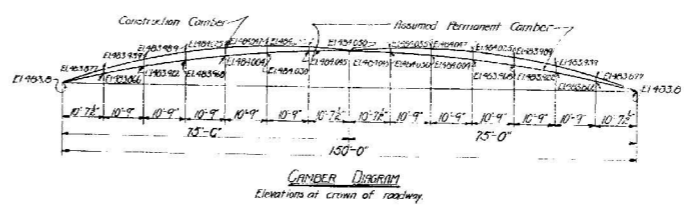


TOPOGRAPHIC MAP OF BRIDGE SITE

Scale - 4" = 1"



BILL OF MATERIAL

Location	Approx. Cu. Yds. of Concrete	Reinforcing Steel (lbs)	Files	Extra Cans for Piles	For details see
Abutment A	269.53		156	23.6	A-3-A-35, 37, 36
Abutment B	225.85	176.8	126	16.1	A-3-A-35, 37, 36
Pier	460.3	106,852	70		A-3-A-37
Girders					A-3-C-14, 15
Finishing					A-3-A-37
Link Plate					A-3-A-37
Shoring Steel					A-3-C-49
Substructure Steel		46,967			A-3-A-37
Expansion Joints					B-3-A-10
Deck & Slabs					
Black Oil					
Totals	955.68	176.8	352	39.7	B-3-B-30

Grand Total concrete 1,129.3 cu. yds.
Total Weight of cast steel 1,129,300 lbs.

Notes:

All material and workmanship to be in accordance with Michigan State Highway Department's Specifications for Road and Concrete Highway Bridges, 1922 Edition.

All sections shall be built with all their dimensions to be given in one continuous run.

No unscreened gravel will be permitted.

Grade A concrete to be used in the superstructure, Grade B concrete to be used in the abutments, Grade C concrete to be used in the piers.

Piles will not be required unless ordered by the Engineer's written instructions have been made.

No substitutions of reinforcing steel will be permitted unless it can be shown that sections called for cannot be purchased in the open market.

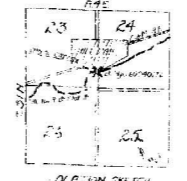
The Contractor will sort and pile reinforcing steel on the ground in such a manner as to be accessible for checking by the Inspector.

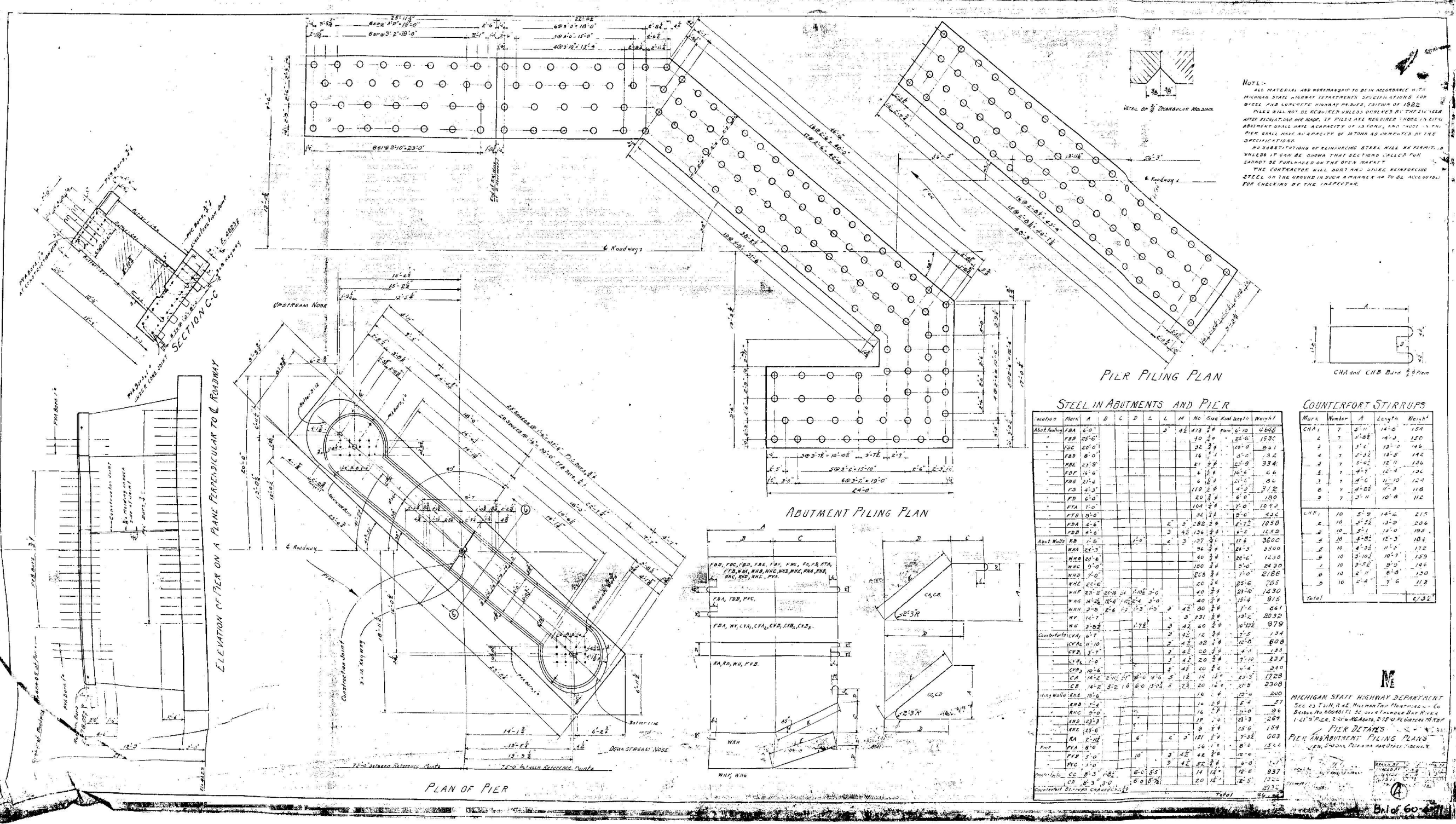
The top of the floor slab is to be finished and troweled to produce a smooth, hard surface true to the section shown.

The reinforcing steel in the girders is to be supported on steel bar chairs of an approved pattern, spaced not more than 18" c/c.

The reinforcing steel in the floor slabs is to be supported on bar chairs spaced not more than 18" c/c in either direction.

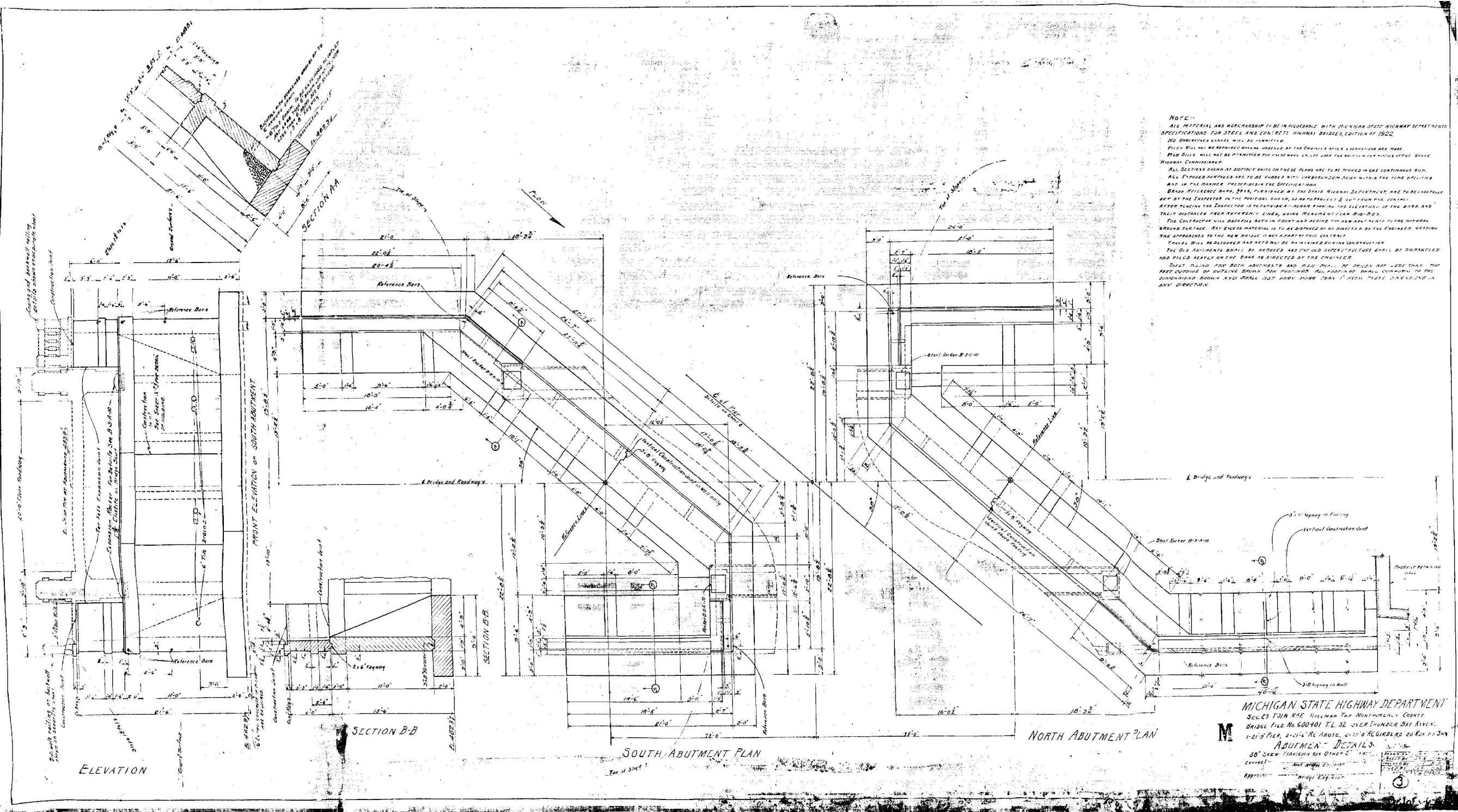
Brass reference lines 2" x 4" furnished by the State Highway Department are to be carefully placed by the Inspector in the positions shown on project & set out from the center. After placing the Inspector is to furnish a diagram showing the elevations of the bars and their distances from reference lines, using measurement plan B-10-B-22.





STEEL IN ABUTMENTS AND PIER

Location	Mark	A	B	C	D	E	L	M	No.	Size	Kind	Length	Weight
Abut. Piling	FBA	6'-0"						42	473	3/4	Perm.	6'-10"	4050
	FBB	25'-6"						30	30	3/4	Perm.	25'-0"	1530
	FBC	20'-0"						32	32	3/4	Perm.	20'-0"	961
	FBD	8'-0"						16	16	3/4	Perm.	8'-0"	82
	FBE	23'-9"						21	21	3/4	Perm.	23'-9"	334
	FBF	14'-6"						6	6	3/4	Perm.	16'-6"	66
	FBG	21'-6"						6	6	3/4	Perm.	21'-6"	60
	FBS	4'-3"						110	3/8		Perm.	4'-3"	312
	FBT	6'-0"						20	3/4		Perm.	6'-0"	180
	FBU	7'-0"						104	3/4		Perm.	7'-0"	1092
	FVB	9'-0"						32	3/4		Perm.	9'-0"	426
	FVA	4'-6"						2	282	3/8	Perm.	4'-6"	1050
	FVB	4'-6"						42	156	3/8	Perm.	4'-6"	1249
Abut. Walls	WA	1'-5"						2	37	3/4	Perm.	1'-5"	3600
	WB	20'-8"						60	3/4		Perm.	20'-6"	1200
	WC	20'-8"						160	3/4		Perm.	20'-0"	2430
	WD	7'-0"						208	3/4		Perm.	7'-0"	2186
	WE	22'-8"						20	3/4		Perm.	25'-6"	705
	WF	23'-5"	20'-10"	24'	10'-0"			40	3/4		Perm.	23'-0"	1430
	WG	14'-0"	12'-4"	12'-4"	3'-0"			40	3/4		Perm.	15'-4"	915
	WH	2'-0"	2'-6"	1'-0"	1'-0"			2	80	3/4	Perm.	1'-0"	861
	WI	12'-7"						2	231	3/8	Perm.	13'-2"	2232
	WJ	3'-0"						3	60	3/8	Perm.	10'-10"	979
Counterforts	CA	1'-7"						3	12	3/4	Perm.	7'-5"	134
	CB	1'-10"						3	12	3/4	Perm.	7'-0"	123
	CC	1'-7"						3	12	3/4	Perm.	7'-10"	135
	CD	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CE	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CF	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CG	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CH	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CI	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CJ	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CK	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CL	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CM	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CN	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CO	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CP	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CQ	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CR	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CS	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CT	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CU	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CV	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CW	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CX	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CY	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CZ	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CA	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CB	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CC	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CD	1'-10"						3	12	3/4	Perm.	7'-10"	135
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	CA	1'-10"						3	12	3/4	Perm.	7'-10"	135
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	CJ	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CK	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CL	1'-10"						3	12	3/4	Perm.	7'-10"	135
	CM	1'-10"						3	12				



NOTE:
 ALL MATERIAL AND WORKMANSHIP TO BE IN ACCORDANCE WITH MICHIGAN STATE HIGHWAY DEPARTMENT SPECIFICATIONS FOR STEEL AND CONCRETE HIGHWAY BRIDGES, EDITION OF 1922.
 NO DIMENSIONED LINES WILL BE IDENTIFIED.
 PILES WILL BE REMOVED UNLESS ORDERED BY THE ENGINEER AFTER EXAMINATION AND MADE.
 MOD BILLS WILL NOT BE PERMITTED FOR BRIDGEWORK EXCEPT FOR PILES AND BRIDGEWORK UNDER THE STATE HIGHWAY COMMISSIONERS.
 ALL SECTIONS SHOWN AS DISTINCT UNITS ON THESE PLANS ARE TO BE WORKED IN ONE CONTINUOUS RUN.
 ALL EXPOSED SURFACES ARE TO BE CURBED WITH LARGER RADIUS THAN SPECIFIED WITHIN THE TIME SPECIFIED AND IN THE MANNER PROVIDED IN THE SPECIFICATIONS.
 BRIDGE REFERENCE MARKS, PLACED BY THE STATE HIGHWAY DEPARTMENT, ARE TO BE CAREFULLY KEPT BY THE INSPECTOR IN THE POSITIONS SHOWN, SO AS TO REMAIN PARALLEL & OUT FROM THE BRIDGE. AFTER PLACING THE INSPECTOR IS TO OBTAIN A RECORD BOOKING THE ELEVATION OF THE MARKS AND THEIR DISTANCES FROM REFERENCE LINES, USING MEASUREMENT PLAN B10-B13.
 THE CONTRACTOR WILL BACKFILL BOTH IN FRONT AND BEHIND THE NEW ABUTMENTS TO THE NATURAL GROUND SURFACE. ANY EXCESS MATERIAL IS TO BE DISPOSED OF AS DIRECTED BY THE ENGINEER. DURING THE APPROACH TO THE NEW BRIDGE THERE IS TO BE A PROTECTED CONDUIT.
 TRAILS WILL BE MAINTAINED AND REFERENCE MARKS MAINTAINED DURING CONSTRUCTION.
 THE OLD ABUTMENTS SHALL BE REMOVED AND THE OLD SUPERSTRUCTURE SHALL BE DEMOLISHED AND FILLED HEAVILY ON THE BANK AS DIRECTED BY THE ENGINEER.
 SHEET PLANS FOR BOTH ABUTMENTS AND PILES SHALL BE DRAWN NOT LESS THAN TWO FEET OUTSIDE OF OUTLINE BRIDGE PIER FOOTINGS. ALL FOOTINGS SHALL CONFORM TO THE DIMENSIONS SHOWN AND SHALL NOT VARY MORE THAN 1/8" FROM THESE DIMENSIONS IN ANY DIRECTION.

MICHIGAN STATE HIGHWAY DEPARTMENT
 SOCC 23 IN R4E WILLMAN TWP MONTMORISSE COUNTY
 BRIDGE FILE NO 600401 T.L. 32 OVER THUNDER BAY RIVER
 1-21'5" PER. 2-21'5" RC ABUTS. 2-17'0" RC GIRDS. 20' RC 15'5" SKW
ABUTMENT DETAILS
 38' SKW. DIVISION BY OTHER S. 1925
 Corrected
 Approved

ELEVATION

SECTION B-B

SOUTH ABUTMENT PLAN

NORTH ABUTMENT PLAN