.000	629.500	1093.000	630.100	1227.000
GR	630.700	1319.000	630.800	1424.000	629.700	1592.000	629.600	1719.000	628.200	1843.000
GR	640.000	1878.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	10.000	0.070	30.000	0.045	857.000	0.030	987.000	0.080	1061.000	0.030
NH	1175.000	0.055	1189.000	10.000	1245.000	0.055	1606.000	10.000	1711.000	0.075
NH	2165.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
1976 HWM 631.9

X1	57650.000	32.000	857.000	1180.000	500.000	50.000	850.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	0.000	0.000	1910.000	0.000	0.000	0.000	0.000
GR	640.000	0.000	630.000	30.000	629.200	845.000	622.000	857.000	620.100	869.000
GR	619.800	879.000	618.500	914.000	621.900	968.000	622.700	987.000	627.000	991.000
GR	625.500	1007.000	627.300	1014.000	627.300	1045.000	628.000	1054.000	624.400	1061.000
GR	623.500	1087.000	622.000	1117.000	619.600	1144.000	617.400	1168.000	621.900	1175.000
GR	626.500	1180.000	629.700	1189.000	629.700	1245.000	630.200	1297.000	629.500	1380.000
GR	630.100	1514.000	630.700	1606.000	630.800	1711.000	629.700	1879.000	629.600	2006.000
GR	628.200	2130.000	640.000	2165.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	4.000	0.070	50.000	0.048	1106.000	0.036	1285.000	0.150	1300.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 14 XSEC BENT 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOE

X1	58350.000	20.000	1106.000	1285.000	500.000	400.000	700.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	640.500	0.000	633.000	50.000	630.100	100.000	628.600	400.000	630.300	731.000
GR	631.100	918.000	630.700	1077.000	630.500	1106.000	623.300	1125.000	621.600	1126.000
GR	616.400	1138.000	616.300	1158.000	617.500	1185.000	619.500	1212.000	619.900	1243.000
GR	619.900	1269.000	620.900	1277.000	622.400	1282.000	629.500	1285.000	640.500	1300.000
NH	4.000	0.060	1150.000	0.034	1389.000	0.100	1513.000	0.100	1550.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 15

X1	58900.000	21.000	1150.000	1389.000	450.000	700.000	550.000	0.000	0.000	0.000
GR	640.600	0.000	633.000	50.000	632.000	100.000	632.200	1130.000	632.000	1143.000
GR	631.800	1147.000	631.500	1150.000	627.000	1153.000	622.700	1162.000	618.400	1183.000
GR	622.100	1201.000	621.700	1225.000	620.900	1257.000	618.700	1289.000	618.100	1317.000
GR	618.000	1342.000	619.600	1367.000	629.000	1389.000	629.000	1447.000	631.300	1513.000
GR	640.600	1550.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.120	32.000	0.040	44.000	0.035	200.000	0.120	800.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 16

X1	60000.000	17.000	44.000	200.000	1000.000	700.000	1100.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	641.400	0.000	631.000	32.000	630.500	36.000	628.800	38.000	628.000	44.000
GR	623.200	47.000	620.800	55.000	618.900	79.000	619.100	103.000	619.400	129.000
GR	620.700	154.000	621.200	168.000	623.300	175.000	626.500	187.000	632.600	200.000
GR	633.100	750.000	641.400	800.000	0.000	0.000	0.000	0.000	0.000	10.000

NH	3.000	0.093	144.000	0.028	422.000	0.089	543.000	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
		XSEC 17	SUBDIVISION ON LEFT BANK							
X1	62250.000	28.000	144.000	422.000	2400.000	1700.000	2225.000	0.000	0.000	0.000
GR	642.800	0.000	638.600	26.000	632.600	88.000	631.600	113.000	632.500	125.000
GR	632.900	144.000	630.900	153.000	625.400	159.000	624.200	161.000	622.000	173.000
GR	622.100	181.000	623.600	193.000	622.100	243.000	620.600	280.000	620.200	313.000
GR	620.700	350.000	621.800	365.000	624.300	384.000	625.000	394.000	624.200	399.000
GR	629.100	422.000	630.300	424.000	629.700	435.000	629.500	468.000	627.800	492.000
GR	629.000	518.000	637.300	534.000	641.600	543.000	0.000	0.000	0.000	0.000
NH	3.000	0.089	32.000	0.028	256.000	0.110	448.000	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	63120.000	22.000	32.000	256.000	970.000	970.000	970.000	0.000	0.000	0.000
GR	643.800	0.000	638.500	14.000	631.400	30.000	630.400	32.000	624.700	34.000
GR	623.000	39.000	619.700	50.000	619.800	82.000	621.500	117.000	621.800	152.000
GR	623.400	187.000	624.100	194.000	624.900	227.000	626.700	235.000	625.400	245.000
GR	625.800	251.000	633.100	256.000	634.000	265.000	633.700	298.000	633.400	322.000
GR	632.300	372.000	643.800	448.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	4.000	0.074	175.000	0.110	216.000	0.028	421.000	0.089	485.000	0.000
X1	65620.000	27.000	216.000	421.000	1900.000	1900.000	1900.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	20.000	0.000	470.000	0.000	0.000	0.000	0.000
GR	642.200	0.000	631.500	53.000	632.000	98.000	634.500	153.000	635.700	175.000
GR	634.000	196.000	633.000	205.000	629.800	216.000	626.100	219.000	624.900	230.000
GR	623.100	238.000	622.500	261.000	623.400	290.000	623.100	307.000	621.600	333.000
GR	620.700	363.000	623.000	397.000	625.200	408.000	628.300	421.000	630.100	425.000
GR	631.000	431.000	631.400	442.000	630.900	455.000	631.800	462.000	634.200	474.000
GR	637.700	479.000	642.200	485.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.074	10.000	0.030	59.000	0.028	295.000	0.110	455.000	0.000
		XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK								
X1	67420.000	21.000	59.000	295.000	2400.000	2500.000	2500.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	10.000	0.000	420.000	0.000	0.000	0.000	0.000
GR	642.900	0.000	638.600	10.000	634.000	20.000	633.200	32.000	632.500	54.000
GR	631.800	59.000	627.800	62.000	624.500	73.000	623.600	86.000	621.000	100.000
GR	619.300	129.000	620.900	154.000	623.200	194.000	624.000	218.000	626.100	267.000
GR	627.700	281.000	633.700	295.000	636.100	299.000	633.000	345.000	634.900	415.000
GR	642.900	455.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.063	270.000	0.028	518.000	0.074	575.000	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
		XSEC 21 US OF GREEN COTTAGE ON LEFT BANK								
X1	68970.000	25.000	270.000	518.000	1400.000	1700.000	1550.000	0.000	0.000	0.000
GR	643.500	0.000	640.700	10.000	637.400	124.000	636.700	212.000	635.500	246.000
GR	633.700	255.000	631.500	270.000	625.500	277.000	626.300	293.000	625.100	308.000
GR	625.600	320.000	624.900	336.000	623.300	346.000	622.700	363.000	623.900	385.000
GR	623.500	421.000	623.000	429.000	623.000	450.000	624.200	481.000	625.300	499.000
GR	626.600	505.000	628.300	518.000	633.700	529.000	636.400	550.000	648.500	575.000
NH	3.000	0.037	126.000	0.028	408.000	0.037	426.000	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
		XSEC 22 BELOW POWER LINE CROSSING N VALUES ARE ATYPICAL								
X1	70300.000	25.000	126.000	408.000	1300.000	1300.000	1330.000	0.000	0.000	0.000
GR	644.400	0.000	640.000	15.000	635.000	24.000	631.600	40.000	632.700	54.000
GR	631.200	73.000	634.100	113.000	634.200	123.000	633.800	126.000	631.700	136.000
GR	625.700	144.000	624.400	160.000	624.500	183.000	623.700	194.000	625.300	214.000
GR	626.400	266.000	625.900	300.000	624.100	307.000	624.100	336.000	624.400	359.000
GR	626.200	383.000	628.600	389.000	632.300	408.000	639.400	417.000	644.400	426.000
NH	4.000	0.089	30.000	0.033	98.000	0.028	323.000	0.074	375.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	71300.000	22.000	98.000	323.000	1000.000	1000.000	1000.000	0.000	0.000	0.000
GR	645.100	0.000	636.000	30.000	633.300	71.000	633.900	79.000	633.600	98.000
GR	631.700	101.000	629.900	108.000	627.100	111.000	625.100	114.000	624.600	144.000
GR	625.000	154.000	623.900	163.000	622.700	193.000	623.600	217.000	623.600	235.000
GR	624.400	271.000	625.300	300.000	626.000	311.000	630.200	323.000	635.800	333.000
GR	637.600	354.000	645.100	375.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	4.000	0.074	67.000	0.035	100.000	0.030	320.000	0.089	408.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	71900.000	25.000	100.000	320.000	500.000	650.000	600.000	0.000	0.000	0.000
GR	646.100	0.000	638.500	21.000	636.100	48.000	634.200	56.000	634.500	67.000
GR	632.700	69.000	631.400	88.000	630.600	99.000	630.000	100.000	627.700	103.000
GR	625.800	109.000	625.500	118.000	624.600	150.000	624.600	178.000	625.500	225.000
GR	626.100	274.000	625.800	291.000	627.100	313.000	630.500	320.000	632.700	335.000
GR	630.900	343.000	632.400	355.000	633.200	361.000	639.400	389.000	645.200	408.000
NH	4.000	0.074	66.000	0.031	311.000	0.028	757.000	0.059	767.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 25 BTJN BARBER AND KRING CABINS US OF PUB ACC SITE DS OF NEWYGC								
X1	73040.000	20.000	66.000	311.000	1200.000	1100.000	1140.000	0.000	0.000	0.000
GR	646.600	0.000	641.900	15.000	639.200	30.000	636.200	66.000	628.600	82.000
GR	626.400	124.000	625.600	147.000	627.300	215.000	627.200	268.000	628.000	301.000
GR	633.300	311.000	636.600	328.000	636.700	343.000	636.400	418.000	637.600	472.000
GR	639.500	526.000	641.300	559.000	644.800	620.000	650.800	757.000	655.800	767.000
NH	3.000	0.035	49.000	0.023	310.000	0.044	335.000	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
		XSEC 26 DS OF CO RD BRIG SEC BENT 45DEG RT OFF RD FILL AT STA 10 BENT 45DEG RT TO RD FILL AT STA 325								
X1	73590.000	21.000	49.000	310.000	660.000	500.000	550.000	0.000	0.000	0.000
GR	646.800	0.000	643.800	10.000	637.000	32.000	635.600	41.000	634.300	47.000
GR	632.900	49.000	628.800	65.000	624.100	82.000	626.000	105.000	626.800	113.000
GR	628.000	121.000	625.800	133.000	626.800	162.000	628.800	175.000	629.900	211.000
GR	626.600	244.000	627.000	272.000	628.400	304.000	632.400	310.000	632.700	325.000
GR	646.800	335.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.035	0.044	0.025	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
		XSEC 27 CENTER OF BRIG ELEC AT 650.5								
X1	73640.000	31.000	0.000	296.000	50.000	50.000	50.000	0.000	0.000	0.000

X2	0.000	0.000	0.000	650.500	652.000	0.000	0.000	0.000	0.000	0.000
GR	652.000	0.000	638.800	0.000	631.300	35.000	629.200	36.000	628.870	43.000
GR	625.700	60.000	625.400	80.000	626.500	90.000	628.500	95.000	629.500	100.000
GR	628.200	107.000	627.100	117.000	626.600	128.000	627.300	138.000	628.700	146.000
GR	652.000	146.000	652.000	152.000	628.700	152.000	629.300	163.000	628.800	167.000
GR	625.800	182.000	625.600	197.000	627.500	208.000	627.000	215.000	626.300	240.000
GR	627.000	250.000	625.800	264.000	633.000	275.000	632.900	290.000	634.800	296.000
GR	652.000	296.000	0.000	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	73660.000	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	650.500	652.000	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	73720.000	21.000	110.000	353.000	60.000	60.000	60.000	0.000	0.000	0.000
GR	653.300	0.000	647.000	44.000	641.700	71.000	634.800	88.000	633.600	99.000
GR	634.700	110.000	631.500	120.000	629.100	123.000	628.500	153.000	626.900	168.000
GR	635.800	202.000	626.700	220.000	625.300	240.000	626.700	278.000	627.300	306.000
GR	639.000	336.000	632.300	353.000	635.400	373.000	640.000	414.000	645.500	492.000
GR	650.000	523.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1

NH	4.000	0.110	80.000	0.059	826.000	0.025	1066.000	0.067	1075.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 29 SEWAGE TREATMENT PLANT IN IOB								
X1	75140.000	24.000	826.000	1066.000	1140.000	1440.000	1420.000	0.000	0.000	0.000
GR	645.200	0.000	640.400	80.000	638.400	170.000	636.000	286.000	636.700	390.000
GR	636.500	494.000	637.200	592.000	636.300	692.000	635.400	790.000	635.600	820.000
GR	635.600	826.000	632.600	838.000	630.600	843.000	630.100	850.000	628.700	857.000
GR	628.100	891.000	627.500	936.000	628.100	953.000	628.900	983.000	629.700	1048.000
GR	631.200	1063.000	634.500	1066.000	639.200	1068.000	646.700	1075.000	0.000	0.000
NC	0.074	0.074	0.025	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
		XSEC 29A AT USGS CABLE								
X1	75800.000	22.000	1005.000	1264.000	540.000	700.000	660.000	0.000	0.000	0.000
GR	636.000	1005.000	632.400	1011.000	631.700	1013.000	630.500	1019.000	628.500	1029.000
GR	628.800	1037.000	629.100	1048.000	629.200	1062.000	630.000	1080.000	629.900	1105.000
GR	629.400	1121.000	629.900	1139.000	629.700	1159.000	629.300	1177.000	629.100	1194.000
GR	628.900	1208.000	628.200	1227.000	628.700	1229.000	631.700	1241.000	633.700	1246.000
GR	633.300	1255.000	635.200	1264.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.030	16.000	0.025	57.000	0.028	327.000	0.075	400.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 29B AT USGS GAGE 1976 STAGE IS 639.2 1986 STAGE 645.4								
X1	76350.000	24.000	24.000	333.000	550.000	550.000	550.000	0.000	0.000	0.000
GR	648.000	0.000	638.800	10.000	634.700	24.000	632.300	33.000	630.800	41.000
GR	630.900	65.000	629.800	86.000	630.600	103.000	631.100	110.000	630.900	132.000
GR	630.900	133.000	630.900	134.000	631.200	141.000	631.200	181.000	630.800	218.000
GR	631.200	243.000	630.700	255.000	629.800	284.000	631.100	306.000	632.500	326.000
GR	633.000	332.000	634.600	333.000	636.500	346.000	646.500	356.000	0.000	0.000

NC	0.074	0.074	0.025	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
		XSEC 30	1975 HWM IS 638.6		1976 HWM IS 639.2					
X1	76760.000	27.000	57.000	327.000	350.000	450.000	410.000	0.000	0.000	0.000
GR	654.000	0.000	645.800	16.000	638.600	32.000	637.900	43.000	636.500	53.000
GR	633.200	62.000	631.000	77.000	629.000	84.000	629.000	98.000	629.600	118.000
GR	629.000	147.000	628.300	167.000	630.400	188.000	633.000	197.000	632.600	203.000
GR	627.600	217.000	629.000	221.000	629.800	232.000	629.600	279.000	631.700	287.000
GR	631.100	298.000	633.300	315.000	636.000	327.000	638.300	341.000	636.900	355.000
GR	638.900	360.000	651.300	400.000	0.000	0.000	0.000	0.000	0.000	0.000
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1

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

*PROF 1

CCHV= 0.100 CEHV= 0.300
1490 NH CARD USED
*SECNO 0.100

3470 ENCROACHMENT STATIONS= 8.0 818.0 TYPE= 1 TARGET= 810.000

XSEC 61

0.10	20.59	620.59	0.00	621.00	620.91	0.32	0.00	0.00	613.20
23100.	22.	18744.	4334.	55.	3756.	4250.	0.	0.	609.60
0.00	0.40	4.99	1.02	0.135	0.031	0.091	0.000	600.00	8.00
0.000251	0.	0.	0.	0	0	3	0.00	810.00	818.00

0
1490 NH CARD USED
*SECNO 1920.000

3470 ENCROACHMENT STATIONS= 22.0 763.0 TYPE= 1 TARGET= 741.000
SEC 61 MOVED US INVERT ADJ BY .94FT FLOOD FLOW SHIFTED FROM
ROB AS NOTED ON XSEC 61 TO APPROX AREA IN LOB FOR THIS XSEC

1920.00	20.12	621.06	0.00	0.00	621.49	0.143	0.55	0.03	614.14
23100.	0.	20393.	2707.	0.	3655.	3657.	323.	32.	610.54
0.10	0.00	5.58	0.74	0.000	0.031	0.140	0.000	600.94	22.00
0.000339	2170.	1920.	1740.	1	0	0	0.00	741.00	763.00

0
1490 NH CARD USED
*SECNO 3050.000

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000

XSEC 62

3050.00	20.05	621.45	0.00	0.00	621.83	0.38	0.33	0.00	608.60
23100.	174.	22806.	119.	138.	4582.	112.	483.	46.	609.00
0.17	1.27	4.98	1.06	0.067	0.031	0.067	0.000	601.40	17.00
0.000255	1200.	1130.	1200.	2	0	0	0.00	311.00	328.00

0

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1490 NH CARD USED
*SECNO 3051.000

3470 ENCROACHMENT STATIONS=       17.0      328.0  TYPE=      1  TARGET=      311.000
        W EDGE OF BRIDGE DECK AT BRIDGETON  1976 HWM 615.7
  3051.00     20.07    621.47      0.00      0.00    621.83      0.36      0.00      0.00    608.60
   23100.      502.    22255.      344.      138.     4588.      113.      483.       46.    609.00
     0.17      3.64      4.85      3.05     0.023     0.031     0.023     0.000    601.40     17.00
 0.000242        1.        1.        1.         2         0         0      0.00    311.00    328.00
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WIN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBE     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST


SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.90      1.25      2.60   1000.00    260.00      8.00   9000.00      1.43    604.50    604.50

*SECNO 3100.000
CLASS A LOW FLOW

3420 BRIDGE W.S.=     621.45 BRIDGE VELOCITY=       4.93      CALCULATED CHANNEL AREA=      4682.

 EGPRS      EGLUC      H3        QWEIR      QLOW      DAREA   TRAPEZOID      ELLC      ELTRD
                                                                AREA
     0.00     621.84     0.01         0.    23100.     9000.     9152.      635.40    638.00


3470 ENCROACHMENT STATIONS=       17.0      328.0  TYPE=      1  TARGET=      311.000
  3100.00     20.08    621.48      0.00      0.00    621.84      0.36      0.01      0.00    608.60
   23100.      502.    22254.      344.      138.     4591.      113.      489.       46.    609.00
     0.17      3.63      4.85      3.05     0.023     0.031     0.023     0.000    601.40     17.00
 0.000241       49.       49.       49.         0         0         0      0.00    311.00    328.00
0
*SECNO 3101.000

3470 ENCROACHMENT STATIONS=       17.0      328.0  TYPE=      1  TARGET=      311.000
  3101.00     20.06    621.46      0.00      0.00    621.85      0.39      0.00      0.01    608.60
   23100.       59.    22955.       86.      138.     4585.      113.      489.       46.    609.00
     0.17      0.43      5.01      0.76     0.202     0.031     0.095     0.000    601.40     17.00
 0.000258        1.        1.        1.         2         0         0      0.00    311.00    328.00
0
1490 NH CARD USED
*SECNO 4680.000
                XSEC 63
  4680.00     18.47    621.97      0.00      0.00    622.18      0.22      0.32      0.02    608.50
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   23100.     512.   20438.    2150.     399.    5189.    1568.     706.      63.    616.00
     0.29     1.28     3.94     1.37    0.061    0.031    0.048    0.000   603.50      6.58
 0.000163    1500.    1579.    1600.        2        0        0     0.00   616.39    622.97
0
 1490 NH CARD USED
 *SECNO 7200.000
        XSEC 64          XSEC CROSSES US OF OLD ROCK CRIBBING
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

  7200.00    20.06    622.36      0.00      0.00    622.75      0.39      0.52      0.05    619.00
   23100.    1739.    21122.      240.     3712.     4023.      149.     1126.      102.    610.40
     0.44     0.47      5.25      1.60     0.194     0.031     0.054     0.000   602.30      6.75
 0.000270    2200.     2520.     2500.         2         0         0      0.00   805.72    812.47
0
 1490 NH CARD USED
 *SECNO 8850.000
        XSEC 65   KSEC CROSSES 100FT US OF BOAT LAUNCH
  8850.00    18.76    622.96      0.00      0.00    623.18      0.22      0.41      0.02    619.30
   23100.       7.    18895.     4198.       17.     4534.     5576.     1453.      132.    619.80
     0.56     0.41      4.17      0.75     0.067     0.034     0.138     0.000   604.20     21.96
 0.000234    1400.     1650.     1600.         2         0         0      0.00   895.75    917.71
0
 1490 NH CARD USED
 *SECNO 10300.000
                XSEC 66
 10300.00    20.10    623.40      0.00      0.00    623.50      0.10      0.30      0.01    611.10
   23100.     236.    15115.     7749.      174.     5014.     7906.     1723.      155.    620.60
     0.71     1.36      3.01      0.98     0.067     0.047     0.114     0.000   603.30     15.24
 0.000251    1500.     1450.      700.         2         0         0      0.00  1201.33   1216.56
0
 1490 NH CARD USED
 *SECNO 11800.000
                XSEC 67
 11800.00    19.31    623.71      0.00      0.00    623.97      0.25      0.42      0.05    619.60
   23100.    4245.    18720.      135.     6794.     4169.      254.     2103.      189.    610.70
     0.82     0.62      4.49      0.53     0.202     0.041     0.202     0.000   604.40     51.87
 0.000357    1600.     1500.     1000.         1         0         0      0.00  1046.17   1098.04
0
 *SECNO 12600.000
 12600.00    19.60    624.00      0.00      0.00    624.25      0.24      0.28      0.00    619.60
   23100.    4323.    18639.      139.     7009.     4237.      265.     2312.      209.    610.70
     0.88     0.62      4.40      0.52     0.202     0.041     0.202     0.000   604.40     46.98
 0.000336     800.      800.      800.         2         0         0      0.00  1051.90   1098.88
0
 1490 NH CARD USED
 *SECNO 14100.000
                XSEC 68
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1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
18100.00	19.38	624.48	0.00	0.00	624.78	0.31	0.52	0.02	611.80
23100.	484.	21151.	1465.	627.	4561.	2612.	2595.	234.	618.40
0.97	0.77	4.64	0.56	0.135	0.041	0.202	0.000	605.10	7.74
0.000383	900.	1500.	1600.	1	0	0	0.00	726.99	734.73

0
1490 NH CARD USED
*SECNO 16700.000

XSEC 69

16700.00	20.60	625.20	0.00	0.00	625.49	0.29	0.71	0.00	621.80
23100.	4112.	18885.	103.	7857.	3982.	109.	2939.	261.	613.80
1.14	0.52	4.74	0.94	0.202	0.029	0.081	0.000	604.60	9.53
0.000243	300.	2600.	1900.	2	0	0	0.00	1129.53	1139.06

0
*SECNO 18990.000

XSEC 1 FROM SUBDIVISION FILE F184 22 12

18990.00	18.90	625.70	0.00	0.00	625.51	0.21	0.41	0.01	611.80
23100.	1365.	21320.	415.	1035.	5606.	544.	3326.	294.	612.70
1.30	1.32	3.80	0.76	0.054	0.034	0.081	0.000	606.80	112.83
0.000163	1250.	2190.	2500.	2	0	0	0.00	552.56	665.39

0
1490 NH CARD USED
*SECNO 19870.000

3265 DIVIDED FLOW

XSEC 70 THROUGH SUBDIV ON LEFT BANK CHANNEL INEFFECTIVE
1976 HWM ON BASEMENT WALL 619.8 HWM 800FT DS 619.98

19870.00	20.24	625.84	0.00	0.00	626.15	0.31	0.21	0.03	612.40
23100.	6849.	16076.	175.	3116.	3119.	329.	3481.	308.	612.80
1.36	2.20	5.15	0.53	0.041	0.034	0.202	0.000	605.60	7.83
0.000294	950.	1000.	980.	2	0	0	0.00	707.30	748.13

0
1490 NH CARD USED
*SECNO 21370.000

XSEC 71 OLDER COTTAGES ON RT BANK SEAWALL PROTECTS RT BANK

21370.00	20.10	626.30	0.00	0.00	626.52	0.23	0.37	0.01	612.40
23100.	1775.	15666.	5659.	2201.	3463.	3539.	3733.	331.	619.80
1.48	0.81	4.52	1.60	0.137	0.033	0.063	0.000	606.20	7.63
0.000224	1100.	1500.	1600.	2	0	0	0.00	782.26	789.90

0
1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV

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

1490 NH CARD USED
*SECNO 24985.000

XSEC 72

24985.00	19.79	627.29	0.00	0.00	627.50	0.21	0.98	0.00	620.30
23100.	3115.	16265.	3720.	4668.	3761.	2010.	4553.	401.	614.70
1.77	0.67	4.32	1.85	0.202	0.041	0.062	0.000	607.50	7.75
0.000332	3700.	3615.	3600.	2	0	0	0.00	908.02	915.77

0
1490 NH CARD USED
*SECNO 28235.000

XSEC 73

28235.00	19.08	628.38	0.00	0.00	628.69	0.31	1.16	0.03	623.50
23100.	1802.	21140.	157.	2871.	4552.	159.	5140.	451.	616.70
1.97	0.63	4.64	0.99	0.199	0.041	0.108	0.000	609.30	6.93
0.000419	2300.	3200.	3300.	2	0	0	0.00	676.46	683.40

0
1490 NH CARD USED
*SECNO 29860.000

XSEC 74 IN LINE WITH E SIDE OF COTTAGE ON TOP OF LFT BANK
JUST US OF POWERLINE

29860.00	19.70	629.00	0.00	0.00	629.44	0.43	0.71	0.04	616.20
23100.	145.	21967.	988.	275.	4064.	1691.	5391.	473.	615.20
2.06	0.53	5.41	0.58	0.202	0.041	0.202	0.000	609.30	8.04
0.000461	1500.	1625.	1700.	2	0	0	0.00	513.48	521.52

0
1490 NH CARD USED
*SECNO 31660.000

XSEC 75

31660.00	19.65	629.85	0.00	0.00	630.14	0.29	0.69	0.01	623.30
23100.	965.	21466.	670.	1799.	4783.	631.	5662.	496.	617.10
2.18	0.54	4.49	1.06	0.185	0.041	0.108	0.000	610.20	13.45
0.000325	1700.	1800.	1800.	2	0	0	0.00	612.71	626.16

0
1490 NH CARD USED
*SECNO 35425.000

3470 ENCHOACHMENT STATIONS= 20.0 790.0 TYPE= 1 TARGET= 770.000

XSEC 76

35425.00	21.53	631.33	0.00	0.00	631.56	0.23	1.41	0.01	621.20
23100.	44.	18287.	4769.	98.	4291.	5237.	6390.	557.	625.30
2.47	0.45	4.26	0.91	0.209	0.047	0.165	0.000	609.80	20.00
0.000443	4300.	3760.	3600.	2	0	0	0.00	770.00	790.00

0
1

SECNO	DEPTH	CWSEL	CHWS	WSELR	EG	HV	HL	QLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	THA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA

SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO 37670.000

3470 ENCROACHMENT STATIONS= 20.0 1035.0 TYPE= 1 TARGET= 1015.000
XSEC 77

37670.00	24.27	632.27	0.00	0.00	632.51	0.24	0.95	0.01	622.70
23100.	7345.	15715.	40.	9214.	3296.	90.	6909.	598.	623.70
2.64	0.80	4.77	0.44	0.203	0.047	0.203	0.000	608.00	20.00
0.000456	1900.	2150.	2100.	2	0	0	0.00	1015.00	1035.00

0
1490 NH CARD USED
*SECNO 38970.000

3470 ENCROACHMENT STATIONS= 20.0 760.0 TYPE= 1 TARGET= 740.000
XSEC 78 800FT DS OF ISLAND, POWERLINE CROSSING AND BOAT LAUNCH
WEST END OF OLD GRAVEL OPERATION

38970.00	19.81	632.71	0.00	0.00	632.86	0.15	0.34	0.01	621.80
23100.	44.	18467.	4589.	88.	5347.	4893.	7187.	618.	624.80
2.75	0.50	3.45	0.94	0.135	0.041	0.112	0.000	612.90	20.00
0.000194	700.	1300.	1300.	2	0	0	0.00	740.00	760.00

0
1490 NH CARD USED
*SECNO 42170.000

3470 ENCROACHMENT STATIONS= 15.0 510.0 TYPE= 1 TARGET= 495.000
XSEC 1

42170.00	21.06	633.16	0.00	0.00	633.73	0.58	0.75	0.13	622.40
23100.	36.	20139.	2924.	89.	3089.	2982.	7775.	662.	625.90
2.90	0.41	6.52	0.98	0.202	0.027	0.114	0.000	612.10	15.00
0.000292	3600.	3200.	3000.	2	0	0	0.00	495.00	510.00

0
1490 NH CARD USED
*SECNO 43770.000
XSEC 2

43770.00	20.70	633.80	0.00	0.00	634.27	0.47	0.52	0.01	622.30
23100.	392.	19344.	3365.	371.	3242.	2622.	8014.	681.	618.30
2.99	1.06	5.97	1.28	0.102	0.034	0.110	0.000	613.10	0.70
0.000357	1200.	1600.	1800.	2	0	0	0.00	469.82	470.52

0
1

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

1490 NH CARD USED
*SECNO 44820.000
XSEC 3 SECTION THRU ISLAND NE OF OLD GRAVEL OPERATION

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 44820.00    21.76   634.46     0.00     0.00   634.67     0.21     0.37     0.03   624.70
   23100.    1255.   21058.     787.    1982.    5524.    1370.    8199.     695.   625.30
     3.07     0.63     3.81     0.57    0.202    0.048    0.202    0.000   612.70     1.08
 0.000352    1100.    1050.    1100.        2        0        0     0.00   699.21   700.28
0
 1490 NH CARD USED
 *SECNO 45470.000
                XSEC 4  OLD WOOD PILING ALONG EACH BANK
 45470.00    21.23   634.63     0.00     0.00   634.99     0.36     0.28     0.05   627.70
   23100.    1413.   21444.     243.    2031.    4265.     463.    8311.     704.   624.50
     3.11     0.70     5.03     0.52    0.202    0.047    0.202    0.000   613.40     2.07
 0.000532     550.     650.     650.        2        0        0     0.00   577.67   579.75
0
 1490 NH CARD USED
 *SECNO 46870.000
                XSEC 5  HILL AT RIGHT BANK IS ERODING
 46870.00    22.72   635.32     0.00     0.00   635.74     0.42     0.73     0.02   622.10
   23100.    2525.   20146.     429.    2236.    3642.     243.    8505.     720.   621.30
     3.18     1.13     5.53     1.77    0.135    0.047    0.088    0.000   612.60    14.36
 0.000592    1280.    1300.    1575.        2        0        0     0.00   481.32   495.68
0
 1490 NH CARD USED
 *SECNO 48720.000
                XSEC 6
 48720.00    19.93   636.33     0.00     0.00   636.54     0.21     0.78     0.02   626.80
   23100.    1888.   19535.    1677.     760.    5007.    1391.    8778.     739.   620.60
     3.32     2.48     3.90     1.21    0.046    0.049    0.135    0.000   616.40     2.02
 0.000323    1500.    1850.    2000.        0        0        0     0.00   454.07   456.09
0
 1490 NH CARD USED
 *SECNO 50220.000
 3280 CROSS SECTION  50220.00 EXTENDED      0.28 FEET

                XSEC 7
 50220.00    23.58   636.78     0.00     0.00   636.90     0.12     0.35     0.01   626.30
   23100.   12313.   10390.     397.    5242.    3287.     327.    9036.     758.   623.10
     3.47     2.35     3.16     1.21    0.041    0.049    0.067    0.000   613.20     0.00
 0.000195    1300.    1500.    1300.        2        0        0     0.00   738.00   738.00
0
1
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   SECNO     DEPTH     CWSEL     CRLWS     USELK     EG        HV        HL        QLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       KNCH      XNR       WIN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 1490 NH CARD USED
 *SECNO 51945.000

 3265 DIVIDED FLOW

 3280 CROSS SECTION  51945.00 EXTENDED      0.07 FEET
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          XSEC 8    VICS CAMPING ON RIGHT BANK  CAMPGROUND IS ON A HILL
                 WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.
 51945.00    22.26   637.16     0.00     0.00   637.46     0.30     0.50     0.06   637.60
   23100.     215.   16938.    5948.     137.    3310.    7987.    9390.     792.   629.40
     3.58     1.57     5.12     0.74    0.027    0.047    0.202    0.000   614.90     0.00
 0.000611    1300.    1725.    1500.        1        0        0     0.00  1268.10  1282.66
0
 1490 NH CARD USED
 *SECNO 53000.000

 3470 ENCROACHMENT STATIONS=      350.0    1700.0  TYPE=      1  TARGET=    -350.000
                 XSEC 9  SECTION THROUGH ISLAND US OF VICS
            XSEC BENT 30DEG LFT AT 887  20DEG RT AT STA 1208
 53000.00    20.49   637.59     0.00     0.00   637.71     0.11     0.23     0.02   625.00
   23100.    4080.   17332.    1688.    6514.    5554.    4133.    9658.     815.   623.00
     3.69     0.63     3.12     0.41    0.139    0.036    0.169    0.000   617.10   350.00
 0.000126    1200.    1055.     500.        2        0        0     0.00  1345.18  1695.18
0
 FLOW DISTRIBUTION FOR SECNO=  53000.00          CWSEL=    637.59

 STA=      350.      650.      760.      872.      887.     1192.     1650.     1695.
   PER Q=      9.1       3.3       3.2       2.0      75.0       7.1       0.2
    AREA=   3843.7    1373.1    1117.6     179.9    5554.1    3941.3     191.9
     VEL=      0.5       0.6       0.7       2.6       3.1       0.4       0.3

 1490 NH CARD USED
 *SECNO 53700.000

 3470 ENCROACHMENT STATIONS=      300.0    1740.0  TYPE=      1  TARGET=    -300.000
                 XSEC 10  REDWOOD COTTAGE ON LEFT BANK  1976 HWM 630.5
                 1986 HWM 638    XSEC BENT 45DEG LEFT AT STA 1360
 53700.00    21.06   637.66     0.00     0.00   637.80     0.14     0.09     0.01   626.20
   23100.    9761.   13329.      10.    15214.    3408.      37.    9866.     832.   629.20
     3.76     0.64     3.91     0.26    0.153    0.034    0.169    0.000   616.60   300.00
 0.000158     400.     700.     750.        2        0        0     0.00  1438.64  1738.64
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 FLOW DISTRIBUTION FOR SECNO=  53700.00          CWSEL=    637.66

 STA=      300.     1340.     1420.     1557.     1730.     1739.
   PER Q=     35.4       3.8       3.1      57.7       0.0
    AREA=  13169.6     806.5    1237.6    3407.8      36.7
     VEL=      0.6       1.1       0.6       3.9       0.3

 1490 NH CARD USED
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 *SECNO 54600.000

 3470 ENCROACHMENT STATIONS=      750.0    2250.0  TYPE=     1  TARGET=    -750.000
                 XSEC 10A NEAR WHITE COTTAGE(BRONKEMA)  1976HWM 630.9 IN GARAGE
                 XSEC BENT 5DEG RT AT STA 139.9  RESTRICTED FOR HIGH GROUND AT
                 XSEC 11 US      1986 HWM 638
  54600.00     23.34    637.84      0.00      0.00    637.92      0.08      0.11      0.01    628.70
    23100.    12359.    10421.      319.    14402.    3118.      221.    10106.      850.     621.00
      3.86      0.86      3.34      1.45     0.111    0.041     0.054     0.000    614.50    750.00
  0.000162     500.      900.     1000.         2        0         0      0.00   1497.98   2247.98
0
 FLOW DISTRIBUTION FOR SECNO=  54600.00          CWSEL=    637.84

 STA=      750.      949.     1352.     1508.     1597.     1755.     1846.     1888.     1957.     2041.     2062.     2221.     2248.
   PER Q=      4.8       9.0       5.9       4.9       6.3       6.9       3.7       7.0       3.2       1.8      45.1       1.4
    AREA=   2819.7    5308.3    1469.3     875.5    1280.2     795.5     362.8     648.8     664.4     177.2    3118.3     220.5
     VEL=      0.4       0.4       0.9       1.3       1.1       2.0       2.4       2.5       1.1       2.3       3.3       1.4

 1490 NH CARD USED
 *SECNO 55080.000
                 XSEC 10B LOB IS FELCH ROAD
  55080.00     23.36    637.86      0.00      0.00    637.98      0.12      0.05      0.01    621.00
    23100.    13762.     9056.      282.     5154.    2931.      219.    10198.      858.     621.30
      3.89      2.67      3.09      1.29     0.023    0.041     0.054     0.000    614.50     31.02
  0.000130     250.      480.      550.         2        0         0      0.00    956.99    988.02
0
 1490 NH CARD USED
 *SECNO 55800.000

 3470 ENCROACHMENT STATIONS=        0.0    1900.0  TYPE=     1  TARGET=    1899.999
                 XSEC 11  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
  55800.00     21.63    637.83      0.00      0.00    638.17      0.34      0.12      0.06    627.70
    23100.        0.    17157.     5943.        0.    3194.     5634.    10288.      866.     628.60
      3.92      0.00      5.37      1.05     0.000    0.039     0.123     0.000    616.20   1000.00
  0.000511     150.      720.      450.         2        0         0      0.00    900.00   1900.00
0
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        BV        HL        CLOSS   BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       HTN       ELMIN       SSTA
    SLOPE     KLOBL     KLCH      KLOBR     ITRIAL    IDC       ICONT     CORAR     TCPWID      ENDST

 FLOW DISTRIBUTION FOR SECNO=  55800.00          CWSEL=    637.83

 STA=     1000.     1169.     1172.     1185.     1287.     1320.     1454.     1546.     1651.     1819.     1900.
   PER Q=     74.3       0.1       0.5       2.2       3.6       5.8       3.5       0.0       6.6       3.4
    AREA=   3191.9      25.4     102.9     407.1     682.3    1075.9     688.5     743.3    1273.2     661.0
     VEL=      5.4       1.2       1.2       1.2       1.2       1.2       1.2       0.0       1.2       1.2

 1490 NH CARD USED
 *SECNO 56800.000
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3470 ENCROACHMENT STATIONS= 0.0 1630.0 TYPE= 1 TARGET= 1629.999
XSEC 12

56800.00	23.73	638.33	0.00	0.00	638.46	0.13	0.27	0.02	621.70
23100.	181.	13017.	9902.	165.	3499.	11683.	10377.	872.	630.00
4.00	1.10	3.72	0.85	0.094	0.048	0.129	0.000	614.60	2.03
0.000322	1200.	1000.	50.	2	0	0	0.00	1627.97	1630.00

0
FLOW DISTRIBUTION FOR SECNO= 56800.00 CWSEL= 638.33

STA=	2.	22.	222.	350.	457.	660.	758.	865.	958.	1093.	1227.	1424.	1592.
PER Q=	0.8	56.3	5.2	4.4	3.2	3.4	4.1	3.6	4.1	4.1	5.1	4.7	
AREA=	165.0	3499.1	1135.8	950.3	1585.0	791.9	918.2	802.7	1143.9	1143.2	1525.7	1357.6	
VEL=	1.1	3.7	1.1	1.1	0.5	1.0	1.0	1.0	0.8	0.8	0.8	0.8	

STA=	1592.	1630.
PER Q=	1.0	
AREA=	328.5	
VEL=	0.7	

1490 NH CARD USED
*SECNO 57650.000

3470 ENCROACHMENT STATIONS= 0.0 1910.0 TYPE= 1 TARGET= 1909.999
XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
1976 HWM 631.9

57650.00	21.11	638.51	0.00	0.00	638.56	0.04	0.09	0.01	622.00
23100.	7952.	11468.	3680.	7533.	5253.	6147.	10517.	883.	626.50
4.10	1.06	2.18	0.60	0.061	0.043	0.103	0.000	617.40	4.44
0.000102	500.	850.	50.	1	0	0	0.00	1905.56	1910.00

0
FLOW DISTRIBUTION FOR SECNO= 57650.00 CWSEL= 638.51

STA=	4.	845.	857.	1180.	1380.	1514.	1879.	1910.
PER Q=	33.6	0.8	49.6	4.7	4.3	6.3	0.6	
AREA=	7378.4	155.0	5252.9	1752.9	1168.4	2952.1	273.8	
VEL=	1.1	1.2	2.2	0.6	0.9	0.5	0.5	

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	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	BIMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO 58350.000

XSEC 14 XSEC BENT 15DEG LEFT AT STA 1105 ABANDD TRAILED PARK IN LOE

58350.00	22.27	638.57	0.00	0.00	638.65	0.08	0.08	0.01	630.50
23100.	12748.	10338.	14.	9162.	3382.	56.	10711.	902.	629.50
4.18	1.39	3.06	0.25	0.065	0.049	0.202	0.000	616.30	12.86
0.000211	500.	700.	400.	2	0	0	0.00	1284.51	1297.37

0

FLOW DISTRIBUTION FOR SECNO= 58350.00 CWSEL= 638.57

STA=	13.	400.	731.	918.	1077.	1106.	1285.	1297.
PER Q=	19.6	19.0	8.4	6.8	1.3	44.8	0.1	
AREA=	3220.6	3018.9	1471.8	1219.6	231.2	3382.4	56.1	
VEL=	1.4	1.5	1.3	1.3	1.3	3.1	0.3	

1490 NH CARD USED
*SECNO 58900.000

XSEC 15

58900.00	20.66	638.66	0.00	0.00	638.78	0.12	0.12	0.01	631.50
23100.	7324.	14888.	888.	7303.	4320.	1230.	10855.	917.	629.00
4.23	1.00	3.45	0.72	0.081	0.046	0.135	0.000	618.00	12.77
0.000247	450.	550.	700.	0	0	0	0.00	1529.51	1542.28

0
1490 NH CARD USED
*SECNO 60000.000

3301 HV CHANGED MORE THAN HVINS

XSEC 16

60000.00	19.88	638.78	0.00	0.00	639.42	0.64	0.48	0.16	628.00
23100.	525.	19196.	3379.	206.	2730.	3356.	11067.	942.	632.60
4.28	2.55	7.03	1.01	0.068	0.047	0.162	0.000	618.90	8.07
0.001149	1000.	1100.	700.	2	0	0	0.00	776.12	784.19

0
FLOW DISTRIBUTION FOR SECNO= 60000.00 CWSEL= 638.78

STA=	8.	44.	200.	750.	784.
PER Q=	2.3	83.1	14.4	0.3	
AREA=	205.6	2730.1	3259.2	97.0	
VEL=	2.6	7.0	1.3	0.6	

1

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

1490 NH CARD USED
*SECNO 62250.000

XSEC 17 SUBDIVISION ON LEFT BANK

62250.00	20.07	640.27	0.00	0.00	640.55	0.28	1.10	0.04	632.90
23100.	516.	21388.	1196.	745.	4861.	1197.	11376.	971.	629.10
4.42	0.69	4.40	1.00	0.126	0.038	0.120	0.000	620.20	15.65
0.000281	2400.	2225.	1700.	2	0	0	0.00	624.57	640.22

0
1490 NH CARD USED
*SECNO 63120.000

63120.00	20.78	640.49	0.00	0.00	640.94	0.46	0.34	0.05	630.40
23100.	91.	22238.	771.	113.	4018.	1051.	11509.	981.	633.10

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     4.48      0.80      5.54      0.73     0.120     0.038     0.148     0.000    619.70      8.76
 0.000447      970.      970.      970.         2         0         0      0.00    417.33    426.09
0
 1490 NH CARD USED
 *SECNO 65620.000

 3470 ENCROACHMENT STATIONS=      20.0     470.0  TYPE=      1  TARGET=     450.000
  65620.00     20.64    641.34      0.00      0.00    641.77      0.43      0.82      0.00    629.80
     23100.     1740.     20803.      557.      1544.     3761.      497.     11748.     1000.    628.30
      4.58      1.13      5.53      1.12     0.107     0.038     0.120     0.000    620.70     20.00
  0.000416      1900.     1900.     1900.         2         0         0      0.00    450.00    470.00
0
 1490 NH CARD USED
 *SECNO 67420.000

 3470 ENCROACHMENT STATIONS=      10.0     420.0  TYPE=      1  TARGET=     410.000
                XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK
  67420.00     23.03    642.33      0.00      0.00    642.66      0.34      0.89      0.01    631.80
     23100.     1140.     21258.      702.      424.     4418.     1009.     12081.     1025.    633.70
      4.73      2.69      4.81      0.70     0.040     0.038     0.149     0.000    619.30     10.00
  0.000309      2400.     2500.     2500.         2         0         0      0.00    410.00    420.00
0
 1490 NH CARD USED
 *SECNO 68970.000
                XSEC 21 US OF GREEN COTTAGE ON LEFT BANK
  68970.00     20.12    642.82      0.00      0.00    643.14      0.32      0.47      0.00    631.50
     23100.     1360.     21375.      364.      1401.     4557.      366.     12296.     1042.    628.30
      4.83      0.97      4.69      1.00     0.085     0.038     0.100     0.000    622.70      2.44
  0.000298      1400.     1550.     1700.         2         0         0      0.00    570.16    572.60
0
1
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    SECNO      DEPTH     CWSEL     CRIWS     WSELA      EG        EV        HL       OLOSS    BANK ELEV
    Q          QLOB      QCH       QROB      ALOB       ACH       AROB      VOL      TWA    LEFT/RIGHT
    TIME       VLOB      VCH       VROB      XNL        XNCH      XNR       WTN      ELMIN       SSTA
    SLOPE      XLOBL     XLCH      XLOBR     ITRIAL     IDC       ICONT     CORAR    TCPWID      ENDST


 1490 NH CARD USED
 *SECNO 70300.000
                XSEC 22 BELOW POWER LINE CROSSING  N VALUES ARE ATYPICAL
  70300.00     19.56    643.26      0.00      0.00    643.51      0.25      0.36      0.01    633.80
     23100.     2520.     20468.      111.      1143.     4908.      80.     12485.     1057.    632.30
      4.92      2.21      4.17      1.39     0.050     0.038     0.050     0.000    623.70      3.89
  0.000254      1300.     1330.     1300.         2         0         0      0.00    420.05    423.94
0
 1490 NH CARD USED
 *SECNO 71300.000
  71300.00     20.77    643.47      0.00      0.00    643.83      0.36      0.29      0.03    633.60
     23100.     1722.     21039.      288.      717.     4206.      295.     12616.     1066.    630.20
      4.98      2.40      5.01      0.98     0.047     0.038     0.100     0.000    622.70      5.38
  0.000334      1000.     1000.     1000.         2         0         0      0.00    365.04    370.43
0
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 1490 NH CARD USED
 *SECNO 71900.000
  71900.00     19.08    643.68      0.00      0.00    644.06      0.37      0.22      0.00    630.00
    23100.     1738.    20518.     844.      774.     3979.     723.     12688.     1071.     630.50
      5.01      2.24      5.16      1.17     0.060     0.040     0.120     0.000    624.60      6.68
  0.000421     500.      600.      650.         2         0         0      0.00    396.34    403.03
0
 1490 NH CARD USED
 *SECNO 73040.000
          KSEC 25 BTON BARBER AND KRING CABINS US OF PUB ACC SITE DS OF NEWYGO
  73040.00     18.65    644.25      0.00      0.00    644.51      0.26      0.45      0.01    636.20
    23100.     274.     18132.     4693.     300.     4110.     1752.     12840.     1084.     633.30
      5.09      0.91      4.41      2.68     0.100     0.042     0.038     0.000    625.60      7.49
  0.000365     1200.     1140.     1100.         2         0         0      0.00    602.96    610.45
0
 1490 NH CARD USED
 *SECNO 73590.000
          KSEC 26 DS OF CO RD BRDG  SEC BENT 45DEG RT OFF RD FILL AT STA 10
            BENT 45DEG RT TO RD FILL AT STA 325
  73590.00     20.27    644.37      0.00      0.00    644.75      0.38      0.21      0.04    632.90
    23100.     523.     22068.     508.      239.     4377.     226.     12909.     1090.     632.40
      5.12      2.19      5.04      2.25     0.047     0.038     0.059     0.000    624.10      8.09
  0.000389     660.      550.      500.         2         0         0      0.00    325.19    333.28
0
1
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    SECNO      DEPTH     CHSIL     CRIHS     RSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q          QLOB      QCH       QROB      ALCB      ACH       AROB      VCL       TRA    LEFT/RIGHT
    TIME       VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
    SLOPE      XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     ICPWID     ENDST

    *SECNO 73640.000

    3265 DIVIDED FLOW

    3370 NORMAL BRIDGE,NRD=   0 MIN ELTRD=   652.00 MAX ELLC=   650.50

                     XSEC 27 CENTER OF BRDG    ELLC AT 650.5
     73640.00     18.99    644.39      0.00      0.00    644.78      0.39      0.02      0.00    652.00
       23100.       0.     23100.       0.        0.     4593.       0.     12915.     1090.     652.00
         5.13      0.00      5.03      0.00     0.000     0.034     0.000     0.000    625.40      0.00
     0.000410      50.       50.       50.         0         0         0      0.00    290.00    296.00
0
    *SECNO 73660.000

    3265 DIVIDED FLOW

    3370 NORMAL BRIDGE,NRD=   0 MIN ELTRD=   652.00 MAX ELLC=   650.50

     73660.00     18.99    644.39      0.00      0.00    644.79      0.39      0.01      0.00    652.00
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   23100.       0.    23100.       0.       0.    4593.       0.   12917.    1090.    652.00
     5.13     0.00     5.03     0.00    0.000    0.034    0.000    0.000   625.40      0.00
 0.000410      20.      20.      20.        0        0        0     0.00   290.00    296.00
0
 *SECNO 73720.000
 73720.00    19.06   644.36     0.00     0.00   644.84     0.49     0.03     0.03   634.70
   23100.     990.   20879.    1231.     346.    3584.     618.   12923.    1091.    632.30
     5.13     2.86     5.83     1.99    0.047    0.034    0.059    0.000   625.30     57.47
 0.000506      60.      60.      60.        2        0        0     0.00   418.30    475.77
0
 1490 NH CARD USED
 *SECNO 75140.000
          XSEC 29  SEWAGE TREATMENT PLANT IN LOB
 75140.00    17.62   645.12     0.00     0.00   645.31     0.19     0.44     0.03   635.60
   23100.    7102.   15983.      15.    6320.    3840.      33.   13142.    1112.    634.50
     5.25     1.12     4.16     0.47    0.080    0.034    0.090    0.000   627.50      1.31
 0.000225    1140.    1420.    1440.        2        0        0     0.00  1072.22   1073.53
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 *SECNO 75800.000
 3280 CROSS SECTION  75800.00 EXTENDED      9.89 FEET

                XSEC 29A  AT USGS CABLE
 75800.00    16.89   645.09     0.00     0.00   645.63     0.54     0.21     0.10   636.00
   23100.       0.    23100.       0.       0.    3918.       0.   13240.    1121.    635.20
     5.28     0.00     5.90     0.00    0.000    0.034    0.000    0.000   628.20   1005.00
 0.000533     540.     660.     700.        2        0        0     0.00   259.00   1264.00
0
 1490 NH CARD USED
 *SECNO 76350.000
          XSEC 29B AT USGS GAGE  1976 STAGE IS 639.2   1986 STAGE 645.4
 76350.00    15.74   645.54     0.00     0.00   645.92     0.38     0.27     0.02   634.70
   23100.     493.   22391.     216.     146.    4495.     171.   13295.    1125.    634.60
     5.31     3.38     4.98     1.26    0.036    0.038    0.101    0.000   629.80      3.26
 0.000459     550.     550.     550.        2        0        0     0.00   351.78    355.04
0
 *SECNO 76760.000
                XSEC 30  1975 HWM IS 638.6      1976 HWM IS 639.2
 76760.00    18.07   645.67     0.00     0.00   646.11     0.44     0.18     0.02   636.50
   23100.     276.   22449.     375.     256.    4144.     345.   13340.    1128.    636.00
     5.33     1.08     5.42     1.09    0.100    0.034    0.100    0.000   627.60     16.29
 0.000404     350.     410.     450.        2        0        0     0.00   365.55    381.84
0
1
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1) COUNTY: Newaygo

2) STUDY NAME: Bridgeton, Ashland, Garfield, Brooks Twp.

3) WATERCOURSE: Muskegon River

4) DOCUMENT TYPE: Floodway Analysis



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1**********************************************
*  WATER SURFACE PROFILES                    *
*  VERSION OF NOVEMBER 1976                  *
*  UPDATED MAY 1984                          *
*                                            *
*  RUN DATE          TIME                    *
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**************************************
*  U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER *
*  609 SECOND STREET, SUITE D        *
*  DAVIS, CALIFORNIA 95616           *
*  (916) 440-2105 (FTS) 448-2105     *
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X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                  X     X
XXXXXXX  XXXX     X           XXXXX   XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX              XXXXXXX
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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORP -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
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C
T1     FLOODWAY THROUGH OLD WOMANS BEND AND ANDERSON FLATS
T2   CHANNEL XSEC FROM 1977 SURVEY  STARTING WSEL FROM DS STUDY
T3     MUSKEGON RIVER  EXISITING COND   N INCREASED TO REFLECT HOMES
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J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	0.	0.	0.	0.000000	0.00	0.0	18800.	634.940	0.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	0.000	0.000	-1.000	0.000	0.000	1.350	0.000	0.000	0.000	0.000

J3	LPRNT	NUMSEC	********REQUESTED SECTION NUMBERS********								
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

NC	0.100	0.150	0.023	0.100	0.300	0.000	0.000	0.000	0.000	0.000	
NH	4.000	0.150	20.000	0.030	532.000	0.036	691.000	0.050	738.000	0.000	
		XSEC 7									
X1	50220.000	23.000	532.000	691.000	1300.000	1500.000	1550.000	0.000	0.000	0.000	

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 GR    636.500      0.000    626.900     20.000    627.600    158.000    628.000    233.000    624.200    282.000
 GR    627.400    347.000    626.500    451.000    624.900    479.000    626.600    525.000    626.300    532.000
 GR    621.100    542.000    619.500    548.000    618.600    555.000    617.500    558.000    616.000    581.000
 GR    614.200    605.000    613.200    628.000    613.400    652.000    616.000    675.000    619.600    688.000
 GR    623.100    691.000    627.700    707.000    636.500    738.000      0.000      0.000      0.000      0.000

 NH      3.000      0.020    124.000      0.035    312.000      0.150   1290.000      0.000      0.000      0.000
                XSEC 8    VICS CAMPING ON RIGHT BANK  CAMPGROUND IS ON A HILL
                WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.
 X1  51945.000     27.000    124.000    312.000   1300.000   1500.000   1725.000      0.000      0.000      0.000
 GR    637.100      0.000    634.700     32.000    637.200    111.000    637.600    124.000    625.400    138.000
 GR    620.200    149.000    617.600    158.000    614.900    181.000    615.700    201.000    617.700    222.000
 GR    617.700    247.000    618.300    254.000    619.300    271.000    620.200    290.000    622.100    297.000
 GR    623.300    303.000    629.400    312.000    630.000    320.000    625.400    367.000    627.200    392.000
 GR    627.000    411.000    628.300    425.000    629.500    454.000    628.600    560.000    629.000    650.000
 GR    629.000   1250.000    639.000   1290.000      0.000      0.000      0.000      0.000      0.000      0.000

 NH      6.000      0.120    787.000      1.000    837.000      0.025   1032.000      0.100   1084.000      0.025
 NH   1192.000      0.125   1700.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
                XSEC 9  SECTION THROUGH ISLAND US OF VICS
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                XSEC BENT 30DEG LFT AT 887  20DEG RT AT STA 1208
 X1  53000.000     39.000    887.000   1192.000   1200.000    500.000   1055.000      0.000      0.000      0.000
 X2      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000     15.000
 X3      0.000      0.000      0.000    350.000      0.000      0.000      0.000      0.000      0.000      0.000
 GR    638.500      0.000    628.500     50.000    625.000    100.000    624.700    650.000    624.900    705.000
 GR    624.900    728.000    626.700    760.000    627.500    815.000    629.000    860.000    626.200    872.000
 GR    625.000    887.000    620.400    892.000    617.400    898.000    617.700    922.000    618.000    947.000
 GR    618.100    974.000    617.700   1001.000    620.400   1025.000    623.600   1032.000    624.400   1035.000
 GR    623.600   1061.000    624.300   1078.000    625.200   1084.000    620.400   1093.000    617.900   1101.000
 GR    617.700   1122.000    618.300   1143.000    617.500   1165.000    617.100   1185.000    619.600   1190.000
 GR    623.000   1192.000    624.500   1203.000    629.600   1208.000    629.000   1226.000    628.200   1240.000
 GR    629.900   1290.000    629.100   1350.000    629.100   1650.000    638.500   1700.000      0.000      0.000

 NH      6.000      0.090   1340.000      0.035   1450.000      1.000   1500.000      0.035   1557.000      0.025
 NH   1730.000      0.120   1740.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
                XSEC 10  REDWOOD COTTAGE ON LEFT BANK  1976 HWM 630.5
                1986 HWM 638   XSEC BENT 45DEG LEFT AT STA 1360
 X1  53700.000     24.000   1557.000   1730.000    400.000    750.000    700.000      0.000      0.000      0.000
 X2      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000     15.000
 X3      0.000      0.000      0.000    300.000      0.000      0.000      0.000      0.000      0.000      0.000
 GR    635.000      0.000    628.500     50.000    625.000    100.000    625.000   1340.000    628.300   1360.000
 GR    627.200   1377.000    628.700   1420.000    628.800   1480.000    629.000   1500.000    629.200   1531.000
 GR    627.400   1545.000    626.800   1550.000    626.200   1557.000    620.600   1563.000    617.900   1567.000
 GR    616.600   1600.000    617.000   1624.000    617.600   1662.000    617.800   1688.000    618.300   1717.000
 GR    620.700   1725.000    629.200   1730.000    632.100   1733.000    639.000   1740.000      0.000      0.000

 NH      7.000      0.038   1399.000      0.030   1784.000      0.025   1962.000      1.000   2012.000      0.025
 NH   2052.000      0.030   2221.000      0.040   2250.000      0.000      0.000      0.000      0.000      0.000
                XSEC 10A NEAR WHITE COTTAGE(BRONKEMA)  1976HWM 630.9 IN GARAGE
                XSEC BENT 50DEG LT AT STA 139.9  RESTRICTED FOR HIGH GROUND AT
                XSEC 11 US      1986 HWM 638
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X1	54600.000	35.000	2062.000	2221.000	500.000	1000.000	900.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	750.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	639.000	0.000	628.500	50.000	625.000	449.000	623.000	649.000	624.000	949.000
GR	623.000	1049.000	627.100	1352.000	626.200	1399.000	629.300	1508.000	626.700	1597.000
GR	630.100	1644.000	630.500	1755.000	628.100	1784.000	629.900	1846.000	628.500	1888.000
GR	628.600	1917.000	628.100	1957.000	629.600	1966.000	630.400	1998.000	629.800	2041.000
GR	629.100	2060.000	628.700	2062.000	625.300	2068.000	624.500	2074.000	621.000	2079.000
GR	620.500	2099.000	619.700	2119.000	618.200	2123.000	616.900	2145.000	615.300	2167.000
GR	614.500	2190.000	616.300	2215.000	621.000	2221.000	632.100	2238.000	639.000	2250.000
NH	3.000	0.029	1169.000	0.080	1946.000	0.100	2105.000	0.000	0.000	0.000
		XSEC 11 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND								
X1	55800.000	23.000	1000.000	1169.000	400.000	1000.000	1200.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	627.700	1000.000	623.000	1014.000	621.400	1015.000	619.400	1026.000	618.800	1039.000
GR	617.000	1051.000	616.800	1075.000	616.200	1100.000	617.000	1125.000	618.400	1148.000
GR	621.400	1154.000	628.600	1169.000	630.100	1172.000	629.800	1185.000	630.200	1237.000
GR	629.500	1320.000	630.100	1454.000	630.700	1546.000	630.800	1651.000	629.700	1819.000
GR	629.600	1946.000	628.200	2070.000	640.000	2105.000	0.000	0.000	0.000	0.000

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NH	4.000	0.070	22.000	0.035	220.000	0.080	958.000	0.100	1592.000	0.000
		XSEC 12								
X1	56800.000	31.000	22.000	222.000	1200.000	50.000	1000.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	640.000	0.000	629.300	13.000	621.700	22.000	619.100	29.000	617.800	53.000
GR	614.600	81.000	617.100	107.000	619.100	131.000	620.300	141.000	621.600	147.000
GR	622.800	152.000	624.300	171.000	626.700	187.000	630.000	222.000	629.900	245.000
GR	628.800	350.000	630.100	457.000	630.700	560.000	630.600	660.000	629.900	758.000
GR	629.600	865.000	629.800	958.000	630.100	1010.000	629.500	1093.000	630.100	1227.000
GR	630.700	1319.000	630.800	1424.000	629.700	1592.000	629.600	1719.000	628.200	1843.000
GR	640.000	1878.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	7.000	0.070	30.000	0.045	857.000	0.030	987.000	0.060	1061.000	0.030
NH	1175.000	0.055	1711.000	0.075	2165.000	0.000	0.000	0.000	0.000	0.000
		XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND								
		1976 HRM 631.9								
X1	57650.000	32.000	857.000	1180.000	500.000	50.000	850.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	640.000	0.000	630.000	30.000	629.200	845.000	622.000	857.000	620.100	869.000
GR	619.800	879.000	618.500	914.000	621.900	968.000	622.700	987.000	627.000	991.000
GR	625.500	1007.000	627.300	1014.000	627.300	1045.000	628.000	1054.000	624.400	1061.000
GR	623.500	1087.000	622.000	1117.000	619.600	1144.000	617.400	1168.000	621.900	1175.000
GR	626.500	1180.000	629.700	1189.000	629.700	1245.000	630.200	1297.000	629.500	1380.000
GR	630.100	1514.000	630.700	1606.000	630.800	1711.000	629.700	1879.000	629.600	2006.000
GR	628.200	2180.000	640.000	2165.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.070	50.000	0.048	1106.000	0.036	1285.000	0.150	1300.000	0.000
		XSEC 14 XSEC BENT 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB								
X1	58350.000	20.000	1106.000	1285.000	500.000	400.000	700.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000

GR	640.500	0.000	633.000	50.000	630.100	100.000	628.600	400.000	630.300	731.000
GR	631.100	918.000	630.700	1077.000	630.500	1106.000	623.300	1125.000	621.600	1126.000
GR	616.400	1138.000	616.300	1158.000	617.500	1185.000	619.500	1212.000	619.900	1243.000
GR	619.900	1269.000	620.900	1277.000	622.400	1282.000	629.500	1285.000	640.500	1300.000
NH	4.000	0.060	1150.000	0.034	1389.000	0.100	1513.000	0.100	1550.000	0.000
	XSEC 15									
X1	58900.000	21.000	1150.000	1389.000	450.000	700.000	550.000	0.000	0.000	0.000
GR	640.600	0.000	633.000	50.000	632.000	100.000	632.200	1130.000	632.000	1143.000
GR	631.800	1147.000	631.500	1150.000	627.000	1153.000	622.700	1162.000	618.400	1183.000
GR	622.100	1201.000	621.700	1225.000	620.900	1257.000	618.700	1289.000	618.100	1317.000
GR	618.000	1342.000	619.600	1367.000	629.000	1389.000	629.000	1447.000	831.300	1513.000
GR	640.600	1550.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.120	32.000	0.040	44.000	0.035	200.000	0.120	800.000	0.000
		XSEC 16								
X1	60000.000	17.000	44.000	200.000	1000.000	700.000	1100.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	641.400	0.000	631.000	32.000	630.500	36.000	628.800	38.000	628.000	44.000
GR	623.200	47.000	620.800	55.000	618.900	79.000	619.100	103.000	619.400	129.000
GR	620.700	154.000	621.200	168.000	623.300	175.000	626.500	187.000	632.600	200.000
GR	633.100	750.000	641.400	800.000	0.000	0.000	0.000	0.000	0.000	0.000

NH	3.000	0.093	144.000	0.028	422.000	0.089	543.000	0.000	0.000	0.000
		XSEC 17	SUBDIVISION ON LEFT BANK							
X1	62250.000	28.000	144.000	422.000	2400.000	1700.000	2225.000	0.000	0.000	0.000
GR	642.800	0.000	638.600	26.000	632.600	88.000	631.600	113.000	632.500	125.000
GR	632.900	144.000	630.900	153.000	625.400	159.000	624.200	161.000	622.000	173.000
GR	622.100	181.000	623.600	193.000	622.100	243.000	620.600	280.000	620.200	313.000
GR	620.700	350.000	621.800	365.000	624.300	384.000	625.000	394.000	624.200	399.000
GR	629.100	422.000	630.300	424.000	629.700	435.000	629.500	468.000	627.800	492.000
GR	629.000	518.000	637.300	534.000	641.600	543.000	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

SECNO	DEPTH	CUSEL	CHANS	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

*PROF 1

CCHV= 0.100 CEHV= 0.300
1490 NH CARD USED
*SECNO 50220.000

XSEC 7

50220.00	21.74	634.94	0.00	634.94	635.05	0.11	0.00	0.00	626.30
18800.	9204.	9313.	2841.	4253.	2994.	245.	0.	0.	623.10

```
     0.00      2.16      3.11      1.16     0.041     0.049     0.057     0.000    613.20      3.25
 0.000214     1300.     1500.     1300.         0         0         0      0.00    729.25    732.50
0
 1490 NH CARD USED
 *SECNO 51945.000

 3265 DIVIDED FLOW

              XSEC 8   VICS CAMPING ON RIGHT BANK  CAMPGROUND IS ON A HILL
                       WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.
  51945.00     20.46    635.36      0.00      0.00    635.66      0.30      0.55      0.06    637.60
     18800.        6.     14715.     4078.       10.     2973.     6238.      294.       32.    629.40
      0.11      0.67      4.95      0.65     0.027     0.047     0.202     0.000    614.90     23.23
 0.000647     1300.     1725.     1500.         2         0         0      0.00   1178.40   1275.43
0
 1490 NH CARD USED
 *SECNO 53000.000

 3470 ENCROACHMENT STATIONS=      350.0     1700.0  TYPE=       1  TARGET=     -350.000
                  XSEC 9  SECTION THROUGH ISLAND DS OF VICS
              XSEC BENT 30DEG LFT AT 887  20DEG RT AT STA 1208
  53000.00     18.71    635.81      0.00      0.00    635.91      0.10      0.23      0.02    625.00
     18800.     3369.     14318.     1112.     5557.     5010.     3244.      521.       55.    623.00
      0.23      0.61      2.86      0.34     0.126     0.036     0.169     0.000    617.10    350.00
 0.000119     1200.     1055.      500.         2         0         0      0.00   1335.69   1685.69
0
 FLOW DISTRIBUTION FOR SECNO=  53000.00          CWSEL=     635.81

 STA=       350.      650.      760.      860.      887.     1192.     1650.     1686.
   PER Q=     8.5       3.1       3.5       2.9      76.2       5.8       0.1
   AREA=   3308.7    1176.9     819.3     251.7    5010.1    3124.5     119.8
    VEL=      0.5       0.5       0.8       2.1       2.9       0.3       0.2

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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


 1490 NH CARD USED
 *SECNO 53700.000

 3470 ENCROACHMENT STATIONS=      300.0     1740.0  TYPE=       1  TARGET=     -300.000
                  XSEC 10  REDWOOD COTTAGE ON LEFT BANK  1976 HWM 630.5
                  1985 HWM 638   XSEC BENT 45DEG LEFT AT STA 1360
  53700.00     19.29    635.90      0.00      0.00    635.98      0.09      0.07      0.00    626.20
     16800.     8904.     9892.        5.    12992.     3102.       23.      700.       71.    629.20
      0.31      0.69      3.19      0.20     0.112     0.034     0.162     0.000    616.60    300.00
 0.000119      400.      700.      750.         2         0         0      0.00   1436.85   1736.85
0
 FLOW DISTRIBUTION FOR SECNO=  53700.00          CWSEL=     635.90
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 STA=      300.    1340.    1420.    1557.    1730.    1737.
  PER Q=    39.2      5.0      3.1     52.6      0.0
  AREA=  11331.3   665.0    995.4   3102.0    23.0
   VEL=      0.7      1.4      0.6      3.2      0.2

 1490 NH CARD USED
 *SECNO 54600.000

 3470 ENCROACHMENT STATIONS=     750.0    2250.0  TYPE=     1  TARGET=    -750.000
                  XSEC 10A NEAR WHITE COTTAGE(BRONKEMA)  1976HWM 630.9 IN GARAGE
                  XSEC BENT 5DEG RT AT STA 139.9  RESTRICTED FOR HIGH GROUND AT
                  XSEC 11 US     1985 HWM 638
  54600.00    21.52   636.02     0.00     0.00   636.06     0.05     0.08     0.00   628.70
    18800.   11384.    7227.     188.   12012.    2829.     174.     907.     89.    621.00
      0.43     0.95     2.56     1.08    0.073    0.041    0.054    0.000   614.50   750.00
  0.000108     500.     900.     1000.        2        0        0     0.00  1494.81  2244.81
0
 FLOW DISTRIBUTION FOR SECNO=  54600.00         CWSEL=    636.02

 STA=      750.     949.    1049.    1352.    1508.    1597.    1755.    1846.    1917.    2041.    2062.    2221.    2245.
  PER Q=     8.7      4.7     11.3      7.1      5.8      6.9      5.3      4.5      5.0      1.2     38.4      1.0
  AREA=   2457.1   1251.6   3322.6   1185.1    713.4    992.4    629.7    502.8    818.0    139.0   2828.7    174.2
   VEL=      0.7      0.7      0.6      1.1      1.5      1.3      1.6      1.7      1.1      1.6      2.6      1.1

 1490 NH CARD USED
 *SECNO 55800.000
 3280 CROSS SECTION  55800.00 EXTENDED      8.34 FEET
1
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                  XSEC 11  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD HOMENS BEND
  55800.00    19.84   636.04     0.00     0.00   636.30     0.27     0.17     0.07   627.70
    18800.       0.   13860.     4940.       0.    2891.     5594.    1107.     111.   628.60
      0.50     0.00     4.79     0.88    0.000    0.039    0.112    0.000   616.20  1000.00
  0.000399     400.     1200.    1000.        2        0        0     0.00  1093.24  2093.24
0
 FLOW DISTRIBUTION FOR SECNO=  55800.00         CWSEL=    636.04

 STA=     1000.    1169.    1320.    1454.    1651.    1819.    1946.    2070.    2093.
  PER Q=    73.7      4.5      4.1      4.9      4.6      4.1      3.8      0.3
  AREA=   2890.8    926.4    835.6   1073.5    972.0    811.3    884.8     91.1
   VEL=      4.8      0.9      0.9      0.9      0.9      0.9      0.8      0.5

 1490 NH CARD USED
 *SECNO 56800.000
                  XSEC 12
  56800.00    21.85   636.45     0.00     0.00   636.55     0.11     0.24     0.02   621.70
    18800.     129.   10658.     8013.     130.    3122.    10673.    1197.     117.   630.00
      0.59     0.99     3.41     0.75    0.094    0.047    0.121    0.000   614.60     4.32
  0.000308    1200.    1000.       50.        2        0        0     0.00  1863.14  1867.46
0
 FLOW DISTRIBUTION FOR SECNO=  56800.00         CWSEL=    636.45
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 STA=        4.      22.     222.     350.     457.     660.     865.    1010.    1227.    1424.    1592.    1719.    1843.
  PER Q=     0.7     56.7      4.2      3.5      5.1      5.9      4.1      5.2      3.9      3.6      3.2      3.7
  AREA=    129.5   3122.5    894.6    748.7   1202.5   1323.8    965.3   1442.3   1154.5   1041.1    863.2    935.8
   VEL=      1.0      3.4      0.9      0.9      0.8      0.8      0.8      0.7      0.6      0.7      0.7      0.7
 STA=     1843.   1867.
  PER Q=     0.3
  AREA=    100.9
   VEL=      0.5

 1490 NH CARD USED
 *SECNO 57650.000
              XSEC 13  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
                   1976 HHM 631.9
 57650.00    19.21   636.61     0.00     0.00   636.65     0.04     0.09     0.01   622.00
    18800.    5327.    9413.    4061.    5912.    4637.    6485.    1307.     128.   626.50
     0.69     0.90     2.03     0.63    0.061    0.043    0.085    0.000   617.40    10.16
 0.000101     500.     850.      50.        0        0        0     0.00  2144.79  2154.95

 FLOW DISTRIBUTION FOR SECNO=  57650.00          CWSEL=   636.61

 STA=       10.     845.     857.    1180.    1297.    1514.    1711.    2006.    2155.
  PER Q=    27.6      0.8     50.1      3.2      5.7      4.2      5.4      3.1
  AREA=   5780.3    132.1   4636.7    810.1   1474.0   1187.0   1952.9   1061.2
   VEL=      0.9      1.1      2.0      0.7      0.7      0.7      0.5      0.6

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   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      WIN      ELMIN       SSTA
   SLOPE     XLOBL    XLCH     XLOBR    ITRIAL    IBC      ICONT    CONAR    TOPWID      ENDST


 1490 NH CARD USED
 *SECNO 58350.000
              XSEC 14 XSEC BENT 150EG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOE
 58350.00    20.36   636.66     0.00     0.00   636.76     0.09     0.09     0.02   630.50
    18800.    9250.    9542.       8.    709.1.    3041.      35.    1474.     148.   629.50
     0.77     1.30     3.14     0.24    0.065    0.049    0.202    0.000   616.30    25.57
 0.000256     500.     700.     400.        2        0        0     0.00  1269.20  1294.77

 FLOW DISTRIBUTION FOR SEQNO=  58350.00          CWSEL=   636.66

 STA=       25.     400.     731.     918.    1077.    1106.    1285.    1295.
  PER Q=    17.7     17.4      7.2      5.8      1.1     50.8      0.0
  AREA=   2495.0   2388.2   1115.5    916.7    175.9   3041.3     35.0
   VEL=      1.3      1.4      1.2      1.2      1.2      3.1      0.2

 1490 NH CARD USED
 *SECNO 58900.000
              XSEC 15
 58900.00    18.77   636.77     0.00     0.00   636.91     0.14     0.14     0.02   631.50
```

18800.	4541.	13609.	650.	5162.	3868.	947.	1588.	163.	629.00	
0.82	0.88	3.52	0.69	0.081	0.046	0.135	0.000	618.00	25.22	
0.000299	450.	550.	700.	0	0	0	0.00	1509.52	1534.75	

0
1490 NH CARD USED
*SECNO 60000.000

XSEC 16

60000.00	18.10	637.00	0.00	0.00	637.62	0.62	0.57	0.14	628.00
18800.	368.	16523.	1909.	147.	2453.	2329.	1755.	187.	632.60
0.87	2.51	6.74	0.82	0.064	0.047	0.162	0.000	618.90	13.54
0.001216	1000.	1100.	700.	2	0	0	0.00	759.96	773.50

0
FLOW DISTRIBUTION FOR SECNO= 60000.00 CWSEL= 637.00

STA=	14.	44.	200.	750.	773.
PER Q=	2.0	87.9	10.0	0.1	
AREA=	146.7	2453.1	2282.7	45.8	
VEL=	2.5	6.7	0.8	0.5	

1490 NH CARD USED
1

SECNO	DEPTH	CWSEL	CRITS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TRA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	KLOBL	KLCH	KLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 62250.000

XSEC 17 SUBDIVISION ON LEFT BANK

62250.00	18.32	638.52	0.00	0.00	638.76	0.24	1.10	0.04	632.90
18800.	303.	17624.	874.	530.	4374.	993.	2013.	216.	629.10
1.03	0.57	4.03	0.88	0.126	0.038	0.120	0.000	620.20	26.82
0.000271	2400.	2225.	1700.	2	0	0	0.00	509.73	536.55

0
1

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

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1*************************************************
 *  WATER SURFACE PROFILES                       *
 *  VERSION OF NOVEMBER 1976                     *
 *  UPDATED MAY 1984                             *
 *                                               *
*  RUN DATE          TIME                       *
 *************************************************
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*************************************
*  U.S. ARMY CORPS OF ENGINEERS     *
*  THE HYDROLOGIC ENGINEERING CENTER*
*  609 SECOND STREET, SUITE D       *
*  DAVIS, CALIFORNIA 95616          *
*  (916) 440-2105 (FTS) 448-2105    *
*************************************
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X      X  XXXXXXX   XXXXX                XXXXX
X      X  X         X     X            X     X
X      X  X         X                  X
XXXXXXXX  XXXX      X          XXXXX    XXXXX
X      X  X         X                  X
X      X  X         X     X            X
X      X  XXXXXXX    XXXXX             XXXXXXX
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PAGE 1

Info only

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

C
T1      FLOODPLAIN DELINEATION     USING 1986 HIGHWATER MARKS AS CALIBRATION
T2   CHANNEL XSEC FROM 1977 SURVEY    N INCREASED TO REFLECT MEANDER
T3      MUSKEGON RIVER  IMPACT OF CHANNEL EROSION  EVERY OTHER XSEC

J1  ICHECK    INQ      NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.        0.        0.        0.  0.000250      0.00      0.0   18800.   619.000     0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
      0.000     0.000    -1.000     0.000     0.000     1.350     0.000     0.000     0.000     0.000

J3  LPRNT     NUMSEC                ********REQUESTED SECTION NUMBERS********
      0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

NC      0.100     0.150     0.023     0.100     0.300     0.000     0.000     0.000     0.000     0.000
NH      7.000     0.100    22.000     0.021   242.000     0.100   298.000     0.035   447.000     0.050
NH    570.000     0.100   789.000     0.050   852.000     0.000     0.000     0.000     0.000     0.000
                XSEC 61
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X1	0.100	25.000	22.000	242.000	0.000	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	8.000	0.000	818.000	0.000	0.000	613.300	0.000
GR	624.100	0.000	613.200	22.000	606.100	47.000	603.700	63.000	598.500	106.000
GR	601.000	136.000	602.600	186.000	603.200	196.000	604.200	226.000	606.100	237.000
GR	609.600	242.000	610.600	252.000	613.900	262.000	614.800	298.000	616.300	326.000
GR	616.300	383.000	615.000	447.000	612.000	492.000	611.700	570.000	611.500	635.000
GR	611.200	685.000	611.000	735.000	612.200	789.000	623.500	830.000	629.400	852.000
NH	4.000	0.150	22.000	0.023	242.000	0.150	298.000	0.100	852.000	0.000
	SEC 61 MOVED US INVERT ADJ BY .94FT FLOOD FLOW SHIFTED FROM									
	ROB AS NOTED ON XSEC 61 TO APPROX AREA IN LOB FOR THIS XSEC									
X1	1920.000	0.000	0.000	0.000	2170.000	1740.000	1920.000	0.000	0.940	0.000
X3	10.000	0.000	0.000	22.000	0.000	768.000	0.000	0.000	613.300	0.000
NH	3.000	0.050	37.000	0.023	311.000	0.050	341.000	0.000	0.000	0.000
	XSEC 62									
X1	3050.000	20.000	37.000	311.000	1200.000	1200.000	1130.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	17.000	0.000	328.000	0.000	0.000	0.000	0.000
GR	635.400	0.000	629.100	4.000	615.670	25.000	608.600	37.000	607.000	40.000
GR	605.200	55.000	604.000	64.000	600.400	74.000	601.000	106.000	605.100	146.000
GR	606.500	163.000	604.300	170.000	603.500	173.000	605.200	199.000	605.400	241.000
GR	606.000	267.000	605.700	285.000	606.700	297.000	609.000	311.000	629.600	341.000

1

NH	3.000	0.017	37.000	0.023	311.000	0.017	341.000	0.000	0.000	0.000
	E EDGE OF BRIDGE DECK AT BRIDGTON 1976 HEM 615.7									
X1	3051.000	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	17.000	0.000	328.000	0.000	0.000	0.000	0.000
SB	0.900	1.250	2.600	1000.000	260.000	8.000	9000.000	1.430	604.500	604.500
X1	3100.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	635.400	638.000	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	17.000	0.000	328.000	0.000	0.000	0.000	0.000
NC	0.150	0.070	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	3101.000	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	17.000	0.000	328.000	0.000	0.000	0.000	0.000
NH	4.000	0.045	58.000	0.023	373.000	0.030	517.000	0.050	633.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 63									
X1	4680.000	20.000	58.000	373.000	1500.000	1600.000	1579.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	617.800	0.000
GR	625.300	0.000	617.700	15.000	608.500	58.000	607.300	76.000	604.900	82.000
GR	603.500	102.000	603.900	129.000	603.800	172.000	604.000	205.000	605.000	248.000
GR	605.600	274.000	606.300	289.000	607.300	356.000	616.000	373.000	617.700	382.000
GR	617.300	404.000	614.500	435.000	614.600	517.000	616.000	605.000	625.300	633.000
NH	5.000	0.150	19.000	0.150	424.000	0.100	562.000	0.023	788.000	0.040
NH	819.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EC	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 64		XSEC CROSSES US OF OLD TOCK CRIBBING							

X1	7200.000	28.000	562.000	738.000	2200.000	2500.000	2520.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	619.600	0.000	0.000
GR	625.700	0.000	616.300	19.000	613.400	58.000	614.400	124.000	614.000	224.000
GR	615.400	314.000	613.600	335.000	614.200	371.000	617.100	424.000	619.600	499.000
GR	619.100	557.000	619.000	562.000	615.800	573.000	608.900	578.000	606.500	582.000
GR	604.000	584.000	600.800	611.000	602.100	638.000	602.100	667.000	602.500	695.000
GR	602.900	724.000	605.500	752.000	605.900	773.000	607.000	780.000	607.690	785.000
GR	610.400	788.000	616.500	801.000	625.700	819.000	0.000	0.000	0.000	0.000
NH	4.000	0.050	39.000	0.025	295.000	0.150	788.000	0.040	924.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 65	XSEC CROSSES 100FT US OF BOAT LAUNCH								
X1	8850.000	30.000	39.000	326.000	1400.000	1600.000	1650.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	619.800	0.000
GR	626.000	0.000	624.200	8.000	621.800	35.000	619.300	39.000	610.900	58.000
GR	608.040	69.000	605.100	95.000	604.200	140.000	604.700	175.000	604.900	210.000
GR	605.100	245.000	605.800	280.000	608.040	293.000	611.700	295.000	612.100	304.000
GR	619.100	317.000	619.800	326.000	619.500	338.000	616.400	365.000	613.500	413.000
GR	612.100	478.000	612.000	548.000	612.100	588.000	612.300	638.000	612.500	688.000
GR	612.500	738.000	612.400	788.000	613.800	843.000	617.300	906.000	626.000	924.000

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NH	7.000	0.050	46.000	0.030	226.000	0.050	293.000	0.160	374.000	0.150
NH	564.000	0.080	1055.000	0.090	1244.000	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
		XSEC 66								
X1	10300.000	36.000	46.000	377.000	1500.000	700.000	1450.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	620.500	0.000
GR	626.500	0.000	620.600	29.000	612.500	38.000	611.100	46.000	608.200	50.000
GR	606.000	59.000	603.200	66.000	603.000	128.000	604.600	161.000	606.000	192.000
GR	607.100	210.000	607.800	225.000	609.300	226.000	610.200	241.000	610.000	249.000
GR	609.200	253.000	610.700	293.000	612.300	311.000	612.900	361.000	618.800	374.000
GR	620.600	377.000	618.900	385.000	618.600	443.000	616.800	529.000	611.500	564.000
GR	611.500	606.000	610.400	693.000	610.500	769.000	611.300	889.000	612.600	893.000
GR	612.700	1012.000	615.100	1065.000	615.500	1115.000	617.600	1165.000	620.400	1190.000
GR	626.500	1244.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.150	839.000	0.030	1059.000	0.150	1107.000	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
		XSEC 67								
X1	11300.000	25.000	816.000	1059.000	1600.000	1000.000	1500.000	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	626.700	0.000	620.500	103.000	616.700	155.000	613.700	255.000	613.500	355.000
GR	613.400	449.000	613.200	530.000	613.100	644.000	613.600	744.000	617.100	799.000
GR	619.800	813.000	619.600	816.000	612.500	825.000	612.100	839.000	608.730	842.000
GR	606.700	861.000	605.900	896.000	605.100	931.000	604.400	967.000	604.400	1002.000
GR	606.000	1037.000	608.730	1051.000	610.700	1059.000	617.400	1079.000	626.700	1107.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	12600.000	0.000	0.000	0.000	800.000	800.000	800.000	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

NH	3.000	0.100	113.000	0.030	363.000	0.150	748.000	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
		XSEC 68								
X1	14100.000	25.000	113.000	382.000	900.000	1600.000	1500.000	0.000	0.000	0.000
GR	527.100	0.000	622.000	15.000	617.600	39.000	620.100	70.000	619.800	88.000
GR	614.200	97.000	611.800	113.000	609.140	125.000	606.500	164.000	605.900	191.000
GR	606.700	205.000	606.300	247.000	604.000	289.000	605.000	330.000	607.500	345.000
GR	608.800	359.000	612.200	363.000	614.700	376.000	618.400	382.000	619.200	435.000
GR	616.000	501.000	615.700	543.000	615.400	633.000	616.200	693.000	627.100	748.000
NH	3.000	0.150	922.000	0.022	1120.000	0.060	1143.000	0.000	0.000	0.000
ET	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 69								
X1	16700.000	28.000	844.000	1120.000	300.000	1300.000	2600.000	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	527.600	0.000	618.800	35.000	616.900	133.000	615.200	230.000	614.100	323.000
GR	613.700	410.000	613.400	515.000	617.800	553.000	613.300	663.000	614.200	712.000
GR	617.800	785.000	621.800	844.000	620.300	868.000	619.800	902.000	618.900	909.000
GR	612.400	922.000	609.640	924.000	607.900	938.000	607.300	954.000	606.200	983.000
GR	604.600	1012.000	605.600	1041.000	607.200	1070.000	608.500	1074.000	609.640	1102.000
GR	613.800	1120.000	620.300	1131.000	627.600	1143.000	0.000	0.000	0.000	0.000

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NC	0.040	0.060	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 1 FROM SUBDIVISION FILE F184 22 12								
X1	18990.000	24.000	257.000	570.000	1250.000	2500.000	2190.000	0.000	0.000	0.000
GR	633.400	0.000	629.500	30.000	628.200	106.000	619.400	130.000	617.400	180.000
GR	617.800	218.000	618.000	225.000	618.900	250.000	611.800	257.000	606.900	257.000
GR	606.000	300.000	606.600	325.000	606.900	350.000	606.400	375.000	606.800	475.000
GR	609.000	527.000	610.300	550.000	612.700	570.000	620.500	580.000	620.200	600.000
GR	618.700	625.000	619.300	640.000	623.700	660.000	630.000	677.000	0.000	0.000
NH	6.000	0.150	43.000	0.080	115.000	0.028	155.000	0.080	529.000	0.025
NH	703.000	0.150	756.000	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
		XSEC 70 THROUGH SUBDIV ON LEFT BANK CHANNEL INEFFECTIVE								
		1976 HWM ON BASEMENT WALL 619.8 HWM 800FT DS 619.98								
X1	19870.000	30.000	529.000	703.000	950.000	990.000	1000.000	0.000	0.000	0.000
GR	628.500	0.000	620.000	25.000	620.400	217.000	630.000	217.000	630.000	250.000
GR	620.400	250.000	621.500	306.000	621.500	306.100	621.500	306.200	621.500	306.300
GR	616.900	332.000	617.500	396.000	619.700	432.000	619.900	465.000	618.400	476.000
GR	619.800	489.000	619.300	503.000	613.800	519.000	612.400	529.000	608.700	558.000
GR	607.600	569.000	607.100	595.000	605.600	620.000	605.900	646.000	607.900	671.000
GR	610.500	697.000	612.800	703.000	614.200	713.000	621.400	735.000	628.500	756.000
NH	6.000	0.060	123.000	0.150	223.000	0.025	406.000	0.045	412.000	0.030
NH	603.000	0.100	800.000	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
		XSEC 71 OLDER COTTAGES ON RT BANK SEAWALL PROTECTS RT BANK								
X1	21370.000	27.000	223.000	412.000	1100.000	1500.000	1500.000	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	622.000	0.000	622.900	18.000	615.900	38.000	618.300	61.000	619.200	83.000

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 GR   619.300   101.000   613.900   123.000   614.400   153.000   611.200   205.000   612.400   223.000
 GR   610.500   231.000   609.200   247.000   609.100   269.000   607.000   285.000   607.000   325.000
 GR   605.700   366.000   605.100   406.000   619.800   412.000   617.700   472.000   616.000   542.000
 GR   615.200   588.000   616.800   503.000   615.000   618.000   615.300   673.000   615.400   724.000
 GR   617.900   756.000   628.800   800.000     0.000     0.000     0.000     0.000     0.000     0.000

 NH     7.000     0.100    27.000     0.150   125.000     0.150   464.000     0.030   663.000     0.050
 NH   829.000     0.030   891.000     0.100   929.000     0.000     0.000     0.000     0.000     0.000
 ET     0.000     0.000     1.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
                XSEC 72
 X1 24985.000    28.000   441.000   663.000  3700.000  3600.000  3615.000     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   629.900     0.000   620.800    27.000   616.000    56.000   614.700   125.000   615.100   191.000
 GR   615.400   263.000   616.600   344.000   617.400   402.000   620.300   441.000   619.700   456.000
 GR   615.000   459.000   613.500   464.000   609.200   488.000   607.500   500.000   608.600   531.000
 GR   608.600   561.000   609.400   592.000   609.800   622.000   609.800   653.000   614.700   663.000
 GR   614.900   690.000   619.200   705.000   619.200   709.000   617.100   744.000   618.800   772.000
 GR   619.700   829.000   622.400   891.000   629.900   929.000     0.000     0.000     0.000     0.000
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                                                                                        PAGE    5

 NH     4.000     0.040    23.000     0.150   425.000     0.030   658.000     0.080   688.000     0.000
 ET     0.000     0.000     1.400     0.000     0.000     0.000     0.000     0.000     0.000     0.000
                XSEC 73
 X1 28235.000    20.000   371.000   658.000  2300.000  3300.000  3200.000     0.000     0.000     0.000
 X3    10.000     0.000     0.000     0.000     0.000     0.000     0.000   623.500     0.000     0.000
 GR   630.700     0.000   623.000    23.000   620.000    38.000   617.800   148.000   619.000   203.000
 GR   620.700   242.000   622.300   309.000   623.500   371.000   619.300   402.000   619.500   425.000
 GR   610.900   436.000   608.900   445.000   610.200   485.000   610.200   526.000   609.000   566.000
 GR   608.000   608.000   612.500   648.000   616.700   658.000   619.100   665.000   630.700   688.000

 NH     3.000     0.150    51.000     0.030   275.000     0.150   536.000     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
                XSEC 74 IN LINE WITH E SIDE OF COTTAGE ON TOP OF LFT BANK
                JUST US OF POWERLINE
 X1 29860.000    16.000    51.000   275.000  1500.000  1700.000  1625.000     0.000     0.000     0.000
 X3    10.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000   622.800     0.000
 GR   631.400     0.000   616.200    51.000   613.400    53.000   610.100    65.000   609.300   104.000
 GR   610.100   142.000   610.600   183.000   611.300   222.000   612.300   235.000   611.900   256.000
 GR   615.200   275.000   620.600   283.000   622.800   313.000   620.400   375.000   622.800   484.000
 GR   631.400   836.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

 NH     4.000     0.150   220.000     0.100   279.000     0.030   545.000     0.080   633.000     0.000
 ET     0.000     0.000     1.400     0.000     0.000     0.000     0.000     0.000     0.000     0.000
                XSEC 75
 X1 31660.000    23.000   279.000   545.000  1700.000  1800.000  1800.000     0.000     0.000     0.000
 X3    10.000     0.000     0.000     0.000     0.000     0.000     0.000   623.500     0.000     0.000
 GR   632.100     0.000   628.900    49.000   621.600    74.000   621.500   112.000   622.100   178.000
 GR   623.200   213.000   628.500   220.000   623.600   276.000   623.300   279.000   615.700   289.000
 GR   614.100   292.000   609.100   300.000   609.700   328.000   608.700   376.000   610.500   420.000
 GR   612.000   477.000   612.500   529.000   614.100   535.000   617.100   545.000   620.200   576.000
 GR   622.300   585.000   624.200   589.000   632.100   633.000     0.000     0.000     0.000     0.000
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NH	5.000	0.155	33.000	0.035	238.000	0.150	383.000	0.120	785.000	0.060
NH	819.000	0.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 76								
X1	35425.000	21.000	33.000	289.000	4300.000	3600.000	3760.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	20.000	0.000	790.000	0.000	0.000	0.000	0.000
GR	633.200	0.000	626.400	20.000	621.200	33.000	615.100	38.000	611.200	51.000
GR	610.300	90.000	609.800	123.000	611.000	157.000	610.800	180.000	615.200	207.000
GR	617.000	217.000	621.600	238.000	625.300	289.000	625.200	316.000	620.400	383.000
GR	619.800	482.000	620.200	583.000	620.100	683.000	620.900	760.000	621.900	785.000
GR	633.200	819.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.160	29.000	0.150	570.000	0.150	849.000	0.035	1017.000	0.150
NH	1047.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 77								
X1	37670.000	31.000	849.000	1017.000	1900.000	2100.000	2150.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	20.000	0.000	1035.000	0.000	0.000	0.000	0.000
GR	633.800	0.000	624.300	19.000	620.600	29.000	619.300	128.000	619.000	224.000
GR	619.100	314.000	619.300	391.000	621.400	419.000	619.700	468.000	620.200	570.000
GR	621.600	607.000	625.100	657.000	625.800	712.000	626.700	761.000	621.900	792.000
GR	621.900	816.000	625.300	823.000	625.200	839.000	624.500	844.000	622.700	849.000
GR	618.200	856.000	615.800	864.000	613.800	886.000	611.300	916.000	608.000	944.000

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GR	609.100	977.000	615.400	1009.000	619.100	1014.000	623.700	1017.000	630.100	1033.000
GR	633.800	1047.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.100	32.000	0.030	332.000	0.150	424.000	0.150	488.000	0.070
NH	779.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 78	800FT DS OF ISLAND, POWERLINE CROSSING AND BOAT LAUNCH							
		WEST END OF OLD GRAVEL OPERATION								
X1	38970.000	22.000	32.000	332.000	700.000	1300.000	1300.000	0.000	0.000	0.000
X3	0.000	10.000	0.000	20.000	0.000	750.000	0.000	0.000	624.800	0.000
GR	634.200	0.000	626.300	24.000	621.800	32.000	617.700	50.000	616.250	52.000
GR	614.900	64.000	612.900	110.000	614.600	173.000	613.700	258.000	614.300	311.000
GR	622.500	322.000	624.800	332.000	624.100	365.000	623.300	382.000	622.900	424.000
GR	621.100	449.000	620.600	488.000	620.400	538.000	620.000	638.000	620.600	743.000
GR	625.000	760.000	634.300	779.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.150	25.000	0.020	186.000	0.150	258.000	0.080	531.000	0.000
		XSEC 1								
X1	42170.000	27.000	25.000	186.000	3600.000	3000.000	3200.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	15.000	0.000	510.000	0.000	0.000	628.000	0.000
GR	634.000	0.000	626.900	14.000	623.300	22.000	622.400	25.000	619.100	26.000
GR	616.400	31.000	613.800	40.000	612.800	63.000	611.000	87.000	611.000	91.000
GR	612.000	135.000	613.500	161.000	614.900	163.000	616.300	174.000	617.600	179.000
GR	625.900	188.000	626.800	191.000	624.600	201.000	627.900	230.000	627.900	258.000
GR	621.800	324.000	620.900	364.000	623.600	379.000	622.600	425.000	621.000	451.000
GR	626.000	516.000	634.000	531.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.090	19.000	0.075	58.000	0.025	223.000	0.070	308.000	0.150
NH	373.000	0.090	479.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 2								

X1	43770.000	26.000	58.000	223.000	1200.000	1800.000	1600.000	0.000	0.000	0.000
GR	634.000	0.000	628.500	19.000	626.000	35.000	623.000	55.000	622.300	58.000
GR	619.700	59.000	616.800	62.000	613.800	75.000	613.900	105.000	613.800	133.000
GR	613.100	159.000	613.400	185.000	614.400	207.000	616.800	219.000	618.300	223.000
GR	618.300	250.000	619.900	258.000	619.200	266.000	619.300	288.000	619.500	295.000
GR	624.700	308.000	623.900	347.000	625.100	373.000	624.300	409.000	626.600	459.000
GR	639.100	479.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.150	12.000	0.150	214.000	0.035	317.000	0.065	357.000	0.035
NH	533.000	0.150	702.000	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
		XSEC 3 SECTION THRU ISLAND NE OF OLD GRAVEL OPERATION								
X1	44820.000	29.000	214.000	533.000	1100.000	1100.000	1050.000	0.000	0.000	0.000
GR	635.000	0.000	629.000	12.000	626.200	72.000	624.900	94.000	622.300	107.000
GR	622.900	145.000	623.300	186.000	624.400	199.000	624.700	214.000	618.000	226.000
GR	617.000	241.000	616.500	258.000	616.900	292.000	617.900	313.000	622.400	317.000
GR	624.400	342.000	622.000	357.000	616.900	361.000	615.100	402.000	613.900	430.000
GR	612.200	458.000	612.200	487.000	613.000	507.000	616.900	513.000	625.300	533.000
GR	627.500	554.000	623.300	660.000	628.100	680.000	635.000	702.000	0.000	0.000

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NH	4.000	0.150	22.000	0.150	252.000	0.035	478.000	0.150	626.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 4 OLD WOOD PILING ALONG EACH BANK								
X1	45470.000	28.000	252.000	478.000	550.000	650.000	650.000	0.000	0.000	0.000
GR	635.400	0.000	627.200	22.000	625.100	52.000	625.500	83.000	625.500	136.000
GR	627.800	157.000	625.300	180.000	626.700	223.000	623.200	248.000	627.700	252.000
GR	625.700	256.000	619.300	262.000	616.300	269.000	615.500	274.000	614.300	280.000
GR	615.000	312.000	615.600	341.000	614.700	371.000	614.800	395.000	615.400	417.000
GR	615.700	442.000	613.400	460.000	617.400	470.000	624.500	478.000	627.100	487.000
GR	628.600	508.000	632.100	558.000	640.000	626.000	0.000	0.000	0.000	0.000
NH	5.000	0.150	23.000	0.100	281.000	0.035	465.000	0.070	473.000	0.060
NH	497.000	0.000	0.000	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
		XSEC 5 HILL AT RIGHT BANK IS ERODING								
X1	46870.000	24.000	281.000	465.000	1280.000	1575.000	1300.000	0.000	0.000	0.000
GR	642.500	0.000	631.000	23.000	626.900	56.000	627.400	89.000	624.500	131.000
GR	626.300	179.000	629.300	237.000	628.100	250.000	627.700	259.000	623.100	270.000
GR	622.100	281.000	618.400	284.000	616.800	299.000	616.300	319.000	614.400	347.000
GR	614.000	370.000	612.600	395.000	611.500	421.000	615.600	447.000	618.200	461.000
GR	621.300	465.000	622.600	473.000	626.700	479.000	636.000	497.000	0.000	0.000
NH	4.000	0.100	36.000	0.030	91.000	0.036	352.000	0.100	458.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 6								
X1	48720.000	20.000	91.000	352.000	1500.000	2030.000	1850.000	0.000	0.000	0.000
GR	587.000	0.000	624.900	36.000	626.500	72.000	626.800	91.000	618.000	104.000
GR	618.000	104.000	616.800	116.000	617.000	148.000	616.700	198.000	616.400	248.000
GR	616.900	298.000	617.500	348.000	618.300	350.000	620.600	352.000	619.700	356.000
GR	618.700	373.000	618.200	386.000	618.800	407.000	628.500	434.000	637.000	458.000

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 NH      4.000      0.150     20.000      0.030    532.000      0.036    691.000      0.050    738.000      0.000
 ET      0.000      0.000      1.400      0.000      0.000      0.000      0.000      0.000      0.000      0.000
                  XSEC 7
 X1  50220.000     23.000    532.000    691.000   1300.000   1300.000   1500.000      0.000      0.000      0.000
 GR    636.500      0.000    626.900     20.000    627.600    158.000    628.000    233.000    624.200    282.000
 GR    627.400    347.000    626.500    451.000    624.900    479.000    626.600    525.000    626.300    532.000
 GR    621.100    542.000    619.500    548.000    618.600    555.000    617.500    558.000    616.000    581.000
 GR    612.700    605.000    611.700    628.000    611.900    652.000    616.000    675.000    619.600    688.000
 GR    623.100    691.000    627.700    707.000    636.500    738.000      0.000      0.000      0.000      0.000

 NH      3.000      0.020    124.000      0.035    312.000      0.150   1290.000      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
              XSEC 8    VICS CAMPING ON RIGHT BANK  CAMPGROUND IS ON A HILL
                  WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.
 X1  51945.000     27.000    124.000    312.000   1300.000   1500.000   1725.000      0.000      0.000      0.000
 GR    637.100      0.000    634.700     32.000    637.200    111.000    637.600    124.000    625.400    138.000
 GR    620.200    149.000    617.600    158.000    614.900    181.000    615.700    201.000    617.700    222.000
 GR    617.700    247.000    618.300    254.000    619.300    271.000    620.200    290.000    622.100    297.000
 GR    623.300    303.000    629.400    312.000    630.000    320.000    625.400    367.000    627.200    392.000
 GR    627.000    411.000    628.300    425.000    629.500    454.000    628.600    560.000    629.000    650.000
 GR    629.000   1250.000    639.000   1290.000      0.000      0.000      0.000      0.000      0.000      0.000
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                                                                                                  PAGE     8

 NH      6.000      0.120    860.000      0.025    887.000      0.025   1032.000      0.100   1084.000      0.025
 NH   1192.000      0.125   1700.000      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
                  XSEC 9  SECTION THROUGH ISLAND US OF VICS
                XSEC BENT 30DEG LFT AT 887  20DEG RT AT STA 1208
 X1  53000.000     39.000    887.000   1192.000   1200.000    500.000   1055.000      0.000      0.000      0.000
 X2      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000     15.000
 X3      0.000      0.000      0.000    350.000      0.000      0.000      0.000      0.000      0.000      0.000
 GR    638.500      0.000    628.500     50.000    625.000    100.000    624.700    650.000    624.900    705.000
 GR    624.900    728.000    626.700    750.000    627.500    815.000    629.000    860.000    626.200    872.000
 GR    625.000    887.000    620.400    892.000    616.900    898.000    616.700    922.000    617.500    947.000
 GR    617.600    974.000    617.500   1001.000    620.400   1025.000    623.600   1032.000    624.400   1035.000
 GR    623.600   1061.000    624.300   1078.000    625.200   1084.000    620.400   1093.000    617.900   1101.000
 GR    617.700   1122.000    618.300   1143.000    617.500   1165.000    617.100   1185.000    619.600   1196.000
 GR    623.000   1192.000    624.500   1263.000    629.600   1208.000    629.000   1226.000    628.200   1240.000
 GR    629.900   1290.000    629.100   1350.000    629.100   1650.000    638.500   1700.000      0.000      0.000

 NH      6.000      0.120   1340.000      0.060   1420.000     10.000   1480.000      0.060   1557.000      0.025
 NH   1730.000      0.125   1740.000      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
                  XSEC 10  REDWOOD COTTAGE ON LEFT BANK  1976 HWM 630.5
                  1996 HWM 638    XSEC BENT 45DEG LEFT AT STA 1360
 X1  53700.000     24.000   1557.000   1730.000    400.000    750.000    700.000      0.000      0.000      0.000
 X2      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000     15.000
 X3      0.000      0.000      0.000    300.000      0.000      0.000      0.000      0.000      0.000      0.000
 GR    639.000      0.000    628.500     50.000    625.000    100.000    625.000   1340.000    628.300   1360.000
 GR    627.200   1377.000    628.700   1420.000    628.800   1480.000    629.000   1500.000    629.200   1531.000
 GR    627.400   1545.000    626.800   1550.000    626.200   1557.000    620.600   1563.000    617.900   1567.000
 GR    616.600   1600.000    617.000   1624.000    617.600   1662.000    617.800   1683.000    618.100   1717.000
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GR    620.700   1725.000   629.200   1730.000    632.100   1733.000    639.000   1740.000      0.000      0.000

NH      7.000      0.200   1399.000      0.050   1784.000      0.025   1957.000     10.000   1998.000      0.025
NH   2062.000      0.030   2221.000      0.040   2250.000      0.000      0.000      0.000      0.000      0.000
FT      0.000      0.000      1.400      0.000      0.000      0.000      0.000      0.000      0.000      0.000
                XSEC 10A NEAR WHITE COTTAGE(BRONKEMA)  1976HWM 630.9 IN GARAGE
                XSEC BEND 5DEG RT AT STA 139.9  RESTRICTED FOR HIGH GROUND AT
                XSEC 11 US      1986 HWM 638
X1  54600.000     35.000   2062.000   2221.000    500.000   1000.000    900.000      0.000      0.000      0.000
X2      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000     15.000
X3      0.000      0.000      0.000    750.000      0.000      0.000      0.000      0.000      0.000      0.000
GR    639.000      0.000    628.500     50.000    625.000    449.000    623.000    649.000    624.000    949.000
GR    623.000   1049.000    627.100   1352.000    628.200   1399.000    629.300   1508.000    626.700   1597.000
GR    630.100   1644.000    630.500   1755.000    628.100   1784.000    629.900   1846.000    628.500   1888.000
GR    628.600   1917.000    628.100   1957.000    629.600   1966.000    630.400   1998.000    629.800   2041.000
GR    629.100   2060.000    628.700   2062.000    625.300   2068.000    624.500   2074.000    621.000   2079.000
GR    620.500   2099.000    617.500   2119.000    617.000   2123.000    615.500   2145.000    614.000   2167.000
GR    613.000   2190.000    616.300   2215.000    621.000   2221.000    632.100   2238.000    639.000   2250.000
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                                                                                                          PAGE    9


NH      6.000      0.013    600.000      0.025    700.000     10.000    750.000      0.025    817.000      0.030
NH    961.000      0.040    978.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
                XSEC 10B LOB IS FELCH ROAD
X1  55080.000     21.000    817.000    961.000    250.000    550.000    480.000      0.000      0.000      0.000
X2      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
GR    640.000      0.000    633.100    100.000    631.300    200.000    631.600    300.000    631.400    400.000
GR    631.100    500.000    631.100    600.000    629.900    700.000    629.300    750.000    628.700    800.000
GR    625.300    806.000    624.500    812.000    621.000    817.000    619.700    857.000    616.900    885.000
GR    615.300    907.000    614.500    930.000    616.300    955.000    621.300    961.000    632.100    978.000
GR    639.000    990.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000

NH      5.000      0.029   1169.000      0.080   1546.000     10.000   1651.000      0.080   1946.000      0.100
NH   2105.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
                XSEC 11  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD HOMENS BEND
X1  55800.000     23.000   1000.000   1169.000    150.000    450.000    720.000      0.000      0.000      0.000
X2      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000     15.000
X3      0.000      0.000      0.000      0.000      0.000   1900.000      0.000      0.000      0.000      0.000
GR    627.700   1000.000    623.000   1014.000    621.400   1015.000    619.400   1026.000    618.800   1039.000
GR    615.500   1051.000    616.300   1075.000    615.700   1100.000    616.500   1125.000    618.400   1148.000
GR    621.400   1154.000    628.600   1169.000    630.100   1172.000    629.800   1185.000    630.200   1237.000
GR    629.500   1320.000    630.100   1454.000    630.700   1546.000    630.800   1651.000    629.700   1819.000
GR    629.600   1946.000    628.200   2070.000    640.000   2105.000      0.000      0.000      0.000      0.000

NH      6.000      0.070     22.000      0.035    220.000      0.080    457.000     10.000    560.000      0.080
NH    958.000      0.100   1592.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
                XSEC 12
X1  56800.000     31.000     22.000    222.000   1200.000     50.000   1000.000      0.000      0.000      0.000
X2      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000     15.000
X3      0.000      0.000      0.000      0.000      0.000   1630.000      0.000      0.000      0.000      0.000
GR    640.000      0.000    629.300     13.000    621.700     22.000    619.100     29.000    617.800     53.000
GR    614.600     81.000    617.100    107.000    619.100    131.000    620.300    141.000    621.600    147.000
GR    622.800    132.000    624.300    171.000    626.700    187.000    630.000    222.000    629.900    245.000
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 GR    628.800    350.000    630.100    457.000    630.700    560.000    630.600    660.000    629.900    758.000
 GR    629.600    865.000    629.300    958.000    630.100   1010.000    629.500   1093.000    630.100   1227.000
 GR    630.700   1319.000    630.800   1424.000    629.700   1592.000    629.600   1719.000    628.200   1843.000
 GR    640.000   1878.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000

 NH     10.000      0.070     30.000      0.045    857.000      0.030    987.000      0.080   1061.000      0.030
 NH   1175.000      0.055   1189.000     10.000   1245.000      0.055   1606.000     10.000   1711.000      0.075
 NE   2165.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
            XSEC 13  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
                1976 JHM 631.9
 X1  57650.000     32.000    857.000   1180.000    500.000     50.000    850.000      0.000      0.000      0.000
 X2      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000     15.000
 X3      0.000      0.000      0.000      0.000      0.000   1910.000      0.000      0.000      0.000      0.000
 GR    640.000      0.000    630.000     30.000    629.200    845.000    622.000    857.000    618.500    869.000
 GR    618.500    879.000    618.500    914.000    620.000    968.000    622.700    987.000    627.000    991.000
 GR    625.500   1007.000    627.300   1014.000    627.300   1045.000    628.000   1054.000    624.400   1061.000
 GR    623.500   1087.000    622.000   1117.000    618.100   1144.000    615.900   1168.000    620.400   1175.000
 GR    626.500   1180.000    629.700   1189.000    629.700   1245.000    630.200   1297.000    629.500   1380.000
 GR    630.100   1514.000    630.700   1606.000    630.800   1711.000    629.700   1879.000    629.600   2006.000
 GR    628.200   2130.000    640.000   2165.000      0.000      0.000      0.000      0.000      0.000      0.000
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 NE      4.000      0.070     50.000      0.048   1106.000      0.036   1285.000      0.150   1300.000      0.000
 EI      0.000      0.000      1.400      0.000      0.000      0.000      0.000      0.000      0.000      0.000
            XSEC 14 XSEC BENT 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB
 X1  58350.000     20.000   1106.000   1285.000    500.000    400.000    700.000      0.000      0.000      0.000
 X2      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000     15.000
 GR    640.500      0.000    633.000     50.000    630.100    100.000    628.600    400.000    630.300    731.000
 GR    631.100    918.000    630.700   1077.000    630.500   1106.000    623.300   1125.000    621.600   1126.000
 GR    616.400   1138.000    616.300   1158.000    617.500   1135.000    619.500   1212.000    619.900   1243.000
 GR    619.900   1269.000    620.900   1277.000    622.400   1282.000    629.500   1285.000    640.500   1300.000

 NH      4.000      0.060   1150.000      0.034   1389.000      0.100   1513.000      0.100   1550.000      0.000
 ET      0.000      0.000      1.400      0.000      0.000      0.000      0.000      0.000      0.000      0.000
            XSEC 15
 X1  58900.000     21.000   1150.000   1389.000    450.000    700.000    550.000      0.000      0.000      0.000
 GR    640.600      0.000    633.000     50.000    632.000    100.000    632.200   1130.000    632.000   1143.000
 GR    631.800   1147.000    631.500   1150.000    627.000   1153.000    622.700   1162.000    618.400   1183.000
 GR    622.100   1201.000    620.700   1225.000    619.900   1257.000    618.700   1289.000    616.600   1317.000
 GR    616.500   1342.000    618.100   1367.000    629.000   1389.000    629.000   1447.000    631.300   1513.000
 GR    640.600   1550.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000

 NH      4.000      0.120     92.000      0.040     44.000      0.035    200.000      0.120    800.000      0.000
 ET      0.000      0.000      1.400      0.000      0.000      0.000      0.000      0.000      0.000      0.000
            XSEC 16
 X1  60000.000     17.000     44.300    200.000   1000.000    700.000   1100.000      0.000      0.000      0.000
 X2      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000     15.000
 GR    641.400      0.000    631.000     32.000    630.500     86.000    628.600     38.000    628.000     44.000
 GR    623.200     47.000    620.800     55.000    618.900     79.000    619.100    103.000    619.400    129.000
 GR    620.700    154.000    621.200    168.000    623.300    175.000    626.500    187.000    632.600    200.000
 GR    633.100    750.000    641.400    800.000      0.000      0.000      0.000      0.000      0.000      0.000
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NH	3.030	0.093	144.000	0.028	422.000	0.089	543.000	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
		XSEC 17 SUBDIVISION ON LEFT BANK								
X1	62250.000	28.000	144.000	422.000	2400.000	1700.000	2225.000	0.000	0.000	0.000
GR	642.800	0.000	638.600	26.000	632.600	88.000	631.600	113.000	632.500	125.000
GR	632.900	144.000	630.900	153.000	625.400	159.000	624.200	161.000	622.000	173.000
GR	621.800	181.000	622.100	193.000	621.400	243.000	620.500	280.000	619.700	313.000
GR	620.200	350.000	621.800	365.000	624.300	384.000	625.000	394.000	624.200	399.000
GR	629.100	422.000	630.300	424.000	629.700	435.000	629.500	468.000	627.800	492.000
GR	629.000	518.000	637.300	534.000	641.600	543.000	0.000	0.000	0.000	0.000
NH	3.000	0.389	32.000	0.028	256.000	0.110	448.000	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	63120.000	22.000	32.000	256.000	970.000	970.000	970.000	0.000	0.000	0.000
GR	643.800	0.000	638.500	14.000	631.400	30.000	630.400	32.000	624.700	34.000
GR	623.000	39.000	619.700	50.000	619.800	82.000	621.500	117.000	621.800	152.000
GR	623.400	187.000	624.100	194.000	624.900	227.000	626.700	235.000	625.400	245.000
GR	625.800	251.000	633.100	256.000	634.000	265.000	633.700	298.000	633.400	322.000
GR	632.300	372.000	643.800	448.000	0.000	0.000	0.000	0.000	0.000	0.000

1

NH	4.000	0.074	175.000	0.110	216.000	0.028	421.000	0.089	485.000	0.000
X1	65620.000	27.000	216.000	421.000	1900.000	1900.000	1900.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	20.000	0.000	470.000	0.000	0.000	0.000	0.000
GR	642.200	0.000	631.500	53.000	632.000	98.000	634.500	153.000	635.700	175.000
GR	634.000	196.000	633.000	205.000	629.800	216.000	626.100	219.000	624.900	230.000
GR	623.100	238.000	622.500	261.000	621.900	290.000	621.400	307.000	620.900	333.000
GR	620.700	363.000	623.000	397.000	625.200	408.000	628.300	421.000	630.100	425.000
GR	631.000	431.000	631.400	442.000	630.900	455.000	631.800	462.000	634.200	474.000
GR	637.700	479.000	642.200	485.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.074	10.000	0.030	59.000	0.028	295.000	0.110	455.000	0.000
		XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK								
X1	67420.000	21.000	59.000	295.000	2400.000	2500.000	2500.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	10.000	0.000	420.000	0.000	0.000	0.000	0.000
GR	642.900	0.000	638.600	10.000	634.000	20.000	633.200	32.000	632.500	54.000
GR	631.300	59.000	627.800	62.000	624.500	73.000	623.600	86.000	621.000	100.000
GR	619.300	129.000	620.900	154.000	623.200	194.000	624.000	218.000	626.100	267.000
GR	627.700	281.000	633.700	295.000	636.100	299.000	633.000	345.000	634.900	415.000
GR	642.900	455.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.063	270.000	0.028	518.000	0.074	575.000	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
		KSEC 21 DS OF GREEN COTTAGE ON LEFT BANK								
X1	68970.000	25.000	270.000	518.000	1400.000	1700.000	1550.000	0.000	0.000	0.000
GR	643.500	0.000	640.700	10.000	637.400	124.000	636.700	212.000	635.500	246.000
GR	633.700	255.000	631.500	270.000	625.500	277.000	626.300	293.000	625.100	303.000
GR	625.600	320.000	623.800	336.000	622.500	346.000	622.500	363.000	622.400	385.000
GR	622.500	421.000	622.500	429.000	623.000	450.000	622.700	481.000	625.300	499.000
GR	626.600	505.000	628.300	518.000	633.700	529.000	636.400	550.000	643.500	575.000
NH	3.000	0.037	126.000	0.028	408.000	0.037	426.000	0.000	0.000	0.000

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ET      0.000      0.000      1.400      0.000      0.000      0.000      0.000      0.000      0.000      0.000
                XSEC 22  BELOW POWER LINE CROSSING  N VALUES ARE ATYPICAL
X1  70300.000     25.000    126.000    408.000   1300.000   1300.000   1330.000      0.000      0.000      0.000
GR    644.400      0.000    640.000     15.000    635.000     24.000    631.600     40.000    632.700     54.000
GR    631.200     73.000    634.100    113.000    634.200    123.000    633.800    126.000    631.700    136.000
GR    625.700    144.000    624.400    160.000    624.500    183.000    623.700    194.000    625.300    214.000
GR    626.400    266.000    625.900    300.000    624.100    307.000    624.100    336.000    624.400    359.000
GR    626.200    383.000    628.600    389.000    632.300    408.000    639.400    417.000    644.400    426.000

NH      4.000      0.099     30.000      0.033     98.000      0.028    323.000      0.074    375.000      0.000
ET      0.000      0.000      1.400      0.000      0.000      0.000      0.000      0.000      0.000      0.000
X1  71300.000     22.000     98.000    323.000   1000.000   1000.000   1000.000      0.000      0.000      0.000
GR    645.100      0.000    636.000     30.000    633.300     71.000    633.900     79.000    633.600     98.000
GR    631.700    101.000    629.900    108.000    627.100    111.000    625.100    114.000    624.600    144.000
GR    625.000    154.000    623.900    163.000    622.700    193.000    622.100    217.000    622.100    235.000
GR    623.200    271.000    624.500    300.000    626.000    311.000    630.200    323.000    635.800    333.000
GR    637.600    354.000    645.100    375.000      0.000      0.000      0.000      0.000      0.000      0.000
1
                                                                                                  PAGE   12

NH      4.000      0.074     57.000      0.035    100.000      0.030    320.000      0.089    408.000      0.000
ET      0.000      0.000      1.400      0.000      0.000      0.000      0.000      0.000      0.000      0.000
X1  71900.000     25.000    100.000    320.000    500.000    650.000    600.000      0.000      0.000      0.000
GR    646.100      0.000    638.500     21.000    636.100     48.000    634.200     56.000    634.500     67.000
GR    632.700     69.000    631.400     88.000    630.600     99.000    630.000    100.000    627.700    103.000
GR    625.800    109.000    625.500    118.000    624.600    150.000    624.600    178.000    625.500    225.000
GR    626.100    274.000    625.600    291.000    627.100    313.000    630.500    320.000    632.700    335.000
GR    630.900    343.000    632.400    355.000    633.200    361.000    639.400    389.000    645.200    408.000

NH      4.000      0.074     66.000      0.031    311.000      0.028    757.000      0.059    767.000      0.000
ET      0.000      0.000      1.400      0.000      0.000      0.000      0.000      0.000      0.000      0.000
          XSEC 25 BTWN BARRIER AND KRING CABINS US OF PUB ACC SITE DS OF NEWYGO
X1  73040.000     20.000     66.000    311.000   1200.000   1100.000   1140.000      0.000      0.000      0.000
GR    646.600      0.000    641.900     15.000    639.200     30.000    636.200     66.000    628.600     82.000
GR    626.400    124.000    625.600    147.000    625.400    215.000    626.000    268.000    628.000    301.000
GR    633.300    311.000    636.600    328.000    636.700    343.000    636.400    418.000    637.600    472.000
GR    639.500    526.000    641.300    559.000    644.800    620.000    650.800    757.000    655.800    767.000

NH      3.000      0.035     49.000      0.028    310.000      0.044    335.000      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
          XSEC 26 DS OF CO RD BRDG  SEC BENT 45DEG RT OFF RD FILL AT STA 10
            BENT 45DEG RT TO RD FILL AT STA 325
X1  73590.000     21.000     49.000    310.000    660.000    500.000    550.000      0.000      0.000      0.000
GR    646.800      0.000    643.800     10.000    637.000     32.000    635.600     41.000    634.300     47.000
GR    632.900     49.000    628.800     65.000    624.100     82.000    626.000    105.000    626.800    113.000
GR    628.000    121.000    625.300    133.000    626.800    162.000    628.800    175.000    629.900    211.000
GR    626.600    244.000    627.000    272.000    628.400    304.000    632.400    310.000    632.700    325.000
GR    646.800    335.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000

NC      0.035      0.044      0.025      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
                XSEC 27 CENTER OF BRDG   ELLC AT 650.5
X1  73640.000     31.000      0.000    296.000     50.000     50.000     50.000      0.000      0.000      0.000
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X2	0.000	0.000	0.000	650.500	652.000	0.000	0.000	0.000	0.000	0.000
GR	652.000	0.000	638.800	0.000	631.300	35.000	629.200	36.000	628.870	43.000
GR	625.700	60.000	625.500	80.000	625.500	90.000	627.500	95.000	628.000	100.000
GR	626.700	107.000	625.600	117.000	625.100	128.000	625.800	138.000	628.000	146.000
GR	652.000	146.000	652.000	152.000	628.000	152.000	627.800	163.000	627.300	167.000
GR	625.800	182.000	625.600	197.000	625.500	208.000	625.500	215.000	624.800	240.000
GR	625.500	250.000	625.500	264.000	633.000	275.000	632.900	290.000	634.800	296.000
GR	652.000	296.000	0.000	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	73660.000	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	653.500	652.000	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	73720.000	21.000	110.000	353.000	60.000	60.000	60.000	0.000	0.000	0.000
GR	653.300	0.000	647.000	44.000	641.700	71.000	634.800	88.000	633.600	99.000
GR	634.700	110.000	631.500	120.000	629.100	123.000	628.500	153.000	626.900	168.000
GR	635.800	202.000	626.700	220.000	625.300	240.000	626.700	278.000	627.300	306.000
GR	639.000	336.000	632.300	353.000	635.400	373.000	640.000	414.000	645.500	492.000
GR	650.000	523.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1

NC	4.000	0.110	80.000	0.059	826.000	0.025	1066.000	0.067	1075.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 29 SEWAGE TREATMENT PLANT IN LOB								
X1	75140.000	24.000	826.000	1066.000	1140.000	1440.000	1420.000	0.000	0.000	0.000
GR	645.200	0.000	640.400	80.000	638.400	170.000	636.000	286.000	636.700	390.000
GR	636.500	494.000	637.200	592.000	636.300	692.000	635.400	790.000	635.600	820.000
GR	635.600	826.000	632.600	838.000	629.100	843.000	628.600	850.000	628.700	857.000
GR	627.800	891.000	627.500	936.000	628.100	953.000	628.900	983.000	629.700	1048.000
GR	631.200	1053.000	634.500	1066.000	639.200	1068.000	646.700	1075.000	0.000	0.000
NC	0.074	0.074	0.025	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
		XSEC 29A AT USGS CABLE								
X1	75900.000	22.000	1005.000	1264.000	540.000	700.000	660.000	0.000	0.000	0.000
GR	636.000	1005.000	632.400	1011.000	631.700	1013.000	630.500	1019.000	628.500	1029.000
GR	628.800	1037.000	629.100	1048.000	629.200	1062.000	630.000	1080.000	629.900	1105.000
GR	629.400	1121.000	629.900	1139.000	629.700	1159.000	629.300	1177.000	629.100	1194.000
GR	628.900	1208.000	628.200	1227.000	628.700	1229.000	631.700	1241.000	633.700	1246.000
GR	633.300	1255.000	635.200	1264.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.080	16.000	0.025	57.000	0.028	327.000	0.075	400.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 29B AT USGS GAGE 1976 STAGE IS 639.2 1986 STAGE:645.4								
X1	76350.000	24.000	24.000	333.000	550.000	550.000	550.000	0.000	0.000	0.000
GR	648.800	0.000	638.800	10.000	634.700	24.000	632.300	33.000	630.800	41.000
GR	630.900	65.000	629.800	86.000	630.600	103.000	631.100	110.000	630.900	132.000
GR	630.900	133.000	630.900	134.000	631.200	141.000	631.200	181.000	630.800	218.000
GR	631.200	243.000	630.700	255.000	629.800	284.000	631.100	306.000	632.500	326.000
GR	633.000	332.000	634.600	333.000	636.590	346.000	646.500	356.000	0.000	0.000

NC	0.074	0.074	0.025	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

XSEC 30 1975 HWM IS 638.6 1976 HWM IS 639.2

X1	75760.000	27.000	57.000	327.000	350.000	450.000	410.000	0.000	0.000	0.000
GR	654.000	0.000	645.800	16.000	638.600	32.000	637.900	43.000	636.500	57.000
GR	633.200	62.000	621.000	77.000	629.000	84.000	629.000	98.000	629.600	118.000
GR	629.000	147.000	628.300	167.000	630.400	188.000	633.000	197.000	632.600	203.000
GR	627.600	217.000	629.000	221.000	629.800	232.000	629.600	279.000	631.700	287.000
GR	631.100	298.000	633.300	315.000	636.000	327.000	638.300	341.000	636.900	355.000
GR	638.900	360.000	651.300	400.000	0.000	0.000	0.000	0.000	0.000	0.000
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1

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

*2OF 1

CCHV= 0.100 CEHV= 0.300
1490 NH CARD USED
*SECNO 0.100

3470 ENCROACHMENT STATIONS= 8.0 818.0 TYPE= 1 TARGET= 810.000

XSEC 51

0.10	20.31	618.81	0.00	619.00	619.10	0.29	0.00	0.00	613.20
18800.	10.	16092.	2698.	32.	3431.	3227.	0.	0.	609.60
0.00	0.32	4.69	0.84	0.135	0.031	0.095	0.000	598.50	10.68
0.000251	0.	0.	0.	0	0	3	0.00	802.30	812.98

0
1490 NH CARD USED
*SECNO 1920.000

3470 ENCROACHMENT STATIONS= 22.0 763.0 TYPE= 1 TARGET= 741.000
SEC 61 MOVED US INVERT ADJ BY .94FT FLOOD FLOW SHIFTED FROM
ROB AS NOTED ON XSEC 61 TO APPROX AREA IN LOB FOR THIS XSEC

1920.00	19.85	619.29	0.00	0.00	619.66	0.37	0.54	0.02	614.14
18800.	0.	17116.	1684.	0.	3331.	2732.	269.	32.	610.54
0.11	0.00	5.14	0.62	0.000	0.031	0.140	0.000	599.44	22.00
0.000323	2170.	1920.	1740.	0	0	0	0.00	741.00	763.00

0
1490 NH CARD USED
*SECNO 3050.000

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000

XSEC 62

3050.00	19.27	619.67	0.00	0.00	619.98	0.31	0.31	0.01	608.60
18800.	113.	18612.	75.	103.	6146.	83.	406.	46.	609.00
0.18	1.10	4.49	0.91	0.067	0.031	0.087	0.000	600.40	18.74
0.000238	1200.	1130.	1200.	2	0	0	0.00	307.80	326.54

0

1490 NH CARD USED
*SECNO 3051.000

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000
W EDGE OF BRIDGE DECK AT BRIDGETON 1976 HWM 615.7

3051.00	19.29	619.69	0.00	0.00	619.98	0.30	0.00	0.00	608.60
18800.	326.	18256.	218.	103.	4148.	83.	406.	46.	609.00
0.18	3.16	4.40	2.63	0.023	0.031	0.023	0.000	600.40	18.73
0.000228	1.	1.	1.	1	0	0	0.00	307.82	326.55

0
1

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

SPECIAL BRIDGE

SB	XK	XKOR	COEQ	RDLEN	BNC	BWP	BAREA	SS	ELCHU	ELCHD
	0.90	1.25	2.60	1000.00	260.00	8.00	9000.00	1.43	604.50	604.50

*SECNO 3100.000
CLASS A LOW FLOW

3420 BRIDGE W.S.= 619.67 BRIDGE VELOCITY= 4.53 CALCULATED CHANNEL AREA= 4152.

ESPDS	EGLEC	HB	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD
0.00	619.99	0.01	0.	18800.	9000.	9152.	635.40	638.00

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000

3100.00	19.30	619.70	0.00	0.00	619.99	0.30	0.01	0.00	608.60
18800.	327.	18255.	219.	103.	4152.	83.	411.	46.	609.00
0.19	3.16	4.40	2.63	0.023	0.031	0.023	0.000	600.40	18.71
0.000227	49.	49.	49.	0	0	0	0.00	307.87	326.57

0
*SECNO 3101.000

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000

3101.00	19.28	619.68	0.00	0.00	620.00	0.31	0.00	0.01	608.60
18800.	38.	18708.	54.	103.	4150.	83.	411.	46.	609.00
0.19	0.37	4.51	0.65	0.202	0.031	0.095	0.000	600.40	18.72
0.000239	1.	1.	1.	1	0	0	0.00	307.85	326.57

0
1490 NH CARD USED
*SECNO 4680.000

XSEC 63

4680.00	16.63	620.13	0.00	0.00	620.33	0.20	0.32	0.01	608.50

18900.	352.	17173.	1275.	308.	4309.	1113.	599.	63.	616.00
3.31	1.14	3.73	1.15	0.061	0.031	0.048	0.000	603.50	10.21
0.000171	1500.	1579.	1600.	2	0	0	0.00	607.21	617.42

0
1490 NH CARD USED
*SECNO 7200.000
XSEC 64 XSEC CROSSES US OF OLD ROCK CRIBBING
1

SECNO	DEPTH	CNSEL	CRIWS	TSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
7200.00	19.75	620.55	0.00	0.00	620.88	0.33	0.51	0.04	619.00
18800.	1013.	17638.	149.	2707.	3695.	108.	950.	101.	610.40
0.47	0.37	4.77	1.38	0.199	0.031	0.054	0.000	600.80	10.42
0.000250	2200.	2520.	2500.	2	0	0	0.00	798.50	808.92

0
1490 NH CARD USED
*SECNO 8850.000
XSEC 65 XSEC CROSSES 100FT US OF BOAT LAUNCH

8850.00	15.89	621.09	0.00	0.00	621.30	0.21	0.40	0.01	619.30
18800.	1.	15840.	2959.	3.	3998.	4474.	1224.	131.	619.80
0.60	0.29	3.96	0.68	0.067	0.033	0.141	0.000	604.20	36.14
0.000244	1400.	1650.	1600.	2	0	0	0.00	877.71	913.84

0
1490 NH CARD USED
*SECNO 10300.000
XSEC 66

10300.00	18.53	621.58	0.00	0.00	621.63	0.09	0.32	0.01	611.10
18800.	162.	12957.	5681.	125.	4462.	6353.	1454.	153.	620.60
0.75	1.30	2.90	0.89	0.067	0.046	0.113	0.000	603.00	24.42
0.000255	1500.	1450.	700.	2	0	0	0.00	1175.60	1200.02

0
1490 NH CARD USED
*SECNO 11800.000
XSEC 67

11800.00	17.47	621.87	0.00	0.00	622.10	0.23	0.43	0.04	619.60
18800.	2995.	15715.	90.	5411.	3720.	187.	1771.	187.	610.70
3.86	0.55	4.22	0.43	0.202	0.041	0.202	0.000	604.40	84.08
0.000363	1600.	1500.	1000.	3	0	0	0.00	1008.39	1092.47

0
*SECNO 12600.000

12600.00	17.76	622.16	0.00	0.00	622.38	0.22	0.28	0.00	619.60
18800.	3072.	15635.	93.	5622.	3790.	196.	1345.	205.	610.70
0.93	0.55	4.13	0.47	0.202	0.041	0.202	0.000	604.40	79.08
0.000838	800.	900.	800.	2	0	0	0.00	1014.26	1093.33

0
1490 NH CARD USED
*SECNO 14100.000
XSEC 68

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	KNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
14100.00	18.63	622.63	0.00	0.00	622.89	0.26	0.49	0.01	611.80
18800.	275.	17634.	891.	438.	4203.	1970.	2185.	230.	618.40
1.03	0.63	4.20	0.45	0.135	0.041	0.202	0.000	604.00	13.15
0.000345	900.	1500.	1600.	0	0	0	0.00	712.28	725.43

0
1490 NH CARD USED
*SECNO 16700.000

XSEC 69

16700.00	18.71	623.31	0.00	0.00	623.59	0.27	0.69	0.01	621.80
19800.	2914.	15822.	64.	6286.	3460.	76.	2481.	257.	613.80
1.20	0.46	4.57	0.84	0.202	0.027	0.081	0.000	604.60	17.05
0.000249	300.	2600.	1900.	2	0	0	0.00	1118.90	1135.95

0
*SECNO 18990.000

XSEC 1 FROM SUBDIVISION FILE F184 22 12

18990.00	17.82	623.82	0.00	0.00	623.99	0.17	0.40	0.01	611.80
18800.	812.	17772.	216.	769.	5162.	369.	2812.	289.	612.70
1.37	1.06	3.44	0.59	0.054	0.034	0.081	0.000	606.00	117.95
0.000149	1250.	2190.	2500.	2	0	0	0.00	542.37	660.32

0
1490 NH CARD USED
*SECNO 19870.000

3265 DIVIDED FLOW

XSEC 70 THROUGH SUBDIV ON LEFT BANK CHANNEL INEFFECTIVE
1975 HWM ON BASEMENT WALL 619.8 HWM 80OFT DS 619.98

19870.00	18.32	623.92	0.00	0.00	624.25	0.33	0.21	0.05	612.40
18800.	4277.	14395.	128.	2187.	2786.	248.	2943.	302.	612.80
1.44	1.96	5.17	0.52	0.041	0.034	0.202	0.000	605.60	13.46
0.000344	950.	1000.	980.	2	0	0	0.00	696.01	742.46

0
1490 NH CARD USED
*SECNO 21370.000

XSEC 71 OLDER COTTAGES ON RT BANK SEAWALL PROTECTS RT BANK

21370.00	19.35	624.45	0.00	0.00	624.66	0.21	0.39	0.01	612.40
18800.	1247.	13642.	3911.	1508.	3211.	2848.	3153.	325.	619.80
1.55	0.69	4.25	1.87	0.142	0.033	0.064	0.000	605.10	13.27
0.000219	1100.	1500.	1600.	2	0	0	0.00	769.17	782.44

0
1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV

Q / TIME / SLOPE	QLOB / VLOB / KLOBL	QCH / VCH / XLCH	QROB / VROB / XLOBR	ALOB / XNL / ITRIAL	ACH / XNCH / IDC	AROB / XNR / ICONT	VOL / WTN / COFAR	TWA / ELMIN / TOPWID	LEFT/RIGHT SSTA / ENDST
1490 NH CARD USED									
*SECNO 24985.000									
	XSEC 72								
24985.00	17.94	625.44	0.00	0.00	625.65	0.20	0.99	0.00	620.30
18800.	2362.	13902.	2536.	3874.	3352.	1552.	3849.	394.	614.70
1.85	0.61	4.15	1.63	0.202	0.040	0.062	0.000	607.50	13.22
0.000349	3700.	3615.	3600.	2	0	0	0.00	893.20	906.42
0									
1490 NH CARD USED									
*SECNO 28235.000									
	XSEC 73								
28235.00	18.54	626.54	0.00	0.00	626.80	0.26	1.13	0.02	623.50
18800.	1117.	17585.	99.	2205.	4153.	115.	4348.	444.	616.70
2.07	0.51	4.23	0.95	0.201	0.040	0.108	0.000	608.00	12.44
0.000377	2300.	3200.	3300.	2	0	0	0.00	667.31	679.74
0									
1490 NH CARD USED									
*SECNO 29860.000									
	XSEC 74 IN LINE WITH E SIDE OF COTTAGE ON TOP OF LFT BANK JUST US OF POWERLINE								
29860.00	17.83	627.13	0.00	0.00	627.50	0.37	0.67	0.03	616.20
18800.	94.	18109.	597.	200.	3642.	1237.	4561.	465.	615.20
2.16	0.47	4.97	0.48	0.202	0.041	0.202	0.000	609.30	14.36
0.000452	1500.	1625.	1700.	0	0	0	0.00	495.77	510.13
0									
1490 NH CARD USED									
*SECNO 31660.000									
	XSEC 75								
31660.00	19.21	627.51	0.00	0.00	628.15	0.24	0.64	0.01	623.30
18800.	536.	17842.	422.	1296.	4451.	480.	4793.	487.	617.10
2.29	0.41	4.01	0.88	0.186	0.041	0.108	0.000	608.70	25.02
0.000286	1700.	1800.	1300.	2	0	0	0.00	595.26	620.28
0									
1490 NH CARD USED									
*SECNO 35425.000									
3470 ENCROACHMENT STATIONS=		20.0	790.0	TYPE=	1	TARGET=	770.000		
	XSEC 76								
35425.00	19.48	629.28	0.00	0.00	629.49	0.21	1.34	0.00	621.20
18800.	28.	15359.	3413.	71.	3766.	4209.	5409.	547.	625.30
2.59	0.40	4.08	0.81	0.209	0.046	0.165	0.000	609.80	20.00
0.000461	4300.	3760.	3600.	2	0	0	0.00	770.00	790.00
0									
1									

SECNO / Q / TIME	DEPTH / QLOB / VLOB	CHSEL / QCH / VCH	CHIWS / QROB / VROB	WSELR / ALOB / XNL	ES / ACH / XNCH	HV / AROB / XNR	HL / VOL / WTN	OLOSS / TWA / ELMIN	BANK ELEV LEFT/RIGHT SSTA

SLOPO	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO 37670.000

3470 ENCROACHMENT STATIONS= 20.0 1035.0 TYPE= 1 TARGET= 1015.000
XSEC 77

37670.00	22.24	630.24	0.00	0.00	630.47	0.23	0.97	0.00	622.70
18800.	5323.	13459.	18.	7533.	3004.	53.	5845.	508.	623.70
2.76	0.71	4.48	0.33	0.203	0.047	0.202	0.000	608.00	20.00
0.000456	1900.	2150.	2100.	2	0	0	0.00	1013.53	1033.53

0
1490 NH CARD USED
*SECNO 38970.000

3470 ENCROACHMENT STATIONS= 20.0 760.0 TYPE= 1 TARGET= 740.000
XSEC 78 800FT DS OF ISLAND, POWERLINE CROSSING AND BOAT LAUNCH
WEST END OF OLD GRAVEL OPERATION

38970.00	17.79	630.69	0.00	0.00	630.83	0.13	0.35	0.01	621.80
18800.	28.	15349.	3423.	64.	4741.	4028.	6082.	609.	624.80
2.89	0.43	3.24	0.85	0.135	0.041	0.111	0.000	612.90	20.00
0.000200	700.	1300.	1300.	2	0	0	0.00	740.00	760.00

0
1490 NH CARD USED
*SECNO 42170.000

3470 ENCROACHMENT STATIONS= 15.0 510.0 TYPE= 1 TARGET= 495.000
XSEC 1

42170.00	20.17	631.17	0.00	0.00	631.65	0.48	0.72	0.10	622.40
18800.	24.	16864.	1912.	69.	2863.	2339.	6586.	652.	625.90
3.05	0.35	5.89	0.92	0.202	0.027	0.113	0.000	611.00	15.00
0.000264	3600.	3200.	3000.	2	0	0	0.00	495.00	510.00

0
1490 NH CARD USED
*SECNO 43770.000
XSEC 2

43770.00	18.64	631.74	0.00	0.00	632.16	0.41	0.50	0.01	622.30
18800.	243.	16113.	2447.	251.	2902.	2116.	6789.	671.	618.30
3.14	0.92	5.55	1.16	0.102	0.034	0.109	0.000	613.10	7.94
0.000358	1200.	1600.	1800.	2	0	0	0.00	459.29	467.23

0
1

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

1490 NH CARD USED
*SECNO 44920.000
XSEC 3 SECTION THRU ISLAND NE OF OLD GRAVEL OPERATION

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  44820.00    20.17   632.37     0.00     0.00   632.55     0.18     0.37     0.02   624.70
    18800.      834.   17475.      491.     1541.     4953.     1027.     6948.      685.   625.30
      3.23     0.54     3.53     0.48    0.202    0.048    0.202    0.000   612.20     5.26
  0.000343     1100.     1050.     1100.        2        0        0     0.00   688.35   693.61
0
 1490 NH CARD USED
 *SECNO 45470.000
                XSEC 4  OLD  WOOD PILING ALONG EACH BANK
  45470.00    19.14   632.54     0.00     0.00   632.87     0.32     0.27     0.04   627.70
    18800.      889.   17796.      115.     1517.     3794.      270.     7040.      694.   624.50
      3.27     0.59     4.69     0.43    0.202    0.047    0.202    0.000   613.40     7.66
  0.000541      550.      650.      650.        2        0        0     0.00   554.15   561.82
0
 1490 NH CARD USED
 *SECNO 46870.000
                XSEC 5  HILL AT RIGHT BANK IS ERODING
  46870.00    21.72   633.22     0.00     0.00   633.58     0.36     0.70     0.01   622.10
    18800.     1524.   16996.      280.     1681.     3387.      183.     7202.      709.   621.30
      3.35     0.91     5.02     1.53    0.135    0.047    0.089    0.000   611.50    18.56
  0.000537     1280.     1300.     1575.        2        0        0     0.00   473.07   491.62
0
 1490 NH CARD USED
 *SECNO 48720.000
                XSEC 6
  48720.00    17.77   634.17     0.00     0.00   634.35     0.18     0.76     0.02   626.80
    18800.     1280.   16198.     1322.      576.     4447.     1174.     7439.      728.   620.60
      3.50     2.22     3.64     1.13    0.046    0.049    0.135    0.000   616.40     8.40
  0.000330     1500.     1850.     2000.        1        0        0     0.00   441.63   450.03
0
 1490 NH CARD USED
 *SECNO 50220.000
                XSEC 7
  50220.00    22.93   634.63     0.00     0.00   634.75     0.12     0.38     0.01   626.30
    18800.     8778.    9753.      269.     4099.     3050.      232.     7658.      746.   623.10
      3.65     2.14     3.20     1.16    0.041    0.049    0.067    0.000   611.70     3.90
  0.000221     1300.     1500.     1300.        2        0        0     0.00   727.52   731.41
0
1
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SECNO	DEPTH	CHSEL	CRIUS	HSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	STN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	COEAR	IOPHID	ENDST

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 1490 NH CARD USED
 *SECNO 51945.000

 3265 DIVIDED FLOW

                XSEC 8    VICS CAMPING ON RIGHT BANK, CAMPGROUND IS ON A HILL
                          WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.
  51945.00    20.17   635.07     0.00     0.00   635.39     0.32     0.58     0.06   637.60
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   18800.        1.    14866.     3933.        3.     2919.     5958.     7944.      778.     629.40
     3.75      0.47      5.09      0.66    0.027     0.047     0.202     0.000    614.90      27.11
 0.000700     1300.     1725.     1500.        2         0         0      0.00   1163.85    1274.27
0
 1490 NH CARD USED
 *SECNO 53000.000

 3470 ENCROACHMENT STATIONS=      350.0     1700.0  TYPE=      1  TARGET=     -350.000
                 XSEC 9  SECTION THROUGH ISLAND US OF VICS
             XSEC BENT 30DEG LFT AT 887  20DEG RT AT STA 1208
  53000.00     18.85    635.55      0.00      0.00    635.66      0.11      0.25      0.02    625.00
    18800.      3010.    14716.     1073.     5416.     4994.     3116.     8167.      800.    623.00
      3.87      0.56      2.95      0.34     0.140     0.036     0.169     0.000    616.70    350.00
  0.000127     1200.     1055.      500.         2         0         0      0.00   1334.31   1684.31
0
 FLOW DISTRIBUTION FOR SECNO=  53000.00          CWSEL=     635.55

 STA=      350.      650.      760.      887.     1192.     1650.     1684.
   PER Q=       8.5       3.0       4.5      78.3       5.6       0.1
    AREA=    3230.4    1148.2    1037.9    4994.1    3005.0     110.6
     VEL=       0.5       0.5       0.8       2.9       0.3       0.2

 1490 NH CARD USED
 *SECNO 53700.000

 3470 ENCROACHMENT STATIONS=      300.0     1740.0  TYPE=      1  TARGET=     -300.000
                 XSEC 10  REDWOOD COTTAGE ON LEFT BANK  1976 HWM 630.5
                 1986 HWM 638    XSEC BENT 45DEG LEFT AT STA 1360
  53700.00     19.02    635.62      0.00      0.00    635.75      0.13      0.09      0.01    626.20
    18800.      7376.    11419.        5.    12645.     3054.       21.     8342.      817.    629.20
      3.94      0.58      3.74      0.23     0.154     0.034     0.169     0.000    616.60    300.00
  0.000167      400.      700.      750.         2         0         0      0.00   1436.57   1736.57
0
1
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   SECNO     DEPTH     CWSEL     CHIWS     JSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       JTN       ELMIN      SSTA
   SLOPE     ELOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 FLOW DISTRIBUTION FOR SECNO=  53700.00          CWSEL=     635.62

 STA=      300.     1340.     1420.     1557.     1730.     1737.
   PER Q=      33.4       3.3       2.6      60.7       0.0
    AREA=   11044.7     643.0     957.6    3054.3      21.2
     VEL=       0.6       1.0       0.5       3.7       0.2

 1490 NH CARD USED
 *SECNO 54600.000

 3470 ENCROACHMENT STATIONS=      750.0     2250.0  TYPE=      1  TARGET=     -750.000
                 XSEC 10A NEAR WHITE COTTAGE(BRONKENA)  1976HWM 630.9 IN GARAGE
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                XSEC BENT 5DEG RT AT STA 139.9  RESTRICTED FOR HIGH GROUND AT
                XSEC 11 US      1986 HJM 638
  54600.00     22.79   635.79      0.00      0.00    635.88      0.10      0.13      0.00    628.70
     18900.     8732.     9837.      231.    11712.    2930.      169.     8545.      835.     621.00
      4.03      0.75      3.36      1.37     0.113     0.040     0.054     0.000    613.00    750.00
  0.000178      500.      900.      1000.        2         0         0      0.00   1494.41   2244.41
0
 FLOW DISTRIBUTION FOR SECNO=  54600.00          CWSEL=    635.79

 STA=      750.      949.     1352.     1508.     1597.     1755.     1846.     1938.     1957.     2060.     2062.     2221.     2244.
   PER Q=      4.8       8.7       5.0       4.3       5.0       5.7       3.0       6.0       3.7       0.2      52.3       1.2
    AREA=   2411.7    4482.1    1149.5     693.1     956.3     603.9     276.7     507.4     612.6      13.8    2930.4     168.9
     VEL=      0.4       0.4       0.8       1.2       1.0       1.8       2.1       2.2       1.1       2.1       3.4       1.4

 1490 NH CARD USED
 *SECNO 55080.000
                XSEC 10B LOB IS FELCH ROAD
  55080.00     21.32   635.82      0.00      0.00    635.97      0.15      0.07      0.02    621.00
     18800.     9207.     9353.      240.     3581.    2637.      167.     8622.      843.     621.30
      4.07      2.57      3.55      1.44     0.024     0.041     0.054     0.000    614.50     60.58
  0.000197      250.      480.      550.        2         0         0      0.00    923.89    984.47
0
 1490 NH CARD USED
 *SECNO 55800.000

 3470 ENCROACHMENT STATIONS=       0.0    1900.0  TYPE=      1  TARGET=    1899.999
                XSEC 11  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
  55800.00     20.35   635.85      0.00      0.00    636.19      0.34      0.17      0.06    627.70
     18800.       0.    15125.     3675.       0.     2924.     4191.     8697.      851.     628.60
      4.10      0.00      5.17      3.88     0.000     0.039     0.122     0.000    615.50   1000.00
  0.000513      150.      720.      450.        2         0         0      0.00    900.00   1900.00
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        QLOSS    BANK ELEV
   Q         QLOB      QCH       VROB      ALOB      ACH       AHOB      VOL       TUA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      ANL       KNCH      KNR       UTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      KLOB*     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST


 FLOW DISTRIBUTION FOR SECNO=  55800.00          CWSEL=    635.85

 STA=     1000.     1169.     1172.     1185.     1237.     1320.     1454.     1546.     1651.     1819.     1900.
   PER Q=     80.5       0.1       0.4       1.6       2.7       4.5       2.6       0.0       4.9       2.7
    AREA=   2923.9      19.5      76.8     304.4     498.4     811.3     501.8     535.9     941.5     501.1
     VEL=      5.2       1.0       1.0       1.0       1.0       1.0       1.0       0.0       1.0       1.0

 1490 NH CARD USED
 *SECNO 56800.000

 3470 ENCROACHMENT STATIONS=       0.0    1630.0  TYPE=      1  TARGET=    1629.999
                XSEC 12
  56800.00     21.79   636.39      0.00      0.00    636.53      0.14      0.32      0.02    621.70
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    18800.      141.    11743.     6916.      129.     3111.     8949.     8775.      857.    630.00
     4.18       1.10     3.77      0.77      0.094     0.047     0.128     0.000    614.60     4.39
 0.000378     1200.     1000.      50.          2         0         0      0.00   1625.61  1630.00
0
 FLOW DISTRIBUTION FOR SECNO=  56800.00          CWSEL=    636.39

 STA=        4.       22.      222.      350.      457.      758.      865.      958.     1093.     1227.     1424.     1592.     1630.
   PER Q=    0.8      62.5       4.6       3.8       5.5       3.6       3.1       3.5       3.5       4.2       3.9       0.9
    AREA=  128.5    3110.8     887.3     742.5    1792.5     710.4     622.1     881.8     883.0    1143.2    1031.4     254.8
     VEL=    1.1       3.8       1.0       1.0       0.6       0.9       1.0       0.7       0.8       0.7       0.7       0.7

 1490 NH CARD USED
 *SECNO 57650.000

 3470 ENCHOACHMENT STATIONS=       0.0    1910.0  TYPE=     1  TARGET=    1909.999
             XSEC 13  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD HOMENS BEND
                  1976 FWM 631.9
  57650.00    20.71   636.61      0.00      0.00    636.65      0.05      0.11      0.01   622.00
    18800.     5602.   10662.     2536.     5900.     4819.     4744.     8895.      868.   626.50
      4.28      0.95     2.21      0.53     0.061     0.043     0.102     0.000    615.90    10.21
 0.000113      500.      850.      50.          0         0         0      0.00   1899.79  1910.00
0
 FLOW DISTRIBUTION FOR SECNO=  57650.00          CWSEL=    636.61

 STA=       10.      845.      857.     1180.     1380.     1514.     1879.     1910.
   PER Q=    29.0       0.8      56.7       4.0       3.7       5.2       0.6
    AREA=  5768.5     132.0    4818.8    1368.5     910.9    2250.6     214.2
     VEL=     0.9       1.2       2.2       0.5       0.8       0.4       0.5

1
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```
    SECNO     DEPTH     CWSEL     CHNS      WSELK     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     CORAE     TOPWID     ENDST


 1490 NH CARD USED
 *SECNO 58350.000
             XSEC 14 XSEC BEND 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB
  58350.00    20.37   636.67      0.00      0.00    636.76      0.09      0.10      0.01   630.50
    18800.     9256.    9536.        8.     7100.     3043.       35.     9055.      886.   629.50
      4.36      1.30     3.13      0.24     0.065     0.049     0.202     0.000    616.30    25.51
 0.000256      500.      700.      400.          2         0         0      0.00   1269.27  1294.78
0
 FLOW DISTRIBUTION FOR SECNO=  58350.00          CWSEL=    636.67

 STA=       26.      400.      731.      918.     1077.     1106.     1285.     1295.
   PER Q=    17.7      17.4       7.2       5.8       1.1      50.7       0.0
    AREA=  2498.2    2391.0    1117.1     918.0     176.1    3042.8      35.1
     VEL=     1.3       1.4       1.2       1.2       1.2       3.1       0.2

 1490 NH CARD USED
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 *SECNO 58900.000
                XSEC 15
  58900.00     20.28    635.78      0.00      0.00    636.91      0.14      0.14      0.01    631.50
    18800.     4822.     13860.     618.      5175.     4043.     948.      9171.     902.     629.00
      4.41      0.84      3.43      0.65      0.081     0.046     0.135     0.000   616.50     25.15
  0.000268     450.      550.      700.         0         0         0      0.00   1509.65   1534.79
0
 1490 NH CARD USED
 *SECNO 60000.000
                XSEC 16
  60000.00     18.06    636.96      0.00      0.00    637.59      0.63      0.53      0.15    628.00
    18800.     366.      16545.     1889.     146.      2447.     2306.     9340.     926.     632.60
      4.46      2.52      6.76      0.82      0.064     0.047     0.162     0.000   618.90     13.66
  0.001230     1000.     1100.     700.         2         0         0      0.00   759.60    773.26
0
 FLOW DISTRIBUTION FOR SECNO=  60000.00          CHSEL=    636.96

 STA=       14.       44.      200.      750.      773.
   PER Q=     1.9       88.0      9.9       0.1
    AREA=   145.5     2447.0   2261.1      44.9
     VEL=     2.5        6.8      0.8       0.5

 1490 NH CARD USED
1
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    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    IOC       ICONT     CORAR     TOPWID     ENDST

 *SECNO 62250.000
                XSEC 17     SUPERVISION ON LEFT BANK
  62250.00     18.75    638.45      0.00      0.00    638.68      0.23      1.05      0.04    632.90
    18800.     287.      17679.     835.      522.      4468.     985.      9599.     954.     629.10
      4.62      0.55      3.96      0.85      0.126     0.038     0.120     0.000   619.70     27.54
  0.000254     2400.     2225.     1700.        2         0         0      0.00   508.87    536.41
0
 1490 NH CARD USED
 *SECNO 63120.000
  63120.00     18.96    638.66      0.00      0.00    639.05      0.39      0.32      0.05    630.40
    18800.     49.       10298.     453.      75.       3604.     751.      9715.     964.     633.10
      4.67      0.65      5.08      0.60      0.120     0.038     0.148     0.000   619.70     13.59
  0.000833     970.      970.      970.         2         0         0      0.00   400.41    414.00
0
 1490 NH CARD USED
 *SECNO 65620.000

 3470 ENCROACHMENT STATIONS=      20.0      470.0  TYPE=      1  TARGET=     450.000
  65620.00     18.76    639.46      0.00      0.00    639.82      0.36      0.77      0.00    629.80
    19800.     1073.     17345.     382.      1176.     3467.     405.      9922.     983.     628.30
      4.79      0.91      5.00      0.94      0.107     0.038     0.120     0.000   620.70     20.00
  0.000380     1900.     1300.     1900.        2         0         0      0.00   450.00    470.00
```

0
1490 NH CARD USED
*SECNO 67420.000

3470 ENCROACHMENT STATIONS= 10.0 420.0 TYPE= 1 TARGET= 410.000
XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK

67420.00	21.08	640.38	0.00	0.00	640.67	0.29	0.85	0.01	631.80
18800.	758.	17600.	443.	329.	3959.	765.	10210.	1007.	633.70
4.95	2.30	4.45	0.58	0.040	0.038	0.148	0.000	619.30	10.00
0.000305	2400.	2500.	2500.	2	0	0	0.00	410.00	420.00

0
1490 NH CARD USED
*SECNO 68970.000
XSEC 21 US OF GREEN COTTAGE ON LEFT BANK

68970.00	18.45	640.85	0.00	0.00	641.12	0.27	0.45	0.00	631.50
18800.	655.	17921.	225.	681.	4207.	265.	10395.	1024.	628.30
5.05	0.74	4.26	0.85	0.085	0.038	0.100	0.000	622.40	9.46
0.000274	1400.	1550.	1700.	2	0	0	0.00	556.21	565.67

0
1

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

1490 NH CARD USED
*SECNO 70300.000
XSEC 22 BELOW POWER LINE CROSSING N VALUES ARE ATYPICAL

70300.00	17.56	641.26	0.00	0.00	641.48	0.22	0.35	0.00	633.80
18800.	1780.	16957.	62.	906.	4345.	52.	10557.	1039.	632.30
5.15	1.97	3.90	1.21	0.050	0.038	0.050	0.000	623.70	10.70
0.000261	1300.	1330.	1300.	2	0	0	0.00	409.65	420.35

0
1490 NH CARD USED
*SECNO 71300.000

71300.00	19.38	641.48	0.00	0.00	641.78	0.30	0.28	0.02	633.60
18800.	1081.	17554.	165.	540.	3887.	206.	10671.	1048.	630.20
5.22	2.00	4.52	0.30	0.046	0.038	0.100	0.000	622.10	11.92
0.000302	1000.	1000.	1000.	2	0	0	0.00	352.98	364.88

0
1490 NH CARD USED
*SECNO 71900.000

71900.00	17.08	641.68	0.00	0.00	642.00	0.33	0.21	0.01	630.00
18800.	1225.	16936.	589.	593.	3538.	563.	10784.	1052.	630.50
5.25	2.07	4.80	1.05	0.058	0.041	0.120	0.000	624.60	12.23
0.000427	500.	600.	650.	2	0	0	0.00	384.23	396.45

0
1490 NH CARD USED
*SECNO 73040.000
XSEC 25 BETWEEN BARBER AND KRING CABINS US OF SUB ACC SITE DS OF NANYGO

73040.00	18.82	642.22	0.00	0.00	642.47	0.25	0.46	0.01	636.20

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   18800.     138.    16002.     2660.      188.     3779.     1180.    10863.     1065.     633.30
    5.33      0.74      4.23      2.25     0.100     0.042     0.038     0.000   625.40      13.98
0.000377     1200.     1140.     1100.         2         0         0      0.00   561.04     575.02
0
1490 NH CARD USED
*SECNO 73590.000
          XSEC 26 DS OF CO RD BRDG  SEC BENT 45DEG RT OFF RD FILL AT STA 10
            BENT 45DEG RT TO RD FILL AT STA 325
 73590.00     18.27    642.37      0.00      0.00    642.71      0.33      0.21      0.03    632.90
   18800.      315.    18114.       371.      163.     3855.      181.    10921.     1070.    632.40
     5.37      1.93      4.70      2.06     0.047     0.038     0.059     0.000   624.10     14.62
0.000401       660.      550.       500.         2         0         0      0.00   317.25     331.86
0
1
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   SECNO      DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q          QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME       VLOB      VCH       VROB      XNL       XNCH      XNR       HIN       ELMIN      SSTA
   SLOPE      XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

*SECNO 73640.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD=  0 MIN ELTRD=  652.00 MAX ELLC=  650.50
          XSEC 27 CENTER OF BRDG    ELLC AT 650.5
 73640.00     17.62    642.42      0.00      0.00    642.73      0.31      0.02      0.00    652.00
   18800.        0.    18800.         0.        0.     4221.        0.    10926.     1071.    652.00
     5.37      0.00      4.45      0.00     0.000     0.034     0.000     0.000   624.80      0.00
0.000351        50.       50.        50.         2         0         0      0.00   290.00     296.00
0
*SECNO 73660.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD=  0 MIN ELTRD=  652.00 MAX ELLC=  650.50

 73660.00     17.63    642.43      0.00      0.00    642.73      0.31      0.01      0.00    652.00
   18800.        0.    18800.         0.        0.     4223.        0.    10928.     1071.    652.00
     5.37      0.00      4.45      0.00     0.000     0.034     0.000     0.000   624.80      0.00
0.000350        20.       20.        20.         0         0         0      0.00   290.00     296.00
0
*SECNO 73720.000
 73720.00     17.95    642.35      0.00      0.00    642.81      0.46      0.03      0.04    634.70
   18800.      674.    17365.       761.      251.     3096.      400.    10934.     1071.    632.30
     5.37      2.69      5.61      1.90     0.047     0.034     0.059     0.000   625.30     67.70
0.000570        60.       60.        60.         2         0         0      0.00   379.60     447.30
0
1490 NH CARD USED
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*SECNO 75140.000
XSEC 29 SEWAGE TREATMENT PLANT IN LOR

75140.00	15.64	643.14	0.00	0.00	643.34	0.20	0.51	0.03	635.60
18800.	4829.	13962.	8.	4720.	3396.	20.	11111.	1092.	634.50
5.49	1.02	4.11	0.42	0.080	0.034	0.090	0.000	627.50	34.31
0.000259	1140.	1420.	1440.	2	0	0	0.00	1037.37	1071.68

0
1

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

*SECNO 75800.000
3280 CROSS SECTION 75800.00 EXTENDED 7.99 FEET

XSEC 23A AT USGS CABLE

75800.00	14.99	643.19	0.00	0.00	643.66	0.47	0.23	0.08	636.00
18800.	0.	19800.	0.	0.	3425.	0.	11192.	1100.	635.20
5.52	0.00	5.49	0.00	0.000	0.034	0.000	0.000	628.20	1005.00
0.000543	540.	560.	700.	2	0	0	0.00	259.00	1264.00

0
1490 NH CARD USED
*SECNO 76350.000
XSEC 29B AT USGS GAGE 1976 STAGE IS 639.2 1986 STAGE 645.4

76350.00	13.82	643.62	0.00	0.00	643.95	0.34	0.28	0.01	634.70
18900.	335.	18314.	152.	108.	3900.	130.	11240.	1104.	634.60
5.56	3.11	4.70	1.16	0.035	0.038	0.101	0.000	629.80	5.18
0.000492	550.	550.	550.	2	0	0	0.00	347.93	353.12

0
*SECNO 76760.000
XSEC 30 1975 HWM IS 638.6 1976 HWM IS 639.2

76760.00	15.16	643.75	0.00	0.00	644.15	0.39	0.19	0.02	636.50
18900.	172.	18333.	235.	182.	3630.	246.	11279.	1108.	636.00
5.58	0.94	5.07	0.96	0.100	0.034	0.100	0.000	627.60	20.52
0.000422	350.	410.	450.	2	0	0	0.00	355.17	375.69

0
OIFY218I VSIOS : I/O ERROR, FILE FT93F001, DJSSVI120S OUTPUT ERROR 013 ON FT93F001,.
VSIOS : LAST EXECUTED FORTRAN STATEMENT IN PROGRAM H2MAIN AT ISN 1331 (OFFSET 0092C6).
0*** START OF BUFFER CONTENTS ***
646.50 633.30 636.20 0.00 625.40 642.22 642.47 73040.00 72985.00
646.80 632.40 632.90 0.00 624.10 642.37 642.71 73590.00 73535.
90 652.00 652.00 652.00 0.00 624.80 642.42 642.73 7
8640.00 73585.00 652.00 652.00 652.00 652.00 0.00 624.80 642.43
642.73 73660.00 73605.00 650.00 632.30 634.70 0.00 6
25.30 642.35 642.81 73720.00 73665.00 645.20 634.50 635.60
0.00 627.50 643.14 643.34 75140.00 75085.00 635.20 635
.20 636.00 0.00 628.20 643.19 643.66 75800.00 75745.00
646.50 634.60 634.70 0.00 629.80 643.62 643.95 76350.00 76295.00
651.30 636.50 636.50 0.00 627.60 643.76 644.15 76760.00 76
705.00

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1*************************************************
 *  WATER SURFACE PROFILES                       *
 *  VERSION OF NOVEMBER 1976                     *
 *  UPDATED MAY 1984                             *
 *                                               *
*  RUN DATE          TIME                       *
 *************************************************
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**************************************
*  U.S. ARMY CORPS OF ENGINEERS      *
*  THE HYDROLOGIC ENGINEERING CENTER *
*  609 SECOND STREET, SUITE D        *
*  DAVIS, CALIFORNIA 95616           *
*  (916) 440-2105 (FTS) 448-2105     *
**************************************
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X      X  XXX.XXXX   XXXXX              XXXXX
X      X  X         X     X            X     X
X      X  X         X                  X
XXXXXXX  XXXX       X          XXXXX    XXXXX
X      X  X         X                  X
X      X  X         X     X            X
X      X  XXXXXXX    XXXXX             XXXXXXX
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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
**************************************************

C
T1      FLOODPLAIN DELINEATION     USING 1986 HIGHWATER MARKS AS CALIBRATION
T2   CHANNEL XSEC FROM 1977 SURVEY    N INCREASED TO REFLECT MEANDER
T3      MUSKEGON RIVER  IMPACT OF CHANNEL EROSION  EVERY OTHER XSEC

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.        0.        0.        0.  0.000250      0.00      0.0   23100.   621.000     0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
    0.000     0.000    -1.000     0.000     0.000     1.350     0.000     0.000     0.000     0.000

J5  LPRNT     NUMSEC                    ********REQUESTED SECTION NUMBERS********
    0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

NC      0.100     0.150     0.023     0.100     0.300     0.000     0.000     0.000     0.000     0.000
NH      7.000     0.100    22.000     0.023   242.000     0.100   298.000     0.035   447.000     0.050
NH    570.000     0.100   789.000     0.050   852.000     0.000     0.000     0.000     0.000     0.000
      XSEC 61
```

X1	0.100	25.000	22.000	242.000	0.000	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	8.000	0.000	818.000	0.000	0.000	613.300	0.000
GR	624.100	0.000	613.200	22.000	606.100	47.000	603.700	63.000	598.500	106.000
GR	601.000	136.000	602.600	166.000	603.200	196.000	604.200	226.000	606.100	237.000
GR	609.600	242.000	610.600	252.000	613.900	262.000	614.800	298.000	616.300	326.000
GR	616.300	383.000	615.000	447.000	612.000	492.000	611.700	570.000	611.500	635.000
GR	611.200	685.000	611.000	735.000	612.200	789.000	623.500	830.000	629.400	852.000
NH	4.000	0.150	22.000	0.023	242.000	0.150	298.000	0.100	852.000	0.000

SEC 61 MOVED US INVERT ADJ BY .94FT FLOOD FLOW SHIFTED FROM ROB AS NOTED ON XSEC 61 TO APPROX AREA IN LOB FOR THIS XSEC

X1	1920.000	0.000	0.000	0.000	2170.000	1740.000	1920.000	0.000	0.940	0.000
X3	10.000	0.000	0.000	22.000	0.000	763.000	0.000	0.000	613.300	0.000
NH	3.000	0.050	37.000	0.023	311.000	0.050	341.000	0.000	0.000	0.000

XSEC 62

X1	3050.000	20.000	37.000	311.000	1200.000	1200.000	1130.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	17.000	0.000	328.000	0.000	0.000	0.000	0.000
GR	635.400	0.000	629.100	4.000	615.670	25.000	608.600	37.000	607.000	40.000
GR	605.200	55.000	604.000	64.000	600.400	74.000	601.000	106.000	605.100	146.000
GR	606.500	163.000	604.300	170.000	603.500	173.000	605.200	199.000	605.400	241.000
GR	606.000	267.000	605.700	285.000	606.700	297.000	609.000	311.000	629.600	341.000

1

NH	3.000	0.017	37.000	0.023	311.000	0.017	341.000	0.000	0.000	0.000

W EDGE OF BRIDGE DECK AT BRIDGETON 1976 HWM 615.7

X1	3051.000	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	17.000	0.000	328.000	0.000	0.000	0.000	0.000
SB	0.900	1.250	2.600	1000.000	260.000	8.000	9000.000	1.430	604.500	604.500
X1	3100.000	0.000	0.000	0.000	49.000	49.000	49.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	635.400	638.000	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	17.000	0.000	328.000	0.000	0.000	0.000	0.000
NC	0.150	0.070	0.323	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	3101.000	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	17.000	0.000	328.000	0.000	0.000	0.000	0.000
NH	4.000	0.045	58.000	0.023	373.000	0.030	517.000	0.050	633.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 63

X1	4680.000	20.000	38.000	373.000	1500.000	1600.000	1579.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	617.800	0.000
GR	625.300	0.000	617.700	15.000	608.500	58.000	607.300	76.000	604.900	82.000
GR	603.500	102.000	603.300	129.000	603.800	172.000	604.000	205.000	605.000	248.000
GR	605.600	274.000	606.300	289.000	607.300	356.000	616.000	373.000	617.700	382.000
GR	617.300	404.000	614.500	435.000	611.600	517.000	616.000	605.000	625.300	633.000
NB	5.000	0.150	15.000	0.150	424.000	0.100	562.000	0.023	788.000	0.040
NH	819.000	0.000	0.000	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

XSEC 64 XSEC CROSSES US OF CID ECCK CRIBBING

X1	7200.000	28.000	552.000	788.000	2200.000	2500.000	2520.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	619.600	0.000	0.000
GR	625.700	0.000	616.300	19.000	613.400	58.000	614.400	124.000	614.000	224.000
GR	615.400	314.000	613.600	336.000	614.200	371.000	617.100	424.000	619.600	499.000
GR	619.100	557.000	619.000	562.000	615.800	573.000	608.900	578.000	606.500	582.000
GR	604.300	584.000	600.800	611.000	602.100	638.000	602.100	667.000	602.500	695.000
GR	602.900	724.000	605.500	752.000	605.900	773.000	607.000	780.000	607.690	785.000
GR	610.400	788.000	616.500	801.000	625.700	819.000	0.000	0.000	0.000	0.000
NH	4.000	0.050	39.000	0.025	295.000	0.150	788.000	0.040	924.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 65	XSEC CROSSES 100FT US OF BOAT LAUNCH								
X1	8850.000	30.000	39.000	326.000	1400.000	1600.000	1650.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	619.800	0.000
GR	626.000	0.000	624.200	8.000	621.800	35.000	619.300	39.000	610.900	58.000
GR	608.040	69.000	605.100	95.000	604.200	140.000	604.700	175.000	604.900	210.000
GR	605.100	245.000	605.800	280.000	608.040	293.000	611.700	295.000	612.100	304.000
GR	619.100	317.000	619.800	326.000	619.500	338.000	616.400	365.000	613.500	413.000
GR	612.100	478.000	612.000	548.000	612.100	588.000	612.300	638.000	612.500	688.000
GR	612.500	738.000	612.400	788.000	613.800	843.000	617.300	906.000	626.000	924.000

NH	7.000	0.050	46.000	0.030	226.000	0.050	293.000	0.160	374.000	0.150
NH	564.000	3.080	1065.000	0.090	1244.000	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
		XSEC 66								
X1	10300.000	36.000	46.000	377.000	1500.000	700.000	1450.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	620.500	0.000
GR	626.500	0.000	620.600	29.000	612.500	38.000	611.100	46.000	608.200	50.000
GR	606.000	59.000	603.200	96.000	603.000	128.000	604.600	161.000	606.000	192.000
GR	607.100	210.000	607.800	225.000	609.300	226.000	610.200	241.000	610.000	249.000
GR	609.200	253.000	610.700	293.000	612.300	311.000	612.900	361.000	618.800	374.000
GR	620.600	377.000	618.900	385.000	618.600	443.000	616.800	529.000	611.500	564.000
GR	611.500	606.000	610.400	693.000	610.500	769.000	611.300	889.000	612.600	893.000
GR	612.700	1012.000	615.100	1065.000	615.500	1115.000	617.600	1165.000	620.400	1190.000
GR	626.500	1244.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.150	839.000	0.030	1059.000	0.150	1107.000	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
		XSEC 67								
X1	11900.000	25.000	816.000	1059.000	1600.000	1000.000	1500.000	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	626.700	0.000	620.500	103.000	616.700	155.000	613.700	255.000	613.500	355.000
GR	613.400	449.000	613.200	530.000	613.100	644.000	613.600	744.000	617.100	799.000
GR	619.800	813.000	619.600	816.000	612.500	825.000	612.100	839.000	608.730	842.000
GR	606.700	861.000	605.900	896.000	605.100	931.000	604.400	967.000	604.400	1002.000
GR	606.000	1037.000	608.730	1051.000	610.700	1059.000	617.400	1079.000	626.700	1107.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	12600.000	0.000	0.000	0.000	800.000	800.000	800.000	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

NH	3.000	0.100	113.000	0.030	368.000	0.150	748.000	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
		XSEC 68								
X1	14100.000	25.000	113.000	382.000	900.000	1600.000	1500.000	0.000	0.000	0.000
GR	627.100	0.000	622.000	15.000	617.600	39.000	620.100	70.000	619.800	88.000
GR	614.200	97.000	611.800	113.000	609.140	125.000	606.500	164.000	605.900	191.000
GR	606.700	205.000	606.300	247.000	604.000	289.000	605.000	330.000	607.500	345.000
GR	608.800	359.000	612.200	353.000	614.700	376.000	618.400	382.000	619.200	435.000
GR	616.000	501.000	615.700	543.000	615.400	633.000	616.200	693.000	627.100	748.000
NH	3.000	0.150	922.000	0.022	1120.000	0.060	1143.000	0.000	0.000	0.000
ET	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 69								
X1	16700.000	28.000	844.000	1120.000	300.000	1900.000	2600.000	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	627.600	0.000	618.800	35.000	616.900	133.000	615.200	230.000	614.100	323.000
GR	613.700	410.000	613.400	515.000	617.800	553.000	613.300	663.000	614.200	712.000
GR	617.800	785.000	621.800	844.000	620.300	868.000	619.800	902.000	618.900	909.000
GR	612.400	922.000	609.640	924.000	607.900	938.000	607.300	954.000	606.200	983.000
GR	604.600	1012.000	605.600	1041.000	607.200	1070.000	608.500	1074.000	609.640	1102.000
GR	613.800	1120.000	620.300	1131.000	627.600	1143.000	0.000	0.000	0.000	0.000

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NC	0.040	0.030	0.025	0.030	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 1 FROM SUBDIVISION FILE F184 22 12								
X1	18990.000	24.000	257.000	570.000	1250.000	2500.000	2190.000	0.000	0.000	0.000
GR	633.400	0.000	629.500	30.000	628.200	106.000	619.400	130.000	617.400	180.000
GR	617.800	218.000	618.000	225.000	618.900	250.000	611.800	257.000	606.900	257.000
GR	606.000	300.000	606.600	325.000	606.900	350.000	606.400	375.000	606.800	475.000
GR	609.000	527.000	610.300	550.000	612.700	570.000	620.500	580.000	620.200	600.000
GR	618.700	625.000	619.300	640.000	623.700	660.000	630.000	677.000	0.000	0.000
NH	6.000	0.150	43.000	0.030	115.000	0.028	155.000	0.030	529.000	0.025
NH	703.000	0.150	756.000	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
		XSEC 70 THROUGH SUBDIV ON LEFT BANK CHANNEL INEFFECTIVE								
		1976 HWM ON BASEMENT WALL 619.8 HWM 800FT DS 619.98								
X1	19670.000	30.000	529.000	703.000	950.000	980.000	1000.000	0.000	0.000	0.000
GR	628.500	0.000	620.000	25.000	620.400	217.000	630.000	217.000	630.000	250.000
GR	620.400	250.000	621.500	306.000	621.500	306.100	621.500	306.200	621.500	306.300
GR	616.900	332.000	617.500	396.000	619.700	432.000	619.900	465.000	618.400	476.000
GR	619.800	489.000	619.300	503.000	613.800	519.000	612.400	529.000	608.700	558.000
GR	607.600	569.000	607.100	595.000	605.800	620.000	605.900	646.000	607.900	671.000
GR	610.500	697.000	612.800	703.000	614.200	713.000	621.400	735.000	628.500	756.000
NH	6.000	0.060	123.000	0.150	223.000	0.025	406.000	0.045	412.000	0.030
NH	603.000	0.100	800.000	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
		XSEC 71 OLDER COTTAGES ON RT BANK SEAWALL PROTECTS RT BANK								
X1	21370.000	27.000	228.000	412.000	1100.000	1600.000	1500.000	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	628.800	0.000	622.900	18.000	615.900	38.000	618.300	61.000	619.200	83.000

GR	619.300	101.000	613.900	123.000	614.400	153.000	611.200	205.000	612.400	223.000
GR	610.500	231.000	609.200	247.000	609.100	269.000	607.000	285.000	607.000	325.000
GR	605.700	366.000	605.100	405.000	619.800	412.000	617.700	472.000	616.000	542.000
GR	615.200	588.000	616.800	603.000	615.000	618.000	615.300	673.000	615.400	724.000
GR	617.900	756.000	628.800	800.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	7.000	0.100	27.000	0.150	125.000	0.150	464.000	0.030	663.000	0.050
NH	929.000	0.030	891.000	0.100	929.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 72								
X1	24985.000	28.000	441.000	663.000	3700.000	3600.000	3615.000	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	629.900	0.000	620.800	27.000	616.000	56.000	614.700	125.000	615.100	191.000
GR	615.400	263.000	616.600	344.000	617.400	402.000	620.300	441.000	619.700	456.000
GR	615.000	459.000	613.500	464.000	609.200	488.000	607.500	500.000	608.600	531.000
GR	608.600	561.000	609.400	592.000	609.800	622.000	609.800	653.000	614.700	663.000
GR	614.900	650.000	619.200	705.000	619.200	709.000	617.100	744.000	618.800	772.000
GR	619.700	829.000	622.400	891.000	629.900	929.000	0.000	0.000	0.000	0.000

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NH	4.000	0.040	23.000	0.150	425.000	0.030	658.000	0.080	688.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 73								
X1	28235.000	20.000	371.000	658.000	2300.000	3300.000	3200.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	623.500	0.000	0.000
GR	630.700	0.000	622.000	23.000	620.000	38.000	617.800	148.000	619.000	203.000
GR	620.700	242.000	622.300	309.000	623.500	371.000	619.300	402.000	619.500	425.000
GR	610.900	436.000	608.900	445.000	610.200	485.000	610.200	526.000	609.000	566.000
GR	608.000	608.000	612.500	648.000	616.700	658.000	619.100	665.000	630.700	688.000
NH	3.000	0.150	51.000	0.030	275.000	0.150	536.000	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
		XSEC 74 IN LINE WITH E SIDE OF COTTAGE ON TOP OF LOT BANK JUST US OF POWERLINE								
X1	29860.000	16.000	51.000	275.000	1500.000	1700.000	1625.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	622.800	0.000
GR	631.400	0.000	616.200	51.000	613.400	53.000	610.100	65.000	609.300	104.000
GR	610.100	143.000	610.600	183.000	611.300	222.000	612.300	235.000	611.900	256.000
GR	615.200	275.000	620.600	283.000	622.800	313.000	620.400	375.000	622.800	484.000
GR	631.400	536.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.150	220.000	0.100	279.000	0.030	545.000	0.080	633.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 75								
X1	31660.000	23.000	279.000	545.000	1700.000	1800.000	1800.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	623.500	0.000	0.000
GR	632.100	0.000	623.900	49.000	621.600	74.000	621.500	112.000	622.100	178.000
GR	623.200	213.000	623.500	320.000	623.600	376.000	623.300	279.000	615.700	289.000
GR	614.100	292.000	609.100	303.000	609.700	328.000	608.700	376.000	610.500	420.000
GR	612.000	477.000	612.500	529.000	614.100	585.000	617.100	545.000	620.200	576.000
GR	622.300	585.000	624.200	609.000	632.100	633.000	0.000	0.000	0.000	0.000

NH	5.000	0.155	33.000	0.035	238.000	0.150	383.000	0.120	785.000	0.060
NH	819.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 76								
X1	35425.000	21.000	33.000	289.000	4300.000	3600.000	3760.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	20.000	0.000	790.000	0.000	0.000	0.000	0.000
GR	633.200	0.000	626.400	20.000	621.200	33.000	615.100	38.000	611.200	51.000
GR	610.300	90.000	609.800	123.000	611.000	157.000	610.800	180.000	615.200	207.000
GR	617.000	217.000	621.600	238.000	625.300	289.000	625.200	316.000	620.400	383.000
GR	619.800	432.000	620.200	583.000	620.100	683.000	620.900	760.000	621.900	785.000
GR	533.200	819.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.160	29.000	0.150	570.000	0.150	849.000	0.035	1017.000	0.150
NH	1047.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 77								
X1	37670.000	31.000	849.000	1017.000	1900.000	2100.000	2150.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	20.000	0.000	1035.000	0.000	0.000	0.000	0.000
GR	633.800	0.000	624.300	19.000	620.600	29.000	619.300	128.000	619.000	224.000
GR	619.100	314.000	619.300	391.000	621.400	419.000	619.700	468.000	620.200	570.000
GR	621.600	607.000	625.100	657.000	625.800	712.000	626.700	761.000	621.900	792.000
GR	621.900	816.000	625.300	823.000	625.200	839.000	624.500	844.000	622.700	849.000
GR	618.200	856.000	615.800	864.000	613.800	886.000	611.300	916.000	608.000	944.000

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GR	609.100	977.000	615.400	1009.000	619.100	1014.000	623.700	1017.000	630.100	1033.000
GR	633.600	1047.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.100	32.000	0.030	332.000	0.150	424.000	0.150	488.000	0.070
NH	779.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 78	BOOFT DS OF ISLAND, POWERLINE CROSSING AND BOAT LAUNCH							
		WEST END OF OLD GRAVEL OPERATION								
X1	33970.000	22.000	32.000	332.000	700.000	1300.000	1300.000	0.000	0.000	0.000
X3	0.000	10.000	0.000	20.000	0.000	760.000	0.000	0.000	624.800	0.000
GR	634.200	0.000	626.800	24.000	621.800	32.000	617.700	50.000	616.250	52.000
GR	614.900	64.000	612.900	110.000	614.600	173.000	613.700	258.000	614.300	311.000
GR	622.500	322.000	624.800	332.000	624.100	365.000	623.300	382.000	622.900	424.000
GR	621.100	449.000	620.600	488.000	620.400	538.000	620.000	638.000	620.600	743.000
GR	625.000	760.000	634.300	779.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.150	25.000	0.020	186.000	0.150	258.000	0.080	531.000	0.000
		XSEC 1								
X1	42170.000	27.000	25.000	186.000	3600.000	3000.000	3200.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	15.000	0.000	510.000	0.000	0.000	628.000	0.000
GR	634.000	0.000	626.900	14.000	623.300	22.000	622.400	25.000	619.100	26.000
GR	616.400	31.000	613.800	40.000	612.800	63.000	611.000	87.000	611.000	91.000
GR	612.000	135.000	613.500	161.000	614.900	163.000	616.300	174.000	617.600	179.000
GR	625.900	196.000	626.800	191.000	624.600	201.000	627.900	230.000	627.900	258.000
GR	621.800	324.000	620.900	364.000	623.600	379.000	622.600	425.000	621.000	451.000
GR	626.000	516.000	634.000	531.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.090	19.000	0.075	58.000	0.025	223.000	0.070	308.000	0.150
NH	378.000	0.080	479.000	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
		XSEC 2								

X1	43770.000	26.000	58.000	223.000	1200.000	1800.000	1600.000	0.000	0.000	0.000
GR	634.000	0.000	628.600	19.000	626.000	35.000	623.000	55.000	622.300	58.000
GR	619.700	59.000	616.800	62.000	613.800	75.000	613.900	105.000	613.800	133.000
GR	613.100	159.000	613.400	185.000	614.400	207.000	616.800	219.000	618.300	223.000
GR	618.800	250.000	619.900	258.000	619.200	266.000	619.300	288.000	619.500	295.000
GR	624.700	308.000	623.900	347.000	625.100	373.000	624.300	409.000	626.600	459.000
GR	639.100	479.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.150	12.000	0.150	214.000	0.035	317.000	0.065	357.000	0.035
NH	533.000	0.150	702.000	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
		XSEC 3 SECTION THRU ISLAND NE OF OLD GRAVEL OPERATION								
X1	44820.000	29.000	214.000	533.000	1100.000	1100.000	1050.000	0.000	0.000	0.000
GR	635.000	0.000	629.000	12.000	626.200	72.000	624.900	94.000	622.300	107.000
GR	622.900	145.000	623.300	186.000	624.400	199.000	624.700	214.000	618.000	226.000
GR	617.000	241.000	616.500	258.000	616.900	292.000	617.900	313.000	622.400	317.000
GR	624.400	342.000	622.000	357.000	616.900	361.000	615.100	402.000	613.900	430.000
GR	612.200	458.000	612.200	487.000	613.000	507.000	616.900	513.000	625.300	533.000
GR	627.500	554.000	623.300	660.000	628.100	680.000	635.000	702.000	0.000	0.000

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NH	4.000	0.150	22.000	0.150	252.000	0.035	478.000	0.150	626.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 4 OLD WOOD PILING ALONG EACH BANK								
X1	45470.000	28.000	252.000	478.000	550.000	650.000	650.000	0.000	0.000	0.000
GR	635.400	0.000	627.200	22.000	625.100	52.000	625.500	83.000	625.500	136.000
GR	627.800	157.000	625.300	180.000	626.700	223.000	628.200	248.000	627.700	252.000
GR	625.700	256.000	619.300	262.000	616.300	269.000	615.500	274.000	614.300	280.000
GR	615.000	312.000	615.600	341.000	614.700	371.000	614.800	395.000	615.400	417.000
GR	615.700	442.000	613.400	460.000	617.400	470.000	624.500	478.000	627.100	487.000
GR	628.600	508.000	632.100	558.000	640.000	626.000	0.000	0.000	0.000	0.000
NH	5.000	0.150	23.000	0.100	281.000	0.035	465.000	0.070	473.000	0.060
NH	497.000	0.000	0.000	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
		XSEC 5 HILL AT RIGHT BANK IS ERODING								
X1	46870.000	24.000	281.000	465.000	1280.000	1575.000	1300.000	0.000	0.000	0.000
GR	642.500	0.000	631.000	23.000	626.000	56.000	627.400	89.000	624.500	131.000
GR	626.300	179.000	629.300	237.000	628.100	250.000	627.700	259.000	623.100	270.000
GR	622.100	281.000	618.400	284.000	616.800	299.000	616.300	319.000	614.400	347.000
GR	614.000	370.000	612.600	395.000	611.500	421.000	615.600	447.000	618.200	461.000
GR	621.300	465.000	622.600	473.000	626.700	479.000	636.000	497.000	0.000	0.000
NH	4.000	0.100	36.000	0.030	91.000	0.036	352.000	0.100	458.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		XSEC 6								
X1	48720.000	25.000	91.000	352.000	1500.000	2000.000	1350.000	0.000	0.000	0.000
GR	637.000	0.000	624.900	36.000	626.500	72.000	626.800	91.000	618.000	104.000
GR	618.000	104.000	616.000	116.000	617.000	148.000	616.700	198.000	616.400	248.000
GR	616.800	298.000	617.500	348.000	618.300	350.000	620.600	352.000	619.700	356.000
GR	618.700	373.000	618.200	396.000	618.300	407.000	628.500	434.000	637.000	458.000

NH	4.000	0.150	20.000	0.030	532.000	0.036	691.000	0.050	738.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 7

X1	50220.000	23.000	532.000	691.000	1300.000	1300.000	1500.000	0.000	0.000	0.000
GR	636.500	0.000	626.900	20.000	627.600	158.000	628.000	233.000	624.200	282.000
GR	627.400	347.000	626.500	451.000	624.900	479.000	626.600	525.000	626.300	532.000
GR	621.100	542.000	619.500	548.000	618.600	555.000	617.500	558.000	616.000	581.000
GR	612.700	605.000	611.700	628.000	611.900	652.000	616.000	675.000	619.600	688.000
GR	623.100	691.000	627.700	707.000	636.500	738.000	0.000	0.000	0.000	0.000

NH	3.000	0.020	124.000	0.035	312.000	0.150	1290.000	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

XSEC 8 VICS CAMPING ON RIGHT BANK CAMPGROUND IS ON A HILL
WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.

X1	51945.000	27.000	124.000	312.000	1300.000	1500.000	1725.000	0.000	0.000	0.000
GR	637.100	0.000	634.700	32.000	637.200	111.000	637.600	124.000	625.400	138.000
GR	620.200	149.000	617.600	158.000	614.900	181.000	615.700	201.000	617.700	222.000
GR	617.700	247.000	618.300	254.000	619.300	271.000	620.200	290.000	622.100	297.000
GR	623.300	303.000	629.400	312.000	630.000	320.000	625.400	367.000	627.200	392.000
GR	627.000	411.000	628.300	425.000	629.500	454.000	628.600	560.000	629.000	650.000
GR	629.000	1250.000	639.000	1290.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	6.000	0.120	860.000	0.025	887.000	0.025	1032.000	0.100	1084.000	0.025
NH	1192.000	0.125	1700.000	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

XSEC 9 SECTION THROUGH ISLAND US OF VICS
XSEC BENT 20DEG LFT AT 887 20DEG PT AT STA 1208

X1	53000.000	39.000	887.000	1192.000	1200.000	500.000	1055.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	350.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	638.500	0.000	628.500	50.000	625.000	100.000	624.700	650.000	624.900	705.000
GR	624.900	728.000	625.700	760.000	627.500	815.000	629.000	860.000	626.200	872.000
GR	625.000	887.000	620.400	892.000	616.900	898.000	616.700	922.000	617.500	947.000
GR	617.600	974.000	617.500	1001.000	620.400	1025.000	623.600	1032.000	624.400	1035.000
GR	623.600	1061.000	624.300	1078.000	625.200	1084.000	620.400	1093.000	617.900	1101.000
GR	617.700	1122.000	618.300	1143.000	617.500	1165.000	617.100	1185.000	619.600	1190.000
GR	623.000	1192.000	624.500	1203.000	629.600	1208.000	629.000	1226.000	628.200	1240.000
GR	629.900	1290.000	629.100	1350.000	629.100	1650.000	638.500	1700.000	0.000	0.000

NH	6.000	0.120	1340.000	0.060	1420.000	10.000	1480.000	0.060	1557.000	0.025
NH	1730.000	0.125	1740.000	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

XSEC 10 REDWOOD COTTAGE ON LEFT BANK 1976 HUM 630.5
1986 HW 639 XSEC BENT 45DEG LEFT AT STA 1360

X1	53700.000	24.000	1557.000	1730.000	400.000	750.000	700.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	300.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	639.000	0.000	628.500	50.000	625.000	100.000	625.000	1340.000	628.300	1360.000
GR	627.200	1377.000	628.700	1420.000	628.800	1480.000	629.000	1500.000	629.200	1531.000
GR	627.400	1545.000	625.800	1550.000	626.200	1557.000	620.600	1563.000	617.900	1567.000
GR	616.600	1600.000	617.000	1624.000	617.600	1662.000	617.800	1688.000	618.100	1717.000

GR	620.700	1725.000	629.200	1730.000	632.100	1733.000	639.000	1740.000	0.000	0.000
NH	7.000	0.200	1399.000	0.050	1784.000	0.025	1957.000	10.000	1998.000	0.025
NH	2062.000	0.030	2221.000	0.040	2250.000	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

XSEC 10A NEAR WHITE COTTAGE(BRONKEMA) 1976HWM 630.9 IN GARAGE
XSEC BENT 5DEG RT AT STA 139.9 RESTRICTED FOR HIGH GROUND AT
XSEC 11 US 1986 HWM 638

X1	54600.000	35.000	2062.000	2221.000	500.000	1000.000	900.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	750.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	639.000	0.000	628.500	50.000	625.000	449.000	623.000	649.000	624.000	949.000
GR	623.000	1049.000	627.100	1352.000	628.200	1399.000	629.300	1508.000	626.700	1597.000
GR	630.100	1644.000	630.500	1755.000	628.100	1784.000	629.900	1846.000	628.500	1888.000
GR	628.600	1917.000	628.100	1957.000	629.600	1966.000	630.400	1998.000	629.800	2041.000
GR	629.100	2060.000	628.700	2062.000	625.300	2068.000	624.500	2074.000	621.000	2079.000
GR	620.500	2099.000	617.500	2119.000	617.000	2123.000	615.500	2145.000	614.000	2167.000
GR	613.000	2190.000	616.300	2215.000	621.000	2221.000	632.100	2238.000	639.000	2250.000

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NH	6.000	0.013	600.000	0.025	700.000	10.000	750.000	0.025	817.000	0.030
NH	961.000	0.040	978.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 10B LOB IS FELCH ROAD

X1	55080.000	21.000	817.000	961.000	250.000	550.000	480.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	640.000	0.000	633.100	100.000	631.300	200.000	631.600	300.000	631.400	400.000
GR	631.100	500.000	631.100	600.000	629.900	700.000	629.300	750.000	628.700	800.000
GR	625.300	806.000	624.500	812.000	621.000	817.000	619.700	857.000	616.900	885.000
GR	615.300	907.000	614.500	930.000	616.300	955.000	621.300	961.000	632.100	978.000
GR	639.000	990.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.029	1169.000	0.080	1546.000	10.000	1651.000	0.080	1946.000	0.100
NH	2105.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 11 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND

X1	55800.000	23.000	1000.000	1169.000	150.000	450.000	720.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	0.000	0.000	1900.000	0.000	0.000	0.000	0.000
GR	627.700	1000.000	623.000	1014.000	621.400	1015.000	619.400	1026.000	618.800	1039.000
GR	615.500	1051.000	616.300	1075.000	615.700	1100.000	616.500	1125.000	618.400	1148.000
GR	621.400	1154.000	628.600	1169.000	630.100	1172.000	629.300	1185.000	630.200	1237.000
GR	629.500	1320.000	630.100	1454.000	630.700	1546.000	630.800	1651.000	629.700	1819.000
GR	629.600	1946.000	628.200	2070.000	640.000	2105.000	0.000	0.000	0.000	0.000
NH	6.000	0.070	22.000	0.035	220.000	0.080	457.000	10.000	560.000	0.080
NH	958.000	0.100	1582.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XSEC 12

X1	56800.000	31.000	22.000	222.000	1200.000	50.000	1000.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	0.000	0.000	1630.000	0.000	0.000	0.000	0.000
GR	640.000	0.000	629.300	13.000	621.700	22.000	619.100	29.000	617.800	53.000
GR	614.600	81.000	617.100	107.000	619.100	131.000	620.300	141.000	621.600	147.000
GR	622.800	152.000	624.300	171.000	626.700	187.000	630.000	222.000	629.900	245.000

GR	628.800	350.000	630.100	457.000	630.700	560.000	630.600	660.000	629.900	758.000
GR	629.500	865.000	629.800	958.000	630.100	1010.000	629.500	1093.000	630.100	1227.000
GR	630.700	1319.000	630.800	1424.000	629.700	1592.000	629.600	1719.000	628.200	1843.000
GR	640.000	1878.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	10.000	0.070	30.000	0.045	857.000	0.030	987.000	0.080	1061.000	0.030
NH	1175.000	0.055	1189.000	10.000	1245.000	0.055	1606.000	10.000	1711.000	0.075
NH	2165.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND									
	1976 HWM 631.9									
X1	57650.000	32.000	857.000	1180.000	500.000	50.000	850.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
X3	0.000	0.000	0.000	0.000	0.000	1910.000	0.000	0.000	0.000	0.000
GR	640.000	0.000	630.000	30.000	629.200	845.000	622.000	857.000	618.500	869.000
GR	618.500	879.000	618.500	914.000	620.000	968.000	622.700	987.000	627.000	991.000
GR	625.500	1007.000	627.300	1014.000	627.300	1045.000	628.000	1054.000	624.400	1061.000
GR	623.500	1087.000	622.000	1117.000	618.100	1144.000	615.900	1168.000	620.400	1175.000
GR	626.500	1180.000	629.700	1189.000	629.700	1245.000	630.200	1297.000	629.500	1380.000
GR	630.100	1514.000	630.700	1606.000	630.800	1711.000	629.700	1879.000	629.600	2006.000
GR	628.200	2130.000	640.000	2165.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	4.000	0.070	50.000	0.048	1106.000	0.036	1285.000	0.150	1300.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 14 XSEC BENT 15DEG LEFT AT STA 1106 ABANDD TRAILER PARK IN LOB									
X1	58350.000	20.000	1106.000	1285.000	500.000	400.000	700.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	640.500	0.000	633.000	50.000	630.100	100.000	628.600	400.000	630.300	731.000
GR	631.100	918.000	630.700	1077.000	630.500	1106.000	623.300	1125.000	621.600	1126.000
GR	616.400	1138.000	616.300	1158.000	617.500	1185.000	619.500	1212.000	619.900	1243.000
GR	619.900	1269.000	620.900	1277.000	622.400	1282.000	629.500	1285.000	640.500	1300.000
NH	4.000	0.060	1150.000	0.034	1389.000	0.100	1513.000	0.100	1550.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 15									
X1	58900.000	21.000	1150.000	1389.000	450.000	700.000	550.000	0.000	0.000	0.000
GR	640.600	0.000	633.000	50.000	632.000	100.000	632.200	1130.000	632.000	1143.000
GR	631.800	1147.000	631.500	1150.000	627.000	1153.000	622.700	1162.000	618.400	1183.000
GR	622.100	1201.000	620.700	1225.000	619.900	1257.000	618.700	1289.000	616.600	1317.000
GR	616.500	1342.000	618.100	1387.000	629.000	1389.000	629.000	1447.000	631.300	1513.000
GR	640.600	1550.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.120	32.000	0.040	44.000	0.035	200.000	0.120	800.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 16									
X1	60000.000	17.000	44.000	300.000	1000.000	700.000	1100.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.000
GR	641.400	0.000	631.000	32.000	630.500	36.000	628.800	38.000	628.000	44.000
GR	623.200	47.000	620.800	55.000	618.900	79.000	619.100	103.000	619.400	129.000
GR	620.700	154.300	621.200	160.000	623.300	175.000	625.500	187.000	632.600	200.000
GR	633.100	750.000	641.400	800.000	0.000	0.000	0.000	0.000	0.000	0.000

NH	3.000	0.093	144.000	0.028	422.000	0.089	543.000	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
		XSEC 17	SUBDIVISION ON LEFT BANK							
X1	62250.000	28.000	144.000	422.000	2400.000	1700.000	2225.000	0.000	0.000	0.000
GR	642.800	0.000	638.600	26.000	632.600	88.000	631.600	113.000	632.500	125.000
GR	632.900	144.000	630.900	158.000	625.400	159.000	624.200	161.000	622.000	173.000
GR	621.800	181.000	622.100	193.000	621.400	243.000	620.500	280.000	619.700	313.000
GR	620.200	350.000	621.800	365.000	624.300	384.000	625.000	394.000	624.200	399.000
GR	629.100	422.000	630.300	424.000	629.700	435.000	629.500	468.000	627.800	492.000
GR	629.000	518.000	637.300	534.000	641.600	543.000	0.000	0.000	0.000	0.000
NH	3.000	0.089	32.000	0.028	256.000	0.110	448.000	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	63120.000	22.000	32.000	256.000	970.000	970.000	970.000	0.000	0.000	0.000
GR	643.800	0.000	638.500	14.000	631.400	30.000	630.400	32.000	624.700	34.000
GR	623.000	39.000	619.700	50.000	619.800	82.000	621.500	117.000	621.800	152.000
GR	623.400	187.000	624.100	194.000	624.900	227.000	626.700	235.000	625.400	245.000
GR	625.800	251.000	633.100	256.000	634.000	265.000	633.700	298.000	633.400	322.000
GR	632.300	372.000	643.800	448.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	4.000	0.074	175.000	0.110	216.000	0.028	421.000	0.089	485.000	0.000
X1	65620.000	27.000	216.000	421.000	1900.000	1900.000	1900.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	20.000	0.000	470.000	0.000	0.000	0.000	0.000
GR	642.200	0.000	631.500	53.000	632.000	98.000	634.500	153.000	635.700	175.000
GR	634.000	186.000	633.000	205.000	629.800	216.000	626.100	219.000	624.900	230.000
GR	623.100	238.000	622.500	261.000	621.900	290.000	621.400	307.000	620.900	333.000
GR	620.700	363.000	623.000	397.000	625.200	408.000	628.300	421.000	630.100	425.000
GR	631.000	431.000	631.400	442.000	630.900	455.000	631.800	462.000	634.200	474.000
GR	637.700	479.000	642.200	485.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.074	10.000	0.030	59.000	0.028	295.000	0.110	455.000	0.000
		XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK								
X1	67420.000	21.000	59.000	295.000	2400.000	2500.000	2500.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	10.000	0.000	420.000	0.000	0.000	0.000	0.000
GR	642.900	0.000	638.600	10.000	634.000	20.000	633.200	32.000	632.500	54.000
GR	631.800	59.000	627.800	62.000	624.500	73.000	623.600	86.000	621.000	100.000
GR	619.300	129.000	620.900	154.000	623.200	194.000	624.000	218.000	626.100	267.000
GR	627.700	281.000	633.700	295.000	636.100	299.000	633.000	345.000	634.900	415.000
GR	642.900	455.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.063	270.000	0.028	518.000	0.074	575.000	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
		XSEC 21 US OF GREEN COTTAGE ON LEFT BANK								
X1	68970.000	25.000	270.000	518.000	1400.000	1700.000	1550.000	0.000	0.000	0.000
GR	643.500	0.000	640.700	10.000	637.400	124.000	636.700	212.000	635.500	246.000
GR	633.700	255.000	631.500	270.000	625.500	277.000	626.300	293.000	625.100	303.000
GR	625.600	320.000	623.300	386.000	622.500	346.000	622.500	363.000	622.400	385.000
GR	622.500	421.000	622.500	429.000	623.000	450.000	622.700	481.000	625.300	499.000
GR	626.600	505.000	628.300	518.000	633.700	529.000	636.400	550.000	643.500	575.000
NH	3.000	0.037	126.000	0.028	408.000	0.037	426.000	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
		XSEC 22 BELOW POWER LINE CROSSING IN VALUES ARE ATYPICAL								
X1	70300.000	25.000	126.000	408.000	1300.000	1300.000	1330.000	0.000	0.000	0.000
GR	644.400	0.000	640.000	15.000	635.000	24.000	631.600	40.000	632.700	54.000
GR	631.200	73.000	634.100	113.000	634.200	123.000	633.800	126.000	631.700	136.000
GR	625.700	144.000	624.400	160.000	624.500	183.000	623.700	194.000	625.300	214.000
GR	626.400	266.000	625.900	300.000	624.100	307.000	624.100	336.000	624.400	359.000
GR	626.200	383.000	628.600	389.000	632.300	408.000	639.400	417.000	644.400	426.000
NH	4.000	0.089	30.000	0.033	98.000	0.028	323.000	0.074	375.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	71300.000	22.000	98.000	323.000	1000.000	1000.000	1000.000	0.000	0.000	0.000
GR	645.100	0.000	636.000	30.000	633.300	71.000	633.900	79.000	633.600	98.000
GR	631.700	101.000	629.900	108.000	627.100	111.000	625.100	114.000	624.600	144.000
GR	625.000	154.000	623.900	163.000	622.700	193.000	622.100	217.000	622.100	235.000
GR	623.200	271.000	624.500	300.000	626.000	311.000	630.200	323.000	635.800	333.000
GR	637.600	354.000	645.100	375.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	4.000	0.074	67.000	0.035	100.000	0.030	320.000	0.089	408.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	71900.000	25.000	100.000	320.000	500.000	650.000	600.000	0.000	0.000	0.000
GR	646.100	0.000	638.500	21.000	636.100	48.000	634.200	56.000	634.500	67.000
GR	632.700	69.000	631.400	88.000	630.600	99.000	630.000	100.000	627.700	103.000
GR	625.800	109.000	625.500	118.000	624.600	150.000	624.600	178.000	625.500	225.000
GR	626.100	274.000	625.600	291.000	627.100	313.000	630.500	320.000	632.700	335.000
GR	630.900	343.000	632.400	355.000	633.200	361.000	639.400	389.000	645.200	408.000
NH	4.000	0.074	66.000	0.031	311.000	0.028	757.000	0.059	767.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 25 BTWN BARBER AND KRING CABINS DS OF PUB ACC SITE DS OF NEWYGO									
X1	73040.000	20.000	65.000	311.000	1200.000	1100.000	1140.000	0.000	0.000	0.000
GR	646.600	0.000	641.900	15.000	639.200	30.000	636.200	66.000	628.600	82.000
GR	626.400	124.000	625.600	147.000	625.400	215.000	626.000	268.000	628.000	301.000
GR	633.300	311.000	636.600	328.000	636.700	343.000	636.400	418.000	637.600	472.000
GR	639.500	526.000	641.300	559.000	644.800	620.000	650.800	757.000	655.800	767.000
NH	3.000	0.035	49.000	0.028	310.000	0.044	335.000	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
	XSEC 26 DS OF CO RD BRDG SEC BENT 45DEG RT OFF RD FILL AT STA 10 BENT 45DEG RT TO RD FILL AT STA 325									
X1	73590.000	21.000	49.000	310.000	660.000	500.000	550.000	0.000	0.000	0.000
GR	646.800	0.000	643.300	10.000	637.000	32.000	635.600	41.000	634.300	47.000
GR	632.900	49.000	628.800	65.000	624.100	82.000	626.000	105.000	626.800	113.000
GR	628.000	121.000	625.800	133.000	626.800	162.000	628.800	175.000	629.900	211.000
GR	626.600	244.000	627.000	272.000	628.400	304.000	632.400	310.000	632.700	325.000
GR	646.800	335.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.035	0.044	0.025	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
	XSEC 27 CENTER OF BRDG FILL AT 650.5									
X1	73640.000	31.000	0.300	296.000	50.000	50.000	50.000	0.000	0.000	0.000

X2	0.000	0.000	0.000	650.500	652.000	0.000	0.000	0.000	0.000	0.000
GR	652.000	0.000	638.800	0.000	631.300	35.000	629.200	36.000	628.870	43.000
GR	625.700	60.000	625.500	80.000	625.500	90.000	627.500	95.000	628.000	100.000
GR	626.700	107.000	625.600	117.000	625.100	128.000	625.800	138.000	628.000	146.000
GR	652.000	146.000	652.000	152.000	628.000	152.000	627.800	163.000	627.300	167.000
GR	625.800	182.000	625.600	197.000	625.500	208.000	625.500	215.000	624.800	240.000
GR	625.500	250.000	625.500	264.000	633.000	275.000	632.900	290.000	634.800	296.000
GR	652.000	296.000	0.000	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	73660.000	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	650.500	652.000	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	73720.000	21.000	110.000	353.000	60.000	60.000	60.000	0.000	0.000	0.000
GR	653.300	0.000	647.000	44.000	641.700	71.000	634.800	88.000	633.600	99.000
GR	634.700	110.000	631.500	120.000	629.100	123.000	628.500	153.000	626.900	168.000
GR	635.800	202.000	626.700	220.000	625.300	240.000	626.700	278.000	627.300	306.000
GR	639.000	336.000	632.300	353.000	635.400	373.000	640.000	414.000	645.500	492.000
GR	650.000	523.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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NH	4.000	0.110	80.000	0.059	826.000	0.025	1066.000	0.067	1075.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 29 SEWAGE TREATMENT PLANT IN LOB									
X1	75140.000	24.000	826.000	1066.000	1140.000	1440.000	1420.000	0.000	0.000	0.000
GR	645.200	0.000	640.400	80.000	638.400	170.000	636.000	286.000	636.700	390.000
GR	636.500	494.000	637.200	592.000	636.300	692.000	635.400	790.000	635.600	820.000
GR	635.600	826.000	632.600	838.000	629.100	843.000	628.600	850.000	628.700	857.000
GR	627.800	891.000	627.500	935.000	628.100	953.000	628.900	983.000	629.700	1048.000
GR	631.200	1063.000	634.500	1066.000	639.200	1068.000	646.700	1075.000	0.000	0.000
NC	0.074	0.074	0.025	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
	XSEC 29A AT USGS CABLE									
X1	75800.000	22.000	1005.000	1264.000	540.000	700.000	660.000	0.000	0.000	0.000
GR	636.000	1005.000	632.400	1011.000	631.700	1013.000	630.500	1019.000	628.500	1029.000
GR	628.800	1037.000	629.100	1048.000	629.200	1062.000	630.000	1080.000	629.900	1105.000
GR	629.400	1121.000	629.900	1139.000	629.700	1159.000	629.300	1177.000	629.100	1194.000
GR	628.900	1208.000	628.200	1227.000	628.700	1229.000	631.700	1241.000	633.700	1246.000
GR	633.300	1255.000	635.200	1264.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.080	16.000	0.025	57.000	0.028	327.000	0.075	400.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	XSEC 29B AT USGS GAGE 1974 STAGE IS 639.2 1986 STAGE 645.4									
X1	76350.000	24.000	24.000	333.000	550.000	550.000	550.000	0.000	0.000	0.000
GR	648.800	0.000	638.800	10.000	634.700	24.000	632.300	33.000	630.800	41.000
GR	630.900	65.000	629.800	86.000	630.600	103.000	631.100	110.000	630.900	132.000
GR	630.900	133.000	630.900	134.000	631.200	141.000	631.200	181.000	630.800	218.000
GR	631.200	243.000	630.700	255.000	629.800	284.000	631.100	306.000	632.500	326.000
GR	633.000	332.000	634.600	333.000	636.500	346.000	646.500	356.000	0.000	0.000

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NC       0.074       0.074       0.025       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
                  XSEC 30   1975 HWM IS 638.6       1976 HWM IS 639.2
X1    76760.000      27.000      57.000     327.000     350.000     450.000     410.000       0.000       0.000       0.000
GR      654.000       0.000     645.800      16.000     638.600      32.000     637.900      43.000     636.500      57.000
GR      633.200      62.000     631.000      77.000     629.000      84.000     629.000      98.000     629.600     118.000
GR      629.000     147.000     628.300     167.000     630.400     188.000     633.000     197.000     632.600     203.000
GR      627.600     217.000     629.000     221.000     629.800     232.000     629.600     279.000     631.700     287.000
GR      631.100     298.000     633.300     315.000     636.000     327.000     638.300     341.000     636.900     355.000
GR      638.900     360.000     651.300     400.000       0.000       0.000       0.000       0.000       0.000       0.000
EJ        0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000
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   SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS    BANK ELEV
   Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA    LEFT/RIGHT
   TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN       SSTA
   SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID      ENDST

*PROF 1

CCHV=   0.100 CEHV=   0.300
1490 NH CARD USED
*SECNO 0.100

3470 ENCROACHMENT STATIONS=        8.0      818.0  TYPE=      1  TARGET=      810.000
                  XSEC 61
     0.10      21.89     620.39       0.00     621.00     620.72       0.32       0.00       0.00     613.20
    23100.        20.      18941.     4139.        52.     3779.      4137.         0.         0.     609.60
     0.00       0.39       5.01       1.00      0.135      0.031      0.091      0.000     598.50       8.00
 0.000252         0.         0.         0.          0          0          3       0.00     810.00     818.00
0
 1490 NH CARD USED
 *SECNO 1920.000

 3470 ENCROACHMENT STATIONS=       22.0      763.0  TYPE=      1  TARGET=      741.000
         SEC 61 MOVED US INVERT ADJ BY .947T      FLOOD FLOW SHIFTED FROM
         ROB AS NOTED ON XSEC 61 TO APPROX AREA IN LOB FOR THIS XSEC
   1920.00      21.43     620.87       0.00       0.00     621.30       0.43       0.55       0.03     614.14
    23100.         0.      20522.     2578.         0.      3678.      3555.       319.         32.     610.54
     0.10       0.00       5.58       0.73      0.000      0.031      0.140      0.000     599.44      22.00
 0.000337       2170.      1920.      1740.          1          0          0       0.00     741.00     763.00
0
 1490 NH CARD USED
 *SECNO 3050.000

 3470 ENCROACHMENT STATIONS=       17.0      328.0  TYPE=      1  TARGET=      311.000
                  XSEC 62
   3050.00      20.85     621.25       0.00       0.00     621.63       0.38       0.33       0.00     608.60
    23100.        168.      22819.     115.       134.      4579.      109.       479.         46.     609.00
     0.17        1.26       4.98       1.05      0.067      0.031      0.067      0.000     600.40      17.00
 0.000256        1200.      1130.      1200.          2          0          0       0.00     311.00     328.00
0
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1490 NH CARD USED
*SECNO 3051.000

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000
W EDGE OF BRIDGE DECK AT BRIDGETON 1975 HWM 615.7

3051.00	20.98	621.28	0.00	0.00	621.64	0.36	0.00	0.00	608.60
23100.	483.	22286.	330.	134.	4585.	109.	479.	46.	609.00
0.17	3.61	4.86	3.02	0.023	0.031	0.023	0.000	600.40	17.00
0.000244	1.	1.	1.	2	0	0	0.00	311.00	328.00

0
1

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

SPECIAL BRIDGE

SB	KK	KKOR	COFQ	RDLEN	BWC	SWP	BAREA	SS	ELCHD	ELCHD
	0.90	1.25	2.60	1000.00	260.00	8.00	9000.00	1.43	604.50	604.50

*SECNO 3100.000
CLASS A LOW FLOW

3420 BRIDGE W.S.= 621.25 BRIDGE VELOCITY= 5.00 CALCULATED CHANNEL AREA= 4623.

ESPRS	EGLWC	H3	QWEIR	QLOW	EAREA	TRAPEZOID AREA	ELLC	ELTRD
0.00	621.64	0.01	0.	23100.	9000.	9152.	635.40	638.00

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000

3100.00	20.89	621.29	0.00	0.00	621.64	0.36	0.01	0.00	608.60
23100.	484.	22286.	331.	139.	4588.	110.	484.	46.	609.00
0.17	3.60	4.86	3.02	0.023	0.031	0.023	0.000	600.40	17.00
0.000243	49.	49.	49.	0	0	0	0.00	311.00	328.00

0
*SECNO 3101.000

3470 ENCROACHMENT STATIONS= 17.0 328.0 TYPE= 1 TARGET= 311.000

3101.00	20.87	621.27	0.00	0.00	621.65	0.39	0.00	0.01	608.60
23100.	56.	22961.	83.	134.	4585.	109.	484.	46.	609.00
0.17	0.42	5.01	0.75	0.202	0.031	0.095	0.000	600.40	17.00
0.000259	1.	1.	1.	1	0	0	0.00	311.00	328.00

0
1490 NH CARD USED
*SECNO 4680.000

	XSEC 63							
4680.00	18.27	621.77	0.00	0.00	622.00	0.22	0.33	0.02	608.50

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    23100.     504.    20503.    2093.     389.    5128.    1520.     699.      63.    616.00
      0.29     1.29     4.00     1.38    0.061    0.031    0.048    0.000   603.50     6.96
 0.000171     1500.    1579.    1600.        2        0        0     0.00   615.43   622.39
0
 1490 NH CARD USED
 *SECNO 7200.000
        XSEC 64          KSEC CROSSES US OF OLD ROCK CRIBBING
1
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SECNO / Q / TIME / SLOPE	DEPTH / QLOB / VLOB / XLOBL	CHSEL / QCH / VCH / XLCH	CRIWS / QROB / VROB / XLOBR	WSELK / ALOB / XNL / ITRIAL	EG / ACH / XNCH / IDC	HV / AROB / XNR / ICONT	HL / VOL / WTN / CORAR	OLOSS / TWA / ELMIN / TOPWID	BANK ELEV LEFT/RIGHT / SSTA / ENDST
7200.00	21.38	622.18	0.00	0.00	622.57	0.39	0.53	0.05	619.00
23100.	1644.	21226.	228.	3612.	4065.	145.	1114.	102.	610.40
0.43	0.46	5.22	1.57	0.195	0.031	0.054	0.000	600.80	7.11
0.000264	2200.	2520.	2500.	2	0	0	0.00	805.01	812.12

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0
 1490 NH CARD USED
 *SECNO 8850.000
        XSEC 65    XSEC CROSSES 100FT US OF BOAT LAUNCH
```

8850.00	18.57	622.77	0.00	0.00	623.00	0.23	0.41	0.02	619.30
23100.	6.	13947.	4147.	14.	4481.	5467.	1437.	132.	619.80
0.56	0.41	4.23	0.76	0.067	0.034	0.138	0.000	604.20	24.04
0.000244	1400.	1650.	1600.	2	0	0	0.00	893.29	917.33

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0
 1490 NH CARD USED
 *SECNO 10300.000
                XSEC 66
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10300.00	20.23	623.23	0.00	0.00	623.33	0.10	0.31	0.01	611.10
23100.	229.	15317.	7554.	158.	5023.	7761.	1705.	155.	620.60
0.71	1.36	3.05	0.97	0.067	0.047	0.114	0.000	603.00	16.08
0.000252	1500.	1450.	700.	2	0	0	0.00	1198.95	1215.03

```
0
 1490 NH CARD USED
 *SECNO 11800.000
                XSEC 67
```

11800.00	19.15	623.55	0.00	0.00	623.81	0.26	0.43	0.05	619.60
23100.	4198.	18769.	133.	6668.	4129.	247.	2080.	189.	610.70
0.81	0.63	4.55	0.54	0.202	0.041	0.202	0.000	604.40	54.76
0.000370	1600.	1500.	1000.	1	0	0	0.00	1042.78	1097.54

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0
 *SECNO 12600.000
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12600.00	19.45	623.85	0.00	0.00	624.10	0.25	0.29	0.00	619.60
23100.	4280.	18684.	137.	6889.	4199.	259.	2286.	208.	610.70
0.87	0.62	4.45	0.53	0.202	0.041	0.202	0.000	604.40	49.70
0.000348	800.	800.	800.	2	0	0	0.00	1048.71	1098.41

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0
 1490 NH CARD USED
 *SECNO 14100.000
                XSEC 68
```

1

SECNO	DEPTH	CHSEL	CHINS	*SELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QEOB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VEOB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XECH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
14100.00	20.32	624.32	0.00	0.00	624.62	0.30	0.51	0.01	611.80
23100.	453.	21272.	1376.	612.	4660.	2561.	2567.	233.	618.40
0.97	0.74	4.57	0.54	0.135	0.041	0.202	0.000	604.00	8.16
0.000359	900.	1500.	1600.	0	0	0	0.00	725.84	734.00

0
1490 NH CARD USED
*SECNO 16700.000

XSEC 69

16700.00	20.43	625.03	0.00	0.00	625.32	0.30	0.70	0.00	621.80
23100.	4067.	18932.	101.	7710.	3933.	106.	2911.	261.	613.80
1.13	0.53	4.81	0.95	0.202	0.029	0.081	0.000	604.60	10.24
0.000252	300.	2600.	1900.	2	0	0	0.00	1128.53	1138.77

0
*SECNO 18990.000

XSEC 1 FROM SUBDIVISION FILE F194 22 12

18990.00	19.53	625.53	0.00	0.00	625.74	0.21	0.41	0.01	611.80
23100.	1286.	21426.	387.	1011.	5699.	528.	3296.	293.	612.70
1.29	1.27	3.76	0.73	0.054	0.034	0.081	0.000	606.00	113.27
0.000156	1250.	2190.	2500.	2	0	0	0.00	551.67	664.95

0
1490 NH CARD USED
*SECNO 19870.000

3265 DIVIDED FLOW

XSEC 70 THROUGH SUBDIV ON LEFT BANK CHANNEL INEFFECTIVE
1976 HUB ON EASEMENT WALL 619.8 HUM 800FT DS 619.98

19870.00	20.06	625.66	0.00	0.00	625.98	0.32	0.21	0.04	612.40
23100.	6719.	16207.	173.	3031.	3089.	321.	3451.	307.	612.80
1.35	2.22	5.25	0.54	0.041	0.034	0.202	0.000	605.60	8.34
0.000309	950.	1000.	980.	2	0	0	0.00	706.26	747.61

0
1490 NH CARD USED
*SECNO 21370.000

XSEC 71 OLDER COTTAGES ON RT BANK SEAWALL PROTECTS RT BANK

21370.00	21.04	626.14	0.00	0.00	626.37	0.23	0.37	0.01	612.40
23100.	1707.	15956.	5437.	2166.	3529.	3478.	3700.	330.	619.80
1.47	0.79	4.52	1.56	0.137	0.033	0.063	0.000	605.10	8.13
0.000219	1100.	1500.	1600.	2	0	0	0.00	781.12	789.25

0
1

SECNO	DEPTH	CHSEL	CHINS	*SELK	EG	HV	HL	OLOSS	BANK ELEV

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

 1490 NH CARD USED
 *SECNO 24985.000
                 XSEC 72
  24985.00    19.63   627.13     0.00     0.00   627.35     0.22     0.98     0.00   620.30
    23100.    3099.   16329.    3672.    4599.    3725.    1969.    4513.     401.   614.70
      1.75     0.67     4.38     1.86    0.202    0.041    0.062    0.000   607.50     8.23
  0.000345    3700.    3615.    3600.        2        0        0     0.00   906.72   914.95
0
 1490 NH CARD USED
 *SECNO 28235.000
                 XSEC 73
  28235.00    20.22   628.22     0.00     0.00   628.52     0.30     1.15     0.02   623.50
    23100.    1696.   21256.     149.    2813.    4636.     155.    5097.     451.   616.70
      1.96     0.60     4.59     0.96    0.199    0.041    0.108    0.000   608.00     7.41
  0.000397    2300.    3200.    3300.        2        0        0     0.00   675.67   683.08
0
 1490 NH CARD USED
 *SECNO 29860.000
                 XSEC 74 IN LINE WITH E SIDE OF COTTAGE ON TOP OF LFT BANK
                 JUST US OF POWERLINE
  29860.00    19.53   628.83     0.00     0.00   629.27     0.44     0.70     0.04   616.20
    23100.     142.   21993.     964.     267.    4023.    1645.    5346.     473.   615.20
      2.04     0.53     5.47     0.59    0.202    0.041    0.202    0.000   609.30     8.65
  0.000478    1500.    1625.    1700.        1        0        0     0.00   511.75   520.41
0
 1490 NH CARD USED
 *SECNO 31660.000
                 XSEC 75
  31660.00    20.98   629.68     0.00     0.00   629.96     0.28     0.67     0.02   623.30
    23100.     890.   21587.     623.    1753.    4920.     617.    5617.     495.   617.10
      2.16     0.51     4.39     1.01    0.185    0.041    0.108    0.000   608.70    14.48
  0.000300    1700.    1800.    1800.        2        0        0     0.00   611.15   625.64
0
 1490 NH CARD USED
 *SECNO 35425.000

 3470 ENCROACHMENT STATIONS=      20.0     790.0  TYPE=     1  TARGET=     770.000
                 XSEC 76
  35425.00    21.31   631.11     0.00     0.00   631.34     0.23     1.38     0.00   621.20
    23100.      43.   18345.    4712.      95.    4234.    5124.    6341.     556.   625.30
      2.45     0.45     4.33     0.92    0.209    0.047    0.165    0.000   609.80    20.00
  0.000464    4300.    3750.    3600.        2        0        0     0.00   770.00   790.00
0
1
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   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	IRRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO 37670.000

3470 ENCROACHMENT STATIONS= 20.0 1035.0 TYPE= 1 TARGET= 1015.000
XSEC 77

37670.00	24.07	632.07	0.00	0.00	632.32	0.25	0.97	0.00	622.70
23100.	7167.	15896.	38.	9051.	3312.	86.	6852.	597.	623.70
2.62	0.79	4.80	0.44	0.203	0.047	0.203	0.000	608.00	20.00
0.000460	1900.	2150.	2100.	2	0	0	0.00	1015.00	1035.00

0
1490 NH CARD USED
*SECNO 38970.000

3470 ENCROACHMENT STATIONS= 20.0 760.0 TYPE= 1 TARGET= 740.000
XSEC 78 800FT DS OF ISLAND, POWERLINE CROSSING AND BOAT LAUNCH
WEST END OF OLD GRAVEL OPERATION

38970.00	19.63	632.53	0.00	0.00	632.68	0.15	0.35	0.01	621.80
23100.	43.	18499.	4558.	86.	5292.	4814.	7127.	617.	624.80
2.73	0.50	3.50	0.95	0.135	0.041	0.112	0.000	612.90	20.00
0.000201	700.	1300.	1300.	2	0	0	0.00	740.00	760.00

0
1490 NH CARD USED
*SECNO 42170.000

3470 ENCROACHMENT STATIONS= 15.0 510.0 TYPE= 1 TARGET= 495.000
XSEC 1

42170.00	21.98	632.98	0.00	0.00	633.55	0.57	0.74	0.12	622.40
23100.	34.	20303.	2763.	87.	3154.	2924.	7711.	661.	625.90
2.88	0.39	5.44	0.94	0.202	0.027	0.114	0.000	611.00	15.00
0.000277	3600.	3200.	3000.	2	0	0	0.00	495.00	510.00

0
1490 NH CARD USED
*SECNO 43770.000
XSEC 2

43770.00	20.49	633.59	0.00	0.00	634.07	0.48	0.52	0.01	622.30
23100.	382.	19886.	3331.	359.	3208.	2571.	7947.	680.	618.30
2.97	1.06	6.04	1.30	0.102	0.034	0.110	0.000	613.10	1.43
0.000372	1200.	1600.	1800.	2	0	0	0.00	468.76	470.19

0
1

SECNO	DEPTH	CHSPL	CRINS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TRA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	KNL	XNCH	KNR	WIN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO 44920.000
XSEC 3 SECTION THRU ISLAND NE OF OLD GRAVEL OPERATION

```
 44820.00    22.07   634.27     0.00     0.00   634.48     0.21     0.38     0.03   624.70
   23100.     1205.   21143.     752.    1942.    5560.    1338.    8131.     694.   625.30
     3.05      0.62     3.80     0.56    0.202    0.048    0.202    0.000   612.20     1.45
 0.000346     1100.    1050.    1100.        2        0        0     0.00   698.23   699.68
0
 1490 NH CARD USED
 *SECNO 45470.000
                XSEC 4  OLD FOOD PILING ALONG EACH BANK
 45470.00    21.03   634.43     0.00     0.00   634.81     0.37     0.28     0.05   627.70
   23100.     1386.   21482.     233.    1983.    4221.     444.    8242.     703.   624.50
     3.09      0.70     5.09     0.52    0.202    0.047    0.202    0.000   613.40     2.59
 0.000552      550.     650.     650.        2        0        0     0.00   575.49   578.08
0
 1490 NH CARD USED
 *SECNO 46870.000
                XSEC 5  HILL AT RIGHT BANK IS ERODING
 46870.00    23.63   635.13     0.00     0.00   635.54     0.41     0.72     0.01   622.10
   23100.     2355.   20343.     402.    2185.    3738.     237.    8435.     719.   621.30
     3.16      1.08     5.44     1.70    0.135    0.047    0.088    0.000   611.50    14.74
 0.000554     1280.    1300.    1575.        2        0        0     0.00   480.58   495.32
0
 1490 NH CARD USED
 *SECNO 48720.000
                XSEC 6
 48720.00    19.72   636.12     0.00     0.00   636.33     0.21     0.78     0.02   626.80
   23100.     1860.   19568.    1672.     742.    4953.    1370.    8707.     738.   620.60
     3.30      2.51     3.95     1.22    0.046    0.049    0.135    0.000   616.40     2.63
 0.000336     1500.    1850.    2000.        0        0        0     0.00   452.88   455.51
0
 1490 NH CARD USED
 *SECNO 50220.000
 3280 CROSS SECTION  50220.00 EXTENDED      0.08 FEET

                XSEC 7
 50220.00    24.88   636.58     0.00     0.00   636.70     0.12     0.36     0.01   626.30
   23100.    11931.   10787.     382.    5136.    3361.     318.    8963.     757.   623.10
     3.45      2.32     3.21     1.20    0.041    0.049    0.067    0.000   611.70     0.00
 0.000196     1300.    1500.    1300.        2        0        0     0.00   738.00   738.00
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       EIMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAN     TOPWID      ENDST

 1490 NH CARD USED
 *SECNO 51945.000

 3265 DIVIDED FLOW

            XSEC 8    VICS CAMPING ON RIGHT BANK  CAMPGROUND IS ON A HILL
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WATER CAN FLOW AROUND HILL AT APPROX ELEV 630.

51945.00	22.06	635.96	0.00	0.00	637.28	0.31	0.51	0.06	637.60
23100.	174.	17068.	5857.	115.	3272.	7788.	9312.	791.	629.40
3.55	1.51	5.22	0.75	0.027	0.047	0.202	0.000	614.90	1.85
0.000644	1300.	1725.	1500.	2	0	0	0.00	1258.74	1281.85

0
1490 NH CARD USED
*SECNO 53000.000

3470 ENCROACHMENT STATIONS= 350.0 1700.0 TYPE= 1 TARGET= -350.000
XSEC 9 SECTION THROUGH ISLAND US OF VICS
XSEC BENT 30DEG LFT AT 887 20DEG RT AT STA 1208

53000.00	20.72	637.42	0.00	0.00	637.53	0.12	0.24	0.02	625.00
23100.	3993.	17473.	1634.	6419.	5563.	4044.	9577.	814.	623.00
3.66	0.62	3.14	0.40	0.139	0.036	0.169	0.000	616.70	350.00
0.000127	1200.	1055.	500.	2	0	0	0.00	1344.23	1694.23

0
FLOW DISTRIBUTION FOR SECNO= 53000.00 CWSEL= 637.42

STA=	350.	650.	760.	872.	887.	1192.	1650.	1694.
PER Q=	8.9	3.2	3.1	2.0	75.6	6.9	0.2	
AREA=	3790.4	1353.5	1097.7	177.2	5563.4	3859.8	183.9	
VEL=	0.5	0.6	0.7	2.6	3.1	0.4	0.3	

1490 NH CARD USED
*SECNO 53700.000

3470 ENCROACHMENT STATIONS= 300.0 1740.0 TYPE= 1 TARGET= -300.000
XSEC 10 PEINOOD COTTAGE ON LEFT BANK 1976 HWM 630.5
1986 HWM 633 XSEC BENT 45DEG LEFT AT STA 1360

53700.00	20.89	637.49	0.00	0.00	637.63	0.14	0.09	0.01	626.20
23100.	9708.	13383.	9.	14990.	3377.	35.	9782.	830.	629.20
3.73	0.65	3.96	0.26	0.153	0.034	0.169	0.000	616.60	300.00
0.000164	400.	700.	750.	2	0	0	0.00	1438.46	1738.46

0
1

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

FLOW DISTRIBUTION FOR SECNO= 53700.00 CWSEL= 637.49

STA=	300.	1340.	1420.	1557.	1730.	1738.
PER Q=	35.3	3.7	3.0	57.9	0.0	
AREA=	12985.0	792.3	1213.2	3377.1	35.2	
VEL=	0.6	1.1	0.6	14.0	0.3	

1490 NH CARD USED
*SECNO 54600.000

```
 3470 ENCROACHMENT STATIONS=      750.0    2250.0  TYPE=     1  TARGET=   -750.000
                XSEC 10A NEAR JHITE COTTAGE(BRONKEMA)  1976HWM 630.9 IN GARAGE
                XSEC BEND 5DEG RT AT STA 139.9  RESTRICTED FOR HIGH GROUND AT
                XSEC 11 US     1986 HWM 638
  54600.00    24.66   637.66     0.00     0.00   637.75     0.09     0.12     0.01   628.70
    23100.   11869.   10925.     307.   14170.    3228.     216.   10021.     849.   621.00
      3.83     0.84     3.38     1.42    0.111    0.041    0.054    0.000   613.00   750.00
  0.000159     500.     900.     1000.        2        0        0     0.00  1497.67  2247.67
0
 FLOW DISTRIBUTION FOR SECNO=  54600.00          CHSEL=    637.66

 STA=      750.     949.    1352.    1508.    1597.    1755.    1846.    1888.    1957.    2041.    2062.    2221.    2248.
   PER Q=     4.6      8.7      5.7      4.7      6.0      6.6      3.5      6.7      3.0      1.7     47.3      1.3
    AREA=  2784.5   5237.1   1441.8    859.8   1252.3    779.4    355.3    636.6    649.5    173.5   3228.2    215.8
     VEL=     0.4      0.4      0.9      1.3      1.1      2.0      2.3      2.4      1.1      2.3      3.4      1.4

 1490 NH CARD USED
 *SECNO 55080.000
                XSEC 10B LOB IS FELCH ROAD
  55080.00    23.19   637.69     0.00     0.00   637.81     0.13     0.05     0.01   621.00
    23100.   13595.    9222.     283.    5018.    2906.     214.   10112.     857.   621.30
      3.86     2.71     3.17     1.32    0.023    0.041    0.054    0.000   614.50    33.55
  0.000139     250.     480.     550.        2        0        0     0.00   954.17   987.71
0
 1490 NH CARD USED
 *SECNO 55800.000

 3470 ENCROACHMENT STATIONS=        0.0    1900.0  TYPE=     1  TARGET=    1899.999
                XSEC 11  EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
  55800.00    22.16   637.66     0.00     0.00   638.00     0.34     0.12     0.06   627.70
    23100.       0.   17397.    5703.       0.    3229.    5510.   10201.     865.   628.60
      3.89     0.00     5.39     1.04    0.000    0.039    0.123    0.000   615.50  1000.00
  0.000506     150.     720.     450.        2        0        0     0.00   900.00  1900.00
0
1
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   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       RTN      ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ICRIAL    IDC       ICONT     CORAR    TOPWID     ENDST

 FLOW DISTRIBUTION FOR SECNO=  55800.00          CHSEL=    637.66

 STA=     1000.    1169.    1172.    1185.    1237.    1320.    1454.    1546.    1651.    1819.    1900.
   PER Q=    75.3      0.1      0.5      2.1      3.4      5.6      3.4      0.0      6.3      3.3
    AREA=  3229.0     24.9    100.2    398.3    648.2   1053.1    667.9    725.5   1294.7    647.3
     VEL=     5.4      1.2      1.2      1.2      1.2      1.2      1.2      0.0      1.2      1.2

 1490 NH CARD USED
 *SECNO 56800.000

 3470 ENCROACHMENT STATIONS=        0.0    1630.0  TYPE=     1  TARGET=    1629.999
```

XSEC 12

56800.00	23.57	638.17	0.00	0.00	638.30	0.13	0.28	0.02	621.70
23100.	181.	13117.	9802.	162.	3467.	11457.	10290.	870.	630.00
3.97	1.12	3.78	0.86	0.094	0.048	0.129	0.000	614.60	2.22
0.000336	1200.	1000.	50.	2	0	0	0.00	1627.78	1630.00

0
FLOW DISTRIBUTION FOR SECNO= 56800.00 CWSEL= 638.17

STA=	2.	22.	222.	350.	457.	660.	758.	865.	958.	1093.	1227.	1424.	1592.
PER Q=	0.8	56.8	5.2	4.3	3.2	3.4	4.1	3.6	4.0	4.0	5.0	4.6	
AREA=	161.8	3457.1	1115.3	933.1	1552.5	776.2	901.0	787.8	1122.3	1121.7	1494.1	1330.7	
VEL=	1.1	3.8	1.1	1.1	0.5	1.0	1.0	1.0	0.8	0.8	0.8	0.8	
STA=	1592.	1630.											
PER Q=	1.0												
AREA=	322.5												
VEL=	0.7												

1490 NH CARD USED
*SECNO 57650.000

3470 ENCROACHMENT STATIONS= 0.0 1910.0 TYPE= 1 TARGET= 1909.999
XSEC 13 EXTENDED PARALLEL TO XSEC 12 ACROSS OLD WOMENS BEND
1976 MMM 631.9

57650.00	22.46	638.36	0.00	0.00	638.40	0.05	0.09	0.01	622.00
23100.	7644.	11923.	3533.	7403.	5390.	6036.	10430.	882.	626.50
4.07	1.03	2.21	0.59	0.061	0.043	0.103	0.000	615.90	4.90
0.000100	500.	850.	50.	0	0	0	0.00	1905.10	1910.00

0
FLOW DISTRIBUTION FOR SECNO= 57650.00 CWSEL= 638.36

STA=	5.	845.	857.	1180.	1380.	1514.	1879.	1910.					
PER Q=	32.3	0.8	51.6	4.5	4.2	6.0	0.6						
AREA=	7250.2	153.2	5390.3	1722.4	1143.0	2896.4	269.0						
VEL=	1.0	1.2	2.2	0.6	0.8	0.5	0.5						

1

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

1490 NH CARD USED
*SECNO 58350.000
XSEC 14 XSEC BEN 15DEG LEFT AT STA 1106 ABANDD TRAILER BANK IN LOB

58350.00	22.11	638.42	0.00	0.00	638.50	0.08	0.08	0.01	630.50
23100.	12652.	10434.	14.	8992.	3355.	54.	10622.	900.	629.50
4.14	1.41	3.11	0.26	0.065	0.049	0.202	0.000	616.30	13.90
0.000221	500.	700.	400.	2	0	0	0.00	1283.26	1297.16

0
FLOW DISTRIBUTION FOR SECNO= 58350.00 CWSEL= 638.42

```
 STA=       14.      400.      731.      918.     1077.     1106.     1285.     1297.
   PER Q=      19.5      18.9       8.3       6.8       1.3      45.2       0.1
    AREA=    3160.4    2967.4    1442.7    1194.9     226.6    3354.5      54.2
     VEL=       1.4       1.5       1.3       1.3       1.3       3.1       0.3

 1490 NH CARD USED
 *SECNO 58900.000
            XSEC 15
  58900.00     22.00    638.50      0.00      0.00    638.63      0.13      0.12      0.01    631.50
    23100.     6904.    15350.      846.     7128.     4456.     1206.    10765.      916.    629.00
      4.20      0.97      3.44      0.70     0.081     0.046     0.135     0.000    616.50     13.78
  0.000238      450.      550.      700.         0         0         0      0.00   1527.89   1541.67
0
 1490 NH CARD USED
 *SECNO 60000.000

 3301 HV CHANGED MORE THAN HVINS.

                XSEC 16
  60000.00     19.70    638.60      0.00      0.00    639.27      0.67      0.48      0.16    628.00
    23100.      519.    19297.     3285.      199.     2703.     3255.    10975.      940.    632.60
      4.24      2.60      7.14      1.01     0.069     0.047     0.162     0.000    618.90      8.61
  0.001200     1000.     1100.      700.         2         0         0      0.00    774.54    783.15
0
 FLOW DISTRIBUTION FOR SECNO=  60000.00          CWSEL=     638.60

 STA=        9.       44.      200.      750.      783.
   PER Q=       2.2      83.5      14.0       0.2
    AREA=     199.5    2703.1    3163.8      91.2
     VEL=       2.6       7.1       1.0       0.6

1
```



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

 1490 NH CARD USED
 *SECNO 62250.000
            XSEC 17    SUBDIVISION ON LEFT BANK
  62250.00     20.41    640.11      0.00      0.00    640.39      0.27      1.08      0.04    632.90
    23100.      485.    21471.     1144.      726.     4932.     1179.    11282.      969.    629.10
      4.39      0.67      4.35      0.97     0.126     0.038     0.120     0.000    619.70     16.60
  0.000270     2400.     2225.     1700.         0         0         0      0.00    523.30    539.90
0
 1490 NH CARD USED
 *SECNO 63120.000
  63120.00     20.61    640.31      0.00      0.00    640.78      0.47      0.34      0.06    630.40
    23100.       88.    22261.      752.      109.     3975.     1022.    11415.      980.    633.10
      4.44      0.80      5.60      0.74     0.120     0.038     0.148     0.000    519.70      9.21
  0.000462      970.      970.      970.         2         0         0      0.00    415.76    424.95
```

```
0
 1490 NH CARD USED
 *SECNO 65620.000

 3470 ENCROACHMENT STATIONS=      20.0     470.0  TYPE=     1  TARGET=     450.000
  65620.00     20.48    641.18      0.00      0.00    641.60      0.42      0.82      0.00    629.80
    23100.     1651.    20917.     532.      1513.    3820.     489.     11653.     999.     628.30
      4.54      1.09      5.49      1.09     0.107     0.038     0.120     0.000   620.70     20.00
  0.000400     1900.     1900.     1900.         2         0         0      0.00   450.00    470.00
0
 1490 NH CARD USED
 *SECNO 67420.000

 3470 ENCROACHMENT STATIONS=      10.0     420.0  TYPE=     1  TARGET=     410.000
                XSEC 20 AT DS OF ABANDONED SHACK ON LEFT BANK
  67420.00     22.86    642.16      0.00      0.00    642.50      0.34      0.89      0.01    631.80
    23100.     1123.    21288.     689.      416.     4378.     987.     11994.     1023.     633.70
      4.69      2.70      4.86      0.70     0.040     0.038     0.148     0.000   619.30     10.00
  0.000319     2400.     2500.     2500.         2         0         0      0.00   410.00    420.00
0
 1490 NH CARD USED
 *SECNO 68970.000
                XSEC 21 US OF GREEN COTTAGE ON LEFT BANK
  68970.00     20.26    642.66      0.00      0.00    642.97      0.31      0.46      0.00    631.50
    23100.     1258.    21500.     342.      1350.    4655.     357.     12200.     1040.     628.30
      4.79      0.93      4.62      0.96     0.085     0.038     0.100     0.000   622.40      3.01
  0.000281     1400.     1550.     1700.         2         0         0      0.00   569.01    572.03
0
1
```



```
   SECNO      DEPTH     CWSEL     CAIWS     USELK     LG        HV        HL        OLOSS    BANK ELEV
   Q          QLOB      QCH       QJOB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME       VLOB      VCH       VROB      XNL       KNCH      XNR       WTN       ELMIN       SSTA
   SLOPE      KLOBL     KLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


 1490 NH CARD USED
 *SECNO 70300.000
                XSEC 22 BELOW POWER LINE CROSSING  N VALUES ARE ATYPICAL
  70300.00     19.38    643.08      0.00      0.00    643.33      0.25      0.36      0.01    633.80
    23100.     2493.    20499.     108.      1121.    4856.      77.     12388.     1055.     632.30
      4.89      2.22      4.22      1.40     0.053     0.038     0.050     0.000   623.70      4.51
  0.000263     1300.     1330.     1300.         2         0         0      0.00   419.11    423.62
0
 1490 NH CARD USED
 *SECNO 71300.000
  71300.00     21.20    643.30      0.00      0.00    643.65      0.35      0.29      0.03    633.60
    23100.     1621.    21210.     265.      701.     4204.     287.     12518.     1064.     630.20
      4.94      2.31      4.94      0.94     0.047     0.038     0.100     0.000   622.10      5.95
  0.000316     1000.     1000.     1000.         2         0         0      0.00   364.00    369.95
0
 1490 NH CARD USED
 *SECNO 71900.000
```

71900.00	18.89	643.49	0.00	0.00	643.88	0.38	0.22	0.01	630.00
23100.	1718.	20549.	833.	757.	3938.	707.	12591.	1069.	630.50
4.98	2.27	5.22	1.18	0.060	0.040	0.120	0.000	624.60	7.20
0.000437	500.	600.	650.	2	0	0	0.00	395.21	402.41

0

1490 NH CARD USED

*SECNO 73040.000

XSEC 25 BTWN BARBER AND KRING CABINS US OF PUB ACC SITE DS OF NEWYGO

73040.00	18.67	644.07	0.00	0.00	644.33	0.26	0.44	0.01	636.20
23100.	253.	18490.	4357.	290.	4233.	1699.	12743.	1082.	633.30
5.06	0.87	4.37	2.56	0.100	0.042	0.038	0.000	625.40	8.06
0.000345	1200.	1140.	1100.	2	0	0	0.00	599.27	607.33

0

1490 NH CARD USED

*SECNO 73590.000

XSEC 26 DS OF CO RD BRDG SEC BENT 45DEG RT OFF FD FILL AT STA 10
BENT 45DEG RT TO FD FILL AT STA 325

73590.00	20.08	644.18	0.00	0.00	644.57	0.39	0.20	0.04	632.90
23100.	509.	22087.	504.	231.	4327.	221.	12812.	1098.	632.40
5.09	2.20	5.10	2.28	0.047	0.038	0.059	0.000	624.10	8.72
0.000405	660.	550.	500.	2	0	0	0.00	324.42	333.14

0

1

SECNO	DEPTH	CWSEL	CRIWS	CSELK	LG	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	ICONC	CORAR	TOPWID	ENDST

*SECNO 73640.000

B265 DIVIDED FLOW

B370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 652.00 MAX ELLC= 650.50

XSEC 27 CENTER OF ROAD ELLC AT 650.5

73640.00	19.43	644.23	0.00	0.00	644.60	0.37	0.02	0.00	652.00
23100.	0.	23100.	0.	0.	4745.	0.	12817.	1088.	652.00
5.09	0.00	4.87	0.00	0.000	0.034	0.000	0.000	624.80	0.00
0.000369	50.	50.	50.	2	0	0	0.00	290.00	296.00

0

*SECNO 73660.000

B265 DIVIDED FLOW

B370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 652.00 MAX ELLC= 650.50

73660.00	19.43	644.23	0.00	0.00	644.60	0.37	0.01	0.00	652.00
23100.	0.	23100.	0.	0.	4747.	0.	12819.	1088.	652.00
5.09	0.00	4.87	0.00	0.000	0.034	0.000	0.000	624.80	0.00

```
  0.000368      20.      20.      20.       0        0        0     0.00   290.00   296.00
0
 *SECNO 73720.000
  73720.00    18.87   644.17     0.00     0.00   644.67     0.50     0.03     0.04   634.70
    23100.     975.   20922.    1203.     336.    3539.     595.   12826.    1089.   632.30
      5.09     2.90     5.91     2.02    0.047    0.034    0.059    0.000   625.30    58.43
  0.000530      60.      60.      60.        2        0        0     0.00   414.69   473.11
0
 1490 NH CARD USED
 *SECNO 75140.000
           XSEC 29  SEWAGE TREATMENT PLANT IN LOB
  75140.00    17.46   644.96     0.00     0.00   645.16     0.20     0.46     0.03   635.60
    23100.    6964.   16121.      15.     6187.    3832.      32.   13041.    1110.   634.50
      5.21     1.13     4.21     0.47    0.080    0.034    0.090    0.000   627.50     4.00
  0.000231    1140.    1420.    1440.        2        0        0     0.00  1069.38  1073.38
0
1
```



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

 *SECNO 75800.000
 3280 CROSS SECTION  75800.00 EXTENDED      9.73 FEET

                XSEC 29A  AT USGS CABLE
  75800.00    16.73   644.93     0.00     0.00   645.48     0.55     0.22     0.11   636.00
    23100.       0.   23100.       0.       0.    3877.       0.   13138.    1119.   635.20
      5.24     0.00     5.96     0.00    0.000    0.034    0.000    0.000   628.20  1005.00
  0.000551     540.     660.     700.        2        0        0     0.00   259.00  1264.00
0
 1490 NH CARD USED
 *SECNO 76350.000
           XSEC 29B AT USGS GAGE  1976 STAGE IS 639.2   1986 STAGE 645.4
  76350.00    15.59   645.39     0.00     0.00   645.78     0.39     0.28     0.02   634.70
    23100.     487.   22399.     214.     143.    4450.     168.   13193.    1123.   634.60
      5.27     3.41     5.03     1.28    0.035    0.038    0.101    0.000   629.80     3.41
  0.000474     550.     550.     550.        2        0        0     0.00   351.49   354.89
0
 *SECNO 76760.000
                XSEC 30  1975 HWM IS 638.6      1976 HWM IS 639.2
  76760.00    17.93   645.53     0.00     0.00   645.98     0.45     0.18     0.02   636.50
    23100.     271.   22460.     369.     250.    4107.     337.   13237.    1127.   636.00
      5.29     1.08     5.47     1.09    0.100    0.034    0.100    0.000   627.60    16.60
  0.000417     350.     410.     450.        2        0        0     0.00   364.79   381.39
0
QIFY218I VSIOS : I/O ERROR, FILE FT93F001,     DMSSVT120S OUTPUT ERROR 013 ON FT93F001,
         VSIOS : LAST EXECUTED FORTRAN STATEMENT IN PROGRAM H2MAIN AT ISN 1331 (OFFSET 0092C6).
0*** START OF BUFFER CONTENTS ***
              645.60     633.30     636.20       0.00     625.40     644.07     644.33   73040.00   72985.00
                            646.80     632.40     632.90       0.00     624.10     644.18     644.57   73590.00   73535.
```

```
                00                                  652.00      652.00      652.00        0.00      624.80      644.23      644.60     7
                3640.00    73585.00                                  652.00      652.00      652.00        0.00      624.80      644.23
                      644.60    73660.00    73605.00                                  650.00      632.30      634.70        0.00      6
                25.30      644.17      644.67    73720.00    73665.00                                  645.20      634.50      635.60
                      0.00      627.50      644.96      645.16    75140.00    75085.00                                  635.20      635
                .20      636.00        0.00      628.20      644.93      645.48    75800.00    75745.00
                  646.50      634.60      634.70        0.00      629.80      645.39      645.78    76350.00    76295.00
                                651.30      636.00      636.50        0.00      627.60      645.53      645.98    76760.00     76
                705.00
0*** END OF BUFFER CONTENTS ***
0TRACEBACK OF CALLING ROUTINES; MODULE ENTRY ADDRESS = 020000.
 ------------------------------------------------------------------------------
  IFYVSIOS (091708) CALLED BY VFCR# (095022) FROM LOCATION 09507C.
 ------------------------------------------------------------------------------
  VFCR# (095022) CALLED BY H2MAIN (020380) AT ISN 1331 AT OFFSET 0092C6.
 ------------------------------------------------------------------------------
  H2MAIN (020380) CALLED BY MAIN (020000) AT ISN 7 AT OFFSET 000222.
   NO ARGUMENTS PASSED TO SUBROUTINE.
 ------------------------------------------------------------------------------
  MAIN (020000) CALLED BY OPERATING SYSTEM.
 ------------------------------------------------------------------------------
0STANDARD CORRECTIVE ACTION TAKEN. EXECUTION CONTINUING.
1
```

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 ***************************************************
   H2C2 RELEASE DATED NOV 76 UPDATED MAY  1984
   ERROR CORR -  01,02,03,04,05,06
   MODIFICATION -  50,51,52,53,54,55,56
 ***************************************************
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0 MESSAGE SUMMARY: MESSAGE NUMBER - COUNT
0                          218        1
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1) COUNTY: Newaygo

2) STUDY NAME: Bridgeton, Ashland, Garfield and Brooks Twp.

3) WATERCOURSE: Muskegon River

4) DOCUMENT TYPE: Report



FLOOD INSURANCE STUDY



TOWNSHIP OF BROOKS, MICHIGAN
NEWAYGO COUNTY



PRELIMINARY

Federal Emergency Management Agency

COMMUNITY NUMBER - 260467

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Muskegon River Panel 01P

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Flood Insurance Rate Map

FLOOD INSURANCE STUDY

TOWNSHIP OF BROOKS,
NEWAYGO COUNTY,
MICHIGAN

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study revises and supersedes a previous Flood Insurance Rate Map for the Township of Brooks, Newaygo County, Michigan (Reference 1). This information will be used by the community to update existing floodplain regulations as part of the regular phase of the National Flood Insurance Program. The information will also be used by local and regional planners to further promote sound land use and floodplain development. Minimum floodplain management requirements for participation in the National Flood Insurance Program are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the State (or other jurisdictional agency) will be able to explain them.

This Flood Insurance Study was prepared by compiling existing hydrologic and hydraulic technical and scientific data prepared originally for purposes other than the National Flood Insurance Program.

The data were identified as the best available at the time of compilation of this Flood Insurance Study and should depict the general conditions of the flooding sources with relative accuracy. The Federal Emergency Management Agency (FEMA) performed a cursory review and accepted the data as valid for purposes of this Flood Insurance Study and the National Flood Insurance Program. However, if better information is known to exist or has been developed since the date of this report, the information should be immediately forwarded to the Natural and Technological Hazards Division, FEMA, Chicago, Illinois, for consideration for revision of this study.

1.2 Authority and Acknowledgments

The sources of authority for this Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study were obtained from a Michigan Department of Natural Resources (MDNR) report entitled "Muskegon River Floodplain Study" (Reference 2).

1.3 Coordination

On , the results of this Flood Insurance Study were reviewed and accepted at a final coordination meeting attended by representatives of the community and FEMA.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the incorporated area of the Township of Brooks, Newaygo County, Michigan. The area of study is shown on the Vicinity Map (Figure 1).

The areas studied by detailed methods were selected based on the extent and validity of available existing hydrologic and hydraulic data.

Flooding caused by overflow of the Muskegon river was studied in detail.

Areas having low development potential or minimal flood hazards were previously studied using approximate analyses. The results were shown on the Flood Insurance Rate Map for the Township of Brooks, Michigan (Reference 1) and are incorporated into this Flood Insurance Study.

2.2 Community Description

The Township of Brooks is in south-central Newaygo County, Michigan, and is bordered by the Township of Everett on the north, the Township of Croton on the east, the Township of Grant on the south, and the City of Newaygo and the Township of Garfield on the west, all in Newaygo County. The Township of Brooks is served by State Highway 82 and the CSX railroad. The 1980 population of the Township of Brooks was reported to be 2,349 (Reference 3).

2.3 Principal Flood Problems

In 1969 the dam at the City of Newaygo was removed. The change in channel configuration was minimal and did not affect flooding boundaries for the 100-year event. Flooding problems occur because of the severe meandering of the Muskegon River, which causes shifting of a large percentage of the flow between the channel and the overbanks. On September 12, 1986, a flood with a discharge of 23,100 cubic feet per second (cfs) and an elevation of 645.39 feet National Geodetic Vertical Datum of 1929 (NGVD) on the Muskegon River at the Newaygo gage resulted in damage to numerous structures. The following is a list of past floods recorded at Newaygo (References 4 and 5):

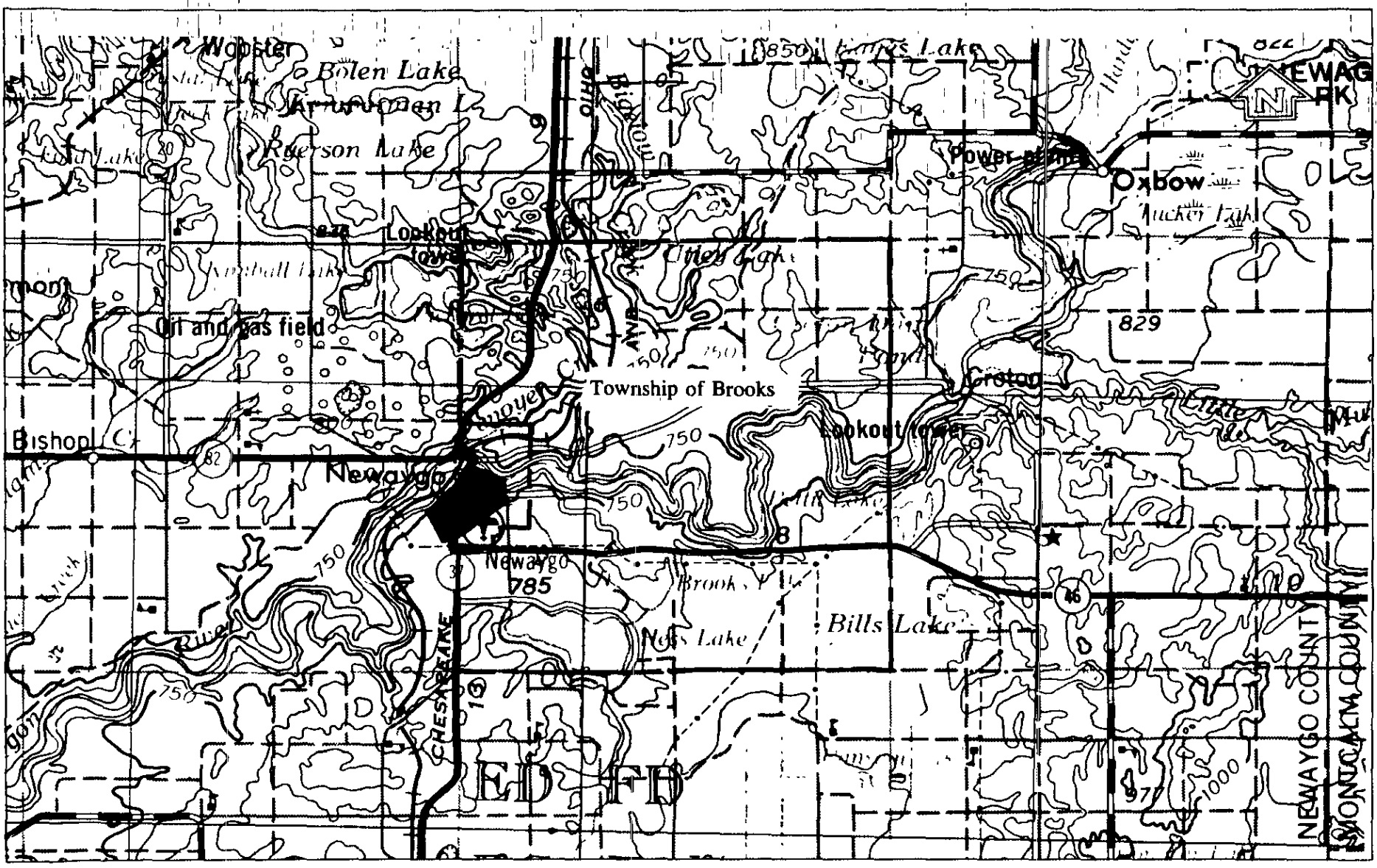

FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF BROOKS, MI

(NEWAYGO CO.)

APPROXIMATE SCALE

2 0 2 4 8 MILES

VICINITY MAP

YEAR	GAGE HEIGHT FEET	ELEVATION (NGVD)	DISCHARGE (CFS)
1986	19.56	645.39	23,100
1913	*	*	14,950
1912	*	*	13,400
1945	53.76**	639.59	11,600
1976	13.37	639.20	10,800
1957	52.83**	638.66	10,000
1919	*	*	9,880
1950	52.70**	638.53	9,830
1975	12.75	638.58	9,800
1959	52.65**	638.48	9,750

* gaging station located at Croton Dam, stage not recorded at Newaygo
**datum of gaging station set at 585.83 NGVD from 1939 to 1963, 40.00 feet lower than existing datum of gage

2.4 Flood Protection Measures

Flood protection measures are not known to exist within the study area.

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 that is expected to be equaled 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 floodplain management and for flood insurance 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 equaled 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 that equals or exceeds the 100-year flood (1-percent chance of annual exceedence) 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 herein 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 each riverine flooding source studied in detail affecting the community.

The floodflow frequency estimates for the Muskegon River at Newaygo, at USGS gage no. 04122000, were obtained using Bulletin No. 17B (Reference 6).

A systematic record of 61 years was based on historic peaks from 1917 and 1919, 1910 to 1915, and 1932 to 1986. The USGS revised 1986 peak discharge of 23,100 cfs resulted in a 100-year flood discharge estimate of 18,800 cfs.

Peak discharge-drainage area relationships for the 100-year floods of each flooding source studied in detail in the community are shown in Table 1.

TABLE 1 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQ MILES)	PEAK DISCHARGE (CFS) 100-YEAR
MUSKEGON RIVER just downstream of CSX railroad	N/A	18,800

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals.

The bridge and cross-section information for this study was obtained by field survey in December 1977.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles and on the Flood Insurance Rate Map.

The hydraulic calculations in this study were developed using the HEC-2 step-backwater computer program (Reference 7). Starting water-surface elevations were determined using stage-discharge relationships based on the slope-area method. Roughness coefficients (Manning's "n") were determined based on field inspection of the study streams.

Following the floods of 1975, 1976, and 1986, high-water marks were recorded by the MDNR. In addition, a U.S. Army Corps of Engineers report (Reference 8) contains high-water information from what is believed to be the 1913 flood. High-water marks were used to calibrate the hydraulic model. The severe meander of the river has the most impact on the river stages because a large percentage of flow is shifting between the channel and the overbanks. To calibrate the 1986 flood and the 1976 flood, it was necessary to use higher roughness coefficients for the 1986 flood to account for the meander.

The hydraulic model was calibrated to the 1986 and 1976 flood and provided a reasonable comparison. The high-water marks in the COE Report (Reference 8) are not well documented in regard to location, condition of the high-water mark, and the event that produced the high-water mark. It was assumed that the 1913 flood produced the high-water marks, thus the discharge of 14,950 cfs was run in the hydraulic model to provide a comparison to a past event.

Flood profiles were drawn showing the computed water-surface elevations for floods of the selected recurrence intervals.

The hydraulic analyses for this study are based on the effects of unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

All elevations are referenced to the NGVD.

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The National Flood Insurance Program encourages State and local governments to adopt sound floodplain management programs. Therefore, each Flood Insurance Study provides 100-year flood elevations and delineations of the 100- and 500-year floodplain boundaries and 100-year floodway to assist communities in developing floodplain management measures.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent annual chance (500-year) flood is employed to indicate additional areas of flood risk in the community. For each stream studied in detail, the 100- and 500-year floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:25000 with a contour interval of 3 meters (Reference 9).

The 100-year floodplain boundaries are shown on the Flood Insurance Rate Map. On this map, the 100-year floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A, AE, AH, AO, A99, V, and VE). Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

For the streams studied by approximate methods, only the 100-year floodplain boundary was delineated using the Flood Insurance Rate Map for the Township of Brooks (Reference 1).

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces the flood-carrying capacity, increases the flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 100-year floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. In Michigan though, under Michigan Act 245, Public Acts of 1929, as amended by Act 167, Public Acts of 1968 (Reference 10), encroachment in the floodplain is limited to that which will cause only an insignificant increase in flood heights. Thus, at the recommendation of the Bureau of Water Management, a floodway having no more than a 0.1-foot surcharge has been delineated for this study. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways presented in this study were computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections and are shown in Table 2, Floodway Data. The computed floodways are shown on the Flood Insurance Rate Map. In cases where the floodway and the 100-year floodplain boundaries are either close together or collinear, only the floodway boundary is shown. Portions of the floodway for the Muskegon River lie outside the township limits.

Along streams where floodways have not been computed, the community must ensure that the cumulative effect of development in the floodplain will not cause an increase in the base flood elevations greater than the State's allowable surcharge at any point within the community.

The area between the floodway and the 100-year floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood more than the State's allowable surcharge at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 2.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
MUSKEGON RIVER								
A	80,230	240	2689	7.0	648.3	648.3	648.4	0.1
B	81,720	237	2839	6.6	649.6	649.6	649.6	0.0
C	83,830	230	2931	6.4	651.1	651.1	651.2	0.1
D	86,390	225	2866	6.6	652.5	652.5	652.6	0.1
E	87,590	264	2865	6.6	653.4	653.4	653.5	0.1
F	88,330	183	2352	8.0	653.7	653.7	653.8	0.1

[1]FEET ABOVE WARNER AVENUE

TABLE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF BROOKS, MI
(NEWAYGO CO.)

FLOODWAY DATA

MUSKEGON RIVER

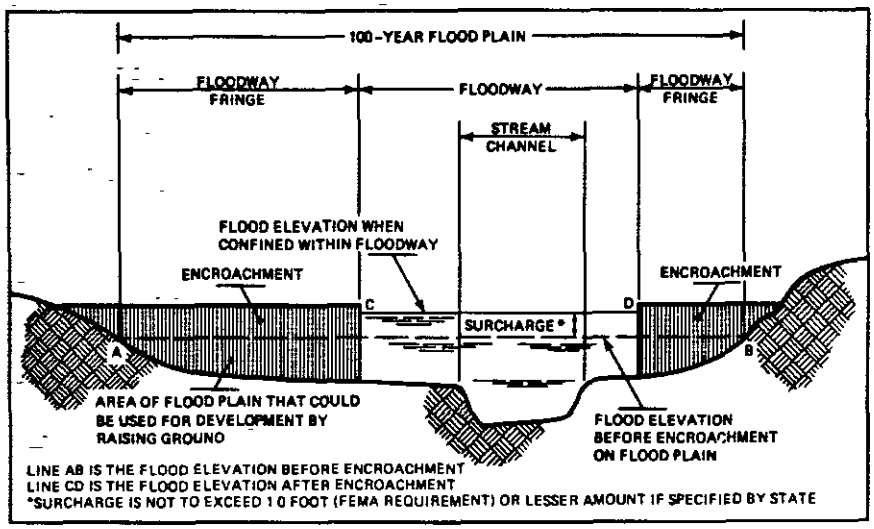

FIGURE 2 - Floodway Schematic

5.0 INSURANCE APPLICATION

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. These zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by detailed methods. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 100-year floodplain, areas of 100-year flooding where average depths are less than 1 foot, areas of 100-year flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 100-year flood by levees. No base flood elevations or depths are shown within this zone.

6.0 FLOOD INSURANCE RATE MAP

The Flood Insurance Rate Map is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 100-year floodplains that were studied by detailed methods, shows selected whole-foot base flood elevations or average depths. Insurance agents use the zones and base flood elevations in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols the 100- and 500-year floodplains, the floodways, and the locations of selected cross sections used in the hydraulic analyses and floodway computations.

7.0 OTHER STUDIES

Flood Insurance Studies in progress for the Township of Ashland, the Township of Bridgeton, and the Township of Garfield, Michigan (References 11-13) are in agreement with this study.

This Flood Insurance Study supersedes the previously printed Flood Insurance Rate Map for the Township of Brooks (Reference 1).

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting the Natural and Technological Hazards Division, FEMA, 175 West Jackson Boulevard, 4th Floor, Chicago, Illinois 60604.

9.0 REFERENCES AND BIBLIOGRAPHY

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2. Michigan Department of Natural Resources, Engineering Water Management Division, Muskegon River Floodplain Study, Lansing, Michigan, January 1987.

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5. ----------, Water Resources Data, through Water Year 1985, Lansing, Michigan, 1986.

6. U.S. Department of the Interior, Geological Survey, Interagency Advisory Committee on Water Data, Office of Water Data Coordination, Hydrology Subcommittee, Bulletin No. 17B, Guidelines for Determining Flood Flow Frequency, September 1981, revised March 1982.

7. U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water-Surface Profiles, Generalized Computer Program, Davis, California, April 1984.

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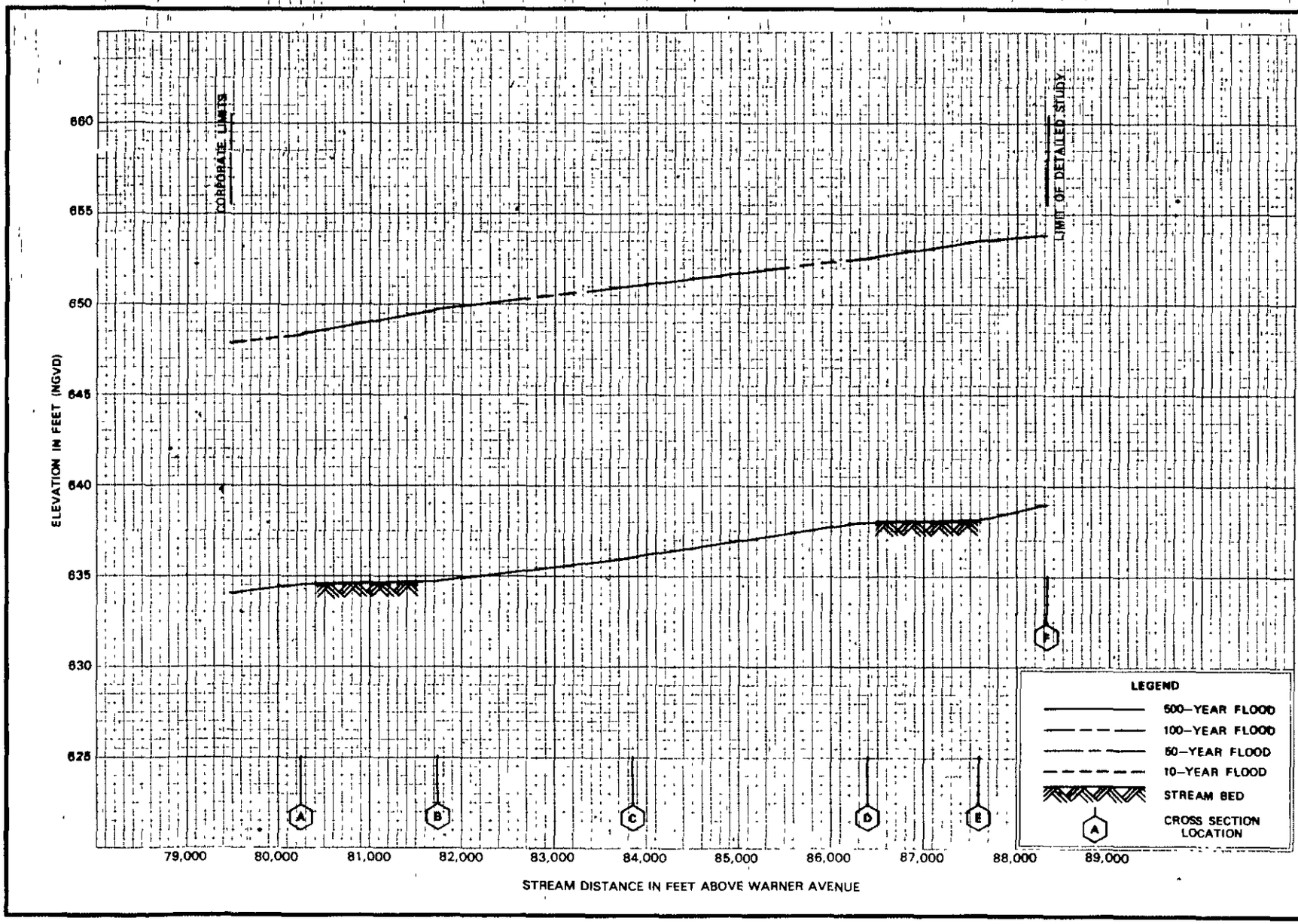
9. U.S. Geological Survey, 7.5 Minute Series Topographic Maps, Scale 1:25000, Contour Interval 3 Meters: Bridgeton, Michigan, provisional 1985; Fremont, Michigan, provisional 1985; Newaygo, Michigan, provisional 1985.

10. State of Michigan, Floodplain Control Act of 1968, Act 245, P.A. 1929 as amended by Act 167, P.A. 1968, Michigan Water Resources Commission, Lansing, Michigan, 1968.

11. Federal Emergency Management Agency, Flood Insurance Study, Township of Ashland, Newaygo County, Michigan, in progress.

12. ———, Flood Insurance Study, Township of Bridgeton, Newaygo County, Michigan, Washington, D.C., study in progress.

13. ———, Flood Insurance Study, Township of Garfield, Newaygo County, Michigan, Washington, D.C., study in progress.



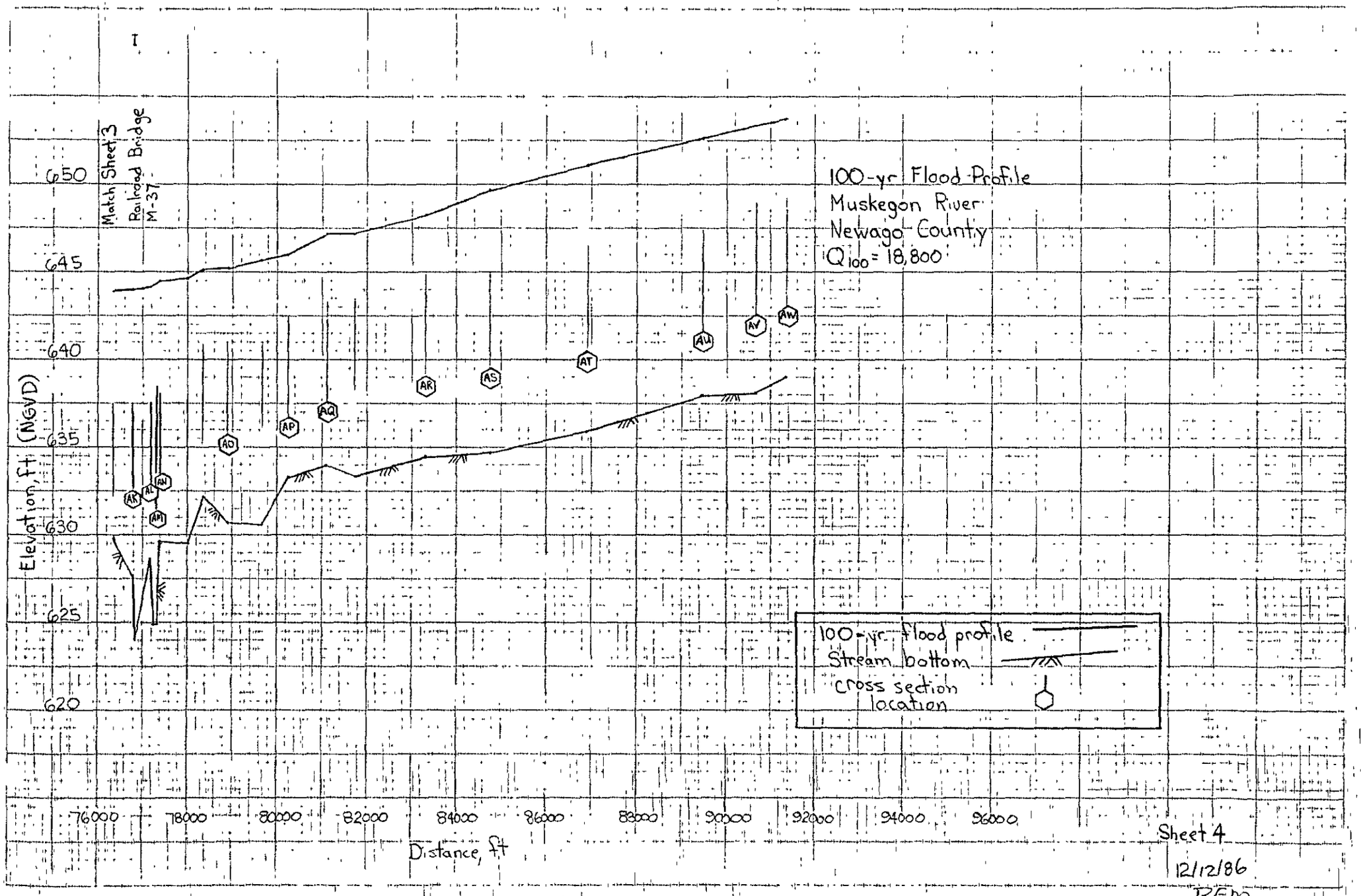
FLOOD PROFILES

MUSKEGON RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF BROOKS, MI
(REVISED)

01P



Sheet 4

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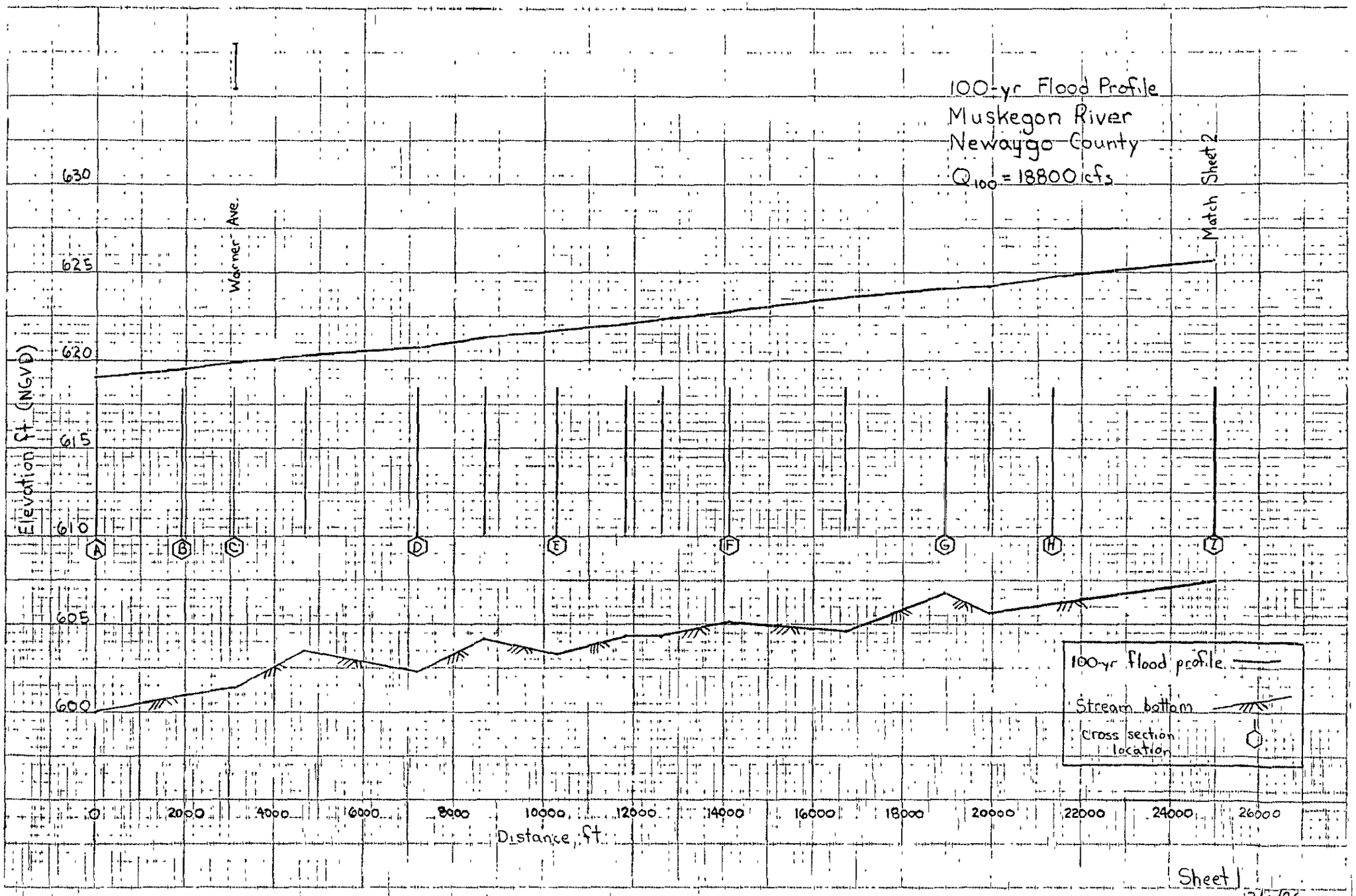
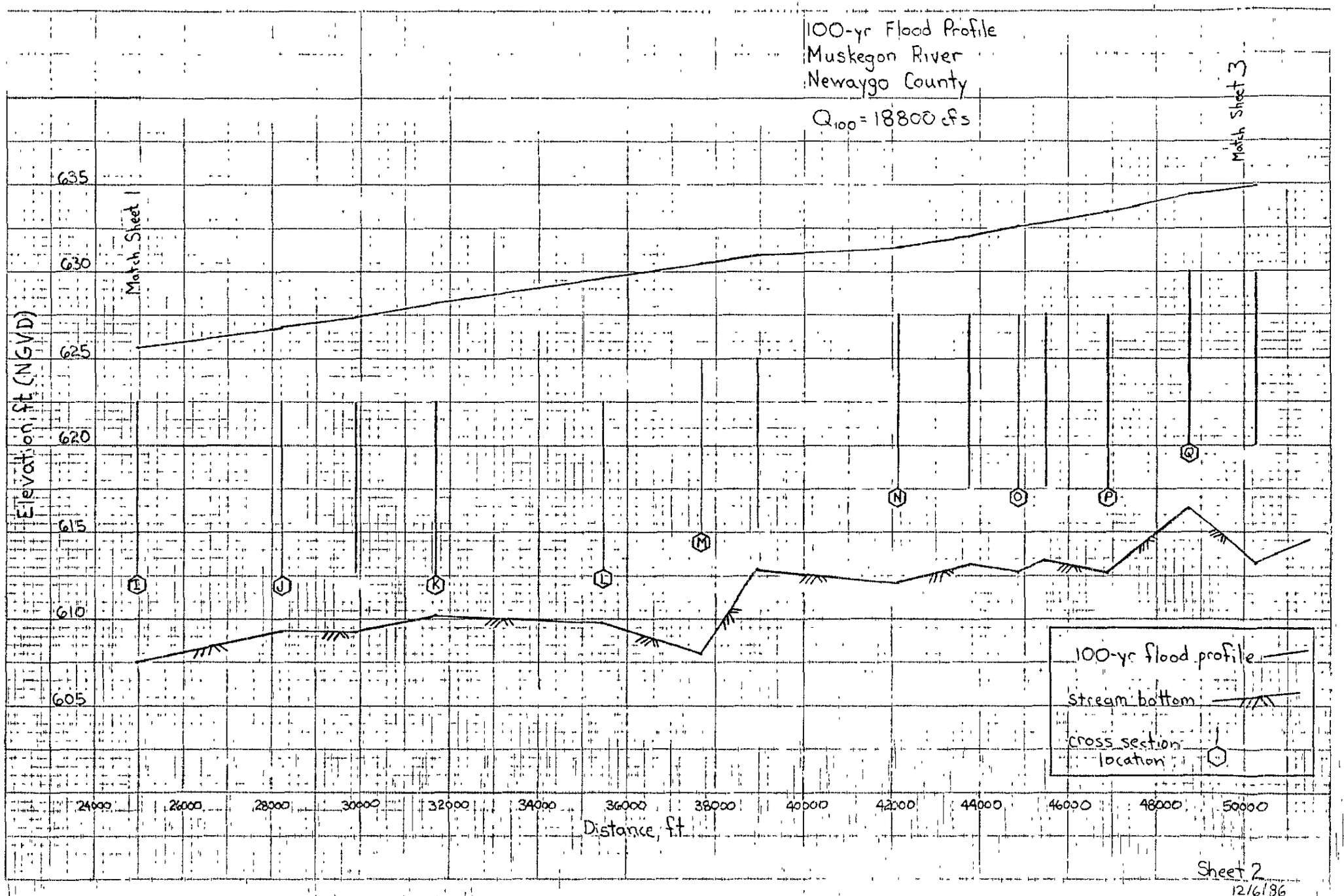
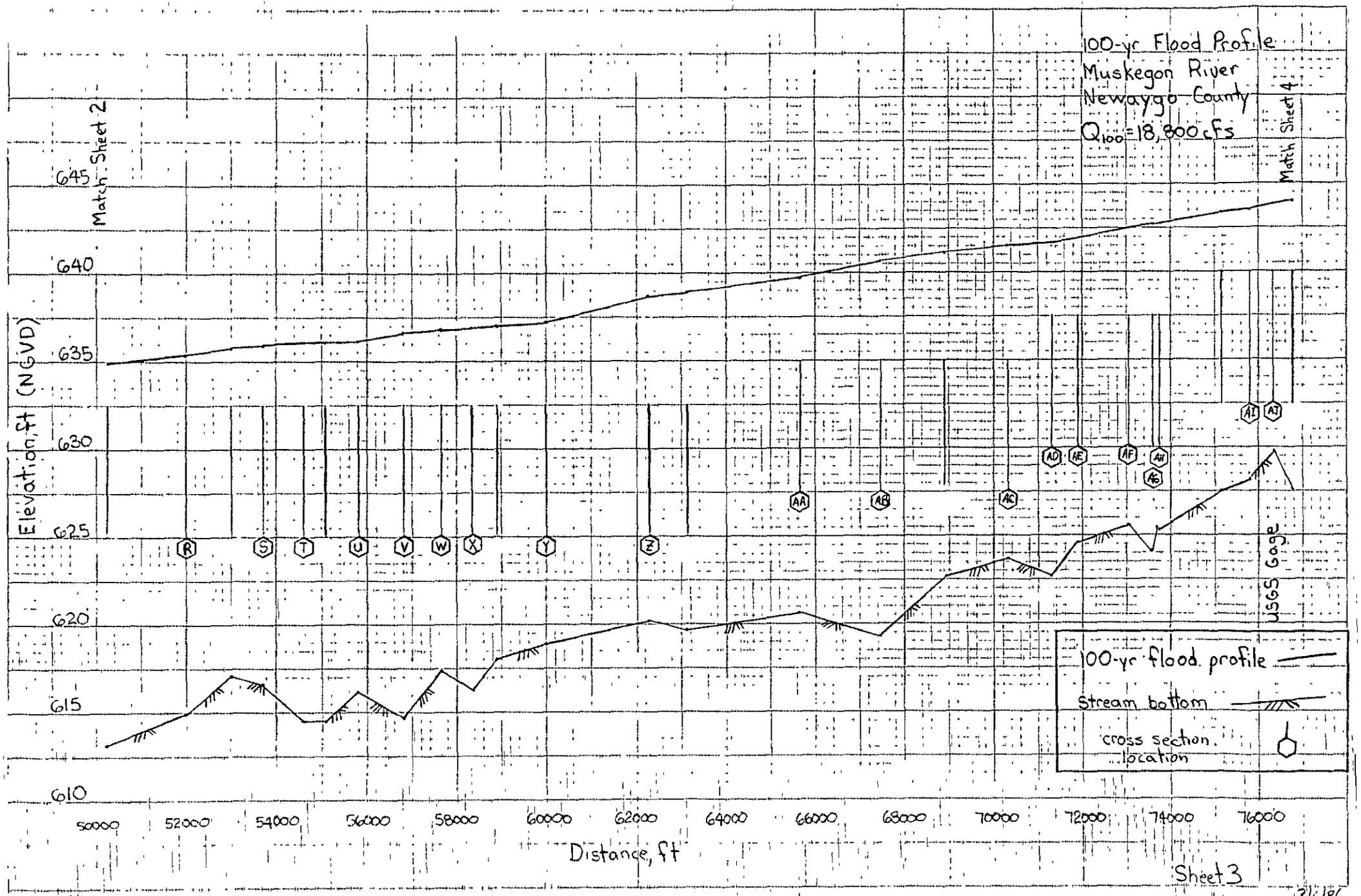
BEM


100-yr Flood Profile
Muskegon River
Newaygo County
Q_{100} = 18800 cfs
Warner Ave.
Match Sheet 2
Elevation ft (NGVD)
630
625
620
615
610
605
600
A
B
C
D
E
F
G
H
I
100-yr flood profile
Stream bottom
cross section location
0
2000
4000
6000
8000
10000
12000
14000
16000
18000
20000
22000
24000
26000
Distance, ft.
Sheet 1
12/6/86


100-yr Flood Profile
Muskegon River
Newaygo County
Q_{100} = 18800 cfs
Match Sheet 1
Match Sheet 3
Elevation, ft (NGVD)
635
630
625
620
615
610
605
I
J
K
L
M
N
O
P
Q
24000
26000
28000
30000
32000
34000
36000
38000
40000
42000
44000
46000
48000
50000
Distance, ft
100-yr flood profile
stream bottom
cross section location
Sheet 2
12/6/86
RE


100-yr Flood Profile
Muskegon River
Newaygo County
Q_{100} = 18,800 cfs
Match Sheet 2
Match Sheet 4
Elevation, ft (NGVD)
645
640
635
630
625
620
615
610
R
S
T
U
V
W
X
Y
Z
AA
AB
AC
AD
AE
AF
AG
AH
AI
AJ
USGS Gage
100-yr flood profile
Stream bottom
cross section location
50000
52000
54000
56000
58000
60000
62000
64000
66000
68000
70000
72000
74000
76000
Distance, ft
Sheet 3

2/6/86
BEM

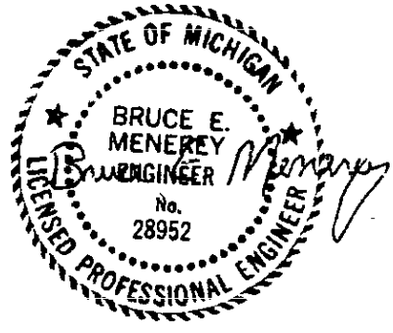
MUSKEGON RIVER FLOODPLAIN STUDY

Newaygo County

Prepared For:
Ashland, Bridgeton, Brook
and Garfield Townships

Prepared By:
Michigan Department of Natural Resources
Engineering-Water Management Division
Lansing, Michigan

January 1987



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Appendix A - Floodway and Flood Boundary Map
Appendix B - 100-Year Flood Profile

HYDRAULIC ANALYSIS
Muskegon River
Newaygo County

Introduction

The hydraulic analysis for the Muskegon River was prepared to develop the 100-year flood profiles, delineations and floodway for Ashland, Brooks, Bridgeton and Garfield Townships. A floodway was computed, assuming a maximum surcharge of .1 foot. The analysis for the Muskegon River begins about 3,000 feet downstream of Warner Avenue in Bridgeton Township and continues to the center of Section 21 of Brooks Township (about 1.8 miles upstream of Newaygo), a total of about 17.3 river miles.

Background

The September 1986 flood on the Muskegon River resulted in damage to numerous structures along the river. As a result of this damage, it was evident that there was a need for adequate floodplain and floodway information. This hydraulic analysis is in response to this need.

Current Flood Hazard Boundary Maps (References 2, 3, 4 & 5) for Ashland, Bridgeton, Brooks and Garfield Townships do not have elevations associated with the special flood hazard areas. The flood prone areas within the townships were first identified under the National Flood Insurance Program (NFIP) on the following dates:

Community	Flood Prone Area Identified	Date Joined NFIP
Ashland Township	5/19/78	7/6/76
Bridgeton Township	10/22/76	5/6/76
Brooks Township	7/18/75	9/23/76
Garfield Township	7/08/75	3/09/76

In 1983, the Michigan Department of Natural Resources provided estimates of the 100-year floodplain elevations for the Muskegon River to the four communities. These elevations had been obtained from the Corps of Engineers "308" profile of the Muskegon River, prepared in 1931 (Reference 14). The high water profile shown in the "308" had been considered to approximate the 100-year flood profile.

The September 1986 flood was the flood of record at the Newaygo stream gaging station. The peak discharge of 23,100 cfs exceeded the 1913 flood of record (14,950 cfs) by about 55%. As a result of this significant event, it was necessary to revise the hydrologic analysis of the streamflow information. The revised analysis yields a 100-year discharge of 18,800 cfs on the Muskegon River at Newaygo, considerably higher than what had been previously considered to be the 100-year discharge.

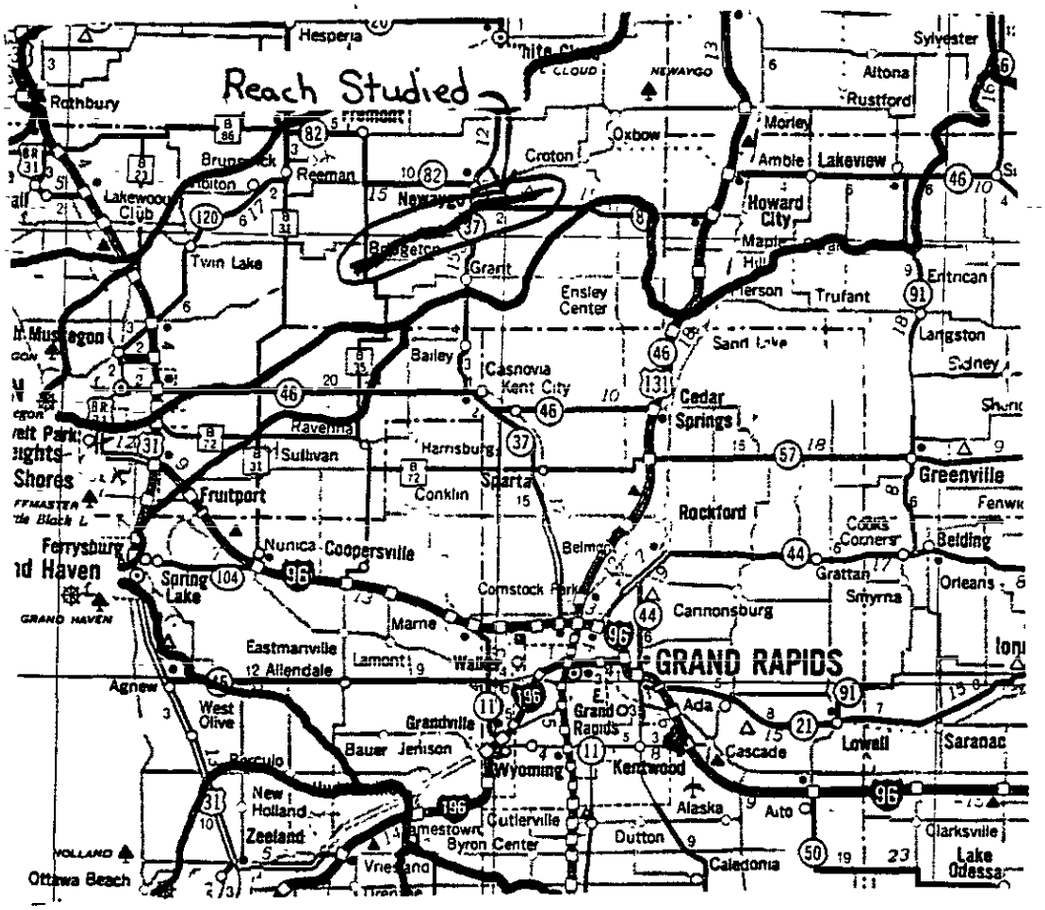

Figure 1 - Site Location Map

Muskegon River Floodplain Study
Newaygo County

The hydraulic analysis uses the updated 100-year discharge, and has been calibrated to the 1986 flood.

Method of Computation

The U.S. Army Corps of Engineers HEC-2 computer program (Reference #1) was used in developing the water surface profiles for the Muskegon River. The computational procedure used by the program is known as the "Standard Step Method", and is based upon the energy loss due to friction.

Cross Sections

The bridge and cross information was originally obtained by the Michigan Department of Natural Resources in July 1971, and were resurveyed in December 1977.

From 1968 through 1969, the dam in the City of Newaygo was removed. The sediment that had accumulated behind the dam was transported downstream. The cross section survey in 1971, and resurveyed in 1977, was done to determine the change in the channel configuration following the removal of the dam. The cross sections surveyed in 1977 were used in the analysis.

The channel portions of cross sections T and AJ were field checked in November 1986. The survey indicated minor variations in the stream bottom. However, after a flood with the magnitude that occurred in 1986, erosion and sedimentation is something that would be anticipated.

Generally, small alterations to the channel of a river that has considerable overbank flow or significant channel area will have minimal impact on the flood profile. Computations were made for the Muskegon River to determine how sensitive the flood profile is to the variation in the stream bottom. The results indicated that minor variations in the stream bottom would have minimal impact on the flood profile. As a result, it was decided that the field verification of every cross section would not be necessary.

Table 1 provides a cross reference between the HEC-2 model, the map designation, and the land survey. The channel and overbank distances were obtained from the cross section location map (reference 6) which has a scale of 1" = 500 feet.

Mapping

The 100-year floodplain and floodway have been delineated on enlargements of U.S. Geological Quadrangles for Bridgeton, Fremont and Newaygo (Reference 7). Between the field surveyed cross sections, the delineation has been based upon the contours of the quadrangle.

TABLE 1

Muskegon River Floodplain Study

Cross Section Cross Reference Table

HEC-2 Input	Land Survey Cross Section	FIS Map Designation	Comment
.1	61	A	3,050 ft d/s of Warner Avenue
1920	-	B	XSEC 61 moved u/s with invert adjusted
3050	62	-	Immediately d/s of Warner Avenue
3100	-	C	Immediately u/s of Warner Avenue
4680	63	-	Near section line 12/13
7200	64	D	
8850	65		
10300	66	E	About 450 ft u/s of Ashland Townships western boundary
11800	67		On the section line between Bridgeton and Ashland Townships
14100	68	F	
16700	69		
18990	-	G	Cross section obtained from MDNR subdivision file No. F184 22 12
19870	70		River Ridge Subdivision in left overbank. Channel in LOB not effective
21370	71	H	At Croswell Avenue "Extended"
24985	72	I	
28235	73	J	Sec. 32 of Garfield Township. About 510 ft u/s of the southern township line
29860	74		
31660	75	K	
35425	76	L	In Section 33, Garfield Township. 400 ft u/s of the township's southern boundary
37670	77	M	
38970	78		800 ft d/s of boat launch Section 34, Garfield Township
42170	1	N	
43770	2		
44820	3	O	Cross section through island in E½ of Section 34, Garfield Township
45470	4		
46870	5	P	
48720	6	Q	
50220	7		
51945	8	R	Vics campground in left overbank Campground is on a hill XSEC through island u/s of Vics

HEC-2 Input	Land Survey Cross Section	FIS Map Designation	Comment
53000	9		XSEC Bent in the overbanks to get XSEC perpendicular to flow. Beginning of Anderson Flats Area
53700	10	S	XSEC bent to get perpendicular to flow. Structures along the left river bank.
54600	10A	T	XSEC bent in left overbank to get XSEC perpendicular to flow. Structures along left bank.
55080			XSEC 10A moved 480 ft u/s. The left overbank includes Felch Road between XSEC 10B and XSEC 11, and is bent to get flow perpendicular to XSEC
55800 bent	11	U	u/s of DNR access site. XSEC in ROB, parallels XSEC 12 across Old Womans Bend
56800	12	V	XSEC at Old Womans Bend
57650	13	W	XSEC bent in LOB to parallel XSEC 12. Bent in right bank to get parallel to flow.
58350	14	X	
58900	15		
6000	16	Y	
62250	17	Z	
65620	19	AA	
67420	20	AB	
68970	21		300 ft u/s of section line between Sections 23 & 26, Garfield Township
70300	22	AC	
71300	23	AD	
71900	24	AE	
73040	25	AF	Between Barber and Kring cabins, u/s of public access site
73590	26	AG	d/s of Bridge Street
73720	28	AH	u/s of Bridge Street
75140	29		Sewage Treatment Plant in left overbank, about 500 ft from the river
75800	29A	AI	USGS Cable
76350	29B	AJ	USGS Gage
76760	30		
76810	31	AK	Railroad bridge, the piers have been input on the GR cards
76825	32		u/s of Railroad Bridge
77175	33	AL	Old dam site at Newaygo
77225			M37 Bridge, piers on GR cards
77295		AM	u/s of M37 Bridge

HEC-2 Input	Land Survey Cross Section	FIS Map Designation	Comment
77375	35	AN	
78005	37		
78385	38		
78895	39	AO	
79635	41		
80205	42	AP	At county park boat ramp
81105	44	AQ	
81755	45		About 700 ft d/s of City of Newaygo's eastern corporate limit
83285	48	AR	
84775	50	AS	
86885	53	AT	
89445	57	AU	
90645	59	AV	
91385	60	AW	

Starting Conditions

The profiles were begun about 3,000 feet downstream of Warner Avenue, Section 14 of Bridgeton Township. The slope-area method (Reference 1) using a slope of .00025 ft/ft, was used for the 1986 flood, the 100-year flood and the 1913 flood. This slope provides a reasonable match of the 1986 high water mark at Warner Avenue. The 1976 flood profile was started using a slope of .000185 which provided a reasonable match to the 1976 high water marks.

Coefficients

The Manning's roughness coefficients (References #8, #9 & #10) were based upon field inspection of the reaches analyzed. For the stream channel, the values ranged from .031 to .049; for the overbanks, the values ranged from .034 to .2.

Due to the severe meander of the river, the overbank flow and channel flow intermingle at bends causing additional losses during high flows. Technical references (references 8, 9, 11) indicate the need to increase mannings roughness coefficients to account for the losses caused by meanders. In this study, it was necessary to increase the coefficients for the 1986 model by 35% to account for the intermingling of the flows and to match 1986 high water marks. The 100-year and 1913 flood model coefficients were also increased by 35% since severe intermingling would also occur for these flows. The 1976 flow was modeled using a 15% increase in "n" values to match high water marks. The lower stages that occurred during the 1976 flood would not have resulted in as severe "intermingling" as occurred in 1986.

Contraction and expansion coefficients (References #1 & 10) of .1 and .3, respectively, were used for smooth transitions. In the vicinity of bridges, these values were increased to .3 and .5, reapectively.

Bridge Losses

The bridges on this portion of the Muskegon River are minimally restrictive. The bridges shapes have been input as a river cross section, with the piers input as ground points. The water surface for the flows analyzed is significantly below the under clearance of the bridge. Following is a listing of bridge crossings and their respective low steel and top of roadway:

Crossing Name	HEC-2 XSEC	Elevations, ft. (NGVD) Low Steel	Top of Roadway	100-year Stage
Warner Avenue	3050	635.4	638.0	619.9
Bridge Street	73640	650.5	652.0	642.2
Railroad Bridge	76810	657.8	659.0	644.0
M-37 Bridge	77225	671.4	673.0	644.1

Past Flooding

The flood of record at the Newaygo stream gaging station occurred on September 12, 1986 with a gage height of 19.56 (645.39 NGVD) which corresponds to a discharge of 23,100 cfs.

Following is a listing of past flood events recorded at Newaygo. (References 12 & 13).

Year	Gage Height Ft	Elevation NGVD	Discharge, CFS
1986	19.56	645.39	23,100
1913	*	*	14,950
1912	*	*	13,400
1945	53.76**	639.59	11,600
1976	13.37	639.20	10,800
1957	52.83**	638.66	10,000
1919	*	*	9,880
1950	52.70**	638.53	9,830
1975	12.75	638.58	9,800
1959	52.65**	638.48	9,750

* Gaging station located at Croton Dam, stage not recorded at Newaygo
**From 1939 to 1963 datum of gaging station at 585.83 NGVD, 40.00 feet lower than existing datum of gage.

Following the floods of 1975, 1976 and 1986, high water marks were obtained by the Michigan Department of Natural Resources. In addition, a 308 Report prepared by the U.S. Army Corps of Engineers (Reference 14) contains high water information from what is believed to be the 1913 flood. Table 2 compares the computed water surface profiles with the high water marks.

Calibration

Available high water marks were used to calibrate the hydraulic model. As noted earlier, the severe meander of the river has the most impact on the river stages in which a large percentage of flow is shifting between the channel and the overbanks. To calibrate the 1986 flood and the 1976 flood, it was necessary to have higher roughness coefficients for the 1986 flood to account for the meander.

Table 2 - Results of Calibration

XSEC	High Water Mark	Computed Stage
1986 Flood		
3051	621.6	621.5
53000	637.6	637.6
54600	638.0	637.8
55080	638.1	637.9
57650	638.6	638.5
Gaging Station 76350	645.4	645.5
1976 Flood		
3051	615.7	615.9
19870	619.8	619.7
53700	630.8	630.9
54600	630.9	631.0
57650	631.9	632.4
Gaging Station 76350	639.2	638.9

High water marks from Corps of Engineers "308" Report have been assumed to be from the 1913 flood.

XSEC	High water Mark*	Computer Stage
43770	630.8	630.1
65620	637.5	637.9
76350	640.8	641.9

*The locations of the high water marks are approximate and the accuracy of the high water marks is not known.

The hydraulic model was calibrated to the 1986 and 1976 flood and provided a reasonable comparison. The high water marks in the "308" Report are not well documented in regard to location, condition of the high water mark and the event that produced the high water mark. It was assumed that the 1913 flood produced the high water marks, thus the discharge of 14,950 cfs was run in the hydraulic model to provide a comparison to a past event.

Floodway Development

The floodway is the channel of a stream plus any adjacent floodplain areas, that must be kept free of encroachment so that the base flood (100-year flood) can be carried without cumulatively increasing the water surface elevation more than a designated height. (Reference 16). Within Michigan, the floodway is determined using a .1 foot surcharge, as established under the States Floodplain Regulatory Authority, Act 245, P.A. of 1929, as amended. (Reference 15).

The floodway for the Muskegon River within the study limits was determined using the HEC-2 encroachment method #4 (Reference #1). This encroachment option eliminates conveyance (flow carrying capacity) from each side of the floodplain until a surcharge of no more than .1 foot is obtained.

In the areas of restrictions and ineffective flow areas, the floodway has been determined by delineating smooth curvilinear lines with 4:1 expansion of flow and 1:1 contraction of flow. (Reference 1 & 10).

Several of the cross sections within Anderson Flats and Old Womans Bend included existing structures (such as houses, mobile homes and garages). To account for these areas of ineffective flow, very high roughness coefficients were used to "block" flow through portions of the cross sections.

A major concern was raised regarding the placement of the floodway through Anderson Flats and Old Womans Bend. To determine the impact of eliminating the flow area (floodway) through these two areas, the following three conditions were analyzed:

Condition #1. Existing or "natural" conditions.

Condition #2. In which flow is limited to the "house line" in the left overbank through Anderson Flats. (Flow was allowed about 50 feet into the left overbank).

Condition #3. In wich flow is limited in Anderson Flats and Old Womans Bend to the "house line" in each overbank.

Figure 2 shows the three floodway configurations considered. Table 3 shows the impact of "limiting" the floodway through Anderson Flats and Old Womans Bend.

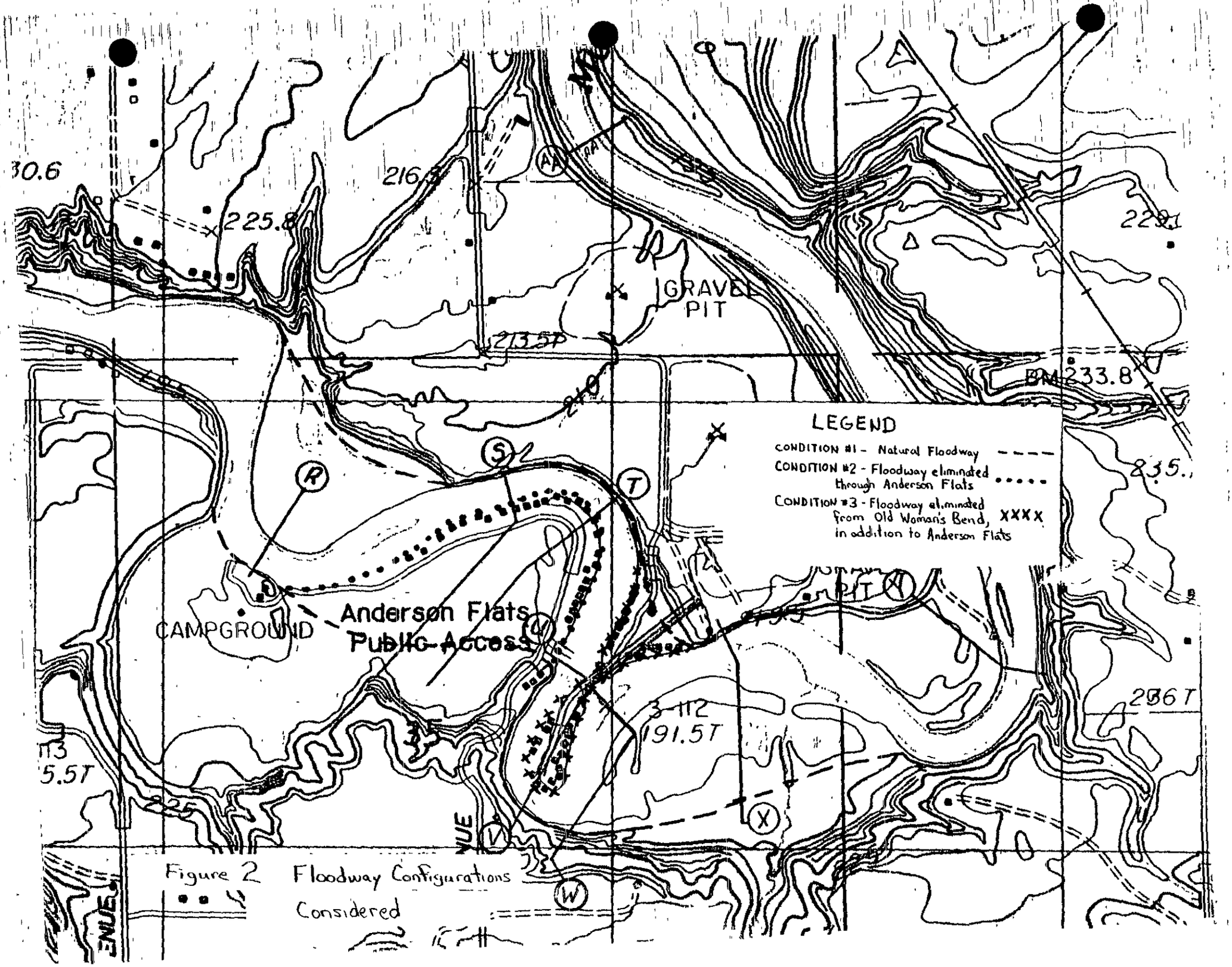

Figure 2 Floodway Configurations Considered

Table 3
Results of Limiting Floodway Width Through Anderson Flats and Old Womans Bend
100-year Flood Elevation, Feet NGVD

Cross Section Designation		Conditions 1 without Floodway Encroachments	Condition 2	Condition 3
R	51945	635.3	635.3	635.3
T	54600	636.0	636.1	636.1
V	56800	636.6	637.6	637.9
Y	60000	637.1	638.0	638.6
AB	67420	640.6	640.9	641.2
AJ	76350	643.8	643.9	644.1

CONDITION #2-Floodway through Anderson Flats eliminated
CONDITION #3-Floodway through Old Womans Bend and Anderson Flats is eliminated

The results indicate that eliminating the floodway through Anderson Flats would cause an increase of 1.0 foot of XSEC V. The combination of eliminating the floodway across Anderson Flats and Old Womans Bend would increase 100-year flood stages 1.5 feet at XSEC Y.

Based upon these results, the area through Anderson Flats and Old Woman's Bend is needed to carry flood flows, thus the floodway shown on the enclosed maps is recommended for regulatory use.

Results

The hydraulic analysis has computed the 100-year flood elevations for the Muskegon River. The 100-year floodplain boundary and floodway portion of the floodplain has been delineated on the work maps in Appendix A.

Table (3) contains a summary of the 100-year flood elevations at selected cross-sections. The resulting flood profiles are plotted in Appendix B, and are based on unobstructed flow.

The floodplain delineation between surveyed cross sections is based upon 3 meter (9.8 feet) contour intervals. With such a wide contour interval, it is very likely that site specific revisions to the delineation may be necessary. The delineation may be revised if adequate topographic information can be provided to FEMA to justify a revision.

Table 4
Summary of Flood Elevations with Floodway
Muskegon River
Newaygo County

Cross Section Designation	100-yr. Flood Elev. Feet (NGVD)	Cross Section Designation	100-yr. Flood Elev. Feet (NGVD)
A .1	619.0	V 56800	636.6
B 1920	619.5	W 57650	636.8
C 3100	619.9	X 58350	636.9
D 7200	620.7	Y 60000	637.2
E 10300	621.7	Z 62250	638.7
F 14100	622.8	AA 65620	639.7
G 18990	624.1	AB 67420	640.7
H 21370	624.7		
I 24985	625.7	AC 70300	641.7
J 28235	626.8	AD 71300	641.7
K 31660	628.2	AE 71900	642.0
L 35425	629.6	AF 73040	642.5
M 37670	630.5	AG 73590	642.7
N 42170	631.4	AH 73720	643.1
O 44820	632.6	AI 75800	643.5
P 46870	633.5	AJ 76350	643.9
Q 48720	634.5	AK 76810	644.0
R 51945	635.4	AL 77175	644.1
S 53700	637.9	AM 77295	644.1
T 54600	636.1	AN 77375	644.5
U 55800	636.1	AO 78895	645.2
		AP 80205	645.9
		AQ 81105	647.2
		AR 83285	648.3
		AS 84775	649.7
		AT 86885	651.1
		AU 89445	652.6
		AV 90645	653.5
		AW 91385	653.8

References and Bibliography

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3. Federal Emergency Management Agency, Flood Hazard Boundary Map, Township of Bridgeton, Newaygo County, Washington, D.C., October 22, 1976

4. Federal Emergency Management Agency, Flood Hazard Boundary Map, Township of Brooks, Newaygo County, Washington, D.C., July 18, 1975

5. Federal Emergency Management Agency, Flood Hazard Boundary Map, Township of Garfield, Newaygo County, Washington, D.C., August 8, 1975

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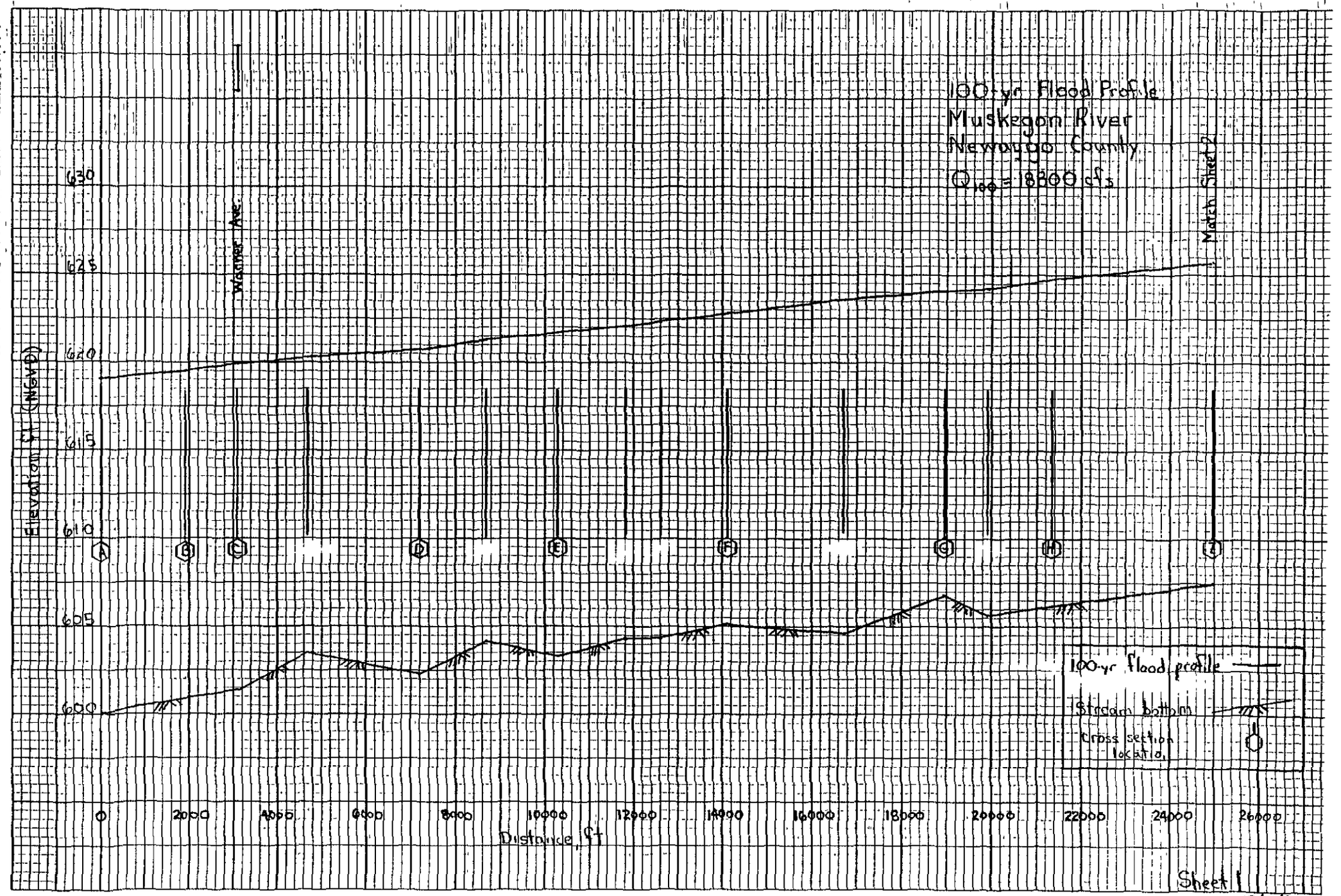
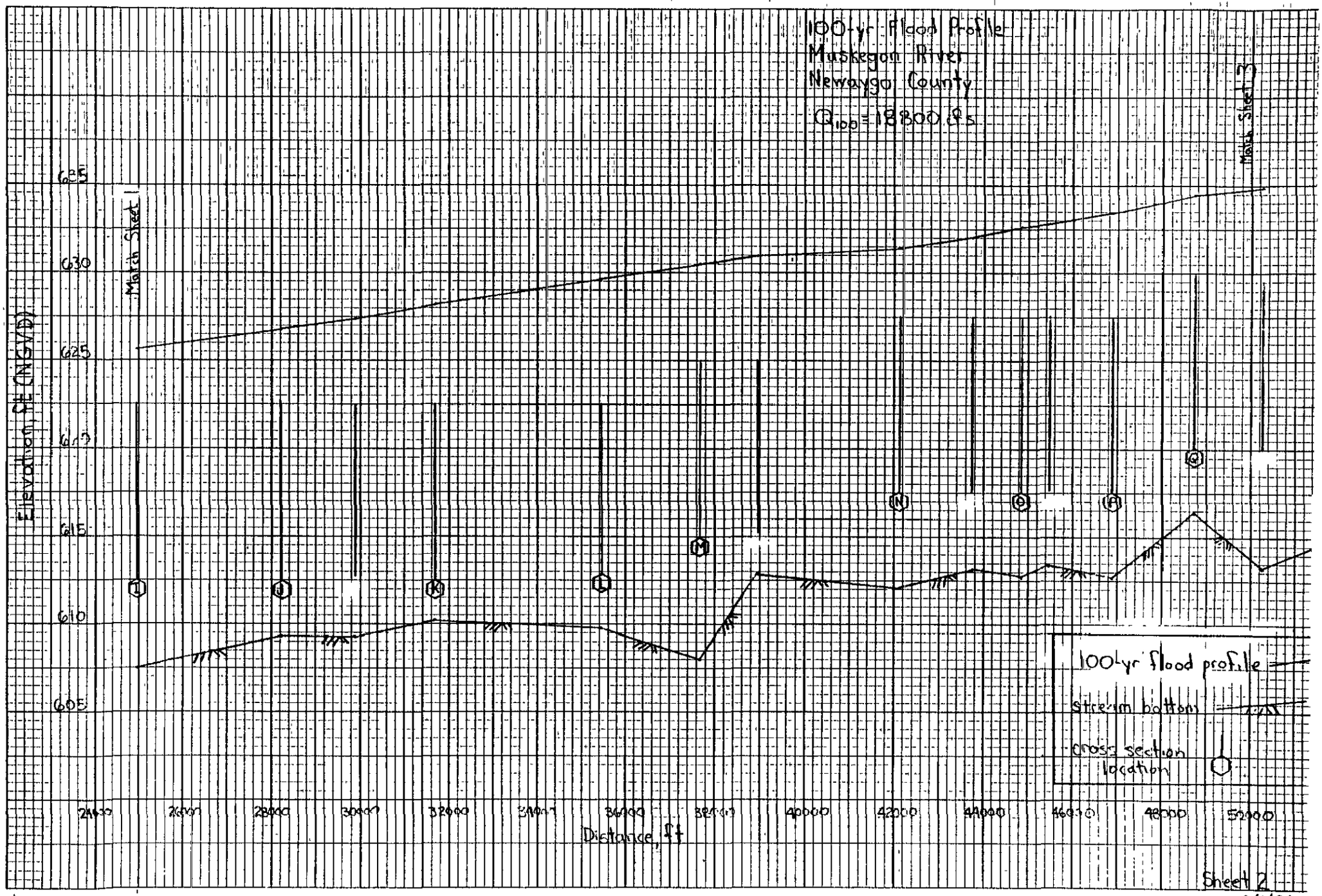
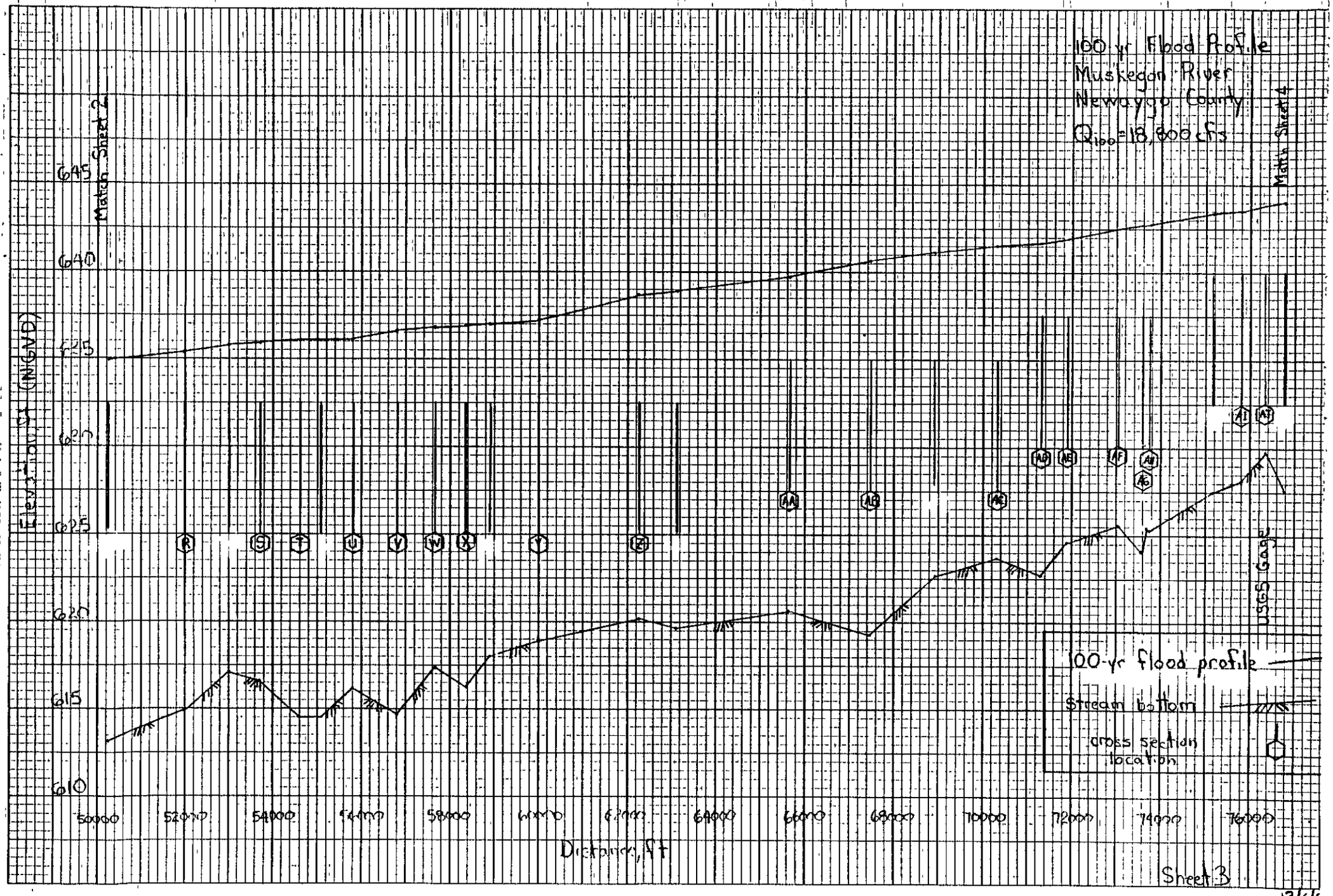
16. Federal Emergency Management Agency, National Flood Insurance Program and Related Regulations, 44 CFR Chapter 1, Subchapter B Part 59.1, Revised October 1, 1985, Washington, D.C.


100-yr Flood Profile
Muskegon River
Newaygo County
Q_{100} = 18800 cfs
Elevation, ft (NGVD)
630
625
620
615
610
605
600
Wagner Ave.
Match Sheet 2
A
B
C
D
E
F
G
H
I
0
2000
4000
6000
8000
10000
12000
14000
16000
18000
20000
22000
24000
26000
Distance, ft
100-yr flood profile
Stream bottom
Cross section location
Sheet 1
12/6/86
BEM

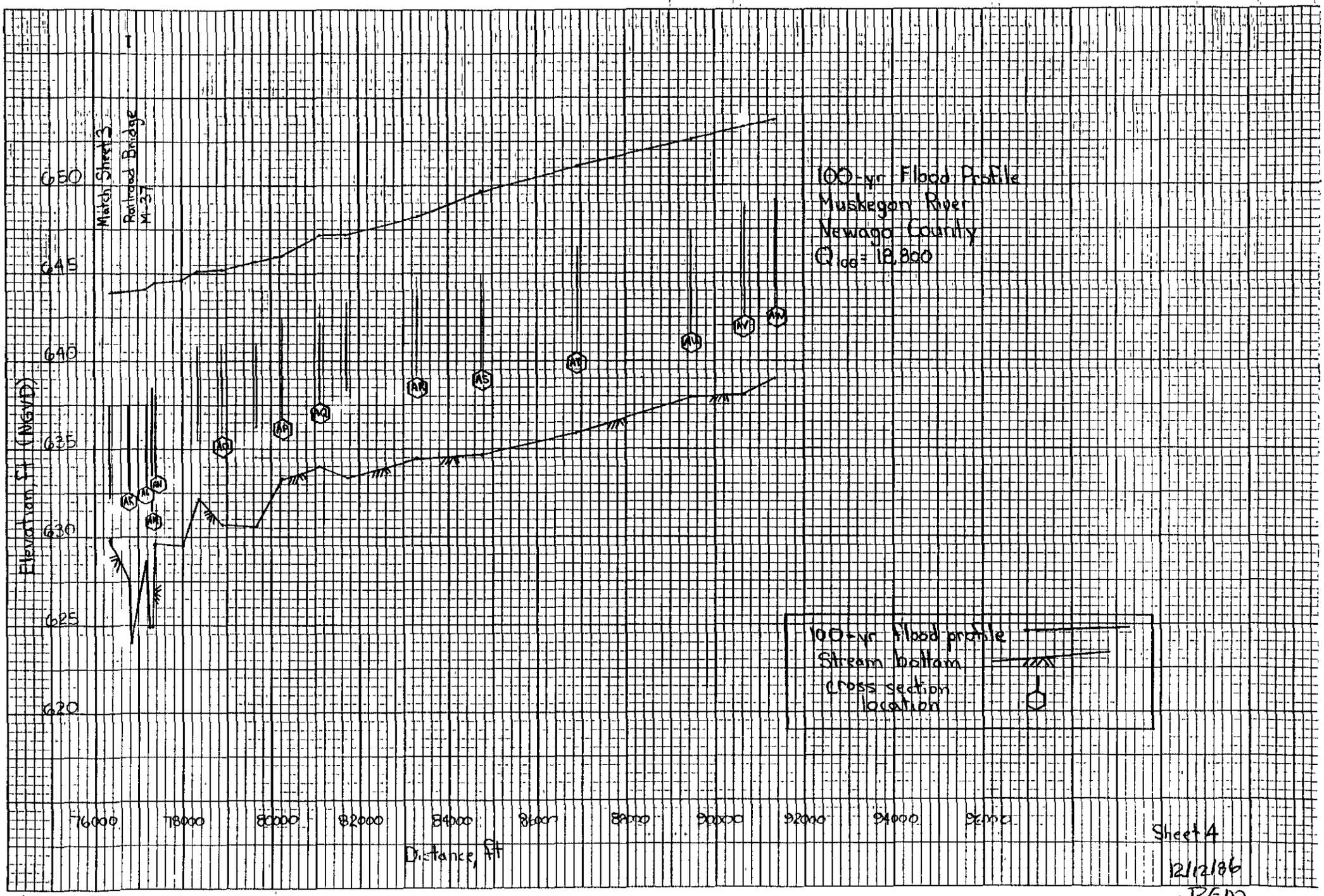


Sheet 2

12/6/86
BEM


100 yr Flood Profile
Muskegon River
Newaygo County
Q_{100} = 18,800 cfs
Match Sheet 2
Match Sheet 4
Elevation, ft (NGVD)
645
640
635
630
625
620
615
610
R
S
T
U
V
W
X
Y
Z
AA
AB
AC
AD
AE
AF
AG
AH
AI
AJ
USGS Gage
100-yr flood profile
Stream bottom
cross section location
50000
52000
54000
56000
58000
60000
62000
64000
66000
68000
70000
72000
74000
76000
Distance, ft
Sheet 3

12/6/8
BEN



Sheet 4

12/12/86

BEM

1) COUNTY: Newaygo

2) STUDY NAME: Bridgeton, Ashland, Garfield and Brooks Twp.

3) WATERCOURSE: Muskegon River

4) DOCUMENT TYPE: Summary

76350.00	9.23	639.03	0.00	0.00	639.32	0.29	0.29	0.01	634.70
10300.	65.	10692.	43.	32.	2494.	48.	5986.	842.	634.60
5.72	2.03	4.30	0.88	0.029	0.032	0.086	0.000	629.80	9.77
0.000545	550.	550.	550.	2	0	0	0.00	338.76	348.53

0

*SECNO 76750.000

XSEC 30 1975 HWM IS 638.6 1976 HWM IS 639.2

76760.00	11.61	639.21	0.00	0.00	639.52	0.31	0.19	0.01	636.50
10800.	20.	10750.	30.	39.	2400.	58.	6010.	845.	636.00
5.75	0.50	4.43	0.52	0.085	0.029	0.035	0.000	627.60	30.65
0.000416	350.	410.	450.	2	0	0	0.00	330.34	360.99

0

1

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

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

MUSKEGON RIVER EXISITIN

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
0.100	0.00	0.00	0.00	600.00	23100.00	620.59	0.00	620.91	2.51	4.99	8060.97	14571.48
0.100	0.00	0.00	0.00	600.00	18800.00	619.00	0.00	619.29	2.51	4.68	6775.90	11854.95
0.100	0.00	0.00	0.00	600.00	14950.00	617.37	0.00	617.63	2.53	4.36	5474.37	9393.49
0.100	0.00	0.00	0.00	600.00	10800.00	615.25	0.00	615.47	1.87	3.93	3897.02	7907.82
1920.000	1920.00	0.00	0.00	600.94	23100.00	621.06	0.00	621.49	3.39	5.58	7312.07	12538.58
1920.000	1920.00	0.00	0.00	600.94	18800.00	619.48	0.00	619.86	3.27	5.14	6139.24	10400.99
1920.000	1920.00	0.00	0.00	600.94	14950.00	617.87	0.00	618.19	3.16	4.71	4934.57	8404.30
1920.000	1920.00	0.00	0.00	600.94	10800.00	615.61	0.00	615.88	2.34	4.24	3445.17	7053.93
3050.000	1130.00	0.00	0.00	601.40	23100.00	621.45	0.00	621.83	2.55	4.98	4831.49	14459.51
3050.000	1130.00	0.00	0.00	601.40	18800.00	619.87	0.00	620.18	2.37	4.48	4340.70	12224.73
3050.000	1130.00	0.00	0.00	601.40	14950.00	618.24	0.00	618.49	2.19	4.00	3844.68	10098.94
3050.000	1130.00	0.00	0.00	601.40	10800.00	615.91	0.00	616.10	1.57	3.51	3145.73	8621.48
3051.000	1.00	0.00	0.00	601.40	23100.00	621.47	0.00	621.83	2.42	4.85	4839.01	14853.67
3051.000	1.00	0.00	0.00	601.40	18800.00	619.88	0.00	620.18	2.27	4.39	4343.18	12484.95
3051.000	1.00	0.00	0.00	601.40	14950.00	618.25	0.00	618.49	2.12	3.94	3846.16	10267.33
3051.000	1.00	0.00	0.00	601.40	10800.00	615.92	0.00	616.10	1.54	3.47	3145.80	8706.89

3100.000	49.00	638.00	635.40	601.40	23100.00	621.48	0.00	621.84	2.41	4.85	4841.82	14867.56
3100.000	49.00	638.00	635.40	601.40	18800.00	619.89	0.00	620.18	2.26	4.39	4347.93	12506.88
3100.000	49.00	638.00	635.40	601.40	14950.00	618.26	0.00	618.50	2.11	3.93	3849.50	10281.68
3100.000	49.00	638.00	635.40	601.40	10800.00	615.92	0.00	616.11	1.53	3.47	3148.62	8719.57
3101.000	1.00	0.00	0.00	601.40	23100.00	621.46	0.00	621.85	2.58	5.01	4835.37	14383.36
3101.000	1.00	0.00	0.00	601.40	18800.00	619.88	0.00	620.19	2.38	4.50	4345.82	12181.28
3101.000	1.00	0.00	0.00	601.40	14950.00	618.25	0.00	618.50	2.20	4.02	3849.50	10075.82
3101.000	1.00	0.00	0.00	601.40	10800.00	615.92	0.00	616.11	1.57	3.51	3148.62	8611.72
4680.000	1579.00	0.00	0.00	603.50	23100.00	621.97	0.00	622.18	1.63	3.94	7155.53	18067.94
4680.000	1579.00	0.00	0.00	603.50	18800.00	620.32	0.00	620.51	1.63	3.67	6145.33	14728.32
4680.000	1579.00	0.00	0.00	603.50	14950.00	618.64	0.00	618.81	1.64	3.39	5130.84	11679.96
4680.000	1579.00	0.00	0.00	603.50	10800.00	616.19	0.00	616.35	1.37	3.17	3507.15	9232.35

1

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
7200.000	2520.00	0.00	0.00	602.30	23100.00	622.36	0.00	622.75	2.70	5.25	7883.89	14058.22
7200.000	2520.00	0.00	0.00	602.30	18800.00	620.72	0.00	621.06	2.57	4.81	6568.53	11717.94
7200.000	2520.00	0.00	0.00	602.30	14950.00	619.05	0.00	619.37	2.65	4.54	3353.54	9181.87
7200.000	2520.00	0.00	0.00	602.30	10800.00	616.52	0.00	616.77	1.80	3.97	2753.23	8058.04
9850.000	1650.00	0.00	0.00	604.20	23100.00	622.96	0.00	623.18	2.34	4.17	10127.28	15115.12
9850.000	1650.00	0.00	0.00	604.20	18800.00	621.27	0.00	621.47	2.32	3.90	8635.26	12331.86
8850.000	1650.00	0.00	0.00	604.20	14950.00	619.57	0.00	619.85	3.11	4.20	3562.22	8481.72
8850.000	1650.00	0.00	0.00	604.20	10800.00	616.88	0.00	617.11	2.39	3.83	2823.52	6988.62
10300.000	1450.00	0.00	0.00	603.30	23100.00	623.40	0.00	623.50	2.51	3.01	13094.01	14574.54
10300.000	1450.00	0.00	0.00	603.30	18800.00	621.70	0.00	621.79	2.55	2.87	11073.44	11776.72
10300.000	1450.00	0.00	0.00	603.30	14950.00	620.19	0.00	620.41	4.82	3.74	4051.67	6807.36
10300.000	1450.00	0.00	0.00	603.30	10800.00	617.35	0.00	617.55	3.93	3.55	3079.31	5445.00
11800.000	1500.00	0.00	0.00	604.40	23100.00	623.71	0.00	623.97	3.57	4.49	11217.28	12223.02
11800.000	1500.00	0.00	0.00	604.40	18800.00	622.03	0.00	622.26	3.49	4.17	9481.20	10067.54
11800.000	1500.00	0.00	0.00	604.40	14950.00	620.80	0.00	620.98	3.02	3.69	8242.17	8609.27
11800.000	1500.00	0.00	0.00	604.40	10800.00	617.86	0.00	618.10	3.25	3.92	2822.19	5995.18
12600.000	800.00	0.00	0.00	604.40	23100.00	624.00	0.00	624.25	3.36	4.40	11511.54	12600.26
12600.000	800.00	0.00	0.00	604.40	18800.00	622.31	0.00	622.53	3.26	4.07	9763.07	10408.97
12600.000	800.00	0.00	0.00	604.40	14950.00	621.04	0.00	621.21	2.83	3.61	8482.38	8886.37
12600.000	800.00	0.00	0.00	604.40	10800.00	618.12	0.00	618.35	3.02	3.83	2891.08	6216.59
14100.000	1500.00	0.00	0.00	605.10	23100.00	624.48	0.00	624.78	3.83	4.64	7800.35	11808.89
14100.000	1500.00	0.00	0.00	605.10	18800.00	622.78	0.00	623.05	3.71	4.27	6577.43	9766.71
14100.000	1500.00	0.00	0.00	605.10	14950.00	621.45	0.00	621.66	3.24	3.78	5642.48	8307.77
14100.000	1500.00	0.00	0.00	605.10	10800.00	618.59	0.00	618.78	2.73	3.54	3733.78	6534.14
16700.000	2600.00	0.00	0.00	604.60	23100.00	625.20	0.00	625.49	2.43	4.74	11948.15	14833.22
16700.000	2600.00	0.00	0.00	604.60	18800.00	623.48	0.00	623.75	2.39	4.50	10011.25	12169.84
16700.000	2600.00	0.00	0.00	604.60	14950.00	622.07	0.00	622.30	2.16	4.13	8437.14	10173.09
16700.000	2600.00	0.00	0.00	604.60	10800.00	619.15	0.00	619.47	2.31	4.52	2413.07	7108.01

38970.000	1300.00	0.00	0.00	612.90	10800.00	625.87	0.00	625.99	1.86	2.88	5281.39	7911.89
42170.000	3200.00	0.00	0.00	612.10	23100.00	633.16	0.00	633.73	2.92	6.52	6160.08	13527.06
42170.000	3200.00	0.00	0.00	612.10	18800.00	631.35	0.00	631.84	2.80	5.98	5264.95	11237.45
42170.000	3200.00	0.00	0.00	612.10	14950.00	629.58	0.00	630.00	2.65	5.42	4389.15	9182.36
42170.000	3200.00	0.00	0.00	612.10	10800.00	626.33	0.00	626.79	2.63	5.42	2011.21	6657.32
43770.000	1600.00	0.00	0.00	613.10	23100.00	633.80	0.00	634.27	3.57	5.97	6235.26	12223.62
43770.000	1600.00	0.00	0.00	613.10	18800.00	631.95	0.00	632.35	3.43	5.47	5376.04	10156.18
43770.000	1600.00	0.00	0.00	613.10	14950.00	630.14	0.00	630.48	3.24	4.96	4549.82	8300.02
43770.000	1600.00	0.00	0.00	613.10	10800.00	626.93	0.00	627.24	2.84	4.69	3131.15	6406.86
44820.000	1050.00	0.00	0.00	612.70	23100.00	634.46	0.00	634.67	3.52	3.81	8875.90	12312.65
44820.000	1050.00	0.00	0.00	612.70	18800.00	632.56	0.00	632.74	3.50	3.54	7555.83	10055.36
44820.000	1050.00	0.00	0.00	612.70	14950.00	630.69	0.00	630.85	3.46	3.26	6276.74	8038.80
44820.000	1050.00	0.00	0.00	612.70	10800.00	627.43	0.00	627.58	3.34	3.21	4109.75	5909.86

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SECNO	XLCH	ELTRD	FLLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	ABEA	.01K
45470.000	650.00	0.00	0.00	613.40	23100.00	634.63	0.00	634.99	5.32	5.03	6759.44	10016.45
45470.000	650.00	0.00	0.00	613.40	18800.00	632.74	0.00	633.05	5.19	4.63	5689.23	8256.23
45470.000	650.00	0.00	0.00	613.40	14950.00	630.88	0.00	631.15	4.99	4.20	4684.16	6692.93
45470.000	650.00	0.00	0.00	613.40	10800.00	627.61	0.00	627.86	4.51	3.99	3049.10	5083.85
46870.000	1300.00	0.00	0.00	612.60	23100.00	635.32	0.00	635.74	5.92	5.53	6120.57	9493.46
46870.000	1300.00	0.00	0.00	612.60	18800.00	633.42	0.00	633.78	5.79	5.12	5211.24	7809.81
46870.000	1300.00	0.00	0.00	612.60	14950.00	631.54	0.00	631.85	5.62	4.68	4327.34	6304.96
46870.000	1300.00	0.00	0.00	612.60	10800.00	628.20	0.00	628.50	5.14	4.49	2829.16	4765.70
48720.000	1850.00	0.00	0.00	616.40	23100.00	636.33	0.00	636.54	3.23	3.90	7158.21	12844.67
48720.000	1850.00	0.00	0.00	616.40	18800.00	634.39	0.00	634.56	3.15	3.59	6293.87	10589.61
48720.000	1850.00	0.00	0.00	616.40	14950.00	632.46	0.00	632.61	3.07	3.27	5452.66	8533.41
48720.000	1850.00	0.00	0.00	616.40	10800.00	629.07	0.00	629.22	2.91	3.16	4016.60	6334.17
50220.000	1500.00	0.00	0.00	613.20	23100.00	636.78	0.00	636.90	1.95	3.16	8856.18	16547.60
50220.000	1500.00	0.00	0.00	613.20	18800.00	634.83	0.00	634.95	2.21	3.15	7424.36	12658.99
50220.000	1500.00	0.00	0.00	613.20	14950.00	632.91	0.00	633.02	2.58	3.17	6030.64	9307.90
50220.000	1500.00	0.00	0.00	613.20	10800.00	629.53	0.00	629.72	3.78	3.87	3636.74	5555.28
51945.000	1725.00	0.00	0.00	614.90	23100.00	637.16	0.00	637.46	6.11	5.12	11433.84	9346.25
51945.000	1725.00	0.00	0.00	614.90	18800.00	635.27	0.00	635.57	6.64	4.99	9111.86	7298.00
51945.000	1725.00	0.00	0.00	614.90	14950.00	633.42	0.00	633.73	7.08	4.80	6999.17	5620.49
51945.000	1725.00	0.00	0.00	614.90	10800.00	630.26	0.00	630.65	7.66	5.06	3426.86	3901.65
53000.000	1055.00	0.00	0.00	617.10	23100.00	637.59	0.00	637.71	1.26	3.12	16201.64	20584.47
53000.000	1055.00	0.00	0.00	617.10	18800.00	635.73	0.00	635.83	1.26	2.93	13701.50	16744.77
53000.000	1055.00	0.00	0.00	617.10	14950.00	633.90	0.00	634.00	1.26	2.72	11273.26	13340.94
53000.000	1055.00	0.00	0.00	617.10	10800.00	630.83	0.00	630.93	1.18	2.71	7223.36	9934.47
53700.000	700.00	0.00	0.00	616.60	23100.00	637.66	0.00	637.80	1.58	3.91	18658.09	18381.50
53700.000	700.00	0.00	0.00	616.60	18800.00	635.80	0.00	635.93	1.60	3.68	15977.86	14868.82

53700.000	700.00	0.00	0.00	616.60	14950.00	633.97	0.00	634.09	1.62	3.45	13357.20	11748.66
53700.000	700.00	0.00	0.00	616.60	10800.00	630.89	0.00	631.03	1.61	3.50	8936.12	8512.68
54600.000	900.00	0.00	0.00	614.50	23100.00	637.84	0.00	637.92	1.62	3.34	17740.58	18132.02
54600.000	900.00	0.00	0.00	614.50	18800.00	635.97	0.00	636.06	1.83	3.32	14939.31	13896.75
54600.000	900.00	0.00	0.00	614.50	14950.00	634.13	0.00	634.23	2.11	3.32	12203.12	10280.33
54600.000	900.00	0.00	0.00	614.50	10800.00	631.03	0.00	631.20	2.79	3.87	7586.37	6467.67
55080.000	480.00	0.00	0.00	614.50	23100.00	637.86	0.00	637.98	1.36	3.09	8303.38	20250.82
55080.000	480.00	0.00	0.00	614.50	18800.00	636.00	0.00	636.14	1.82	3.43	6550.01	13918.73
55080.000	480.00	0.00	0.00	614.50	14950.00	634.17	0.00	634.35	2.75	3.93	4883.08	9022.05
55080.000	480.00	0.00	0.00	614.50	10800.00	631.03	0.00	631.43	4.57	5.18	2351.43	5056.88
55800.000	720.00	0.00	0.00	616.20	23100.00	637.83	0.00	638.17	5.11	5.37	8827.98	10223.50
55800.000	720.00	0.00	0.00	616.20	18800.00	636.02	0.00	636.35	5.21	5.17	7200.69	8237.58
55800.000	720.00	0.00	0.00	616.20	14950.00	634.29	0.00	634.61	5.24	4.91	5638.22	6531.64
55800.000	720.00	0.00	0.00	616.20	10800.00	631.39	0.00	631.75	4.80	4.95	3030.95	4930.03

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SECNO	XLCH	ELTRI	ELLC	ELMIN	Q	CwSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
56800.000	1000.00	0.00	0.00	614.60	23100.00	638.33	0.00	638.46	3.22	3.72	15346.91	12877.59
56800.000	1000.00	0.00	0.00	614.60	18800.00	636.55	0.00	636.68	3.60	3.70	12445.84	9911.19
56800.000	1000.00	0.00	0.00	614.60	14950.00	634.84	0.00	634.99	4.04	3.68	9676.28	7436.05
56800.000	1000.00	0.00	0.00	614.60	10800.00	631.97	0.00	632.21	4.87	4.21	5023.36	4893.77
57650.000	850.00	0.00	0.00	617.40	23100.00	638.51	0.00	638.56	1.02	2.18	18933.46	22892.01
57650.000	850.00	0.00	0.00	617.40	18800.00	636.76	0.00	636.80	1.16	2.19	15572.70	17434.32
57650.000	850.00	0.00	0.00	617.40	14950.00	635.09	0.00	635.14	1.34	2.19	12411.00	12924.23
57650.000	850.00	0.00	0.00	617.40	10800.00	632.35	0.00	632.43	1.72	2.57	7236.65	8230.03
58350.000	700.00	0.00	0.00	616.30	23100.00	638.57	0.00	638.65	2.11	3.06	12600.59	15898.46
58350.000	700.00	0.00	0.00	616.30	18800.00	636.83	0.00	636.91	2.43	3.07	10371.52	12069.64
58350.000	700.00	0.00	0.00	616.30	14950.00	635.17	0.00	635.26	2.81	3.09	8279.50	8913.64
58350.000	700.00	0.00	0.00	616.30	10800.00	632.45	0.00	632.61	3.59	3.61	4894.86	5696.58
58900.000	550.00	0.00	0.00	618.00	23100.00	638.66	0.00	638.78	2.47	3.45	12852.58	14692.96
58900.000	550.00	0.00	0.00	618.00	18800.00	636.93	0.00	637.06	2.83	3.45	10219.78	11179.96
58900.000	550.00	0.00	0.00	618.00	14950.00	635.29	0.00	635.44	3.20	3.42	7756.09	8352.23
58900.000	550.00	0.00	0.00	618.00	10800.00	632.61	0.00	632.81	3.45	3.64	3795.16	5813.31
60000.000	1100.00	0.00	0.00	618.90	23100.00	638.78	0.00	639.42	11.49	7.03	6291.94	6814.17
60000.000	1100.00	0.00	0.00	618.90	18800.00	637.14	0.00	637.74	11.71	6.65	5031.99	5493.17
60000.000	1100.00	0.00	0.00	618.90	14950.00	635.60	0.00	636.15	11.52	6.16	3873.61	4403.75
60000.000	1100.00	0.00	0.00	618.90	10800.00	632.98	0.00	633.51	9.87	5.85	1955.56	3437.74
62250.000	2225.00	0.00	0.00	620.20	23100.00	640.27	0.00	640.55	2.81	4.40	6802.88	13776.95
62250.000	2225.00	0.00	0.00	620.20	18800.00	638.61	0.00	638.84	2.66	4.00	5942.93	11529.13
62250.000	2225.00	0.00	0.00	620.20	14950.00	637.00	0.00	637.19	2.46	3.58	5138.18	9535.05
62250.000	2225.00	0.00	0.00	620.20	10800.00	634.23	0.00	634.39	2.00	3.29	3822.09	7630.34
63120.000	970.00	0.00	0.00	619.70	23100.00	640.48	0.00	640.94	4.47	5.54	5177.29	10929.69

63120.000	970.00	0.00	0.00	619.70	18800.00	638.83	0.00	639.21	4.17	5.02	4498.37	9205.48
63120.000	970.00	0.00	0.00	619.70	14950.00	637.22	0.00	637.52	3.81	4.47	3862.20	7661.80
63120.000	970.00	0.00	0.00	619.70	10800.00	634.40	0.00	634.65	3.03	4.06	2805.37	6206.87
65620.000	1900.00	0.00	0.00	620.70	23100.00	641.34	0.00	641.77	4.16	5.53	5802.12	11320.18
65620.000	1900.00	0.00	0.00	620.70	18800.00	639.62	0.00	639.98	3.98	5.06	5027.92	9427.70
65620.000	1900.00	0.00	0.00	620.70	14950.00	637.93	0.00	638.24	3.74	4.57	4270.76	7729.97
65620.000	1900.00	0.00	0.00	620.70	10800.00	634.97	0.00	635.25	3.19	4.28	2972.14	6050.01
67420.000	2500.00	0.00	0.00	619.30	23100.00	642.33	0.00	642.66	3.09	4.81	5851.29	13149.86
67420.000	2500.00	0.00	0.00	619.30	18800.00	640.55	0.00	640.84	2.94	4.39	5124.39	10969.32
67420.000	2500.00	0.00	0.00	619.30	14950.00	638.81	0.00	639.04	2.76	3.96	4408.59	8994.14
67420.000	2500.00	0.00	0.00	619.30	10800.00	635.73	0.00	635.94	2.37	3.71	3158.27	7013.23
68970.000	1550.00	0.00	0.00	622.70	23100.00	642.82	0.00	643.14	2.98	4.69	6322.99	13378.12
68970.000	1550.00	0.00	0.00	622.70	18800.00	641.01	0.00	641.29	2.93	4.34	5306.53	10986.69
68970.000	1550.00	0.00	0.00	622.70	14950.00	639.24	0.00	639.48	2.82	3.95	4361.17	8903.17
68970.000	1550.00	0.00	0.00	622.70	10800.00	636.10	0.00	636.32	2.47	3.70	3041.09	6869.34

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
70300.000	1330.00	0.00	0.00	623.70	23100.00	643.26	0.00	643.51	2.54	4.17	6131.20	14507.24
70300.000	1330.00	0.00	0.00	623.70	18800.00	641.44	0.00	641.66	2.50	3.85	5378.11	11884.90
70300.000	1330.00	0.00	0.00	623.70	14950.00	639.65	0.00	639.83	2.47	3.52	4649.60	9520.93
70300.000	1330.00	0.00	0.00	623.70	10800.00	636.47	0.00	636.64	2.42	3.44	3386.51	6947.93
71300.000	1000.00	0.00	0.00	622.70	23100.00	643.47	0.00	643.83	3.34	5.01	5217.73	12631.11
71300.000	1000.00	0.00	0.00	622.70	18800.00	641.66	0.00	641.97	3.22	4.59	4568.18	10483.19
71300.000	1000.00	0.00	0.00	622.70	14950.00	639.87	0.00	640.13	3.07	4.16	3944.31	8538.32
71300.000	1000.00	0.00	0.00	622.70	10800.00	636.68	0.00	636.92	2.75	3.95	2884.85	6515.73
71900.000	600.00	0.00	0.00	624.60	23100.00	643.68	0.00	644.06	4.21	5.16	5476.46	11262.15
71900.000	600.00	0.00	0.00	624.60	18800.00	641.87	0.00	642.19	4.09	4.74	4767.45	9299.64
71900.000	600.00	0.00	0.00	624.60	14950.00	640.07	0.00	640.34	3.95	4.31	4084.24	7522.36
71900.000	600.00	0.00	0.00	624.60	10800.00	636.86	0.00	637.11	3.69	4.13	2928.37	5625.55
73040.000	1140.00	0.00	0.00	625.60	23100.00	644.25	0.00	644.51	3.65	4.41	6162.95	12083.23
73040.000	1140.00	0.00	0.00	625.60	18800.00	642.40	0.00	642.66	4.05	4.30	5083.40	9339.51
73040.000	1140.00	0.00	0.00	625.60	14950.00	640.57	0.00	640.82	4.52	4.16	4086.94	7034.34
73040.000	1140.00	0.00	0.00	625.60	10800.00	637.33	0.00	637.63	5.39	4.41	2551.24	4654.00
73590.000	550.00	0.00	0.00	624.10	23100.00	644.37	0.00	644.75	3.89	5.04	4840.98	11705.66
73590.000	550.00	0.00	0.00	624.10	18800.00	642.57	0.00	642.89	3.83	4.63	4261.02	9609.58
73590.000	550.00	0.00	0.00	624.10	14950.00	640.78	0.00	641.05	3.75	4.22	3698.99	7715.18
73590.000	550.00	0.00	0.00	624.10	10800.00	637.62	0.00	637.88	3.65	4.06	2736.19	5656.13
73640.000	50.00	652.00	650.50	625.40	23100.00	644.39	0.00	644.78	4.10	5.03	4593.36	11407.70
73640.000	50.00	652.00	650.50	625.40	18800.00	642.58	0.00	642.91	3.95	4.62	4070.37	9459.25
73640.000	50.00	652.00	650.50	625.40	14950.00	640.80	0.00	641.07	3.82	4.21	3552.39	7648.23
73640.000	50.00	652.00	650.50	625.40	10800.00	637.64	0.00	637.90	3.63	4.09	2639.76	5670.71

73660.000	20.00	652.00	650.50	625.40	23100.00	644.39	0.00	644.79	4.10	5.03	4593.44	11407.98
73660.000	20.00	652.00	650.50	625.40	18800.00	642.59	0.00	642.92	3.95	4.62	4070.86	9461.04
73660.000	20.00	652.00	650.50	625.40	14950.00	640.80	0.00	641.08	3.82	4.21	3552.88	7649.90
73660.000	20.00	652.00	650.50	625.40	10800.00	637.64	0.00	637.90	3.63	4.09	2639.07	5668.45
73720.000	60.00	0.00	0.00	625.30	23100.00	644.36	0.00	644.84	5.06	5.83	4547.37	10268.80
73720.000	60.00	0.00	0.00	625.30	18800.00	642.54	0.00	642.98	5.40	5.51	3820.21	8090.84
73720.000	60.00	0.00	0.00	625.30	14950.00	640.75	0.00	641.14	5.83	5.19	3162.53	6191.41
73720.000	60.00	0.00	0.00	625.30	10800.00	637.54	0.00	637.99	6.92	5.42	2111.93	4105.16
75140.000	1420.00	0.00	0.00	627.50	23100.00	645.12	0.00	645.31	2.25	4.16	10193.00	15409.70
75140.000	1420.00	0.00	0.00	627.50	18800.00	643.30	0.00	643.50	2.51	4.06	8273.43	11856.25
75140.000	1420.00	0.00	0.00	627.50	14950.00	641.52	0.00	641.72	2.88	3.98	6443.76	8807.06
75140.000	1420.00	0.00	0.00	627.50	10800.00	638.43	0.00	638.71	3.86	4.46	3465.85	5497.45
75800.000	660.00	0.00	0.00	628.20	23100.00	645.09	0.00	645.63	5.33	5.90	3917.73	10004.99
75800.000	660.00	0.00	0.00	628.20	18800.00	643.35	0.00	643.80	5.23	5.42	3465.74	8224.52
75800.000	660.00	0.00	0.00	628.20	14950.00	641.63	0.00	642.01	5.13	4.95	3022.42	6601.44
75800.000	660.00	0.00	0.00	628.20	10800.00	638.67	0.00	639.02	5.01	4.79	2254.01	4822.69

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
76350.000	550.00	0.00	0.00	629.80	23100.00	645.54	0.00	645.92	4.59	4.98	4811.29	10787.86
76350.000	550.00	0.00	0.00	629.80	18800.00	643.76	0.00	644.09	4.73	4.64	4188.21	8643.15
76350.000	550.00	0.00	0.00	629.80	14950.00	642.02	0.00	642.30	4.92	4.30	3584.50	6736.75
76350.000	550.00	0.00	0.00	629.80	10800.00	639.03	0.00	639.32	5.45	4.30	2564.26	4627.95
76760.000	410.00	0.00	0.00	627.60	23100.00	645.67	0.00	646.11	4.04	5.42	4745.05	11489.74
76760.000	410.00	0.00	0.00	627.60	18800.00	643.90	0.00	644.28	4.08	5.01	4107.09	9311.56
76760.000	410.00	0.00	0.00	627.60	14950.00	642.17	0.00	642.50	4.11	4.60	3499.77	7373.05
76760.000	410.00	0.00	0.00	627.60	10800.00	639.21	0.00	639.52	4.16	4.48	2496.66	5296.72

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MUSKEGON RIVER EXISITIN

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XICH
0.100	23100.00	620.59	0.00	0.00	-0.41	810.00	0.00
0.100	18800.00	619.00	-1.59	0.00	0.00	803.38	0.00
0.100	14950.00	617.37	-1.63	0.00	-0.63	794.18	0.00
0.100	10800.00	615.25	-2.13	0.00	-1.75	653.55	0.00
1920.000	23100.00	621.06	0.00	0.47	0.00	741.00	1920.00
1920.000	18800.00	619.48	-1.58	0.48	0.00	741.00	1920.00
1920.000	14950.00	617.87	-1.62	0.50	0.00	741.00	1920.00

1920.000	10800.00	615.61	-2.25	0.37	0.00	581.71	1920.00
3050.000	23100.00	621.45	0.00	0.38	0.00	311.00	1130.00
3050.000	18800.00	619.87	-1.58	0.38	0.00	308.38	1130.00
3050.000	14950.00	618.24	-1.62	0.38	0.00	303.49	1130.00
3050.000	10800.00	615.91	-2.33	0.30	0.00	296.45	1130.00
3051.000	23100.00	621.47	0.00	0.02	0.00	311.00	1.00
3051.000	18800.00	619.88	-1.59	0.02	0.00	308.41	1.00
3051.000	14950.00	618.25	-1.63	0.01	0.00	303.50	1.00
3051.000	10800.00	615.92	-2.33	0.01	0.00	296.45	1.00
3100.000	23100.00	621.48	0.00	0.01	0.00	311.00	49.00
3100.000	18800.00	619.89	-1.59	0.01	0.00	308.45	49.00
3100.000	14950.00	618.26	-1.63	0.01	0.00	303.53	49.00
3100.000	10800.00	615.92	-2.34	0.00	0.00	296.48	49.00
3101.000	23100.00	621.46	0.00	-0.02	0.00	311.00	1.00
3101.000	18800.00	619.88	-1.58	-0.01	0.00	308.43	1.00
3101.000	14950.00	618.25	-1.62	-0.01	0.00	303.53	1.00
3101.000	10800.00	615.92	-2.33	0.00	0.00	296.48	1.00
4680.000	23100.00	621.97	0.00	0.51	0.00	616.39	1579.00
4680.000	18800.00	620.32	-1.65	0.44	0.00	608.16	1579.00
4680.000	14950.00	618.64	-1.68	0.39	0.00	599.79	1579.00
4680.000	10800.00	616.19	-2.45	0.27	0.00	350.95	1579.00
7200.000	23100.00	622.36	0.00	0.39	0.00	805.72	2520.00
7200.000	18800.00	620.72	-1.64	0.41	0.00	799.20	2520.00
7200.000	14950.00	619.05	-1.67	0.41	0.00	243.99	2520.00
7200.000	10800.00	616.52	-2.53	0.33	0.00	230.52	2520.00
8850.000	23100.00	622.96	0.00	0.60	0.00	895.75	1650.00
8850.000	18800.00	621.27	-1.69	0.55	0.00	878.38	1650.00
8850.000	14950.00	619.57	-1.70	0.52	0.00	284.50	1650.00
8850.000	10800.00	616.88	-2.69	0.36	0.00	268.40	1650.00

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	FORWID	XLCH
10300.000	23100.00	623.40	0.00	0.44	0.00	1201.33	1450.00
10300.000	18800.00	621.70	-1.70	0.43	0.00	1177.94	1450.00
10300.000	14950.00	620.19	-1.51	0.62	0.00	346.86	1450.00
10300.000	10800.00	617.35	-2.84	0.47	0.00	338.20	1450.00
11800.000	23100.00	623.71	0.00	0.31	0.00	1046.17	1500.00
11800.000	18800.00	622.03	-1.68	0.33	0.00	1011.70	1500.00
11800.000	14950.00	620.80	-1.24	0.60	0.00	986.36	1500.00
11800.000	10800.00	617.86	-2.94	0.50	0.00	262.16	1500.00
12600.000	23100.00	624.00	0.00	0.29	0.00	1051.90	800.00
12600.000	18800.00	622.31	-1.69	0.28	0.00	1017.37	800.00

12600.000	14950.00	621.04	-1.28	0.24	0.00	991.32	800.00
12600.000	10800.00	618.12	-2.92	0.26	0.00	263.29	800.00
14100.000	23100.00	624.48	0.00	0.47	0.00	726.99	1500.00
14100.000	18800.00	622.78	-1.69	0.47	0.00	713.43	1500.00
14100.000	14950.00	621.45	-1.33	0.41	0.00	701.50	1500.00
14100.000	10800.00	618.59	-2.86	0.47	0.00	579.70	1500.00
16700.000	23100.00	625.20	0.00	0.73	0.00	1129.53	2600.00
16700.000	18800.00	623.48	-1.72	0.70	0.00	1119.85	2600.00
16700.000	14950.00	622.07	-1.41	0.62	0.00	1111.92	2600.00
16700.000	10800.00	619.15	-2.92	0.56	0.00	222.00	2600.00
18990.000	23100.00	625.70	0.00	0.49	0.00	552.56	2190.00
18990.000	18800.00	623.98	-1.72	0.50	0.00	543.23	2190.00
18990.000	14950.00	622.53	-1.45	0.46	0.00	533.19	2190.00
18990.000	10800.00	619.71	-2.82	0.55	0.00	483.41	2190.00
19870.000	23100.00	625.94	0.00	0.14	0.00	707.30	1000.00
19870.000	18800.00	624.10	-1.74	0.12	0.00	697.03	1000.00
19870.000	14950.00	622.62	-1.48	0.09	0.00	688.31	1000.00
19870.000	10800.00	619.72	-2.90	0.02	0.00	380.63	1000.00
21370.000	23100.00	626.30	0.00	0.46	0.00	782.26	1500.00
21370.000	18800.00	624.61	-1.69	0.51	0.00	770.27	1500.00
21370.000	14950.00	623.14	-1.47	0.52	0.00	759.88	1500.00
21370.000	10800.00	620.29	-2.85	0.56	0.00	740.17	1500.00
24985.000	23100.00	627.29	0.00	0.99	0.00	908.02	3615.00
24985.000	18800.00	625.60	-1.69	1.00	0.00	894.51	3615.00
24985.000	14950.00	624.09	-1.52	0.95	0.00	882.29	3615.00
24985.000	10800.00	621.19	-2.90	0.90	0.00	837.41	3615.00
28235.000	23100.00	628.38	0.00	1.09	0.00	676.46	3200.00
28235.000	18800.00	626.69	-1.68	1.09	0.00	668.09	3200.00
28235.000	14950.00	625.13	-1.56	1.05	0.00	660.34	3200.00
28235.000	10800.00	622.19	-2.94	1.00	0.00	290.46	3200.00

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFXWS	TOPWID	XICH
29860.000	23100.00	629.00	0.00	0.63	0.00	513.48	1625.00
29860.000	18800.00	627.31	-1.70	0.61	0.00	497.52	1625.00
29860.000	14950.00	625.71	-1.60	0.58	0.00	482.43	1625.00
29860.000	10800.00	622.72	-2.99	0.53	0.00	245.85	1625.00
31660.000	23100.00	629.85	0.00	0.84	0.00	612.71	1800.00
31660.000	18800.00	628.09	-1.76	0.78	0.00	596.83	1800.00
31660.000	14950.00	626.41	-1.67	0.70	0.00	581.74	1800.00
31660.000	10800.00	623.32	-3.09	0.60	0.00	318.84	1800.00
35425.000	23100.00	631.33	0.00	1.49	0.00	770.00	3760.00

35425.000	18800.00	629.51	-1.82	1.43	0.00	770.00	3760.00
35425.000	14950.00	627.75	-1.76	1.34	0.00	770.00	3760.00
35425.000	10800.00	624.53	-3.22	1.21	0.00	718.39	3760.00
37670.000	23100.00	632.27	0.00	0.93	0.00	1015.00	2150.00
37670.000	18800.00	630.44	-1.83	0.93	0.00	1014.28	2150.00
37670.000	14950.00	628.66	-1.78	0.91	0.00	1009.40	2150.00
37670.000	10800.00	625.42	-3.24	0.89	0.00	914.51	2150.00
38970.000	23100.00	632.71	0.00	0.44	0.00	740.00	1300.00
38970.000	18800.00	630.83	-1.83	0.44	0.00	740.00	1300.00
38970.000	14950.00	629.09	-1.79	0.43	0.00	740.00	1300.00
38970.000	10800.00	625.87	-3.22	0.45	0.00	734.53	1300.00
42170.000	23100.00	633.16	0.00	0.45	0.00	495.00	3200.00
42170.000	18800.00	631.35	-1.81	0.47	0.00	495.00	3200.00
42170.000	14950.00	629.58	-1.77	0.49	0.00	495.00	3200.00
42170.000	10800.00	626.33	-3.25	0.46	0.00	170.74	3200.00
43770.000	23100.00	633.80	0.00	0.54	0.00	469.82	1600.00
43770.000	18800.00	631.95	-1.85	0.60	0.00	460.37	1600.00
43770.000	14950.00	630.14	-1.81	0.56	0.00	451.09	1600.00
43770.000	10800.00	626.93	-3.21	0.60	0.00	430.24	1600.00
44820.000	23100.00	634.46	0.00	0.66	0.00	699.21	1050.00
44820.000	18800.00	632.56	-1.90	0.61	0.00	689.34	1050.00
44320.000	14950.00	630.69	-1.87	0.55	0.00	679.65	1050.00
44320.000	10800.00	627.43	-3.27	0.50	0.00	628.96	1050.00
45470.000	23100.00	634.63	0.00	0.16	0.00	577.67	650.00
45470.000	18800.00	632.74	-1.89	0.18	0.00	556.36	650.00
45470.000	14950.00	630.88	-1.86	0.19	0.00	528.62	650.00
45470.000	10800.00	627.61	-3.27	0.19	0.00	456.14	650.00
46870.000	23100.00	635.32	0.00	0.69	0.00	481.32	1300.00
46870.000	18800.00	633.42	-1.90	0.68	0.00	473.83	1300.00
46870.000	14950.00	631.54	-1.88	0.65	0.00	466.43	1300.00
46870.000	10800.00	628.20	-3.34	0.58	0.00	407.19	1300.00

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
48720.000	23100.00	636.33	0.00	1.01	0.00	454.07	1850.00
48720.000	18800.00	634.39	-1.94	0.97	0.00	442.89	1850.00
48720.000	14950.00	632.46	-1.92	0.93	0.00	431.74	1850.00
48720.000	10800.00	629.07	-3.39	0.88	0.00	412.00	1850.00
50220.000	23100.00	636.78	0.00	0.46	0.00	738.00	1500.00
50220.000	18800.00	634.83	-1.95	0.45	0.00	728.66	1500.00
50220.000	14950.00	632.91	-1.93	0.45	0.00	717.86	1500.00
50220.000	10800.00	629.53	-3.38	0.45	0.00	698.91	1500.00

51945.000	23100.00	637.16	0.00	0.37	0.00	1268.10	1725.00
51945.000	18800.00	635.27	-1.89	0.43	0.00	1173.78	1725.00
51945.000	14950.00	633.42	-1.84	0.52	0.00	1138.90	1725.00
51945.000	10800.00	630.26	-3.16	0.74	0.00	1122.64	1725.00
53000.000	23100.00	637.53	0.00	0.44	0.00	1345.18	1055.00
53000.000	18800.00	635.73	-1.87	0.46	0.00	1335.26	1055.00
53000.000	14950.00	633.90	-1.83	0.48	0.00	1325.55	1055.00
53000.000	10800.00	630.83	-3.07	0.56	0.00	1309.20	1055.00
53700.000	23100.00	637.66	0.00	0.07	0.00	1438.64	700.00
53700.000	18800.00	635.80	-1.86	0.07	0.00	1436.75	700.00
53700.000	14950.00	633.97	-1.82	0.07	0.00	1434.90	700.00
53700.000	10800.00	630.89	-3.08	0.06	0.00	1431.75	700.00
54600.000	23100.00	637.84	0.00	0.17	0.00	1497.98	900.00
54600.000	18800.00	635.97	-1.87	0.17	0.00	1494.72	900.00
54600.000	14950.00	634.13	-1.83	0.16	0.00	1491.53	900.00
54600.000	10800.00	631.03	-3.10	0.14	0.00	1486.36	900.00
55080.000	23100.00	637.86	0.00	0.02	0.00	956.99	480.00
55080.000	18800.00	636.00	-1.86	0.03	0.00	926.77	480.00
55080.000	14950.00	634.17	-1.83	0.04	0.00	897.10	480.00
55080.000	10800.00	631.03	-3.14	0.00	0.00	370.73	480.00
55800.000	23100.00	637.83	0.00	-0.03	0.00	900.00	720.00
55800.000	18800.00	636.02	-1.81	0.02	0.00	900.00	720.00
55800.000	14950.00	634.29	-1.73	0.12	0.00	900.00	720.00
55800.000	10800.00	631.39	-2.90	0.35	0.00	900.00	720.00
56800.000	23100.00	638.33	0.00	0.50	0.00	1627.97	1000.00
56800.000	18800.00	636.55	-1.78	0.53	0.00	1625.80	1000.00
56800.000	14950.00	634.84	-1.71	0.55	0.00	1623.73	1000.00
56800.000	10800.00	631.97	-2.87	0.59	0.00	1620.25	1000.00
57650.000	23100.00	638.51	0.00	0.18	0.00	1905.56	850.00
57650.000	18800.00	636.76	-1.76	0.21	0.00	1900.26	850.00
57650.000	14950.00	635.09	-1.67	0.24	0.00	1895.26	850.00
57650.000	10800.00	632.35	-2.74	0.38	0.00	1887.05	850.00

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XICH
58350.000	23100.00	638.57	0.00	0.06	0.00	1284.51	700.00
58350.000	18800.00	636.83	-1.74	0.07	0.00	1270.49	700.00
58350.000	14950.00	635.17	-1.66	0.08	0.00	1257.20	700.00
58350.000	10800.00	632.45	-2.72	0.10	0.00	1229.60	700.00
58900.000	23100.00	638.66	0.00	0.09	0.00	1529.51	550.00
58900.000	18800.00	636.93	-1.73	0.10	0.00	1511.23	550.00
58900.000	14950.00	635.29	-1.64	0.12	0.00	1493.92	550.00
58900.000	10800.00	632.61	-2.68	0.16	0.00	1448.65	550.00

60000.000	23100.00	638.78	0.00	0.12	0.00	776.12	1100.00
60000.000	18800.00	637.14	-1.64	0.21	0.00	761.20	1100.00
60000.000	14950.00	635.60	-1.54	0.31	0.00	747.22	1100.00
60000.000	10800.00	632.98	-2.62	0.37	0.00	594.12	1100.00
62250.000	23100.00	640.27	0.00	1.50	0.00	524.57	2225.00
62250.000	18800.00	638.61	-1.66	1.47	0.00	510.81	2225.00
62250.000	14950.00	637.00	-1.61	1.40	0.00	490.93	2225.00
62250.000	10800.00	634.23	-2.78	1.25	0.00	456.89	2225.00
63120.000	23100.00	640.48	0.00	0.21	0.00	417.33	970.00
63120.000	18800.00	638.83	-1.66	0.22	0.00	402.00	970.00
63120.000	14950.00	637.22	-1.61	0.21	0.00	387.59	970.00
63120.000	10800.00	634.40	-2.82	0.17	0.00	362.63	970.00
65620.000	23100.00	641.34	0.00	0.85	0.00	450.00	1900.00
65620.000	18800.00	639.62	-1.72	0.79	0.00	450.00	1900.00
65620.000	14950.00	637.93	-1.68	0.72	0.00	448.86	1900.00
65620.000	10800.00	634.97	-2.96	0.57	0.00	411.92	1900.00
67420.000	23100.00	642.33	0.00	0.99	0.00	410.00	2500.00
67420.000	18800.00	640.55	-1.77	0.94	0.00	410.00	2500.00
67420.000	14950.00	638.81	-1.75	0.88	0.00	410.00	2500.00
67420.000	10800.00	635.73	-3.08	0.76	0.00	396.91	2500.00
68970.000	23100.00	642.82	0.00	0.49	0.00	570.16	1550.00
68970.000	18800.00	641.01	-1.80	0.46	0.00	557.37	1550.00
68970.000	14950.00	639.24	-1.77	0.43	0.00	499.55	1550.00
68970.000	10800.00	636.10	-3.14	0.37	0.00	318.78	1550.00
70300.000	23100.00	643.26	0.00	0.44	0.00	420.05	1330.00
70300.000	18800.00	641.44	-1.81	0.43	0.00	410.61	1330.00
70300.000	14950.00	639.65	-1.79	0.41	0.00	401.82	1330.00
70300.000	10800.00	636.47	-3.18	0.36	0.00	391.92	1330.00
71300.000	23100.00	643.47	0.00	0.21	0.00	365.04	1000.00
71300.000	18800.00	641.66	-1.81	0.22	0.00	354.03	1000.00
71300.000	14950.00	639.87	-1.79	0.22	0.00	343.12	1000.00
71300.000	10800.00	636.68	-3.19	0.21	0.00	315.53	1000.00

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	IOPWID	XLCH
71900.000	23100.00	643.68	0.00	0.21	0.00	396.34	600.00
71900.000	18900.00	641.87	-1.81	0.21	0.00	385.39	600.00
71900.000	14950.00	640.07	-1.80	0.20	0.00	374.53	600.00
71900.000	10800.00	636.86	-3.21	0.18	0.00	338.07	600.00
73040.000	23100.00	644.25	0.00	0.57	0.00	602.96	1140.00
73040.000	18900.00	642.40	-1.85	0.54	0.00	564.83	1140.00
73040.000	14950.00	640.57	-1.83	0.50	0.00	523.32	1140.00

73040.000	10800.00	637.33	-3.24	0.47	0.00	407.50	1140.00
73590.000	23100.00	644.37	0.00	0.12	0.00	325.19	550.00
73590.000	18800.00	642.57	-1.80	0.17	0.00	318.02	550.00
73590.000	14950.00	640.78	-1.79	0.21	0.00	310.97	550.00
73590.000	10800.00	637.62	-3.16	0.29	0.00	298.51	550.00
73640.000	23100.00	644.39	0.00	0.01	0.00	290.00	50.00
73640.000	18800.00	642.58	-1.80	0.01	0.00	290.00	50.00
73640.000	14950.00	640.80	-1.79	0.01	0.00	290.00	50.00
73640.000	10800.00	637.64	-3.16	0.01	0.00	284.61	50.00
73660.000	23100.00	644.39	0.00	0.01	0.00	290.00	20.00
73660.000	18800.00	642.59	-1.80	0.01	0.00	290.00	20.00
73660.000	14950.00	640.80	-1.79	0.01	0.00	290.00	20.00
73660.000	10800.00	637.64	-3.16	0.01	0.00	284.60	20.00
73720.000	23100.00	644.36	0.00	-0.04	0.00	418.30	60.00
73720.000	18800.00	642.54	-1.81	-0.05	0.00	383.33	60.00
73720.000	14950.00	640.75	-1.79	-0.06	0.00	351.26	60.00
73720.000	10800.00	637.54	-3.20	-0.10	0.00	303.44	60.00
75140.000	23100.00	645.12	0.00	0.77	0.00	1072.22	1420.00
75140.000	18800.00	643.30	-1.82	0.76	0.00	1040.23	1420.00
75140.000	14950.00	641.52	-1.79	0.77	0.00	1008.80	1420.00
75140.000	10800.00	638.43	-3.09	0.89	0.00	898.97	1420.00
75800.000	23100.00	645.09	0.00	-0.03	0.00	259.00	660.00
75800.000	18800.00	643.35	-1.74	0.04	0.00	259.00	660.00
75800.000	14950.00	641.63	-1.71	0.12	0.00	259.00	660.00
75800.000	10800.00	638.67	-2.97	0.24	0.00	259.00	660.00
76350.000	23100.00	645.54	0.00	0.45	0.00	351.78	550.00
76350.000	18800.00	643.76	-1.78	0.41	0.00	348.22	550.00
76350.000	14950.00	642.02	-1.74	0.38	0.00	344.73	550.00
76350.000	10800.00	639.03	-2.99	0.37	0.00	338.76	550.00
76760.000	23100.00	645.67	0.00	0.13	0.00	365.55	410.00
76760.000	18800.00	643.90	-1.77	0.14	0.00	355.91	410.00
76760.000	14950.00	642.17	-1.73	0.16	0.00	346.49	410.00
76760.000	10800.00	639.21	-2.96	0.18	0.00	330.34	410.00

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SUMMARY OF ERRORS AND SPECIAL NOTES

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73040.000	10800.00	637.33	-3.24	0.47	0.00	407.50	1140.00
73590.000	23100.00	644.37	0.00	0.12	0.00	325.19	550.00
73590.000	18800.00	642.57	-1.80	0.17	0.00	318.02	550.00
73590.000	14950.00	640.78	-1.79	0.21	0.00	310.97	550.00
73590.000	10800.00	637.62	-3.16	0.29	0.00	298.51	550.00
73640.000	23100.00	644.39	0.00	0.01	0.00	290.00	50.00
73640.000	18800.00	642.58	-1.80	0.01	0.00	290.00	50.00
73640.000	14950.00	640.80	-1.79	0.01	0.00	290.00	50.00
73640.000	10800.00	637.64	-3.16	0.01	0.00	284.61	50.00
73660.000	23100.00	644.39	0.00	0.01	0.00	290.00	20.00
73660.000	18800.00	642.59	-1.80	0.01	0.00	290.00	20.00
73660.000	14950.00	640.80	-1.79	0.01	0.00	290.00	20.00
73660.000	10800.00	637.64	-3.16	0.01	0.00	284.60	20.00
73720.000	23100.00	644.36	0.00	-0.04	0.00	418.30	60.00
73720.000	18800.00	642.54	-1.81	-0.05	0.00	383.33	60.00
73720.000	14950.00	640.75	-1.79	-0.06	0.00	351.26	60.00
73720.000	10800.00	637.54	-3.20	-0.10	0.00	303.44	60.00
75140.000	23100.00	645.12	0.00	0.77	0.00	1072.22	1420.00
75140.000	18800.00	643.30	-1.82	0.76	0.00	1040.23	1420.00
75140.000	14950.00	641.52	-1.79	0.77	0.00	1008.80	1420.00
75140.000	10800.00	638.43	-3.09	0.89	0.00	898.97	1420.00
75800.000	23100.00	645.09	0.00	-0.03	0.00	259.00	660.00
75800.000	18800.00	643.35	-1.74	0.04	0.00	259.00	660.00
75800.000	14950.00	641.63	-1.71	0.12	0.00	259.00	660.00
75800.000	10800.00	638.67	-2.97	0.24	0.00	259.00	660.00
76350.000	23100.00	645.54	0.00	0.45	0.00	351.78	550.00
76350.000	18800.00	643.76	-1.78	0.41	0.00	348.22	550.00
76350.000	14950.00	642.02	-1.74	0.38	0.00	344.73	550.00
76350.000	10800.00	639.03	-2.99	0.37	0.00	338.76	550.00
76760.000	23100.00	645.67	0.00	0.13	0.00	365.55	410.00
76760.000	18800.00	643.90	-1.77	0.14	0.00	355.91	410.00
76760.000	14950.00	642.17	-1.73	0.16	0.00	346.49	410.00
76760.000	10800.00	639.21	-2.96	0.13	0.00	330.34	410.00

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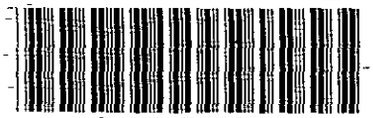
SUMMARY OF ERRORS AND SPECIAL NOTES

1



1) COUNTY: Newaygo

2) STUDY NAME: Bridgeton, Ashland, Garfield and Brooks Twps

3) WATERCOURSE: Muskegon River

4) DOCUMENT TYPE: Summary



MODIFICATION - 50,51,52,53,54,55,56
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

MUSKEGON RIVER EXISITIN

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
48720.000	0.00	0.00	0.00	616.40	18800.00	634.39	0.00	634.57	3.16	3.59	6291.71	10584.12
48720.000	0.00	0.00	0.00	616.40	18800.00	634.39	0.00	634.57	3.16	3.59	6291.71	10584.12
48720.000	0.00	0.00	0.00	616.40	18800.00	634.39	0.00	634.57	3.16	3.59	6291.71	10584.12
50220.000	1500.00	0.00	0.00	613.20	18800.00	634.84	0.00	634.95	2.21	3.15	7421.16	12650.78
50220.000	1500.00	0.00	0.00	613.20	18800.00	634.84	0.00	634.95	2.21	3.15	7421.16	12650.78
50220.000	1500.00	0.00	0.00	613.20	18800.00	634.84	0.00	634.95	2.21	3.15	7421.16	12650.78
51945.000	1725.00	0.00	0.00	614.90	18800.00	635.27	0.00	635.58	6.63	4.99	9117.02	7302.31
51945.000	1725.00	0.00	0.00	614.90	18800.00	635.27	0.00	635.58	6.63	4.99	9117.02	7302.31
51945.000	1725.00	0.00	0.00	614.90	18800.00	635.27	0.00	635.58	6.63	4.99	9117.02	7302.31
53000.000	1055.00	0.00	0.00	617.10	18800.00	635.73	0.00	635.84	1.26	2.93	13707.04	16752.92
53000.000	1055.00	0.00	0.00	617.10	18800.00	635.72	0.00	635.88	1.64	3.34	9005.78	14658.63
53000.000	1055.00	0.00	0.00	617.10	18800.00	635.72	0.00	635.88	1.64	3.34	9005.78	14658.63
53700.000	700.00	0.00	0.00	616.60	18800.00	635.80	0.00	635.93	1.60	3.68	15983.47	14875.84
53700.000	700.00	0.00	0.00	616.60	18800.00	635.63	0.00	636.16	4.25	5.97	3488.26	9114.91
53700.000	700.00	0.00	0.00	616.60	18800.00	635.63	0.00	636.16	4.25	5.97	3488.26	9114.91
54600.000	900.00	0.00	0.00	614.50	18800.00	635.97	0.00	636.06	1.83	3.32	14944.42	13903.99
54600.000	900.00	0.00	0.00	614.50	18800.00	636.07	0.00	636.61	6.09	6.08	3329.34	7619.62
54600.000	900.00	0.00	0.00	614.50	18800.00	636.07	0.00	636.61	6.09	6.08	3329.34	7619.62
55080.000	480.00	0.00	0.00	614.50	18800.00	636.00	0.00	636.14	1.82	3.43	6553.63	13930.63
55080.000	480.00	0.00	0.00	614.50	18800.00	636.36	0.00	636.88	5.52	6.05	3369.19	7999.00
55080.000	480.00	0.00	0.00	614.50	18800.00	636.36	0.00	636.88	5.52	6.05	3369.19	7999.00
55800.000	720.00	0.00	0.00	616.20	18800.00	636.02	0.00	636.36	5.20	5.16	7203.98	8241.39
55800.000	720.00	0.00	0.00	616.20	18800.00	636.95	0.00	637.22	4.15	4.73	8037.18	9233.12
55800.000	720.00	0.00	0.00	616.20	18800.00	636.75	0.00	637.32	6.98	6.11	3354.12	7114.88

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
56800.000	1000.00	0.00	0.00	614.60	18800.00	636.55	0.00	636.69	3.67	3.74	12190.90	9813.57
56800.000	1000.00	0.00	0.00	614.60	18800.00	637.36	0.00	637.47	2.87	3.40	13481.01	11097.55
56800.000	1000.00	0.00	0.00	614.60	18800.00	637.58	0.00	638.03	7.34	5.48	3674.28	6939.36

57650.000	850.00	0.00	0.00	617.40	18800.00	636.77	0.00	636.81	1.18	2.20	15362.83	17330.01
57650.000	850.00	0.00	0.00	617.40	18800.00	637.53	0.00	637.57	0.92	2.00	16801.28	19601.78
57650.000	850.00	0.00	0.00	617.40	18800.00	638.19	0.00	638.24	1.04	2.18	12492.16	18465.42
58350.000	700.00	0.00	0.00	616.30	18800.00	636.84	0.00	636.92	2.42	3.07	10385.16	12091.68
58350.000	700.00	0.00	0.00	616.30	18800.00	637.58	0.00	637.65	1.89	2.79	11336.62	13671.24
58350.000	700.00	0.00	0.00	616.30	18800.00	638.26	0.00	638.32	1.53	2.58	12204.89	15185.84
58900.000	550.00	0.00	0.00	618.00	18800.00	636.94	0.00	637.07	2.82	3.44	10236.37	11200.59
58900.000	550.00	0.00	0.00	618.00	18800.00	637.66	0.00	637.77	2.22	3.15	11334.65	12609.23
58900.000	550.00	0.00	0.00	618.00	18800.00	638.32	0.00	638.41	1.81	2.91	12349.42	13985.18
60000.000	1100.00	0.00	0.00	618.90	18800.00	637.15	0.00	637.75	11.68	6.64	5039.05	5500.21
60000.000	1100.00	0.00	0.00	618.90	18800.00	637.80	0.00	638.32	9.79	6.25	5539.85	6009.65
60000.000	1100.00	0.00	0.00	618.90	18800.00	638.42	0.00	638.88	8.33	5.90	6015.88	6513.55
62250.000	2225.00	0.00	0.00	620.20	18800.00	638.62	0.00	638.85	2.66	4.00	5945.80	11536.41
62250.000	2225.00	0.00	0.00	620.20	18800.00	639.07	0.00	639.29	2.40	3.88	6177.00	12129.09
62250.000	2225.00	0.00	0.00	620.20	18800.00	639.53	0.00	639.73	2.17	3.76	6415.20	12748.91
63120.000	970.00	0.00	0.00	619.70	18800.00	638.83	0.00	639.21	4.17	5.02	4500.53	9210.85
63120.000	970.00	0.00	0.00	619.70	18800.00	639.26	0.00	639.62	3.80	4.87	4674.94	9646.99
63120.000	970.00	0.00	0.00	619.70	18800.00	639.70	0.00	640.04	3.47	4.74	4851.96	10094.64
65620.000	1900.00	0.00	0.00	620.70	18800.00	639.62	0.00	639.99	3.97	5.06	5030.22	9433.11
65620.000	1900.00	0.00	0.00	620.70	18800.00	639.99	0.00	640.33	3.66	4.93	5194.58	9822.08
65620.000	1900.00	0.00	0.00	620.70	18800.00	640.36	0.00	640.69	3.38	4.80	5362.45	10226.62
67420.000	2500.00	0.00	0.00	619.30	18800.00	640.56	0.00	640.84	2.94	4.39	5125.89	10973.64
67420.000	2500.00	0.00	0.00	619.30	18800.00	640.86	0.00	641.13	2.75	4.30	5248.00	11328.00
67420.000	2500.00	0.00	0.00	619.30	18800.00	641.17	0.00	641.43	2.58	4.22	5375.53	11703.29
68970.000	1550.00	0.00	0.00	622.70	18800.00	641.02	0.00	641.30	2.93	4.34	5308.29	10990.66
68970.000	1550.00	0.00	0.00	622.70	18800.00	641.29	0.00	641.55	2.75	4.25	5458.93	11332.11
68970.000	1550.00	0.00	0.00	622.70	18800.00	641.57	0.00	641.83	2.58	4.17	5618.29	11698.46
70300.000	1330.00	0.00	0.00	623.70	18800.00	641.45	0.00	641.66	2.50	3.85	5379.51	11889.61
70300.000	1330.00	0.00	0.00	623.70	18800.00	641.69	0.00	641.90	2.36	3.78	5480.32	12230.55
70300.000	1330.00	0.00	0.00	623.70	18800.00	641.95	0.00	642.15	2.23	3.71	5587.59	12596.90
71300.000	1000.00	0.00	0.00	622.70	18800.00	641.66	0.00	641.97	3.21	4.59	4569.22	10486.52
71300.000	1000.00	0.00	0.00	622.70	18800.00	641.90	0.00	642.19	3.06	4.52	4651.50	10752.06
71300.000	1000.00	0.00	0.00	622.70	18800.00	642.14	0.00	642.43	2.90	4.45	4739.51	11038.27
71900.000	600.00	0.00	0.00	624.60	18800.00	641.87	0.00	642.19	4.08	4.74	4768.38	9302.17
71900.000	600.00	0.00	0.00	624.60	18800.00	642.09	0.00	642.40	3.89	4.66	4854.07	9533.26
71900.000	600.00	0.00	0.00	624.60	18800.00	642.33	0.00	642.63	3.69	4.59	4945.82	9782.65

SECNO XLCH ELTRD ELLC ELMIN D CUSEL CRLWS EG OK*S VCH AREA .01K

73040.000	1140.00	0.00	0.00	625.60	18800.00	642.41	0.00	642.66	4.05	4.30	5084.64	9342.52
73040.000	1140.00	0.00	0.00	625.60	18800.00	642.60	0.00	642.85	3.82	4.21	5197.17	9617.37
73040.000	1140.00	0.00	0.00	625.60	18800.00	642.82	0.00	643.05	3.59	4.12	5319.18	9918.50
73590.000	550.00	0.00	0.00	624.10	18800.00	642.57	0.00	642.90	3.83	4.63	4261.72	9612.02
73590.000	550.00	0.00	0.00	624.10	18800.00	642.76	0.00	643.07	3.67	4.57	4320.95	9819.60
73590.000	550.00	0.00	0.00	624.10	18800.00	642.96	0.00	643.26	3.50	4.51	4385.08	10045.96
73640.000	50.00	652.00	650.50	625.40	18800.00	642.59	0.00	642.92	3.95	4.62	4071.00	9461.55
73640.000	50.00	652.00	650.50	625.40	18800.00	642.77	0.00	643.09	3.79	4.56	4124.67	9656.15
73640.000	50.00	652.00	650.50	625.40	18800.00	642.97	0.00	643.28	3.63	4.49	4182.72	9868.09
73660.000	20.00	652.00	650.50	625.40	18800.00	642.59	0.00	642.92	3.95	4.62	4071.50	9463.34
73660.000	20.00	652.00	650.50	625.40	18800.00	642.78	0.00	643.10	3.79	4.56	4125.16	9657.96
73660.000	20.00	652.00	650.50	625.40	18800.00	642.98	0.00	643.29	3.63	4.49	4183.22	9869.91
73720.000	60.00	0.00	0.00	625.30	18800.00	642.54	0.00	642.98	5.40	5.51	3820.96	8093.06
73720.000	60.00	0.00	0.00	625.30	18800.00	642.73	0.00	643.16	5.12	5.42	3893.74	8307.89
73720.000	60.00	0.00	0.00	625.30	18800.00	642.94	0.00	643.35	4.84	5.33	3972.47	8541.07
75140.000	1420.00	0.00	0.00	627.50	18800.00	643.31	0.00	643.50	2.51	4.06	8275.46	11859.82
75140.000	1420.00	0.00	0.00	627.50	18800.00	643.46	0.00	643.65	2.40	4.00	8437.46	12146.55
75140.000	1420.00	0.00	0.00	627.50	18800.00	643.63	0.00	643.81	2.28	3.92	8615.19	12464.05
75800.000	660.00	0.00	0.00	628.20	18800.00	643.35	0.00	643.80	5.22	5.42	3466.12	8225.96
75800.000	660.00	0.00	0.00	628.20	18800.00	643.50	0.00	643.94	5.04	5.36	3504.57	8372.61
75800.000	660.00	0.00	0.00	628.20	18800.00	643.66	0.00	644.09	4.85	5.30	3546.68	8534.29
76350.000	550.00	0.00	0.00	629.80	18800.00	643.76	0.00	644.09	4.73	4.64	4188.97	8645.69
76350.000	550.00	0.00	0.00	629.80	18800.00	643.90	0.00	644.22	4.56	4.59	4235.91	8801.20
76350.000	550.00	0.00	0.00	629.80	18800.00	644.05	0.00	644.36	4.39	4.54	4288.01	8974.95
76760.000	410.00	0.00	0.00	627.60	18800.00	643.90	0.00	644.29	4.07	5.01	4107.87	9314.14
76760.000	410.00	0.00	0.00	627.60	18800.00	644.03	0.00	644.41	3.94	4.96	4153.88	9466.61
76760.000	410.00	0.00	0.00	627.60	18800.00	644.18	0.00	644.54	3.81	4.91	4205.22	9637.61

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MUSKEGON RIVER EXISITIN

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFWS	TOPWID	XICH
48720.000	18800.00	634.39	0.00	0.00	0.00	442.86	0.00
48720.000	18800.00	634.39	0.00	0.00	0.00	442.86	0.00
48720.000	18800.00	634.39	0.00	0.00	0.00	442.86	0.00
50220.000	18800.00	634.84	0.00	0.45	0.00	728.63	1500.00
50220.000	18800.00	634.84	0.00	0.45	0.00	728.63	1500.00
50220.000	18800.00	634.84	0.00	0.45	0.00	728.63	1500.00

R	51945.000	18800.00	635.27	0.00	0.43	0.00	1173.92	1725.00
	51945.000	18800.00	635.27	0.00	0.43	0.00	1173.92	1725.00
	51945.000	18800.00	635.27	0.00	0.43	0.00	1173.92	1725.00
	53000.000	18800.00	635.73	0.00	0.46	0.00	1335.28	1055.00
	53000.000	18800.00	635.72	-0.01	0.45	-0.01	898.23	1055.00
	53000.000	18800.00	635.72	0.00	0.45	-0.01	898.23	1055.00
S	53700.000	18800.00	635.80	0.00	0.07	0.00	1436.76	700.00
	53700.000	18800.00	635.63	-0.18	-0.10	-0.18	236.58	700.00
	53700.000	18800.00	635.63	0.00	-0.10	-0.18	236.58	700.00
T	54600.000	18800.00	635.97	0.00	0.17	0.00	1494.73	900.00
	54600.000	18800.00	636.07	0.10	0.44	0.10	232.91	900.00
	54600.000	18800.00	636.07	0.00	0.44	0.10	232.91	900.00
	55080.000	18800.00	636.00	0.00	0.03	0.00	926.84	480.00
	55080.000	18800.00	636.36	0.35	0.28	0.35	223.40	480.00
	55080.000	18800.00	636.36	0.00	0.28	0.35	223.40	480.00
U	55800.000	18800.00	636.02	0.00	0.02	0.00	900.00	720.00
	55800.000	18800.00	636.95	0.93	0.59	0.93	900.00	720.00
	55800.000	18800.00	636.75	-0.20	0.39	0.73	219.00	720.00
V	56800.000	18800.00	636.55	0.00	0.53	0.00	1587.82	1000.00
	56800.000	18800.00	637.36	0.81	0.41	0.81	1588.81	1000.00
	56800.000	18800.00	637.58	0.21	0.83	1.03	242.07	1000.00
W	57650.000	18800.00	636.77	0.00	0.22	0.00	1869.28	850.00
	57650.000	18800.00	637.53	0.76	0.17	0.76	1871.59	850.00
	57650.000	18800.00	638.19	0.66	0.61	1.43	1183.58	850.00
	58350.000	18800.00	636.84	0.00	0.07	0.00	1270.58	700.00
	58350.000	18800.00	637.58	0.75	0.05	0.75	1276.58	700.00
	58350.000	18800.00	638.26	0.68	0.07	1.43	1282.03	700.00
	58900.000	18800.00	636.94	0.00	0.10	0.00	1511.34	550.00
	58900.000	18800.00	637.66	0.72	0.08	0.72	1519.00	550.00
	58900.000	18800.00	638.32	0.66	0.06	1.39	1526.03	550.00

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	SECNO	Q	CWSEL	DIFWS2	DIFWSX	DIFKWS	TOPWID	XLCH
	60000.000	18800.00	637.15	0.00	0.21	0.00	761.28	1100.00
Y	60000.000	18800.00	637.80	0.66	0.14	0.66	767.25	1100.00
	60000.000	18800.00	638.42	0.62	0.10	1.27	772.87	1100.00
	62250.000	18800.00	638.62	0.00	1.47	0.00	510.85	2225.00
Z	62250.000	18800.00	639.07	0.46	1.27	0.46	514.59	2225.00
	62250.000	18800.00	639.50	0.46	1.11	0.91	518.41	2225.00
	63120.000	18800.00	638.83	0.00	0.22	0.00	402.05	970.00

	63120.000	18800.00	639.26	0.43	0.19	0.43	406.05	970.00
	63120.000	18800.00	639.70	0.43	0.17	0.87	410.06	970.00
	65620.000	18800.00	639.62	0.00	0.79	0.00	450.00	1900.00
AA	65620.000	18800.00	639.99	0.36	0.72	0.36	450.00	1900.00
	65620.000	18800.00	640.36	0.37	0.66	0.74	450.00	1900.00
	67420.000	18800.00	640.56	0.00	0.94	0.00	410.00	2500.00
AB	67420.000	18800.00	640.86	0.30	0.87	0.30	410.00	2500.00
	67420.000	18800.00	641.17	0.31	0.81	0.61	410.00	2500.00
	68970.000	18800.00	641.02	0.00	0.46	0.00	557.40	1550.00
	68970.000	18800.00	641.29	0.27	0.43	0.27	559.31	1550.00
	68970.000	18800.00	641.57	0.28	0.41	0.55	561.33	1550.00
	70300.000	18800.00	641.45	0.00	0.43	0.00	410.62	1330.00
	70300.000	18800.00	641.69	0.24	0.40	0.24	411.90	1330.00
	70300.000	18800.00	641.95	0.26	0.38	0.51	413.26	1330.00
	71300.000	18800.00	641.66	0.00	0.22	0.00	354.05	1000.00
	71300.000	18800.00	641.90	0.23	0.20	0.23	355.46	1000.00
	71300.000	18800.00	642.14	0.25	0.19	0.48	356.97	1000.00
	71900.000	18800.00	641.87	0.00	0.21	0.00	385.41	600.00
	71900.000	18800.00	642.09	0.22	0.20	0.22	386.75	600.00
	71900.000	18800.00	642.33	0.24	0.19	0.46	388.18	600.00
	73040.000	18800.00	642.41	0.00	0.53	0.00	564.88	1140.00
	73040.000	18800.00	642.60	0.20	0.51	0.20	568.97	1140.00
	73040.000	18800.00	642.82	0.21	0.49	0.41	573.38	1140.00
	73590.000	18800.00	642.57	0.00	0.17	0.00	318.03	550.00
	73590.000	18800.00	642.76	0.19	0.15	0.19	318.76	550.00
	73590.000	18800.00	642.96	0.20	0.14	0.39	319.55	550.00
	73640.000	18800.00	642.59	0.00	0.01	0.00	290.00	50.00
	73640.000	18800.00	642.77	0.19	0.01	0.19	290.00	50.00
	73640.000	18800.00	642.97	0.20	0.01	0.39	290.00	50.00
	73660.000	18800.00	642.59	0.00	0.01	0.00	290.00	20.00
	73660.000	18800.00	642.78	0.19	0.01	0.19	290.00	20.00
	73660.000	18800.00	642.98	0.20	0.01	0.39	290.00	20.00

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
73720.000	18800.00	642.54	0.00	-0.05	0.00	383.37	60.00
73720.000	18800.00	642.73	0.19	-0.05	0.19	387.01	60.00
73720.000	18800.00	642.94	0.20	-0.04	0.39	390.91	60.00
75140.000	18800.00	643.31	0.00	0.76	0.00	1040.27	1420.00
75140.000	18800.00	643.46	0.16	0.73	0.16	1043.01	1420.00

75140.000	18800.00	643.63	0.17	0.70	0.33	1046.00	1420.00
75800.000	18800.00	643.35	0.00	0.04	0.00	259.00	660.00
75800.000	18800.00	643.50	0.15	0.03	0.15	259.00	660.00
75800.000	18800.00	643.66	0.16	0.03	0.31	259.00	660.00
76350.000	18800.00	643.76	0.00	0.41	0.00	348.22	550.00
76350.000	18800.00	643.90	0.14	0.40	0.14	348.49	550.00
76350.000	18800.00	644.05	0.15	0.39	0.28	348.79	550.00
76760.000	18800.00	643.90	0.00	0.14	0.00	355.93	410.00
76760.000	18800.00	644.03	0.13	0.14	0.13	356.63	410.00
76760.000	18800.00	644.18	0.14	0.13	0.27	357.41	410.00

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SUMMARY OF ERRORS AND SPECIAL NOTES

1


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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
**************************************************
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00BREAK00

1) COUNTY: Newaygo

2) STUDY NAME: Bridgeton, Ashland, Garfield and Brooks Twp

3) WATERCOURSE: Muskegon River

4) DOCUMENT TYPE: Summary

00BREAK00

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**********************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
**********************************************
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

MUSKEGON RIVER EXISITIN

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
	0.100	0.00	0.00	0.00	600.00	18800.00	619.00	0.00	619.29	2.51	4.68	6775.90	11854.95
A	0.100	0.00	0.00	0.00	600.00	18800.00	619.00	0.00	619.29	2.51	4.68	6775.90	11854.95
	1920.000	1920.00	0.00	0.00	600.94	18800.00	619.48	0.00	619.86	3.27	5.14	6139.24	10400.99
B	1920.000	1920.00	0.00	0.00	600.94	18800.00	619.48	0.00	619.86	3.27	5.14	6139.24	10400.99
	3050.000	1130.00	0.00	0.00	601.40	18800.00	619.87	0.00	620.18	2.37	4.48	4340.70	12224.73
	3050.000	1130.00	0.00	0.00	601.40	18800.00	619.87	0.00	620.18	2.37	4.48	4340.70	12224.73
	3051.000	1.00	0.00	0.00	601.40	18800.00	619.88	0.00	620.18	2.27	4.39	4343.18	12484.95
	3051.000	1.00	0.00	0.00	601.40	18800.00	619.88	0.00	620.18	2.27	4.39	4343.18	12484.95
C	3100.000	49.00	638.00	635.40	601.40	18800.00	619.89	0.00	620.18	2.26	4.39	4347.93	12506.88
	3100.000	49.00	638.00	635.40	601.40	18800.00	619.89	0.00	620.18	2.26	4.39	4347.93	12506.88
	3101.000	1.00	0.00	0.00	601.40	18800.00	619.88	0.00	620.19	2.38	4.50	4345.82	12181.28
	3101.000	1.00	0.00	0.00	601.40	18800.00	619.88	0.00	620.19	2.38	4.50	4345.82	12181.28
	4680.000	1579.00	0.00	0.00	603.50	18800.00	620.32	0.00	620.51	1.63	3.67	6145.33	14728.32
	4680.000	1579.00	0.00	0.00	603.50	18800.00	620.31	0.00	620.51	1.67	3.71	5891.01	14539.46
D	7200.000	2520.00	0.00	0.00	602.30	18800.00	620.72	0.00	621.06	2.57	4.81	6568.53	11717.94
	7200.000	2520.00	0.00	0.00	602.30	18800.00	620.73	0.00	621.08	2.63	4.86	6255.80	11591.95
	8850.000	1650.00	0.00	0.00	604.20	18800.00	621.27	0.00	621.47	2.32	3.90	8635.26	12331.86
	8850.000	1650.00	0.00	0.00	604.20	18800.00	621.30	0.00	621.50	2.39	3.94	8473.01	12160.36
E	10300.000	1450.00	0.00	0.00	603.30	18800.00	621.70	0.00	621.79	2.55	2.87	11073.44	11776.72
	10300.000	1450.00	0.00	0.00	603.30	18800.00	621.74	0.00	621.83	2.59	2.90	10807.60	11675.48
	11800.000	1500.00	0.00	0.00	604.40	18800.00	622.03	0.00	622.26	3.49	4.17	9481.20	10067.54
	11800.000	1500.00	0.00	0.00	604.40	18800.00	622.07	0.00	622.30	3.50	4.18	9207.03	10044.89

SECNO XLCH ELTRD ELLC ELMIN Q CWSEL CRIWS EG 10K*S VCH AREA .01K

	12600.000	800.00	0.00	0.00	604.40	18800.00	622.31	0.00	622.53	3.26	4.07	9763.07	10408.97
	12600.000	800.00	0.00	0.00	604.40	18800.00	622.35	0.00	622.57	3.31	4.11	9273.87	10326.52
F	14100.000	1500.00	0.00	0.00	605.10	18800.00	622.78	0.00	623.05	3.71	4.27	6577.43	9766.71
	14100.000	1500.00	0.00	0.00	605.10	18800.00	622.83	0.00	623.10	3.76	4.31	6122.43	9698.40
	16700.000	2600.00	0.00	0.00	604.60	18800.00	623.48	0.00	623.75	2.39	4.50	10011.25	12169.84
	16700.000	2600.00	0.00	0.00	604.60	18800.00	623.54	0.00	623.81	2.39	4.51	9617.64	12150.54
G	18990.000	2190.00	0.00	0.00	606.80	18800.00	623.98	0.00	624.16	1.57	3.49	6241.75	15009.32
	18990.000	2190.00	0.00	0.00	606.80	18800.00	624.04	0.00	624.22	1.58	3.51	6013.14	14949.09
	19870.000	1000.00	0.00	0.00	605.60	18800.00	624.10	0.00	624.41	3.25	5.06	5342.55	10421.45
	19870.000	1000.00	0.00	0.00	605.60	18800.00	624.16	0.00	624.48	3.30	5.11	5012.64	10351.32
H	21370.000	1500.00	0.00	0.00	606.20	18800.00	624.61	0.00	624.81	2.25	4.26	7889.69	12524.04
	21370.000	1500.00	0.00	0.00	606.20	18800.00	624.68	0.00	624.89	2.27	4.29	7636.49	12477.12
	24985.000	3615.00	0.00	0.00	607.50	18800.00	625.60	0.00	625.80	3.34	4.08	8924.60	10282.86
I	24985.000	3615.00	0.00	0.00	607.50	18800.00	625.68	0.00	625.88	3.35	4.10	8708.06	10267.97
J	28235.000	3200.00	0.00	0.00	609.30	18800.00	626.69	0.00	626.96	4.02	4.30	6449.37	9371.26
	28235.000	3200.00	0.00	0.00	609.30	18800.00	626.78	0.00	627.05	4.04	4.32	6216.92	9352.55
	29860.000	1625.00	0.00	0.00	609.30	18800.00	627.31	0.00	627.67	4.34	4.91	5171.17	9025.98
	29860.000	1625.00	0.00	0.00	609.30	18800.00	627.39	0.00	627.75	4.30	4.90	5025.08	9066.71
K	31660.000	1800.00	0.00	0.00	610.20	18800.00	628.09	0.00	628.34	3.13	4.11	6148.04	10627.57
	31660.000	1800.00	0.00	0.00	610.20	18800.00	628.17	0.00	628.41	3.10	4.10	6073.23	10685.97
L	35425.000	3760.00	0.00	0.00	609.80	18800.00	629.51	0.00	629.72	4.36	4.00	8224.42	9000.19
	35425.000	3760.00	0.00	0.00	609.80	18800.00	629.58	0.00	629.78	4.30	3.98	8272.36	9065.04
M	37670.000	2150.00	0.00	0.00	608.00	18800.00	630.44	0.00	630.66	4.52	4.45	10743.92	8842.11
	37670.000	2150.00	0.00	0.00	608.00	18800.00	630.50	0.00	630.73	4.65	4.52	10297.57	8720.64
	38970.000	1300.00	0.00	0.00	612.90	18800.00	630.88	0.00	631.01	1.91	3.19	8971.85	13592.74
	38970.000	1300.00	0.00	0.00	612.90	18800.00	630.96	0.00	631.09	1.97	3.19	8865.13	13388.05
N	42170.000	3200.00	0.00	0.00	612.10	18800.00	631.35	0.00	631.84	2.80	5.98	5264.95	11237.45
	42170.000	3200.00	0.00	0.00	612.10	18800.00	631.44	0.00	631.93	2.74	5.94	5311.11	11350.95
	43770.000	1600.00	0.00	0.00	613.10	18800.00	631.95	0.00	632.35	3.48	5.47	5376.04	10156.18
	43770.000	1600.00	0.00	0.00	613.10	18800.00	632.03	0.00	632.44	3.44	5.50	5204.02	10131.18
O	44820.000	1050.00	0.00	0.00	612.70	18800.00	632.56	0.00	632.74	3.50	3.54	7555.88	10055.36
	44820.000	1050.00	0.00	0.00	612.70	18800.00	632.64	0.00	632.82	3.51	3.56	7155.24	10030.80
	45470.000	650.00	0.00	0.00	613.40	18800.00	632.74	0.00	633.05	5.19	4.63	5689.23	8256.23
	45470.000	650.00	0.00	0.00	613.40	18800.00	632.82	0.00	633.14	5.21	4.65	5823.82	8237.05

	SECNO	XLCH	ELTED	ELLC	ELMIN	Q	CNSEI	CRIWS	EG	10K*S	VCH	AREA	.01K
P	46870.000	1300.00	0.00	0.00	612.60	18800.00	633.42	0.00	633.78	5.79	5.12	5211.24	7809.81
	46870.000	1300.00	0.00	0.00	612.60	18800.00	633.50	0.00	633.87	5.82	5.14	5050.47	7791.88
Q	48720.000	1850.00	0.00	0.00	616.40	18800.00	634.39	0.00	634.56	3.15	3.59	6293.87	10589.61
	48720.000	1850.00	0.00	0.00	616.40	18800.00	634.47	0.00	634.65	3.15	3.60	6140.00	10595.73
	50220.000	1500.00	0.00	0.00	613.20	18800.00	634.83	0.00	634.95	2.21	3.15	7424.36	12658.99
	50220.000	1500.00	0.00	0.00	613.20	18800.00	634.92	0.00	635.04	2.21	3.16	7298.44	12641.03
R	51945.000	1725.00	0.00	0.00	614.90	18800.00	635.27	0.00	635.57	6.64	4.99	9111.86	7298.00
	51945.000	1725.00	0.00	0.00	614.90	18800.00	635.35	0.00	635.66	6.66	5.02	8824.85	7287.34
	53000.000	1055.00	0.00	0.00	617.10	18800.00	635.73	0.00	635.83	1.26	2.93	13701.50	16744.77
	53000.000	1055.00	0.00	0.00	617.10	18800.00	635.82	0.00	635.93	1.24	2.91	13705.87	16895.49
S	53700.000	700.00	0.00	0.00	616.60	18800.00	635.80	0.00	635.93	1.60	3.68	15977.86	14868.82
	53700.000	700.00	0.00	0.00	616.60	18800.00	635.89	0.00	636.02	1.61	3.62	16092.66	14821.00
T	54600.000	900.00	0.00	0.00	614.50	18800.00	635.96	0.00	636.06	1.86	3.35	14559.79	13782.02
	54600.000	900.00	0.00	0.00	614.50	18800.00	636.05	0.00	636.14	1.80	3.30	14819.17	14011.32
	55080.000	480.00	0.00	0.00	614.50	18800.00	636.00	0.00	636.14	1.82	3.43	6550.91	13921.70
	55080.000	480.00	0.00	0.00	614.50	18800.00	636.09	0.00	636.22	1.75	3.38	6633.56	14194.73
U	55800.000	720.00	0.00	0.00	616.20	18800.00	636.02	0.00	636.35	5.21	5.17	7201.35	8238.34
	55800.000	720.00	0.00	0.00	616.20	18800.00	636.11	0.00	636.43	5.10	5.12	7278.69	8328.08
V	56800.000	1000.00	0.00	0.00	614.60	18800.00	636.55	0.00	636.69	3.67	3.74	12186.64	9809.46
	56800.000	1000.00	0.00	0.00	614.60	18800.00	636.62	0.00	636.76	3.59	3.71	12303.32	9922.41
W	57650.000	850.00	0.00	0.00	617.40	18800.00	636.76	0.00	636.81	1.18	2.20	15357.81	17322.30
	57650.000	850.00	0.00	0.00	617.40	18800.00	636.83	0.00	636.88	1.15	2.18	15487.43	17521.81
X	58350.000	700.00	0.00	0.00	616.30	18800.00	636.83	0.00	636.92	2.42	3.07	10382.68	12087.68
	58350.000	700.00	0.00	0.00	616.30	18800.00	636.90	0.00	636.99	2.45	3.09	10150.82	12022.90
	58900.000	550.00	0.00	0.00	618.00	18800.00	636.93	0.00	637.07	2.82	3.44	10233.05	11196.46
	58900.000	550.00	0.00	0.00	618.00	18800.00	637.00	0.00	637.14	2.85	3.47	9889.66	11133.49
Y	60000.000	1100.00	0.00	0.00	618.90	18800.00	637.14	0.00	637.75	11.69	6.64	5037.38	5498.54
	60000.000	1100.00	0.00	0.00	618.90	18800.00	637.21	0.00	637.83	11.78	6.69	4844.27	5477.26
Z	62250.000	2225.00	0.00	0.00	620.20	18800.00	638.62	0.00	638.85	2.66	4.00	5945.42	11535.47
	62250.000	2225.00	0.00	0.00	620.20	18800.00	638.70	0.00	638.94	2.67	4.02	5683.08	11513.98
	63120.000	970.00	0.00	0.00	619.70	18800.00	638.83	0.00	639.21	4.17	5.02	4499.94	9209.38
	63120.000	970.00	0.00	0.00	619.70	18800.00	638.92	0.00	639.31	4.38	5.04	4211.04	8984.79
AA	65620.000	1900.00	0.00	0.00	620.70	18800.00	639.62	0.00	639.99	3.97	5.06	5029.68	9431.82
1	65620.000	1900.00	0.00	0.00	620.70	18800.00	639.73	0.00	640.09	3.87	5.02	5080.10	9550.41

	SECNO	XLCH	ELTRD	XLLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
AB	67420.000	2500.00	0.00	0.00	619.30	18800.00	640.56	0.00	640.84	2.94	4.39	5125.79	10973.36
	67420.000	2500.00	0.00	0.00	619.30	18800.00	640.65	0.00	640.93	2.88	4.36	5162.82	11080.30
	68970.000	1550.00	0.00	0.00	622.70	18800.00	641.02	0.00	641.30	2.93	4.34	5308.16	10990.36
	68970.000	1550.00	0.00	0.00	622.70	18800.00	641.10	0.00	641.38	2.94	4.36	4988.78	10957.68
AC	70300.000	1330.00	0.00	0.00	623.70	18800.00	641.45	0.00	641.66	2.50	3.85	5379.51	11889.61
	70300.000	1330.00	0.00	0.00	623.70	18800.00	641.53	0.00	641.75	2.49	3.85	5343.54	11912.50
AD	71300.000	1000.00	0.00	0.00	622.70	18800.00	641.66	0.00	641.97	3.21	4.59	4568.96	10485.69
	71300.000	1000.00	0.00	0.00	622.70	18800.00	641.74	0.00	642.06	3.22	4.61	4411.95	10472.55
AE	71900.000	600.00	0.00	0.00	624.60	18800.00	641.87	0.00	642.19	4.08	4.74	4768.48	9302.43
	71900.000	600.00	0.00	0.00	624.60	18800.00	641.95	0.00	642.28	4.10	4.76	4531.54	9280.24
AF	73040.000	1140.00	0.00	0.00	625.60	18800.00	642.41	0.00	642.66	4.05	4.30	5084.50	9342.19
	73040.000	1140.00	0.00	0.00	625.60	18800.00	642.49	0.00	642.75	4.07	4.32	4861.55	9318.04
AG	73590.000	550.00	0.00	0.00	624.10	18800.00	642.57	0.00	642.89	3.83	4.63	4261.72	9612.02
	73590.000	550.00	0.00	0.00	624.10	18800.00	642.66	0.00	642.98	3.81	4.64	4206.31	9637.50
	73640.000	50.00	652.00	650.50	625.40	18800.00	642.59	0.00	642.92	3.95	4.62	4070.93	9461.29
	73640.000	50.00	652.00	650.50	625.40	18800.00	642.68	0.00	643.00	3.87	4.59	4095.71	9550.99
	73660.000	20.00	652.00	650.50	625.40	18800.00	642.59	0.00	642.92	3.95	4.62	4071.43	9463.08
	73660.000	20.00	652.00	650.50	625.40	18800.00	642.68	0.00	643.01	3.87	4.59	4097.62	9557.91
AH	73720.000	60.00	0.00	0.00	625.30	18800.00	642.54	0.00	642.98	5.40	5.51	3820.87	8092.77
	73720.000	60.00	0.00	0.00	625.30	18800.00	642.62	0.00	643.08	5.43	5.55	3674.71	8069.05
	75140.000	1420.00	0.00	0.00	627.50	18800.00	643.31	0.00	643.50	2.51	4.06	8275.46	11859.82
	75140.000	1420.00	0.00	0.00	627.50	18800.00	643.40	0.00	643.59	2.52	4.08	7937.73	11846.73
AI	75800.000	660.00	0.00	0.00	628.20	18800.00	643.35	0.00	643.80	5.22	5.42	3466.12	8225.96
	75300.000	660.00	0.00	0.00	628.20	18800.00	643.45	0.00	643.90	5.46	5.38	3492.80	8041.99
AJ	76350.000	550.00	0.00	0.00	629.80	18800.00	643.76	0.00	644.09	4.73	4.64	4188.97	8645.69
	76350.000	550.00	0.00	0.00	629.80	18800.00	643.86	0.00	644.19	4.73	4.66	4102.32	8641.82
	76760.000	410.00	0.00	0.00	627.60	18800.00	643.90	0.00	644.29	4.07	5.01	4107.87	9314.14
	76760.000	410.00	0.00	0.00	627.60	18800.00	644.00	0.00	644.39	4.08	5.04	3906.81	9306.42

MUSKEGON RIVER EXISITIN

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
0.100	18800.00	619.00	0.00	0.00	0.00	803.38	0.00
0.100	18800.00	619.00	0.00	0.00	0.00	803.38	0.00
1920.000	18800.00	619.48	0.00	0.48	0.00	741.00	1920.00
1920.000	18800.00	619.48	0.00	0.48	0.00	741.00	1920.00
3050.000	18800.00	619.87	0.00	0.38	0.00	308.38	1130.00
3050.000	18800.00	619.87	0.00	0.38	0.00	308.38	1130.00
3051.000	18800.00	619.88	0.00	0.02	0.00	308.41	1.00
3051.000	18800.00	619.88	0.00	0.02	0.00	308.41	1.00
3100.000	18800.00	619.89	0.00	0.01	0.00	308.45	49.00
3100.000	18800.00	619.89	0.00	0.01	0.00	308.45	49.00
3101.000	18800.00	619.88	0.00	-0.01	0.00	308.43	1.00
3101.000	18800.00	619.88	0.00	-0.01	0.00	308.43	1.00
4680.000	18800.00	620.32	0.00	0.44	0.00	608.16	1579.00
4680.000	18800.00	620.31	0.00	0.44	0.00	543.28	1579.00
7200.000	18800.00	620.72	0.00	0.41	0.00	799.20	2520.00
7200.000	18800.00	620.73	0.01	0.42	0.01	734.68	2520.00
8850.000	18800.00	621.27	0.00	0.55	0.00	878.38	1650.00
8850.000	18800.00	621.30	0.02	0.57	0.02	834.08	1650.00
10300.000	18800.00	621.70	0.00	0.43	0.00	1177.94	1450.00
10300.000	18800.00	621.74	0.03	0.44	0.03	1092.10	1450.00
11800.000	18800.00	622.03	0.00	0.33	0.00	1011.70	1500.00
11800.000	18800.00	622.07	0.04	0.33	0.04	916.25	1500.00
12600.000	18800.00	622.31	0.00	0.28	0.00	1017.37	800.00
12600.000	18800.00	622.35	0.04	0.28	0.04	885.09	800.00
14100.000	18800.00	622.78	0.00	0.47	0.00	718.43	1500.00
14100.000	18800.00	622.83	0.04	0.48	0.04	586.70	1500.00
16700.000	18800.00	623.48	0.00	0.70	0.00	1119.85	2600.00
16700.000	18800.00	623.54	0.06	0.72	0.06	1025.67	2600.00
18990.000	18800.00	623.98	0.00	0.50	0.00	543.23	2190.00
18990.000	18800.00	624.04	0.06	0.50	0.06	473.63	2190.00
19870.000	18800.00	624.10	0.00	0.12	0.00	697.03	1000.00
19870.000	18800.00	624.16	0.06	0.12	0.06	623.47	1000.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	ICPWID	XICH
21370.000	18800.00	624.61	0.00	0.51	0.00	770.27	1500.00
21370.000	18800.00	624.68	0.07	0.52	0.07	703.81	1500.00
24985.000	18800.00	625.60	0.00	1.00	0.00	894.51	3615.00
24985.000	18800.00	625.68	0.08	1.00	0.08	823.44	3615.00
28235.000	18800.00	626.69	0.00	1.09	0.00	668.09	3200.00
28235.000	18800.00	626.78	0.08	1.10	0.08	610.42	3200.00
29860.000	18800.00	627.31	0.00	0.61	0.00	497.52	1625.00
29860.000	18800.00	627.39	0.08	0.61	0.08	445.00	1625.00
31660.000	18800.00	628.09	0.00	0.78	0.00	596.83	1800.00
31660.000	18800.00	628.17	0.08	0.78	0.08	550.00	1800.00
35425.000	18800.00	629.51	0.00	1.43	0.00	770.00	3760.00
35425.000	18800.00	629.53	0.06	1.41	0.06	770.00	3760.00
37670.000	18800.00	630.44	0.00	0.93	0.00	1014.28	2150.00
37670.000	18800.00	630.50	0.06	0.92	0.06	955.00	2150.00
38970.000	18800.00	630.88	0.00	0.44	0.00	740.00	1300.00
38970.000	18800.00	630.95	0.08	0.46	0.08	715.00	1300.00
42170.000	18800.00	631.35	0.00	0.47	0.00	495.00	3200.00
42170.000	18800.00	631.44	0.09	0.48	0.09	495.00	3200.00
43770.000	18800.00	631.95	0.00	0.60	0.00	460.37	1600.00
43770.000	18800.00	632.03	0.07	0.58	0.07	409.10	1600.00
44820.000	18800.00	632.56	0.00	0.61	0.00	689.34	1050.00
44820.000	18800.00	632.64	0.08	0.61	0.08	593.86	1050.00
45470.000	18800.00	632.74	0.00	0.18	0.00	556.36	650.00
45470.000	18800.00	632.82	0.08	0.18	0.08	443.41	650.00
46870.000	18800.00	633.42	0.00	0.68	0.00	473.83	1300.00
46870.000	18800.00	633.50	0.08	0.68	0.08	425.49	1300.00
48720.000	18800.00	634.39	0.00	0.97	0.00	442.89	1850.00
48720.000	18800.00	634.47	0.09	0.98	0.09	396.67	1850.00
50220.000	18800.00	634.83	0.00	0.45	0.00	728.66	1500.00
50220.000	18800.00	634.92	0.09	0.45	0.09	682.95	1500.00
51945.000	18800.00	635.27	0.00	0.43	0.00	1173.78	1725.00
51945.000	18800.00	635.35	0.09	0.43	0.09	1076.15	1725.00
53000.000	18800.00	635.73	0.00	0.46	0.00	1335.26	1055.00
53000.000	18800.00	635.82	0.09	0.47	0.09	1300.00	1055.00

SECNO	Q	CWSEL	DIFWSP	DIFWSK	DIFKWS	TOPWID	XICH
53700.000	18800.00	635.80	0.00	0.07	0.00	1436.75	700.00
53700.000	18800.00	635.89	0.10	0.07	0.10	1430.00	700.00
54600.000	18800.00	635.96	0.00	0.17	0.00	1464.72	900.00
54600.000	18800.00	636.05	0.09	0.16	0.09	1474.88	900.00
55080.000	18800.00	636.00	0.00	0.03	0.00	926.79	480.00
55080.000	18800.00	636.09	0.09	0.03	0.09	928.24	480.00
55800.000	18800.00	636.02	0.00	0.02	0.00	900.00	720.00
55800.000	18800.00	636.11	0.09	0.02	0.09	900.00	720.00
56800.000	18800.00	636.55	0.00	0.53	0.00	1587.82	1000.00
56800.000	18800.00	636.62	0.07	0.52	0.07	1587.91	1000.00
57650.000	18800.00	636.76	0.00	0.22	0.00	1869.28	850.00
57650.000	18800.00	636.83	0.07	0.21	0.07	1869.48	850.00
58350.000	18800.00	636.83	0.00	0.07	0.00	1270.56	700.00
58350.000	18800.00	636.90	0.07	0.07	0.07	1195.56	700.00
58900.000	18800.00	636.93	0.00	0.10	0.00	1511.32	550.00
58900.000	18800.00	637.00	0.07	0.10	0.07	1400.82	550.00
60000.000	18800.00	637.14	0.00	0.21	0.00	761.26	1100.00
60000.000	18800.00	637.21	0.06	0.21	0.06	687.35	1100.00
62250.000	18800.00	638.62	0.00	1.47	0.00	510.85	2225.00
62250.000	18800.00	638.70	0.08	1.49	0.08	426.80	2225.00
63120.000	18800.00	638.83	0.00	0.22	0.00	402.04	970.00
63120.000	18800.00	638.92	0.09	0.22	0.09	324.52	970.00
65620.000	18800.00	639.62	0.00	0.79	0.00	450.00	1900.00
65620.000	18800.00	639.73	0.11	0.81	0.11	450.00	1900.00
67420.000	18800.00	640.56	0.00	0.94	0.00	410.00	2500.00
67420.000	18800.00	640.65	0.09	0.92	0.09	410.00	2500.00
68970.000	18800.00	641.02	0.00	0.46	0.00	557.40	1550.00
68970.000	18800.00	641.10	0.08	0.45	0.08	411.63	1550.00
70300.000	18800.00	641.45	0.00	0.43	0.00	410.62	1330.00
70300.000	18800.00	641.53	0.08	0.44	0.08	392.58	1330.00
71300.000	18800.00	641.66	0.00	0.22	0.00	354.04	1000.00
71300.000	18800.00	641.74	0.08	0.21	0.08	302.75	1000.00
71900.000	18800.00	641.87	0.00	0.21	0.00	385.41	600.00
71900.000	18800.00	641.95	0.08	0.21	0.08	318.64	600.00

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
73040.000	18800.00	642.41	0.00	0.53	0.00	564.88	1140.00
73040.000	18800.00	642.49	0.08	0.54	0.08	459.85	1140.00
73590.000	18800.00	642.57	0.00	0.17	0.00	318.03	550.00
73590.000	18800.00	642.66	0.09	0.17	0.09	293.08	550.00
73640.000	18800.00	642.59	0.00	0.01	0.00	290.00	50.00
73640.000	18800.00	642.68	0.09	0.02	0.09	290.00	50.00
73660.000	18800.00	642.59	0.00	0.01	0.00	290.00	20.00
73660.000	18800.00	642.68	0.09	0.01	0.09	290.00	20.00
73720.000	18800.00	642.54	0.00	-0.05	0.00	383.36	60.00
73720.000	18800.00	642.62	0.08	-0.06	0.08	310.69	60.00
75140.000	18800.00	643.31	0.00	0.76	0.00	1040.27	1420.00
75140.000	18800.00	643.40	0.09	0.77	0.09	902.55	1420.00
75800.000	18800.00	643.35	0.00	0.04	0.00	259.00	660.00
75800.000	18800.00	643.45	0.10	0.05	0.10	259.00	660.00
76350.000	18800.00	643.76	0.00	0.41	0.00	348.22	550.00
76350.000	18800.00	643.86	0.09	0.41	0.09	325.14	550.00
76760.000	18800.00	643.90	0.00	0.14	0.00	355.93	410.00
76760.000	18800.00	644.00	0.09	0.14	0.09	301.98	410.00

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SUMMARY OF ERRORS AND SPECIAL NOTES

1

FLOODWAY DATA, MUSKEGON RIVER EXISITIN
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE

A	0.100	803.	6776.	2.8	619.0	619.0	0.0
B	1920.000	741.	6139.	3.1	619.5	619.5	0.0
	3050.000	308.	4341.	4.3	619.9	619.9	0.0
	3051.000	308.	4343.	4.3	619.9	619.9	0.0
C	3100.000	308.	4348.	4.3	619.9	619.9	0.0
	3101.000	308.	4346.	4.3	619.9	619.9	0.0
	4680.000	543.	5891.	3.2	620.3	620.3	0.0
D	7200.000	735.	6256.	3.0	620.7	620.7	0.0
	8850.000	834.	8473.	2.2	621.3	621.3	0.0
E	10300.000	1092.	10808.	1.7	621.7	621.7	0.0
	11800.000	916.	9207.	2.0	622.0	622.0	0.0
	12600.000	885.	9274.	2.0	622.3	622.3	0.0
F	14100.000	587.	6122.	3.1	622.8	622.8	0.0
	16700.000	1026.	9518.	2.0	623.6	623.5	0.1
G	18990.000	474.	6013.	3.1	624.1	624.0	0.1
	19870.000	656.	5013.	3.8	624.2	624.1	0.1
H	21370.000	704.	7636.	2.5	624.7	624.6	0.1
I	24985.000	823.	8708.	2.2	625.7	625.5	0.1
J	28235.000	610.	6217.	3.0	626.8	626.7	0.1
	29860.000	445.	5025.	3.7	627.4	627.3	0.1
K	31660.000	550.	6073.	3.1	628.2	628.1	0.1
L	35425.000	770.	8272.	2.3	629.6	629.5	0.1
M	37670.000	955.	10298.	1.8	630.5	630.4	0.1
	38970.000	715.	8865.	2.1	631.0	630.9	0.1
N	42170.000	495.	5311.	3.5	631.4	631.3	0.1
	43770.000	409.	5209.	3.6	632.1	632.0	0.1
O	44820.000	594.	7155.	2.6	632.7	632.6	0.1
	45470.000	443.	5324.	3.5	632.8	632.7	0.1
P	46870.000	425.	5050.	3.7	633.5	633.4	0.1
Q	48720.000	397.	6140.	3.1	634.5	634.4	0.1
	50220.000	683.	7298.	2.6	634.9	634.8	0.1
R	51945.000	1076.	8825.	2.1	635.4	635.3	0.1
	53000.000	1300.	13706.	1.4	635.8	635.7	0.1
S	53700.000	1430.	16093.	1.2	635.9	635.8	0.1
T	54600.000	1475.	14819.	1.3	636.1	636.0	0.1
	55080.000	928.	6634.	2.8	636.1	636.0	0.1
U	55800.000	900.	7279.	2.6	636.1	636.0	0.1
V	56800.000	1588.	12303.	1.5	636.6	636.5	0.1
W	57650.000	1069.	15487.	1.2	636.9	636.8	0.1
X	58350.000	1196.	10151.	1.9	636.9	636.8	0.1
	58900.000	1401.	9890.	1.9	637.0	636.9	0.1
Y	60000.000	687.	4944.	3.9	637.2	637.1	0.1

1

FLOODWAY DATA, MUSKEGON RIVER EXISTING
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE

Z	62250.000	427.	5603.	3.3	638.7	638.6	0.1
	63120.000	325.	4211.	4.5	638.9	638.8	0.1
AA	65620.000	450.	5080.	3.7	639.7	639.6	0.1
AB	67420.000	410.	5163.	3.6	640.7	640.6	0.1
	68970.000	412.	4989.	3.8	641.1	641.0	0.1
AC	70300.000	393.	5344.	3.5	641.5	641.4	0.1
AD	71300.000	303.	4412.	4.3	641.8	641.7	0.1
AE	71900.000	319.	4532.	4.1	642.0	641.9	0.1
AF	73040.000	460.	4862.	3.9	642.5	642.4	0.1
AG	73590.000	293.	4206.	4.5	642.7	642.6	0.1
	73640.000	296.	4096.	4.6	642.7	642.6	0.1
	73660.000	296.	4098.	4.6	642.7	642.6	0.1
AH	73720.000	311.	3675.	5.1	642.6	642.5	0.1
	75140.000	903.	7938.	2.4	643.4	643.3	0.1
AI	75800.000	259.	3493.	5.4	643.4	643.3	0.1
AJ	76350.000	325.	4102.	4.6	643.9	643.8	0.1
	76760.000	302.	3907.	4.8	644.0	643.9	0.1

1


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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CODE -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
**************************************************
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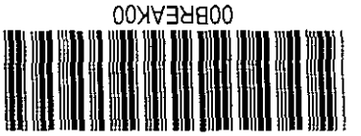
1) COUNTY: Newaygo

2) STUDY NAME: Bridgeton, Ashland, Garfield, Brooks Twp.

3) WATERCOURSE: Muskegan River

4) DOCUMENT TYPE: Summary



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**********************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
**********************************************
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

MUSKEGON RIVER EXISTING

SUMMARY PRINTOUT TABLE 150

SECNO	WLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
0.100	0.00	0.00	0.00	600.00	18800.00	620.14	0.00	620.37	1.87	4.22	7692.37	13763.43
0.100	0.00	0.00	0.00	600.00	18800.00	620.14	0.00	620.37	1.86	4.22	7695.33	13769.82
1920.000	1920.00	0.00	0.00	600.94	18800.00	620.49	0.00	620.80	2.56	4.74	6887.66	11744.04
1920.000	1920.00	0.00	0.00	600.94	18800.00	620.49	0.00	620.80	2.56	4.74	6890.19	11748.72
3050.000	1130.00	0.00	0.00	601.40	18800.00	620.78	0.00	621.06	1.94	4.22	4624.97	13501.94
3050.000	1130.00	0.00	0.00	601.40	18800.00	620.79	0.00	621.06	1.94	4.22	4625.88	13506.09
3051.000	1.00	0.00	0.00	601.40	18800.00	620.80	0.00	621.06	1.85	4.13	4627.33	13821.23
3051.000	1.00	0.00	0.00	601.40	18800.00	620.80	0.00	621.06	1.85	4.13	4628.16	13825.21
3100.000	49.00	638.00	635.40	601.40	18800.00	620.80	0.00	621.06	1.84	4.12	4631.65	13842.04
3100.000	49.00	638.00	635.40	601.40	18800.00	620.81	0.00	621.07	1.84	4.12	4632.49	13846.04
3101.000	1.00	0.00	0.00	601.40	18800.00	620.79	0.00	621.07	1.96	4.24	4629.53	13441.09
3101.000	1.00	0.00	0.00	601.40	18800.00	620.79	0.00	621.07	1.96	4.24	4630.44	13445.23
4680.000	1579.00	0.00	0.00	603.50	18800.00	621.17	0.00	621.33	1.31	3.42	6663.54	16405.66
4680.000	1579.00	0.00	0.00	603.50	18800.00	621.17	0.00	621.34	1.34	3.45	6428.16	16217.37
7200.000	2520.00	0.00	0.00	602.30	18800.00	621.49	0.00	621.79	2.16	4.54	7181.98	12785.07
7200.000	2520.00	0.00	0.00	602.30	18800.00	621.50	0.00	621.80	2.21	4.59	6845.47	12655.79
8850.000	1650.00	0.00	0.00	604.20	18800.00	621.96	0.00	622.14	1.96	3.68	9238.62	13432.97
8850.000	1650.00	0.00	0.00	604.20	18800.00	621.98	0.00	622.16	2.02	3.71	9082.09	13232.27
10300.000	1450.00	0.00	0.00	603.30	18800.00	622.33	0.00	622.41	2.17	2.70	11810.31	12770.52
10300.000	1450.00	0.00	0.00	603.30	18800.00	622.36	0.00	622.44	2.20	2.73	11548.86	12662.13
11800.000	1500.00	0.00	0.00	604.40	18800.00	622.60	0.00	622.81	3.04	3.98	10063.25	10776.33
11800.000	1500.00	0.00	0.00	604.40	18800.00	622.64	0.00	622.85	3.09	4.01	9592.86	10696.51

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	ABEA	.01K
12600.000	800.00	0.00	0.00	604.40	18800.00	622.85	0.00	623.04	2.88	3.91	10310.95	11082.31
12600.000	800.00	0.00	0.00	604.40	18800.00	622.89	0.00	623.09	2.89	3.92	10043.21	11058.70
14100.000	1500.00	0.00	0.00	605.10	18800.00	623.26	0.00	623.50	3.32	4.12	6920.44	10324.83
14100.000	1500.00	0.00	0.00	605.10	18800.00	623.30	0.00	623.55	3.36	4.16	6493.16	10254.84
16700.000	2600.00	0.00	0.00	604.60	18800.00	623.89	0.00	624.13	2.16	4.33	10469.11	12779.47
16700.000	2600.00	0.00	0.00	604.60	18800.00	623.97	0.00	624.21	2.30	4.33	9993.22	12384.57
19870.000	3170.00	0.00	0.00	605.60	18800.00	624.59	0.00	624.87	2.79	4.79	5689.06	11246.35
19870.000	3170.00	0.00	0.00	605.60	18800.00	624.69	0.00	624.97	2.76	4.77	5649.68	11326.43
21370.000	1500.00	0.00	0.00	606.20	18800.00	625.03	0.00	625.22	2.02	4.10	8216.97	13227.54
21370.000	1500.00	0.00	0.00	606.20	18800.00	625.12	0.00	625.32	2.02	4.11	7980.84	13236.04
24985.000	3615.00	0.00	0.00	607.50	18800.00	625.93	0.00	626.11	3.07	3.96	9213.07	10724.53
24985.000	3615.00	0.00	0.00	607.50	18800.00	626.02	0.00	626.21	3.08	3.98	8951.11	10712.57
28235.000	3200.00	0.00	0.00	609.30	18800.00	626.94	0.00	627.20	3.80	4.22	6614.59	9641.07
28235.000	3200.00	0.00	0.00	609.30	18800.00	627.04	0.00	627.30	3.82	4.23	6393.68	9624.94
29860.000	1625.00	0.00	0.00	609.30	18800.00	627.52	0.00	627.87	4.14	4.84	5277.90	9236.46
29860.000	1625.00	0.00	0.00	609.30	18800.00	627.62	0.00	627.97	4.15	4.86	4880.91	9231.65
31660.000	1800.00	0.00	0.00	610.20	18800.00	628.27	0.00	628.51	3.01	4.06	6256.45	10844.70
31660.000	1800.00	0.00	0.00	610.20	18800.00	628.37	0.00	628.61	3.00	4.08	5923.64	10847.66
35425.000	3760.00	0.00	0.00	609.80	18800.00	629.64	0.00	629.84	4.23	3.95	8330.26	9143.66
35425.000	3760.00	0.00	0.00	609.80	18800.00	629.74	0.00	629.93	4.14	3.92	8403.01	9242.86
37670.000	2150.00	0.00	0.00	608.00	18800.00	630.54	0.00	630.76	4.41	4.41	10849.43	8949.70
37670.000	2150.00	0.00	0.00	608.00	18800.00	630.62	0.00	630.83	4.34	4.39	10524.26	9026.33
38970.000	1300.00	0.00	0.00	612.90	18800.00	630.97	0.00	631.10	1.87	3.17	9041.05	13740.02
38970.000	1300.00	0.00	0.00	612.90	18800.00	631.04	0.00	631.17	1.84	3.16	9090.55	13845.77
42170.000	3200.00	0.00	0.00	612.10	18800.00	631.43	0.00	631.92	2.75	5.94	5305.92	11338.15
42170.000	3200.00	0.00	0.00	612.10	18800.00	631.49	0.00	631.98	2.72	5.92	5334.80	11409.37
43770.000	1600.00	0.00	0.00	613.10	18800.00	632.03	0.00	632.42	3.37	5.45	5409.55	10234.29
43770.000	1600.00	0.00	0.00	613.10	18800.00	632.07	0.00	632.47	3.41	5.48	5226.68	10177.76
44820.000	1050.00	0.00	0.00	612.70	18800.00	632.63	0.00	632.80	3.45	3.52	7600.27	10128.54
44820.000	1050.00	0.00	0.00	612.70	18800.00	632.68	0.00	632.86	3.48	3.55	7185.98	10078.43
45470.000	650.00	0.00	0.00	613.40	18800.00	632.80	0.00	633.11	5.12	4.61	5723.20	8310.62
45470.000	650.00	0.00	0.00	613.40	18800.00	632.85	0.00	633.17	5.16	4.64	5346.32	8273.26
46870.000	1300.00	0.00	0.00	612.60	18800.00	633.47	0.00	633.83	5.73	5.10	5236.35	7854.52
46870.000	1300.00	0.00	0.00	612.60	18800.00	633.53	0.00	633.90	5.78	5.13	5067.33	7817.62

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
48720.000	1850.00	0.00	0.00	616.40	18800.00	634.43	0.00	634.61	3.12	3.58	6311.83	10635.04
48720.000	1850.00	0.00	0.00	616.40	18800.00	634.50	0.00	634.68	3.13	3.59	6148.01	10621.32
50220.000	1500.00	0.00	0.00	613.20	18800.00	634.87	0.00	634.98	2.18	3.13	7452.66	12731.59
50220.000	1500.00	0.00	0.00	613.20	18800.00	634.94	0.00	635.06	2.20	3.15	7314.52	12681.84
51945.000	1725.00	0.00	0.00	614.90	18800.00	635.30	0.00	635.60	6.58	4.98	9151.44	7331.06
51945.000	1725.00	0.00	0.00	614.90	18800.00	635.37	0.00	635.68	6.62	5.01	8849.84	7306.24
53000.000	1055.00	0.00	0.00	617.10	18800.00	635.76	0.00	635.86	1.25	2.92	13741.59	16803.74
53000.000	1055.00	0.00	0.00	617.10	18800.00	635.84	0.00	635.94	1.23	2.90	13848.54	16961.47
53700.000	700.00	0.00	0.00	616.60	18800.00	635.86	0.00	635.94	1.12	3.09	16060.64	17782.26
53700.000	700.00	0.00	0.00	616.60	18800.00	635.94	0.00	636.01	1.10	3.06	16173.60	17964.31
54600.000	900.00	0.00	0.00	614.50	18800.00	635.97	0.00	636.01	1.06	2.52	14929.82	18295.55
54600.000	900.00	0.00	0.00	614.50	18800.00	636.04	0.00	636.09	1.03	2.50	15044.04	18520.65
55800.000	1200.00	0.00	0.00	616.20	18800.00	635.97	0.00	636.28	5.00	5.05	7151.25	8405.31
55800.000	1200.00	0.00	0.00	616.20	18800.00	636.04	0.00	636.35	4.90	5.02	7219.14	8489.23
56800.000	1000.00	0.00	0.00	614.60	18800.00	636.46	0.00	636.59	3.49	3.64	12304.14	10059.09
56800.000	1000.00	0.00	0.00	614.60	18800.00	636.53	0.00	636.65	3.42	3.61	12409.72	10164.94
57650.000	850.00	0.00	0.00	617.40	18800.00	636.66	0.00	636.70	1.11	2.13	15392.71	17847.16
57650.000	850.00	0.00	0.00	617.40	18800.00	636.72	0.00	636.76	1.09	2.11	15508.68	18034.27
58350.000	700.00	0.00	0.00	616.30	18800.00	636.72	0.00	636.81	2.51	3.11	10238.18	11855.37
58350.000	700.00	0.00	0.00	616.30	18800.00	636.78	0.00	636.87	2.54	3.14	9995.86	11789.33
58900.000	550.00	0.00	0.00	618.00	18800.00	636.82	0.00	636.96	2.93	3.49	10062.66	10985.72
58900.000	550.00	0.00	0.00	618.00	18800.00	636.88	0.00	637.03	2.97	3.53	9698.29	10909.12
60000.000	1100.00	0.00	0.00	618.90	18800.00	637.05	0.00	637.66	12.01	6.71	4963.82	5425.57
60000.000	1100.00	0.00	0.00	618.90	18800.00	637.11	0.00	637.74	12.12	6.75	4766.29	5400.71
62250.000	2225.00	0.00	0.00	620.20	18800.00	638.55	0.00	638.79	2.69	4.02	5912.89	11453.05
62250.000	2225.00	0.00	0.00	620.20	18800.00	638.63	0.00	638.87	2.71	4.04	5650.16	11427.19
63120.000	970.00	0.00	0.00	619.70	18800.00	638.77	0.00	639.15	4.22	5.04	4476.01	9149.92
63120.000	970.00	0.00	0.00	619.70	18800.00	638.86	0.00	639.25	4.44	5.06	4187.87	8925.20
65620.000	1900.00	0.00	0.00	620.70	18800.00	639.57	0.00	639.94	4.02	5.08	5006.93	9378.56
65620.000	1900.00	0.00	0.00	620.70	18800.00	639.68	0.00	640.04	3.92	5.04	5056.15	9494.00
67420.000	2500.00	0.00	0.00	619.30	18800.00	640.52	0.00	640.80	2.96	4.40	5108.97	10924.95
67420.000	2500.00	0.00	0.00	619.30	18800.00	640.61	0.00	640.89	2.91	4.38	5146.00	11028.81
68970.000	1550.00	0.00	0.00	622.70	18800.00	640.98	0.00	641.26	2.95	4.35	5287.34	10943.55

68970.000	1550.00	0.00	0.00	622.70	18800.00	641.06	0.00	641.34	2.97	4.38	4965.28	10908.15

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
70300.000	1330.00	0.00	0.00	623.70	18800.00	641.41	0.00	641.63	2.52	3.86	5365.48	11842.41
70300.000	1330.00	0.00	0.00	623.70	18800.00	641.50	0.00	641.71	2.51	3.87	5327.77	11861.86
71300.000	0.00	0.00	0.00	622.70	18800.00	641.36	0.00	641.69	3.43	4.69	4463.09	10147.00
71300.000	0.00	0.00	0.00	622.70	18800.00	641.44	0.00	641.77	3.44	4.71	4309.14	10133.26
71900.000	600.00	0.00	0.00	624.60	18800.00	641.58	0.00	641.92	4.36	4.83	4658.45	9008.24
71900.000	600.00	0.00	0.00	624.60	18800.00	641.66	0.00	642.00	4.38	4.86	4427.03	8987.45
73040.000	1140.00	0.00	0.00	625.60	18800.00	642.15	0.00	642.42	4.37	4.41	4941.74	8997.53
73040.000	1140.00	0.00	0.00	625.60	18800.00	642.23	0.00	642.51	4.39	4.44	4713.91	8969.77
73590.000	550.00	0.00	0.00	624.10	18800.00	642.33	0.00	642.67	4.04	4.71	4186.52	9350.59
73590.000	550.00	0.00	0.00	624.10	18800.00	642.42	0.00	642.75	4.02	4.72	4129.12	9372.21
73640.000	50.00	652.00	650.50	625.40	18800.00	642.35	0.00	642.69	4.16	4.70	4002.75	9215.89
73640.000	50.00	652.00	650.50	625.40	18800.00	642.44	0.00	642.78	4.09	4.67	4026.26	9300.25
73660.000	20.00	652.00	650.50	625.40	18800.00	642.36	0.00	642.70	4.16	4.70	4003.32	9217.91
73660.000	20.00	652.00	650.50	625.40	18800.00	642.44	0.00	642.78	4.09	4.67	4028.45	9308.14
73720.000	60.00	0.00	0.00	625.30	18800.00	642.30	0.00	642.77	5.77	5.63	3729.60	7824.45
73720.000	60.00	0.00	0.00	625.30	18800.00	642.38	0.00	642.85	5.79	5.66	3604.70	7812.13
75140.000	1420.00	0.00	0.00	627.50	18800.00	643.11	0.00	643.31	2.67	4.15	8072.11	11503.56
75140.000	1420.00	0.00	0.00	627.50	18800.00	643.20	0.00	643.40	2.68	4.18	7732.76	11476.93
75800.000	660.00	0.00	0.00	628.20	18800.00	643.16	0.00	643.63	5.46	5.50	3418.26	8044.65
75800.000	660.00	0.00	0.00	628.20	18800.00	643.25	0.00	643.72	5.71	5.46	3443.67	7867.96
76350.000	550.00	0.00	0.00	629.80	18800.00	643.59	0.00	643.93	4.95	4.70	4130.17	8452.32
76350.000	550.00	0.00	0.00	629.80	18800.00	643.68	0.00	644.03	4.96	4.73	4039.41	8443.34
76760.000	410.00	0.00	0.00	627.60	18800.00	643.74	0.00	644.13	4.24	5.08	4050.50	9125.12
76760.000	410.00	0.00	0.00	627.60	18800.00	643.83	0.00	644.23	4.26	5.11	3845.06	9113.11

MUSKEGON RIVER EXISTING

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH

0.100	18800.00	620.14	0.00	0.00	1.14	809.79	0.00
0.100	18800.00	620.14	0.00	0.00	0.00	809.81	0.00
1920.000	18800.00	620.49	0.00	0.35	0.00	741.00	1920.00
1920.000	18800.00	620.49	0.00	0.35	0.00	741.00	1920.00
3050.000	18800.00	620.78	0.00	0.29	0.00	310.99	1130.00
3050.000	18800.00	620.79	0.00	0.29	0.00	311.00	1130.00
3051.000	18800.00	620.80	0.00	0.02	0.00	311.00	1.00
3051.000	18800.00	620.80	0.00	0.02	0.00	311.00	1.00
3100.000	18800.00	620.80	0.00	0.01	0.00	311.00	49.00
3100.000	18800.00	620.81	0.00	0.01	0.00	311.00	49.00
3101.000	18800.00	620.79	0.00	-0.01	0.00	311.00	1.00
3101.000	18800.00	620.79	0.00	-0.01	0.00	311.00	1.00
4680.000	18800.00	621.17	0.00	0.38	0.00	612.40	1579.00
4680.000	18800.00	621.17	0.00	0.37	0.00	555.22	1579.00
7200.000	18800.00	621.49	0.00	0.32	0.00	802.25	2520.00
7200.000	18800.00	621.50	0.01	0.33	0.01	737.95	2520.00
8850.000	18800.00	621.96	0.00	0.47	0.00	882.43	1650.00
8850.000	18800.00	621.98	0.02	0.48	0.02	840.15	1650.00
10300.000	18800.00	622.33	0.00	0.37	0.00	1186.52	1450.00
10300.000	18800.00	622.36	0.03	0.38	0.03	1101.94	1450.00
11800.000	18800.00	622.60	0.00	0.28	0.00	1023.38	1500.00
11800.000	18800.00	622.64	0.03	0.28	0.03	894.44	1500.00
12600.000	18800.00	622.85	0.00	0.25	0.00	1028.32	800.00
12600.000	18800.00	622.89	0.04	0.25	0.04	932.58	800.00
14100.000	18800.00	623.26	0.00	0.41	0.00	717.26	1500.00
14100.000	18800.00	623.30	0.04	0.41	0.04	608.87	1500.00
16700.000	18800.00	623.89	0.00	0.63	0.00	1122.14	2600.00
16700.000	18800.00	623.97	0.08	0.67	0.08	1013.34	2600.00
19870.000	18800.00	624.59	0.00	0.70	0.00	699.96	3170.00
19870.000	18800.00	624.69	0.10	0.72	0.10	669.50	3170.00
21370.000	18800.00	625.03	0.00	0.44	0.00	773.28	1500.00
21370.000	18800.00	625.12	0.09	0.43	0.09	707.36	1500.00

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SECNO	Q	CHSEL	DIFWSP	DIFWSX	DIFKWS	ZOPWID	XLCH
24985.000	18800.00	625.93	0.00	0.90	0.00	897.10	3615.00

24985.000	18800.00	626.02	0.09	0.90	0.09	821.67	3615.00
28235.000	18800.00	626.94	0.00	1.01	0.00	669.32	3200.00
28235.000	18800.00	627.04	0.09	1.02	0.09	618.33	3200.00
29860.000	18800.00	627.52	0.00	0.58	0.00	499.53	1625.00
29860.000	18800.00	627.62	0.09	0.58	0.09	402.62	1625.00
31660.000	18800.00	628.27	0.00	0.75	0.00	598.47	1800.00
31660.000	18800.00	628.37	0.10	0.75	0.10	504.95	1800.00
35425.000	18800.00	629.64	0.00	1.38	0.00	770.00	3760.00
35425.000	18800.00	629.74	0.09	1.37	0.09	770.00	3760.00
37670.000	18800.00	630.54	0.00	0.90	0.00	1014.67	2150.00
37670.000	18800.00	630.62	0.07	0.88	0.07	1014.95	2150.00
38970.000	18800.00	630.97	0.00	0.43	0.00	740.00	1300.00
38970.000	18800.00	631.04	0.07	0.42	0.07	740.00	1300.00
42170.000	18800.00	631.43	0.00	0.46	0.00	495.00	3200.00
42170.000	18800.00	631.49	0.06	0.45	0.06	495.00	3200.00
43770.000	18800.00	632.03	0.00	0.59	0.00	460.74	1600.00
43770.000	18800.00	632.07	0.04	0.58	0.04	409.98	1600.00
44820.000	18800.00	632.63	0.00	0.60	0.00	689.68	1050.00
44820.000	18800.00	632.68	0.05	0.61	0.05	595.15	1050.00
45470.000	18800.00	632.80	0.00	0.18	0.00	557.05	650.00
45470.000	18800.00	632.85	0.05	0.18	0.05	444.50	650.00
46870.000	18800.00	633.47	0.00	0.67	0.00	474.04	1300.00
46870.000	18800.00	633.53	0.06	0.67	0.06	426.10	1300.00
48720.000	18800.00	634.43	0.00	0.96	0.00	443.13	1850.00
48720.000	18800.00	634.50	0.07	0.97	0.07	396.48	1850.00
50220.000	18800.00	634.87	0.00	0.44	0.00	728.88	1500.00
50220.000	18800.00	634.94	0.07	0.45	0.07	683.13	1500.00
51945.000	18800.00	635.30	0.00	0.43	0.00	1175.46	1725.00
51945.000	18800.00	635.37	0.07	0.43	0.07	1076.96	1725.00
53000.000	18800.00	635.76	0.00	0.46	0.00	1335.42	1055.00
53000.000	18800.00	635.84	0.08	0.47	0.08	1335.84	1055.00
53700.000	18800.00	635.86	0.00	0.10	0.00	1436.81	700.00
53700.000	18800.00	635.94	0.08	0.10	0.08	1436.89	700.00

SECNO Q CUSEL DIFWSE DIFJSK DIFKWS IO2VID ILCH

54600.000	18800.00	635.97	0.00	0.11	0.00	1494.71	900.00
54600.000	18800.00	636.04	0.08	0.11	0.08	1494.84	900.00
55800.000	18800.00	635.97	0.00	0.00	0.00	900.00	1200.00
55800.000	18800.00	636.04	0.08	0.00	0.08	900.00	1200.00
56800.000	18800.00	636.46	0.00	0.49	0.00	1625.70	1000.00
56800.000	18800.00	636.53	0.06	0.48	0.06	1625.78	1000.00
57650.000	18800.00	636.66	0.00	0.20	0.00	1899.98	850.00
57650.000	18800.00	636.72	0.06	0.19	0.06	1900.16	850.00
58350.000	18800.00	636.72	0.00	0.06	0.00	1269.65	700.00
58350.000	18800.00	636.78	0.06	0.06	0.06	1189.43	700.00
58900.000	18800.00	636.82	0.00	0.10	0.00	1510.13	550.00
58900.000	18800.00	636.88	0.06	0.10	0.06	1395.79	550.00
60000.000	18800.00	637.05	0.00	0.22	0.00	760.38	1100.00
60000.000	18800.00	637.11	0.06	0.22	0.06	685.52	1100.00
62250.000	18800.00	638.55	0.00	1.50	0.00	510.12	2225.00
62250.000	18800.00	638.63	0.08	1.52	0.08	426.20	2225.00
63120.000	18800.00	638.77	0.00	0.22	0.00	401.49	970.00
63120.000	18800.00	638.86	0.08	0.23	0.08	324.12	970.00
65620.000	18800.00	639.57	0.00	0.80	0.00	450.00	1900.00
65620.000	18800.00	639.68	0.11	0.82	0.11	450.00	1900.00
67420.000	18800.00	640.52	0.00	0.95	0.00	410.00	2500.00
67420.000	18800.00	640.61	0.09	0.93	0.09	410.00	2500.00
68970.000	18800.00	640.98	0.00	0.46	0.00	557.13	1550.00
68970.000	18800.00	641.06	0.08	0.45	0.08	409.92	1550.00
70300.000	18800.00	641.41	0.00	0.43	0.00	410.45	1330.00
70300.000	18800.00	641.50	0.08	0.44	0.08	392.29	1330.00
71300.000	18800.00	641.36	0.00	-0.05	0.00	352.21	0.00
71300.000	18800.00	641.44	0.08	-0.06	0.08	300.83	0.00
71900.000	18800.00	641.58	0.00	0.22	0.00	383.68	600.00
71900.000	18800.00	641.66	0.08	0.22	0.08	317.13	600.00
73040.000	18800.00	642.15	0.00	0.57	0.00	559.64	1140.00
73040.000	18800.00	642.23	0.08	0.57	0.08	452.48	1140.00
73590.000	18800.00	642.33	0.00	0.18	0.00	337.09	550.00
73590.000	18800.00	642.42	0.08	0.19	0.08	291.99	550.00

SECNO	Q	CUSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XTCH
73640.000	18800.00	642.35	0.00	0.01	0.00	290.00	50.00
73640.000	18800.00	642.44	0.09	0.02	0.09	290.00	50.00
73660.000	18800.00	642.36	0.00	0.01	0.00	290.00	20.00
73660.000	18800.00	642.44	0.09	0.01	0.09	290.00	20.00
73720.000	18800.00	642.30	0.00	-0.05	0.00	378.75	60.00
73720.000	18800.00	642.38	0.08	-0.06	0.08	310.49	60.00
75140.000	18800.00	643.11	0.00	0.81	0.00	1036.82	1420.00
75140.000	18800.00	643.20	0.08	0.82	0.08	895.90	1420.00
75800.000	18800.00	643.16	0.00	0.05	0.00	259.00	660.00
75800.000	18800.00	643.26	0.10	0.06	0.10	259.00	660.00
76350.000	18800.00	643.59	0.00	0.43	0.00	347.89	550.00
76350.000	18800.00	643.68	0.09	0.42	0.09	324.25	550.00
76760.000	18800.00	643.74	0.00	0.15	0.00	355.05	410.00
76760.000	18800.00	643.83	0.09	0.15	0.09	300.05	410.00

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SUMMARY OF ERRORS AND SPECIAL NOTES

1

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

00BREAK00

1) COUNTY: Newaygo

2) STUDY NAME: Bridgeton, Ashland, Garfield and Brooks Twp.

3) WATERCOURSE: Muskegan River

4) DOCUMENT TYPE: Summary

00BREAK00

MODIFICATION - 50,51,52,53,54,55,56
****

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

MUSKEGON RIVER EXISITIN

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CUSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
48720.000	0.00	0.00	0.00	616.40	18800.00	634.39	0.00	634.57	3.16	3.59	6291.71	10584.12
48720.000	0.00	0.00	0.00	616.40	18800.00	634.39	0.00	634.57	3.16	3.59	6291.71	10584.12
48720.000	0.00	0.00	0.00	616.40	18800.00	634.39	0.00	634.57	3.16	3.59	6291.71	10584.12
50220.000	1500.00	0.00	0.00	613.20	18800.00	634.84	0.00	634.95	2.21	3.15	7421.16	12650.78
50220.000	1500.00	0.00	0.00	613.20	18800.00	634.84	0.00	634.95	2.21	3.15	7421.16	12650.78
50220.000	1500.00	0.00	0.00	613.20	18800.00	634.84	0.00	634.95	2.21	3.15	7421.16	12650.78
51945.000	1725.00	0.00	0.00	614.90	18800.00	635.27	0.00	635.58	6.63	4.99	9117.02	7302.31
51945.000	1725.00	0.00	0.00	614.90	18800.00	635.27	0.00	635.58	6.63	4.99	9117.02	7302.31
51945.000	1725.00	0.00	0.00	614.90	18800.00	635.27	0.00	635.58	6.63	4.99	9117.02	7302.31
53000.000	1055.00	0.00	0.00	617.10	18800.00	635.73	0.00	635.84	1.26	2.93	13707.04	16752.92
53000.000	1055.00	0.00	0.00	617.10	18800.00	635.72	0.00	635.88	1.64	3.34	9005.78	14658.63
53000.000	1055.00	0.00	0.00	617.10	18800.00	635.72	0.00	635.88	1.64	3.34	9005.78	14658.63
53700.000	700.00	0.00	0.00	616.60	18800.00	635.80	0.00	635.93	1.60	3.68	15983.47	14875.84
53700.000	700.00	0.00	0.00	616.60	18800.00	635.63	0.00	636.16	4.25	5.97	3488.26	9114.91
53700.000	700.00	0.00	0.00	616.60	18800.00	635.63	0.00	636.16	4.25	5.97	3488.26	9114.91
54600.000	900.00	0.00	0.00	614.50	18800.00	635.97	0.00	636.06	1.83	3.32	14944.42	13903.99
54600.000	900.00	0.00	0.00	614.50	18800.00	636.07	0.00	636.61	6.09	6.08	3329.34	7619.62
54600.000	900.00	0.00	0.00	614.50	18800.00	636.07	0.00	636.61	6.09	6.08	3329.34	7619.62
55080.000	480.00	0.00	0.00	614.50	18800.00	636.00	0.00	636.14	1.82	3.43	6553.63	13930.63
55080.000	480.00	0.00	0.00	614.50	18800.00	636.36	0.00	636.88	5.52	6.05	3369.19	7999.00
55080.000	480.00	0.00	0.00	614.50	18800.00	636.36	0.00	636.88	5.52	6.05	3369.19	7999.00
55800.000	720.00	0.00	0.00	616.20	18800.00	636.02	0.00	636.36	5.20	5.16	7203.98	8241.39
55800.000	720.00	0.00	0.00	616.20	18800.00	636.95	0.00	637.22	4.15	4.73	8037.18	9233.12
55800.000	720.00	0.00	0.00	616.20	18800.00	636.75	0.00	637.32	6.98	6.11	3354.12	7114.86

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CUSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
56800.000	1000.00	0.00	0.00	614.60	18800.00	636.55	0.00	636.69	3.67	3.74	12190.90	9813.57
56800.000	1000.00	0.00	0.00	614.60	18800.00	637.36	0.00	637.47	2.87	3.40	13481.01	11097.55
56800.000	1000.00	0.00	0.00	614.60	18800.00	637.58	0.00	638.03	7.34	5.48	3674.28	6939.36

57650.000	850.00	0.00	0.00	617.40	18800.00	636.77	0.00	636.81	1.18	2.20	15362.83	17330.01
57650.000	850.00	0.00	0.00	617.40	18800.00	637.53	0.00	637.57	0.92	2.00	16801.28	19601.78
57650.000	850.00	0.00	0.00	617.40	18800.00	638.19	0.00	638.24	1.04	2.18	12492.16	18465.42
58350.000	700.00	0.00	0.00	616.30	18800.00	636.84	0.00	636.92	2.42	3.07	10385.16	12091.68
58350.000	700.00	0.00	0.00	616.30	18800.00	637.58	0.00	637.65	1.89	2.79	11336.62	13671.24
58350.000	700.00	0.00	0.00	616.30	18800.00	638.26	0.00	638.32	1.53	2.58	12204.89	15185.84
58900.000	550.00	0.00	0.00	618.00	18800.00	636.94	0.00	637.07	2.82	3.44	10236.37	11200.59
58900.000	550.00	0.00	0.00	618.00	18800.00	637.66	0.00	637.77	2.22	3.15	11334.65	12609.23
58900.000	550.00	0.00	0.00	618.00	18800.00	638.32	0.00	638.41	1.81	2.91	12349.42	13985.18
60000.000	1100.00	0.00	0.00	618.90	18800.00	637.15	0.00	637.75	11.68	6.64	5039.05	5500.21
60000.000	1100.00	0.00	0.00	618.90	18800.00	637.80	0.00	638.32	9.79	6.25	5539.85	6009.65
60000.000	1100.00	0.00	0.00	618.90	18800.00	638.42	0.00	638.88	8.33	5.90	6015.88	6513.55
62250.000	2225.00	0.00	0.00	620.20	18800.00	638.62	0.00	638.85	2.66	4.00	5945.80	11536.41
62250.000	2225.00	0.00	0.00	620.20	18800.00	639.07	0.00	639.29	2.40	3.88	6177.00	12129.09
62250.000	2225.00	0.00	0.00	620.20	18800.00	639.53	0.00	639.73	2.17	3.76	6415.20	12748.91
63120.000	970.00	0.00	0.00	619.70	18800.00	638.83	0.00	639.21	4.17	5.02	4500.53	9210.85
63120.000	970.00	0.00	0.00	619.70	18800.00	639.26	0.00	639.62	3.80	4.87	4674.94	9646.99
63120.000	970.00	0.00	0.00	619.70	18800.00	639.70	0.00	640.04	3.47	4.74	4851.96	10094.64
65620.000	1900.00	0.00	0.00	620.70	18800.00	639.62	0.00	639.99	3.97	5.06	5030.22	9433.11
65620.000	1900.00	0.00	0.00	620.70	18800.00	639.99	0.00	640.33	3.66	4.93	5194.58	9822.08
65620.000	1900.00	0.00	0.00	620.70	18800.00	640.36	0.00	640.69	3.38	4.80	5362.45	10226.62
67420.000	2500.00	0.00	0.00	619.30	18800.00	640.56	0.00	640.84	2.94	4.39	5125.89	10973.64
67420.000	2500.00	0.00	0.00	619.30	18800.00	640.86	0.00	641.13	2.75	4.30	5248.00	11328.00
67420.000	2500.00	0.00	0.00	619.30	18800.00	641.17	0.00	641.43	2.58	4.22	5375.53	11703.29
68970.000	1550.00	0.00	0.00	622.70	18800.00	641.02	0.00	641.30	2.93	4.34	5308.29	10990.66
68970.000	1550.00	0.00	0.00	622.70	18800.00	641.29	0.00	641.55	2.75	4.25	5458.93	11332.11
68970.000	1550.00	0.00	0.00	622.70	18800.00	641.57	0.00	641.83	2.58	4.17	5618.29	11698.46
70300.000	1330.00	0.00	0.00	623.70	18800.00	641.45	0.00	641.66	2.50	3.85	5379.51	11889.61
70300.000	1330.00	0.00	0.00	623.70	18800.00	641.69	0.00	641.90	2.36	3.78	5480.32	12230.55
70300.000	1330.00	0.00	0.00	623.70	18800.00	641.95	0.00	642.15	2.23	3.71	5587.59	12596.90
71300.000	1000.00	0.00	0.00	622.70	18800.00	641.66	0.00	641.97	3.21	4.59	4569.22	10486.52
71300.000	1000.00	0.00	0.00	622.70	18800.00	641.90	0.00	642.19	3.06	4.52	4651.50	10752.06
71300.000	1000.00	0.00	0.00	622.70	18800.00	642.14	0.00	642.43	2.90	4.45	4739.51	11038.27
71900.000	600.00	0.00	0.00	624.60	18800.00	641.87	0.00	642.19	4.08	4.74	4768.38	9302.17
71900.000	600.00	0.00	0.00	624.60	18800.00	642.09	0.00	642.40	3.89	4.66	4854.07	9533.26
71900.000	600.00	0.00	0.00	624.60	18800.00	642.33	0.00	642.63	3.69	4.59	4945.82	9782.65

SECNO KLCA ELTRD ELLC ELMIN Q CWSEL CRINS EG 10K*S VCH AREA .01K

73040.000	1140.00	0.00	0.00	625.60	18800.00	642.41	0.00	642.66	4.05	4.30	5084.64	9342.52
73040.000	1140.00	0.00	0.00	625.60	18800.00	642.60	0.00	642.85	3.82	4.21	5197.17	9617.37
73040.000	1140.00	0.00	0.00	625.60	18800.00	642.82	0.00	643.05	3.59	4.12	5319.18	9918.50
73590.000	550.00	0.00	0.00	624.10	18800.00	642.57	0.00	642.90	3.83	4.63	4261.72	9612.02
73590.000	550.00	0.00	0.00	624.10	18800.00	642.76	0.00	643.07	3.67	4.57	4320.95	9819.60
73590.000	550.00	0.00	0.00	624.10	18800.00	642.96	0.00	643.26	3.50	4.51	4385.08	10045.96
73640.000	50.00	652.00	650.50	625.40	18800.00	642.59	0.00	642.92	3.95	4.62	4071.00	9461.55
73640.000	50.00	652.00	650.50	625.40	18800.00	642.77	0.00	643.09	3.79	4.56	4124.67	9656.15
73640.000	50.00	652.00	650.50	625.40	18800.00	642.97	0.00	643.28	3.63	4.49	4182.72	9868.09
73660.000	20.00	652.00	650.50	625.40	18800.00	642.59	0.00	642.92	3.95	4.62	4071.50	9463.34
73660.000	20.00	652.00	650.50	625.40	18800.00	642.78	0.00	643.10	3.79	4.56	4125.16	9657.96
73660.000	20.00	652.00	650.50	625.40	18800.00	642.98	0.00	643.29	3.63	4.49	4183.22	9869.91
73720.000	60.00	0.00	0.00	625.30	18800.00	642.54	0.00	642.98	5.40	5.51	3820.96	8093.06
73720.000	60.00	0.00	0.00	625.30	18800.00	642.73	0.00	643.16	5.12	5.42	3893.74	8307.89
73720.000	60.00	0.00	0.00	625.30	18800.00	642.94	0.00	643.35	4.84	5.33	3972.47	8541.07
75140.000	1420.00	0.00	0.00	627.50	18800.00	643.31	0.00	643.50	2.51	4.06	8275.46	11859.82
75140.000	1420.00	0.00	0.00	627.50	18800.00	643.46	0.00	643.65	2.40	4.00	8437.46	12146.55
75140.000	1420.00	0.00	0.00	627.50	18800.00	643.63	0.00	643.81	2.28	3.92	8615.19	12464.05
75800.000	660.00	0.00	0.00	628.20	18800.00	643.35	0.00	643.80	5.22	5.42	3466.12	8225.96
75800.000	660.00	0.00	0.00	628.20	18800.00	643.50	0.00	643.94	5.04	5.36	3504.57	8372.61
75800.000	660.00	0.00	0.00	628.20	18800.00	643.66	0.00	644.09	4.85	5.30	3546.68	8534.29
76350.000	550.00	0.00	0.00	629.80	18800.00	643.76	0.00	644.09	4.73	4.64	4188.97	8645.69
76350.000	550.00	0.00	0.00	629.80	18800.00	643.90	0.00	644.22	4.56	4.59	4235.91	8801.20
76350.000	550.00	0.00	0.00	629.80	18800.00	644.05	0.00	644.36	4.39	4.54	4288.01	8974.95
76760.000	410.00	0.00	0.00	627.60	18800.00	643.90	0.00	644.29	4.07	5.01	4107.87	9314.14
76760.000	410.00	0.00	0.00	627.60	18800.00	644.03	0.00	644.41	3.94	4.96	4153.88	9466.61
76760.000	410.00	0.00	0.00	627.60	18800.00	644.18	0.00	644.54	3.81	4.91	4205.22	9637.61

1

MUSKEGON RIVER EXISTIN

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XICH
48720.000	18800.00	634.39	0.00	0.00	0.00	442.86	0.00
48720.000	18800.00	634.39	0.00	0.00	0.00	442.86	0.00
48720.000	18800.00	634.39	0.00	0.00	0.00	442.86	0.00
50220.000	18800.00	634.84	0.00	0.45	0.00	728.63	1500.00
50220.000	18800.00	634.84	0.00	0.45	0.00	728.63	1500.00
50220.000	18800.00	634.84	0.00	0.45	0.00	728.63	1500.00

51945.000	18800.00	635.27	0.00	0.43	0.00	1173.92	1725.00
51945.000	18800.00	635.27	0.00	0.43	0.00	1173.92	1725.00
51945.000	18800.00	635.27	0.00	0.43	0.00	1173.92	1725.00
53000.000	18800.00	635.73	0.00	0.46	0.00	1335.28	1055.00
53000.000	18800.00	635.72	-0.01	0.45	-0.01	898.23	1055.00
53000.000	18800.00	635.72	0.00	0.45	-0.01	898.23	1055.00
53700.000	18800.00	635.80	0.00	0.07	0.00	1436.76	700.00
53700.000	18800.00	635.63	-0.18	-0.10	-0.18	236.58	700.00
53700.000	18800.00	635.63	0.00	-0.10	-0.18	236.58	700.00
54600.000	18800.00	635.97	0.00	0.17	0.00	1494.73	900.00
54600.000	18800.00	636.07	0.10	0.44	0.10	232.91	900.00
54600.000	18800.00	636.07	0.00	0.44	0.10	232.91	900.00
55080.000	18800.00	636.00	0.00	0.03	0.00	926.84	480.00
55080.000	18800.00	636.36	0.35	0.28	0.35	223.40	480.00
55080.000	18800.00	636.36	0.00	0.28	0.35	223.40	480.00
55800.000	18800.00	636.02	0.00	0.02	0.00	900.00	720.00
55800.000	18800.00	636.95	0.93	0.59	0.93	900.00	720.00
55800.000	18800.00	636.75	-0.20	0.39	0.73	219.00	720.00
56800.000	18800.00	636.55	0.00	0.53	0.00	1587.82	1000.00
56800.000	18800.00	637.36	0.81	0.41	0.81	1588.81	1000.00
56800.000	18800.00	637.58	0.21	0.83	1.03	242.07	1000.00
57650.000	18800.00	636.77	0.00	0.22	0.00	1869.28	850.00
57650.000	18800.00	637.53	0.76	0.17	0.76	1871.59	850.00
57650.000	18800.00	638.19	0.66	0.61	1.43	1183.58	850.00
58350.000	18800.00	636.84	0.00	0.07	0.00	1270.58	700.00
58350.000	18800.00	637.58	0.75	0.05	0.75	1276.58	700.00
58350.000	18800.00	638.26	0.68	0.07	1.43	1282.03	700.00
58900.000	18800.00	636.94	0.00	0.10	0.00	1511.34	550.00
58900.000	18800.00	637.66	0.72	0.08	0.72	1519.00	550.00
58900.000	18800.00	638.32	0.66	0.06	1.39	1526.03	550.00

1

SECNO	Q	CNSEL	DIFWS2	DIFWSX	DIFKWS	TOPWID	XICH
60000.000	18800.00	637.15	0.00	0.21	0.00	761.28	1100.00
60000.000	18800.00	637.80	0.66	0.14	0.66	767.25	1100.00
60000.000	18800.00	638.42	0.62	0.10	1.27	772.87	1100.00
62250.000	18800.00	638.62	0.00	1.47	0.00	510.85	2225.00
62250.000	18800.00	639.07	0.46	1.27	0.46	514.59	2225.00
62250.000	18800.00	639.53	0.46	1.11	0.91	518.41	2225.00
63120.000	18800.00	638.83	0.00	0.22	0.00	402.05	970.00

63120.000	18800.00	639.26	0.45	0.19	0.43	406.05	970.00
63120.000	18800.00	639.70	0.43	0.17	0.87	410.06	970.00
65620.000	18800.00	639.62	0.00	0.79	0.00	450.00	1900.00
65620.000	18800.00	639.99	0.36	0.72	0.36	450.00	1900.00
65620.000	18800.00	640.36	0.37	0.66	0.74	450.00	1900.00
67420.000	18800.00	640.56	0.00	0.94	0.00	410.00	2500.00
67420.000	18800.00	640.86	0.30	0.87	0.30	410.00	2500.00
67420.000	18800.00	641.17	0.31	0.81	0.61	410.00	2500.00
68970.000	18800.00	641.02	0.00	0.46	0.00	557.40	1550.00
68970.000	18800.00	641.29	0.27	0.43	0.27	559.31	1550.00
68970.000	18800.00	641.57	0.28	0.41	0.55	561.33	1550.00
70300.000	18800.00	641.45	0.00	0.43	0.00	410.62	1330.00
70300.000	18800.00	641.69	0.24	0.40	0.24	411.90	1330.00
70300.000	18800.00	641.95	0.26	0.38	0.51	413.26	1330.00
71300.000	18800.00	641.66	0.00	0.22	0.00	354.05	1000.00
71300.000	18800.00	641.90	0.23	0.20	0.23	355.46	1000.00
71300.000	18800.00	642.14	0.25	0.19	0.48	356.97	1000.00
71900.000	18800.00	641.87	0.00	0.21	0.00	385.41	600.00
71900.000	18800.00	642.09	0.22	0.20	0.22	386.75	600.00
71900.000	18800.00	642.33	0.24	0.19	0.46	388.18	600.00
73040.000	18800.00	642.41	0.00	0.53	0.00	564.88	1140.00
73040.000	18800.00	642.60	0.20	0.51	0.20	568.97	1140.00
73040.000	18800.00	642.82	0.21	0.49	0.41	573.38	1140.00
73590.000	18800.00	642.57	0.00	0.17	0.00	318.03	550.00
73590.000	18800.00	642.76	0.19	0.15	0.19	318.76	550.00
73590.000	18800.00	642.96	0.20	0.14	0.39	319.55	550.00
73640.000	18800.00	642.59	0.00	0.01	0.00	290.00	50.00
73640.000	18800.00	642.77	0.19	0.01	0.19	290.00	50.00
73640.000	18800.00	642.97	0.20	0.01	0.39	290.00	50.00
73660.000	18800.00	642.59	0.00	0.01	0.00	290.00	20.00
73660.000	18800.00	642.78	0.19	0.01	0.19	290.00	20.00
73660.000	18800.00	642.98	0.20	0.01	0.39	290.00	20.00

SECNO	Q	CNSEL	DIFWSP	DIFWSI	DIFKWS	TOPBID	XLCH
73720.000	18800.00	642.54	0.00	-0.05	0.00	383.37	60.00
73720.000	18800.00	642.73	0.19	-0.05	0.19	387.01	60.00
73720.000	18800.00	642.94	0.20	-0.04	0.39	390.91	60.00
75140.000	18800.00	643.31	0.00	0.76	0.00	1040.27	1420.00
75140.000	18800.00	643.46	0.16	0.73	0.16	1043.01	1420.00

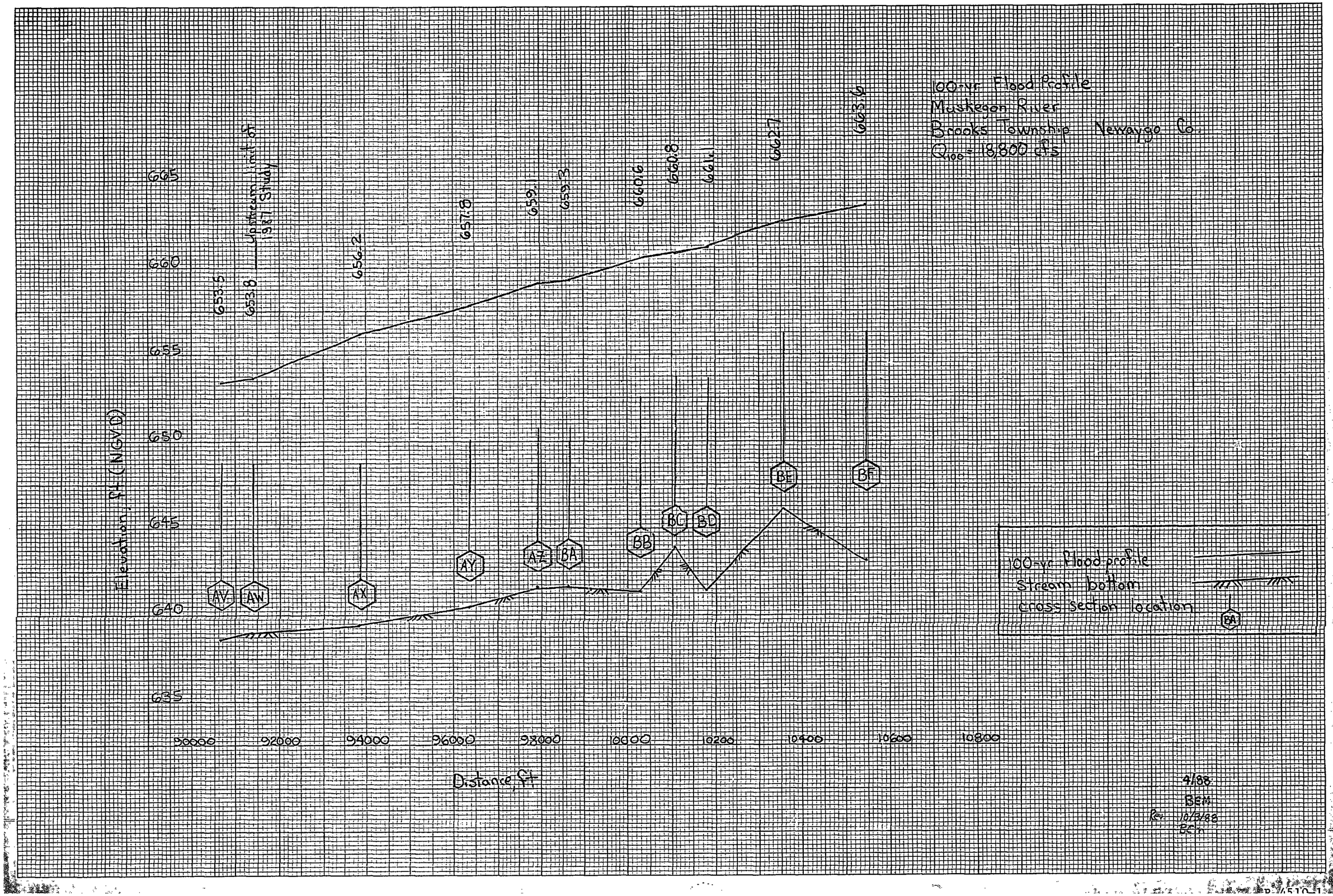
75140.000	18800.00	643.63	0.17	0.70	0.33	1046.00	1420.00
75800.000	18800.00	643.35	0.00	0.04	0.00	259.00	660.00
75800.000	18800.00	643.50	0.15	0.03	0.15	259.00	660.00
75800.000	18800.00	643.66	0.16	0.03	0.31	259.00	660.00
76350.000	18800.00	643.76	0.00	0.41	0.00	348.22	550.00
76350.000	18800.00	643.90	0.14	0.40	0.14	348.49	550.00
76350.000	18800.00	644.05	0.15	0.39	0.28	348.79	550.00
76760.000	18800.00	643.90	0.00	0.14	0.00	355.93	410.00
76760.000	18800.00	644.03	0.13	0.14	0.13	356.63	410.00
76760.000	18800.00	644.18	0.14	0.13	0.27	357.41	410.00

1

SUMMARY OF ERRORS AND SPECIAL NOTES

1

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


100-yr Flood Profile
Muskegon River
Brooks Township Newaygo Co.
Q100 = 18,800 cfs
Upstream limit of 1987 Study
653.5
653.8
656.2
657.8
659.1
659.3
660.6
660.8
661.1
662.7
663.6
AV
AW
AX
AY
AZ
BA
BB
BC
BD
BE
BF
Elevation, ft (NGVD)
665
660
655
650
645
640
635
90000
92000
94000
96000
98000
10000
10200
10400
10600
10800
Distance, ft
100-yr flood profile
Stream bottom
cross section location
BA
4/88
BEM
Rev. 10/3/88
BEM

MUSKEGON RIVER FLOODPLAIN STUDY
BROOKS TWP, NEWAYGO COUNTY
100-YR FLOODPLAIN

100-YR FLOODPLAIN
FLOODWAY
100-YR FLOODPLAIN
Cross Section Line (BA)

Elevations Referenced to the
National Geodetic Vertical Datum
of 1929

800 0 800
feet
Scale

N

Reference Marks	Elevation (NGVD)	Description
#1	661.61	PK nail + tag

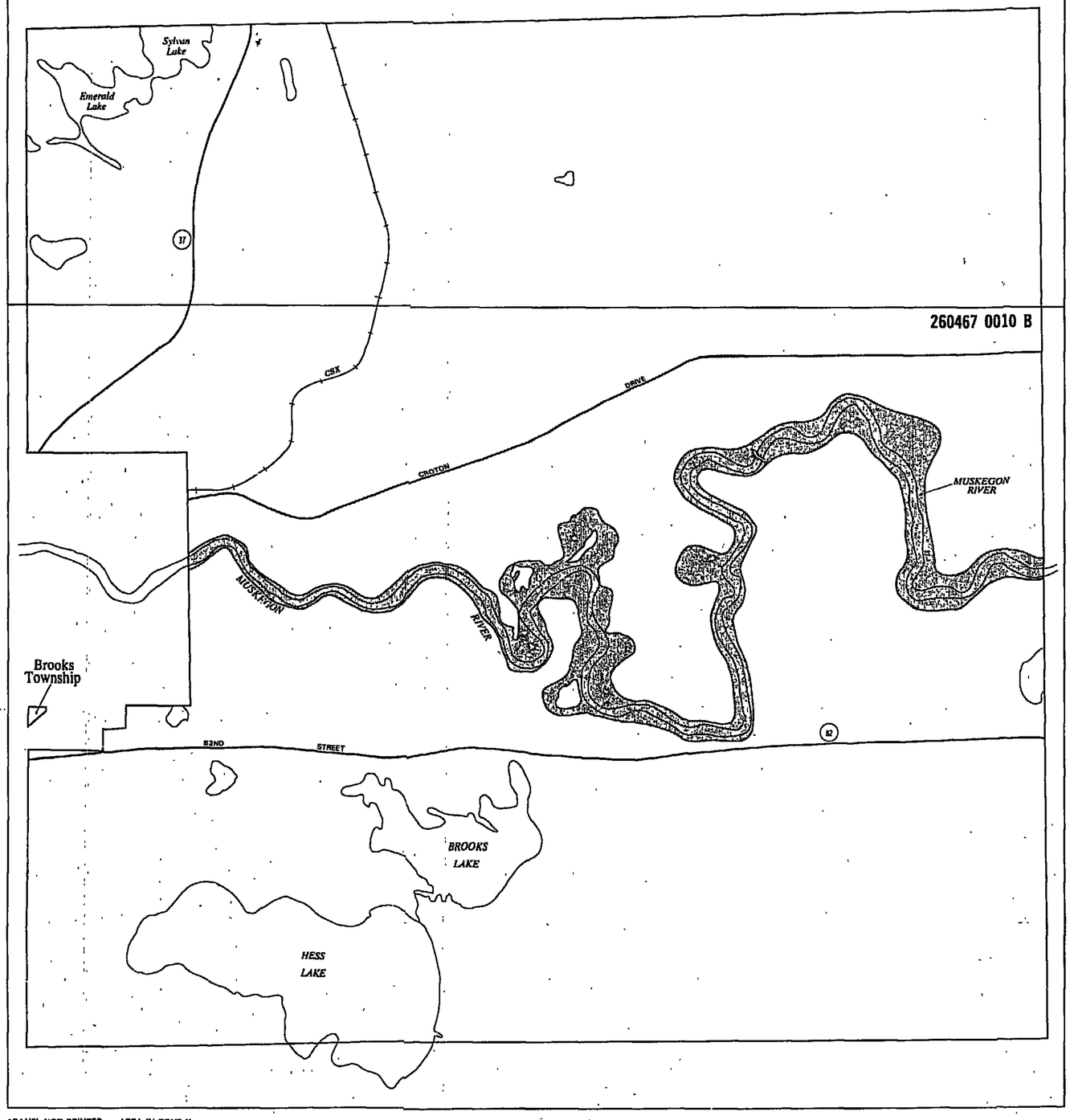
Bigelow
FT. BRIDGE
Creek
4-105 230T
4-104 243T
X-BD 243.7
4-103 243T
242.5T
240.0
243.0
DRIVE
243.4
CROTON
242.1
241.2
16
15
14
11
10
9
226.3
4-037 226.5T
4-038 231T
SPRUCE AVE
AVENUE
STREET
MUSKEGON
4-039 214T
BROOKS
216.9
217.8
217.5T
Anderson Bayou
Schumaker Bayou
HAZLEWOOD
216.0
217.6
230.0
RIVER
23
BOAT RAMP
High Rollway Public Access
205.0
200.0
200.4
205T
246.5T
247.5
249T
249.3
247.0
246T

FOLD FOLD FOLD FOLD

COMMUNITY–PANEL NUMBERS

*260467 0005 B

260467 0010 B



*PANEL NOT PRINTED — AREA IN ZONE X

LEGEND

FLOOD PRONE AREAS:
FOR ORIENTATION PURPOSES ONLY

MAP REPOSITORY

N

FOLD FOLD

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

TOWNSHIP OF
BROOKS,
MICHIGAN
NEWAYGO COUNTY

RECEIVED
JAN 3 1989
NATURAL RESOURCES
LAND & WATER MGMT.

MAP INDEX

PANELS PRINTED: 10

COMMUNITY-PANEL NUMBERS
260467 0005-0010

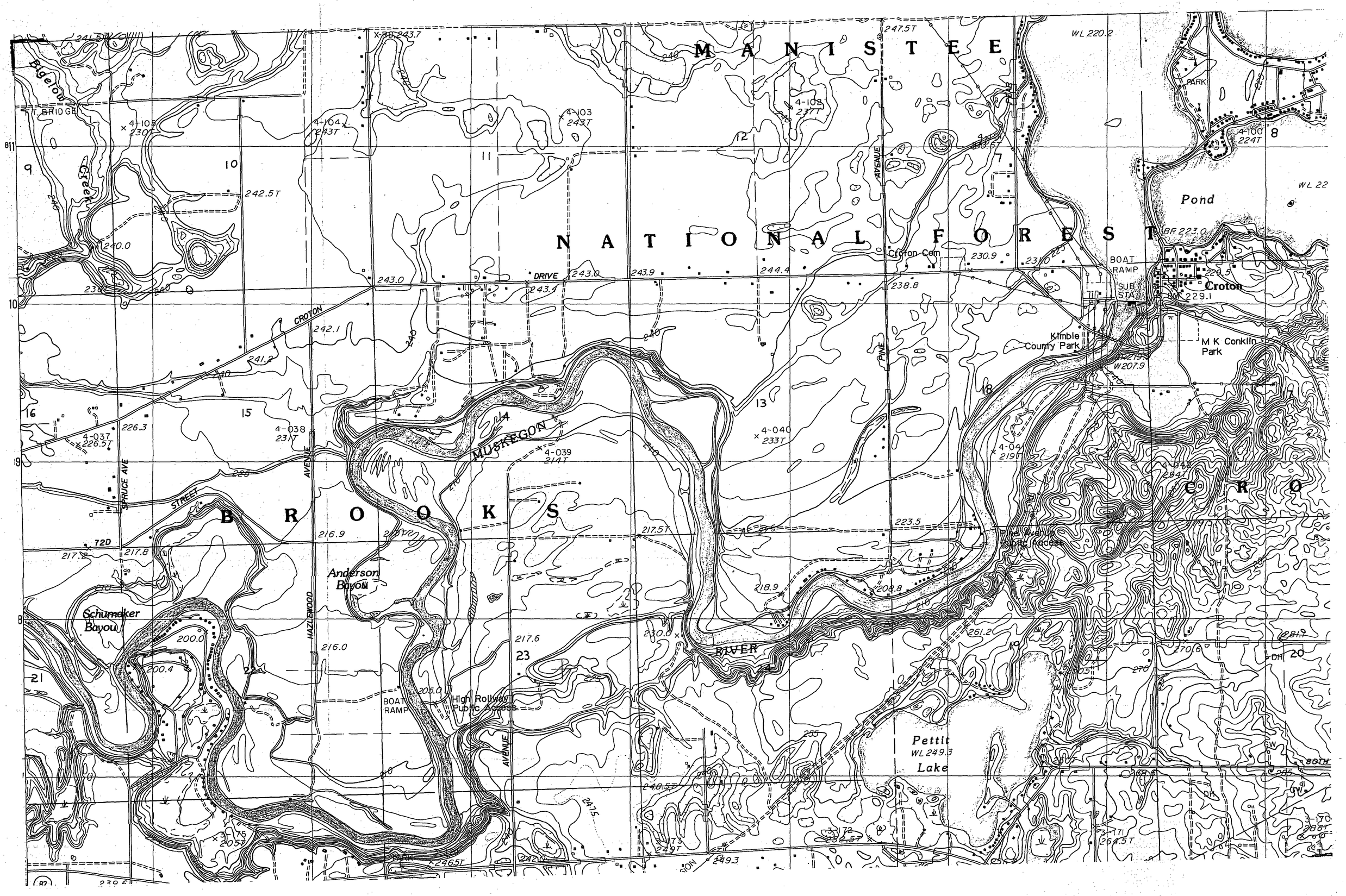
MAP REVISED:

REVISED
PRELIMINARY

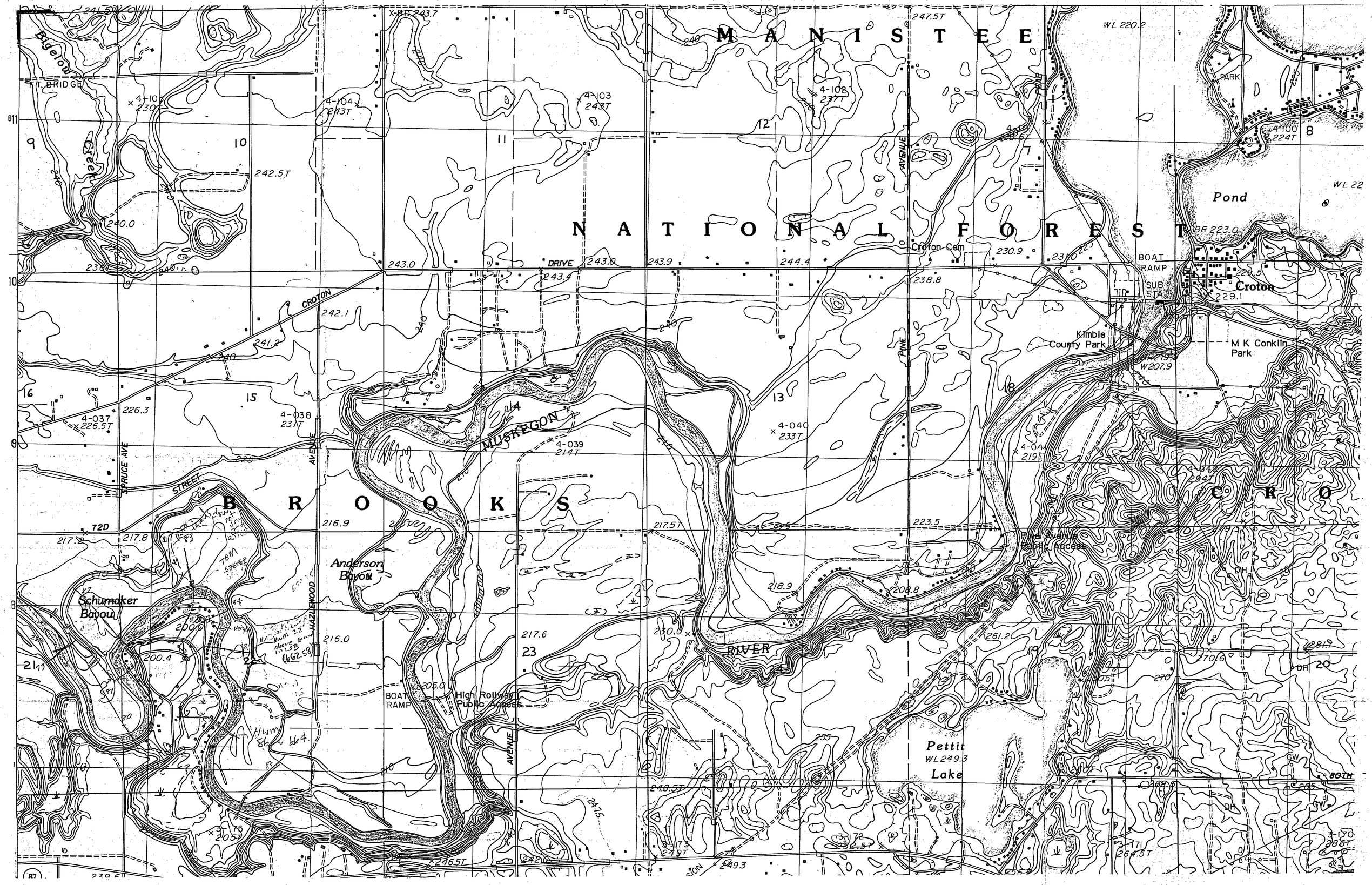
Federal Emergency Management Agency

FOLD FOLD FOLD FOLD

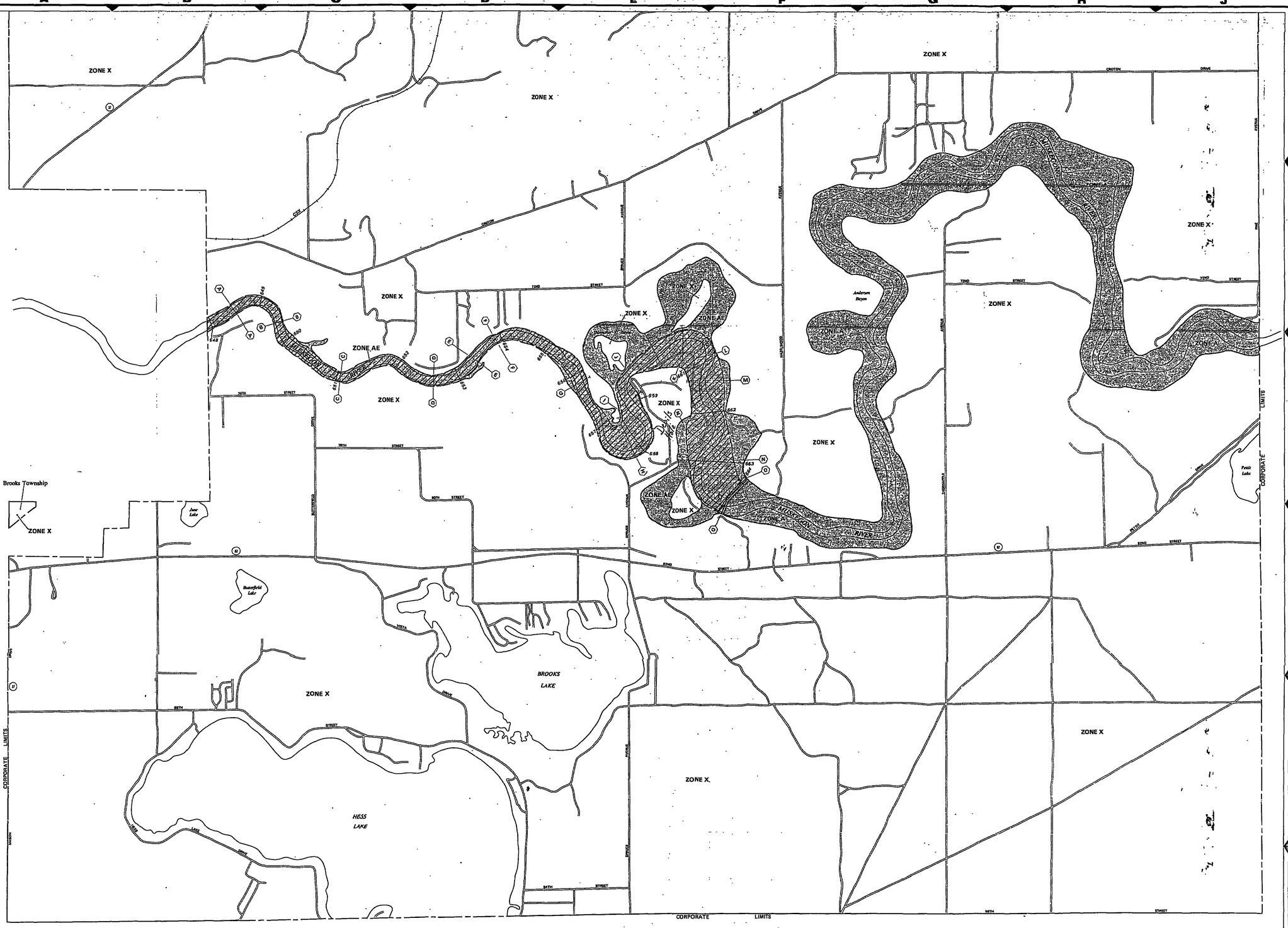
GREENHORNE & O'MARA A FRAME



MANISTEE
NATIONAL FOREST
BROOKS
CROTON
Pond
Croton
Croton Cem
BOAT RAMP
SUB STA
Kimble County Park
M K Conklin Park
Pine Avenue Public Access
Anderson Bayou
Schumaker Bayou
High Rollway Public Access
Pettit Lake
MUSKEGON
RIVER
CROTON DRIVE
SPRUCE AVE
HAZLEWOOD AVENUE
PINE AVENUE
STREET
Bigelow Creek
FT. BRIDGE
PARK



MANISTEE
NATIONAL FOREST
BROOKS
CROTON
Bigelow Creek
FT. BRIDGE
DRIVE
CROTON
MUSKEGON
RIVER
SPRUCE AVE
STREET
HAZLEWOOD
AVENUE
PINE
AVENUE
Anderson Bayou
Schumaker Bayou
BOAT RAMP
High Rollway Public Access
Pettit Lake
WL 249.3
Pond
Croton
Croton Cem
BOAT RAMP
SUB STA
Kimble County Park
M K Conklin Park
Pine Avenue Public Access
PARK
WL 220.2
WL 22
BR 223.0
BM 229.1


ZONE X
ZONE AE
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ZONE A9
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ZONE A19
ZONE A20
ZONE

00BREAK00

1) COUNTY: Newaygo

2) STUDY NAME: Brook Twp

3) WATERCOURSE: Muskegon River - Devils hole

4) DOCUMENT TYPE: 100 yr

00BREAK00

Up dated Run

THIS RUN EXECUTED 10-04-88

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**************************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
 ERROR CORR - 01,02,03,04,05,06
 MODIFICATION - 50,51,52,53,54,55,56
 IBM-PC-XT-VERSION AUGUST 1985
**************************************************

 C
 T1    DEVILS HOLE   STARTING WEEL FROM DS STUDY
 T2    XSEC 79 THROUGH 87   SURVEYED IN 1987
 T3    MUSKEGON RIVER. EXISTING COND  100YR FLOW          DEVILHOL.FHY

 J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

       0.        4.       0.       0.   .000000      .00      .0   18800.   653.360     .000

 J2  NPROF    IPLOT    PRFVS    XSECV    XSECH      FN     ALLDC     IBW      CHNIM    ITRACE

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

 J3 - VARIABLE CODES FOR SUMMARY PRINTOUT

     110.000   200.000     .000     .000     .000     .000     .000     .000     .000     .000

 J5  LPRNT    NUMSEC          ********REQUESTED SECTION NUMBERS********

      .000      .000     .000     .000     .000     .000     .000     .000     .000     .000

 NC    .090      .100     .030     .100     .300     .000     .000     .000     .000     .000
 ET    .000      .000    5.100     .000  1150.000  1419.000     .000     .000     .000     .000
                XSEC 79
 X1 90645.000   20.000  1168.000  1414.000     .000     .000     .000     .000     .000     .000
 X2      .000     .000     .000     .000     .000     .000     .000     .000     .000   15.000
 GR   660.000   974.000   649.800  1000.000   651.800  1028.000   651.800  1054.000   651.000  1082.000
 GR   651.500  1115.000   654.000  1154.000   651.400  1157.000   650.500  1163.000   648.500  1168.000
 GR   641.100  1174.000   639.800  1193.000   638.100  1248.000   641.000  1258.000   641.900  1283.000
 GR   641.400  1312.000   644.000  1360.000   644.500  1395.000   650.900  1414.000   661.500  1439.000

 ET    .000      .000    5.100     .000    44.000   227.000     .000     .000     .000     .000
                XSEC 80
 X1 91385.000   13.000    54.000   217.000   700.000   780.000   740.000     .000     .000     .000
 X2      .000     .000     .000     .000     .000     .000     .000     .000     .000   15.000
 GR   659.000     .000   652.400     5.000   649.000    22.000   648.000    36.000   646.000    39.000
 GR   644.100    54.000   639.500    82.000   639.000   119.000   639.600   176.000   641.800   200.000
 GR   644.300   217.000   651.900   240.000   654.500   246.000   660.000   250.000     .000     .000

 NC    .070      .070     .040     .000     .000     .000     .000     .000     .000     .000
 ET    .000      .000    5.100     .000   115.000   528.000     .000     .000     .000     .000
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XSEC 79 STEEP LOB RIDGE IN ROB

X1	93835.000	21.000	169.000	412.000	2350.000	2500.000	2450.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	704.400	.000	667.700	56.000	661.900	74.000	657.200	114.000	657.800	126.000
GR	652.800	148.000	654.400	163.000	648.600	169.000	646.100	189.000	644.100	213.000
GR	641.600	223.000	640.200	253.000	639.400	314.000	641.900	355.000	643.400	386.000
GR	645.900	412.000	646.200	426.000	654.400	447.000	652.900	521.000	667.100	549.000
GR	672.000	595.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.100	.070	.040	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	5.100	.000	58.000	880.000	.000	.000	.000	.000

XSEC 80. STEEP LOB ROB IS FLAT BUT ABOUT 10 FT ABOVE RIVER BED

X1	96345.000	18.000	72.000	231.000	2660.000	2000.000	2510.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	705.900	.000	646.700	72.000	641.600	94.000	640.500	129.000	641.100	163.000
GR	642.800	191.000	642.600	207.000	647.100	231.000	650.500	242.000	653.000	272.000
GR	657.400	281.000	656.000	545.000	655.900	627.000	656.100	729.000	655.900	795.000
GR	655.900	875.000	656.900	944.000	669.300	984.000	.000	.000	.000	.000
NC	.050	.120	.040	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	5.100	.000	8.900	695.300	.000	.000	.000	.000

XSEC 81 STRUCTURES IN LOB ALONG BANK ROB IS WOODED

X1	97905.000	28.000	277.000	505.000	1740.000	1120.000	1560.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	665.700	.000	651.600	20.000	650.600	32.000	654.100	56.000	654.300	77.000
GR	654.400	89.000	655.300	161.000	665.000	207.000	656.100	223.000	655.900	265.000
GR	644.400	277.000	641.600	303.000	642.500	326.000	642.600	337.000	644.100	402.000
GR	643.500	443.000	647.000	463.000	644.500	486.000	644.800	504.000	646.600	505.000
GR	657.300	528.000	650.600	535.000	654.700	590.000	659.500	635.000	658.000	737.000
GR	659.500	814.000	660.000	880.000	664.300	893.000	.000	.000	.000	.000
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	1.400	.000	.000	.000	.000	.000	.000	.000

XSEC 82 CHANNEL IS INCISED

X1	98625.000	13.000	35.000	220.000	560.000	900.000	720.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	676.600	.000	648.400	35.000	641.700	61.000	641.900	107.000	644.200	131.000
GR	644.000	146.000	642.500	169.000	644.600	188.000	648.500	229.000	651.100	222.000
GR	652.800	222.000	667.000	246.000	659.900	297.000	.000	.000	.000	.000
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NH	5.000	.090	1141.000	10.000	1171.000	.050	1437.000	.040	1554.000	.120
NH	1661.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	7.100	5.100	.000	1639.000	640.000	1578.000	.000	.000

XSEC 83 STRUCTURES IN LOB ALONG BANK FAR LOB HEAVY VEG
ROB HAS STEEP BANK THAT DROPS OFF INTO A SWAMP FLOW AREA
IS NOT VERY EFFECTIVE NOT INCLUDED IN XSEC HWM 663.0

X1	100295.000	39.000	1437.000	1554.000	1460.000	1780.000	1670.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
X4	2.000	654.700	725.000	654.100	851.000	.000	.000	.000	.000	.000
GR	667.100	480.000	654.800	802.000	655.600	721.000	653.600	760.000	655.600	1000.000
GR	656.600	1005.000	656.500	1021.000	656.600	1028.000	656.700	1141.000	656.700	1171.000
GR	655.700	1190.000	654.100	1183.000	651.100	1197.000	649.900	1199.000	649.200	1200.000
GR	648.300	1207.000	649.400	1213.000	649.900	1214.000	651.500	1216.000	651.800	1225.000

GR	654.400	1232.000	654.900	1296.000	652.100	1316.000	651.000	1362.000	650.100	1365.000
GR	648.500	1381.000	648.700	1420.000	649.600	1426.000	648.900	1435.000	648.000	1437.000
GR	645.000	1465.000	643.400	1486.000	641.300	1504.000	642.400	1539.000	647.900	1554.000
GR	665.200	1578.000	662.800	1614.000	663.000	1639.000	653.500	1661.000	.000	.000
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NH	5.000	.070	736.000	10.000	766.000	.050	912.000	.040	1076.000	.120
NH	1135.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	1.400	.000	.000	.000	.000	.000	.000	.000
	XSEC 84 STRUCTURES IN LOB ALONG BANK FAR LOB HEAVY VEG HWM 663.0									
X1	101055.000	24.000	912.000	1076.000	400.000	1000.000	760.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	676.600	.000	656.600	197.000	656.800	265.000	655.100	286.000	655.900	341.000
GR	655.600	415.000	657.200	563.000	657.400	583.000	659.900	736.000	659.300	766.000
GR	658.400	785.000	655.600	805.000	654.000	845.000	650.300	912.000	648.200	928.000
GR	646.300	943.000	643.900	983.000	645.300	1016.000	644.600	1029.000	646.800	1051.000
GR	646.100	1076.000	657.200	1109.000	650.100	1115.000	666.700	1135.000	.000	.000
NH	5.000	.070	319.000	10.000	349.000	.050	373.000	.040	517.000	.120
NH	1280.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	1.400	5.100	.000	930.000	.000	.000	.000	.000
	XSEC 85 HOMES IN LOB 1986 HWM 662.6									
X1	101756.000	35.000	373.000	517.000	560.000	860.000	740.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	675.700	.000	659.300	25.000	657.800	31.000	656.000	49.000	656.600	79.000
GR	657.000	120.000	656.000	163.000	657.700	179.000	657.800	213.000	658.400	223.000
GR	657.900	234.000	659.000	246.000	659.600	319.000	659.800	349.000	659.400	359.000
GR	651.000	373.000	645.800	384.000	643.400	395.000	641.400	408.000	644.800	453.000
GR	647.600	486.000	652.200	517.000	653.900	522.000	655.900	573.000	655.500	665.000
GR	655.600	680.000	657.300	683.000	657.200	803.000	659.300	867.000	657.900	930.000
GR	659.500	1060.000	659.500	1200.000	669.300	1240.000	679.200	1260.000	689.000	1280.000
NH	6.000	.080	521.000	.050	638.000	10.000	686.000	.050	755.000	.040
NH	934.000	.120	1730.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	1.400	.000	.000	.000	.000	.000	.000	.000
	XSEC 86 HOMES IN LOB 1986 HWM 664									
X1	103535.000	32.000	755.000	934.000	1420.000	1820.000	1780.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	678.400	.000	659.100	64.000	656.900	158.000	660.100	252.000	659.100	333.000
GR	659.100	450.000	659.100	504.000	659.600	521.000	659.400	549.000	659.800	638.000
GR	660.400	686.000	660.600	728.000	657.500	747.000	651.600 LOB	755.000	646.100	785.000
GR	646.100	812.000	647.400	845.000	648.400	871.000	647.400	897.000	651.900 ROB	934.000
GR	652.900	937.000	655.400	980.000	656.300	985.000	655.900	1015.000	655.400	1042.000
GR	658.100	1052.000	658.200	1077.000	657.900	1151.000	660.300	1216.000	659.000	1260.000
GR	659.000	1560.000	659.000	1730.000	.000	.000	.000	.000	.000	.000
NC	.000	.120	.040	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	1.400	.000	.000	.000	.000	.000	.000	.000
	XSEC 87 LOB STEEP ROB WOODED									
X1	105455.000	16.000	23.000	193.000	2200.000	1320.000	1920.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	671.900	.000	652.400	23.000	647.400	62.000	642.200	99.000	643.900	126.000
GR	646.900	155.000	652.700	193.000	654.100	202.000	658.200	286.000	662.000	300.000
GR	661.000	346.000	661.100	429.000	660.500	531.000	661.400	621.000	662.000	1080.000

GR	669.000	1101.000	.000	.000	.000	.000	.000	.000	.000	.000
EJ	.000	.000	.000	.000	.000	.000	.000	.000	.000	.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	KLOBL	XLCH	ALOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

#PROF 1

CCHV= .100 CEHV= .300

#SECNO 90645.000

3265 DIVIDED FLOW

XSEC 59

90645.00	15.26	653.36	.00	653.36	654.03	.67	.00	.00	648.50
18800.	226.	18571.	3.	316.	2803.	7.	0.	0.	650.90
.00	.71	6.63	.43	.090	.030	.100	.000	638.10	990.93
.000717	0.	0.	0.	0	0	0	.00	418.15	1419.89

FLOW DISTRIBUTION FOR SECNO= 90645.00 CWSEL= 653.36

STA=	991.	1000.	1028.	1054.	1082.	1115.	1144.	1163.	1168.	1414.	1420.
PER Q=	.1	.3	.1	.2	.3	.1	.1	.1	98.8	.0	
AREA=	16.2	71.7	40.6	54.9	69.6	27.9	16.7	19.3	2802.7	7.1	
VEL=	.6	.8	.6	.7	.7	.4	.7	1.0	6.6	.4	

#SECNO 91385.000

XSEC 60

91385.00	14.69	653.69	.00	.00	654.74	1.05	.59	.11	644.30
18800.	456.	18169.	176.	272.	2178.	132.	48.	6.	644.30
.03	1.67	8.34	1.33	.090	.030	.100	.000	639.00	4.02
.000900	700.	740.	780.	2	0	0	.00	239.96	243.98

FLOW DISTRIBUTION FOR SECNO= 91385.00 CWSEL= 653.69

STA=	4.	22.	36.	39.	54.	217.	240.	244.
PER Q=	.3	.6	.2	1.4	96.6	.9	.0	
AREA=	51.5	72.7	20.1	128.1	2177.6	128.6	3.6	
VEL=	1.0	1.5	1.6	2.4	8.3	1.4	.4	

#SECNO 93835.000

3301 HV CHANGED MORE THAN HVINS

XSEC 79 - STEEP LOB RIDGE IN ROB

93835.00	16.78	656.18	.00	.00	656.59	.42	1.79	.06	648.60
18800.	180.	17915.	735.	144.	3388.	463.	233.	24.	645.90
.16	1.04	5.29	1.59	.070	.040	.070	.000	639.40	117.61
.000606	2350.	2450.	2500.	2	0	0	.00	409.85	527.46

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

FLOW DISTRIBUTION FOR SECNO= 93835.00 CWSEL= 656.18

STA=	118.	126.	148.	163.	169.	412.	426.	447.	521.	527.
PER Q=	.0	.4	.2	.2	95.3	1.8	1.1	1.0	.0	
AREA=	10.0	65.5	40.1	28.1	3388.4	141.8	123.4	186.9	10.6	
VEL=	.6	1.1	1.0	1.2	5.3	2.4	1.6	1.9	.7	

XSECNO 96345.000

XSEC 80. STEEP LOB ROB IS FLAT BUT ABOUT 10 FT ABOVE RIVER BED

96345.00	17.30	657.80	.00	.00	658.48	.68	1.81	.08	646.70
18800.	88.	17193.	1519.	75.	2492.	1298.	450.	56.	647.10
.27	1.17	6.90	1.17	.100	.040	.070	.000	640.50	58.50
.000891	2660.	2510.	2000.	2	0	0	.00	888.40	946.90

FLOW DISTRIBUTION FOR SECNO= 96345.00 CWSEL= 657.80

STA=	59.	72.	231.	242.	272.	281.	545.	627.	729.	795.	875.	944.	947.
PER Q=	.5	91.5	1.4	2.0	.3	1.0	.8	.9	.6	.8	.4	.0	
AREA=	74.9	2491.6	99.6	181.5	23.4	290.2	151.6	183.5	119.8	151.9	96.6	1.3	
VEL=	1.2	6.7	2.7	2.1	1.1	.7	1.0	.9	.9	1.0	.8	.4	

XSECNO 97905.000

3265 DIVIDED FLOW

XSEC 81 STRUCTURES IN LOB ALONG BANK ROB IS WOODED

97905.00	17.51	659.11	.00	.00	659.40	.30	.89	.04	646.40
19800.	1770.	15511.	519.	1033.	3563.	720.	606.	81.	646.60
.37	1.71	4.63	.72	.050	.040	.120	.000	641.60	9.35
.000402	1740.	1560.	1120.	2	0	0	.00	715.48	793.81

FLOW DISTRIBUTION FOR SECNO= 97905.00 CWSEL= 659.11

STA=	9.	56.	161.	277.	505.	794.
PER Q=	3.3	4.0	2.1	87.8	2.8	
AREA=	298.2	466.6	268.4	3562.9	719.9	
VEL=	2.1	1.6	1.5	4.6	.7	

XSECNO 98625.000

XSEC 82 CHANNEL IS INCISED

98625.00	17.56	659.26	.00	.00	659.90	.65	.39	.10	648.40
16800.	161.	18536.	104.	73.	2857.	95.	675.	89.	648.50
.40	2.20	6.49	1.09	.050	.040	.120	.000	641.70	21.52
.000691	560.	720.	900.	2	0	0	.00	215.21	236.73

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	HTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IBC	ICONT	CORAR	TOPWID	ENDST

FLOW DISTRIBUTION FOR SECNO= 98625.00 CWSEL= 659.26

STA=	22.	35.	220.	222.	229.	237.
PER Q=	.9	98.6	.1	.4	.1	
AREA=	73.1	2857.0	18.9	51.1	25.0	
VEL=	2.2	6.5	1.1	1.3	.6	

1490 NH CARD USED
XSECNO 100295.000
XSEC 83 STRUCTURES IN LOB ALONG BANK FAR LOB HEAVY VEG
ROB HAS STEEP BANK THAT DROPS OFF INTO A SWAMP FLOW AREA
IS NOT VERY EFFECTIVE NOT INCLUDED IN XSEC HWM 663.0

100295.00	19.32	660.62	.00	.00	660.81	.19	.86	.05	648.00
18800.	9500.	9219.	81.	3961.	1958.	112.	872.	111.	647.90
.54	1.59	4.71	.72	.066	.040	.120	.000	641.30	491.59
.000331	1460.	1670.	1780.	2	0	0	.00	1080.06	1571.55

FLOW DISTRIBUTION FOR SECNO= 100295.00 CWSEL= 660.62

STA=	472.	721.	851.	1000.	1197.	1214.	1296.	1362.	1391.	1420.	1437.	1554.	1572.
PER Q=	6.4	5.2	4.7	4.3	3.0	5.8	7.2	3.2	7.6	3.0	49.0	.4	
AREA=	1217.6	864.6	859.9	351.9	196.0	535.4	559.7	211.4	468.8	195.5	1958.2	112.3	
VEL=	1.0	1.1	1.0	.9	2.9	2.0	2.4	2.9	3.0	2.9	4.7	.7	

1490 NH CARD USED
XSECNO 101055.000
XSEC 84 STRUCTURES IN LOB ALONG BANK FAR LOB HEAVY VEG HWM 663.0

101055.00	15.72	660.82	.00	.00	661.14	.32	.29	.04	650.30
18800.	5458.	12938.	404.	3248.	2420.	381.	958.	122.	648.10
.58	1.68	5.35	1.06	.061	.040	.120	.000	643.90	155.45
.000574	400.	760.	1000.	2	0	0	.00	972.30	1127.76

FLOW DISTRIBUTION FOR SECNO= 101055.00 CWSEL= 660.82

STA=	155.	286.	415.	563.	806.	912.	1076.	1128.
PER Q=	3.1	5.4	4.8	3.5	12.3	68.8	2.1	
AREA=	469.8	667.5	653.8	639.5	817.4	2420.1	380.9	
VEL=	1.3	1.5	1.4	1.0	2.8	5.3	1.1	

1490 NH CARD USED

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

#SECNO 101755.000

XSEC 85 HOMES IN LOB 1986 HWM 662.6

101755.00	19.73	661.13	.00	.00	661.73	.60	.51	.08	651.00
18800.	1840.	15245.	1715.	1169.	2217.	1605.	1046.	136.	652.20
.62	1.57	6.88	1.07	.069	.040	.120	.000	641.40	22.21
.000912	560.	740.	860.	2	0	0	.00	844.79	867.00

FLOW DISTRIBUTION FOR SECNO= 101755.00 CWSEL= 661.13

STA=	22.	120.	213.	373.	517.	665.	867.
PER Q=	3.8	3.4	2.6	81.1	5.5	3.6	
AREA=	416.4	382.3	369.8	2217.3	857.4	747.3	
VEL=	1.7	1.7	1.3	6.9	1.2	.9	

1490 NH CARD USED

#SECNO 103535.000

XSEC 86 HOMES IN LOB 1986 HWM 664

103535.00	16.56	662.66	.00	.00	662.99	.33	1.23	.03	651.60
18800.	2497.	13955.	2348.	2286.	2636.	2869.	1295.	181.	651.70
.73	1.09	5.29	.82	.072	.040	.120	.000	646.10	52.18
.000566	1420.	1780.	1820.	2	0	0	.00	1570.11	1622.29

FLOW DISTRIBUTION FOR SECNO= 103535.00 CWSEL= 662.66

STA=	52.	252.	450.	638.	755.	934.	1015.	1151.	1560.	1622.
PER Q=	3.5	3.5	4.2	2.0	74.2	3.5	3.3	5.4	.3	
AREA=	662.9	665.2	810.1	347.6	2636.1	593.9	699.8	1460.9	114.1	
VEL=	1.0	1.0	1.3	1.1	5.3	1.1	.9	.7	.4	

#SECNO 105455.000

XSEC 87 LOB STEEP ROB WOODED

105455.00	20.65	663.65	.00	.00	664.17	.52	1.12	.06	652.40
18800.	82.	17031.	1687.	75.	2814.	2430.	1555.	231.	652.70
.83	1.10	6.05	.69	.090	.040	.120	.000	643.20	9.73
.000635	2200.	1720.	1320.	2	0	0	.00	1075.24	1084.96

FLOW DISTRIBUTION FOR SECNO= 105455.00 CWSEL= 663.65

STA=	10.	23.	193.	202.	286.	300.	346.	429.	531.	621.	1080.	1085.
PER Q=	.4	90.6	.6	3.2	.2	.3	.7	1.0	.8	2.3	.0	
AREA=	74.7	2814.2	83.3	546.4	49.8	99.1	216.2	291.1	243.4	897.0	4.1	
VEL=	1.1	6.1	1.3	1.1	.7	.5	.6	.6	.6	.5	.3	

THIS RUN EXECUTED 10-04-88

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*****************************************************
HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
ERROR CORR -- 01,02,03,04,05,06
MODIFICATION-- 50,51,52,53,54,55,56
IBM-PC-XT VERSION AUGUST 1985
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T1
T2 FLOODWAY RUN
T3

J1	ICHECK	ING	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	3.	0.	0.	.000000	.00	.0	18800.	653.440	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	15.000	.000	-1.000	.000	.000	.000	.000	.000	.000	.000

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

 #PROF 2

 CCHV=   .100 CEHV=   .300
 #SECNO 90645.000

 3470 ENCROACHMENT STATIONS=   1150.0   1415.0 TYPE=    1 TARGET=    269.000
                    XSEC 59
 90645.00   15.34   653.44     .00   653.36   654.12     .68     .00     .00   648.50
  18800.     34.    18763.      3.      37.    2822.      7.      0.      0.    650.90
     .00     .91     8.65      .46     .090     .030     .100     .000   638.10  1154.65
 .000715      0.      0.        0.       0        0        0      .00   264.35  1419.00

 FLOW-DISTRIBUTION FOR SECNO=  90645.00      CWSEL=   653.44

 STA=    1155.   1163.   1168.   1414.   1419.
 PER Q=     .1      .1    99.8      .0
 AREA=     17.3    19.7  2822.4     7.4
 VEL=       .7     1.0     6.6      .5

 #SECNO 91385.000

 3470 ENCROACHMENT STATIONS=     44.0    227.0 TYPE=    1 TARGET=    183.000
                    XSEC 60
 91385.00   14.74   653.74     .00   653.69   654.85    1.11     .60     .13   644.30
  18800.    128.    18574.     99.     89.    2186.     78.     44.      4.    644.30
     .02    1.44     8.50     1.27     .090     .030     .100     .000   639.00   44.00
 .000928     700.    740.     780.       2        0        0      .00   183.00   227.00

 FLOW DISTRIBUTION FOR SECNO=  91385.00      CWSEL=   653.74

 STA=     44.     54.    217.    227.
 PER Q=     .7    98.8      .5
 AREA=     68.8  2136.2    77.9
 VEL=      1.4     6.5     1.3

 #SECNO 93833.000

 3301 HV CHANGED MORE THAN HVINS

 3470 ENCROACHMENT STATIONS=    115.0    528.0 TYPE=    1 TARGET=    413.000
```

XSEC 79 STEEP LOB RIDGE IN ROB

93835.00	16.90	656.30	.00	656.18	656.71	.41	1.79	.07	648.60
18900.	157.	17890.	753.	150.	3418.	477.	224.	20.	645.90
.16	1.05	5.23	1.58	.070	.040	.070	.000	639.40	117.18
.000587	2330.	2450.	2500.	2	0	0	.00	410.53	527.70

FLOW DISTRIBUTION FOR SECNO= 93935.00 CWSEL= 656.30

STA=	117.	126.	148.	163.	169.	412.	426.	447.	521.	528.
PER Q=	.0	.4	.2	.2	95.2	1.9	1.1	1.0	.0	
AREA=	11.0	68.2	42.0	28.8	3418.5	143.5	126.0	196.1	11.4	
VEL=	.6	1.1	1.0	1.2	5.2	2.4	1.6	1.0	.7	

XSECNO 96345.000

3470 ENCROACHMENT STATIONS= 52.0 880.0 TYPE= 1 TARGET= 822.000

XSEC 80. STEEP LOB ROB IS FLAT BUT ABOUT 10 FT ABOVE RIVER BED

96345.00	17.38	657.88	.00	657.80	658.55	.67	1.76	.08	646.70
18800.	89.	17196.	1515.	76.	2504.	1259.	442.	52.	647.10
.27	1.17	6.27	1.20	.100	.040	.070	.000	640.50	58.41
.000577	2660.	2510.	2000.	2	0	0	.00	821.59	880.00

FLOW DISTRIBUTION FOR SECNO= 96345.00 CWSEL= 657.88

STA=	59.	72.	231.	242.	272.	281.	545.	627.	729.	795.	875.	880.
PER Q=	.5	91.5	1.4	2.1	.1	1.2	.8	1.0	.6	.8	.0	
AREA=	75.0	2503.9	99.8	183.8	24.1	310.6	158.0	191.4	123.9	158.1	9.7	
VEL=	1.2	6.9	2.7	2.1	1.1	.7	1.0	1.0	1.0	1.0	.8	

XSECNO 97905.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 8.9 695.0 TYPE= 1 TARGET= 686.100

XSEC 81 STRUCTURES IN LOB ALONG BANK ROB IS WOODED

97905.00	17.57	659.17	.00	659.11	659.46	.29	.88	.04	646.40
18800.	1792.	16495.	513.	1047.	3577.	685.	598.	74.	646.60
.37	1.71	4.61	.77	.050	.040	.120	.000	641.60	9.27
.000396	1740.	1560.	1120.	2	0	0	.00	621.83	695.00

FLOW DISTRIBUTION FOR SECNO= 97905.00 CWSEL= 659.17

STA=	9.	56.	141.	277.	505.	695.
PER Q=	3.3	4.1	2.1	87.7	2.7	
AREA=	301.0	473.0	273.1	3576.7	664.8	
VEL=	2.1	1.6	1.5	4.6	.8	

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

*SECNO 98625.000
2800 NAT Q1=  6644.17  WSEL=   659.26  ENC-Q1=  6644.17  WSEL=   659.36  RATIO=  .0000
NAT Q1=  6717.  RATIOS-LOB,CH,ROB=  .0087  .9857  .0056  WSEL=   659.36

3470 ENCROACHMENT STATIONS=     31.9    220.9  TYPE=    4  TARGET=       .011
          XSEC-82-CHANNEL IS INCISED
98625.00   17.60   659.30     .00   659.26   659.96     .66     .39     .11   648.40
  18800.     45.    18752.      3.     30.    2865.      9.    665.     80.   648.50
     .40    1.52     6.54     .30    .050     .040    .120    .000  641.70   31.93
 .000812    560.     720.    900.       2        0       0     .00  188.93  220.86

FLOW DISTRIBUTION FOR SECNO=  98625.00        CWSEL=   659.30

STA=      32.     35.     220.     221.
 PER Q=      .2     99.7      .0
 AREA=    29.7   2865.1     8.8
  VEL=     1.5      6.5      .3

1490 NH CARD USED
*SECNO 100295.000
3280 CROSS SECTION 100295.00 EXTENDED      7.20 FEET

3470 ENCROACHMENT STATIONS=     640.0    1578.0  TYPE=    1  TARGET=     938.000
          XSEC 83  STRUCTURES IN LOB ALONG BANK  FAR LOB HEAVY VEG
          ROB HAS STEEP BANK THAT DROPS OFF INTO A SWAMP FLOW AREA
          IS NOT VERY EFFECTIVE  NOT INCLUDED IN XSEC   HWM 663.0
100295.00   19.40   660.70     .00   660.62   660.91     .21     .90     .05   648.00
  18800.    9124.    9591.     85.    5225.    1967.    114.    848.    100.   647.90
     .53    1.75     4.88     .75     .064     .040    .120    .000  641.30  640.00
 .000406    1460.    1670.   1780.       2        0       0     .00  931.76 1571.76

FLOW DISTRIBUTION FOR SECNO= 100295.00        CWSEL=   660.70

STA=     640.     760.     851.    1000.    1183.    1207.    1232.    1296.    1362.    1381.    1420.    1437.    1554.
 PER Q=     3.7      4.0      5.0      3.1      3.3      3.3      4.1      7.6      3.4      7.9      3.2     51.0
 AREA=   676.6    623.4    871.7    754.0    228.6    236.8    387.2    564.9    212.9    471.9    196.9   1967.4
  VEL=     1.0      1.2      1.1       .8      2.7      2.6      2.0      2.5      3.0      3.2      3.0      4.9
STA=    1554.    1572.
 PER Q=      .5
 AREA=   113.6
  VEL=      .7
```

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	YNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IBC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
#SECNO 101055.000
2000 NAT Q1= 7644.08 WSEL= 660.82 END Q1= 7644.08 WSEL= 660.92 RATIO= .0000
NAT Q1= 7983. RATIOS LOB,CH,ROB= .2946 .6836 .0216 WSEL= 660.92

3470 ENCROACHMENT STATIONS= 209.6 1099.8 TYPE= 4 TARGET= .017
XSEC-84 STRUCTURES IN LOB ALONG BANK FAR LOB HEAVY VEG HWM 663.0

101055.00	17.02	660.92	.00	660.82	661.24	.32	.30	.03	650.30
16800.	5470.	13076.	254.	3179.	2437.	227.	929.	110.	648.10
.57	1.72	5.37	1.12	.061	.040	.120	.000	643.90	209.58
.000573	400.	760.	1000.	2	0	0	.00	890.20	1099.78

FLOW DISTRIBUTION FOR SECNO= 101055.00 CWSEL= 660.92

STA=	210.	341.	415.	563.	806.	845.	912.	1076.	1100.
PER Q=	4.9	3.1	4.9	3.7	3.1	9.4	69.6	1.4	
AREA=	635.2	382.5	668.8	664.1	240.6	587.5	2436.7	226.9	
VEL=	1.4	1.5	1.4	1.0	2.4	3.0	5.4	1.1	

1490 NH CARD USED
#SECNO 101755.000
2000 NAT Q1= 6225.58 WSEL= 661.13 END Q1= 6225.58 WSEL= 661.23 RATIO= .0000
NAT Q1= 6486. RATIOS LOB,CH,ROB= .0780 .7868 .1152 WSEL= 661.23

3470 ENCROACHMENT STATIONS= 73.7 918.3 TYPE= 4 TARGET= .040
XSEC 95 HOMES IN LOB 1986 HWM 662.6

101755.00	19.87	661.23	.00	661.13	661.84	.61	.51	.09	651.00
18300.	1521.	15416.	1363.	983.	2232.	1767.	1015.	123.	652.20
.61	1.55	6.91	1.05	.069	.040	.120	.000	641.40	73.75
.000913	550.	740.	860.	2	0	0	.00	844.54	918.28

FLOW DISTRIBUTION FOR SECNO= 101755.00 CWSEL= 661.23

STA=	74.	163.	319.	373.	517.	665.	867.	918.	
PER Q=	3.8	3.0	1.3	82.0	5.7	3.8	.5		
AREA=	409.4	427.4	146.5	2231.5	872.1	767.3	128.1		
VEL=	1.7	1.5	1.7	6.9	1.2	.9	.7		

1490 NH CARD USED
#SECNO 103535.000

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

2800 NAT Q1= 7902.78 WSEL= 662.66 ENC Q1= 7902.78 WSEL= 662.76 RATIO= .0000
NAT Q1= 8057. RATIOS LOB,CH,ROB= .4368 .7363 .1270 WSEL= 662.76

3470 ENCROACHMENT STATIONS= 104.6 1514.3 TYPE= 4 TARGET= .019
XSEC 86 HOMES IN LOB 1986 HUM 664

103535.00	16.67	662.77	.00	662.66	663.10	.33	1.24	.03	651.60
18800.	2442.	14105.	2253.	2187.	2655.	2649.	1259.	166.	651.90
.72	1.12	5.31	.85	.072	.040	.120	.000	646.10	104.65
.000564	1420.	1780.	1820.	2	0	0	.00	1409.65	1514.30

FLOW DISTRIBUTION FOR SECNO= 103535.00 CWSEL= 662.77

STA=	105.	333.	504.	638.	755.	934.	1015.	1151.	1514.
PER Q=	4.0	3.5	3.4	2.1	75.0	3.6	3.4	4.9	
AREA=	767.7	627.6	431.9	360.0	2655.1	602.5	714.2	1332.1	
VEL=	1.0	1.1	1.5	1.1	5.3	1.1	.9	.7	

SECNO 105455.000
2800 NAT Q1= 7462.60 WSEL= 663.65 ENC Q1= 7462.60 WSEL= 663.75 RATIO= .0000
NAT Q1= 7567. RATIOS LOB,CH,ROB= .0044 .9024 .0932 WSEL= 663.75

3470 ENCROACHMENT STATIONS= 23.0 882.1 TYPE= 4 TARGET= .014
XSEC 87 LOB STEEP ROB WOODED

105455.00	20.60	663.80	.00	663.65	664.32	.51	1.16	.05	652.40
13800.	0.	17113.	1687.	0.	2839.	2174.	1508.	209.	652.70
.82	.00	6.03	.78	.070	.040	.120	.000	643.20	23.00
.000578	2200.	1920.	1320.	2	0	0	.00	859.14	882.14

FLOW DISTRIBUTION FOR SECNO= 105455.00 CWSEL= 663.80

STA=	23.	193.	202.	286.	300.	346.	429.	531.	621.	882.
PER Q=	91.0	.6	3.4	.2	.3	.8	1.1	.9	1.7	
AREA=	2839.1	84.6	558.7	51.8	105.8	228.3	306.1	256.6	582.4	
VEL=	6.0	1.4	1.1	.8	.6	.6	.7	.6	.5	

THIS RUN EXECUTED 10-04-88

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HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
ERROR CORR - 01,02,03,04,05,06
MODIFICATION - 50,51,52,53,54,55,56
IBM-PC-XT VERSION AUGUST 1985

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

MUSKEGON RIVER EXISTING

SUMMARY PRINTOUT TABLE 110

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
90645.000	653.36	.00	654.03	418.15	225.58	18571.34	3.09	.00	.00	1168.00	1414.00	.00
90645.000	653.44	.08	654.12	264.35	33.58	18762.98	3.44	269.00	1150.00	1168.00	1414.00	1419.00
91385.000	653.69	.00	654.74	239.96	454.93	18169.17	175.91	.00	.00	54.00	217.00	.00
91385.000	653.74	.05	654.85	183.00	127.65	18573.73	98.62	183.00	44.00	54.00	217.00	227.00
93835.000	656.18	.00	656.59	409.85	149.58	17915.63	735.38	.00	.00	169.00	412.00	.00
93835.000	656.30	.12	656.71	410.53	157.42	17889.53	753.05	413.00	115.00	169.00	412.00	528.00
96345.000	657.20	.00	658.48	538.40	87.69	17193.37	1518.95	.00	.00	72.00	231.00	.00
96345.000	657.88	.08	658.55	821.59	88.61	17196.30	1515.09	822.00	58.00	72.00	231.00	880.00
97905.000	659.11	.00	659.40	715.48	1770.03	16510.77	519.20	.00	.00	277.00	505.00	.00
97905.000	659.17	.06	659.46	621.83	1752.42	16494.73	512.85	686.10	8.90	277.00	505.00	695.00
98625.000	659.26	.00	659.90	215.21	160.83	18535.63	103.54	.00	.00	35.00	220.00	.00
98625.000	659.30	.04	659.96	188.93	45.03	18752.31	2.67	.01	31.93	35.00	220.00	220.86
100295.000	660.62	.00	660.81	1080.06	9540.31	9218.69	81.00	1639.00	.00	1437.00	1554.00	1639.00
100295.000	660.70	.08	660.91	931.76	9123.66	9591.34	85.00	938.00	640.00	1437.00	1554.00	1578.00
101055.000	660.82	.00	661.14	972.30	5459.03	12937.88	404.09	.00	.00	912.00	1076.00	.00
101055.000	660.92	.10	661.24	893.20	5470.19	13075.83	253.99	.02	209.58	912.00	1076.00	1099.78
101755.000	661.13	.00	661.73	844.79	1839.79	15244.60	1715.62	930.00	.00	373.00	517.00	930.00
101755.000	661.23	.10	661.84	844.54	1521.20	15415.53	1863.27	.04	73.75	373.00	517.00	918.28
103535.000	662.66	.00	662.99	1570.11	2497.20	13954.69	2348.11	.00	.00	755.00	934.00	.00
103535.000	662.77	.11	663.10	1409.65	2442.41	14104.86	2252.74	.02	104.65	755.00	934.00	1514.30
105455.000	663.63	.00	664.17	1075.24	82.06	17031.39	1686.55	.00	.00	23.00	193.00	.00
105455.000	663.80	.15	664.32	859.14	.00	17113.09	1586.91	.01	23.00	23.00	193.00	882.14

FLOODWAY DATA, MUSKEGON RIVER EXISTING
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
90645.000	264.	2867.	4.6	653.5	653.4	.1
91295.000	193.	2353.	5.0	653.8	653.7	.1
93835.000	411.	4045.	4.6	656.3	656.2	.1
96345.000	822.	3809.	4.9	657.9	657.8	.1
97905.000	686.	5289.	3.6	659.2	659.1	.1
98425.000	189.	2904.	6.5	659.3	659.3	.0
100295.000	932.	7506.	2.6	660.7	660.6	.1
101055.000	690.	5842.	3.2	660.9	660.8	.1
101755.000	845.	4982.	3.8	661.2	661.1	.1
103535.000	1410.	7491.	2.5	662.8	662.7	.1
105455.000	859.	5017.	3.7	663.8	663.7	.1



1) COUNTY: Newaygo

2) STUDY NAME: Brook Twp

3) WATERCOURSE: Muskegon River - Devils hole

4) DOCUMENT TYPE: 100yr Natural



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                    C:\
 Name          Size      Date      Time     ************
BASIC         SUB-DIR   1-19-88   1:38a                *
BAT           SUB-DIR   1-27-88   2:18a 1              *
CULVERTF      SUB-DIR   1-25-88   8:28p                *
DBASE         SUB-DIR   2-15-88  11:12a   1985-1987    *
DISK_MAG      SUB-DIR   1-19-88   1:43a ************
DOS           SUB-DIR   1-19-88   1:34a
HEC2          SUB-DIR   1-22-88   2:27a
PCFILE        SUB-DIR   2-15-88  11:13a
UTIL          SUB-DIR   2-10-88   4:49p norton:c:\
Io      sys     22357   7-24-87  12:00a
Msdos   sys     30128   7-24-87  12:00a
autoexec bat       81   2-10-88   4:55p
The Norton Commander, Copyright (C) 1986 by Peter Norton

C:

1Help  2Menu  3View  4Edit  5Copy  6RenMov 7Mkdir 8Delete 9Setup 10Quit
```

```
*************************************************
* WATER SURFACE PROFILES                        *
* VERSION OF NOVEMBER 1976                      *
* UPDATED MAY 1984                              *
* IBM-PC-XT VERSION AUGUST 1985                 *
* RUN DATE 02-24-88   TIME 11:19:22             *
*************************************************
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*****************************************
* U.S. ARMY CORPS OF ENGINEERS          *
* THE HYDROLOGIC ENGINEERING CENTER     *
* 609 SECOND STREET, SUITE D            *
* DAVIS, CALIFORNIA 95616               *
*  (916) 440-2105 (FTS) 448-2105        *
*****************************************
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X    X  XXXXXXX   XXXXX            XXXXX
X    X  X       X    X          X    X
X    X  X       X                    X
XXXXXXX  XXXX    X        XXXXX   XXXXX
X    X  X       X              X
X    X  X       X    X         X
X    X  XXXXXXX   XXXXX         XXXXXXX

1
 02-24-88    11:19:22                                              PAGE    1
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THIS RUN EXECUTED 02-24-88

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*************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
 IBM-PC-XT VERSION AUGUST 1985
*************************************************

C
 TI     DEVILS HOLE    STARTING WSEL FROM OS STUDY
```

```
T2   XSEC 79 THROUGH 87   SURVEYED IN 19 7          NATURAL FLL    Y
T3   MUSKEGON RIVER  EXISTING COND   1986 FLOW              FWENCR.100

J1  ICHECK    INQ     NINV     IDIR     STRT     METRIC    HVINS     Q        WSEL      FQ

     0.       4.       0.       0.   .000000      .00       .0    18800.   653.360     .000

J2  NPROF     IPLOT    PRFVS    XSECV    XSECH     FN      ALLDC     IBW      CHNIM     ITRACE

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

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    110.000  200.000     .000     .000     .000     .000     .000     .000     .000     .000

J5  LPRNT    NUMSEC                  ********REQUESTED SECTION NUMBERS********

     .000     .000     .000     .000     .000     .000     .000     .000     .000     .000

NC      .090     .100     .030     .100     .300     .000     .000     .000     .000     .000
ET      .000     .000    5.100     .000  1150.000  1419.000     .000     .000     .000     .000
                XSEC 59
X1  90645.000   20.000  1168.000  1414.000     .000     .000     .000     .000     .000     .000
X2      .000     .000     .000     .000     .000     .000     .000     .000     .000    15.000
GR    660.000  974.000   649.800  1000.000   651.800  1028.000   651.800  1054.000   651.000  1082.000
GR    651.500 1115.000   654.000  1154.000   651.400  1157.000   650.500  1163.000   648.500  1168.000
GR    641.100 1174.000   639.800  1193.000   638.100  1248.000   641.000  1258.000   641.900  1283.000
GR    641.400 1312.000   644.000  1360.000   644.500  1395.000   650.900  1414.000   661.500  1439.000

ET      .000     .000    5.100     .000    44.000   227.000     .000     .000     .000     .000
                XSEC 60
X1  91385.000   13.000    54.000   217.000   700.000   780.000   740.000     .000     .000     .000
X2      .000     .000     .000     .000     .000     .000     .000     .000     .000    15.000
GR    659.000     .000   652.400     5.000   649.000    22.000   648.000    36.000   646.000    39.000
GR    644.300    54.000   639.500    82.000   639.000   119.000   639.600   176.000   641.800   200.000
GR    644.300   217.000   651.900   240.000   654.600   246.000   660.000   250.000     .000     .000

NC      .070     .070     .040     .000     .000     .000     .000     .000     .000     .000
ET      .000     .000    5.100     .000   115.000   528.000     .000     .000     .000     .000
1
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                XSEC 79    STEEP LOB    RIDGE IN ROB
X1  93835.000   21.000   169.000   412.000  2350.000  2500.000  2450.000     .000     .000     .000
X2      .000     .000     .000     .000     .000     .000     .000     .000     .000    15.000
GR    704.400     .000   667.700    56.000   661.900    74.000   657.200   114.000   653.800   126.000
GR    652.600   148.000   654.400   163.000   648.600   169.000   646.100   189.000   644.100   213.000
GR    641.600   223.000   640.200   253.000   639.400   314.000   641.900   355.000   643.400   386.000
GR    645.900   412.000   646.200   426.000   654.400   447.000   652.900   521.000   667.100   549.000
GR    672.000   595.000     .000     .000     .000     .000     .000     .000     .000     .000

NC      .100     .070     .040     .000     .000     .000     .000     .000     .000     .000
ET      .000     .000    5.100     .000    58.000   880.000     .000     .000     .000     .000
                XSEC 80.  STEEP LOB   ROB IS FLAT BUT ABOUT 10 FT ABOVE RIVER BED
X1  96345.000   18.000    72.000   231.000  2660.000  2000.000  2510.000     .000     .000     .000
X2      .000     .000     .000     .000     .000     .000     .000     .000     .000    15.000
GR    705.900     .000   646.700    72.000   641.600    84.000   640.500   129.000   641.100   163.000
GR    642.800   191.000   642.600   207.000   647.100   231.000   650.500   242.000   653.000   272.000
GR    657.400   281.000   656.000   545.000   655.900   627.000   656.100   729.000   655.900   795.000
GR    655.900   875.000   656.900   944.000   669.300   984.000     .000     .000     .000     .000

NC      .050     .120     .040     .000     .000     .000     .000     .000     .000     .000
ET      .000     .000    5.100     .000     8.900   695.000     .000     .000     .000     .000
                XSEC 81   STRUCTURES IN LOB ALONG BANK  ROB IS WOODED
X1  97905.000   28.000   277.000   505.000  1740.000  1120.000  1560.000     .000     .000     .000
```

X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	665.700	.000	651.600	20.000	650.600	32.000	654.100	56.000	654.300	77.000
GR	654.400	89.000	655.300	161.000	665.000	207.000	656.100	223.000	655.900	265.000
GR	646.400	277.000	641.600	303.000	642.500	326.000	642.600	337.000	644.100	402.000
GR	643.500	443.000	643.000	463.000	644.500	486.000	644.800	504.000	646.600	505.000
GR	657.300	528.000	650.600	535.000	654.700	590.000	659.500	635.000	658.000	737.000
GR	659.500	814.000	660.000	860.000	664.300	893.000	.000	.000	.000	.000
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	1.400	.000	.000	.000	.000	.000	.000	.000
XSEC 82 CHANNEL IS INCISED										
X1	98625.000	13.000	35.000	220.000	560.000	900.000	720.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	676.600	.000	648.400	35.000	641.700	61.000	641.900	103.000	644.200	131.000
GR	644.000	146.000	642.500	169.000	644.600	188.000	648.500	220.000	651.100	222.000
GR	652.800	229.000	667.000	246.000	659.900	297.000	.000	.000	.000	.000
NH	5.000	.090	541.000	10.000	571.000	.050	837.000	.040	954.000	.120
NH	1061.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	1.400	.000	.000	.000	.000	.000	.000	.000
XSEC 83 STRUCTURES IN LOB ALONG BANK FAR LOB HEAVY VEG										
ROB HAS STEEP BANK THAT DROPS OFF INTO A SWAMP FLOW AREA										
IS NOT VERY EFFECTIVE NOT INCLUDED IN XSEC HWM 663.0										
X1	100295.000	40.000	837.000	954.000	1460.000	1780.000	1670.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
X3	.000	.000	.000	.000	.000	1039.000	.000	.000	.000	.000
GR	689.000	.000	679.200	20.000	669.300	60.000	659.500	90.000	655.600	400.000
GR	656.600	405.000	656.500	421.000	656.600	428.000	656.700	541.000	656.700	571.000
GR	655.700	580.000	654.100	583.000	651.100	597.000	649.900	599.000	649.200	600.000
GR	648.300	607.000	649.400	613.000	649.900	614.000	651.500	616.000	651.800	625.000
GR	654.400	632.000	654.900	696.000	652.100	716.000	651.000	762.000	650.100	765.000

1

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GR	648.500	781.000	648.700	820.000	649.600	826.000	648.900	835.000	648.000	837.000
GR	645.000	865.000	643.400	886.000	641.300	904.000	642.400	939.000	647.900	954.000
GR	665.200	978.000	662.800	1014.000	663.000	1039.000	653.500	1061.000	653.500	1261.000
NH	5.000	.070	736.000	10.000	766.000	.050	912.000	.040	1076.000	.120
NH	1135.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	1.400	.000	.000	.000	.000	.000	.000	.000
XSEC 84 STRUCTURES IN LOB ALONG BANK FAR LOB HEAVY VEG HWM 663.0										
X1	101055.000	24.000	912.000	1076.000	400.000	1000.000	760.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	676.600	.000	656.600	197.000	656.800	265.000	655.100	286.000	655.900	341.000
GR	655.600	415.000	657.200	563.000	657.400	583.000	659.000	736.000	659.300	766.000
GR	658.400	785.000	655.500	806.000	654.000	845.000	650.300	912.000	648.200	928.000
GR	646.500	943.000	643.900	983.000	645.300	1016.000	644.600	1029.000	646.800	1051.000
GR	648.100	1076.000	657.200	1109.000	650.100	1115.000	666.900	1135.000	.000	.000
NH	5.000	.070	319.000	10.000	349.000	.050	373.000	.040	517.000	.120
NH	1280.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	1.400	5.100	.000	930.000	.000	.000	.000	.000
XSEC 85 HOMES IN LOB 1986 HWM 662.6										
X1	101755.000	35.000	373.000	517.000	560.000	860.000	740.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	675.700	.000	659.300	25.000	657.800	31.000	656.000	49.000	656.600	79.000
GR	657.000	120.000	656.000	163.000	657.700	179.000	657.800	213.000	658.400	223.000
GR	657.900	234.000	659.000	246.000	659.600	319.000	659.800	349.000	659.400	359.000
GR	651.000	373.000	645.800	384.000	643.400	395.000	641.400	408.000	644.800	453.000
GR	647.600	486.000	652.200	517.000	653.900	522.000	655.900	573.000	655.500	665.000
GR	655.600	680.000	657.300	683.000	657.200	803.000	659.300	867.000	657.900	930.000
GR	659.500	1060.000	659.500	1200.000	669.300	1240.000	679.200	1260.000	689.000	1280.000
NH	5.000	.070	845.000	10.000	875.000	.050	926.000	.040	1105.000	.120

```
   1860.000      .000      .000      .000      .000      .000      .000      .000      .000      .000
ET      .000      .000     1.400      .000      .000      .000      .000      .000      .000      .000
                XSEC 86 HOMES IN LOB   1986 HWM  664
X1 103535.000    34.000   926.000   1105.000   1420.000   1820.000   1780.000      .000      .000      .000
X2      .000      .000      .000      .000      .000      .000      .000      .000      .000     15.000
GR    679.100      .000   669.300     30.000    659.580     70.000    659.500    440.000    659.000    600.000
GR    660.300   644.000   657.980    709.000    658.200    763.000    658.100    808.000    655.400    817.000
GR    655.900   845.000   656.300    875.000    655.400    900.000    652.900    923.000    651.900    926.000
GR    647.400   963.000   648.400    989.000    647.400   1015.000    646.100   1048.000    646.100   1075.000
GR    651.600  1105.000   657.500   1113.000    660.600   1132.000    660.400   1174.000    659.800   1222.000
GR    659.400  1311.000   659.600   1339.000    659.100   1356.000    659.100   1410.000    659.100   1527.000
GR    660.100  1608.000   658.900   1702.000    659.100   1796.000    678.400   1860.000      .000      .000

NC      .090      .120      .040      .000      .000      .000      .000      .000      .000      .000
ET      .000      .000     5.100      .000     9.700    580.000      .000      .000      .000      .000
                XSEC 87 LOB STEEP   ROB WOODED
X1 105455.000    14.000    23.000    193.000   2200.000   1320.000   1920.000      .000      .000      .000
X2      .000      .000      .000      .000      .000      .000      .000      .000      .000     15.000
GR    671.900      .000   652.400     23.000    647.400     62.000    643.200     99.000    643.900    126.000
GR    646.900   155.000   652.700    193.000    656.100    202.000    658.200    286.000    662.000    300.000
GR    661.000   346.000   661.100    429.000    660.500    531.000    661.400    621.000      .000      .000
EJ      .000      .000      .000      .000      .000      .000      .000      .000      .000      .000
1
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST

 *PROF-1

 CCHV=    .100 CEHV=    .300
 *SECNO 90645.000

 3265 DIVIDED FLOW

                XSEC 59
  90645.00    15.26   653.36      .00   653.36   654.03      .67      .00      .00   648.50
   18800.     226.    18571.       3.     316.    2803.       7.       0.       0.   650.90
      .00      .71     6.63      .43     .090     .030     .100     .000   638.10   990.93
  .000717       0.       0.       0.        0        0        0      .00   418.15  1419.80
0
 FLOW DISTRIBUTION FOR SECNO=  90645.00          CWSEL=    653.36

 STA=     991.    1000.    1028.    1054.    1082.    1115.    1144.    1163.    1168.    1414.    1420.
   PER Q=       .1       .3       .1       .2       .3       .1       .1       .1     98.8       .0
    AREA=     16.2     71.7     40.6     54.9     69.6     27.0     16.7     19.3   2802.7      7.1
     VEL=       .6       .8       .6       .7       .7       .4       .7      1.0      6.6       .4

 *SECNO 91385.000
                XSEC 60
  91385.00    14.69   653.69      .00      .00   654.74     1.05      .59      .11   644.30
   18800.     455.    18169.     176.     272.    2178.     132.      48.       6.   644.30
      .03     1.67     8.34     1.33     .090     .030     .100     .000   639.00     4.02
  .000900     700.     740.     780.        2        0        0      .00   239.96   243.98
0
 FLOW DISTRIBUTION FOR SECNO=  91385.00          CWSEL=    653.69

 STA=       4.      22.      36.      39.      54.     217.     240.     244.
   PER Q=       .3       .6       .2      1.4     96.6       .9       .0
    AREA=     51.5     72.7     20.1    128.1   2177.6    128.6      3.6
     VEL=      1.0      1.5      1.6      2.1      8.3      1.4       .4
```

Channel
1168 - 1414
Natural Floodway

L	C	R
177	246	5.8 feet

Channel
54 - 217
Natural Floodway

L	C	R
50	163	27 feet

3301 HV CHANGED MORE THAN HVINS

XSEC 79 STEEP LOB RIDGE IN ROB

93835.00	16.78	656.18	.00	.00	656.59	.42	1.79	.06	648.60
18800.	150.	17915.	735.	144.	3388.	463.	233.	24.	645.90
.16	1.04	5.29	1.59	.070	.040	.070	.000	639.40	117.61
.000606	2350.	2450.	2500.	2	0	0	.00	409.85	527.46

0
1

Channel
169 - 412
Natural Floodway

L	C	R
51.4	243	115.5 feet

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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

FLOW DISTRIBUTION FOR SECNO= 93835.00 CWSEL= 656.18

STA=	118.	126.	148.	163.	169.	412.	426.	447.	521.	527.
PER Q=	.0	.4	.2	.2	95.3	1.8	1.1	1.0	.0	
AREA=	10.0	65.5	40.1	28.1	3388.4	141.8	123.4	186.9	10.6	
VEL=	.6	1.1	1.0	1.2	5.3	2.4	1.6	1.0	.7	

*SECNO 96345.000

XSEC 80. STEEP LOB ROB IS FLAT BUT ABOUT 10 FT ABOVE RIVER BED

96345.00	17.30	657.80	.00	.00	658.48	.68	1.81	.08	646.70
18800.	86.	17193.	1519.	75.	2492.	1298.	450.	56.	647.10
.27	1.17	6.90	1.17	.100	.040	.070	.000	640.50	58.50
.000891	2660.	2510.	2000.	2	0	0	.00	888.40	946.90

0

Channel
72 - 231
Natural Floodway

L	C	R
13.5	159	716 feet

FLOW DISTRIBUTION FOR SECNO= 96345.00 CWSEL= 657.80

STA=	59.	72.	231.	242.	272.	281.	545.	627.	729.	795.	875.	944.	947.
PER Q=	.5	91.5	1.4	2.0	.1	1.0	.8	.9	.6	.8	.4	.0	
AREA=	74.9	2491.6	99.0	181.5	23.4	290.2	151.6	183.5	118.8	151.9	96.6	1.3	
VEL=	1.2	6.9	2.7	2.1	1.1	.7	1.0	.9	.9	1.0	.8	.4	

*SECNO 97905.000

3265 DIVIDED FLOW

XSEC 81 STRUCTURES IN LOB ALONG BANK ROB IS WOODED

97905.00	17.51	659.11	.00	.00	659.40	.30	.89	.04	646.40
18800.	1770.	16511.	519.	1033.	3563.	720.	606.	81.	646.60
.37	1.71	4.63	.72	.050	.040	.120	.000	641.60	9.35
.000402	1740.	1560.	1120.	2	0	0	.00	715.48	793.81

0

Channel
277 - 505
Natural Floodway

L	C	R
267.65	228	288.81 feet

FLOW DISTRIBUTION FOR SECNO= 97905.00 CWSEL= 659.11

STA=	9.	56.	161.	277.	505.	794.
PER Q=	3.3	4.0	2.1	87.8	2.8	
AREA=	298.2	466.6	268.4	3562.9	719.9	
VEL=	2.1	1.6	1.5	4.6	.7	

*SECNO 98625.000

XSEC 82 CHANNEL IS INCISED

98625.00	17.56	659.26	.00	.00	659.90	.65	.39	.10	648.40
18800.	161.	18536.	104.	73.	2857.	95.	675.	89.	648.50
.40	2.20	6.49	1.09	.050	.040	.120	.000	641.70	21.52
.000801	560.	720.	900.	2	0	0	.00	215.21	236.73

0
1

Channel
35 - 226
Natural Floodway

L	C	R
13.5	185	16.7 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

FLOW DISTRIBUTION FOR SECNO= 98625.00 CWSEL= 659.26

STA=	22.	35.	220.	222.	229.	237.
PER Q=	.9	98.6	.1	.4	.1	
AREA=	73.1	2857.0	18.9	51.1	25.0	
VEL=	2.2	6.5	1.1	1.3	.6	

1490 NH CARD USED
#SECNO 100295.000
3280-CROSS SECTION 100295.00 EXTENDED 7.17 FEET

3470 ENCROACHMENT STATIONS= .0 1039.0 TYPE= 1 TARGET= 1038.999
XSEC 83 STRUCTURES IN LOB ALONG BANK FAR LOB HEAVY VEG
ROB HAS STEEP BANK THAT DROPS OFF INTO A SWAMP FLOW AREA
IS NOT VERY EFFECTIVE NOT INCLUDED IN XSEC HWM 663.0

100295.00	19.37	660.67	.00	.00	660.95	.28	1.01	.04	648.00
18800.	8149.	10558.	93.	4007.	1963.	113.	840.	108.	647.90
.51	2.03	5.38	.82	.058	.040	.120	.000	641.30	86.43
.000495	1460.	1670.	1780.	2	0	0	.00	885.28	971.71

0
FLOW DISTRIBUTION FOR SECNO= 100295.00 CWSEL= 660.67

STA=	86.	400.	580.	607.	632.	696.	762.	781.	820.	835.	837.	954.	972.
PER Q=	4.0	3.2	3.7	3.7	4.5	8.3	3.7	8.7	3.1	.4	56.2	.5	
AREA=	968.2	730.6	245.1	236.0	385.1	562.7	212.2	470.6	171.8	24.4	1963.5	113.1	
VEL=	.8	.8	2.9	2.9	2.2	2.8	3.3	3.5	3.3	3.3	5.4	.8	

1490 NH CARD USED
#SECNO 101055.000
XSEC 84 STRUCTURES IN LOB ALONG BANK FAR LOB HEAVY VEG HWM 663.0

101055.00	17.08	660.98	.00	.00	661.28	.30	.33	.01	650.30
18800.	5587.	12807.	406.	3369.	2446.	389.	918.	118.	648.10
.56	1.66	5.24	1.04	.062	.040	.120	.000	643.90	153.88
.000543	400.	760.	1000.	2	0	0	.00	974.07	1127.95

0
FLOW DISTRIBUTION FOR SECNO= 101055.00 CWSEL= 660.98

STA=	154.	286.	415.	563.	806.	845.	912.	1076.	1128.
PER Q=	3.2	5.5	4.9	3.7	3.0	9.3	68.1	2.2	
AREA=	490.9	688.1	677.5	678.4	242.9	591.5	2446.3	389.2	
VEL=	1.2	1.5	1.4	1.0	2.3	3.0	5.2	1.0	

1

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

1490 NH CARD USED
#SECNO 101755.000
XSEC 85 HOMES IN LOB 1986 HWM 662.6

101755.00	19.87	660.27	.00	.00	661.85	.58	.48	.08	651.00

Channel
837 - 954
Natural Floodway
L 750.6 C 117 R 17.7 feet

Channel
912 - 1076
Natural Floodway
L 758.1 C 164 R 52 feet

Channel

1	.0	1.07	15192.	1767.	1218.	2237.	1654.	1007.	152.	652.20
	.59	1.57	6.76	1.06	.069	.040	.120	.000	641.40	22.00
	.000872	560.	740.	860.	2	0	0	.00	845.00	867.00

373 - 517
Natural Floodway
L 351 C 144 R 350 feet

0

FLOW DISTRIBUTION FOR SECNO= 101755.00 CWSEL= 661.27

STA=	22.	120.	213.	373.	517.	665.	867.
PER Q=	3.9	3.5	2.7	80.5	5.6	3.7	
AREA=	430.1	395.3	392.2	2237.4	878.1	775.6	
VEL=	1.7	1.7	1.3	6.8	1.2	.9	

1490 NH CARD USED

*SECNO 103535.000

XSEC 86 HOMES IN LOB 1986 HWM 664

103535.00	16.61	662.71	.00	.00	662.98	.27	1.11	.03	651.90
18800.	4260.	13104.	1436.	3419.	2645.	2320.	1266.	180.	651.60
.72	1.25	4.95	.62	.070	.040	.120	.000	646.10	57.11
.000494	1420.	1780.	1820.	2	0	0	.00	1750.87	1807.98

Channel
926 - 1105
Natural Floodway
L 869 C 179 R 703 feet

0

FLOW DISTRIBUTION FOR SECNO= 103535.00 CWSEL= 662.71

STA=	57.	440.	600.	763.	845.	923.	926.	1105.	1410.	1702.	1808.
PER Q=	6.4	3.2	3.8	3.7	5.1	.5	69.7	3.2	3.2	1.3	
AREA=	1194.1	554.0	616.6	456.7	566.9	30.9	2644.8	972.5	976.8	370.6	
VEL=	1.0	1.1	1.2	1.5	1.7	3.0	5.0	.6	.6	.6	

*SECNO 105455.000

3280-CROSS SECTION 105455.00 EXTENDED 2.21 FEET

XSEC 87 LOB STEEP ROB WOODED

105455.00	20.41	663.61	.00	.00	664.16	.56	1.09	.09	652.40
18800.	84.	17458.	1258.	74.	2806.	1508.	1532.	227.	652.70
.81	1.13	6.22	.83	.090	.040	.120	.000	643.20	9.78
.000673	2200.	1920.	1320.	2	0	0	.00	611.22	621.00

Channel
23 - 193
Natural Floodway
L 13 C 170 R 428 feet

0

1

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

FLOW DISTRIBUTION FOR SECNO= 105455.00 CWSEL= 663.61

STA=	10.	23.	193.	202.	286.	300.	346.	429.	531.	621.
PER Q=	.4	92.9	.6	3.2	.2	.3	.7	1.0	.8	
AREA=	74.1	2805.9	82.9	542.3	49.1	96.9	212.1	286.2	239.0	
VEL=	1.1	6.2	1.4	1.1	.7	.5	.6	.6	.6	

1

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THIS RUN EXECUTED 02-24-88

****

HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984

ERROR CORR - 01,02,03,04,05,06

MODIFICATION - 50,51,52,53,54,55,56

IBM-PC-XT-VERSION AUGUST 1985

****

T1
T2 FLOODWAY RUN ENCROACHED
T3

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	3.	0.	0.	.000000	.00	.0	18800.	653.440	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	15.000	.000	-1.000	.000	.000	.000	.000	.000	.000	.000

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

*PROF 2

CCHV= .100 CEHV= .300
*SECNO 90645.000

3470 ENCROACHMENT STATIONS= 1150.0 1419.0 TYPE= 1 TARGET= 269.000

XSEC 59

90645.00	15.34	653.44	.00	653.36	654.12	.68	.00	.00	648.50
18800.	34.	18763.	3.	37.	2822.	7.	0.	0.	650.90
.00	.91	6.65	.46	.090	.030	.100	.000	638.10	1154.65
.000715	0.	0.	0.	0	0	0	.00	264.35	1419.00

Channel
1168 - 1419
Floodway - Encr.

L	C	R	
13.35	246	5	feet
4.07	75	1.5	meters

0
FLOW DISTRIBUTION FOR SECNO= 90645.00 CWSEL= 653.44

STA=	1155.	1163.	1168.	1414.	1419.
PER Q=	.1	.1	99.8	.0	
AREA=	17.3	19.7	2822.4	7.4	
VEL=	.7	1.0	6.6	.5	

*SECNO 91385.000

3470 ENCROACHMENT STATIONS= 44.0 227.0 TYPE= 1 TARGET= 183.000

XSEC 60

91385.00	14.74	653.74	.00	653.69	654.85	1.11	.60	.13	644.30
18800.	128.	18574.	99.	89.	2186.	78.	44.	4.	644.30
.02	1.44	8.50	1.27	.090	.030	.100	.000	639.00	44.00
.000928	700.	740.	780.	2	0	0	.00	183.00	227.00

Channel
54 - 217
Floodway - Encr.

L	C	R	
10	163	10	feet
3	50	3	meters

0
FLOW DISTRIBUTION FOR SECNO= 91385.00 CWSEL= 653.74

STA=	44.	54.	217.	227.
PER Q=	.7	98.8	.5	
AREA=	88.8	2186.2	77.9	
VEL=	1.4	8.5	1.3	

*SECNO 93835.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 115.0 528.0 TYPE= 1 TARGET= 413.000

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XSEC 79 STEEP LOB RIDGE IN ROB

93835.00	16.90	656.30	.00	656.18	656.71	.41	1.79	.07	648.60
18800.	157.	17890.	753.	150.	3418.	477.	224.	20.	645.90
.16	1.05	5.23	1.58	.070	.040	.070	.000	639.40	117.18
.000587	2350.	2450.	2500.	2	0	0	.00	410.53	527.70

0

FLOW DISTRIBUTION FOR SECNO= 93835.00 CWSEL= 656.30

STA=	117.	126.	148.	163.	169.	412.	426.	447.	521.	528.
PER Q=	.0	.4	.2	.2	95.2	1.9	1.1	1.0	.0	
AREA=	11.0	68.2	42.0	28.8	3418.5	143.5	126.0	196.1	11.4	
VEL=	.6	1.1	1.0	1.2	5.2	2.4	1.6	1.0	.7	

Channel 169 - 412

Floodway Encr.

L	C	R	
52	243	116	feet
16	74	35	meters

*SECNO 96345.000

3470 ENCROACHMENT STATIONS= 58.0 880.0 TYPE= 1 TARGET= 822.000

XSEC 80. STEEP LOB ROB IS FLAT BUT ABOUT 10 FT ABOVE RIVER BED

96345.00	17.38	657.88	.00	657.80	658.55	.67	1.76	.08	646.70
18800.	89.	17196.	1515.	76.	2504.	1259.	442.	52.	647.10
.27	1.17	6.87	1.20	.100	.040	.070	.000	640.50	58.41
.000877	2660.	2510.	2000.	2	0	0	.00	821.59	880.00

0

FLOW DISTRIBUTION FOR SECNO= 96345.00 CWSEL= 657.88

STA=	58.	72.	231.	242.	272.	281.	545.	627.	729.	795.	875.	880.
PER Q=	.5	91.5	1.4	2.1	.1	1.2	.8	1.0	.6	.8	.0	
AREA=	76.0	2503.9	99.8	183.8	24.1	310.6	158.0	191.4	123.9	158.1	9.7	
VEL=	1.2	6.9	2.7	2.1	1.1	.7	1.0	1.0	1.0	1.0	.8	

Channel 72 - 231

Floodway - Encr.

L	C	R	
14	159	649	feet
4	48	198	meters

*SECNO 97905.000

3265-DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 8.9 695.0 TYPE= 1 TARGET= 686.100

XSEC 81 STRUCTURES IN LOB ALONG BANK ROB IS WOODED

97905.00	17.57	659.17	.00	659.11	659.46	.29	.88	.04	646.40
18800.	1792.	16495.	513.	1047.	3577.	665.	598.	74.	646.60
.37	1.71	4.61	.77	.050	.040	.120	.000	641.60	9.27
.000396	1740.	1560.	1120.	2	0	0	.00	621.83	695.00

0

FLOW DISTRIBUTION FOR SECNO= 97905.00 CWSEL= 659.17

STA=	9.	56.	161.	277.	505.	695.
PER Q=	3.3	4.1	2.1	87.7	2.7	
AREA=	301.0	473.0	273.1	3576.7	664.8	
VEL=	2.1	1.6	1.5	4.6	.8	

Channel 277 - 505

Floodway - Encr.

L	C	R	
268	228	190	feet
82	70	58	meters

1

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

*SECNO 98625.000

2800 NAT Q1= 6644.17 WSEL= 659.26 ENC Q1= 6644.17 WSEL= 659.36 RATIO= .0000

NAT Q1= 6717. RATIOS LOB,CH,ROB= .0087 .9857 .0056 WSEL= 659.36

3470 ENCROACHMENT STATIONS= 31.9 220.9 TYPE= 4 TARGET= .011

[redacted] CHANNEL IS INCISED

525.00	17.60	659.30	.00	642.26	643.06	.66	.57	.11	648.40
18800.	45.	18752.	3.	30.	2865.	9.	665.	80.	648.50
.40	1.52	6.54	.30	.050	.040	.120	.000	641.70	31.93
.000812	560.	720.	900.	2	0	0	.00	188.93	220.86

0

FLOW DISTRIBUTION FOR SECNO= 98625.00 CWSEL= 659.30

STA=	32.	35.	220.	221.
PER Q=	.2	99.7	.0	
AREA=	29.7	2865.1	8.8	
VEL=	1.5	6.5	.3	

1490 NH CARD USED

*SECNO 100295.000

3280 CROSS SECTION 100295.00 EXTENDED 7.23 FEET

3470 ENCROACHMENT STATIONS= .0 1039.0 TYPE= 1 TARGET= 1038.999

XSEC-83 STRUCTURES IN LOB ALONG BANK FAR LOB HEAVY VEG
ROB HAS STEEP BANK THAT DROPS OFF INTO A SWAMP FLOW AREA
IS NOT VERY EFFECTIVE NOT INCLUDED IN XSEC HWM 663.0

100295.00	19.43	660.73	.00	660.67	661.01	.28	1.00	.04	648.00
18800.	8186.	10520.	94.	4055.	1971.	114.	829.	99.	647.90
.52	2.02	5.34	.82	.058	.040	.120	.000	641.30	86.23
.000485	1460.	1670.	1780.	2	0	0	.00	885.57	971.80

0

FLOW DISTRIBUTION FOR SECNO= 100295.00 CWSEL= 660.73

STA=	86.	400.	580.	607.	632.	696.	762.	781.	820.	835.	837.	954.	972.
PER Q=	4.1	3.3	3.8	3.7	4.5	8.3	3.7	8.7	3.1	.4	56.0	.5	
AREA=	988.5	742.2	246.8	237.6	389.2	567.0	213.4	473.1	172.8	24.6	1971.0	114.2	
VEL=	.8	.8	2.9	2.9	2.2	2.8	3.3	3.5	3.3	3.3	5.3	.8	

1490 NH CARD USED

1

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

*SECNO 101055.000

2800 NAT-QI= 8068.26 WSEL= 660.98 ENC QI= 8068.26 WSEL= 661.08 RATIO= .0000

NAT QI= 8210. RATIOS LOB,CH,ROB= .3014 .6769 .0217 WSEL= 661.08

3470 ENCROACHMENT STATIONS= 207.8 1100.4 TYPE= 4 TARGET= .017

XSEC-84 STRUCTURES IN LOB ALONG BANK FAR LOB HEAVY VEG HWM 663.0

101055.00	17.13	661.03	.00	660.98	661.34	.31	.33	.01	650.30
18800.	5563.	12979.	258.	3265.	2455.	234.	905.	109.	648.10
.56	1.70	5.29	1.10	.061	.040	.120	.000	643.90	207.77
.000551	400.	760.	1000.	2	0	0	.00	892.66	1100.43

0

FLOW DISTRIBUTION FOR SECNO= 101055.00 CWSEL= 661.03

STA=	208.	341.	415.	563.	785.	845.	912.	1076.	1100.
PER Q=	5.0	3.1	5.0	3.0	3.9	9.5	69.0	1.4	
AREA=	657.8	390.7	685.3	605.5	330.6	595.0	2454.9	233.6	
VEL=	1.4	1.5	1.4	.9	2.2	3.0	5.3	1.1	

1490 NH CARD USED

*SECNO 101755.000

2800_NAT QI= 6367.29 WSEL= 661.27 ENC QI= 6367.29 WSEL= 661.37 RATIO= .0000

NAT-QI= 6646. RATIOS LOB,CH,ROB= .1014 .7794 .1192 WSEL= 661.37

Channel
35 - 220
Floodway - Encr.

L	C	R
3	185	.86 feet
1	56	.3 meters

Channel
937 - 954
Floodway - Encr.

L	C	R
751	117	18 feet
229	36	5.5 meters

Channel
912 - 1076
Floodway - Encr.

L	C	R
704	164	24.5 feet
215	56	7.5 meters

```
 3470 ENCROACHMENT STATIONS=     74.7     924.1  TYPE=     4  TARGET=       .042
                XSEC 85 HOMES IN LOB   1986 HWM  662.6
-101755.00    19.92   661.32     .00   661.27   661.92     .60     .49     .08   651.00
  18800.      1554.   15334.    1912.    1008.    2245.    1825.    992.    122.   652.20
     .59       1.54     6.83     1.05     .069     .040     .120    .000   641.40   74.68
 .000885     560.     740.     860.        2        0        0     .00   849.46  924.14
 0
 FLOW DISTRIBUTION FOR SECNO= 101755.00          CWSEL=    661.32

 STA=     75.     163.     319.     373.     517.     665.     803.     924.
  PER Q=     3.8      3.1      1.3     81.6      5.7      3.1      1.4
  AREA=    413.5    442.5    151.7   2245.4    886.4    590.1    348.6
   VEL=      1.7      1.3      1.7      6.8      1.2      1.0       .7

 1490 NH-CARD USED
 #SECNO 103535.000
 2800 NAT Q1=   8462.40  WSEL=    662.71  ENC Q1=   8462.40  WSEL=    662.81  RATIO=   .0000
  NAT Q1=   8636.  RATIOS LOB,CH,ROB=   .2307   .6907   .0786  WSEL=    662.81
 1
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


 3470 ENCROACHMENT STATIONS=    121.3    1724.8  TYPE=     4  TARGET=       .020
                XSEC 86 HOMES IN LOB   1986 HWM  664
 103535.00    18.69   662.79     .00   662.71   663.07     .28    1.12     .03   651.90
  18800.      4221.   13274.    1305.    3303.    2659.    2086.   1245.    168.   651.60
     .72      1.28     4.99      .63      .071     .040     .120    .000   646.10  121.30
 .000497     1420.    1780.    1820.        2        0        0     .00  1603.53 1724.83
 0
 FLOW DISTRIBUTION FOR SECNO= 103535.00          CWSEL=    662.79

 STA=    121.     440.     600.     763.     845.     923.     926.    1105.    1410.    1702.    1725.
  PER Q=     5.7      3.3      4.0      3.8      5.2       .5     70.6      3.3      3.3       .3
  AREA=   1038.8    567.0    629.9    463.4    573.2     31.2   2659.3    997.3   1000.5    88.4
   VEL=      1.0      1.1      1.2      1.5      1.7      3.0      5.0       .6       .6       .6

 #SECNO 105455.000
 3280 CROSS SECTION 105455.00 EXTENDED     2.29 FEET

 3470 ENCROACHMENT STATIONS=      9.7     580.0  TYPE=     1  TARGET=     570.300
                XSEC 87 LOB STEEP   ROB WOODED
 105455.00    20.49   663.69     .00   663.61   664.25     .56    1.09     .08   652.40
  18800.        85.   17482.    1233.      75.    2821.    1443.   1504.    212.   652.70
     .81      1.13     6.20      .85      .090     .040     .120    .000   643.20    9.70
 .000664     2200.    1920.    1320.        2        0        0     .00   570.30  580.00
 0
 FLOW DISTRIBUTION FOR SECNO= 105455.00          CWSEL=    663.69

 STA=      10.      23.     193.     202.     286.     300.     346.     429.     531.     580.
  PER Q=       .5     93.0       .6      3.3       .2       .3       .7      1.0       .5
  AREA=     75.2   2820.7     83.6    549.6     50.3    100.9    219.4    295.1    144.4
   VEL=      1.1      6.2      1.3      1.1       .7       .5       .6       .6       .6

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Channel
373 - 517
Floodway - Encr.

L	C	R	
298	144	407	feet
91	44	124	meters

Channel
926 - 1105
Floodway - Encr.

LOB	C	R	
804	179	620	feet
245	55	189	meters

Channel
23 - 193
Floodway-Encr.

L	C	R	
13	176	387	feet
4	52	118	meters

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
 ERROR-CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION AUGUST 1985
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

MUSKEGON RIVER EXISTING

SUMMARY PRINTOUT TABLE 110

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
90645.000	653.36	.00	654.03	418.15	225.58	18571.34	3.09	.00	.00	1168.00	1414.00	.00
90645.000	653.44	.08	654.12	264.35	33.58	18762.98	3.44	269.00	1150.00	1168.00	1414.00	1419.00
91385.000	653.69	.00	654.74	239.96	454.93	18169.17	175.91	.00	.00	54.00	217.00	.00
91385.000	653.74	.05	654.85	183.00	127.65	18573.73	98.62	183.00	44.00	54.00	217.00	227.00
93835.000	656.18	.00	656.59	409.85	149.58	17915.03	735.38	.00	.00	169.00	412.00	.00
93835.000	656.30	.12	656.71	410.53	157.42	17889.53	753.05	413.00	115.00	169.00	412.00	528.00
96345.000	657.80	.00	658.48	888.40	87.69	17193.37	1518.95	.00	.00	72.00	231.00	.00
96345.000	657.88	.08	658.55	821.59	88.61	17196.30	1515.09	822.00	58.00	72.00	231.00	880.00
97905.000	659.11	.00	659.40	715.48	1770.03	16510.77	519.20	.00	.00	277.00	505.00	.00
97905.000	659.17	.06	659.46	621.83	1792.42	16494.73	512.85	686.10	8.90	277.00	505.00	695.00
98625.000	659.26	.00	659.90	215.21	160.83	18535.63	103.54	.00	.00	35.00	220.00	.00
98625.000	659.30	.04	659.96	188.93	45.03	18752.31	2.67	.01	31.93	35.00	220.00	220.86
100295.000	660.67	.00	660.95	885.28	8148.50	10558.27	93.23	1039.00	.00	837.00	954.00	1039.00
100295.000	660.73	.06	661.01	885.57	8186.48	10519.98	93.55	1039.00	.00	837.00	954.00	1039.00
101055.000	660.98	.00	661.28	974.07	5587.10	12806.58	406.31	.00	.00	912.00	1076.00	.00
101055.000	661.03	.05	661.34	892.66	5562.57	12979.35	258.09	.02	207.77	912.00	1076.00	1100.43
101755.000	661.27	.00	661.85	845.00	1909.15	15131.50	1759.35	930.00	.00	373.00	517.00	930.00
101755.000	661.32	.06	661.92	849.46	1554.34	15333.52	1912.14	.04	74.68	373.00	517.00	924.14
103535.000	662.71	.00	662.98	1750.87	4260.05	13103.60	1436.35	.00	.00	926.00	1105.00	.00
103535.000	662.79	.08	663.07	1603.53	4220.98	13273.58	1305.44	.02	121.30	926.00	1105.00	1724.84
105455.000	663.61	.00	664.16	611.22	83.56	17458.46	1257.98	.00	.00	23.00	193.00	.00
105455.000	663.69	.09	664.25	570.30	84.71	17482.00	1233.30	570.30	9.70	23.00	193.00	580.00

SUMMARY OF ERRORS AND SPECIAL NOTES

FLOODWAY-DATA, MUSKEGON RIVER EXISTING
PROFILE NO. 2

STATION	WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE	Meters
590645.000	264.	2867.	6.6	653.5	653.4	59 .1	199.16
691385.000	183.	2353.	8.0	653.8	653.7	60 .1	199.25
793835.000	411.	4045.	4.6	656.3	656.2	79 .1	200.01
896345.000	822.	3839.	4.9	657.9	657.8	80 .1	200.5
997905.000	686.	5289.	3.6	659.2	659.1	81 .1	200.9
1098625.000	189.	2904.	6.5	659.3	659.3	82.0	200.96
1100295.000	886.	6140.	3.1	660.8	660.7	83 .1	201.38
1101055.000	893.	5953.	3.2	661.1	661.0	84 .1	201.48
1101755.000	849.	5078.	3.7	661.4	661.3	85 .1	201.57
1103535.000	1604.	8049.	2.3	662.8	662.7	86 .1	202.0
1105455.000	570.	4339.	4.3	663.7	663.6	87 .1	202.27

1

02-24-88 11:20:12 PAGE 1

THIS RUN EXECUTED 02-24-88

****
HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
ERROR CORR - 01,02,03,04,05,06
MODIFICATION - 50,51,52,53,54,55,56
IBM-PC-XT VERSION AUGUST 1985
****

1) COUNTY: Newaygo

2) STUDY NAME: Brook Twp.

3) WATERCOURSE: Muskegon River - Devils Hole

4) DOCUMENT TYPE: 100yr Natural

THIS RUN EXECUTED 01/26/88 23:16:15

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*****************************************************
HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
ERROR CORR - 01,02,03,04,05,06
MODIFICATION - 50,51,52,53,54,55,56
IBM-PC-XT-VERSION 1.1
*****************************************************

C
T1      DEVILS HOLE     STARTING WSEL FROM DS STUDY
T2      XSEC 79 THROUGH 87   SURVEYED IN 1987
T3      MUSKEGON RIVER  EXISTING COND   1986 FLOWS          DEVILHOL.NAT

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC    HVINS     Q       WSEL      FQ

      0.       0.       0.       0.   .000000      .00       .0   23100.   655.020     .000

J2  NPROF    IPLOT    PRFVS    XSECV    XSECH     FN      ALLDC     IBWS     CHNIM     ITRACE

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

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     .000     .000     .000     .000     .000     .000     .000     .000     .000     .000

J5  LPRNT    NUMSEC                  ********REQUESTED SECTION NUMBERS********

     .000     .000     .000     .000     .000     .000     .000     .000     .000     .000

NC      .100      .100      .040      .100      .300      .000      .000      .000      .000      .000
ET      .000      .000     1.400      .000      .000      .000      .000      .000      .000      .000
              XSEC 59
X1  90645.000    20.000  1168.000  1414.000      .000      .000      .000      .000      .000      .000
X2      .000      .000      .000      .000      .000      .000      .000      .000      .000     15.000
GR   660.000   974.000   649.800  1000.000   651.800  1028.000   651.800  1054.000   651.000  1082.000
GR   651.500  1115.000   654.000  1154.000   651.400  1157.000   650.500  1163.000   648.500  1168.000
GR   641.100  1174.000   639.800  1193.000   638.100  1248.000   641.000  1258.000   641.900  1283.000
GR   641.400  1312.000   644.000  1360.000   644.500  1395.000   650.900  1414.000   661.500  1439.000

ET      .000      .000     1.400      .000      .000      .000      .000      .000      .000      .000
              XSEC 60
X1  91385.000    13.000    54.000   217.000   700.000   780.000   740.000      .000      .000      .000
X2      .000      .000      .000      .000      .000      .000      .000      .000      .000     15.000
GR   659.000      .000   652.400     5.000   649.000    22.000   648.000    36.000   646.000    39.000
GR   644.300    54.000   639.500    82.000   639.000   119.000   639.600   176.000   641.800   200.000
GR   644.300   217.000   651.900   240.000   654.600   246.000   660.000   250.000      .000      .000

NC      .100      .100      .040      .000      .000      .000      .000      .000      .000      .000
ET      .000      .000      .000      .000      .000      .000      .000      .000      .000      .000
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              XSEC 79    STEEP LOB   RIDGE IN ROB
X1  93835.000    21.000   169.000   412.000  2350.000  2500.000  2450.000      .000      .000      .000
X2      .000      .000      .000      .000      .000      .000      .000      .000      .000     15.000
GR   704.400      .000   667.700    56.000   661.900    74.000   657.200   114.000   653.800   126.000
GR   652.600   148.000   654.400   163.000   648.600   169.000   646.100   189.000   644.100   213.000
```

GR	645.900	412.000	646.200	426.000	654.400	447.000	652.900	521.000	667.100	549.000
GR	672.000	595.000	.000	.000	.000	.000	.000	.000	.000	.000

XSEC 80. STEEP-LOB ROB IS FLAT BUT ABOUT 10 FT ABOVE RIVER BED

X1	96345.000	18.000	72.000	231.000	2660.000	2000.000	2510.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	705.900	.000	646.700	72.000	641.600	84.000	640.500	129.000	641.100	163.000
GR	642.800	191.000	642.600	207.000	647.100	231.000	650.500	242.000	653.000	272.000
GR	657.400	281.000	656.000	545.000	655.900	627.000	656.100	729.000	655.900	795.000
GR	655.900	875.000	656.900	944.000	669.300	984.000	.000	.000	.000	.000
NC	.050	.120	.040	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

XSEC 81 STRUCTURES IN LOB ALONG BANK ROB IS WOODED

X1	97905.000	28.000	277.000	505.000	1740.000	1120.000	1560.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	665.700	.000	651.600	20.000	650.600	32.000	654.100	56.000	654.300	77.000
GR	654.400	89.000	655.300	161.000	665.000	207.000	656.100	223.000	655.900	265.000
GR	646.400	277.000	641.600	303.000	642.500	326.000	642.600	337.000	644.100	402.000
GR	643.500	443.000	643.000	463.000	644.500	486.000	644.800	504.000	646.600	505.000
GR	657.300	528.000	650.600	535.000	654.700	590.000	659.500	635.000	658.000	737.000
GR	659.500	814.000	660.000	860.000	664.300	893.000	.000	.000	.000	.000
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

XSEC 82 CHANNEL IS INCISED

X1	98625.000	13.000	35.000	220.000	560.000	900.000	720.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	676.600	.000	648.400	35.000	641.700	61.000	641.900	103.000	644.200	131.000
GR	644.000	146.000	642.500	169.000	644.600	188.000	648.500	220.000	651.100	222.000
GR	652.800	229.000	667.000	246.000	659.900	297.000	.000	.000	.000	.000
NH	5.000	.090	541.000	10.000	571.000	.050	837.000	.040	954.000	.120
NH	1061.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

XSEC 83 STRUCTURES IN LOB ALONG BANK FAR LOB HEAVY VEG
ROB HAS STEEP BANK THAT DROPS OFF INTO A SWAMP FLOW&AREA
IS NOT VERY EFFECTIVE NOT INCLUDED IN XSEC HWM 663.0

X1	100295.000	40.000	837.000	954.000	1460.000	1780.000	1670.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
X3	.000	.000	.000	.000	.000	1039.000	.000	.000	.000	.000
GR	689.000	.000	679.200	20.000	669.300	60.000	659.500	90.000	655.600	400.000
GR	656.600	405.000	656.500	421.000	656.600	428.000	656.700	541.000	656.700	571.000
GR	655.700	580.000	654.100	583.000	651.100	597.000	649.900	599.000	649.200	600.000
GR	648.300	607.000	649.400	613.000	649.900	614.000	651.500	616.000	651.800	625.000
GR	654.400	632.000	654.900	696.000	652.100	716.000	651.000	762.000	650.100	765.000
GR	648.500	781.000	648.700	820.000	649.600	826.000	648.900	835.000	648.000	837.000
GR	645.000	865.000	643.400	886.000	641.300	904.000	642.400	939.000	647.900	954.000

1

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GR	665.200	978.000	662.800	1014.000	663.000	1039.000	653.500	1061.000	653.500	1261.000
NH	5.000	.070	736.000	10.000	766.000	.050	912.000	.040	1076.000	.120
NH	1135.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

XSEC 84 STRUCTURES IN LOB ALONG BANK FAR LOB HEAVY VEG HWM 663.0

X1	101055.000	24.000	912.000	1076.000	400.000	1000.000	760.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	676.600	.000	656.600	197.000	656.800	265.000	655.100	286.000	655.900	341.000
GR	655.600	415.000	657.200	563.000	657.400	583.000	659.000	736.000	659.300	766.000
GR	658.400	785.000	655.500	806.000	654.000	845.000	650.300	912.000	648.200	928.000
GR	646.500	943.000	643.900	983.000	645.300	1016.000	644.600	1029.000	646.800	1051.000
GR	648.100	1076.000	657.200	1109.000	650.100	1115.000	666.900	1135.000	.000	.000

```
NH      5.000      .070   319.000    10.000   349.000      .050   373.000      .040   517.000      .120
NH   1280.000      .000      .000      .000      .000      .000      .000      .000      .000      .000
ET       .000      .000      .000      .000      .000      .000      .000      .000      .000      .000
                XSEC 85 HOMES IN LOB   1986 HWM  662.6
X1 101755.000    35.000   373.000   517.000   560.000   860.000   740.000      .000      .000      .000
X2       .000      .000      .000      .000      .000      .000      .000      .000      .000    15.000
GR    675.700      .000   659.300    25.000   657.800    31.000   656.000    49.000   656.600    79.000
GR    657.000   120.000   656.000   163.000   657.700   179.000   657.800   213.000   658.400   223.000
GR    657.900   234.000   659.000   246.000   659.600   319.000   659.800   349.000   659.400   359.000
GR    651.000   373.000   645.800   384.000   643.400   395.000   641.400   408.000   644.800   453.000
GR    647.600   486.000   652.200   517.000   653.900   522.000   655.900   573.000   655.500   665.000
GR    655.600   680.000   657.300   683.000   657.200   803.000   659.300   867.000   657.900   930.000
GR    659.500  1060.000   659.500  1200.000   669.300  1240.000   679.200  1260.000   689.000  1280.000

NH      5.000      .070   845.000    10.000   875.000      .050   926.000      .040  1105.000      .120
NH   1860.000      .000      .000      .000      .000      .000      .000      .000      .000      .000
ET       .000      .000      .000      .000      .000      .000      .000      .000      .000      .000
                XSEC 86 HOMES IN LOB   1986 HWM  664
X1 103535.000    34.000   926.000  1105.000  1420.000  1820.000  1780.000      .000      .000      .000
X2       .000      .000      .000      .000      .000      .000      .000      .000      .000    15.000
GR    679.100      .000   669.300    30.000   659.580    70.000   659.500   440.000   659.000   600.000
GR    660.300   644.000   657.980   709.000   658.200   763.000   658.100   808.000   655.400   817.000
GR    655.900   845.000   656.300   875.000   655.400   900.000   652.900   923.000   651.900   926.000
GR    647.400   963.000   648.400   989.000   647.400  1015.000   646.100  1048.000   646.100  1075.000
GR    651.600  1105.000   657.500  1113.000   660.600  1132.000   660.400  1174.000   659.800  1222.000
GR    659.400  1311.000   659.600  1339.000   659.100  1356.000   659.100  1410.000   659.100  1527.000
GR    660.100  1608.000   658.900  1702.000   659.100  1796.000   678.400  1860.000      .000      .000

NC       .090      .120      .040      .000      .000      .000      .000      .000      .000      .000
ET       .000      .000      .000      .000      .000      .000      .000      .000      .000      .000
                XSEC 87 LOB STEEP   ROB WOODED
X1 105455.000    14.000    23.000   193.000  2200.000  1320.000  1920.000      .000      .000      .000
X2       .000      .000      .000      .000      .000      .000      .000      .000      .000    15.000
GR    671.900      .000   652.400    23.000   647.400    62.000   643.200    99.000   643.900   126.000
GR    646.900   155.000   652.700   193.000   656.100   202.000   658.200   286.000   662.000   300.000
GR    661.000   346.000   661.100   429.000   660.500   531.000   661.400   621.000      .000      .000
EJ       .000      .000      .000      .000      .000      .000      .000      .000      .000      .000
1
 01/26/88   23:16:14                                                                          PAGE    4


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


*PROF 1

CCHV=    .100 CEHV=    .300
*SECNO 90645.000
                XSEC 59
 90645.00    16.92   655.02      .00   655.02   655.75      .73      .00      .00   648.50
   23100.     714.    22371.      16.     610.     3211.      20.       0.       0.    650.90
      .00     1.17     6.97      .78     .100     .040     .100     .000   638.10   986.69
  .001176       0.       0.       0.        0        0        0      .00   437.02  1423.72
0
FLOW&DISTRIBUTION FOR SECNO=  90645.00          CWSEL=    655.02

STA=     987.    1000.    1028.    1054.    1082.    1115.    1154.    1157.    1163.    1168.    1414.    1424.
  PER Q=      .1       .7       .4       .5       .7       .3       .0       .1       .2     96.8       .1
   AREA=    34.7    118.2     83.7    101.4    124.4     88.5      7.0     24.4     27.6   3211.1     20.0
    VEL=      .9      1.3      1.1      1.2      1.2       .9       .7      1.3      1.5      7.0       .8

*SECNO 91385.000
[illegible]
```

XSEC 60

91385.00	16.71	655.71	.00	.00	656.83	1.12	.96	.12	644.30	
23100.	840.	21877.	383.	375.	2506.	190.	58.	6.	644.30	
.02	2.24	8.73	2.02	.100	.040	.100	.000	639.00	2.49	
.001452	700.	740.	780.	2	0	0	.00	243.51	246.00	

0

FLOW&DISTRIBUTION FOR SECNO= 91385.00 CWSEL= 655.71

STA=	2.	5.	22.	36.	39.	54.	217.	240.	246.
PER Q=	.0	.6	.9	.2	1.9	94.7	1.6	.1	
AREA=	4.1	85.1	100.9	26.1	158.4	2506.1	175.0	14.7	
VEL=	.6	1.6	2.1	2.1	2.7	8.7	2.1	.9	

$SECNO 93835.000

3301 HV CHANGED MORE THAN HVINS

XSEC 79 STEEP LOB RIDGE IN ROB

93835.00	19.09	658.49	.00	.00	658.95	.45	2.05	.07	648.60
23100.	267.	21903.	929.	276.	3951.	735.	284.	25.	645.90
.15	.97	5.54	1.26	.100	.040	.100	.000	639.40	103.00
.000543	2350.	2450.	2500.	2	0	0	.00	429.03	532.03

0

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

FLOW&DISTRIBUTION FOR SECNO= 93835.00 CWSEL= 658.49

STA=	103.	126.	148.	163.	169.	412.	426.	447.	521.	532.
PER Q=	.1	.5	.3	.2	94.8	1.4	1.0	1.5	.1	
AREA=	43.0	116.4	74.9	42.0	3951.3	174.2	172.0	358.3	30.8	
VEL=	.6	1.1	1.0	1.0	5.5	1.9	1.3	1.0	.6	

$SECNO 96345.000

XSEC 80. STEEP LOB ROB IS FLAT BUT ABOUT 10 FT ABOVE RIVER BED

96345.00	19.44	659.94	.00	.00	660.60	.66	1.59	.06	646.70
23100.	131.	19881.	3088.	107.	2832.	2837.	573.	58.	647.10
.26	1.23	7.02	1.09	.100	.040	.100	.000	640.50	55.90
.000778	2660.	2510.	2000.	2	0	0	.00	897.90	953.80

0

FLOW&DISTRIBUTION FOR SECNO= 96345.00 CWSEL= 659.94

STA=	56.	72.	231.	242.	272.	281.	545.	627.	729.	795.	875.	944.	954.
PER Q=	.6	86.1	1.1	1.8	.2	3.4	1.5	1.8	1.2	1.5	1.0	.0	
AREA=	106.6	2831.8	122.5	245.7	42.7	855.1	327.1	401.8	260.0	323.1	244.2	14.9	
VEL=	1.2	7.0	2.0	1.7	1.1	.9	1.0	1.0	1.0	1.1	1.0	.5	

$SECNO 97905.000

3265 DIVIDED FLOW

XSEC 81 STRUCTURES IN LOB ALONG BANK ROB IS WOODED

97905.00	19.52	661.12	.00	.00	661.42	.30	.78	.04	646.40
23100.	2972.	19132.	996.	1510.	4022.	1399.	783.	84.	646.60
.36	1.97	4.76	.71	.050	.040	.120	.000	641.60	6.50
.000360	1740.	1560.	1120.	2	0	0	.00	836.70	868.58

0

FLOW DISTRIBUTION FOR SECNO= 97905.00 CWSEL= 661.12

STA= 6. 56. 161. 277. 505. 635. 869.
PER Q= 3.9 5.7 3.2 82.8 3.5 .8
AREA= 394.9 677.9 437.5 4021.6 907.7 491.7
VEL= 2.3 2.0 1.7 4.8 .9 .4

*SECNO 98625.000
1
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3265 DIVIDED FLOW

3280 CROSS SECTION 98625.00 EXTENDED 1.26 FEET

XSEC 82 CHANNEL IS INCISED

98625.00	19.46	661.16	.00	.00	661.93	.76	.37	.14	648.40
23100.	250.	22689.	161.	101.	3210.	135.	869.	93.	648.50
.39	2.47	7.07	1.19	.050	.040	.120	.000	641.70	19.16
.000814	560.	720.	900.	2	0	0	.00	228.94	297.00

0
FLOW&DISTRIBUTION FOR SECNO= 98625.00 CWSEL= 661.16

STA= 19. 35. 220. 222. 229. 239. 297.
PER Q= 1.1 98.2 .1 .4 .1 .0
AREA= 101.1 3209.9 22.7 64.5 41.9 5.7
VEL= 2.5 7.1 1.3 1.5 .8 .2

1490 NH CARD USED
*SECNO 100295.000
3280 CROSS SECTION 100295.00 EXTENDED 9.14 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= .0 1039.0 TYPE= 1 TARGET= 1038.999
XSEC 83 STRUCTURES IN LOB ALONG BANK FAR LOB HEAVY VEG
ROB HAS STEEP BANK THAT DROPS OFF INTO A SWAMP FLOW&AREA
IS NOT VERY EFFECTIVE NOT INCLUDED IN XSEC HWM 663.0

100295.00	21.34	662.64	.00	.00	662.90	.26	.92	.05	648.00
23100.	11267.	11707.	126.	5496.	2195.	151.	1072.	113.	647.90
.51	2.05	5.33	.84	.061	.040	.120	.000	641.30	80.38
.000420	1460.	1670.	1780.	2	0	0	.00	894.07	974.45

0
FLOW&DISTRIBUTION FOR SECNO= 100295.00 CWSEL= 662.64

STA= 80. 400. 541. 607. 632. 696. 762. 781. 820. 837. 954. 974.
PER Q= 6.9 4.1 4.4 3.7 5.4 8.8 3.6 8.4 3.4 50.7 .5
AREA= 1593.9 850.0 534.7 285.4 511.5 693.1 249.8 547.7 229.9 2194.7 150.8
VEL= 1.0 1.1 1.9 3.0 2.4 2.9 3.4 3.5 3.4 5.3 .8

1
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT

```
    SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST

 1490 NH CARD USED
 #SECNO 101055.000
          XSEC 84 STRUCTURES IN LOB ALONG BANK  FAR LOB HEAVY VEG  HWM 663.0
 101055.00   19.00  662.90      .00      .00   663.16      .26      .26      .00   650.30
   23100.    8504.   14072.     524.    4842.    2761.     491.    1170.     123.   648.10
     .56     1.76     5.10     1.07     .063     .040     .120     .000   643.90   134.98
    .000438   400.     760.    1000.        2        0        0      .00   995.26  1130.23
 0
 FLOW&DISTRIBUTION FOR SECNO= 101055.00      CWSEL=    662.90

 STA=     135.     265.     341.     415.     563.     736.     845.     912.    1076.    1130.
  PER Q=    3.5      4.0      3.8      6.4      4.6      5.1      9.4     60.9      2.3
  AREA=   616.7    552.7    528.9    961.5    830.6    631.9    720.0   2761.0    491.1
   VEL=     1.3      1.7      1.6      1.5      1.3      1.9      3.0      5.1      1.1

 1490 NH CARD USED
 #SECNO 101755.000
          XSEC 85 HOMES IN LOB  1986 HWM  662.6
 101755.00   21.75  663.15      .00      .00   663.60      .45      .38      .06   651.00
   23100.    3220.   16069.    3810.    1879.    2508.    3712.    1299.     141.   652.20
     .60     1.71     6.41     1.03     .070     .040     .120     .000   641.40    19.14
    .000672   560.     740.     860.        2        0        0      .00  1195.74  1214.88
 0
 FLOW&DISTRIBUTION FOR SECNO= 101755.00      CWSEL=    663.15

 STA=      19.     120.     179.     319.     373.     517.     665.     803.    1060.    1215.
  PER Q=    5.0      3.2      4.1      1.6     69.6      6.3      3.9      4.5      1.7
  AREA=   616.8    386.5    625.9    250.0   2507.7   1155.9    841.4   1177.5    537.4
   VEL=     1.9      1.9      1.5      1.5      6.4      1.3      1.1       .9       .7

 1490 NH CARD USED
 #SECNO 103535.000
          XSEC 86 HOMES IN LOB  1986 HWM  664
 103535.00   18.17  664.27      .00      .00   664.50      .23      .88      .02   651.90
   23100.    6540.   14094.    2465.    4780.    2924.    3421.    1668.     197.   651.60
     .74     1.37     4.82      .72      .071     .040     .120     .000   646.10    50.69
    .000409  1420.    1780.    1820.        2        0        0      .00  1762.47  1813.15
 0
 FLOW&DISTRIBUTION FOR SECNO= 103535.00      CWSEL=    664.27

 STA=      51.     440.     600.     763.     845.     923.     926.    1105.    1339.    1527.    1796.    1813.
  PER Q=    9.3      4.4      5.0      4.1      5.1       .5     61.0      3.3      3.1      4.2       .1
  AREA=  1796.6    803.7    871.0    584.7    688.6     35.6  2924.1   1085.3    968.3   1322.9     44.4
   VEL=     1.2      1.3      1.3      1.6      1.7      3.0      4.8       .7       .7       .7       .5

 1
  01/26/88    23:16:14                                                                          PAGE    8

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

 #SECNO 105455.000
 3280 CROSS SECTION 105455.00 EXTENDED     3.59 FEET

          XSEC 87 LOB STEEP   ROB WOODED
 105455.00   21.79  664.99      .00      .00   665.65      .66     1.02      .13   652.40
   23100.    -119.   20827.    2154.      93.    3041.    2101.    2006.     244.   652.70
     .82     1.27     6.85     1.03     .090     .040     .120     .000   643.20     8.15
```

0

FLOW&DISTRIBUTION FOR SECNO= 105455.00 CWSEL= 664.99

STA=	8.	23.	193.	202.	286.	300.	346.	429.	531.	621.
PER Q=	.5	90.2	.6	3.8	.3	.5	1.2	1.6	1.3	
AREA=	93.5	3041.4	95.3	658.6	68.5	160.6	327.1	427.5	363.7	
VEL=	1.3	6.8	1.5	1.3	.9	.8	.8	.9	.8	

1

THIS RUN EXECUTED 01/26/88 23:16:51

****
HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
ERROR CORR 01,02,03,04,05,06
MODIFICATION 50,51,52,53,54,55,56
IBM-PC-XT VERSION 1.1
****

NC .325 in the vicinity of xsec 82

THIS RUN-EXECUTED 04-26-88

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION AUGUST 1985
**************************************************

C
T1    DEVILS HOLE     STARTING WSEL FROM DS STUDY
T2    XSEC 79 THROUGH 87   SURVEYED IN 1987          NATURAL FLOODWAY RUN
T3    MUSKEGON RIVER  EXISTING COND   1986 FLOW             FWENCR.100

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.       4.        0.        0.   .000000       .00        .0   18800.   653.360      .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

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

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    110.000   200.000      .000      .000      .000      .000      .000      .000      .000      .000

J5  LPRNT     NUMSEC                  ********REQUESTED SECTION NUMBERS********
```

	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.090	.100	.030	.100	.300	.000	.000	.000	.000	.000
ET	.000	.000	5.100	.000	1150.000	1419.000	.000	.000	.000	.000
		XSEC 59								
X1	90645.000	20.000	1168.000	1414.000	.000	.000	.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	660.000	974.000	649.800	1000.000	651.800	1028.000	651.800	1054.000	651.000	1082.000
GR	651.500	1115.000	654.000	1154.000	651.400	1157.000	650.500	1163.000	648.500	1168.000
GR	641.100	1174.000	639.800	1193.000	638.100	1248.000	641.000	1258.000	641.900	1283.000
GR	641.400	1312.000	644.000	1360.000	644.500	1395.000	650.900	1414.000	661.500	1439.000
ET	.000	.000	5.100	.000	44.000	227.000	.000	.000	.000	.000
		XSEC 60								
X1	91385.000	13.000	54.000	217.000	700.000	780.000	740.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	659.000	.000	652.400	5.000	649.000	22.000	648.000	36.000	646.000	39.000
GR	644.300	54.000	639.500	82.000	639.000	119.000	639.600	176.000	641.800	200.000
GR	644.300	217.000	651.900	240.000	654.600	246.000	660.000	250.000	.000	.000
NC	.070	.070	.040	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	5.100	.000	115.000	528.000	.000	.000	.000	.000

		XSEC 79	STEEP LOB	RIDGE IN ROB						
X1	93835.000	21.000	169.000	412.000	2350.000	2500.000	2450.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	704.400	.000	667.700	56.000	661.900	74.000	657.200	114.000	653.800	126.000
GR	652.600	148.000	654.400	163.000	648.600	169.000	646.100	189.000	644.100	213.000
GR	641.600	223.000	640.200	253.000	639.400	314.000	641.900	355.000	643.400	386.000
GR	645.900	412.000	646.200	426.000	654.400	447.000	652.900	521.000	667.100	549.000
GR	672.000	595.000	.000	.000	.000	.000	.000	.000	.000	.000
NC	.100	.070	.040	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	5.100	.000	58.000	880.000	.000	.000	.000	.000
		XSEC 80. STEEP LOB ROB IS FLAT BUT ABOUT 10 FT ABOVE RIVER BED								
X1	96345.000	18.000	72.000	231.000	2660.000	2000.000	2510.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	705.900	.000	646.700	72.000	641.600	84.000	640.500	129.000	641.100	163.000
GR	642.800	191.000	642.600	207.000	647.100	231.000	650.500	242.000	653.000	272.000
GR	657.400	281.000	656.000	545.000	655.700	627.000	656.100	729.000	655.900	795.000
GR	655.900	875.000	656.900	944.000	669.300	984.000	.000	.000	.000	.000
NC	.050	.120	.040	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	5.100	.000	8.900	695.000	.000	.000	.000	.000
		XSEC 81 STRUCTURES IN LOB ALONG BANK ROB IS WOODED								
X1	97905.000	28.000	277.000	505.000	1740.000	1120.000	1560.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	665.700	.000	651.600	20.000	650.600	32.000	654.100	56.000	654.300	77.000
GR	654.400	89.000	655.300	161.000	665.000	207.000	656.100	223.000	655.900	265.000
GR	646.400	277.000	641.600	303.000	642.500	326.000	642.600	337.000	644.100	402.000
GR	643.500	443.000	643.000	463.000	644.500	486.000	644.800	504.000	646.600	505.000
GR	657.300	528.000	650.600	535.000	654.700	590.000	659.500	635.000	658.000	737.000
GR	659.500	814.000	660.000	860.000	664.300	893.000	.000	.000	.000	.000

NC	.000	.000	.000	.300	.500	.000	.000	.000	.000	.000
ET	.000	.000	1.400	.000	.000	.000	.000	.000	.000	.000

XSEC 82 CHANNEL IS INCISED

X1	98625.000	13.000	35.000	220.000	560.000	900.000	720.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	672.600	.000	648.400	35.000	641.700	61.000	641.900	103.000	644.200	131.000
GR	644.000	146.000	642.500	169.000	644.600	188.000	648.500	220.000	651.100	222.000
GR	652.800	229.000	667.000	246.000	659.900	297.000	.000	.000	.000	.000
NH	5.000	.090	541.000	10.000	571.000	.050	837.000	.040	954.000	.120
NH	1061.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	1.400	.000	.000	.000	.000	.000	.000	.000

XSEC 83 STRUCTURES IN LOB ALONG BANK FAR LOB HEAVY VEG
ROB HAS STEEP BANK THAT DROPS OFF INTO A SWAMP FLOW AREA
IS NOT VERY EFFECTIVE NOT INCLUDED IN XSEC HWM 663.0

X1	100295.000	40.000	837.000	954.000	1460.000	1780.000	1670.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
X3	.000	.000	.000	.000	.000	1039.000	.000	.000	.000	.000
GR	689.000	.000	679.200	20.000	669.300	60.000	659.500	90.000	655.600	400.000
GR	656.500	405.000	656.500	421.000	656.600	428.000	656.700	541.000	656.700	571.000
GR	655.700	580.000	654.100	583.000	651.100	597.000	649.900	599.000	649.200	600.000
GR	648.300	607.000	649.400	613.000	649.900	614.000	651.500	616.000	651.800	625.000
GR	654.400	632.000	654.900	696.000	652.100	716.000	651.000	762.000	650.100	765.000

GR	648.500	761.000	648.700	820.000	649.600	826.000	648.900	835.000	648.000	837.000
GR	645.000	865.000	643.400	886.000	641.300	904.000	642.400	939.000	647.900	954.000
GR	665.200	978.000	662.800	1014.000	663.000	1039.000	653.500	1061.000	653.500	1261.000
NC	.000	.000	.000	.300	.500	.000	.000	.000	.000	.000
NH	5.000	.070	736.000	10.000	766.000	.050	912.000	.040	1076.000	.120
NH	1135.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	1.400	.000	.000	.000	.000	.000	.000	.000

XSEC 84 STRUCTURES IN LOB ALONG BANK FAR LOB HEAVY VEG HWM 663.0

X1	101055.000	24.000	912.000	1076.000	400.000	1000.000	760.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	676.600	.000	656.600	197.000	656.800	265.000	655.100	286.000	655.900	341.000
GR	655.600	415.000	657.200	563.000	657.400	583.000	659.000	736.000	659.300	766.000
GR	658.400	785.000	655.500	806.000	654.000	845.000	650.300	912.000	648.200	928.000
GR	646.500	943.000	643.900	983.000	645.300	1016.000	644.600	1029.000	646.800	1051.000
GR	648.100	1076.000	657.200	1109.000	650.100	1115.000	666.900	1135.000	.000	.000
NH	5.000	.070	319.000	10.000	349.000	.050	373.000	.040	517.000	.120
NH	1280.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	1.400	5.100	.000	930.000	.000	.000	.000	.000

XSEC 85 HOMES IN LOB 1986 HWM 662.6

X1	101755.000	35.000	373.000	517.000	560.000	860.000	740.000	.000	.000	.000
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000
GR	675.700	.000	659.300	25.000	657.800	31.000	656.000	49.000	656.600	79.000
GR	657.000	120.000	656.000	163.000	657.700	179.000	657.800	213.000	658.400	223.000
GR	657.900	234.000	659.000	246.000	659.600	319.000	659.800	349.000	659.400	359.000
GR	651.000	373.000	645.800	384.000	643.400	395.000	641.400	408.000	644.800	453.000
GR	647.600	486.000	652.200	517.000	653.900	522.000	655.900	573.000	655.500	665.000
GR	655.600	680.000	657.300	683.000	657.200	803.000	659.300	867.000	657.900	930.000
GR	659.500	1060.000	659.500	1200.000	669.300	1240.000	679.200	1260.000	689.000	1280.000

```
NH     5.000      .070   845.000    10.000   875.000      .050   926.000      .040  1105.000      .120
NH  1860.000      .000      .000      .000      .000      .000      .000      .000      .000      .000
ET      .000      .000     1.400      .000      .000      .000      .000      .000      .000      .000
                XSEC 86 HOMES IN LOB  1986 HWM  664
X1 103535.000    34.000   926.000  1105.000  1420.000  1820.000  1780.000      .000      .000      .000
X2      .000      .000      .000      .000      .000      .000      .000      .000      .000     15.000
GR   679.100      .000   669.300    30.000   659.580    70.000   659.500   440.000   659.000   600.000
GR   660.300   644.000   657.980   709.000   658.200   763.000   658.100   808.000   655.400   817.000
GR   655.900   845.000   656.300   875.000   655.400   900.000   652.900   923.000   651.900   926.000
GR   647.400   963.000   648.400   989.000   647.400  1015.000   646.100  1048.000   646.100  1075.000
GR   651.600  1105.000   657.500  1113.000   660.600  1132.000   660.400  1174.000   659.800  1222.000
GR   659.400  1311.000   659.600  1339.000   659.100  1356.000   659.100  1410.000   659.100  1527.000
GR   660.100  1608.000   658.900  1702.000   659.100  1796.000   678.400  1860.000      .000      .000

NC      .090      .120      .040      .000      .000      .000      .000      .000      .000      .000
ET      .000      .000     5.100      .000     9.700   580.000      .000      .000      .000      .000
                XSEC 87 LOB STEEP  ROB WOODED
X1 105455.000    14.000    23.000   193.000  2200.000  1320.000  1920.000      .000      .000      .000
X2      .000      .000      .000      .000      .000      .000      .000      .000      .000     15.000
GR   671.900      .000   652.400    23.000   647.400    62.000   643.200    99.000   643.900   126.000
GR   646.900   155.000   652.700   193.000   656.100   202.000   658.200   286.000   662.000   300.000
GR   661.000   346.000   661.100   429.000   660.500   531.000   661.400   621.000      .000      .000
EJ      .000      .000      .000      .000      .000      .000      .000      .000      .000      .000
```



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

*PROF 1

CCHV=    .100 CEHV=    .300
*SECNO 90645.000

3265 DIVIDED FLOW

                XSEC 59
 90645.00   15.26   653.36     .00   653.36   654.03     .67     .00     .00   648.50
  18800.     226.   18571.      3.     316.    2803.      7.      0.      0.    650.90
     .00      .71     6.63     .43     .090     .030    .100    .000   638.10   990.93
 .000717       0.      0.       0.       0        0       0     .00   418.15  1419.80

FLOW DISTRIBUTION FOR SECNO= 90645.00        CWSEL=    653.36

STA=    991.    1000.    1028.    1054.    1062.    1115.    1144.    1163.    1168.    1414.    1420.
 PER Q=      .1      .3      .1      .2      .3      .1      .1      .1     98.8      .0
  AREA=    16.2    71.7    40.6    54.9    69.6    27.0    16.7    19.3   2802.7     7.1
   VEL=      .6      .8      .6      .7      .7      .4      .7     1.0      6.6      .4

*SECNO 91385.000
                XSEC 60
 91385.00   14.69   653.69     .00     .00   654.74    1.05     .59     .11   644.30
```

18800.	455.	18169.	176.	272.	2178.	132.	48.	6.	644.30	
.03	4.67	8.34	1.33	.090	.030	.100	.000	639.00	4.02	
.000900	700.	740.	780.	2	0	0	.00	239.96	243.98	

FLOW DISTRIBUTION FOR SECNO= 91385.00 CWSEL= 653.69

STA=	4.	22.	36.	39.	54.	217.	240.	244.
PER Q=	.3	.6	.2	1.4	96.6	.9	.0	
AREA=	51.5	72.7	20.1	128.1	2177.6	128.6	3.6	
VEL=	1.0	1.5	1.6	2.1	8.3	1.4	.4	

*SECNO 93835.000

3301 HV CHANGED MORE THAN HVINS

	XSEC 79	STEEP LOB	RIDGE IN ROB				
93835.00	16.78	656.18	.00	.00	656.59	.42	1.79	.06	648.60
18800.	150.	17915.	735.	144.	3388.	463.	233.	24.	645.90
.16	1.04	5.29	1.59	.070	.040	.070	.000	639.40	117.61
.000606	2350.	2450.	2500.	2	0	0	.00	409.85	527.46

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

FLOW DISTRIBUTION FOR SECNO= 93835.00 CWSEL= 656.18

STA=	118.	126.	148.	163.	169.	412.	426.	447.	521.	527.
PER Q=	.0	.4	.2	.2	95.3	1.8	1.1	1.0	.0	
AREA=	10.0	65.5	40.1	28.1	3388.4	141.8	123.4	186.9	10.6	
VEL=	.6	1.1	1.0	1.2	5.3	2.4	1.6	1.0	.7	

*SECNO 96345.000

XSEC 80. STEEP LOB ROB IS FLAT BUT ABOUT 10 FT ABOVE RIVER BED

96345.00	17.30	657.80	.00	.00	658.48	.68	1.81	.08	646.70
18800.	88.	17193.	1519.	75.	2492.	1298.	450.	56.	647.10
.27	1.17	6.90	1.17	.100	.040	.070	.000	640.50	58.50
.000891	2660.	2510.	2000.	2	0	0	.00	888.40	946.90

FLOW DISTRIBUTION FOR SECNO= 96345.00 CWSEL= 657.80

STA=	59.	72.	231.	242.	272.	281.	545.	627.	729.	795.	875.	944.	947.
PER Q=	.5	91.5	1.4	2.0	.1	1.0	.8	.9	.6	.8	.4	.0	
AREA=	74.9	2491.6	99.0	181.5	23.4	290.2	151.6	183.5	118.8	151.9	96.6	1.3	
VEL=	1.2	6.9	2.7	2.1	1.1	.7	1.0	.9	.9	1.0	.8	.4	

*SECNO 97905.000

3265 DIVIDED FLOW

XSEC B1 STRUCTURES IN LOB ALONG BANK ROB IS WOODED

97905.00	17.51	659.11	.00	.00	659.40	.30	.89	.04	646.40
18800.	1770.	16511.	519.	1033.	3563.	720.	606.	81.	646.60
.37	1.71	4.63	.72	.050	.040	.120	.000	641.60	9.35
.000402	1740.	1560.	1120.	2	0	0	.00	715.48	793.81

FLOW DISTRIBUTION FOR SECNO= 97905.00 CWSEL= 659.11

STA=	9.	56.	161.	277.	505.	794.
PER Q=	3.3	4.0	2.1	87.8	2.8	
AREA=	298.2	466.6	268.4	3562.9	719.9	
VEL=	2.1	1.6	1.5	4.6	.7	

CCHV= .300 CEHV= .500

#SECNO 98625.000

XSEC B2 CHANNEL IS INCISED

SECNO=	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	KLOBL	YLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
98625.00	17.63	659.33	.00	.00	659.97	.64	.39	.17	648.40
18800.	162.	18533.	105.	74.	2870.	96.	675.	89.	648.50
.40	2.19	6.46	1.09	.050	.040	.120	.000	641.70	21.44
.000788	560.	720.	900.	2	0	0	.00	215.38	236.81

FLOW DISTRIBUTION FOR SECNO= 98625.00 CWSEL= 659.33

STA=	21.	35.	220.	222.	229.	237.
PER Q=	.9	98.6	.1	.4	.1	
AREA=	74.1	2869.9	19.1	51.6	25.5	
VEL=	2.2	6.5	1.1	1.3	.6	

1490 NH CARD USED

#SECND 100295.000

3290 CROSS SECTION 100295.00 EXTENDED 7.29 FEET

3470 ENCROACHMENT STATIONS= .0 1039.0 TYPE= 1 TARGET= 1038.999

XSEC B3 STRUCTURES IN LOB ALONG BANK FAR LOB HEAVY VEG

ROB HAS STEEP BANK THAT DROPS OFF INTO A SWAMP FLOW AREA

IS NOT VERY EFFECTIVE - NOT INCLUDED IN XSEC HWM 663.0

100295.00	19.49	660.79	.00	.00	661.06	.27	.98	.11	648.00
18800.	8218.	10488.	94.	4096.	1977.	115.	842.	108.	647.90

.24 2.01 3.30 .81 .058 .040 .120 .000 641.30 86.06
.000477 1460. 1670. 1780. 2 0 0 .00 885.81 971.88

FLOW DISTRIBUTION FOR SECNO= 100295.00 CWSEL= 660.79

STA= 86. 400. 580. 807. 832. 896. 962. 981. 1020. 1035. 1037. 1154. 1172.
PER Q= 4.2 3.3 3.8 3.7 4.5 8.3 3.7 8.7 3.1 .4 55.8 .5
AREA= 1005.7 752.1 248.3 259.0 392.7 570.6 214.5 475.3 173.6 24.7 1977.5 115.2
VEL= .8 .8 2.8 2.9 2.2 2.7 3.2 3.4 3.3 3.3 5.3 .8

CCHV= .300 CEHV= .500
1490 NH CARD USED
*SECNO 101055.000
XSEC 84 STRUCTURES IN LOB ALONG BANK FAR LOB HEAVY VEG HWM 663.0
101055.00 17.19 661.09 .00 .00 661.38 .29 .31 .01 650.30
18800. 5675. 12717. 408. 3454. 2465. 395. 921. 118. 648.10
.56 1.64 5.16 1.03 .062 .040 .120 .000 643.90 152.78
.000522 400. 760. 1000. 2 0 0 .00 975.30 1128.08

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

FLOW DISTRIBUTION FOR SECNO= 101055.00 CWSEL= 661.09

STA= 153. 286. 415. 563. 785. 845. 912. 1076. 1128.
PER Q= 3.3 5.6 5.0 3.1 3.9 9.3 67.6 2.2
AREA= 505.7 702.5 694.0 618.6 334.2 598.9 2464.6 395.0
VEL= 1.2 1.5 1.4 .9 2.2 2.9 5.2 1.0

1490 NH CARD USED
*SECNO 101755.000
XSEC 85 HOMES IN LOB 1986-HWM 662.6
101755.00 20.02 661.42 .00 .00 661.97 .55 .46 .13 651.00
18800. 1984. 15010. 1806. 1271. 2259. 1707. 1012. 132. 652.20
.59 1.56 6.64 1.06 .069 .040 .120 .000 641.40 21.77
.000830 560. 740. 860. 2 0 0 .00 845.23 867.00

FLOW DISTRIBUTION FOR SECNO= 101755.00 CWSEL= 661.42

STA= 22. 120. 213. 373. 517. 665. 803. 867.
PER Q= 4.0 3.6 2.9 79.8 5.7 3.1 .8
AREA= 445.1 409.5 416.6 2259.4 900.7 603.5 202.9
VEL= 1.7 1.7 1.3 6.6 1.2 1.0 .8

1490 NH CARD USED

#SECNO 103535.000

XSEC 86 HOMES IN LOB - 1986 HWM - 664

103535.00	16.75	662.85	.00	.00	663.11	.26	1.05	.09	651.90
18800.	4371.	12935.	1495.	3543.	2670.	2420.	1278.	180.	651.60
.73	1.23	4.84	.62	.070	.040	.120	.000	646.10	56.52
.000465	1420.	1780.	1820.	2	0	0	.00	1751.93	1808.45

FLOW DISTRIBUTION FOR SECNO= 103535.00 CWSEL= 662.85

STA=	57.	440.	600.	763.	845.	923.	926.	1105.	1410.	1702.	1808.
PER Q=	6.7	3.3	3.9	3.7	5.1	.5	68.8	3.3	3.3	1.3	
AREA=	1248.7	576.8	639.8	468.4	578.0	31.4	2670.3	1015.9	1018.4	385.8	
VEL=	1.0	1.1	1.2	1.5	1.7	3.0	4.8	.6	.6	.6	

#SECNO 105455.000

3280 CROSS SECTION 105455.00 EXTENDED 2.35 FEET

XSEC 87 LOB STEEP ROB WOODED

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	LOB	CH	ROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
105455.00	20.55	663.75	.00	.00	664.30	.54	1.04	.14	652.40
18600.	85.	17404.	1311.	76.	2831.	1572.	1551.	227.	652.70
.82	1.12	6.15	.83	.090	.040	.120	.000	643.20	9.61
.000650	2200.	1920.	1320.	2	0	0	.00	611.39	621.00

FLOW DISTRIBUTION FOR SECNO= 105455.00 CWSEL= 663.75

STA=	10.	23.	193.	202.	286.	300.	346.	429.	531.	621.	
PER Q=	.5	92.6	.6	3.3	.2	.3	.7	1.0	.8		
AREA=	76.0	2831.1	84.2	554.7	51.2	103.7	224.4	301.3	252.3		
VEL=	1.1	6.1	1.3	1.1	.7	.5	.6	.6	.6		

00BREAK00

1) COUNTY: Newaygo

2) STUDY NAME: Brook Twp.

3) WATERCOURSE: Muskegon River - Devils Hole

4) DOCUMENT TYPE: 100 yr

00BREAK00

THIS RUN EXECUTED 09-01-88

Revised 10/4/88 Run
See impacts @ 100295, 101055, 105455 less than .2 ft

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**************************************************
 HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
 ERROR CORR - 01,02,03,04,05,06
 MODIFICATION - 50,51,52,53,54,55,56
 IBM-PC-XT VERSION AUGUST 1985
**************************************************

C
T1   DEVILS HOLE    STARTING WSEL FROM DS STUDY
T2   XSEC 79 THROUGH 87   SURVEYED IN 1987
T3   MUSKEGON RIVER  EXISTING COND  100YR FLOW      ----- DEVILHOL.FWY

J1  ICHECK   INQ     NINV    IDIR    STRT    METRIC   HVINS    Q       WSEL     FQ

      0.      4.      0.      0.   .000000    .00      .0   18800.  653.360    .000

J2  NPROF   IPLOT   PRFVS   XSECV   XSECH    FN     ALLDC    IBW    CHNIM    ITRACE

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

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

   -110.000  200.000    .000    .000    .000    .000    .000    .000    .000    .000

J5  LPRNT   NUMSEC                  ********REQUESTED SECTION NUMBERS********

     .000    .000    .000    .000    .000    .000    .000    .000    .000    .000

NC    .090    .100    .030    .100    .300    .000    .000    .000    .000    .000
ET    .000    .000   5.100    .000  1150.000 1419.000    .000    .000    .000    .000
            XSEC 59
X1  90645.000  20.000 1168.000 1414.000    .000    .000    .000    .000    .000    .000
X2    .000    .000    .000    .000    .000    .000    .000    .000    .000   15.000
GR   660.000  974.000  649.800 1000.000  651.800 1028.000  651.800 1054.000  651.000 1082.000
GR   651.500 1115.000  654.000 1154.000  651.400 1157.000  650.500 1163.000  648.500 1168.000
GR   641.100 1174.000  639.800 1193.000  638.100 1248.000  641.000 1258.000  641.900 1283.000
GR   641.400 1312.000  644.000 1360.000  644.500 1395.000  650.900 1414.000  661.500 1439.000

ET    .000    .000   5.100    .000   44.000  227.000    .000    .000    .000    .000
            XSEC 60
X1  91385.000  13.000  54.000  217.000  700.000  780.000  740.000    .000    .000    .000
X2    .000    .000    .000    .000    .000    .000    .000    .000    .000   15.000
GR   659.000    .000  652.400   5.000  649.000   22.000  648.000   36.000  646.000   39.000
GR   644.300   54.000  639.500  82.000  639.000  119.000  639.600  176.000  641.800  200.000
GR   644.300  217.000  651.900  240.000  654.600  246.000  660.000  250.000    .000    .000

NC    .070    .070    .040    .000    .000    .000    .000    .000    .000    .000
ET    .000    .000   5.100    .000  115.000  528.000    .000    .000    .000    .000
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XSEC 79 STEEP LOB- RIDGE IN ROB

X1	93835.000	21.000	169.000	412.000	2350.000	2500.000	2450.000	.000	.000	.000	
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000	
GR	704.400	.000	667.700	56.000	661.900	74.000	657.200	114.000	653.800	126.000	
GR	652.600	148.000	654.400	163.000	648.600	169.000	646.100	189.000	644.100	213.000	
GR	641.600	223.000	640.200	253.000	639.400	314.000	641.900	355.000	643.400	386.000	
GR	645.900	412.000	646.200	426.000	654.400	447.000	652.900	521.000	667.100	549.000	
GR	672.000	595.000	.000	.000	.000	.000	.000	.000	.000	.000	
NC	.100	.070	.040	.000	.000	.000	.000	.000	.000	.000	
ET	.000	.000	5.100	.000	58.000	880.000	.000	.000	.000	.000	

XSEC-80. STEEP LOB -ROB IS FLAT-BUT ABOUT 10 FT ABOVE RIVER BED

X1	96345.000	18.000	72.000	231.000	2660.000	2000.000	2510.000	.000	.000	.000	
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000	
GR	705.900	.000	646.700	72.000	641.600	84.000	640.500	129.000	641.100	163.000	
GR	642.800	191.000	642.600	207.000	647.100	231.000	650.500	242.000	653.000	272.000	
GR	657.400	281.000	656.000	545.000	655.900	627.000	656.100	729.000	655.900	795.000	
GR	655.900	875.000	656.900	944.000	669.300	984.000	.000	.000	.000	.000	
NC	.050	.120	.040	.000	.000	.000	.000	.000	.000	.000	
ET	.000	.000	5.100	.000	8.900	695.000	.000	.000	.000	.000	

XSEC 81 STRUCTURES IN LOB ALONG BANK ROB IS WOODED

X1	97905.000	28.000	277.000	505.000	1740.000	1120.000	1560.000	.000	.000	.000	
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000	
GR	665.700	.000	651.600	20.000	650.600	32.000	654.100	56.000	654.300	77.000	
GR	654.400	89.000	655.300	161.000	665.000	207.000	656.100	223.000	655.900	265.000	
GR	646.400	277.000	641.600	303.000	642.500	326.000	642.600	337.000	644.100	402.000	
GR	643.500	443.000	643.000	463.000	644.500	486.000	644.800	504.000	646.600	505.000	
GR	657.300	528.000	650.600	535.000	654.700	590.000	659.500	635.000	658.000	737.000	
GR	659.500	814.000	660.000	860.000	664.300	893.000	.000	.000	.000	.000	
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
ET	.000	.000	1.400	.000	.000	.000	.000	.000	.000	.000	

XSEC 82 CHANNEL IS INCISED

X1	98625.000	13.000	35.000	220.000	560.000	900.000	720.000	.000	.000	.000	
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000	
GR	676.600	.000	648.400	35.000	641.700	61.000	641.900	103.000	644.200	131.000	
GR	644.000	146.000	642.500	169.000	644.600	188.000	648.500	220.000	651.100	222.000	
GR	652.800	229.000	667.000	246.000	659.900	297.000	.000	.000	.000	.000	
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
NH	5.000	.090	541.000	10.000	571.000	.050	837.000	.040	954.000	.120	
NH	1061.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
ET	.000	.000	7.100	5.100	.000	1039.000	140.000	1039.000	.000	.000	

XSEC 83 STRUCTURES IN LOB-ALONG BANK FAR LOB HEAVY VEG
ROB HAS STEEP BANK THAT DROPS OFF INTO A SWAMP FLOW AREA
IS NOT VERY EFFECTIVE- NOT INCLUDED IN XSEC HHM 663.0

X1	100295.000	39.000	837.000	954.000	1460.000	1780.000	1670.000	.000	.000	.000	
X2	.000	.000	.000	.000	.000	.000	.000	.000	.000	15.000	
GR	689.000	.000	679.200	20.000	669.300	60.000	659.500	90.000	655.600	400.000	
GR	656.600	405.000	656.500	421.000	656.600	428.000	656.700	541.000	656.700	571.000	
GR	655.700	580.000	654.100	583.000	651.100	597.000	649.900	599.000	649.200	600.000	
GR	648.300	607.000	649.400	613.000	649.900	614.000	651.500	616.000	651.800	625.000	
GR	654.400	632.000	654.900	696.000	652.100	716.000	651.000	762.000	650.100	765.000	

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GR   648.500   781.000   648.700   820.000   649.600   826.000   648.900   835.000   648.000   837.000
GR   645.000   865.000   643.400   886.000   641.300   904.000   642.400   939.000   647.900   954.000
GR   665.200   978.000   662.800  1014.000   663.000  1039.000   653.500  1061.000      .000      .000

NC      .000      .000      .000      .000      .000      .000      .000      .000      .000      .000
NH     5.000      .070   736.000    10.000   766.000      .050   912.000      .040  1076.000      .120
NH  1135.000      .000      .000      .000      .000      .000      .000      .000      .000      .000
ET      .000      .000     1.400      .000      .000      .000      .000      .000      .000      .000
                XSEC 84 STRUCTURES IN LOB ALONG BANK FAR LOB HEAVY VEG  HWM 663.0
X1 101055.000   24.000   912.000  1076.000   400.000  1000.000   760.000      .000      .000      .000
X2      .000      .000      .000      .000      .000      .000      .000      .000      .000    15.000
GR   676.600      .000   656.600   197.000   656.800   265.000   655.100   286.000   655.900   341.000
GR   655.600   415.000   657.200   563.000   657.400   583.000   659.000   736.000   659.300   766.000
GR   658.400   785.000   655.500   806.000   654.000   845.000   650.300   912.000   648.200   928.000
GR   646.500   943.000   643.900   983.000   645.300  1016.000   644.600  1029.000   646.800  1051.000
GR   648.100  1076.000   657.200  1109.000   650.100  1115.000   666.900  1135.000      .000      .000

NH     5.000      .070   319.000    10.000   349.000      .050   373.000      .040   517.000      .120
NH  1280.000      .000      .000      .000      .000      .000      .000      .000      .000      .000
ET      .000      .000     1.400     5.100      .000   930.000      .000      .000      .000      .000
                XSEC 85 HOMES IN LOB  1986 HWM  662.6
X1 101755.000   35.000   373.000   517.000   560.000   860.000   740.000      .000      .000      .000
X2      .000      .000      .000      .000      .000      .000      .000      .000      .000    15.000
GR   675.700      .000   659.300    25.000   657.800    31.000   656.000    49.000   656.600    79.000
GR   657.000   120.000   656.000   163.000   657.700   179.000   657.800   213.000   658.400   223.000
GR   657.900   234.000   659.000   246.000   659.600   319.000   659.800   349.000   659.400   359.000
GR   651.000   373.000   645.800   384.000   643.400   395.000   641.400   408.000   644.800   453.000
GR   647.600   486.000   652.200   517.000   653.900   522.000   655.900   573.000   655.500   665.000
GR   655.600   680.000   657.300   683.000   657.200   803.000   659.300   867.000   657.900   930.000
GR   659.500  1060.000   659.500  1200.000   669.300  1240.000   679.200  1260.000   689.000  1280.000

NH     6.000      .080   521.000      .050   638.000    10.000   686.000      .050   755.000      .040
NH   934.000      .120  1730.000      .000      .000      .000      .000      .000      .000      .000
ET      .000      .000     1.400      .000      .000      .000      .000      .000      .000      .000
                XSEC 86 HOMES IN LOB  1986 HWM  664
X1 103535.000   32.000   755.000   934.000  1420.000  1820.000  1780.000      .000      .000      .000
X2      .000      .000      .000      .000      .000      .000      .000      .000      .000    15.000
GR   678.400      .000   659.100    64.000   658.900   158.000   660.100   252.000   659.100   333.000
GR   659.100   450.000   659.100   504.000   659.600   521.000   659.400   549.000   659.800   638.000
GR   660.400   686.000   660.600   728.000   657.500   747.000   651.600   755.000   646.100   785.000
GR   646.100   812.000   647.400   845.000   648.400   871.000   647.400   897.000   651.900   934.000
GR   652.900   937.600   655.400   960.000   656.300   985.000   655.900  1015.000   655.400  1043.000
GR   658.100  1052.000   658.200  1097.000   657.980  1151.000   660.300  1216.000   659.000  1260.000
GR   659.000  1560.000   669.000  1730.000      .000      .000      .000      .000      .000      .000

NC      .090      .120      .040      .000      .000      .000      .000      .000      .000      .000
ET      .000      .000     1.400      .000      .000      .000      .000      .000      .000      .000
                XSEC 87 LOB STEEP   ROB WOODED
X1 105455.000   16.000   23.000   193.000  2200.000  1320.000  1920.000      .000      .000      .000
X2      .000      .000      .000      .000      .000      .000      .000      .000      .000    15.000
GR   671.900      .000   652.400    23.000   647.400    62.000   643.200    99.000   643.900   126.000
GR   646.900   155.000   652.700   193.000   656.100   202.000   658.200   286.000   662.000   300.000
GR   661.000   346.000   661.100   429.000   660.500   531.000   661.400   621.000   662.000  1080.000
GR   669.000  1101.000      .000      .000      .000      .000      .000      .000      .000      .000
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EJ	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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

#PROF 1

CCHV= .100 CEHV= .300

#SECNO 90645.000

3265 DIVIDED FLOW

XSEC 59

90645.00	15.26	653.36	.00	653.36	654.03	.67	.00	.00	648.50
18800.	226.	18571.	3.	316.	2803.	7.	0.	0.	650.90
.00	.71	6.63	.43	.090	.030	.100	.000	638.10	990.93
.000717	0.	0.	0.	0	0	0	.00	418.15	1419.80

FLOW DISTRIBUTION FOR SECNO= 90645.00 CWSEL= 653.36

STA=	991.	1000.	1028.	1054.	1082.	1115.	1144.	1163.	1168.	1414.	1420.
PER Q=	.1	.3	.1	.2	.3	.1	.1	.1	98.8	.0	
AREA=	16.2	71.7	40.6	54.9	69.6	27.0	16.7	19.3	2802.7	7.1	
VEL=	.6	.8	.6	.7	.7	.4	.7	1.0	6.6	.4	

#SECNO 91385.000

XSEC 60

91385.00	14.69	653.69	.00	.00	654.74	1.05	.59	.11	644.30
18800.	455.	18169.	176.	272.	2178.	132.	48.	6.	644.30
.03	1.67	8.34	1.33	.090	.030	.100	.000	639.00	4.02
.000900	700.	740.	780.	2.	0	0	.00	239.96	243.98

FLOW DISTRIBUTION FOR SECNO= 91385.00 CWSEL= 653.69

STA=	4.	22.	36.	39.	54.	217.	240.	244.
PER Q=	.3	.6	.2	1.4	96.6	.9	.0	
AREA=	51.5	72.7	20.1	128.1	2177.6	128.6	3.6	
VEL=	1.0	1.5	1.6	2.1	8.3	1.4	.4	

#SECNO 93835.000

3301 HV CHANGED MORE THAN HVINS

XSEC 79 STEEP LOB RIDGE IN ROB

93835.00	16.78	656.18	.00	.00	656.59	.42	1.79	.06	648.60
18800.	150.	17915.	735.	144.	3398.	463.	233.	24.	645.90
.16	1.04	5.29	1.59	.070	.040	.070	.000	639.40	117.61
.000606	2350.	2450.	2500.	2	0	0	.00	409.85	527.46

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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


FLOW DISTRIBUTION FOR SECNO= 93835.00    CWSEL=  656.18

STA=    118.   126.   148.   163.   169.   412.   426.   447.   521.   527.
PER Q=   .0     .4     .2     .2    95.3    1.8    1.1    1.0     .0
AREA=  10.0    65.5   40.1   28.1  3388.4  141.8  123.4  186.9   10.6
VEL=     .6     1.1    1.0    1.2    5.3    2.4    1.6    1.0     .7

*SECNO 96345.000
      XSEC 80.  STEEP LOB  ROB IS FLAT BUT ABOUT 10 FT ABOVE RIVER BED
 96345.00  17.30  657.80    .00    .00  658.48    .68   1.81    .08  646.70
 18800.    88.   17193.   1519.    75.   2492.  1298.   450.    56.  647.10
   .27    1.17    6.90    1.17    .100   .040   .070   .000  640.50   58.50
 .000891  2660.   2510.   2000.     2      0      0    .00  888.40  946.90

FLOW DISTRIBUTION FOR SECNO= 96345.00    CWSEL=  657.80

STA=    59.    72.   231.   242.   272.   281.   545.   627.   729.   795.   875.   944.   947.
PER Q=   .5   91.5    1.4    2.0    .1     1.0    .8     .9     .6     .8     .4     .0
AREA=  74.9  2491.6   99.0  181.5   23.4  290.2  151.6  183.5  118.8  151.9   96.6   1.3
VEL=    1.2    6.9    2.7    2.1   1.1     .7    1.0     .9     .9    1.0     .8    .4

*SECNO 97905.000

3265 DIVIDED FLOW

      XSEC 81   STRUCTURES IN LOB ALONG BANK  ROB IS WOODED
 97905.00  17.51  659.11    .00    .00  659.40    .30   .89    .04  646.40
 18800.    1770.  16511.    519.  1033.   3563.   720.   606.    81.  646.60
   .37    1.71    4.63    .72    .050   .040    .120   .000  641.60   9.35
 .000402  1740.   1560.   1120.     2      0      0    .00  715.48  793.81

FLOW DISTRIBUTION FOR SECNO= 97905.00    CWSEL=  659.11

STA=     9.    56.   161.   277.   505.   794.
PER Q=   3.3    4.0    2.1   87.8    2.8
AREA=  298.2  466.6  268.4 3562.9  719.9
VEL=     2.1    1.6    1.5    4.6    .7

*SECNO 98625.000
      XSEC 82 CHANNEL IS INCISED
 98625.00  17.56  659.26    .00    .00  659.90    .65    .39    .10  648.40
 18800.    161.   18536.    104.   73.   2857.    95.   675.    89.  648.50
   .40    2.20    6.49    1.09    .050   .040    .120   .000  641.70   21.52
 .000801  560.    720.    900.     2      0      0    .00  215.21  236.73
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 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

FLOW DISTRIBUTION FOR SECNO= 98625.00     CWSEL=  659.26

STA=    22.     35.     220.    222.    229.    237.
PER Q=   .9     98.6     .1      .4      .1
AREA=   73.1   2857.0    18.9    51.1    25.0
VEL=     2.2     6.5     1.1     1.3     .6

1490 NH CARD USED
*SECND=100295.000
          XSEC 83  STRUCTURES IN LOB ALONG BANK  FAR LOB HEAVY VEG
          ROB=HAS STEEP BANK THAT DROPS OFF INTO A SWAMP FLOW AREA
          IS NOT VERY EFFECTIVE  NOT INCLUDED IN XSEC   HWM 663.0
100295.00  19.37  660.67    .00     .00  660.95     .28    1.01     .04   648.00
 18800.    8149.  10558.    93.    4007.   1963.    113.    840.    108.   647.90
   .51     2.03    5.38     .82     .058    .040     .120    .000   641.30   86.43
.000495   1460.   1670.    1780.     2       0        0      .00   885.28   971.71

FLOW DISTRIBUTION FOR SECNO=100295.00     CWSEL=  660.67

STA=    86.     400.    580.    607.    632.    696.    762.    781.    820.    835.    837.    954.    972.
PER Q=   4.0     3.2     3.7     3.7     4.5     8.3     3.7     8.7     3.1     .4     56.2     .5
AREA=  968.2   730.6   245.1   236.0   385.1   562.7   212.2   470.6   171.8    24.4  1963.5   113.1
VEL=     .8      .8     2.9     2.9     2.2     2.8     3.3     3.5     3.3     3.3     5.4     .8

1490 NH CARD USED
*SECND=101055.000
          XSEC 84 STRUCTURES IN LOB ALONG BANK  FAR LOB HEAVY VEG  HWM 663.0
101055.00  17.08  660.98    .00     .00  661.28     .30     .33     .01   650.30
 18800.    5587.  12807.    406.   3369.   2446.    389.    918.    118.   648.10
   .56     1.66    5.24    1.04     .062    .040     .120    .000   643.90   153.88
.000543   400.    760.    1000.     2       0        0      .00   974.07  1127.95

FLOW DISTRIBUTION FOR SECNO= 101055.00     CWSEL=  660.98

STA=   154.    286.    415.    563.    806.    845.    912.   1076.   1128.
PER Q=   3.2     5.5     4.9     3.7     3.0     9.3    68.1     2.2
AREA=  490.9   688.1   677.5   678.4   242.9   591.5  2446.3   389.2
VEL=     1.2     1.5     1.4     1.0     2.3     3.0     5.2     1.0

1490 NH CARD USED
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	QLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 101755.000

XSEC 85 HOMES IN LOB 1986 HWM 662.6

101755.00	19.87	661.27	.00	.00	661.85	.58	.48	.08	651.00
18800.	1909.	15132.	1759.	1218.	2237.	1654.	1007.	132.	652.20
.59	1.57	6.76	1.06	.069	.040	.120	.000	641.40	22.00
.000872	560.	740.	860.	2	0	0	.00	845.00	867.00

FLOW DISTRIBUTION FOR SECNO= 101755.00 CWSEL= 661.27

STA=	22.	120.	213.	373.	517.	665.	867.
PER Q=	3.9	3.5	2.7	80.5	5.6	3.7	
AREA=	430.1	395.3	392.2	2237.4	878.1	775.6	
VEL=	1.7	1.7	1.3	6.8	1.2	.9	

1490 NH CARD USED

*SECNO 103535.000

XSEC 86 HOMES IN LOB 1986 HWM 664

103535.00	16.64	662.74	.00	.00	663.06	.32	1.19	.03	651.60
18800.	2555.	13866.	2379.	2341.	2650.	2923.	1261.	177.	651.90
.71	1.09	5.23	.81	.072	.040	.120	.000	646.10	51.92
.000549	1420.	1780.	1820.	2	0	0	.00	1571.71	1623.63

FLOW DISTRIBUTION FOR SECNO= 103535.00 CWSEL= 662.74

STA=	52.	252.	450.	638.	755.	934.	1015.	1151.	1560.	1624.
PER Q=	3.6	3.6	4.3	2.1	73.8	3.5	3.4	5.5	.3	
AREA=	678.6	680.8	624.9	356.8	2650.1	600.3	710.5	1493.1	119.1	
VEL=	1.0	1.0	1.3	1.1	5.2	1.1	.9	.7	.4	

*SECNO 105455.000

XSEC 87 LOB STEEP ROB WOODED

105455.00	20.51	663.71	.00	.00	664.21	.51	1.10	.06	652.40
18800.	82.	16998.	1720.	75.	2823.	2476.	1524.	227.	652.70
.80	1.09	6.02	.69	.090	.040	.120	.000	643.20	9.67
.000626	2200.	1920.	1320.	2	0	0	.00	1075.45	1085.12

FLOW DISTRIBUTION FOR SECNO= 105455.00 CWSEL= 663.71

STA=	10.	23.	193.	202.	286.	300.	346.	429.	531.	621.	1080.	1085.
PER Q=	.4	90.4	.6	3.2	.2	.3	.7	1.0	.8	2.4	.0	
AREA=	75.4	2822.8	83.7	550.6	50.5	101.4	220.4	296.3	248.0	920.4	4.4	
VEL=	1.1	6.0	1.3	1.1	.7	.5	.6	.6	.6	.5	.3	

THIS RUN EXECUTED 09-01-88

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 HEC2 RELEASE=DATED NOV 76 UPDATED MAY 1984
 ERROR CORR - 01,02,03,04,05,06
 MODIFICATION - 50,51,52,53,54,55,56
 IBM-PC-XT VERSION AUGUST 1985
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T1
T2 FLOODWAY RUN
T3

J1 ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
0.	3.	0.	0.	.000000	.00	.0	18800.	653.440	.000

J2 NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
15.000	.000	-1.000	.000	.000	.000	.000	.000	.000	.000

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

#PROF 2

CCHV=  .100 CEHV=  .300
#SECNO 90645.000

3470 ENCROACHMENT STATIONS=  1150.0  1419.0  TYPE=  1  TARGET=  269.000
                    XSEC 59
90645.00  15.34  653.44    .00  653.36  654.12    .68    .00    .00  648.50
 18800.     34.  18763.     3.     37.    2822.     7.     0.     0.  650.90
    .00     .91    6.65    .46    .090    .030    .100    .000  638.10 1154.65
 .000715     0.     0.      0.      0       0       0     .00  264.35 1419.00

FLOW DISTRIBUTION FOR SECNO=  90645.00   CWSEL=  653.44

STA=  1155.  1163.  1168.  1414.  1419.
PER Q=   .1    .1   99.8    .0
AREA=  17.3  19.7  2822.4   7.4
VEL=    .7   1.0    6.6    .5

#SECNO 91385.000

3470 ENCROACHMENT STATIONS=  44.0  227.0  TYPE=  1  TARGET=  183.000
                    XSEC 60
91385.00  14.74  653.74    .00  653.69  654.85   1.11    .60    .13  644.30
 18800.    128.  18574.    99.    89.    2186.    78.    44.     4.  644.30
    .02    1.44    8.50   1.27    .090    .030    .100    .000  639.00   44.00
 .000928    700.    740.    780.     2       0       0     .00  183.00  227.00

FLOW DISTRIBUTION FOR SECNO=  91385.00   CWSEL=  653.74

STA=  44.  54.  217.  227.
PER Q=   .7  98.8    .5
AREA=  88.8 2186.2  77.9
VEL=    1.4   8.5   1.3

#SECNO 93835.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=  115.0  528.0  TYPE=  1  TARGET=  413.000
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XSEC 79 STEEP LOB RIDGE IN ROB
93835.00 16.90 656.30 .00 656.18 656.71 .41 1.79 .07 648.60
18800. 157. 17890. 753. 150. 3418. 477. 224. 20. 645.90
.16 1.05 5.23 1.58 .070 .040 .070 .000 639.40 117.18
.000587 2350. 2450. 2500. 2 0 0 .00 410.53 527.70

FLOW DISTRIBUTION FOR SECNO= 93835.00 CWSEL= 656.30

STA= 117. 126. 148. 163. 169. 412. 426. 447. 521. 528.
PER Q= .0 .4 .2 .2 95.2 1.9 1.1 1.0 .0
AREA= 11.0 68.2 42.0 28.8 3418.5 143.5 126.0 196.1 11.4
VEL= .6 1.1 1.0 1.2 5.2 2.4 1.6 1.0 .7

*SECNO 96345.000

3470 ENCROACHMENT STATIONS= 58.0 880.0 TYPE= 1 TARGET= 822.000
XSEC 80. STEEP LOB ROB IS FLAT BUT ABOUT 10 FT ABOVE RIVER BED
96345.00 17.38 657.88 .00 657.80 658.55 .67 1.76 .08 646.70
18800. 89. 17196. 1515. 76. 2504. 1259. 442. 52. 647.10
.27 1.17 6.87 1.20 .100 .040 .070 .000 640.50 58.41
.000877 2660. 2510. 2000. 2 0 0 .00 821.59 880.00

FLOW DISTRIBUTION FOR SECNO= 96345.00 CWSEL= 657.88

STA= 58. 72. 231. 242. 272. 281. 545. 627. 729. 795. 875. 880.
PER Q= .5 91.5 1.4 2.1 .1 1.2 .8 1.0 .6 .8 .0
AREA= 76.0 2503.9 99.8 183.8 24.1 310.6 158.0 191.4 123.9 158.1 9.7
VEL= 1.2 6.9 2.7 2.1 1.1 .7 1.0 1.0 1.0 1.0 .8

*SECNO 97905.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 8.9 695.0 TYPE= 1 TARGET= 686.100
XSEC 81 STRUCTURES IN LOB ALONG BANK ROB IS WOODED
97905.00 17.57 659.17 .00 659.11 659.46 .29 .88 .04 646.40
18800. 1792. 16495. 513. 1047. 3577. 665. 598. 74. 646.60
.37 1.71 4.61 .77 .050 .040 .120 .000 641.60 9.27
.000396 1740. 1560. 1120. 2 0 0 .00 621.83 695.00

FLOW DISTRIBUTION FOR SECNO= 97905.00 CWSEL= 659.17

STA= 9. 56. 161. 277. 505. 695.
PER Q= 3.3 4.1 2.1 87.7 2.7
AREA= 301.0 473.0 273.1 3576.7 664.8
VEL= 2.1 1.6 1.5 4.6 .8

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

*SECNO 98625.000
 2800 NAT Q1=  6644.17  WSEL=   659.26  ENC Q1=  6644.17  WSEL=   659.36  RATIO=   .0000
 NAT Q1=  6717.  RATIOS LOB,CH,ROB=   .0087   .9857   .0056  WSEL=   659.36

3470 ENCROACHMENT STATIONS=   31.9     220.9  TYPE=    4  TARGET=      .011
          XSEC 82 CHANNEL IS INCISED
 98625.00   17.60   659.30     .00   659.26   659.96     .66     .39     .11   648.40
  18800.     45.   18752.      3.     30.    2865.      9.    665.     80.    648.50
     .40    1.52     6.54     .30    .050     .040    .120    .000   641.70   31.93
 .000812    560.     720.    900.      2       0       0     .00   188.93   220.86

FLOW DISTRIBUTION FOR SECNO=  98625.00      CWSEL=   659.30

STA=     32.     35.     220.     221.
 PER Q=      .2     99.7      .0
  AREA=    29.7   2865.1     8.8
   VEL=     1.5     6.5      .3

1490 NH CARD USED
*SECNO 100295.000
3280 CROSS SECTION 100295.00 EXTENDED    7.23 FEET

3470 ENCROACHMENT STATIONS=    140.0    1039.0  TYPE=    1  TARGET=    899.000
          XSEC 83  STRUCTURES IN LOB ALONG BANK  FAR LOB HEAVY VEG
          ROB HAS STEEP BANK THAT DROPS OFF INTO A SWAMP FLOW AREA
          IS NOT VERY EFFECTIVE  NOT INCLUDED IN XSEC   HWM 663.0
100295.00   19.43   660.73     .00   660.67   661.01     .28    1.00     .04   648.00
  18800.    8175.   10531.     94.    3975.    1971.    114.    827.     98.    647.90
     .51    2.06     5.34     .82     .058     .040    .120    .000   641.30   140.00
 .000486    1460.    1670.   1780.      2       0       0     .00   831.80   971.80

FLOW DISTRIBUTION FOR SECNO= 100295.00      CWSEL=   660.73

STA=    140.    400.    580.    607.    632.    696.    762.    781.    820.    835.    837.    954.    972.
 PER Q=     4.0     3.3     3.8     3.7     4.5     8.3     3.7     8.7     3.1      .4    56.0      .5
  AREA=   908.7   742.1   246.8   237.6   389.1   566.9   213.4   473.1   172.8    24.6  1970.9   114.2
   VEL=      .8      .8     2.9     2.9     2.2     2.8     3.3     3.5     3.3     3.3     5.3      .8

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


#SECNO 101055.000
 2800 NAT Q1=  8068.26  WSEL=  660.98  ENC Q1=  8068.26  WSEL=  661.08  RATIO=  .0000
 NAT Q1=  8210.  RATIOS LOB,CH,ROB=  .3014  .6769  .0217  WSEL=  661.08

 3470 ENCROACHMENT STATIONS=  207.8  1100.4  TYPE=  4  TARGET=  .017
      XSEC B4 STRUCTURES IN LOB ALONG BANK  FAR LOB HEAVY VEG  HWM 663.0
 101055.00  17.13  661.03  .00  660.98  661.34  .31  .33  .01  650.30
  18800.  5563.  12979.  258.  3265.  2455.  234.  903.  108.  648.10
  .56  1.70  5.29  1.10  .061  .040  .120  .000  643.90  207.77
  .000551  400.  760.  1000.  2  0  0  .00  892.66  1100.43

 FLOW DISTRIBUTION FOR SECNO= 101055.00  CWSEL=  661.03

 STA=  208.  341.  415.  563.  785.  845.  912.  1076.  1100.
 PER Q=  5.0  3.1  5.0  3.0  3.9  9.5  69.0  1.4
 AREA=  657.9  390.8  685.4  605.6  330.7  595.0  2455.0  233.6
 VEL=  1.4  1.5  1.4  .9  2.2  3.0  5.3  1.1

 1490 NH CARD USED
#SECNO 101755.000
 2800 NAT Q1=  6367.29  WSEL=  661.27  ENC Q1=  6367.29  WSEL=  661.37  RATIO=  .0000
 NAT Q1=  6646.  RATIOS LOB,CH,ROB=  .1014  .7794  .1192  WSEL=  661.37

 3470 ENCROACHMENT STATIONS=  74.7  924.1  TYPE=  4  TARGET=  .042
      XSEC B5 HOMES IN LOB  1986 HWM 662.6
 101755.00  19.92  661.32  .00  661.27  661.92  .60  .49  .08  651.00
  18800.  1555.  15333.  1912.  1008.  2246.  1825.  991.  121.  652.20
  .59  1.54  6.83  1.05  .069  .040  .120  .000  641.40  74.68
  .000884  560.  740.  860.  2  0  0  .00  849.46  924.14

 FLOW DISTRIBUTION FOR SECNO= 101755.00  CWSEL=  661.32

 STA=  75.  163.  319.  373.  517.  665.  803.  924.
 PER Q=  3.8  3.1  1.3  81.6  5.7  3.1  1.4
 AREA=  413.6  442.6  151.7  2245.5  886.5  590.2  348.7
 VEL=  1.7  1.3  1.7  6.8  1.2  1.0  .7

 1490 NH CARD USED
#SECNO 103535.000
 2800 NAT Q1=  8024.48  WSEL=  662.74  ENC Q1=  8024.48  WSEL=  662.84  RATIO=  .0000
 NAT Q1=  8181.  RATIOS LOB,CH,ROB=  .1398  .7316  .1286  WSEL=  662.84
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	GLOB	GCH	GROB	ALOB	ACH	AROB	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= 103.4 1516.4 TYPE= 4 TARGET= .019

XSEC 86 HOMES IN LOB 1986-HWM-664

103535.00	16.72	662.82	.00	662.74	663.15	.33	1.20	.03	651.60
10800.	2484.	14040.	2276.	2227.	2665.	2688.	1238.	164.	651.90
.71	1.12	5.27	.85	.072	.040	.120	.000	646.10	103.41
.000553	1420.	1780.	1820.	2	0	0	.00	1412.94	1516.35

FLOW DISTRIBUTION FOR SECNO= 103535.00 CWSEL= 662.82

STA=	103.	333.	504.	638.	755.	934.	1015.	1151.	1516.
PER Q=	4.1	3.6	3.4	2.2	74.7	3.6	3.5	5.0	
AREA=	784.8	636.9	439.2	366.3	2664.8	606.9	721.6	1359.6	
VEL=	1.0	1.0	1.5	1.1	5.3	1.1	.9	.7	

*SECNO 105455.000

2800 NAT Q1= 7515.63 WSEL= 663.71 ENC Q1= 7515.63 WSEL= 663.81 RATIO= .0000

NAT Q1= 7621. RATIOS LOB,CH,ROB= .0044 .9907 .0949 WSEL= 663.81

3470 ENCROACHMENT STATIONS= 23.0 889.5 TYPE= 4 TARGET= .014

XSEC 87 LOB STEEP ROB WOODED

105455.00	20.63	663.83	.00	663.71	664.34	.51	1.14	.06	652.40
18800.	0.	17087.	1713.	0.	2845.	2213.	1490.	207.	652.70
.80	.00	6.01	.77	.090	.040	.120	.000	643.20	23.00
.000672	2200.	1920.	1320.	2	0	0	.00	866.49	889.49

FLOW DISTRIBUTION FOR SECNO= 105455.00 CWSEL= 663.83

STA=	23.	193.	202.	286.	300.	346.	429.	531.	621.	889.
PER Q=	90.9	.6	3.4	.2	.3	.8	1.1	.9	1.8	
AREA=	2844.9	84.9	561.5	52.3	107.4	231.2	309.6	259.6	606.6	
VEL=	6.0	1.4	1.1	.8	.6	.6	.7	.7	.5	



1) COUNTY: Newaygo

2) STUDY NAME: Brook Twp.

3) WATERCOURSE: Muskegon River - Devils Hole

4) DOCUMENT TYPE: Summary



THIS RUN EXECUTED 09-01-88

HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
ERROR CORR 01,02,03,04,05,06
MODIFICATION 50,51,52,53,54,55,56
IBM-PC-XT-VERSION AUGUST 1985

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

MUSKEGON RIVER -EXISTING

SUMMARY PRINTOUT TABLE 110

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	90645.000	653.36	.00	654.03	418.15	225.58	18571.34	3.09	.00	.00	1168.00	1414.00	.00
	90645.000	653.44	.08	654.12	264.35	33.58	18762.98	3.44	269.00	1150.00	1168.00	1414.00	1419.00
	91385.000	653.69	.00	654.74	239.96	454.93	18169.17	175.91	.00	.00	54.00	217.00	.00
	91385.000	653.74	.05	654.85	183.00	127.65	18573.73	98.62	183.00	44.00	54.00	217.00	227.00
	93835.000	656.18	.00	656.59	409.85	149.58	17915.03	735.38	.00	.00	169.00	412.00	.00
	93835.000	656.30	.12	656.71	410.53	157.42	17889.53	753.05	413.00	115.00	169.00	412.00	528.00
	96345.000	657.80	.00	658.48	888.40	87.69	17193.37	1518.95	.00	.00	72.00	231.00	.00
	96345.000	657.88	.08	658.55	821.59	88.61	17196.30	1515.09	822.00	58.00	72.00	231.00	880.00
	97905.000	659.11	.00	659.40	715.48	1770.03	16510.77	519.20	.00	.00	277.00	505.00	.00
	97905.000	659.17	.06	659.46	621.83	1792.42	16494.73	512.85	686.10	8.90	277.00	505.00	695.00
	98625.000	659.26	.00	659.90	215.21	160.83	18535.63	103.54	.00	.00	35.00	220.00	.00
	98625.000	659.30	.04	659.96	188.93	45.03	18752.31	2.67	.01	31.93	35.00	220.00	220.86
	100295.000	660.67	.00	660.95	885.28	8148.50	10558.27	93.23	1039.00	.00	837.00	954.00	1039.00
	100295.000	660.73	.06	661.01	831.80	8175.48	10530.88	93.64	899.00	140.00	837.00	954.00	1039.00
	101055.000	660.98	.00	661.28	974.07	5587.10	12806.58	406.31	.00	.00	912.00	1076.00	.00
	101055.000	661.03	.05	661.34	892.66	5563.23	12978.69	258.08	.02	207.77	912.00	1076.00	1100.43
	101755.000	661.27	.00	661.85	845.00	1909.15	15131.50	1759.35	930.00	.00	373.00	517.00	930.00
	101755.000	661.32	.06	661.92	849.46	1554.67	15332.90	1912.43	.04	74.68	373.00	517.00	924.14
	103535.000	662.74	.00	663.06	1571.71	2555.50	13865.54	2378.96	.00	.00	755.00	934.00	.00
	103535.000	662.82	.08	663.15	1412.94	2484.47	14039.73	2275.81	.02	103.41	755.00	934.00	1516.35
	105455.000	663.71	.00	664.21	1075.45	82.47	16997.98	1719.55	.00	.00	23.00	193.00	.00
	105455.000	663.83	.13	664.34	866.49	.00	17086.68	1713.32	.01	23.00	23.00	193.00	889.49

SUMMARY OF ERRORS AND SPECIAL NOTES

FLOODWAY DATA. MUSKEGON RIVER EXISTING
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
90645.000	264.	2867.	6.6	653.5	653.4	.1
91385.000	183.	2353.	8.0	653.8	653.7	.1
93835.000	411.	4045.	4.6	656.3	656.2	.1
96345.000	822.	3839.	4.9	657.9	657.8	.1
97905.000	686.	5289.	3.6	659.2	659.1	.1
98625.000	189.	2904.	6.5	659.3	659.3	.0
100295.000	832.	6060.	3.1	660.8	660.76	.1
101055.000	893.	5954.	3.2	661.1	661.008	.1
101755.000	849.	5079.	3.7	661.4	661.31	.1
103535.000	1413.	7580.	2.5	662.8	662.7	.1
105455.000	866.	5058.	3.7	663.8	663.7	.1

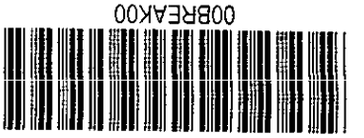


1) COUNTY: Newaygo

2) STUDY NAME: Brook Twp.

3) WATERCOURSE: Muskegon River - Devils Hole

4) DOCUMENT TYPE: Report



FLOOD INSURANCE STUDY



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LAND & WATER MGMT.

TOWNSHIP OF BROOKS, MICHIGAN
NEWAYGO COUNTY



REVISED PRELIMINARY

Federal Emergency Management Agency

COMMUNITY NUMBER - 260467

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EXHIBITS

Flood Profiles

Muskegon River Panels 01P-02P

Flood Insurance Rate Map Index

Flood Insurance Rate Map

FLOOD INSURANCE STUDY

TOWNSHIP OF BROOKS,
NEWAYGO COUNTY,
MICHIGAN

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study revises and supersedes a previous Flood Insurance Rate Map for the Township of Brooks, Newaygo County, Michigan (Reference 1). This information will be used by the community to update existing floodplain regulations as part of the regular phase of the National Flood Insurance Program. The information will also be used by local and regional planners to further promote sound land use and floodplain development. Minimum floodplain management requirements for participation in the National Flood Insurance Program are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the state (or other jurisdictional agency) will be able to explain them.

This Flood Insurance Study was prepared by compiling existing hydrologic and hydraulic technical and scientific data prepared originally for purposes other than the National Flood Insurance Program.

The data were identified as applicable at the time of compilation of this Flood Insurance Study and should depict the general conditions of the flooding sources with relative accuracy. The Federal Emergency Management Agency (FEMA) performed a cursory review and accepted the data as valid for purposes of this Flood Insurance Study and the National Flood Insurance Program. However, if better information is known to exist or has been developed since the date of this report, the information should be immediately forwarded to the Natural and Technological Hazards Division, FEMA, Chicago, Illinois, for consideration for revision of this study.

1.2 Authority and Acknowledgments

The sources of authority for this Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study were obtained from the 1987 and 1988 Michigan Department of Natural Resources (MDNR) Muskegan River floodplain studies (References 2 and 3).

1.3 Coordination

On , the results of this Flood Insurance Study were reviewed and accepted at a final coordination meeting attended by representatives of the community and FEMA.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the incorporated area of the Township of Brooks, Newaygo County, Michigan. The area of study is shown on the Vicinity Map (Figure 1).

The areas studied by detailed methods were selected based on the extent and validity of available existing hydrologic and hydraulic data.

Flooding caused by overflow of the Muskegon River was studied in detail.

Areas having low development potential or minimal flood hazards were previously studied using approximate analyses. The results were shown on the Flood Insurance Rate Map for the Township of Brooks, Michigan (Reference 1) and are incorporated into this Flood Insurance Study.

2.2 Community Description

The Township of Brooks is in south-central Newaygo County, Michigan, and is bordered by the Township of Everett on the north, the Township of Croton on the east, the Township of Grant on the south, and the City of Newaygo and the Township of Garfield on the west, all in Newaygo County. The Township of Brooks is served by State Highway 82 and the CSX railroad. The 1980 population of the Township of Brooks was reported to be 2,349 (Reference 4).

2.3 Principal Flood Problems

In 1969, the dam at the City of Newaygo was removed. The change in channel configuration was minimal and did not affect flooding boundaries for the 100-year event. Flooding problems occur because of the severe meandering of the Muskegon River, which causes shifting of a large percentage of the flow between the channel and the overbanks. On September 12, 1986, a flood with a discharge of 23,200 cubic feet per second (cfs) and an elevation of 645.39 feet National Geodetic Vertical Datum of 1929 (NGVD) on the Muskegon River at the Newaygo gage resulted in damage to numerous structures. Past floods recorded at Newaygo (References 5 and 6) are listed below.

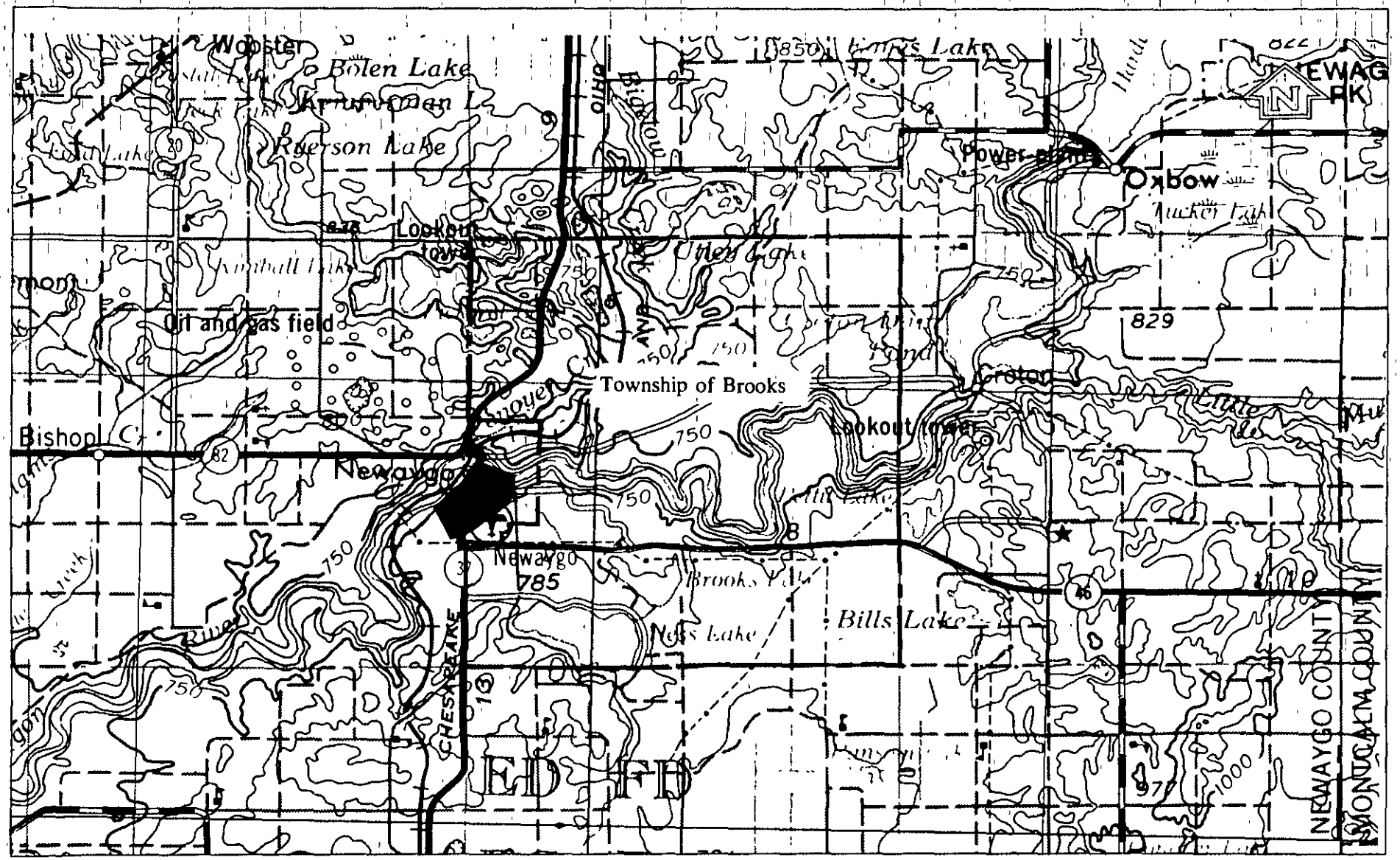


FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF BROOKS, MI
(NEWAYGO CO.)

APPROXIMATE SCALE

2 0 2 4 8 MILES

VICINITY MAP

YEAR	GAGE HEIGHT FEET	ELEVATION (NGVD)	DISCHARGE (CFS)
1986	19.56	645.39	23,200
1913	*	*	14,950
1912	*	*	13,400
1945	53.76**	639.59	11,600
1976	13.37	639.20	10,800
1957	52.83**	638.66	10,000
1919	*	*	9,880
1950	52.70**	638.53	9,830
1975	12.75	638.58	9,800
1959	52.65**	638.48	9,750

* gaging station located at Croton Dam, stage not recorded at Newaygo
**datum of gaging station set at 585.83 NGVD from 1939 to 1963, 40.00 feet lower than existing datum of gage

2.4 Flood-Protection Measures

Flood-protection measures are not known to exist within the study area.

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 that is expected to be equaled 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 floodplain management and for flood insurance 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 equaled 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 that equals or exceeds the 100-year flood (1-percent chance of annual exceedence) 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 herein 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 each riverine flooding source studied in detail affecting the community.

The floodflow frequency estimates for the Muskegon River at Newaygo (USGS gage no. 04122000) were obtained using Bulletin No. 17B (Reference 7).

A systematic record of 61 years was based on historic peaks from 1917 and 1919, 1910 to 1915, and 1932 to 1986. The USGS revised 1986 peak discharge of 23,100 cfs resulted in a 100-year flood discharge estimate of 18,800 cfs.

Peak discharge-drainage area relationships for the 100-year floods of each flooding source studied in detail in the community are shown in Table 1.

TABLE 1 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQ MILES)	PEAK DISCHARGE (CFS) 100-YEAR
MUSKEGON RIVER just downstream of CSX railroad	N/A	18,800

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals.

The bridge and cross-section information for this study was obtained by field survey.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles and on the Flood Insurance Rate Map.

The hydraulic calculations in this study were developed using the HEC-2 step-backwater computer program (Reference 8). Starting water-surface elevations were determined using stage-discharge relationships based on the slope-area method. Roughness coefficients (Manning's "n") were determined based on field inspection of the study streams.

Following the floods of 1975, 1976, and 1986, high-water marks were recorded by the MDNR. In addition, a U.S. Army Corps of Engineers (COE) report (Reference 9) contains high-water information from what is believed to be the 1913 flood. High-water marks were used to calibrate the hydraulic model. The severe meander of the river has the most impact on the river stages because a large percentage of flow is shifting between the channel and the overbanks. To calibrate the 1986 flood and the 1976 flood, it was necessary to use higher roughness coefficients for the 1986 flood to account for the meander.

The hydraulic model was calibrated to the 1986 and 1976 flood and provided a reasonable comparison. The high-water marks in the COE Report (Reference 9) are not well documented in regard to location, condition of the high-water mark, and the event that produced the high-water mark. It was assumed that the 1913 flood produced the high-water marks, thus the discharge of 14,950 cfs was run in the hydraulic model to provide a comparison to a past event.

Flood profiles were drawn showing the computed water-surface elevations for floods of the selected recurrence intervals.

The hydraulic analyses for this study are based on the effects of unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

All elevations are referenced to the NGVD.

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The National Flood Insurance Program encourages State and local governments to adopt sound floodplain management programs. Therefore, each Flood Insurance Study provides 100-year flood elevations and delineations of the 100- and 500-year floodplain boundaries and 100-year floodway to assist communities in developing floodplain management measures.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent annual chance (500-year) flood is employed to indicate additional areas of flood risk in the community. For each stream studied in detail, the 100- and 500-year floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:25000 with a contour interval of 3 meters (Reference 10).

The 100-year floodplain boundaries are shown on the Flood Insurance Rate Map. On this map, the 100-year floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A, AE, AH, AO, A99, V, and VE). Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

For the streams studied by approximate methods, only the 100-year floodplain boundary was delineated using the Flood Insurance Rate Map for the Township of Brooks (Reference 1).

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces the flood-carrying capacity, increases the flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 100-year floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. In Michigan though, under Michigan Act 245, Public Acts of 1929, as amended by Act 167, Public Acts of 1968 (Reference 11), encroachment in the floodplain is limited to that which will cause only an insignificant increase in flood heights. Thus, at the recommendation of the Bureau of Water Management, a floodway having no more than a 0.1-foot surcharge has been delineated for this study. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways presented in this study were computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections and are shown in Table 2, Floodway Data. The computed floodways are shown on the Flood Insurance Rate Map. In cases where the floodway and the 100-year floodplain boundaries are either close together or collinear, only the floodway boundary is shown. Portions of the floodway for the Muskegon River lie outside the township limits.

Along streams where floodways have not been computed, the community must ensure that the cumulative effect of development in the floodplain will not cause an increase in the base flood elevations greater than the State's allowable surcharge at any point within the community.

The area between the floodway and the 100-year floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood more than the State's allowable surcharge at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 2.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
MUSKEGON RIVER								
A	80,230	240	2689	7.0	648.3	648.3	648.4	0.1
B	81,720	237	2839	6.6	649.6	649.6	649.6	0.0
C	83,830	230	2931	6.4	651.1	651.1	651.2	0.1
D	86,390	225	2866	6.6	652.5	652.5	652.6	0.1
E	87,590	264	2865	6.6	653.4	653.4	653.5	0.1
F	88,330	183	2352	8.0	653.7	653.7	653.8	0.1
G	90,780	411	4045	4.6	656.2	656.2	656.3	0.1
H	93,290	822	3839	4.9	657.8	657.8	657.9	0.1
I	94,850	686	5289	3.6	659.1	659.1	659.2	0.1
J	95,570	189	3904	6.5	659.2	659.2	659.2	0.0
K	97,240	932	7306	2.6	660.4	660.4	660.5	0.1
L	98,000	890	5842	3.2	660.6	660.6	660.7	0.1
M	98,700	845	4982	3.8	661.1	661.1	661.2	0.1
N	100,480	1410	7491	2.5	662.7	662.7	662.8	0.1
O	102,400	859	5013	3.7	663.7	663.7	663.8	0.1

[1]FEET ABOVE WARNER AVENUE

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF BROOKS, MI
(NEWAYGO CO.)

FLOODWAY DATA

MUSKEGON RIVER

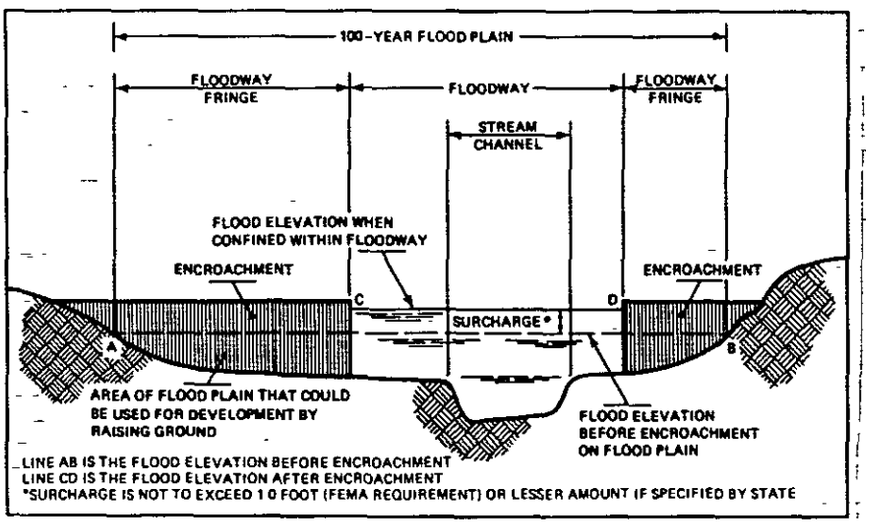


FIGURE 2 - Floodway Schematic

5.0 INSURANCE APPLICATION

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. These zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by detailed methods. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 100-year floodplain, areas of 100-year flooding where average depths are less than 1 foot, areas of 100-year flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 100-year flood by levees. No base flood elevations or depths are shown within this zone.

6.0 FLOOD INSURANCE RATE MAP

The Flood Insurance Rate Map is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 100-year floodplains that were studied by detailed methods, shows selected whole-foot base flood elevations or average depths. Insurance agents use the zones and base flood elevations in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols the 100- and 500-year floodplains, the floodways, and the locations of selected cross sections used in the hydraulic analyses and floodway computations.

7.0 OTHER STUDIES

Flood Insurance Studies in progress for the Township of Ashland, the Township of Bridgeton, and the Township of Garfield, Michigan (References 12-14) are in agreement with this study.

This Flood Insurance Study supersedes the previously printed Flood Insurance Rate Map for the Township of Brooks (Reference 1).

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting the Natural and Technological Hazards Division, FEMA, 175 West Jackson Boulevard, 4th Floor, Chicago, Illinois 60604.

9.0 REFERENCES AND BIBLIOGRAPHY

1. Federal Emergency Management Agency, Flood Insurance Rate Map, Township of Brooks, Newaygo County, Michigan, July 1986.

2. Michigan Department of Natural Resources, Engineering Water Management Division, Muskegon River Floodplain Study, Lansing, Michigan, January 1987.

3. ----------, Engineering Water Management Division, Muskegon River Floodplain Study, Lansing, Michigan, April 1988.

4. U.S. Department of Commerce, Bureau of the Census, 1980 Census of Population, Number of Inhabitants, Michigan, Washington, D.C., January 1982.

5. U.S. Geological Survey, Water Supply Paper 1677, Magnitude and Frequency of Floods in the United States, Part 4, St. Lawrence River Basin, Washington, D.C., 1965.

6. ----------, Water Resources Data, through Water Year 1985, Lansing, Michigan, 1986.

7. U.S. Department of the Interior, Geological Survey, Interagency Advisory Committee on Water Data, Office of Water Data Coordination, Hydrology Subcommittee, Bulletin No. 17B, Guidelines for Determining Flood Flow Frequency, September 1981, revised March 1982.

8. U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water-Surface Profiles, Generalized Computer Program, Davis, California, April 1984.

9. War Department, Muskegon River, Michigan, 72nd Congress, Document No. 143, Washington, D.C., 1931.

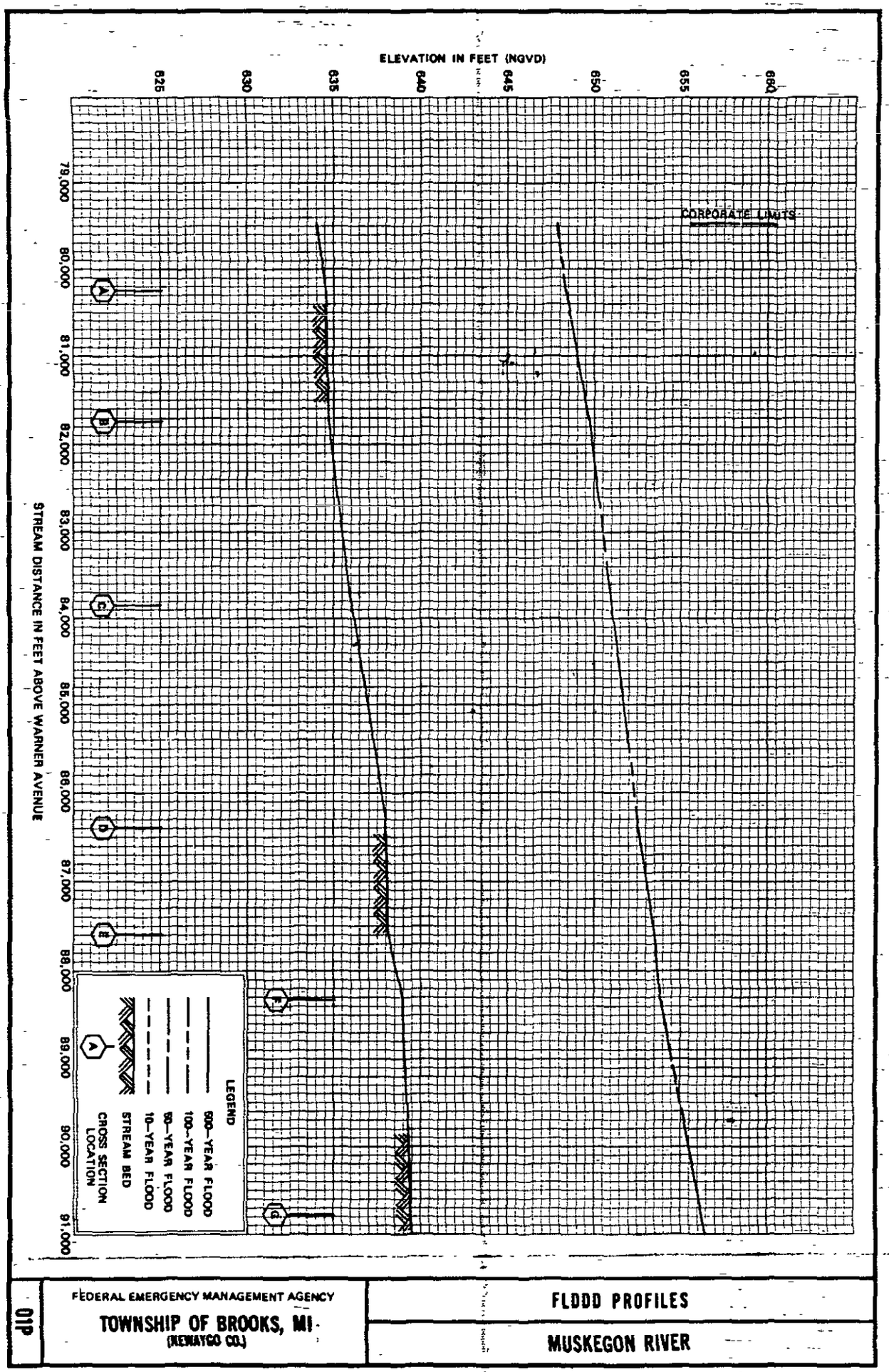
10. U.S. Geological Survey, 7.5 Minute Series Topographic Maps, Scale 1:25000, Contour Interval 3 Meters: Bridgeton, Michigan, provisional 1985; Fremont, Michigan, provisional 1985; Newaygo, Michigan, provisional 1985.

11. State of Michigan, Floodplain Control Act of 1968, Act 245, P.A. 1929 as amended by Act 167, P.A. 1968, Michigan Water Resources Commission, Lansing, Michigan, 1968.

12. Federal Emergency Management Agency, Flood Insurance Study, Township of Ashland, Newaygo County, Michigan, in progress.

13. ———, Flood Insurance Study, Township of Bridgeton, Newaygo County, Michigan, in progress.

14. ———, Flood Insurance Study, Township of Garfield, Newaygo County, Michigan, in progress.



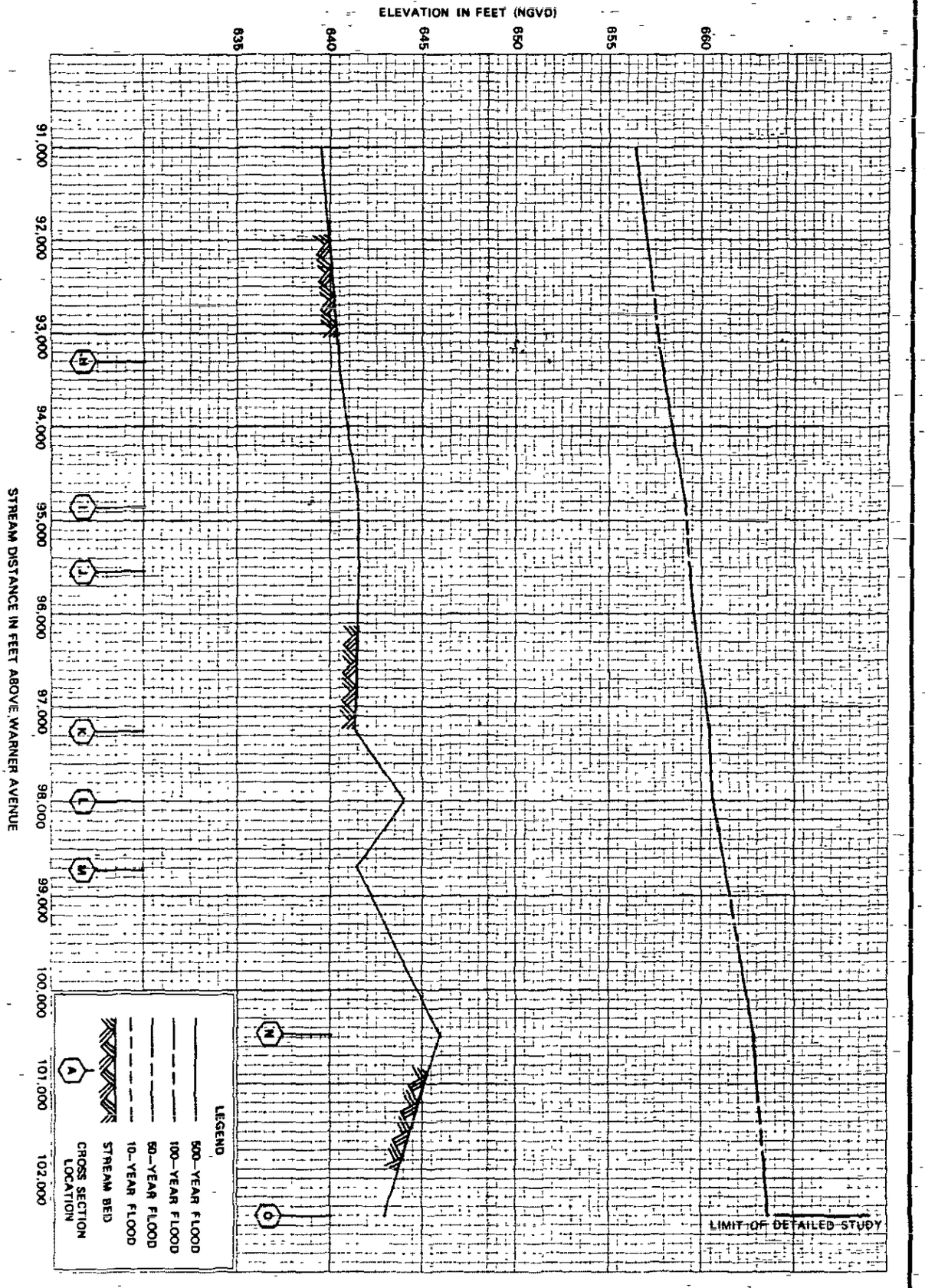
FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF BROOKS, MI
(NEWAYGO CO.)

FLOOD PROFILES

MUSKEGON RIVER

01P



02P

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF BROOKS, MI
(NEWAYGO CO.)

FLOOD PROFILES

MUSKEGON RIVER

MICHIGAN DEPT. OF NATURAL RESOURCES, RECREATION DIV., SURVEYS
P.O. BOX 30028, LANSING, MI 48909

JOB NUMBER: 18-4015

11-30-1987
12:37:37

MUSKEGON-RIVER X-SECTIONS
NEWAYGO COUNTY, BROOKS TWP.

SPN.ID: WALWIL

FROM	BEARING	DISTANCE	TO	NORTHING	EASTING
			400	8475.7830	84328.2510
400	NA 264 49 37.2	19.8529	401	8473.9930	84308.4790
401	NA 119 00 47.4	6.3133	402	8470.9310	84314.0000
402	NA 244 27 54.8	30.2785	403	8456.5860	84287.9720
403	NA 270 51 48.9	24.0847	404	8456.9490	84259.8900
404	NA 260 07 03.2	22.8334	405	8453.0040	84237.4000
405	NA 258 20 08.9	12.1479	406	8450.5480	84225.5030
406	NA 262 23 07.0	33.7708	407	8446.0730	84192.0300
407	NA 252 55 20.0	40.1333	408	8434.2280	84153.0660
408	NA 254 59 56.8	14.6078	409	8430.5070	84139.5560
409	NA 253 05 25.3	15.9903	410	8425.8560	84124.2570
410	NA 259 10 47.0	67.4217	411	8413.1990	84058.0340
411	NA 258 13 55.9	38.0640	412	8405.4360	84020.7700
412	NA 255 19 59.9	21.4696	84	8400.0000	84000.0000
84	NA 246 03 06.4	18.7578	413	8392.3860	83982.8570
413	NA 236 28 31.9	187.2795	414	8291.1620	83830.0660
414	NA 229 46 15.8	19.9615	415	8278.2700	83814.8260
415	NA 222 59 40.6	149.0280	416	8169.1220	83713.0630
416	NA 235 12 12.2	74.2222	417	8126.7660	83652.1130
417	NA 227 01 35.3	54.1912	418	8089.8260	83612.4630
418	NA 221 08 57.2	21.5844	419	8073.5730	83598.3660
419	NA 227 28 15.4	67.7373	420	8027.7850	83548.3420
420	NA 220 30 45.7	197.2241	422	7877.8430	83420.2220
422	NA 056 38 05.9	1087.2207	400	8475.7830	84328.2510

AREA OF TRAVERSE 79778.1973 SQ.FT. 1.8315 ACRES

X- SECTION 84

ELEVATION	STATION	
666.93	0	1135
650.09	20	1115
657.15	26	1109
648.08	59	1076
646.81	84	1051
644.62	106	1029
645.33	119	1016
643.86	152	983
646.53	192	943
648.17	207	928
650.26	223	912
654.04	290	845
655.53	329	806
658.40	350	785
659.25	369	766
639.6		736
657.36	552	583
657.23	572	563
655.55	720	415
655.86	794	341
655.73	849	286
656.80	870	265
656.64	938	197
		207
676.60	1135	0

676.60
1135

ELEVATION, FT. (U.S.G.S.)

670
665
660
655
650
645
640
635

0 100 200 300 400 500 600 700 800 900 1000 1100 1200

STATION, FT.

* Looking N.E.

CROSS SECTION # 84
MUSKEGON RIVER
NEWAYGO COUNTY, BROOKS TWP.

M. STEINERT
R 4510-1

X- SECTION 83

ELEVATION	STATION		ELEVATION	STATION	
653.46	0 661		654.13	478 183 1183	
663.01	22 639		655.68	481 180 1180	
662.81	47 614		656.67	490 171 1171	
665.21	83 578		656.57	633 28 1028	
647.94	107 554	*	656.54	640 21 1021	
642.40	122 539		656.59	656 5 1005	
* 641.26	157 504		655.56	661 0 1000	
643.39	175 486		654.1	-149 851	
644.99	196 465		653.6	-240 760	
643.01	224 437	*	654.7	-275 725	
643.93	226 435		655.6	-279 721	
649.59	235 426		654.8	-498 502	
648.72	241 420		667.1	-520 480	
648.50	280 381				
650.13	296 365				
650.97	299 362				
652.07	345 316				
654.95	365 296				
654.40	429 232				
651.31	436 225				
651.49	445 216				
649.79	447 214				
648.98	448 213				
648.31	454 207				
649.16	461 200				
649.76	462 199				
651.10	464 197				

MICHIGAN DEPT. OF NATURAL RESOURCES, RECREATION DIV., SURVEYS
P.O. BOX 30028, LANSING, MI 48909

JOB NUMBER: 18-4015

11-30-1987
12:13:49

MUSKEGON RIVER X-SECTIONS
NEWAYGO COUNTY, BROOKS TWP.

SPN.ID: BRUCE

FROM	BEARING	DISTANCE	TO	NORTHING	EASTING
			340	8650.1570	82878.6720
340	NA 164 04 37.8	21.6372	339	8629.3300	82904.6080
339	NA 164 19 28.7	25.5897	337	8604.6920	82911.5220
337	NA 162 24 46.3	35.2653	300	8571.0770	82922.1770
300	NA 158 10 08.7	24.5194	332	8548.7160	82931.2950
332	NA 165 12 54.7	14.7771	333	8534.0280	82935.0660
333	NA 169 44 28.5	35.5767	334	8499.0200	82941.4020
334	NA 158 10 11.7	17.8080	335	8482.4890	82948.0240
335	NA 166 09 01.0	20.6770	336	8462.4520	82952.9640
336	NA 163 00 26.1	28.2702	301	8435.4160	82961.2260
301	NA 168 30 09.0	2.0369	302	8433.4200	82961.6320
302	NA 163 57 22.0	8.3908	303	8425.3560	82963.9510
303	NA 158 14 19.6	6.0878	304	8419.7020	82966.2080
304	NA 164 46 29.5	39.4040	305	8381.6810	82976.5560
305	NA 161 17 08.7	16.0231	306	8366.5050	82981.6970
306	NA 157 43 15.1	2.9621	307	8363.7640	82982.8200
307	NA 165 14 33.2	45.6095	308	8319.6590	82994.4380
308	NA 164 12 09.1	20.4307	87	8300.0000	83000.0000
80	NA 162 45 05.7	64.2022	309	8238.6660	83019.0430
309	NA 170 48 14.7	7.0395	310	8231.7170	83020.1680
310	NA 158 24 04.4	8.6117	311	8223.7100	83023.3380
311	NA 155 00 53.6	3.2870	312	8221.6370	83024.3040
312	NA 149 00 15.7	1.2331	313	8220.5800	83024.9390
313	NA 147 51 04.7	5.5146	314	8216.1270	83028.1920
314	NA 200 00 33.9	6.8824	315	8209.6600	83025.8370
315	NA 170 12 11.3	1.3605	316	8208.3210	83025.5960
316	NA 169 21 31.5	1.6500	317	8206.7190	83025.8970
317	NA 172 30 29.7	14.5724	318	8192.2710	83027.7970
318	NA 162 42 22.3	2.6676	319	8189.7240	83028.5900
319	NA 162 38 04.7	8.6469	320	8181.4710	83031.1700
320	NA 164 18 27.2	143.7811	321	8041.0490	83070.0590
321	NA 166 36 21.3	6.6653	322	8036.5650	83071.6030
322	NA 164 20 41.9	15.8800	323	8021.2740	83075.8880
323	NA 168 59 33.1	5.2374	324	8016.1330	83076.8880
324	NA 344 17 58.3	658.5757	340	8650.1570	82898.6720

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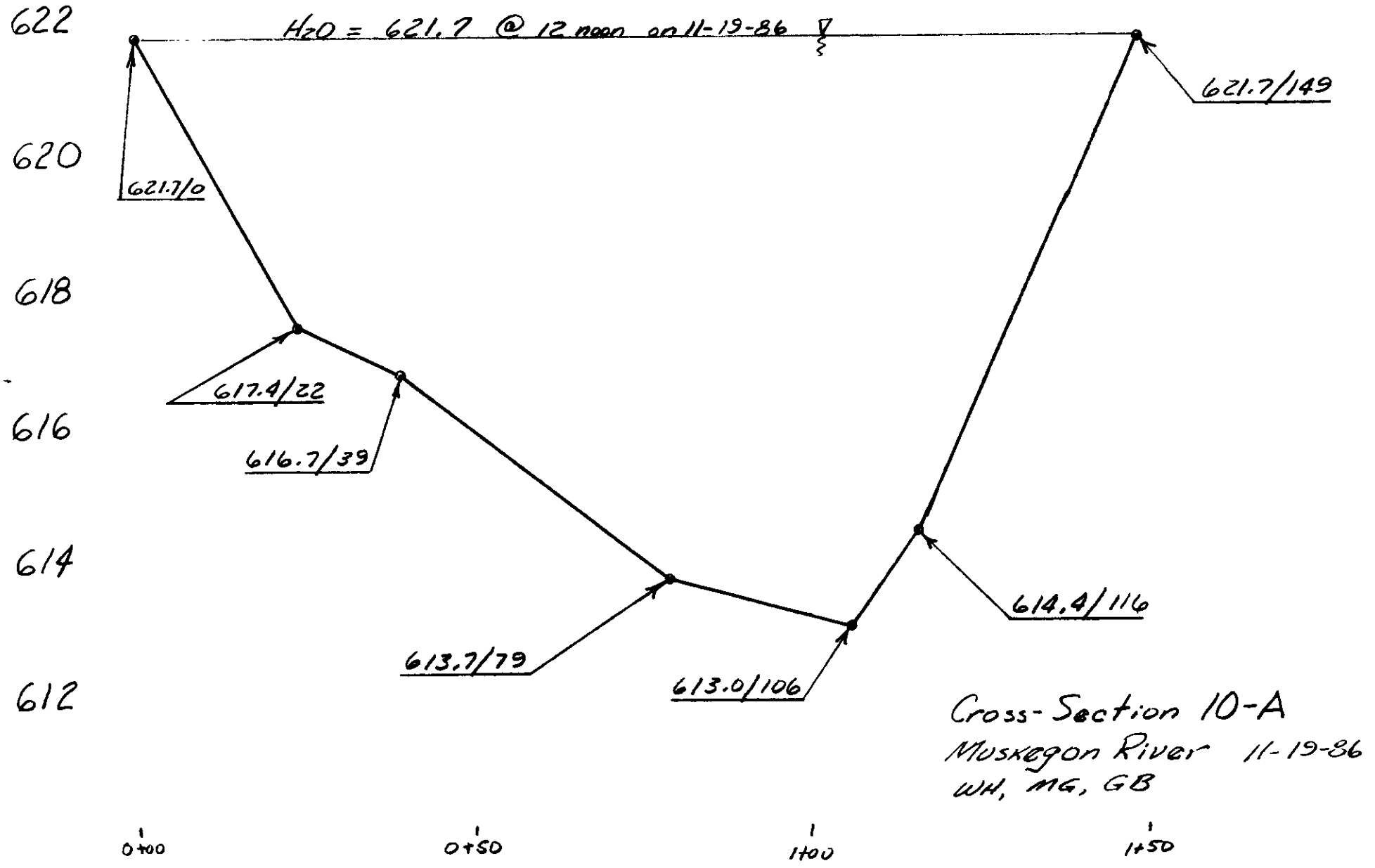

622
620
618
616
614
612
H2O = 621.7 @ 12 noon on 11-19-86
621.7/0
617.4/22
616.7/39
613.7/79
613.0/106
614.4/116
621.7/149
0+00
0+50
1+00
1+50
Cross-Section 10-A
Muskegon River 11-19-86
WH, MG, GB

2

MICHIGAN DEPT. OF NATURAL RESOURCES, RECREATION DIV., SURVEYS
P.O. BOX 30028, LANSING, MI 48909

JOB NUMBER: 18-4015

11-30-1987
09:14:37

MUSKEGON RIVER X-SECTIONS
NEWAYGO COUNTY, BROOKS TWP.

PT.#	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	8221.2130	79992.7700	647.1110	EOW
2	8068.8200	79978.8930	646.7060	EOW
3	8238.7640	79924.9700	650.4920	GRD
4	8256.9540	79915.6230	652.9910	GRD
5	8074.8070	79974.4340	641.6100	R BTM
6	8266.0630	79912.2210	657.3840	R BTM
7	8271.5100	79918.3420	**657.9550**	**HWM** • Not ground point
8	8123.6940	79961.9150	640.4440	R BTM
9	8515.3300	79838.9770	655.9510	GRD
10	8155.4230	79951.6220	641.1110	R BTM
11	8586.8970	79794.0480	655.9430	GRD
12	8181.9930	79943.2970	642.7610	R BTM
13	8682.7810	79762.5960	656.1400	GRD
14	8197.6500	79940.1100	642.5660	R BTM
16	8747.3050	79770.9470	655.9250	GRD
17	8820.5810	79779.7010	655.8770	GRD
18	8887.1470	79718.5430	656.8860	GRD
21	7913.4040	80439.5420	655.3870	GRD
79	79000.0000	79000.0000	704.4300	X-SEC 79
80	80000.0000	80000.0000	705.9400	X-SEC 80
82	82000.0000	82000.0000	676.6000	X-SEC 82
83	83000.0000	83000.0000	654.8500	X-SEC 83
84	84000.0000	84000.0000	658.4000	X-SEC 84
85	85000.0000	85000.0000	654.7600	X-SEC 85
86	86000.0000	86000.0000	660.6400	X-SEC 86
87	87000.0000	87000.0000	671.9000	X-SEC 87
100	7998.0430	80747.6410	657.3180	GRD
101	8090.6310	80779.2980	646.4410	EOR
102	8082.8620	80954.5310	641.6420	R BTM
103	8072.2140	80974.5190	642.5210	R BTM
104	8070.0510	80923.7490	642.5840	R BTM
105	8044.2220	80863.8750	644.1430	R BTM
106	8051.6740	80825.5590	643.4770	R BTM
107	8024.8410	80806.0910	642.9850	R BTM
108	8014.5760	80780.1080	644.4650	R BTM
109	8006.7270	80767.3640	644.7900	R BTM
110	8006.6970	80768.7040	646.5070	EOR
111	7999.6580	80755.1600	650.6160	GRD
112	7981.5930	80705.9340	654.6590	GRD
113	7972.2660	80684.4510	**658.7580**	**HWM** • Not a ground point
114	7967.6000	80661.3590	659.4890	GRD
115	8004.6770	80567.0570	657.9980	GRD
116	8024.1010	80492.2500	659.3140	GRD
117	8042.0560	80430.1830	660.0070	GRD

Pt.#	NORTHING	EASTING	ELEVATION	DESCRIPTION
118	8078.8600	80416.3820	664.3570	GRD
119	8096.1100	80989.8480	655.8630	GRD
120	8116.6300	81027.1210	656.1380	GRD
121	8124.6160	81040.8270	655.0450	GRD
122	8148.2200	81080.6800	655.2960	GRD
123	8180.5170	81145.0480	654.4100	EOR
124	8180.0400	81154.1400	654.2580	EORD
125	8002.1110	81169.2880	654.1290	GRD
126	8215.3960	81189.5150	650.5680	GRD
127	8220.6250	81200.7140	651.5540	GRD
128	8226.1650	81219.5530	665.7270	GRD
200	8363.8000	81818.0860	666.9580	GRD
201	8306.5430	81867.0820	644.5750	R BTM
202	8311.4130	81873.3110	642.5370	R BTM
203	8295.5340	81899.5150	643.9910	R BTM
204	8286.7110	81902.8710	644.2090	R BTM
205	8267.2850	81922.6650	641.8800	R BTM
206	8241.1510	81958.1080	641.7400	R BTM
207	8201.7420	81971.7790	648.4060	EOR
208	8147.0850	81838.2450	648.4950	EOR
209	8348.4120	81836.4040	651.1040	GRD
210	8352.3690	81830.8050	652.8000	GRD
211	8398.4860	81780.8230	659.9700	GRD
300	8571.0770	82922.1770	665.2150	TOP BANK
301	8435.4160	82961.2260	648.0110	ED RIVER
302	8433.4200	82961.6320	648.9340	GRD
303	8425.3960	82963.9510	647.5910	GRD
304	8419.7020	82966.2080	648.7190	GRD
305	8381.6810	82976.5560	648.4480	GRD
306	8366.5050	82981.6970	650.1350	GRD
307	8363.7640	82982.8200	650.9750	GRD
308	8319.6590	82994.4780	652.0680	GRD
309	8238.6660	83019.0430	654.3980	GRD
310	8231.3170	83020.1680	651.8120	GRD
311	8223.7100	83023.3380	651.4890	GRD
312	8221.6370	83024.3040	649.8960	CHA. FOW
313	8220.5600	83024.9390	648.9830	CHA. BTM
314	8216.1270	83028.1920	648.3100	CHA. BTM
315	8209.6600	83025.8370	649.1570	CHA. BTM
316	8208.3210	83025.5960	649.7610	CHA. EOW
317	8206.7190	83025.8970	651.1030	GRD
318	8192.2710	83027.7970	654.1250	GRD
319	8189.7240	83028.5900	655.6300	GRD
320	8181.4710	83031.1700	656.6670	GRD
321	8047.0490	83070.0590	656.5880	GRD
322	8036.5650	83071.6050	656.5410	EOR
323	8021.2740	83075.8830	656.5900	TP AND EOP
324	8016.1330	83076.8880	655.5610	GRD
325	7870.4350	83044.2190	654.1170	GRD
326	7785.0490	83022.1520	653.6480	GRD
327	7751.0840	83012.6770	654.6960	GRD
328	7747.6050	83011.0840	655.5650	GRD

PT.#	NORTHING	EASTING	ELEVATION	DESCRIPTION
329	7537.6170	82949.3410	654.7710	TOE BANK
331	7520.0550	82935.5230	667.1430	ON SLOPE
332	8548.3160	82931.2950	647.9400	EOW
333	8534.0280	82935.0660	642.3990	R BTM
334	8499.0200	82941.4020	641.2570	R BTM
335	8482.4890	82948.0240	643.3880	R BTM
336	8462.4520	82952.9640	644.9870	R BTM
337	8604.6920	82911.5220	662.8120	GRD
339	8629.3300	82904.6080	663.0110	GRD
340	8650.1370	82898.6720	653.4600	EOSWAMP
400	8475.7830	84328.2510	666.9250	GRD
401	8473.9930	84308.4790	650.0900	EOW
402	8470.9310	84314.0000	657.1540	GRD
403	8456.5860	84283.9720	648.0780	R BTM
404	8456.9490	84259.8900	646.8100	R BTM
405	8453.0040	84237.4000	644.6240	R BTM
406	8450.5480	84225.5030	645.3270	R BTM
407	8446.0730	84192.0300	643.8590	R BTM
408	8434.2880	84153.6660	646.5310	R BTM
409	8430.5070	84139.5560	648.1740	R BTM
410	8425.8560	84124.2570	650.2620	EOW
411	8413.1990	84058.0340	654.0370	GRD
412	8405.4360	84020.7700	655.5250	GRD
413	8392.3860	83982.8570	659.2470	GRD
414	8291.1620	83830.0660	657.3580	FORD
415	8278.2700	83814.8260	657.2270	EORD
416	8169.1220	83713.0630	655.5450	GRD
417	8126.7660	83652.1130	655.8630	GRD
418	8089.8260	83612.4630	655.1350	GRD
419	8073.5730	83598.2600	656.8030	GRD
420	8027.7850	83548.3420	656.6370	GRD
422	7877.8430	83420.2220	676.5970	GRD
500	8465.2760	85163.3550	650.8470	EOW
501	8470.7750	85132.5840	647.5500	R BTM
502	8480.1330	85101.3820	644.7480	R BTM
503	8490.9440	85057.0300	641.4550	R BTM
504	8489.1740	85044.4530	643.4290	R BTM
505	8491.8140	85033.5190	645.7820	R BTM
506	8494.7410	85023.0050	651.0180	EOW
507	8465.0730	85163.5010	652.2230	GRD
508	8463.9750	85168.2780	653.9260	GRD
509	8452.9780	85218.2090	655.9300	GRD
510	8425.2650	85305.8740	655.5150	GRD
511	8421.2360	85320.4540	655.6710	GRD
512	8420.8840	85323.4080	657.0260	GRD
513	8377.4360	85434.3200	657.1740	GRD
514	8359.8110	85496.7670	659.2990	GRD
515	8342.7910	85557.0400	657.9340	GRD
516	8498.6360	85009.1220	659.4400	GRD
517	8527.3990	84900.0790	659.0110	GRD
518	8522.4860	84889.5150	657.9440	FORD
519	8521.1130	84878.5800	658.3810	CLRD

PT.#	NORTHING	EASTING	ELEVATION	DESCRIPTION
500	8513.7760	84868.9050	657.8510	EGRD
501	8515.1990	84844.8270	657.6990	GRD
502	8515.3070	84829.5070	656.0590	GRD
503	8504.4490	84787.3170	656.9530	GRD
504	8495.8260	84746.7240	656.5670	GRD
505	8486.9340	84718.7640	656.0300	GRD
506	8475.7160	84697.3310	657.7740	GRD
507	8472.9140	84687.7250	659.3350	GRD
508	8468.1340	84661.3090	675.6720	GRD
600	8453.6160	86144.9980	651.9090	ED RIVER
601	8480.7630	86119.7120	647.4330	R BTM
602	8499.2750	86101.7750	648.3930	R BTM
603	8518.4800	86087.3650	647.3820	R BTM
604	8542.3610	86061.1990	646.0760	R BTM
605	8558.9910	86040.0840	646.0670	R BTM
606	8567.4850	86020.0540	651.5950	ED RIVER
607	8452.9250	86147.1720	652.8580	GRD
608	8445.7340	86169.8140	655.4310	GRD
609	8434.3790	86193.6010	656.2830	GRD
610	8586.6160	86014.0690	657.4450	GRD
611	8429.4560	86250.4050	655.4060	GRD
612	8426.4950	86259.1940	658.0950	GRD
613	8413.4720	86302.4010	658.2660	GRD
614	8400.7600	86350.2960	657.9790	GRD
615	8606.4720	85958.8420	660.4510	GRD
616	8394.7890	86419.6440	660.5100	GRD
617	8600.3850	85911.1090	659.7920	GRD
618	8585.0260	85827.6570	659.4570	R ED RD
619	8578.1000	85796.3240	659.5500	L ED RD
620	8383.8050	86402.2200	658.9810	GRD
621	8574.0320	85780.2490	659.0850	GRD
622	8569.8560	85726.1690	659.1030	GRD
623	8557.0160	85610.0460	659.1330	GRD
624	8546.1320	85529.7160	660.0960	GRD
625	8536.4750	85435.7640	658.9160	GRD
626	8522.5780	85340.5040	659.0650	GRD
627	8527.8140	85278.9430	678.7050	TOP HILL
700	8885.8610	87039.5060	650.7050	BG
701	8894.4640	87043.4460	656.0830	GRD
702	8907.9780	87047.5420	658.9040	GRD
703	8922.1130	87075.6500	658.2550	GRD
704	8935.2400	87080.1570	660.0280	GRD
705	9015.9610	87113.7130	660.9910	GRD
706	9052.5970	87187.9380	661.0800	GRD
707	9122.1380	87262.6150	660.4670	GRD
708	9151.6700	87347.8920	661.3910	GRD
709	8722.6140	87004.5680	652.4530	ED RIVER
710	8760.9770	87015.1160	647.4200	RIVER BTM
711	8777.5530	87015.0440	643.2410	RIVER BTM
712	8821.7680	87025.8780	643.8840	RIVER BTM
713	8847.6370	87037.9280	646.8670	RIVER BTM
900	8074.0180	79572.1800	640.8640	LOW

PT.#	NORTHING	EASTING	ELEVATION	DESCRIPTION
901	7979.9140	79171.2190	646.0920	EOW
902	8080.9700	79185.9640	646.1680	GRD
903	7980.9360	79192.9890	644.0690	R BTM
904	8086.8600	79405.2750	644.6520	GRD
905	7991.5000	79202.9260	641.5710	R BTM
906	8190.0140	79471.4210	652.8580	GRD
907	8006.9050	79229.3620	640.1840	GRD
908	8134.8410	79495.7090	607.1750	GRD
910	8033.2080	79284.6920	659.3600	R BTM
911	8158.4.90	79534.7180	672.0430	GRD
912	8050.1540	79301.7750	641.9360	R BTM
913	8063.8860	79348.9150	643.4470	R BTM
914	7971.7890	79152.8990	648.6170	GRD
915	7968.8690	79148.2600	654.4150	GRD
916	7967.1710	79133.9230	652.5990	GRD
917	7955.2270	79114.6.70	653.8420	GRD
918	7947.6610	79104.0320	657.1980	GRD
919	7929.7940	79067.5760	661.8750	GRD
920	7922.6200	79051.6140	667.7400	~~GRD~~ EOW

MICHIGAN DEPT. OF NATURAL RESOURCES, RECREATION DIV., SURVEYS
P.O. BOX 30028, LANSING, MI 48909

JOB NUMBER: 18-4015

11-30-1987
1?:48:07

MUSKEGON RIVER X-SECTIONS
NEWAYGO COUNTY, BROOKS TWP.

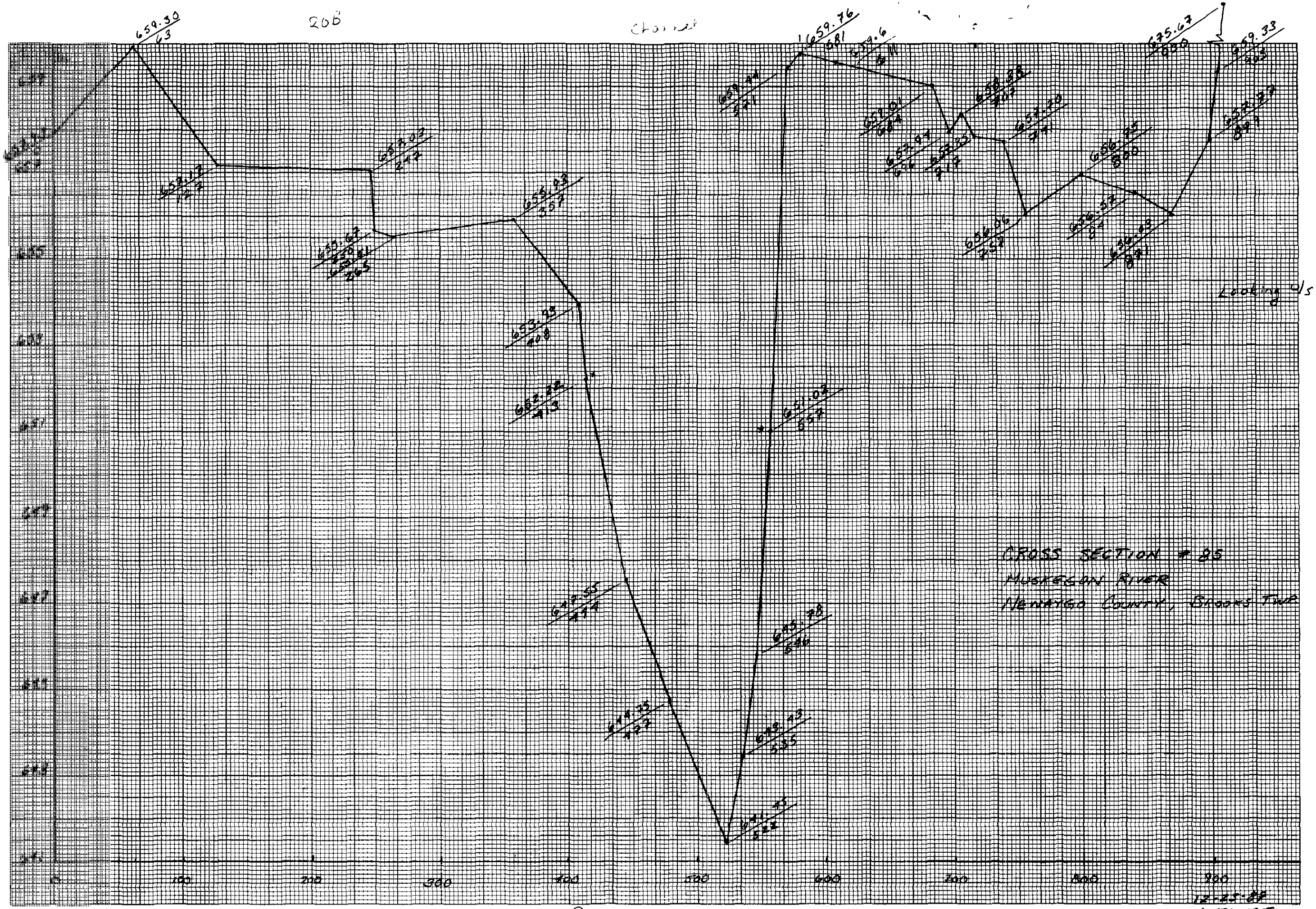
SPN.ID: WISLAND

FROM	BEARING	DISTANCE	TO	NORTHING	EASTING
			515	8342.7910	85557.0400
515	NA 285 46 07.4	62.6700	514	8359.8110	85496.7670
514	NA 285 45 40.2	64.8866	513	8377.4360	85434.3500
513	NA 291 23 31.1	119.1184	512	8420.8840	85323.4080
512	NA 276 47 43.3	2.9749	511	8421.2360	85320.4540
511	NA 285 26 50.9	15.1264	510	8425.2650	85305.8740
510	NA 287 32 34.8	91.9411	509	8452.9780	85218.2090
509	NA 282 25 14.7	51.1277	508	8463.9750	85168.2780
508	NA 282 56 40.8	4.9016	507	8465.0750	85163.5010
507	NA 280 26 58.5	31.4384	501	8470.7750	85132.5840
501	NA 286 41 41.5	32.5751	502	8480.1330	85101.3820
502	NA 283 41 56.7	45.6506	503	8490.9440	85057.0200
503	NA 261 59 21.1	12.7009	504	8489.1740	85044.4530
504	NA 283 34 37.1	11.2482	505	8491.8140	85033.5190
505	NA 285 37 24.2	10.9138	506	8494.7410	85023.0050
506	NA 285 40 19.0	14.4190	516	8498.6360	85009.1220
516	NA 278 30 15.7	9.2234	85	8500.0000	85000.0000
85	NA 285 20 02.3	103.2094	517	8527.3990	84900.0790
517	NA 245 03 29.8	11.6506	518	8522.4860	84889.5150
518	NA 262 50 36.2	11.0209	519	8521.1130	84878.5800
519	NA 256 75 13.1	9.9533	520	8518.7760	84868.9050
520	NA 261 33 00.0	24.1422	521	8515.1990	84844.8270
521	NA 270 01 47.7	15.3200	522	8515.2070	84829.5070
522	NA 255 41 42.1	43.5400	523	8504.4490	84787.3170
523	NA 258 00 25.8	41.4988	524	8495.8260	84746.7240
524	NA 252 21 28.8	29.3799	525	8486.9340	84718.7640
525	NA 246 14 11.0	27.7891	526	8475.7760	84693.7110
526	NA 243 18 15.4	6.2749	527	8472.9170	84687.7150
527	NA 258 57 37.6	24.9782	528	8468.1340	84663.2090
528	NA 097 58 57.4	902.5767	515	8342.7910	85557.0400

AREA OF TRAVERSE 46010.4900 SQ.FT. 1.0567 ACRES

X - SECTION 85

ELEVATION	STATION		ELEVATION	STATION	
657.93	0	930	659.33	905	25
659.30	63	867	675.67	930	0
657.17	27	803			
657.03	247	683			
655 67	250	680			
655.51	265	665			
655.93	357	573			
653.93	403	522			
652.22	413	517			
647.55	447	486			
644.75	477	453			
641 45	522	408			
643.43	535	395			
645.73	546	384			
651.02	557	373			
659.44	571	359			
659.76	591	349			
659.01	694	246			
657.94	696	234			
659.33	707	223			
657.85	717	213			
657.70	741	179			
656.06	757	163			
656.95	800	120			
656 57	841	79			
656.03	971	49			
657.77	899	31			


20B
Looking D/S
ELEVATION, FT (U.S.G.S.)
STATION, FT.
CROSS SECTION # 20B
MUSKEGON RIVER
NEWAYGO COUNTY, BROOKS TWP
12-23-88
M. STEINERT
R 4510-1

MICHIGAN DEPT. OF NATURAL RESOURCES, RECREATION DIV., SURVEYS
P.O. BOX 30028, LANSING, MI 48909

JOB NUMBER: 18-4015 11-30-1987
12:30:14

MUSKEGON RIVER X-SECTIONS
NEWAYGO COUNTY, BROOKS TWP.

SPN.ID: WALMEN

FROM	BEARING	DISTANCE	TO	NORTHING	EASTING
			620	8383.8030	86462.2200
620	NA S84 27 57.8	43.9700	616	8394.7890	86419.6440
616	NA S75 18 05.1	64.6244	614	8400.7600	86355.2960
614	NA S83 30 48.1	54.4011	613	8413.4720	86302.4010
613	NA S86 46 19.8	45.1261	612	8426.4920	86259.1940
612	NA S88 45 19.1	9.2185	611	8429.4560	86250.4650
611	NA S79 52 55.2	57.7257	609	8439.3790	86193.6010
609	NA S84 57 28.6	24.6213	608	8445.7340	86169.8140
608	NA S87 34 59.5	23.8041	607	8452.9250	86147.1220
607	NA S88 01 16.5	2.9336	600	8453.6160	86144.9980
600	NA S17 01 54.1	37.0983	601	8480.7620	86119.7120
601	NA S15 54 19.2	25.7273	602	8499.2750	86101.7750
602	NA S16 12 38.8	26.6058	603	8518.4800	86083.3650
603	NA S17 07 26.2	32.5875	604	8542.3610	86061.1920
604	NA S08 13 58.5	26.8720	605	8558.9910	86040.0840
605	NA S19 33 01.7	30.8734	606	8582.4850	86020.0540
606	NA S04 36 51.9	7.2722	610	8586.6160	86014.0690
610	NA S13 34 14.4	19.4182	86	8600.0000	86000.0000
86	NA S78 56 11.2	41.6657	615	8606.4720	85958.8420
615	NA S62 43 57.9	48.1195	617	8600.3850	85911.1090
617	NA S60 02 49.9	88.7905	618	8585.0260	85823.6570
618	NA S55 46 51.3	28.1969	619	8578.1000	85796.3240
619	NA S55 47 55.2	16.5817	621	8574.0320	85780.2490
621	NA S65 35 04.0	54.7410	622	8569.8560	85726.1690
622	NA S61 44 54.8	117.3372	623	8553.0160	85610.0460
623	NA S65 06 06.9	80.6244	624	8546.1320	85529.7160
624	NA S64 09 53.0	94.4470	625	8536.4750	85435.7640
625	NA S61 43 01.6	76.4663	626	8523.5780	85340.3040
626	NA S74 52 28.3	61.5840	627	8527.8140	85278.9430
627	NA S06 56 20.3	1192.0080	620	8383.8050	86462.2200

AREA OF TRAVERSE 73786.6654 SQ.FT. 1.6939 ACRES

X-Section 86

ELEVATION	STATION
658.98	0
660.31	44
657.98	109
658.20	163
658.09	208
655.91	217
656.28	275
655.43	300
652.86	323
651.91	326
647.43	363
648.39	389
647.38	415
646.08	448
646.07	475
651.59	505
657.45	513
660.64	532
665.43	574
659.79	622
659.46	711
659.55	739
659.09	756
659.10	810
659.13	927
660.10	1008
658.92	1102
659.07	1196
678.37	1260

(U.S.G.S.)

ELEVATION, FT.

Cross Section #86
Muskegon River
Newaygo County, Brooks T...

Edge of Ri
651.9

STATION FT.

R 4510-1

MICHIGAN DEPT. OF NATURAL RESOURCES, RECREATION DIV., SURVEYS
P.O. BOX 30028, LANSING, MI 48909

JOB NUMBER: 16-4015

11-30-1987
12:23:21

MUSKEGON RIVER X-SECTIONS
NEWAYGO COUNTY, BROOKS TWP.

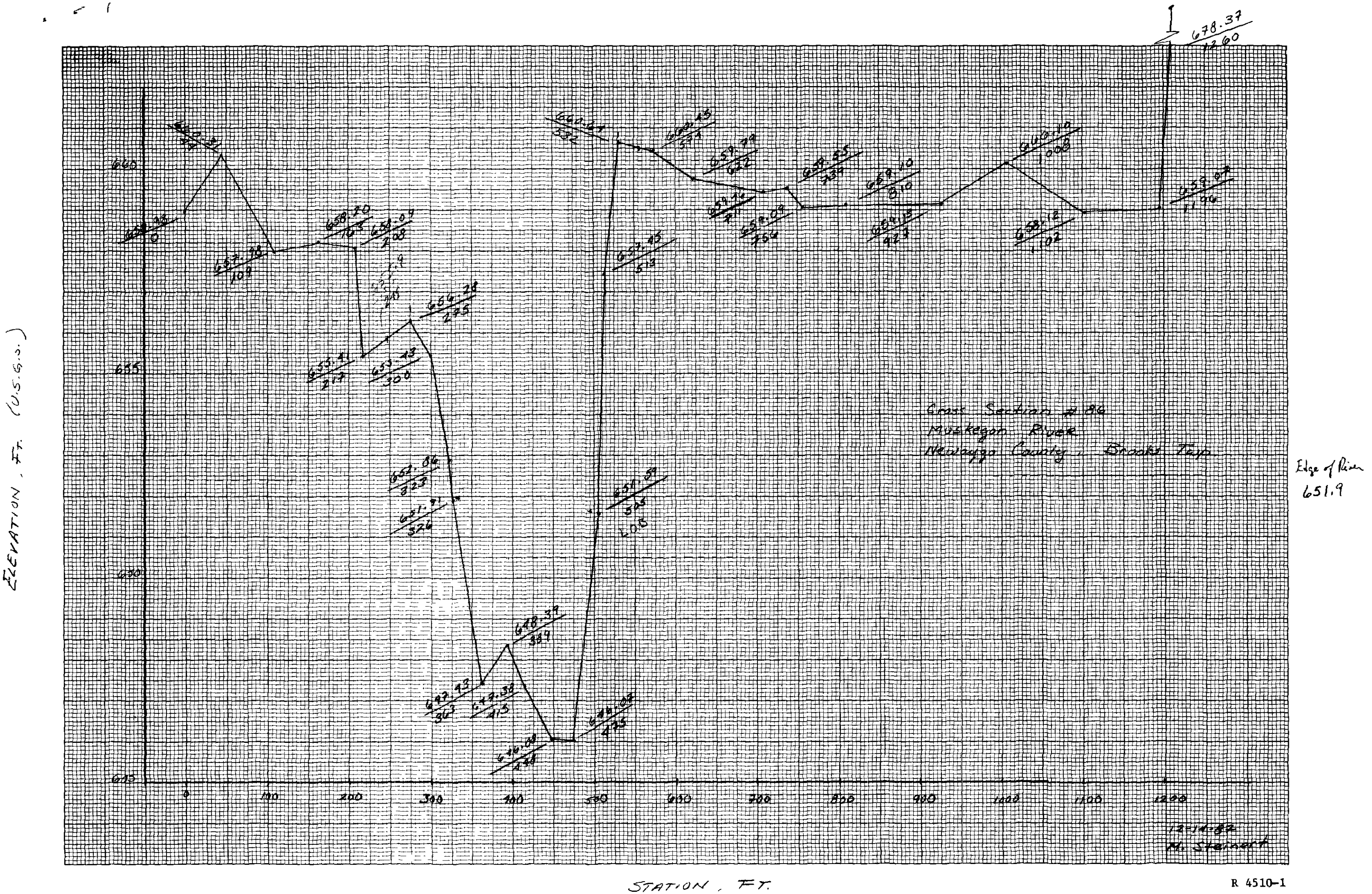
SPN.ID: MARYANN

FROM	BEARING	DISTANCE	TO	NORTHING	EASTING
			87	8700.0000	87000.0000
87	NA 011 25 12.0	22.0708	709	8727.6140	87004.5680
709	NA 012 33 10.2	39.3035	710	8760.9770	87013.1100
710	NA 003 01 36.4	36.6271	711	8797.5530	87015.0410
711	NA 024 06 15.0	26.5781	712	8821.7680	87025.8780
712	NA 028 30 26.3	29.4382	713	8847.6770	87039.9180
713	NA 359 27 02.9	38.2263	700	8885.8610	87039.5060
700	NA 024 36 24.6	9.4623	701	8894.4640	87043.4460
701	NA 016 51 42.1	14.1211	702	8907.9780	87047.5420
702	NA 023 36 02.0	70.2072	703	8972.3130	87075.6500
703	NA 019 08 31.5	13.6836	704	8985.2400	87080.1770
704	NA 047 32 32.8	45.5096	705	9015.9610	87113.7130
705	NA 063 43 47.9	82.7741	706	9052.5970	87187.9380
706	NA 046 57 41.8	102.1718	707	9122.3280	87262.6150
707	NA 071 02 34.1	90.1676	708	9151.6200	87347.8920
708	NA 217 26 28.0	570.0785	87	8700.0000	87000.0000

AREA OF TRAVERSE 35692.2488 SQ.FT. .8194 ACRES

X= Section 87

Elevation	Station	
671.9	0	✓
652.45	23	✓
647.42	62	✓
643.24	99	✓
643.89	126	✓
646.87	155	✓
652.70	193	✓
656.08	202	✓
658.90	216	✓
658.25	286	✓
662.03	300	✓
660.79	346	✓
661.08	429	✓
660.47	531	✓
661.39	621	



Cross Section #86
Muskegon River
Newaygo County, Brooks Twp.
Edge of River
651.9
ELEVATION, FT. (U.S.G.S.)
STATION, FT.
12-14-82
M. Steinert

R 4510-1

MICHIGAN DEPT. OF NATURAL RESOURCES, RECREATION DIV., SURVEYS
P.O. BOX 30028, LANSING, MI 48909

JOB NUMBER: 18-4015 11-30-1987
12:18:01

MUSKEGON RIVER X-SECTIONS
NEWAYGO COUNTY, BROOKS TWP.

SPN ID: TERRY

FROM	BEARING	DISTANCE	TO	NORTHING	EASTING
			82	8200.0000	82000.0000
82	NA 307 05 53.6	35.3823	207	8221.3420	81971.7790
207	NA 320 45 22.7	25.5777	206	8241.1510	81955.5980
206	NA 308 26 01.6	42.0425	205	8267.2850	81922.6650
205	NA 314 24 44.7	37.7239	204	8286.7110	81902.8710
204	NA 305 31 45.6	15.1828	203	8295.5340	81890.5150
203	NA 312 42 23.3	23.4120	202	8311.4130	81873.3110
202	NA 322 25 15.0	18.8410	201	8326.5430	81862.0830
201	NA 310 45 00.7	31.4693	208	8347.0850	81838.2430
208	NA 305 48 49.5	2.3678	209	8348.4120	81836.4040
209	NA 305 23 43.2	6.8317	210	8352.3690	81830.8350
210	NA 311 52 48.1	17.1232	200	8363.8000	81818.0860
200	NA 312 56 55.4	50.9082	211	8398.4860	81780.8230
211	NA 132 09 50.6	295.6945	82	8200.0000	82000.0000

AREA OF TRAVERSE 257.1938 SQ.FT. .0059 ACRES

X - SECTION 87

ELEVATION	STATION
676.60	0
678.40	35
641.74	61
641.88	103
644.27	131
643.99	146
642.54	169
649.57	188
648.49	220
651.10	222
652.80	229
666.96	246
659.97	297

CROSS SECTION #82

MUSKEGON RIVER

NEWAYGO COUNTY, BROOKS TWP.

ELEVATION, FT. (U.S.G.S.)

STATION, FT.

12-28-82

M. STEINECT

R 4510-1

MICHIGAN DEPT. OF NATURAL RESOURCES, RECREATION DIV., SURVEYS
P.O. BOX 30028, LANSING, MI 48909

JOB NUMBER: 18-4015

11-30-1987
11:44:18

MUSKEGON RIVER X-SECTIONS
NEWAYGO COUNTY, BROOKS TWP.

SPN.ID: W1J

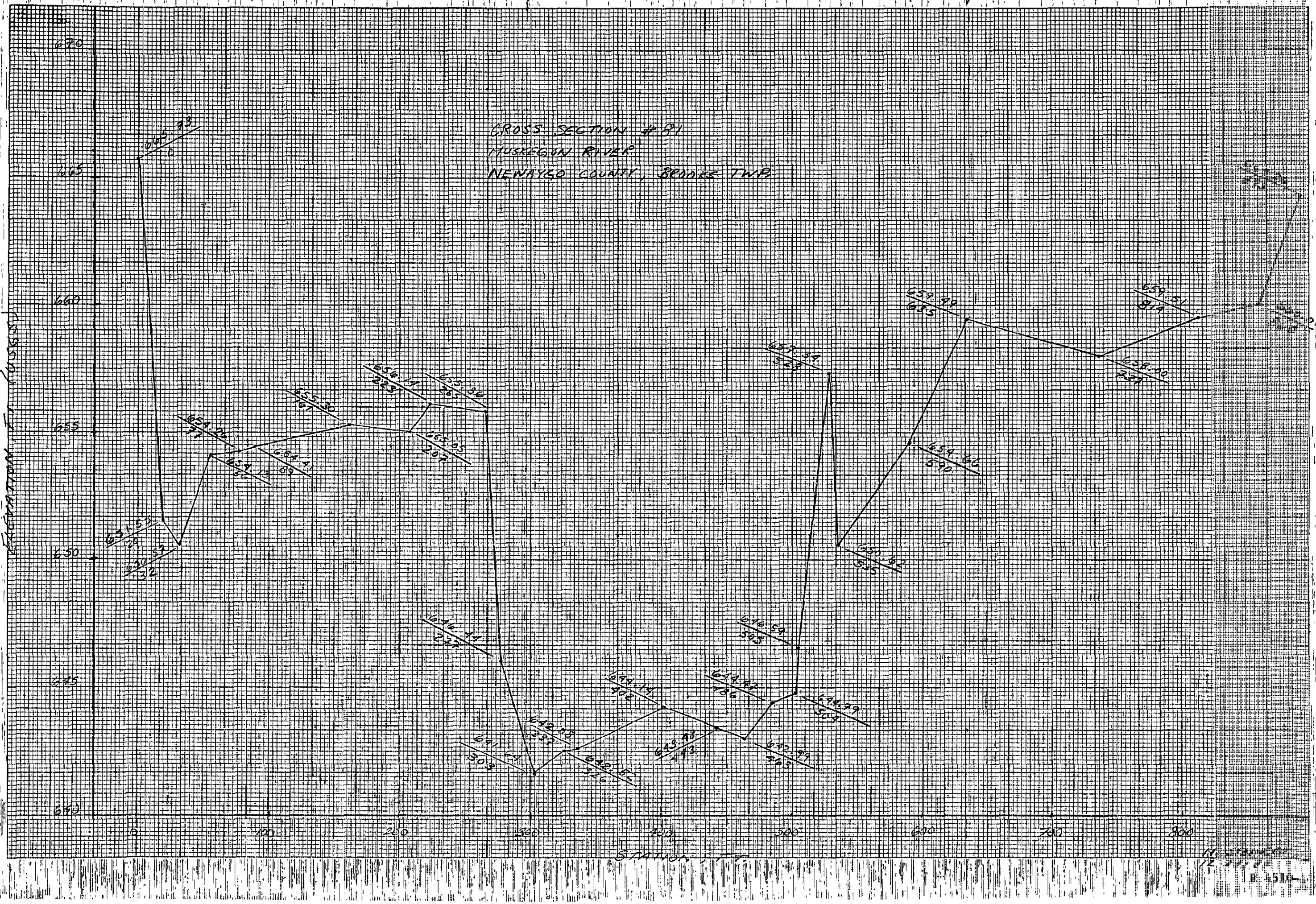
FROM	BEARING	DISTANCE	TO	NORTHING	EASTING
			128	8226.1650	81219.5330
128	NA 253 35 47.2	19.6175	127	8220.6250	81200.7140
127	NA 244 58 31.0	12.3614	126	8215.3960	81189.5130
126	NA 236 12 02.4	24.1980	125	8202.1110	81169.7880
125	NA 227 05 45.1	20.6691	124	8188.0400	81154.1480
124	NA 220 25 09.7	11.8070	123	8180.5170	81145.0480
123	NA 243 21 16.3	72.0162	122	8148.2200	81080.6800
122	NA 239 21 45.8	46.3186	121	8124.6160	81040.8270
121	NA 239 55 21.6	15.7765	120	8116.6300	81027.2210
120	NA 238 34 41.0	31.8989	81	8100.0000	81000.0000
81	NA 249 03 50.1	10.8696	119	8096.1160	80989.8480
119	NA 242 31 47.4	11.8907	101	8090.6310	80979.2980
101	NA 252 42 55.4	26.1478	102	8082.8620	80954.3310
102	NA 241 44 38.8	22.4921	103	8072.2140	80934.5190
103	NA 258 38 38.5	10.9851	104	8070.0510	80923.7490
104	NA 246 39 54.5	65.2076	105	8044.2220	80863.8750
105	NA 251 52 01.3	40.3183	106	8031.6740	80825.5590
106	NA 250 39 54.7	20.6723	107	8024.8410	80806.0910
107	NA 242 48 39.7	22.4653	108	8014.5760	80785.1080
108	NA 244 53 04.1	18.4924	109	8006.7270	80769.3640
109	NA 267 13 50.8	.6607	110	8006.6770	80768.7040
110	NA 247 39 50.7	22.7715	100	7998.0430	80747.6410
100	NA 078 10 58.1	7.8861	111	7999.6580	80755.7600
111	NA 250 38 16.9	54.5070	112	7981.5920	80703.9340
112	NA 244 25 14.8	21.6000	113	7972.2660	80684.4510
113	NA 258 34 35.6	23.5587	114	7967.6000	80661.3590
114	NA 291 27 48.3	101.3290	115	8004.6770	80567.0570
115	NA 284 33 21.8	77.2857	116	8024.1010	80492.2520
116	NA 293 06 54.7	45.7358	117	8042.0560	80450.1880
117	NA 264 35 57.6	33.9567	118	8038.8600	80416.3820
118	NA 076 52 21.1	824.7028	128	8226.1650	81219.5330

AREA OF TRAVERSE 56911.1413 SQ.FT. 1.3065 ACRES

X - SECTION 81

ELEVATION	STATION	ELEVATION	STATION
665.73	0 ✓	659.51	814 ✓
651.55	20 ✓	660.01	860 ✓
650.57	32 ✓	664.26	893
654.13	56 ✓		
654.26	77 ✓		
654.41	89 ✓		
655.30	161 ✓		
655.05	207 ✓		
656.14	223 ✓		
81 ?	255		
655.86	265 ✓		
646.44	277 ✓		
641.64	303 ✓		
642.52	326 ✓		
642.58	337 ✓		
644.14	402 ✓		
643.48	443 ✓		
642.99	463 ✓		
644.47	486		
644.79	504 ✓		
646.59	505 ✓		
657.34	528 ✓		
650.62	535 ✓		
654.66	590 ✓		
113 658.2 [illegible]	612		
659.49	635 ✓		
658.00	737 ✓		

CROSS SECTION #91
MUSKEGON RIVER
NEWAYGO COUNTY, BROOKS TWP.



MICHIGAN DEPT. OF NATURAL RESOURCES, RECREATION DIV., SURVEYS
P.O. BOX 30028, LANSING, MI 48909

JOB NUMBER: 18-4013 11-30-1987
11:56:16

MUSKEGON RIVER X-SECTIONS
NEWAYGO COUNTY, BROOKS TWP.

SPN.ID: mile

FROM	BEARING	DISTANCE	TO	NORTHING	EASTING
			80	8000.0000	80000.0000
80	NA 342 55 57.5	71.9840	2	8068.8206	79978.8930
2	NA 337 54 38.0	11.8574	5	8079.8070	79974.4340
5	NA 344 04 44.1	45.6376	8	8123.6940	79961.9150
8	NA 342 01 34.4	33.3558	10	8155.4220	79951.6200
10	NA 342 56 13.1	27.8446	12	8181.9930	79943.3970
12	NA 348 29 40.4	15.9781	14	8197.6500	79940.1100
14	NA 341 48 56.3	74.8017	1	8221.2130	79932.3700
1	NA 345 34 43.1	10.5725	3	8228.7640	79924.9700
3	NA 341 39 25.8	29.7011	4	8256.9560	79918.6230
4	NA 338 30 59.0	9.7217	6	8266.0630	79912.2210
6	NA 012 40 16.7	28.1322	7	8293.5100	79918.3920
7	NA 340 18 22.5	235.5488	9	8515.5780	79838.9970
9	NA 330 49 48.9	81.9637	11	8586.8970	79799.0480
11	NA 339 06 18.5	102.2054	13	8682.3810	79762.5960
13	NA 007 19 46.4	65.4589	16	8747.3050	79770.9470
16	NA 336 54 21.1	79.6598	17	8820.5810	79739.7010
17	NA 342 32 01.7	69.8476	18	8887.1470	79718.3430
18	NA 162 23 52.1	930.7244	80	8000.0000	80000.0000

AREA OF TRAVERSE 499.8706 SQ.FT. .0115 ACRES

X- SECTION 80

ELEVATION	STATION
705.94	0
696.71	72
697.61	84
690.49	129
697.11	163
692.76	191
692.57	207
697.11	231
650.49	242
652.99	272
657.58	281
~~654.93~~	309
655.95	545
655.94	627
654.14	729
655.93	795
655.88	875
656.89	944
669.3	981 (pt taken from quad)

CROSS SECTION #80
MUSKEGON RIVER
NEWAYGO COUNTY, BROOKS TWP

ELEVATION, FT.

620
615
610

0 100 200 300 400 500 600 700 800 900 1000

STATION, FT.

M. STEINGER
12-28-82
R 4510-1

MICHIGAN DEPT. OF NATURAL RESOURCES, RECREATION DIV., SURVEYS
P.O. BOX 30028, LANSING, MI 48909

JOB NUMBER: 18-404-5 11-30-1987
11:51:14

MUSKEGON RIVER X-SECTIONS
NEWAYGO COUNTY, BROOKS TWP.

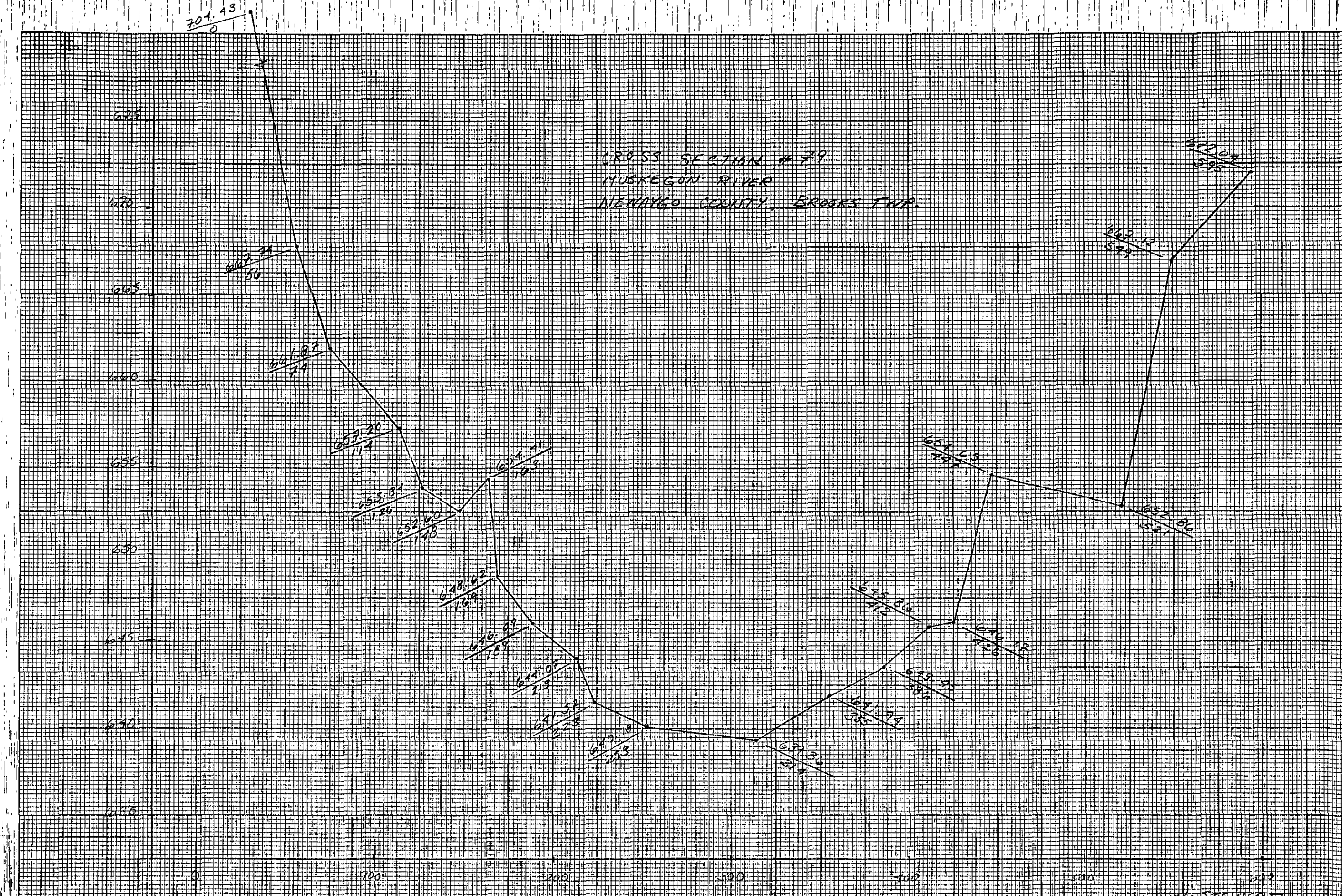
SPN.ID: wilson

FROM	BEARING	DISTANCE	TO	NORTHING	EASTING
			79	7900.0000	79000.0000
79	NA 066 19 57.2	56.3539	920	7922.6220	79051.6140
920	NA 065 48 1?.?	17.4992	919	7929.7940	79067.5760
919	NA 063 53 26.?	40.5989	918	7947.6610	79104.0320
918	NA 062 17 06.6	11.9681	917	7953.2270	79114.6270
917	NA 062 44 10.1	21.7076	916	7963.1710	79133.9230
916	NA 068 18 42.?	15.4185	915	7968.8690	79148.2500
915	NA 057 52 03.6	5.4900	914	7971.7890	79152.8990
914	NA 066 05 38.7	20.0501	901	7979.9140	79171.2290
901	NA 067 28 47.5	?.5562	903	7988.9360	79192.9890
903	NA 065 19 51.6	10.9350	905	7997.5000	79202.9260
905	NA 063 58 48.8	29.4177	907	8006.4050	79229.3620
907	NA 064 09 12.6	?1.4802	910	80?3.2080	79284.6920
910	NA 065 12 13.9	40.4062	912	8050.1540	79321.3730
912	NA 063 29 59.6	30.7755	913	8063.8860	79348.9150
913	NA 067 20 18.?	26.2972	900	8074.0180	79373.1870
900	NA 061 27 11.?	14.5503	902	8080.9700	79385.9640
902	NA 073 02 10.5	20.1874	904	8086.8600	79405.2730
904	NA 063 22 46.3	73.9915	906	8120.0140	79471.4210
906	NA 058 35 56.5	28.4561	908	8174.8410	79495.7090
908	NA 058 50 22.0	45.5861	911	8158.4290	79534.7180
911	NA 244 12 19.9	593.8930	79	7900.0000	79000.0000

AREA OF TRAVERSE 2300.6825 SQ.FT. .0528 ACRES

X - SECTION - 79

ELEVATION	STATION
704.43	0
667.79	56
661.87	74
657.20	114
655.84	126
652.60	148
654.41	163
648.62	169
646.09	189
644.67	213
641.57	223
640.18	253
639.36	314
641.94	355
643.45	386
645.84	412
646.17	426
654.65	447
652.86	521
662.12	549
672.04	595


CROSS SECTION # 79
MUSKEGON RIVER
NEWAYGO COUNTY, BROOKS TWP.
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661.87
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M. STEINERT
12-28-87

R 4510-1

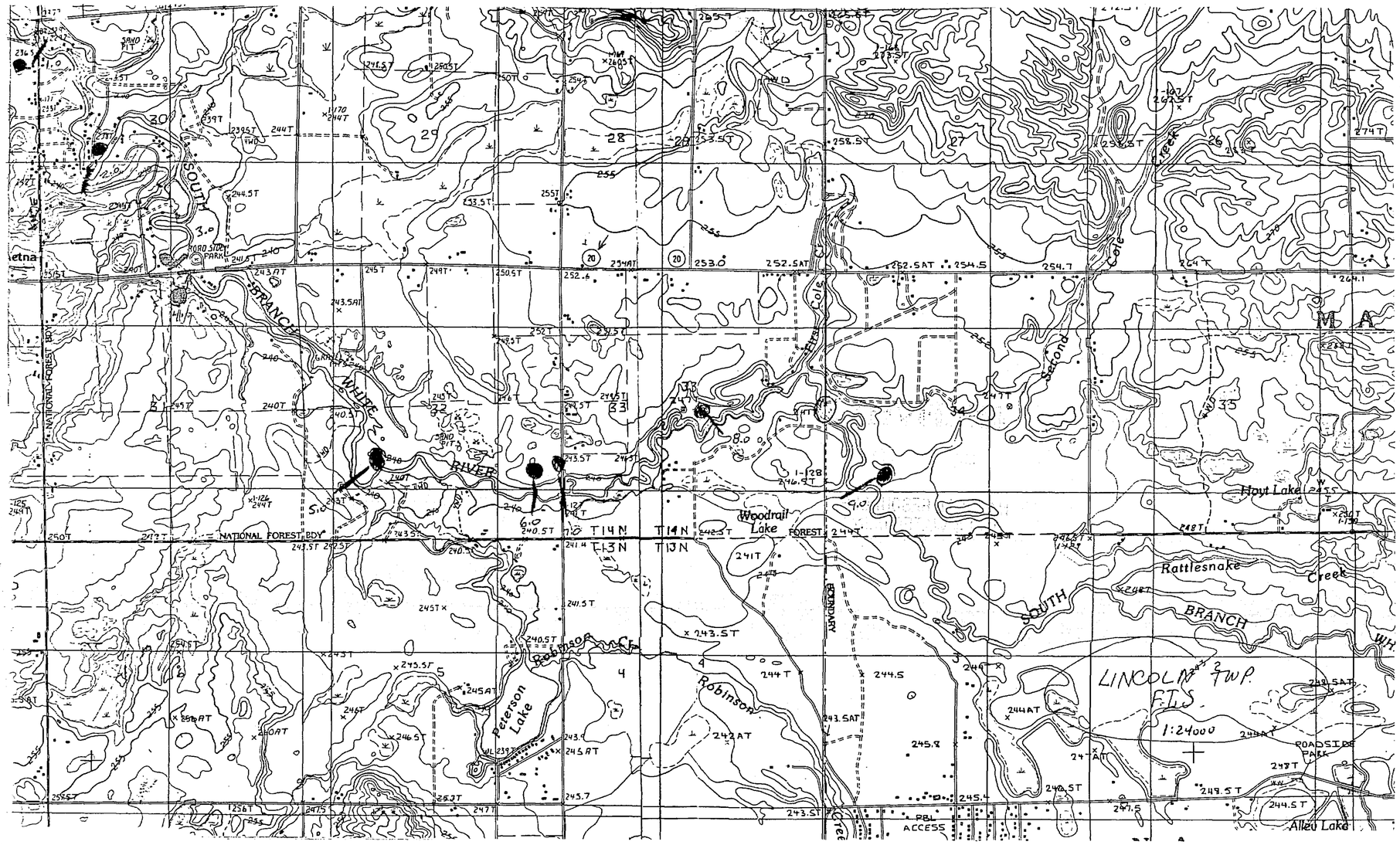
CROSS SECTION # 95
MUSKEGON RIVER
NEWAYGO COUNTY, BROOKS TWP.

Looking u/s

ELEVATION, Ft. (U.S.G.S.)

STATION, Ft.

4510-1


SOUTH BRANCH
MILLTE R.
RIVER
Robinson Creek
Peterson Lake
Woodrail Lake
Rattlesnake Creek
SOUTH BRANCH
Hoyt Lake
Allen Lake
LINCOLN TWP.
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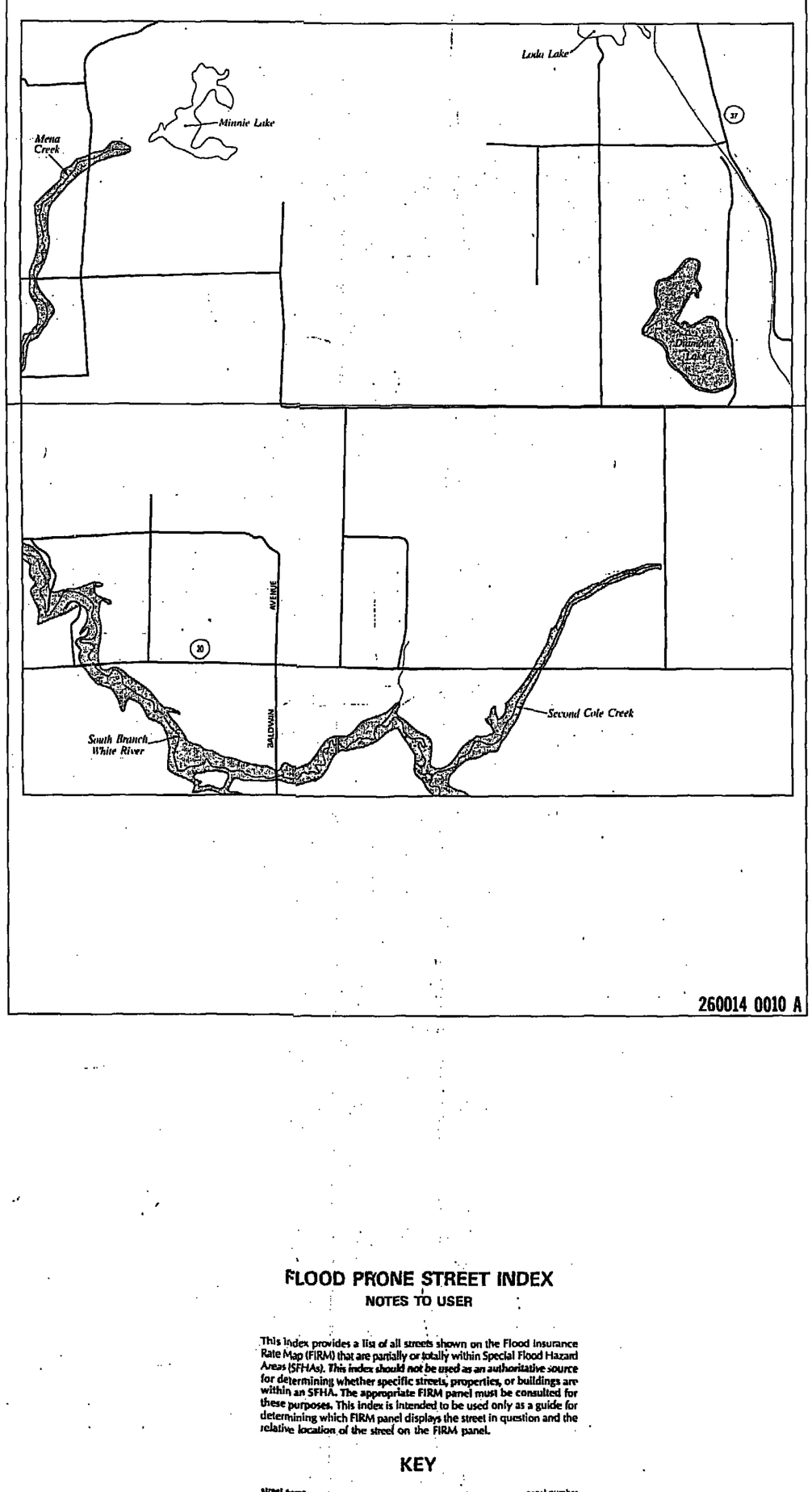
COMMUNITY–PANEL NUMBER

260014 0005 A



260014 0010 A

LEGEND

FLOOD PRONE AREAS;
FOR ORIENTATION PURPOSES ONLY

FOLD

MAP REPOSITORY

FLOOD PRONE STREET INDEX

NOTES TO USER

This index provides a list of all streets shown on the Flood Insurance Rate Map (FIRM) that are partially or totally within Special Flood Hazard Areas (SFHAs). *This index should not be used as an authoritative source* for determining whether specific streets, properties, or buildings are within an SFHA. The appropriate FIRM panel must be consulted for these purposes. This index is intended to be used only as a guide for determining which FIRM panel displays the street in question and the relative location of the street on the FIRM panel.

KEY

street name — panel number

BAKER STREET.....0005 (A2)

grid location

NAMED STREETS

ALGER AVENUE.....0005 (B4)
BALDWIN AVENUE.....0010 (D4)
BASE LINE ROAD.....0010 (C4)
BUSH STREET.....0005 (H5)
FOUR MILE ROAD.....0005 (A5)
LUCIE ROAD.....0010 (A2)
ONE MILE ROAD.....0010 (B3,F3)

NUMBERED STREETS

STATE HIGHWAY 20.....0010 (B3,F3)

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

TOWNSHIP OF.
LINCOLN,
MICHIGAN
NEWAYGO COUNTY

MAP INDEX

PANELS PRINTED: 5, 10

COMMUNITY-PANEL NUMBERS
260014 0005-0010

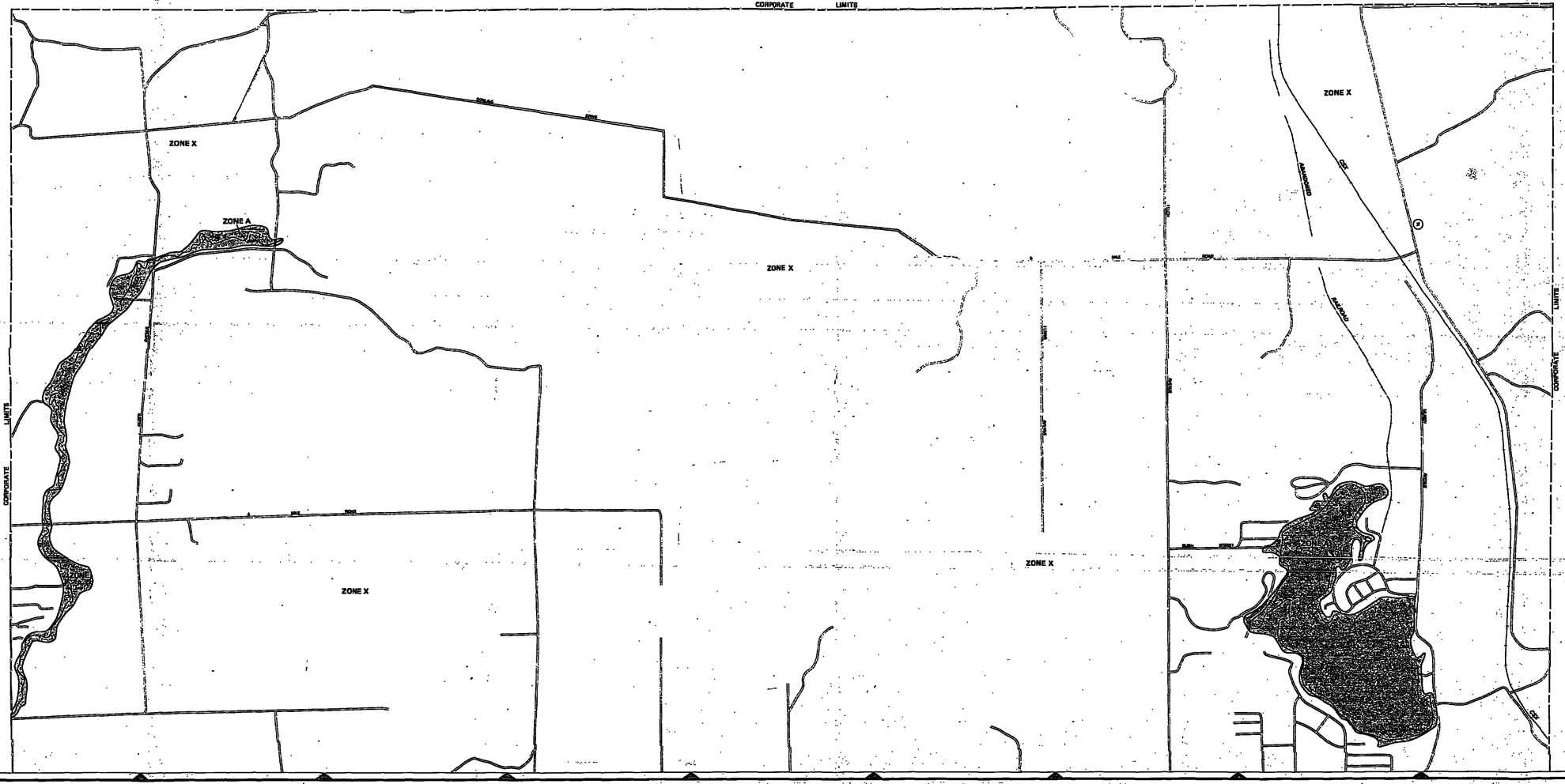
EFFECTIVE DATE:

PRELIMINARY

Federal Emergency Management Agency

FOLD FOLD FOLD FOLD

GREENHO


CORPORATE LIMITS
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1) COUNTY: Newaygo

2) STUDY NAME: Lincoln Twp.

3) WATERCOURSE: S. Branch White River

4) DOCUMENT TYPE: 100yr Encroached



```
  2670.        0.        25.        .          .          .          .          .          .          .
    2.50       0.00      5.28       0.00       0.000      0.020      0.000      0.000    778.40     296.00
 0.001734       47.       47.        47.          1          0          0    -228.84    104.00     400.00
0
1
   2 MAY 89     9:53:46                                                                          PAGE    9

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

   CCHV=   0.100 CEHV=   0.300
   *SECNO 7.300

   3470 ENCROACHMENT STATIONS=     490.0     740.0  TYPE=     1  TARGET=     250.000
        7.30      9.44    787.94      0.00       0.00    788.10      0.16      0.16      0.03100001.00
      2670.         0.      1536.     1134.         0.      374.       885.      754.      182.    783.00
        2.51      0.00      4.11      1.28      0.000     0.045     0.120     0.000    778.50    490.29
    0.001406      100.      100.      100.          2         0         0      0.00    249.71    740.00
0
   *SECNO 8.000
        8.00     10.09    790.49      0.00       0.00    790.51      0.03      2.40      0.01    785.36
      2670.       627.      969.     1074.       1122.     474.     2023.     1006.      233.    785.00
        3.74      0.56      2.04      0.53      0.120     0.045     0.120     0.000    780.40    261.23
    0.000252     4405.     5410.     4290.          5         0         0      0.00    763.69   1024.92
0
   *SECNO 9.000
   3280 CROSS SECTION      9.00 EXTENDED      3.47 FEET

        9.00      9.87    792.87      0.00       0.00    792.95      0.08      2.42      0.02    806.35
      2670.         0.      1208.     1462.         0.      373.     1798.     1374.      317.    788.80
        4.60      0.00      3.24      0.81      0.000     0.045     0.120     0.000    783.00    539.79
    0.000797     4755.     6545.     5535.          3         0         0      0.00    560.21   1100.00
0
1
   2 MAY 89     9:53:46                                                                          PAGE   10

                                                                    THIS RUN EXECUTED  2 MAY 89    9:53:52

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

   T1  LINCOLN TOWNSHIP, NEWAYGO COUNTY, MICHIGAN
   T2  FLOOD INSURANCE STUDY
   T3  SOUTH BRANCH WHITE RIVER - 100 YEAR FLOOD, ENCROACHED

   J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
          0.        3.        0.        0.   0.000000      0.00      0.0       0     762.600     0.000

   J2  NPROF     IPLOT     PRFVS     XSECV     XSECH      FN       ALLDC     IBW       CHNIM     ITRACE
      15.000     0.000    -1.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
1
   2 MAY 89     9:53:46                                                                          PAGE   11
```

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

*PROF 2

CCHV= 0.100 CEHV= 0.300

*SECNO 1.000

2800 NAT Q1= 1345.00 WSEL= 762.50 ENC Q1= 1345.00 WSEL= 762.60 RATIO= 0.0000

NAT Q1= 1376. RATIOS LOB,CH,ROB= 0.0000 0.5147 0.4853 WSEL= 762.60

3470 ENCROACHMENT STATIONS= 500.0 831.0 TYPE= 4 TARGET= 0.023

1.00	11.40	762.60	0.00	762.50	762.70	0.10	0.00	0.00	777.32
3365.	0.	1773.	1592.	0	522.	1527.	0.	0.	755.10
0.00	0.00	3.40	1.04	0.000	0.045	0.120	0.000	751.20	520.65
0.000627	0.	0.	0.	0	0	0	0.00	310.33	830.98

0

*SECNO 2.000

2800 NAT Q1= 1537.56 WSEL= 764.40 ENC Q1= 1537.56 WSEL= 764.50 RATIO= 0.0000

NAT Q1= 1606. RATIOS LOB,CH,ROB= 0.0404 0.4193 0.5403 WSEL= 764.50

3280 CROSS SECTION 2.00 EXTENDED 2.30 FEET

3470 ENCROACHMENT STATIONS= 465.4 1047.3 TYPE= 4 TARGET= 0.043

2.00	9.80	764.50	0.00	764.40	764.57	0.06	1.86	0.00	761.83
3365.	67.	1474.	1825.	104.	550.	1356.	157.	34.	760.00
0.50	0.64	2.68	1.35	0.100	0.045	0.050	0.000	754.70	465.38
0.000478	3260.	3545.	3295.	2	0	0	0.00	581.96	1047.34

0

*SECNO 2.200

2800 NAT Q1= 650.29 WSEL= 764.93 ENC Q1= 650.29 WSEL= 765.03 RATIO= 0.0000

NAT Q1= 686. RATIOS LOB,CH,ROB= 0.0135 0.6591 0.3275 WSEL= 765.03

3470 ENCROACHMENT STATIONS= 500.0 811.8 TYPE= 4 TARGET= 0.052

2.20	7.82	765.02	0.00	764.93	765.36	0.34	0.71	0.08	764.10
3365.	0.	2332.	1033.	0.	433.	426.	180.	41.	761.70
0.54	0.00	5.39	2.42	0.000	0.045	0.050	0.000	757.20	500.00
0.002705	690.	805.	675.	2	0	0	0.00	311.78	811.78

0

*SECNO 2.300

2800 NAT Q1= 737.07 WSEL= 766.78 ENC Q1= 737.07 WSEL= 766.88 RATIO= 0.0000

NAT Q1= 770. RATIOS LOB,CH,ROB= 0.0010 0.7284 0.2705 WSEL= 766.88

3470 ENCROACHMENT STATIONS= 475.0 682.9 TYPE= 4 TARGET= 0.043

1

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

2.30	8.09	766.89	0.00	766.78	767.18	0.30	1.82	0.00	766.40
3365.	0.	2559.	806.	0.	535.	309.	195.	46.	763.40
0.59	0.00	4.79	2.61	0.000	0.045	0.050	0.000	758.80	475.00
0.002084	685.	805.	670.	2	0	0	0.00	207.86	682.86

0

*SECNO 2.500

2800 NAT Q1= 731.61 WSEL= 770.01 ENC Q1= 731.61 WSEL= 770.11 RATIO= 0.0000

NAT Q1= 761. RATIOS LOB,CH,ROB= 0.0000 0.7510 0.2490 WSEL= 770.11

```
     2.50      7.52    770.12      0.00    770.01    770.41      0.29      3.23      0.00    771.00
    3365.        0.      2628.      737.        0.      559.      273.      224.       52.    766.80
     0.69      0.00      4.70      2.70     0.000     0.045     0.050     0.000    762.60    458.53
 0.002099     1375.     1605.     1345.         2         0         0      0.00    196.74    655.27
0
 *SECNO 3.000
  2800 NAT Q1=     744.13  WSEL=     776.45  ENC Q1=     744.13  WSEL=     776.55  RATIO=  0.0000
  NAT Q1=     772.  RATIOS LOB,CH,ROB=  0.0000  0.7108  0.2892  WSEL=     776.55

 3470 ENCROACHMENT STATIONS=      398.0      644.2  TYPE=      4  TARGET=        0.036
     3.00      8.46    776.56      0.00    776.45    776.81      0.25      6.39      0.00    780.20
    3365.        0.      2480.      885.        0       572.      315.      284.       66.    773.60
     0.91      0.00      4.33      2.81     0.000     0.045     0.050     0.000    768.10    430.06
 0.002040     2745.     3215.     2685.         3         0         0      0.00    214.11    644.17
0
 *SECNO 4.000
  2800 NAT Q1=     654.93  WSEL=     776.97  ENC Q1=     654.93  WSEL=     777.07  RATIO=  0.0000
  NAT Q1=     924.  RATIOS LOB,CH,ROB=  0.0000  0.6851  0.3149  WSEL=     777.07

 3470 ENCROACHMENT STATIONS=      398.0      554.3  TYPE=      4  TARGET=        0.291
     4.00      8.98    777.08      0.00    776.97    777.45      0.37      0.60      0.04    780.20
    3240.        0.      3136.      104.        0.      633.       36.      289.       67.    773.60
     0.93      0.00      4.96      2.86     0.000     0.045     0.050     0.000    768.10    425.97
 0.002450      175.      270.      280.         2         0         0      0.00    128.30    554.28
0
 CCHV=    0.300 CEHV=    0.500
 *SECNO 4.100
  2800 NAT Q1=    1308.02  WSEL=     777.18  ENC Q1=    1337.51  WSEL=     777.28  RATIO= -0.0225
  NAT Q1=    1338.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=     777.28
1
  2 MAY 89      9:53:46                                                                          PAGE   13


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


 3265 DIVIDED FLOW


 3370 NORMAL BRIDGE,NRD= 28 MIN ELTRD=  784.08 MAX ELLC=  785.86


 3470 ENCROACHMENT STATIONS=      250.0      400.0  TYPE=      4  TARGET=        0.000
             M-20 BRIDGE
     4.10      9.32    777.32      0.00    777.18    777.51      0.20      0.01      0.05    784.21
    3240.        0.      3240.        0.        0.      912.        0.      289.       67.    784.71
     0.93      0.00      3.55      0.00     0.000     0.030     0.000     0.000    768.00    253.63
 0.000578       10.       10.       10.         2         0         0      0.00    138.87    397.50
0
 *SECNO 4.200
  2800 NAT Q1=    1316.23  WSEL=     777.21  ENC Q1=    1345.90  WSEL=     777.31  RATIO= -0.0225
  NAT Q1=    1346.  RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=     777.31

 3265 DIVIDED FLOW


 3370 NORMAL BRIDGE,NRD= 28 MIN ELTRD=  784.08 MAX ELLC=  785.86


 3470 ENCROACHMENT STATIONS=      250.0      400.0  TYPE=      4  TARGET=        0.000
     4.20      9.34    777.3      0.00    777.21    777.54      0.19      0.02      0.00    784.21
```

```
     0.[illegible]     0.00      3.54      0.00      0.000      0.030      0.000      0.00[illegible]     768.00     253.55
  0.000572      43.       43.       43.         0         0         0       0.00     138.97     397.51
0
 CCHV=    0.100 CEHV=    0.300
 *SECNO 4.300
  2800 NAT Q1=     680.69  WSEL=     777.13  ENC Q1=     680.69  WSEL=     777.23  RATIO=  0.0000
  NAT Q1=     790.  RATIOS LOB,CH,ROB=  0.0000  0.8350  0.1650  WSEL=     777.23

 3470 ENCROACHMENT STATIONS=      398.0      567.5  TYPE=      4  TARGET=        0.138
      4.30      9.15    777.25      0.00    777.13    777.59      0.35      0.01      0.05    780.20
     3240.        0.     3137.      103.        0.      653.       84.      290.       68.     773.60
      0.93      0.00      4.81      1.22     0.000     0.045     0.120     0.000    768.10    424.59
  0.002245       10.       10.       10.         2         0         0       0.00    142.94    567.53
0
1
   2 MAY 89      9:53:46                                                                          PAGE   14

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

 *SECNO 5.000
  2800 NAT Q1=    1500.37  WSEL=     783.37  ENC Q1=    1500.37  WSEL=     783.47  RATIO=  0.0000
  NAT Q1=    1555.  RATIOS LOB,CH,ROB=  0.0004  0.6612  0.3384  WSEL=     783.47
 3280 CROSS SECTION       5.00 EXTENDED       3.19 FEET

 3470 ENCROACHMENT STATIONS=      500.0      997.7  TYPE=      4  TARGET=        0.035
      5.00      8.49    783.49      0.00    783.37    783.55      0.06      5.92      0.03    781.90
     3240.        0.     2215.     1025.        0.      994.     1426.      525.      115.     779.10
      2.00      0.00      2.23      0.72     0.000     0.045     0.120     0.000    775.00    500.00
  0.000466     5970.     6885.     6040.         4         0         0       0.00    497.65    997.65
0
 *SECNO 6.000

 3470 ENCROACHMENT STATIONS=      492.0      832.0  TYPE=      1  TARGET=      340.000
      6.00      9.28    786.78      0.00    786.68    786.96      0.18      3.37      0.04100000.00
     3240.        0.     1648.     1592.        0.      364.     1189.      704.      152.     782.00
      2.39      0.00      4.52      1.34     0.000     0.045     0.120     0.000    777.50    492.00
  0.001706     4045.     4630.     3565.         3         0         0       0.00    340.00    832.00
0
 *SECNO 7.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=      788.10 ELREA=      788.00

      7.00      9.18    787.58      0.00    787.50    787.78      0.20      0.81      0.01    785.27
     2670.        0.     2670.        0.        0.      746.        0.      719.      155.     785.05
      2.44      0.00      3.58      0.00     0.000     0.045     0.000     0.000    778.40    296.00
  0.001154      540.      590.      530.         2         0         0       0.00    104.00    400.00
0
 CCHV=    0.300 CEHV=    0.500
 *SECNO 7.100

 3370 NORMAL BRIDGE,NRD= 27 MIN ELTRD=  787.99 MAX ELLC=  789.39

              BALDWIN AVENUE BRIDGE
      7.10      9.08    787.48      0.00    787.40    787.91      0.43      0.01      0.12    788.08
     2670.        0.     2670.        0.        0.      506.        0.      719.      155.     788.00
      2.44      0.00      5.28      0.00     0.000     0.020     0.000     0.000    778.40    296.00
  0.001734       10.       10.       10.         2         0         0    -228.99    104.00    400.00
0
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA      LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 *SECNO 7.200

 3370 NORMAL BRIDGE,NRD= 27 MIN ELTRD=  787.99 MAX ELLC=  789.39

      7.20      9.16    787.56      0.00    787.48    787.99      0.43      0.08      0.00    788.08
     2670.        0.     2670.        0.        0.      506.         0      720.       155     788.00
      2.44      0.00      5.28      0.00     0.000     0.020     0.000     0.000    778.40    296.00
  0.001735       47.       47.       47.         1         0         0   -236.76    104.00    400.00
0
 CCHV=   0.100 CEHV=   0.300
 *SECNO 7.300
  2800 NAT Q1=    712.11  WSEL=    787.94  ENC Q1=    712.11  WSEL=    788.04  RATIO=  0.0000
  NAT Q1=    865.  RATIOS LOB,CH,ROB=  0.0000  0.4844  0.5156  WSEL=    788.04

 3470 ENCROACHMENT STATIONS=     489.0     726.8  TYPE=     4  TARGET=       0.176
      7.30      9.51    788.01      0.00    787.94    788.17      0.17      0.16      0.03    788.30
     2670.        0.     1567.     1103.        0.      378.      840.      722.      155.    783.00
      2.45      0.00      4.15      1.31     0.000     0.045     0.120     0.000    778.50    490.04
  0.001418      100.      100.      100.         2         0         0      0.00    236.73    726.77
0
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  2800 NAT Q1=   1682.17  WSEL=    790.49  ENC Q1=   1682.17  WSEL=    790.59  RATIO=  0.0000
  NAT Q1=   1735.  RATIOS LOB,CH,ROB=  0.2358  0.3593  0.4049  WSEL=    790.59

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      3.66      0.57      2.06      0.54     0.120     0.045     0.120     0.000    780.40    287.32
  0.000253     4405.     5410.     4290.         3         0         0      0.00    706.07    993.40
0
 *SECNO 9.000
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  NAT Q1=    979.  RATIOS LOB,CH,ROB=  0.0000  0.4467  0.5533  WSEL=    792.97
 3280 CROSS SECTION      9.00 EXTENDED      3.57 FEET

 3470 ENCROACHMENT STATIONS=     500.0    1065.6  TYPE=     4  TARGET=       0.034
      9.00      9.97    792.97      0.00    792.87    793.05      0.08      2.43      0.02    806.35
     2670.        0.     1235.     1435.        0.      378.     1728.     1326.      281.    788.80
      4.49      0.00      3.26      0.83     0.000     0.045     0.120     0.000    783.00    539.68
  0.000797     4755.     6545.     5535.         2         0         0      0.00    525.88   1065.55
0
1
  2 MAY 89      9:53:46                                                                    PAGE   16


                                                                  THIS RUN EXECUTED  2 MAY 89    9:53:55
 ***************************************************
   HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
   ERROR CORR -  01,02,03,04,05,06
   MODIFICATION -  50,51,52,53,54,55,56
 ***************************************************

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

2) STUDY NAME: Lincoln Twp

3) WATERCOURSE: S. Branch White River

4) DOCUMENT TYPE: Report



DEPARTMENT OF THE ARMY
DETROIT DISTRICT, CORPS OF ENGINEERS
BOX 1027
DETROIT, MICHIGAN 48231-1027

IN REPLY REFER TO

March 27, 1989

Great Lakes Hydraulics and Hydrology Branch

RECEIVED
MAR 28 1989
NATURAL RESOURCES
LAND & WATER MGMT

Mr. Bruce E. Menerey, P.E.
Technical Programs
Land and Water Management Division
Michigan Department of Natural Resources
P.O. Box 30028
Lansing, Michigan 48909

Dear Mr. Menerey:

Submitted for your review and approval is a copy of the hydraulic calculations for the Lincoln Township, Newaygo County, Michigan, Flood Insurance Study. Enclosed are the HEC-2 100-year unencroached and encroached runs, a map showing the location of cross sections along with the corresponding section numbers in the computer run, copies of the bridge sketches in the field notes, and a brief write up dealing with items that will assist the review process.

According to FEMA guidelines, the information supplied to aid in the review process is not intended for flood plain management purposes or distribution to other individuals at this time. Before using or distributing this information, approval should be obtained from FEMA.

If you have any questions regarding the enclosed data, please contact Mr. Gary O'Keefe at (313) 226-6772.

Sincerely,

P. M. O'Dell, P.E.
Chief, Engineering Division

Enclosures

LINCOLN TOWNSHIP, MICHIGAN
FLOOD INSURANCE STUDY
HYDRAULIC COMPUTATION BACKGROUND INFORMATION

The South Branch White River was studied from the downstream township limit at Lincoln Township to the upstream township limit.

Analyses of the hydraulic characteristics of flooding along the White River were carried out to provide estimates of the elevation of the 100-year flood. Water surface elevations were computed using the COE HEC-2 step-backwater computer program.

Cross section data for the backwater analysis were obtained by a field survey completed in September 1988. All bridges and culverts were surveyed to obtain elevation data and structural geometry.

Channel and overbank roughness factors (Manning's "n") used in the hydraulic computations were chosen by engineering judgment and were based on field observations of the streams and flood plain areas.

The starting water surface elevation for the White River was determined by beginning the computations at the downstream corporate limit using the slope-area method.

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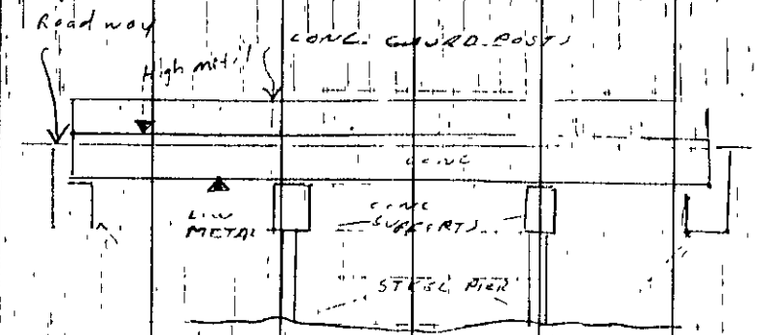
NATURAL RESOURCES
LAND & WATER MGMT

50 0+00 ON RIGHT AND OF 1061 50

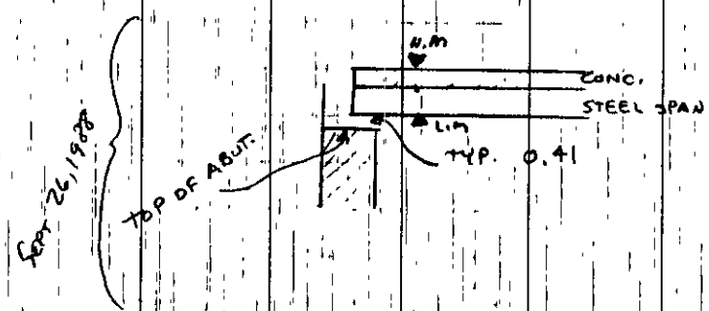
X-SEC 4 M 20 BRIDGE SEPT 19, 1988

		785.32	EL OF H.M FROM PG 52 ON SEPT 19, 1988	
LT	~~RT~~ RT			
0+01	~~0+02~~	4.39	780.93	TOP RT/ABUT
0+03	~~0+38~~	7.2	776.1	TOP RIP RAP
		784.94	EL OF H.M FROM PG 62 ON SEPT 19, 1988	
1+~~25~~ 49		4.40	780.54	TOP LT/ABUT
1+~~27~~ 47		7.40	777.5	TOP RIP RAP

SEPT 26, 1988



U/S FACE



SEPT 26, 1988

* SEE ENCLOSED SET OF MDOT CONST PLANS FOR DETAILS

BRIDGE ABUTMENT - CONCRETE GOOD CONDITION

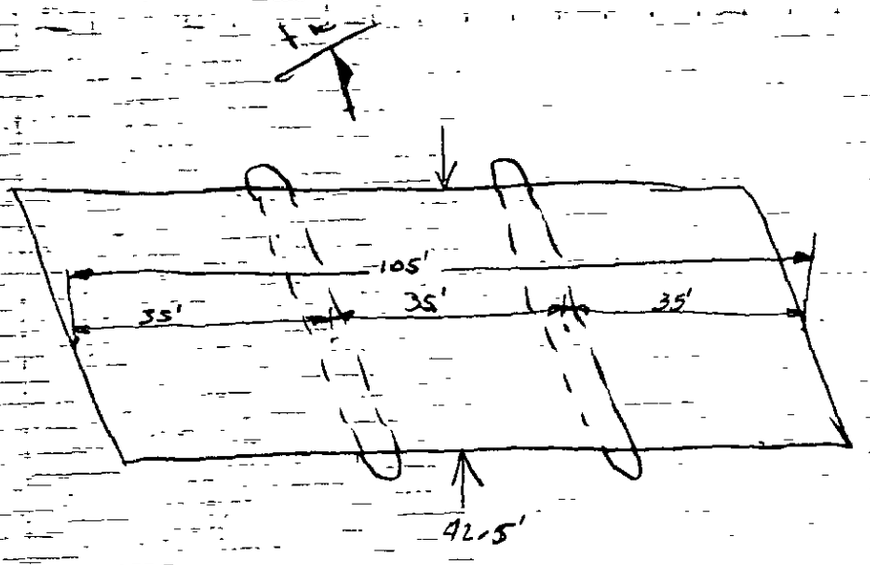
BRIDGE PIERS STEEL WITH CONC SUPPORTS - GOOD CONDITION

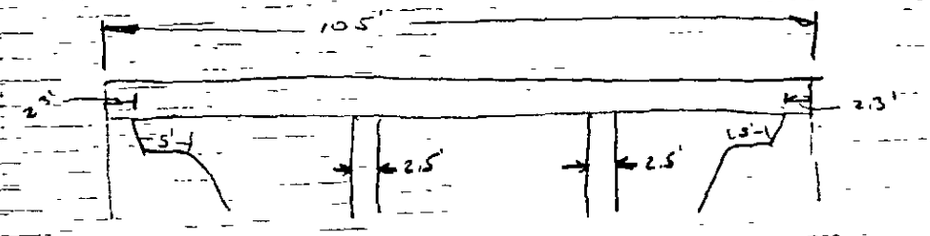
BRIDGE SUPERSTRUCTURE - STEEL GOOD CONDITION

RIPRAP APPEARS HEAVELY CROSSED ON RIB - LIB APPEARS IN GOOD CONDITION

ROADWAY - CONCRETE SURFACE GOOD SHAPE

APPROX 250' U/S of Bridge 15 @ 12' x 12' ROCK & CONC (WATERWHEEL BLDG) ELEC. HOUSE IN STONE SLUICEWAY ON RIVER SIDE, STRUCTURE LYS IN LIB - NO WATERWHEEL REMAINING





CROSS-SECTION #4 HWY M-20

RECEIVED
MAR 28 1989
NATURAL RESOURCES
LAND & WATER MGT.

(47) DATE SEPT 19, 19[illegible]

WEATHER 70°F HEAVY PAINS, HIGH WI[illegible]

INST. JORDAN LEVEL E-15009

S VALLIER
L HILL

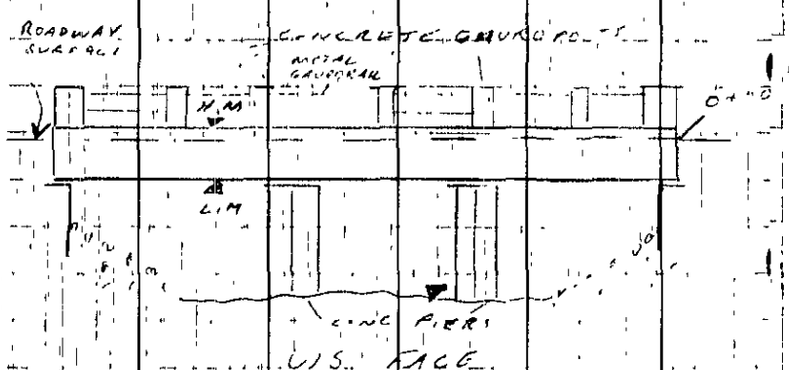
(47)

BRIDGE SEC. #7

	4.13	HI 792.90		78877	BM#2 PG 14
LT	RT				
	0+00 ~~0+00~~	7.85	785.05	TOP RT/ABUT	
	0+02 ~~0+00~~	9.9	783.0	TOP RIP RAP@AB.	
1+02	10.0		982.9	TOP RIP RAP@AB.	
1+02	7.86		785.04	TOP LT/ABUT	

9/26/86

(LIP WHERE RD MEETS BRIDGE)



* FOR DETAILS OF BRIDGE PLAN & PROFILE OBTAINED FROM NEWAYGO COUNTY ROAD COMMISSION

BRIDGE ABUTMENT - CONCRETE FAIR CONDITION

BRIDGE PIERS - CONCRETE FAIR CONDITION

BRIDGE SUPERSTRUCTURE - PRECAST CONCRETE GOOD CONDITION

ROADWAY - ASPHALT CAP - FAIR CONDITION

SHORELINE STABLE WITH RIPRAP

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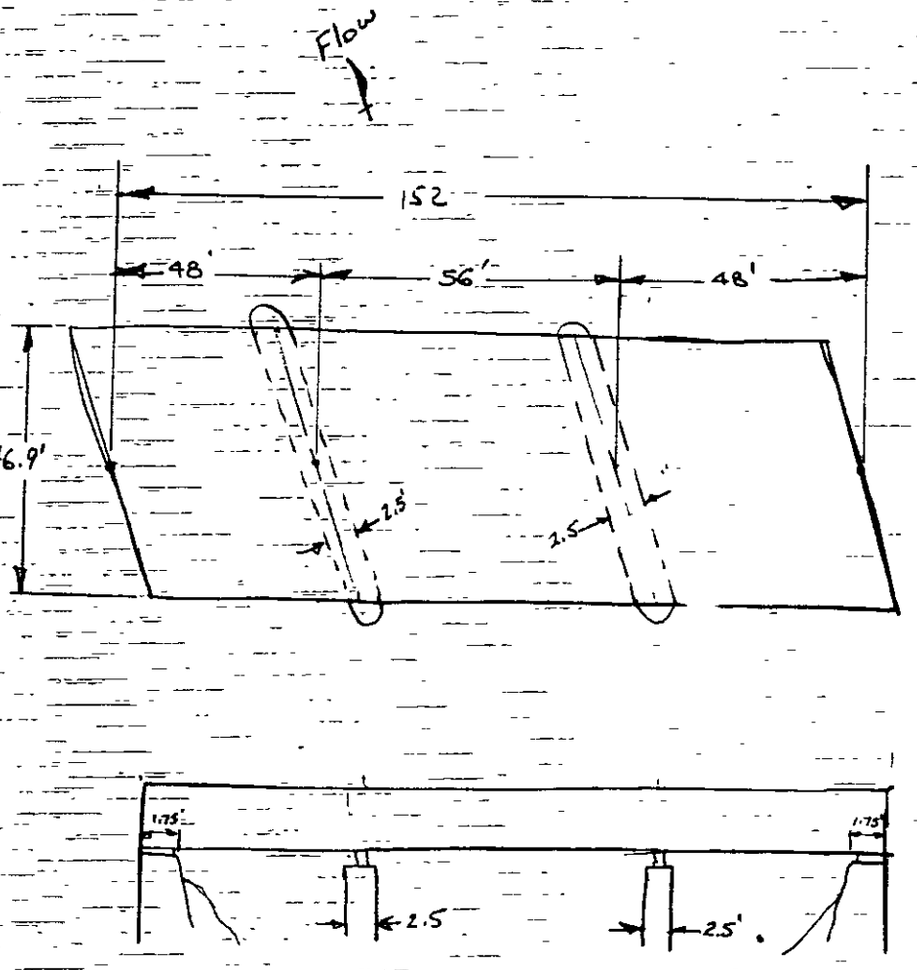
NATURAL RESOURCES
LAND & WATER MGMT
NOV 1989

RECEIVED
MAR 23 1989
NATURAL RESOURCES
LAND & WATER MGMT



X-SECTION #7

RECEIVED
MAY 08 1989
NATURAL RESOURCES
LAND & WATER MGMT

To: Bruce Menerey, DNR
From: Gary O'Keefe
Date: 5/2/89
Re: Revisions to South Branch White River Hydraulics

This submittal includes the computer output of the revised HEC2 run for the South Branch White River in Lincoln Township, Newaygo County. Revisions were made in response to the comments in your letter of April 20, 1989. Your comments were addressed as follows:

1. Earlier contact with Newaygo County failed to turn up any high water marks for the 1986 flood. It was stated that the most severe flooding occurred in the vicinity of Diamond Lake.

2. The revised run uses a fixed starting elevation of 762.5 feet. This elevation was determined by duplicating the first cross section at the location of the bridge, constricting the flow in the new section to the channel. This produced a one foot increase in the water level at cross-section 1.0. Comparing the depth at 1.0 to the depth at other locations, the value of 762.5 appears to be reasonable. Photos of the bridge are enclosed for your information.

3. Cross-sections 4.0 and 4.3 have been encroached to 140 and 160 feet, respectively, as suggested.

4. Cross-section 7.3 has been encroached to 250 feet, as suggested.

FLOOD INSURANCE STUDY





TOWNSHIP OF LINCOLN, MICHIGAN

NEWAYGO COUNTY

PRELIMINARY

Federal Emergency Management Agency

COMMUNITY NUMBER - 260014

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

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EXHIBITS

Flood Profiles

South Branch White River Panels 01P-02P

Flood Insurance Rate Map Index

Flood Insurance Rate Map

Elevation Reference Marks

FLOOD INSURANCE STUDY

TOWNSHIP OF LINCOLN,
NEWAYGO COUNTY,
MICHIGAN

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study investigates the existence and severity of flood hazards in the Township of Lincoln, Newaygo County, Michigan, and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood risk data for various areas of the community that will be used to establish actuarial flood insurance rates and assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the State (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgments

The sources of authority for this Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study were performed by the U.S. Army Corps of Engineers (COE), Detroit District (the Study Contractor) for the Federal Emergency Management Agency (FEMA), under Inter-Agency Agreement No. EMW-88-E-2739, Project Order No. 6. This study was completed in May 1989.

1.3 Coordination

On June 23, 1987, an initial coordination meeting was held with representatives of FEMA, the Michigan Department of Natural Resources (MDNR), Newaygo County, Lincoln Township, and the Study Contractor. During the search for data, contacts were made with the MDNR, Hydrologic Studies Unit, Land and Water Management Division; and the Newaygo County Road Commission. Results of the technical aspects of this study were coordinated with, reviewed and approved by the MDNR, the State coordinating agency.

On _____, the results of this Flood Insurance Study were reviewed and accepted at a final coordination meeting attended by representatives of the Study Contractor, FEMA, and the community.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the incorporated area of Township of Lincoln, Newaygo County, Michigan. The area of study is shown on the Vicinity Map (Figure 1).

Flooding caused by overflow of South Branch White River was studied in detail.

Approximate analyses were used to study those areas having a low development potential or minimal flood hazards and included Mena Creek, Second Cole Creek, Peterson Creek and Diamond Lake.

The areas studied were selected with priority given to all known flood hazard areas and areas of projected development or proposed construction through May 1994. The scope and methods of study were proposed to and agreed upon by FEMA and Township of Lincoln.

2.2 Community Description

Lincoln Township is in the western portion of Michigan's lower peninsula. It is bordered by Sherman Township on the south, Merrill Township on the north, Wilcox Township on the east and Denver Township on the west. Lincoln Township is about 40 miles north of the City of Grand Rapids, Michigan, and is served by State Highways 20 and 37. Lincoln Township is sparsely populated, with a reported 1980 population of 885 (Reference 1).

Residential development is concentrated primarily at Diamond Lake and along State Highway 20. The northern half of the township is part of the Manistee National Forest.

Because of the proximity of Lincoln Township to Lake Michigan, the area's climate is influenced appreciably by the lake. As a result, low temperatures are experienced in the spring and a warming effect occurs in the fall. Winter and summer temperatures are similarly tempered by the lake, making annual climatic extremes rare. The average annual precipitation is 33.27 inches and is fairly uniformly distributed throughout the year. The area receives approximately 80 inches of snow annually (Reference 2).

2.3 Principal Flood Problems

The principal flood problems in Lincoln Township are due to high-water levels on Diamond Lake and overflow of the South Branch

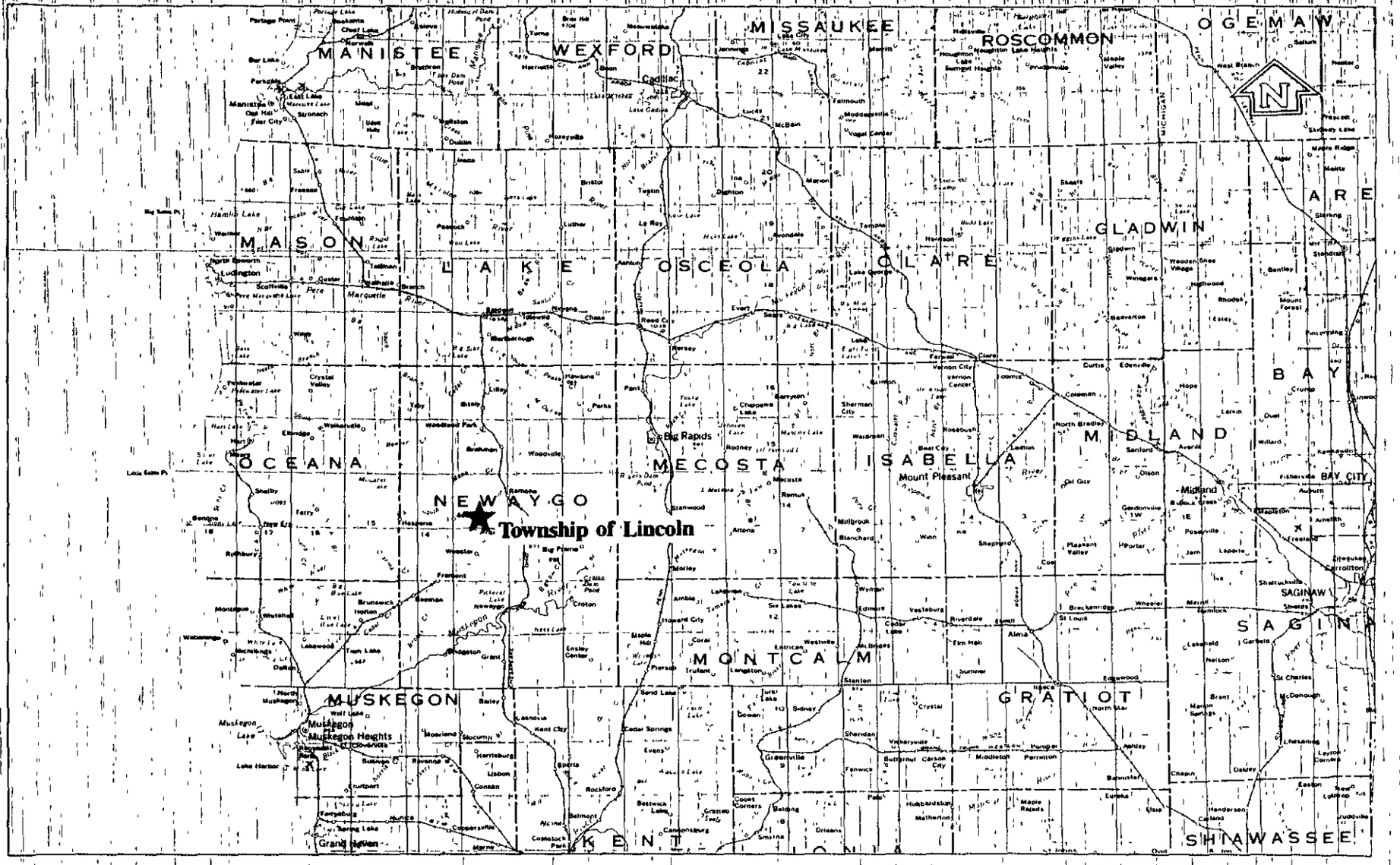


FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF LINCOLN, MI

(NEWAYGO CO.)

APPROXIMATE SCALE

16 0 16 32 48 MILES

VICINITY MAP

White River. The river has no gages in the area, but records on the White River gage near Whitehall, Michigan, indicate that most periods of high runoff occur in late winter or spring.

2.4 Flood Protection Measures

Flood protection measures are not known to exist within the study area.

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 that is expected to be equaled 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 floodplain management and for flood insurance 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 equaled 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 that equals or exceeds the 100-year flood (1-percent chance of annual exceedence) 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 herein 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 each riverine flooding source studied in detail affecting the community.

A discharge-frequency relationship was developed using USGS regression equations (Reference 3). Area, stream length, slope and basin boundaries were determined from topographic maps of the area (Reference 4). Soil types and areas were determined from MDNR maps (Reference 5).

Peak discharge-drainage area relationships for the 100-year flood of each flooding source studied in detail in the community are shown in Table 1.

TABLE 1 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQ MILES)	PEAK DISCHARGE (CFS) 100-YEAR
SOUTH BRANCH WHITE RIVER		
just upstream of confluence of Mena Creek	155	3,365
at State Highway 20	139	3,240
at Baldwin Avenue	110	2,670

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals.

Cross-section data for the backwater analyses were obtained by field surveys. All bridges and culverts were surveyed to obtain elevation data and structural geometry.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles and on the Flood Insurance Rate Map.

Water-surface elevations of floods for the selected recurrence interval were computed using the HEC-2 step-backwater computer program (Reference 6). The starting water-surface elevation for the South Branch White River was determined using the slope-area method.

Roughness coefficients (Manning's "n") used in the hydraulic computations were determined by field observations of the stream and floodplain areas. The channel "n" values of the South Branch White River ranged from 0.02 to 0.045, and overbank "n" values ranged from 0.03 to 0.12.

Flood profiles were drawn showing the computed water-surface elevations for floods of the selected recurrence intervals.

The hydraulic analyses for this study are based on the effects of unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

All elevations are referenced to the National Geodetic Vertical Datum of 1929 (NGVD). Elevation reference marks used in this study are shown on the maps and described in the exhibit labeled Elevation Reference Marks.

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The National Flood Insurance Program encourages state and local governments to adopt sound floodplain management programs. Therefore, each Flood Insurance Study provides 100-year flood elevations and delineations of the 100- and 500-year floodplain boundaries and 100-year floodway to assist communities in developing floodplain management measures.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent annual chance (500-year) flood is employed to indicate additional areas of flood risk in the community. For each stream studied in detail, the 100-year floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:24000 with a contour interval of 3 meters (Reference 4).

The 100-year floodplain boundaries are shown on the Flood Insurance Rate Map. On this map, the 100-year floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A, AE, AH, AO, A99, V, and VE). Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

For the streams studied by approximate methods, only the 100-year floodplain boundary was delineated using topographic maps at a scale of 1:24000 with a contour interval of 3 meters (Reference 4).

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces the flood-carrying capacity, increases the flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 100-year floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. In

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ FEET)	MEAN VELOCITY (FEET/SEC.)	REGULATORY (FEET NGVD)	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE (FEET)
SOUTH BRANCH WHITE RIVER								
A	200	310	2049	1.6	762.5	762.5	762.6	0.1
B	3745	582	2011	1.7	764.4	764.4	764.5	0.1
C	10,175	214	887	3.8	776.5	776.5	776.6	0.1
D	10,445	128	669	4.8	777.0	777.0	777.1	0.1
E	17,395	498	2420	1.3	783.4	783.4	783.5	0.1
F	22,025	340	1554	2.1	786.7	786.7	786.8	0.1
G	22,615	104	746	3.6	787.5	787.5	787.6	0.1
H	28,180	706	3525	0.8	790.5	790.5	790.6	0.1
I	34,725	526	2107	1.3	792.9	792.9	793.0	0.1

[1]FEET ABOVE CORPORATE LIMITS

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

LINCOLN TOWNSHIP, MI
(NEWAYGO CO.)

FLOODWAY DATA

SOUTH BRANCH WHITE RIVER

Michigan though, under Michigan Act 245, Public Acts of 1929, as amended by Act 167, Public Acts of 1968 (Reference 7), encroachment in the floodplain is limited to that which will cause only an insignificant increase in flood heights. Thus, at the recommendation of the Michigan Department of Natural Resources, Land and Water Resources Division, a floodway having no more than a 0.1-foot surcharge has been delineated for this study. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways for this study were Floodway analyses were based on equal conveyance reduction and adjusted as necessary to account for the effects of existing development and to provide functional and manageable floodways. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections and are shown in Table 2, Floodway Data. The computed floodways are shown on the Flood Insurance Rate Map. In cases where the floodway and 100-year floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

Along streams where floodways have not been computed, the community must ensure that the cumulative effect of development in the floodplain will not cause an increase in the base flood elevations greater than the State's allowable surcharge at any point within the community.

The area between the floodway and the 100-year floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood by more than the State's allowable surcharge at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown on the Floodway Schematic (Figure 2).

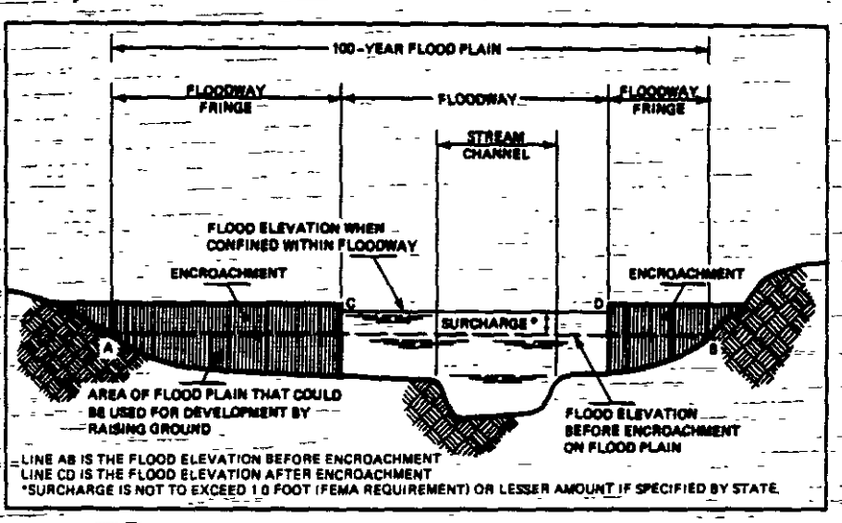


FIGURE 2 - Floodway Schematic

5.0 INSURANCE APPLICATION

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. These zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by detailed methods. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 100-year floodplain, areas of 100-year flooding where average depths are less than 1 foot, areas of 100-year flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 100-year flood by levees. No base flood elevations or depths are shown within this zone.

6.0 FLOOD INSURANCE RATE MAP

The Flood Insurance Rate Map is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 100-year floodplains that were studied by detailed methods, shows selected whole-foot base flood elevations or average depths. Insurance agents use the zones and base flood elevations in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols the 100- and 500-year floodplains, the floodways, and the locations of selected cross sections used in the hydraulic analyses and floodway computations.

7.0 OTHER STUDIES

No published Flood Insurance Studies effecting flooding in Lincoln Township exist.

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting the Natural and Technological Hazards Division, FEMA, 175 West Jackson Boulevard, 4th Floor, Chicago, Illinois 60604-2698.

Future revisions may be made that do not result in the republishing of the Flood Insurance Study report. To assure that any user is aware of all revisions, it is advisable to contact the map repository of flood hazard data located in the community.

9.0 REFERENCES AND BIBLIOGRAPHY

1. U.S. Department of Commerce, Bureau of the Census, 1980 Census of Population, Number of Inhabitants, Michigan, Washington, D.C., January 1982.

2. National Oceanic and Atmospheric Administration, Climates of the States, Volume 1, Alabama-North Dakota, Detroit, Michigan, 1980.

3. U.S. Geological Survey, Statistical Models for Estimating Flow Characteristics of Michigan Streams, Water Resources Investigations Report No. 84-4207, Lansing, Michigan, 1984.

4. ----------, Topographic Map, Scale 1:24000, Contour Interval 3 meters, Dayton Center, Michigan, (provisional edition) 1985; Walkup Lake, Michigan, (provisional edition) 1985; White Cloud, Michigan, (provisional edition) 1985; Woodland Park, Michigan, (provisional edition) 1985.

5. Michigan Department of Natural Resources, Geologic Survey Division, Quaternary Geology of Michigan with Surface Water Drainage Divides, W.R. Farrand and D.L. Bell, reprinted 1984.

6. U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, Computer Program 723-X5-L202A, Users Manual, Davis, California, September 1982, with updates.

7. State of Michigan, Flood Plain Control Act of 1968, Act 245, P.A. 1929 as amended by Act 167, P.A. 1968, Michigan Water Resources Commission, Lansing, Michigan, 1968.

U.S. Army Corps of Engineers, Detroit District, Development of Generalized Skew Coefficients for Use in Estimating Flood Flow Frequencies, Detroit, Michigan, 1979.

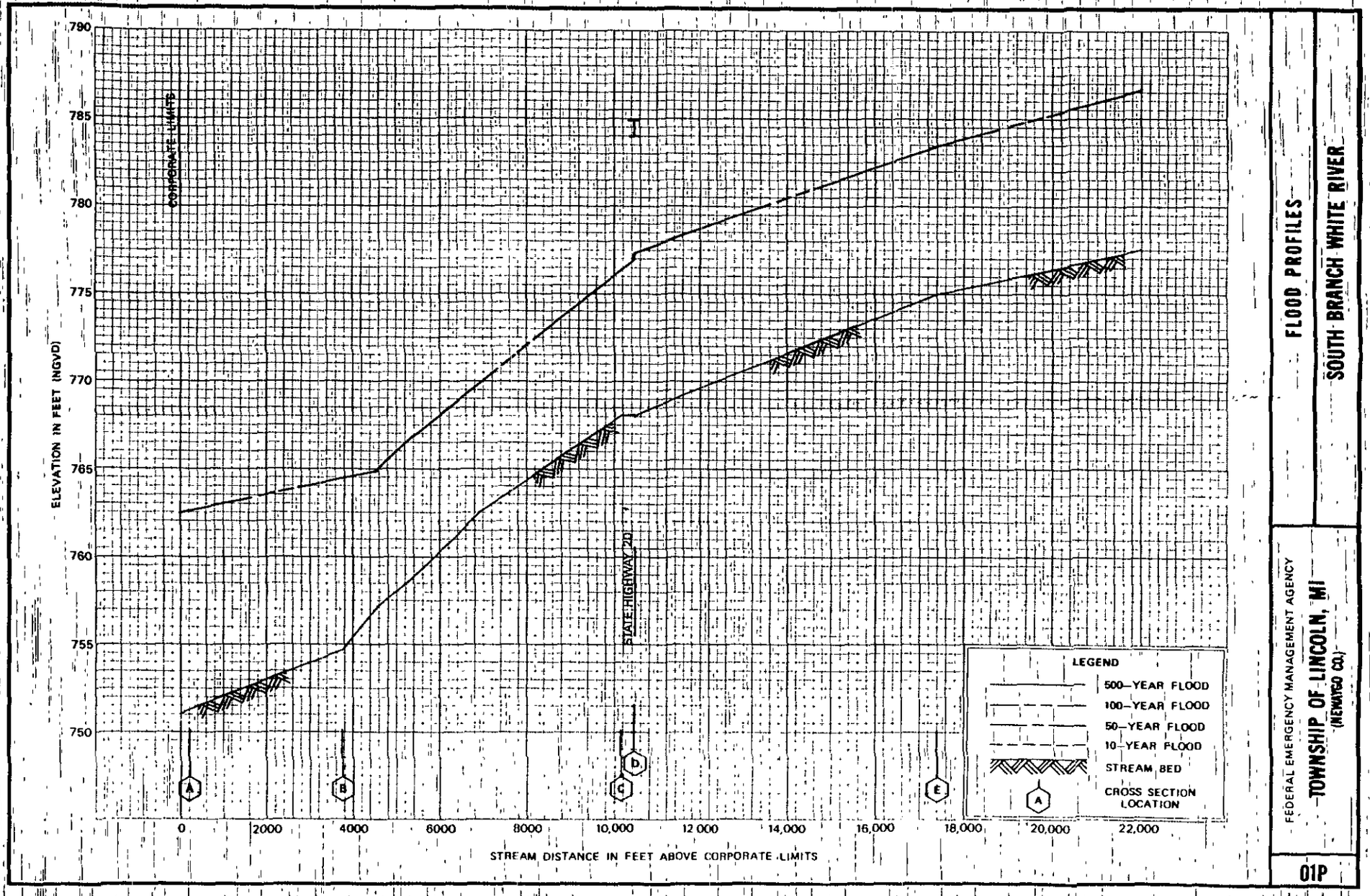
----------, Hydrologic Engineering Center, Flood Flow Frequency Analysis, Generalized Computer Program 723-X6-L7550, Davis, California, June 1976.

U.S. Department of the Interior, Geological Survey, Interagency Advisory Committee on Water Data, Office of Water Data Coordination, Hydrology Subcommittee, Bulletin No. 17B, Guidelines for Determining Flood Flow Frequency, September 1981, revised March 1982.

ELEVATION REFERENCE MARKS

REFERENCE MARK	FLOOD INSURANCE RATE MAP PANEL	ELEVATION (FEET NGVD)	DESCRIPTION OF LOCATION
1	0010	824.68	chiseled square on top of curb located in southeast corner of intersection of Luce Road and State Highway 20
2	0010	784.61	chiseled square in top of north end of west abutment of State Highway 20 bridge over the South Branch White River
3	0010	823.015	20d spike in power pole located in northeast corner of intersection of Luce Road and Base Line Road
4	0010	800.63	20d spike in power pole No. 39F28 located on north side of Baseline Road about 1.1 miles east along Baseline Road from its intersection with Luce Road
5	0010	788.765	chiseled square on inside edge concrete guard rail at southwest corner of Baldwin Avenue bridge over the South Branch White River
*6	0010	791.845	20d spike in power pole No. WC-4/3952-17 located in southwest corner of intersection of Baldwin Avenue and Baseline Road

*outside corporate limits



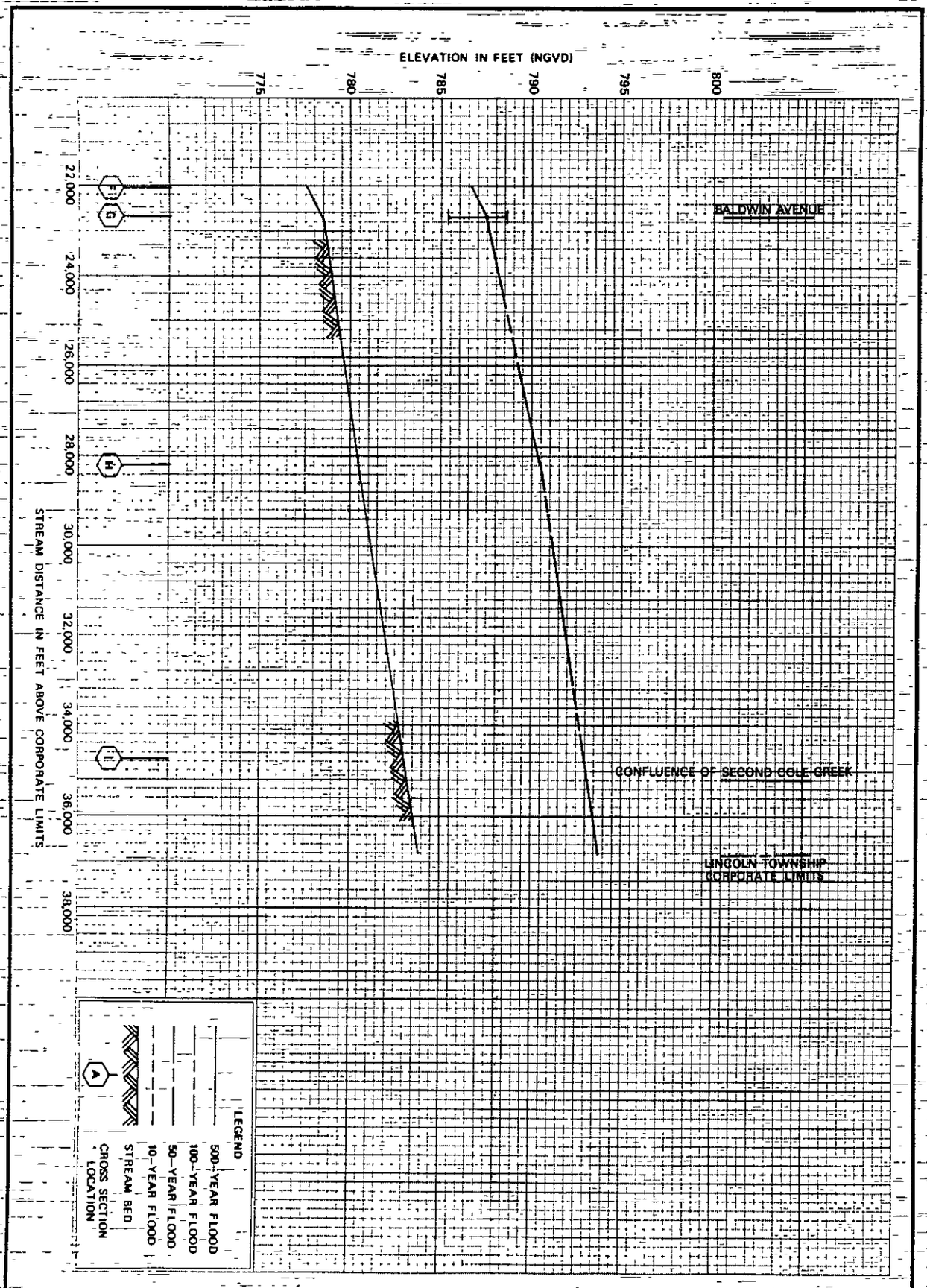
FLOOD PROFILES

SOUTH BRANCH WHITE RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF LINCOLN, MI
(NEWAYGO CO.)

01P



02P

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF LINCOLN, MI

(NEWAYGO CO.)

FLOOD PROFILES

SOUTH BRANCH WHITE RIVER

00BREAK00

1) COUNTY: Newago

2) STUDY NAME: Lincoln Twp

3) WATERCOURSE: S. Branch White River

4) DOCUMENT TYPE: Summary

00BREAK00

H BRANCH WHITE RIVER - 1

SUMMARY PRINTOUT TABLE 110

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
1.000	762.50	0.00	762.60	364.74	0.00	1741.83	1623.17	0.00	0.00	500.00	580.00	0.00
1.000	762.60	0.10	762.70	310.33	0.00	1773.12	1591.88	0.02	500.00	500.00	580.00	830.78
2.000	764.40	0.00	764.46	682.18	132.68	1440.25	1792.07	0.00	0.00	500.00	575.00	0.00
2.000	764.50	0.10	764.57	581.96	66.51	1473.51	1824.97	0.04	465.38	500.00	575.00	1047.34
2.200	764.93	0.00	765.25	492.65	39.69	2272.16	1053.15	0.00	0.00	500.00	575.00	0.00
2.200	765.02	0.09	765.36	311.78	0.00	2332.48	1032.52	0.05	500.00	500.00	575.00	811.78
2.300	766.78	0.00	767.05	427.81	2.09	2488.26	874.66	0.00	0.00	475.00	567.00	0.00
2.300	766.89	0.11	767.18	207.86	0.00	2558.51	806.49	0.04	475.00	475.00	567.00	682.86
2.500	770.01	0.00	770.29	239.77	0.00	2551.39	813.61	0.00	0.00	449.00	559.00	0.00
2.500	770.12	0.11	770.41	196.74	0.00	2628.33	736.67	0.04	449.00	449.00	559.00	655.28
3.000	776.45	0.00	776.69	235.53	0.00	2410.60	954.40	0.00	0.00	398.00	543.00	0.00
3.000	776.56	0.11	776.81	214.11	0.00	2479.88	885.12	0.04	398.00	398.00	543.00	644.17
4.000	776.97	0.00	777.33	138.14	0.00	3041.47	198.53	167.00	398.00	398.00	543.00	565.00
4.000	777.08	0.10	777.45	128.30	0.00	3135.89	104.11	0.29	398.00	398.00	543.00	554.28
4.100	777.18	0.00	777.39	138.36	0.00	3240.00	0.00	0.00	0.00	250.00	400.00	0.00
4.100	777.32	0.13	777.51	138.87	0.00	3240.00	0.00	0.00	250.00	250.00	400.00	400.00
4.200	777.21	0.00	777.41	138.47	0.00	3240.00	0.00	0.00	0.00	250.00	400.00	0.00
4.200	777.34	0.13	777.54	138.97	0.00	3240.00	0.00	0.00	250.00	250.00	400.00	400.00
4.300	777.13	0.00	777.47	159.44	0.00	3058.17	181.83	187.00	398.00	398.00	543.00	585.00
4.300	777.25	0.12	777.59	142.94	0.00	3137.39	102.61	0.14	398.00	398.00	543.00	567.53
5.000	783.37	0.00	783.42	556.70	1.05	2149.75	1089.20	0.00	0.00	500.00	675.00	0.00
5.000	783.49	0.12	783.55	497.65	0.00	2214.96	1025.04	0.04	500.00	500.00	675.00	997.65

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
6.000	786.68	0.00	786.85	367.21	0.00	1616.42	1623.58	0.00	0.00	489.00	550.00	0.00
6.000	786.78	0.10	786.96	340.00	0.00	1647.78	1592.22	340.00	492.00	489.00	550.00	832.00
7.000	787.50	0.00	787.70	104.00	0.00	2670.00	0.00	0.00	0.00	296.00	400.00	0.00
7.000	787.58	0.08	787.78	104.00	0.00	2670.00	0.00	0.00	0.00	296.00	400.00	0.00
7.100	787.40	0.00	787.83	104.00	0.00	2670.00	0.00	0.00	0.00	296.00	400.00	0.00
7.100	787.48	0.08	787.91	104.00	0.00	2670.00	0.00	0.00	0.00	296.00	400.00	0.00
7.200	787.48	0.00	787.91	104.00	0.00	2670.00	0.00	0.00	0.00	296.00	400.00	0.00
7.200	787.56	0.08	787.99	104.00	0.00	2670.00	0.00	0.00	0.00	296.00	400.00	0.00
7.300	787.94	0.00	788.10	249.71	0.00	1535.62	1134.38	250.00	490.00	489.00	550.00	740.00
7.300	788.01	0.07	788.17	236.73	0.00	1567.12	1102.88	0.18	489.00	489.00	550.00	726.77
8.000	790.49	0.00	790.51	763.69	627.23	968.74	1074.03	0.00	0.00	500.00	560.00	0.00
8.000	790.58	0.09	790.61	706.07	607.26	989.58	1073.17	0.03	287.32	500.00	560.00	993.40

9.000	792.87	0.00	792.95	560.21	0.00	1207.49	1462.07	0.00	500.00	500.00	594.00	1065.55
9.000	792.97	0.10	793.05	525.88	0.00	1234.53	1435.47	0.03	500.00	500.00	594.00	1065.55

H BRANCH WHITE RIVER - 1

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	01K
1.000	0.00	0.00	0.00	751.20	3365.00	762.50	0.00	762.60	6.26	3.37	2134.47	1345.00
1.000	0.00	0.00	0.00	751.20	3365.00	762.60	0.00	762.70	6.27	3.40	2049.02	1344.18
2.000	3545.00	0.00	0.00	754.70	3365.00	764.40	0.00	764.46	4.79	2.65	2136.05	1537.56
2.000	3545.00	0.00	0.00	754.70	3365.00	764.50	0.00	764.57	4.78	2.68	2010.52	1538.46
2.200	805.00	0.00	0.00	757.20	3365.00	764.93	0.00	765.25	26.78	5.34	966.44	650.29
2.200	805.00	0.00	0.00	757.20	3365.00	765.02	0.00	765.36	27.05	5.39	859.08	647.04
2.300	805.00	0.00	0.00	758.80	3365.00	766.78	0.00	767.05	20.84	4.74	924.79	737.07
2.300	805.00	0.00	0.00	758.80	3365.00	766.89	0.00	767.18	20.84	4.79	843.43	737.15
2.500	1605.00	0.00	0.00	762.60	3365.00	770.01	0.00	770.29	21.16	4.66	870.48	731.61
2.500	1605.00	0.00	0.00	762.60	3365.00	770.12	0.00	770.41	20.99	4.70	832.35	734.39
3.000	3215.00	0.00	0.00	768.10	3365.00	776.45	0.00	776.69	20.45	4.30	909.24	744.13
3.000	3215.00	0.00	0.00	768.10	3365.00	776.56	0.00	776.81	20.40	4.33	887.25	745.11
4.000	270.00	0.00	0.00	768.10	3240.00	776.97	0.00	777.33	24.47	4.91	688.21	654.93
4.000	270.00	0.00	0.00	768.10	3240.00	777.08	0.00	777.45	24.50	4.96	669.06	654.64
4.100	10.00	784.08	785.86	768.00	3240.00	777.18	0.00	777.39	6.14	3.63	893.30	1308.02
4.100	10.00	784.08	785.86	768.00	3240.00	777.32	0.00	777.51	5.78	3.55	911.69	1347.33
4.200	42.50	784.08	785.86	768.00	3240.00	777.21	0.00	777.41	6.06	3.61	897.16	1316.23
4.200	42.50	784.08	785.86	768.00	3240.00	777.34	0.00	777.54	5.72	3.54	915.04	1354.52
4.300	10.00	0.00	0.00	768.10	3240.00	777.13	0.00	777.47	22.66	4.79	782.06	680.69
4.300	10.00	0.00	0.00	768.10	3240.00	777.25	0.00	777.59	22.45	4.81	736.52	683.88
5.000	6885.00	0.00	0.00	775.00	3240.00	783.37	0.00	783.42	4.66	2.21	2541.55	1500.37
5.000	6885.00	0.00	0.00	775.00	3240.00	783.49	0.00	783.55	4.66	2.23	2420.37	1501.56
6.000	4630.00	0.00	0.00	777.50	3240.00	786.68	0.00	786.85	17.49	4.50	1587.78	774.75
6.000	4630.00	0.00	0.00	777.50	3240.00	786.78	0.00	786.96	17.06	4.52	1553.77	784.50
7.000	590.00	0.00	0.00	778.40	2670.00	787.50	0.00	787.70	11.97	3.62	737.30	771.69
7.000	590.00	0.00	0.00	778.40	2670.00	787.58	0.00	787.78	11.54	3.58	745.53	786.11
7.100	10.00	787.99	789.39	778.40	2670.00	787.40	0.00	787.83	17.34	5.28	505.89	641.26
7.100	10.00	787.99	789.39	778.40	2670.00	787.48	0.00	787.91	17.34	5.28	505.89	641.12
7.200	47.00	787.99	789.39	778.40	2670.00	787.48	0.00	787.91	17.34	5.28	505.89	641.12
7.200	47.00	787.99	789.39	778.40	2670.00	787.56	0.00	787.99	17.35	5.28	505.89	640.98
7.300	100.00	0.00	0.00	778.50	2670.00	787.94	0.00	788.10	14.06	4.11	1258.62	712.11
7.300	100.00	0.00	0.00	778.50	2670.00	788.01	0.00	788.17	14.18	4.15	1218.49	709.06

SECNO	XLCH	ELTRD	ELLC	ELMI	Q	CWSEL	RIWS	EG	IC *S	VC	A EA	01
8.000	5410.00	0.00	0.00	780.40	2670.00	790.49	0.00	790.51	2.52	2.04	3619.73	1682.17
8.000	5410.00	0.00	0.00	780.40	2670.00	790.58	0.00	790.61	2.53	2.06	3524.57	1679.59
9.000	6545.00	0.00	0.00	783.00	2670.00	792.87	0.00	792.95	7.97	3.24	2170.62	945.56
9.000	6545.00	0.00	0.00	783.00	2670.00	792.97	0.00	793.05	7.97	3.26	2106.54	945.55

1

2 MAY 89 9:53:46 PAGE 20

H BRANCH WHITE RIVER - 1

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
1.000	3365.00	762.50	0.00	0.00	0.00	364.74	0.00
1.000	3365.00	762.60	0.10	0.00	0.10	310.33	0.00
2.000	3365.00	764.40	0.00	1.90	0.00	682.18	3545.00
2.000	3365.00	764.50	0.10	1.90	0.10	581.96	3545.00
2.200	3365.00	764.93	0.00	0.52	0.00	492.65	805.00
2.200	3365.00	765.02	0.09	0.52	0.09	311.78	805.00
2.300	3365.00	766.78	0.00	1.85	0.00	427.81	805.00
2.300	3365.00	766.89	0.11	1.87	0.11	207.86	805.00
2.500	3365.00	770.01	0.00	3.23	0.00	239.77	1605.00
2.500	3365.00	770.12	0.11	3.24	0.11	196.74	1605.00
3.000	3365.00	776.45	0.00	6.44	0.00	235.53	3215.00
3.000	3365.00	776.56	0.11	6.44	0.11	214.11	3215.00
4.000	3240.00	776.97	0.00	0.52	0.00	138.14	270.00
4.000	3240.00	777.08	0.10	0.52	0.10	128.30	270.00
4.100	3240.00	777.18	0.00	0.21	0.00	138.36	10.00
4.100	3240.00	777.32	0.13	0.24	0.13	138.87	10.00
4.200	3240.00	777.21	0.00	0.03	0.00	138.47	42.50
4.200	3240.00	777.34	0.13	0.03	0.13	138.97	42.50
4.300	3240.00	777.13	0.00	-0.08	0.00	159.44	10.00
4.300	3240.00	777.25	0.12	-0.10	0.12	142.94	10.00
5.000	3240.00	783.37	0.00	6.24	0.00	556.70	6885.00
5.000	3240.00	783.49	0.12	6.25	0.12	497.65	6885.00
6.000	3240.00	786.68	0.00	3.31	0.00	367.21	4630.00
6.000	3240.00	786.78	0.10	3.29	0.10	340.00	4630.00
7.000	2670.00	787.50	0.00	0.82	0.00	104.00	590.00
7.000	2670.00	787.58	0.08	0.80	0.08	104.00	590.00
7.100	2670.00	787.40	0.00	-0.10	0.00	104.00	10.00
7.100	2670.00	787.48	0.08	-0.10	0.08	104.00	10.00
7.200	2670.00	787.48	0.00	0.08	0.00	104.00	47.00
7.200	2670.00	787.56	0.08	0.08	0.08	104.00	47.00
7.300	2670.00	787.94	0.00	0.45	0.00	249.71	100.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
8.000	2670.00	790.49	0.00	2.55	0.00	763.69	5410.00
8.000	2670.00	790.58	0.09	2.57	0.09	706.07	5410.00
9.000	2670.00	792.87	0.00	2.38	0.00	560.21	6545.00
9.000	2670.00	792.97	0.10	2.39	0.10	525.88	6545.00

SUMMARY OF ERRORS AND SPECIAL NOTES

FLOODWAY DATA, H BRANCH WHITE RIVER - 1
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
1.000	310.	2049.	1.6	762.6	762.5	0.1
2.000	582.	2011.	1.7	764.5	764.4	0.1
2.200	312.	859.	3.9	765.0	764.9	0.1
2.300	208.	843.	4.0	766.9	766.8	0.1
2.500	197.	832.	4.0	770.1	770.0	0.1
3.000	214.	887.	3.8	776.6	776.5	0.1
4.000	128.	669.	4.8	777.1	777.0	0.1
4.100	144.	912.	3.6	777.3	777.2	0.1
4.200	144.	915.	3.5	777.3	777.2	0.1
4.300	143.	737.	4.4	777.2	777.1	0.1
5.000	498.	2420.	1.3	783.5	783.4	0.1
6.000	340.	1554.	2.1	786.8	786.7	0.1
7.000	104.	746.	3.6	787.6	787.5	0.1
7.100	104.	506.	5.3	787.5	787.4	0.1
7.200	104.	506.	5.3	787.6	787.5	0.1
7.300	237.	1218.	2.2	788.0	787.9	0.1
8.000	706.	3525.	0.8	790.6	790.5	0.1
9.000	526.	2107.	1.3	793.0	792.9	0.1

THIS RUN EXECUTED 2 MAY 89 9:53:57

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