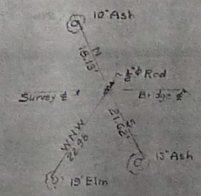
B.M. "A" - Elev. 93.45
Nail in E. root of N. twin Ash
21' Left of Sta. 10+22

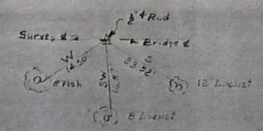
B.M. "X" Elev. 100.00
Chiseled □ S.W. Cor. of
Westerly Abutment.

B.M. "Y" - Elev. 100.02
Chiseled □ N.W. Cor. of
Westerly Abutment

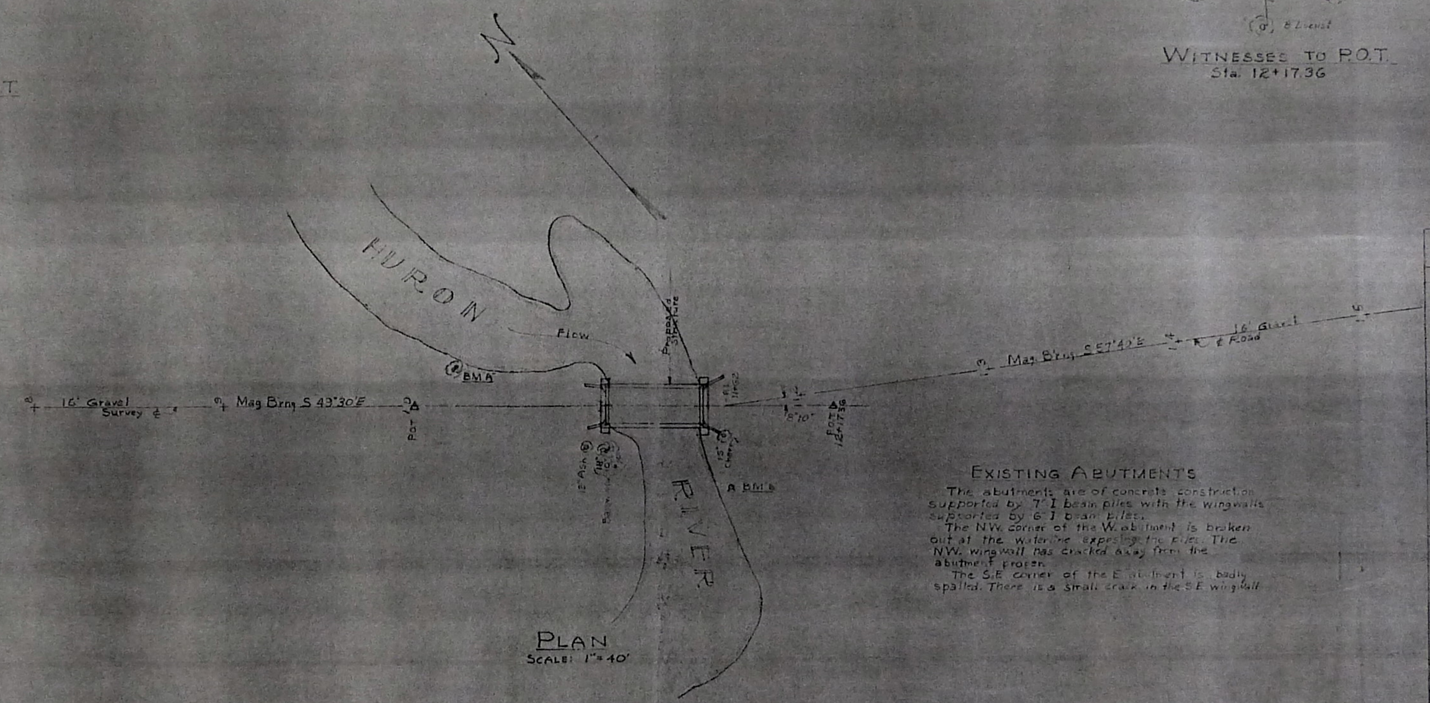
B.M. "B" - Elev. 96.00
Nail in N. root of Stump
43' Right of Sta. 11+64



WITNESSES TO P.O.T.
Sta. 10+00



WITNESSES TO P.O.T.
Sta. 12+17.36



PLAN
SCALE: 1" = 40'

EXISTING ABUTMENTS

The abutments are of concrete construction supported by 7" I beam piles with the wingwalls supported by 6" I beam piles.

The N.W. corner of the W. abutment is broken out at the waterline exposing the piles. The N.W. wingwall has cracked away from the abutment frozen.

The S.E. corner of the E. abutment is badly spalled. There is a small crack in the S.E. wingwall

GENERAL NOTES

Except where otherwise indicated on these plans or in the Proposal and Supplemental Specifications contained therein, all materials and workmanship shall be in accordance with the Michigan State Highway Department's Standard Specifications for Road and Bridge Construction, 1950 Edition.

All copper shall be 16 ounce sheet Copper.

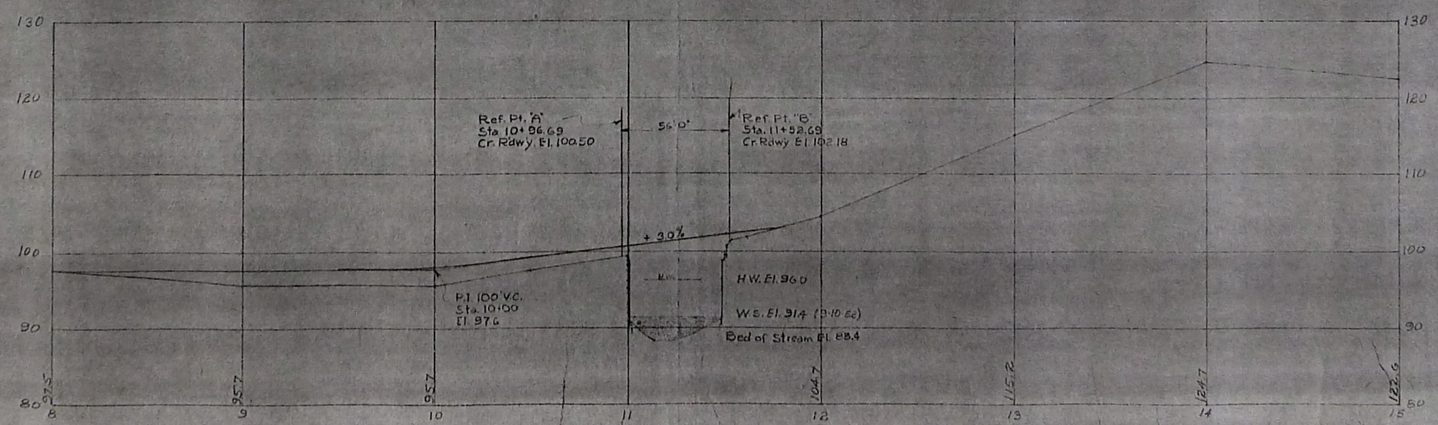
All exposed concrete corners shown square on the plans shall be beveled with ¾" triangular moldings except as otherwise noted.

Approach grading and surfacing are not a part of this contract.

No temporary bridge will be required, traffic is being maintained by the county.

BILL OF MATERIAL

ITEM	UNIT	AMOUNT	DATE
Unclassified Excavation	Cu. Yds.	25	
Steel Piles - Furnished	Lin. Ft.	192	
Steel Piles - Driven	Lin. Ft.	184	
Splices - Steel Piles	Each	4	
Cutoff - Steel Piles	Each	4	
Grade A Concrete - Substructure	Cu. Yds.	33.6	
Grade A Concrete - Superstructure	Cu. Yds.	41.1	
Cement	Bbls.	107	
Steel Reinforcement	Lbs.	7526	
Structural Steel Furnishing & Fabricating	Lbs.	780	
Structural Steel Erection	Lbs.	49,780	
½" Joint Filler	Sq. Ft.	76	
Copper	Lbs.	67	
Field Painting	Lump Sum		
Joint Waterproofing	Sq. Ft.	110	
Sand Gravel Backfill (Loose Measure)	Cu. Yds.	25	
Hook Bolts w/ Expansion Anchors	Each	32	



PROFILE
SCALE: HORIZ: 1" = 40'
VERT: 1" = 10'

Revised 12-9-52 JRC

REVISIONS

No.	DESCRIPTION	DATE	BY

LIVINGSTON COUNTY ROAD COMMISSION
BRIDGE CROSSING HURON RIVER ON MC CABE ROAD,
SECTION 16, T.1N., R.6E., GREEN OAK TWP.

GENERAL PLAN OF SITE

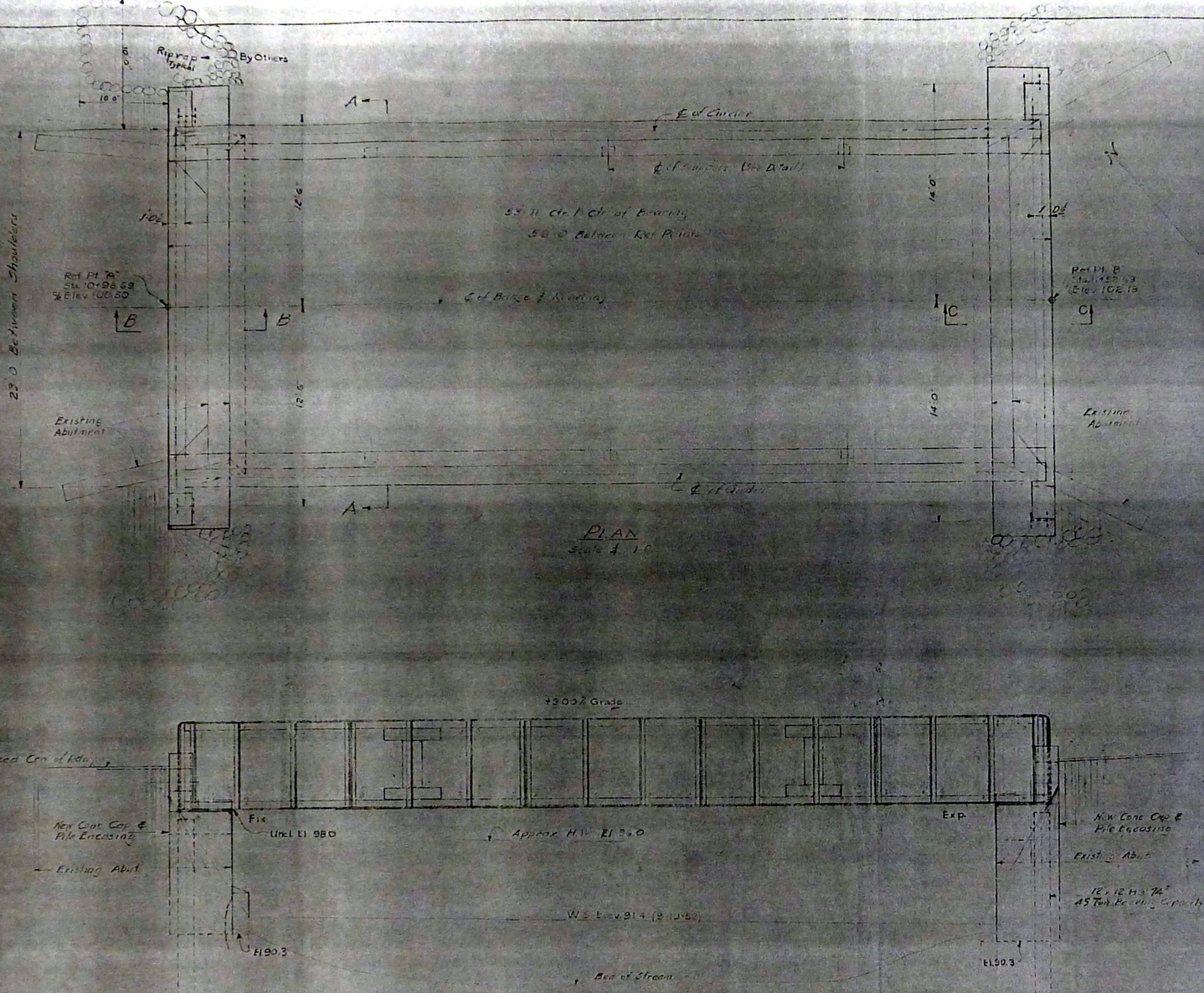
PREPARED BY FOSTER ENGINEERING CO.
LANSING, MICHIGAN

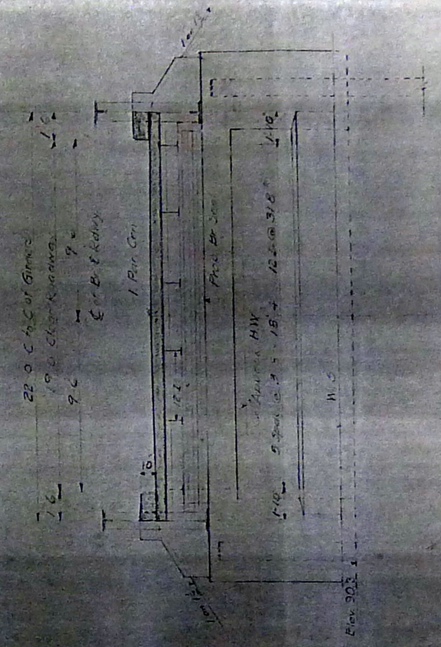
APPROVED W. M. Stanbaugh 10-31-54
REGISTERED CIVIL ENGINEER

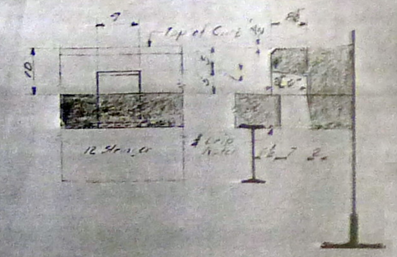
APPROVED _____
COUNTY ENGINEER

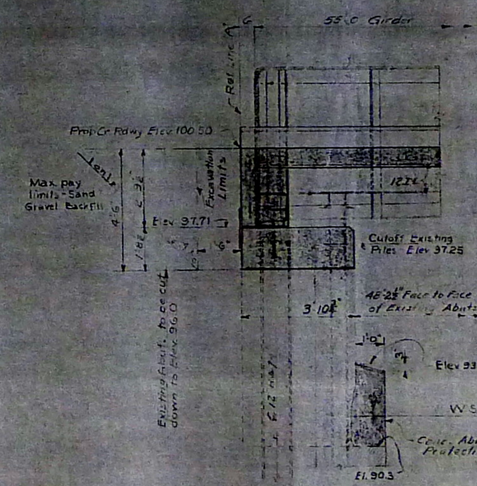
DRAWN BY	J.R.C.	8-11-52
CHECKED BY	[illegible]	[illegible]

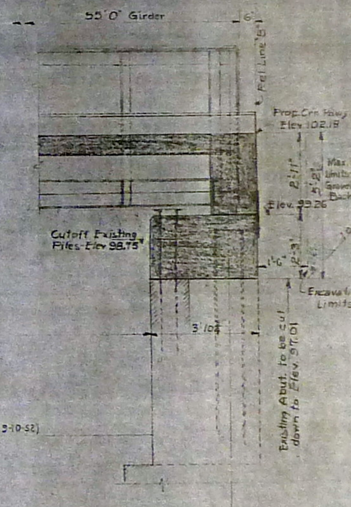
SHEET 1 OF 4
B1 OF 47-6-24











H15-44 Loading

Revised 12-9-52 JRC

REVISIONS

No	Description	Date	By

LIVINGSTON COUNTY ROAD COMMISSION

BRIDGE CROSSING HURON RIVER ON MCCABE ROAD, SECTION 16, T.1N. R.6 E., GREEN OAK TWP.

GENERAL PLAN OF STRUCTURE

PREPARED BY FOSTER ENGINEERING CO.
LANSING, MICHIGAN

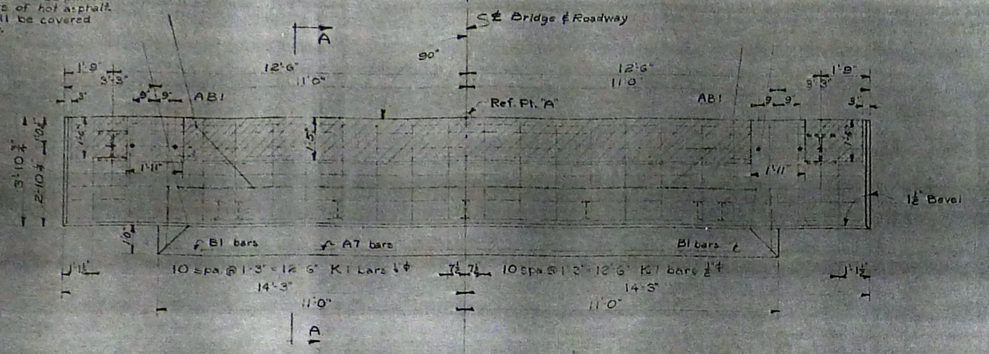
APPROVED _____ REGISTERED CIVIL ENGINEER

APPROVED _____ COUNTY ENGINEER

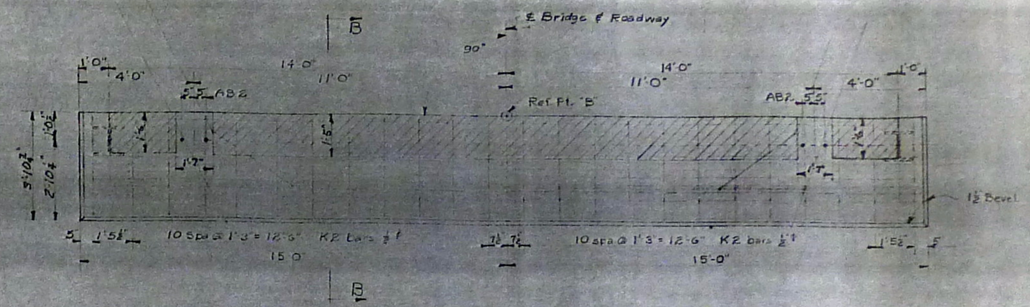
Drawn By	J.L.K.	R.C.	9-26-52
Checked By	J.E.		10-29-52
Sheet 2 of 4			

B1 OF 47-6-24

Note: Shaded areas and areas beneath the masonry plates shall be painted with two heavy coats of hot asphalt. Shaded areas shall be covered with ½" joint filler.

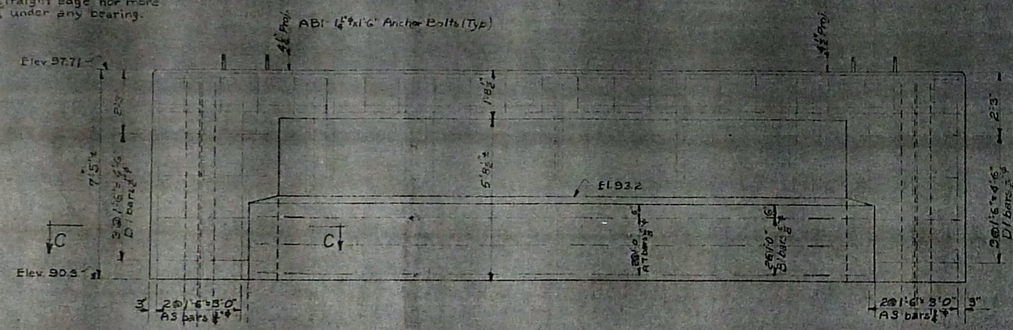


PLAN
ABUTMENT 'A'

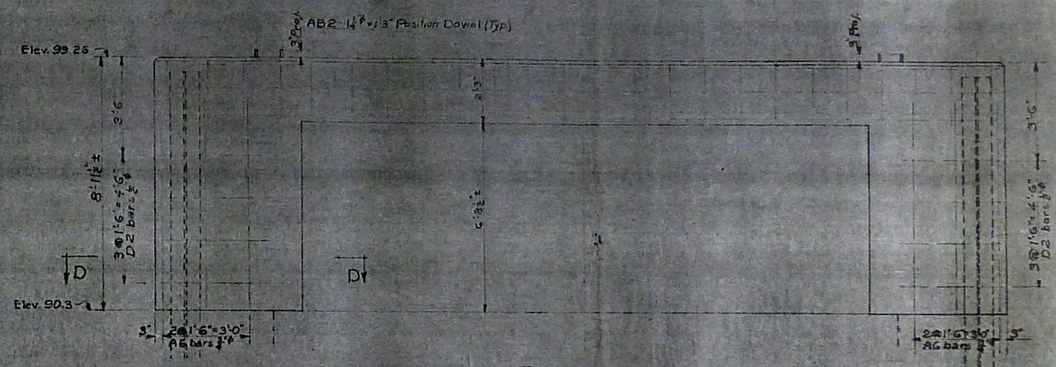


PLAN
ABUTMENT "B"

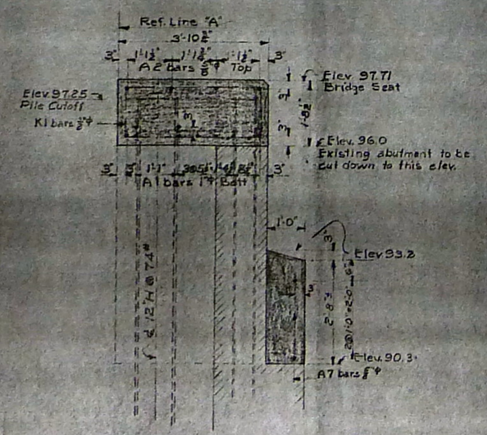
Note: Bridge seat shall be finished to a true plane with not more than ⅛" showing under a 10' straight edge nor more than 1/16" under any bearing.



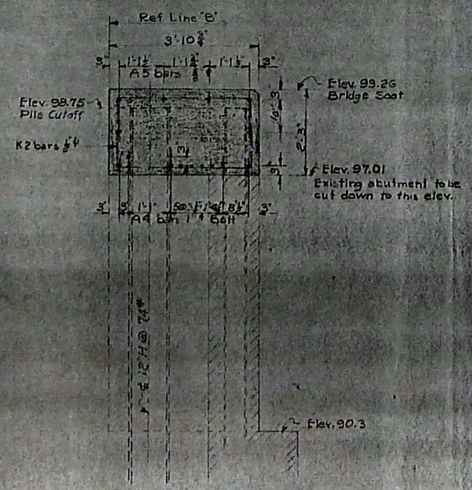
ELEVATION



ELEVATION



SECTION A-A



SECTION B-B

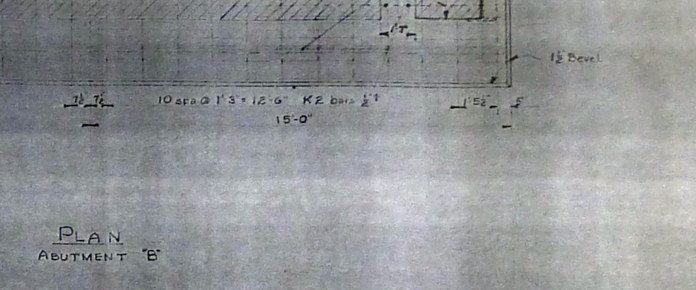
MISCELLANEOUS QUANTITIES

Grade A Concrete ~	Abut A	15.6 Cu. Yds.
	Abut B	17.8 Cu. Yds.
	TOTAL	33.6 Cu. Yds.
½" Joint Filler		76 Sq. Ft
Unclassified Excavation		25 Cu. Yds.
Sand Gravel Backfill (L.M.)		25 Cu. Yds.
Hook Bolts w/ Expansion Anchors HB1		32 Each

BILL OF STEEL PILES

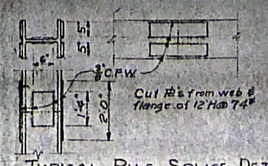
No.	Description	Furnished	Driven	Splices	Cut Off
4	12"x12" @ 74# - 48' Long	192 Lin Ft	184 Lin Ft	4 Each	4 Each

Note: All piles shall be driven to a minimum bearing capacity of 45 tons each and to the penetration shown unless practical refusal is obtained at a lesser depth. "Practical Refusal" shall be defined as a penetration of 0.08 inches per blow for 10 blows from a Vulcan No. 1 Steam Hammer.



SECTION C-C

SECTION D-D



TYPICAL PILE SPLICE DETAIL

REVISIONS

No.	Description	Date	By

LIVINGSTON COUNTY ROAD COMMISSION

BRIDGE CROSSING HURON RIVER ON MC CABE ROAD

ABUTMENT DETAILS

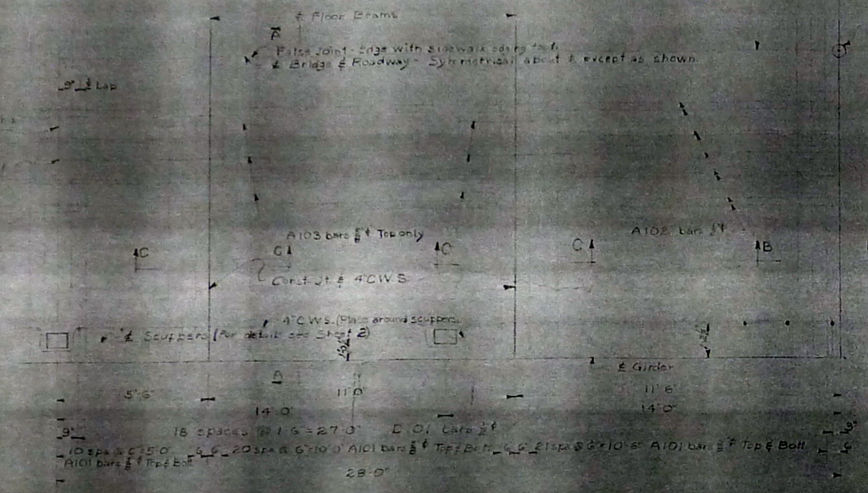
PREPARED BY FOSTER ENGINEERING CO.
LANSING, MICHIGAN

APPROVED W. M. Hombauer 12-3-52
REGISTERED CIVIL ENGINEER

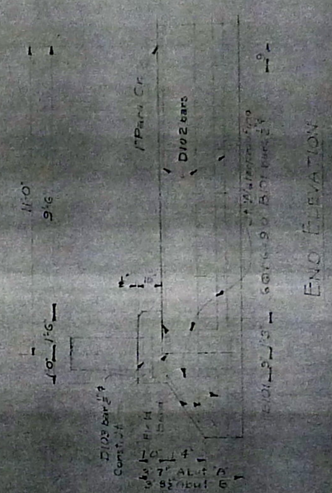
APPROVED _____
COUNTY ENGINEER

Drawn By	J.R.C.	9-26-52
Checked By	V.C.	10-23-52
Sheet 3 of 4		
B1 of 47-6-24		

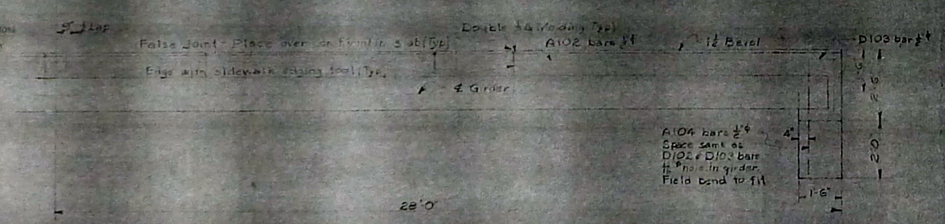
Revised 12-9-52 J.R.C.



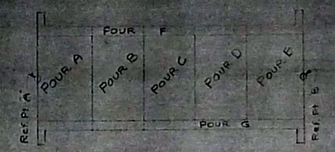
QUARTER PLAN SLAB



DETAIL OF C.W.S. CONNECTION AT CURB OVER FLOOR BEAM



QUARTER PLAN OF CURB



POUR DIAGRAM

CONCRETE QUANTITIES

Pour	Location	Cu. Yds. Ea.
A	Slab	8.5
B	"	5.7
C	"	5.7
D	"	5.7
E	"	8.7
F	Curb	3.4
G	"	3.4
	TOTAL	41.1

MISCELLANEOUS QUANTITIES

Copper	67 lbs.
Joint Waterproofing	110 Sq. Ft.

NEW STRUCTURAL STEEL

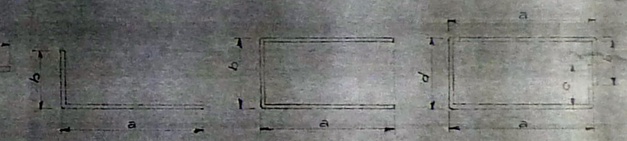
Mark	No.	Description
BP1	2	0.2⅝ x 1'-10" Bevel Pl.
BP2	2	10'-3½ x 1'-6" Bevel Pl.
MP1	2	16 x ½ x 1'-11" Masonry Pl.
MP2	2	18 x ½ x 1'-7" Masonry Pl.
AB1	4	1½" ϕ Bolt - 1'-6" long
AB2	4	1½" ϕ Dowel - 1'-3" long
—	300	¾" ϕ Rivets

BAR LIST

Mark	Dimensions a	b	c	d	e	Size	Length	No.	Weight
A1	28'-0"					1" ϕ	28'-0"	9	573
A2	28'-0"					⅝" ϕ	28'-0"	4	117
A3	6'-6"					⅝" ϕ	6'-6"	14	127
A4	28'-6"					1" ϕ	28'-6"	11	533
A5	28'-6"					⅝" ϕ	28'-6"	6	180
A6	7'-6"					¾" ϕ	7'-6"	14	158
A7	19'-0"					¾" ϕ	19'-0"	3	43
B1	2'-3"	2'-3"				⅝" ϕ	4'-6"	6	29
D1	3'-2"	3'-6½"				½" ϕ	9'-10"	8	53
D2	3'-0"	3'-6½"				½" ϕ	9'-6"	8	51
K1	3'-6½"	9"	9"	1'-4"		½" ϕ	9'-10"	22	144
K2	3'-6½"	1'-0"	1'-0"	1'-11"		½" ϕ	10'-11"	24	175
				Total Abutment A & B					2846
A101	21'-6"					⅝" ϕ	21'-6"	107	2299
A102	28'-6"					½" ϕ	28'-6"	98	1869
A103	4'-0"					⅝" ϕ	4'-0"	60	250
A104	5'-6"					⅝" ϕ	5'-0"	16	53
B101	2'-3"	1'-0"				½" ϕ	3'-3"	32	69
D101	6"	1'-3"				½" ϕ	2'-2"	76	110
D102	1'-0"	27'-6"				½" ϕ	29'-5"	6	118
D103	9"	2'-0"				½" ϕ	3'-5"	4	9
				Total Superstructure					4886
				Grand Total Steel Reinforcement					7528 lbs.

Note: All steel reinforcement must be High Bond A.S.T.M. Specification A-305-43

BAR BENDING DIAGRAMS



A BARS — B BARS — D BARS — K BARS

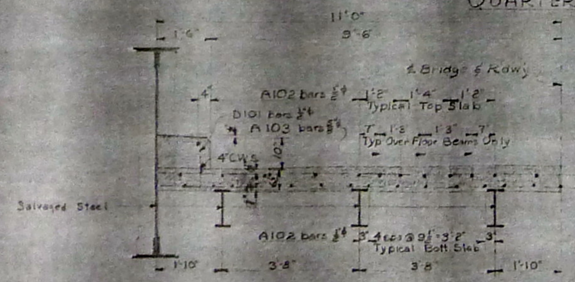
STRUCTURAL STEEL NOTES

Fabrication: Michigan State Highway Departments Standard Specifications for Road & Bridge Construction - 1950 Edition.
Design: Michigan State Highway Departments Specifications for the Design of Highway Bridges - 1944 Edition (H15-44 Loading)
Rivets: Rivets shall be ¾" ϕ.
Field Connections: Field connections, unless otherwise noted, shall be rivetted.
Open Holes: Existing open holes for rivets shall be reamed to 15/16" ϕ unless otherwise noted.
Shop Paint: In addition to the shop paint provisions of the Standard Specifications the top surfaces of masonry plates shall be coated in accordance with the requirements for machine finished surfaces.
Field Paint: After all concrete work is completed all exposed steel surfaces shall be thoroughly cleaned and painted with one coat each of painting mixtures No. 2A and No. 5.

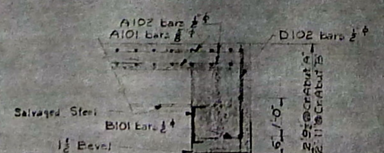
Structural Steel - Furnishing & Fabricating 780 Lbs.
Structural Steel - Erection 49,780 Lbs.

SALVAGED STRUCTURAL STEEL

No.	Description
2	Plate Girder - 55'-0" x 5'-7½", ⅜" Web Pl., 6 x 6 x ⅝" Ls, 14 x ⅜" Cover Pl.
4	Int. Floor Beam - 2'-4" I 79.9# - 21'-9½", 4 x 4 x ½" Clip Ls.
2	End Floor Beam - 3" x 3" x ⅜" Ls 21'-0", ⅜" Pl., ⅜" bars
18	Int. Stringers - 12" I 31.8# 10'-9", 4 x 4 x ½" Clip Ls.
12	End Stringers - 12" I 31.8# 10'-10½", 4 x 4 x ½" Clip L one end only.



SECTION A-A



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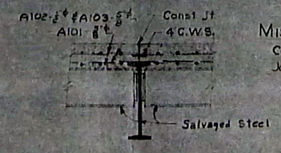

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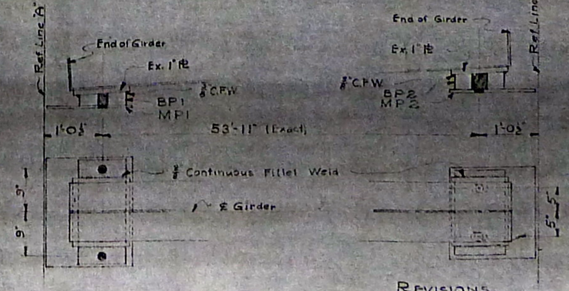
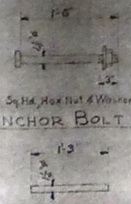
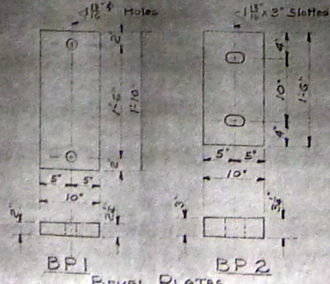




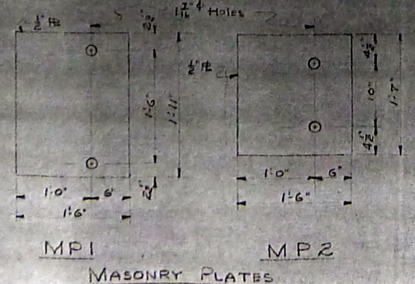
ANCHOR BOLT AB1

POSITION DOWEL AB2



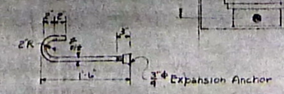
BP1 BP2

BEVEL PLATES



MP1 MP2

MASONRY PLATES



HOOK BOLT HB1
32 Required

REVISIONS

No.	Description	Date	By

Revised 12-9-52

LIVINGSTON COUNTY ROAD COMMISSION
BRIDGE CROSSING HURON RIVER ON MC CABE ROAD
SUPERSTRUCTURE DETAILS
STRUCTURAL STEEL DETAILS
STEEL REINFORCEMENT DETAILS

PREPARED BY FOSTER ENGINEERING CO.
LANSING, MICHIGAN

APPROVED [signature] 10-31-52
REGISTERED CIVIL ENGINEER

APPROVED
COUNTY ENGINEER

Drawn by	J.R.F.	10-8-52
Checked by	V.L.	10-29-52
Sheet 4 of 4		

B1 of 47-6-24