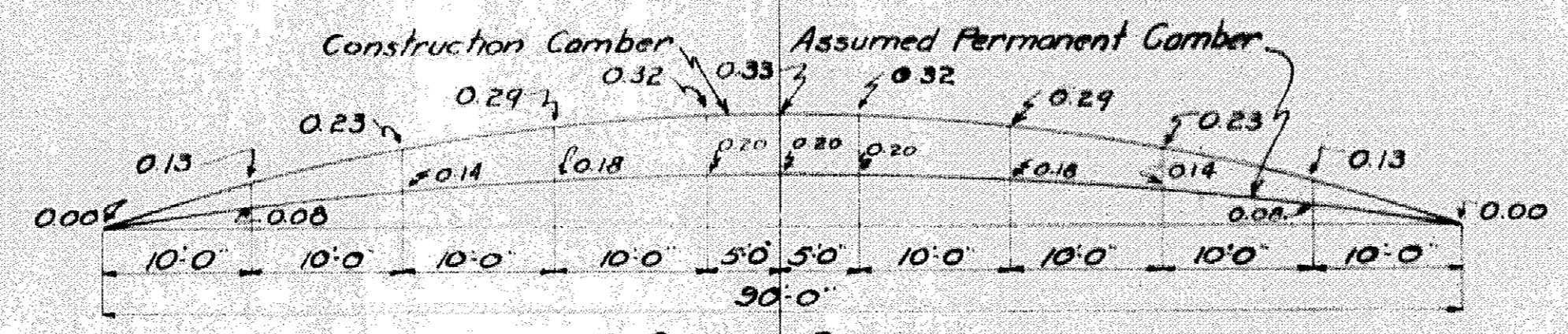


NAME PLATE BLOCK DETAILS
 Name plates to be placed on right hand side of each approach. Similar caps to be placed on left hand pilasters. If name plates are not available at time of pouring girders form a grout notch as shown to permit placing name plates later.

For details of pilasters and sidewalks see sheet 2.

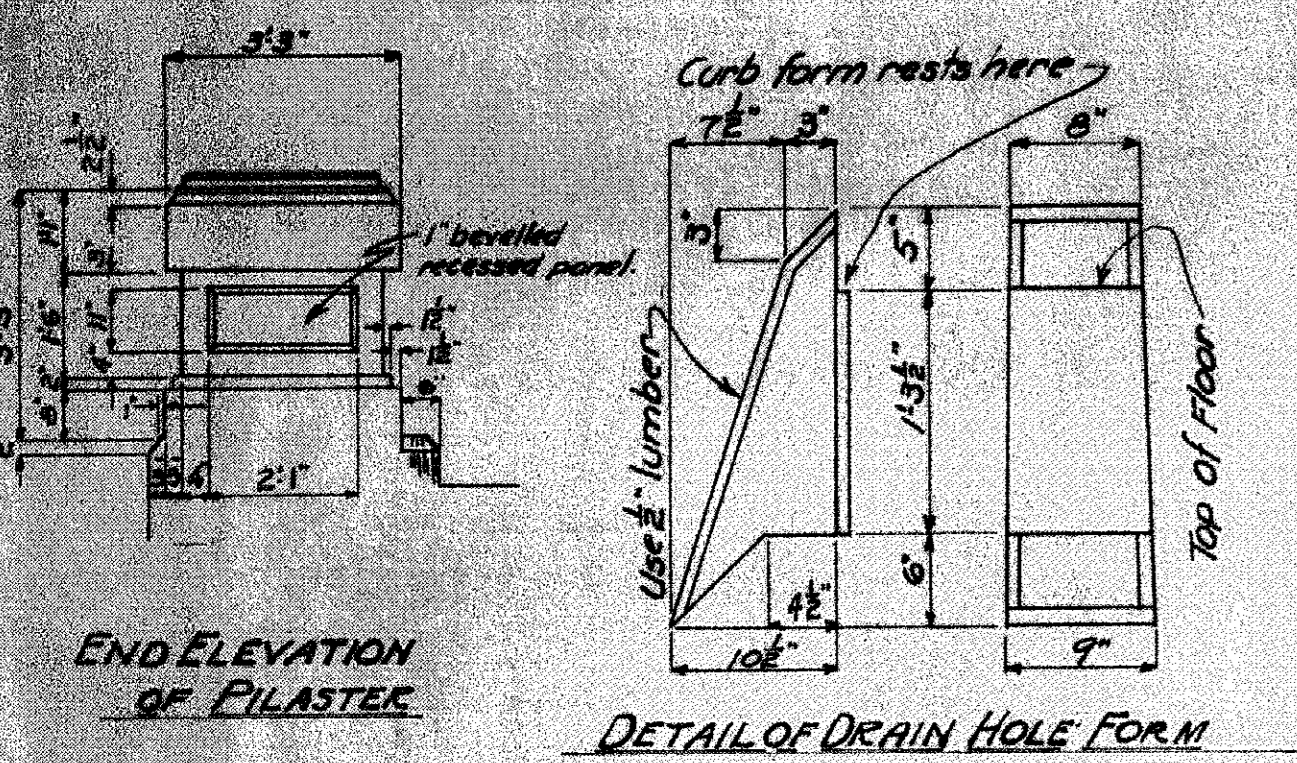
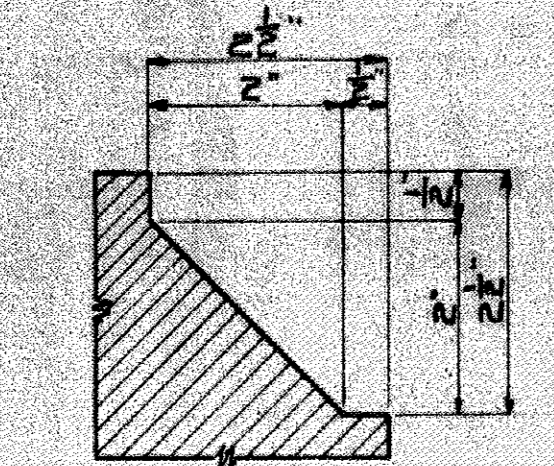
HALF SECTION ON E

HALF ELEVATION WITH SIDEWALKS



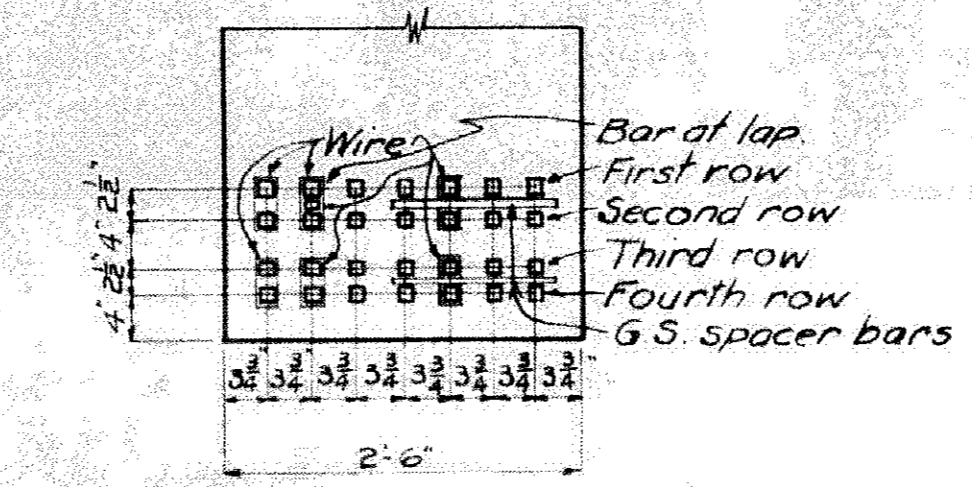
CAMBER DIAGRAM
 Add these amounts to elevation of crown of roadway.

DETAIL OF CORNER FINISH

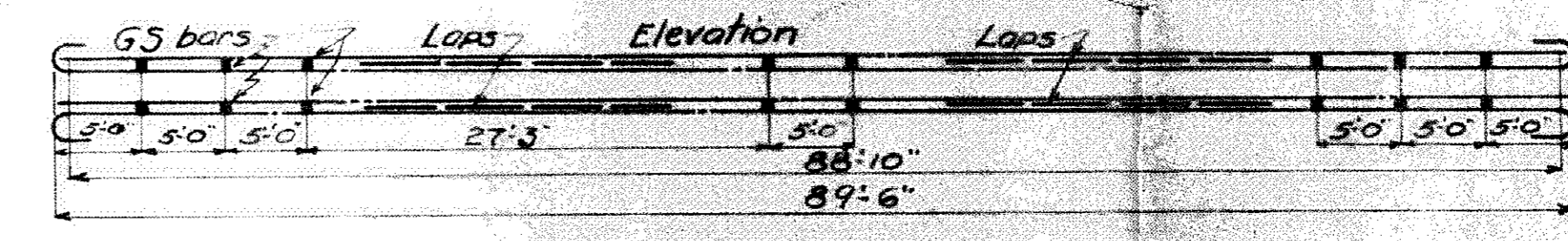
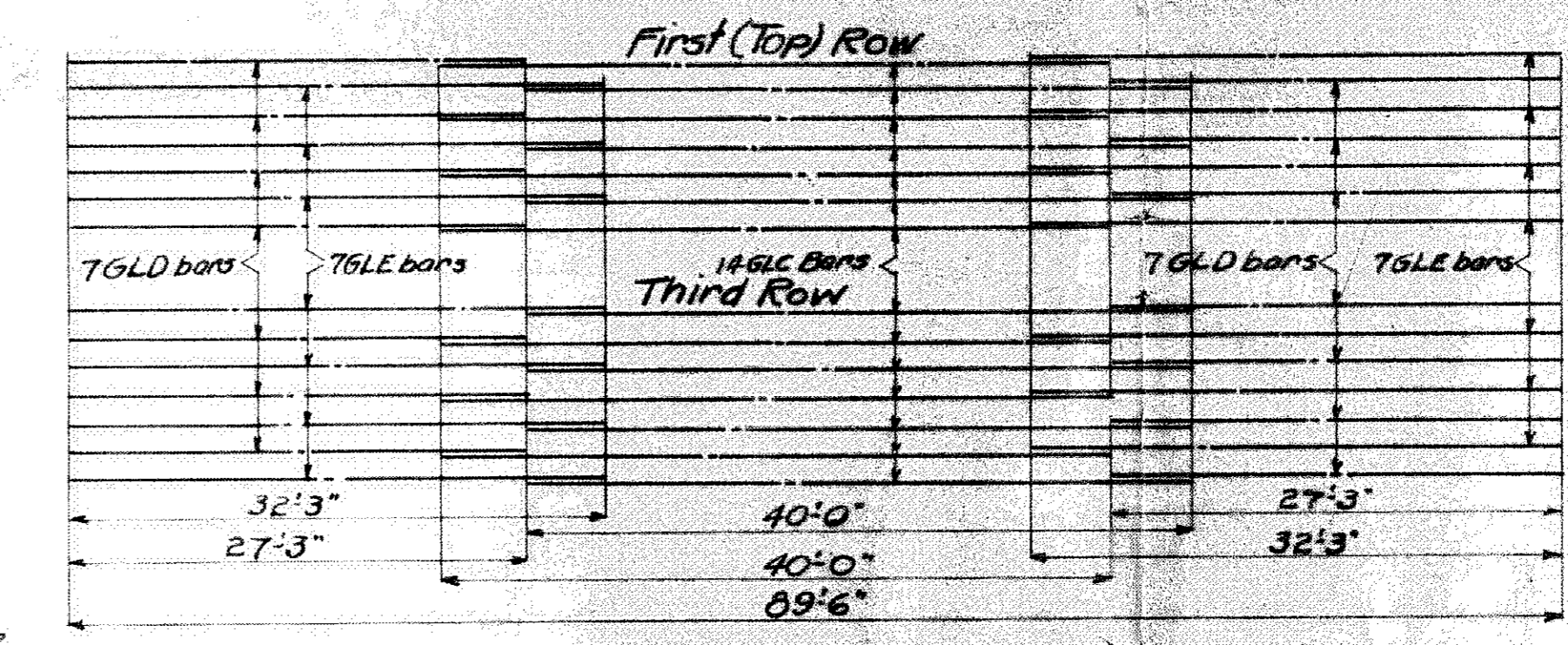
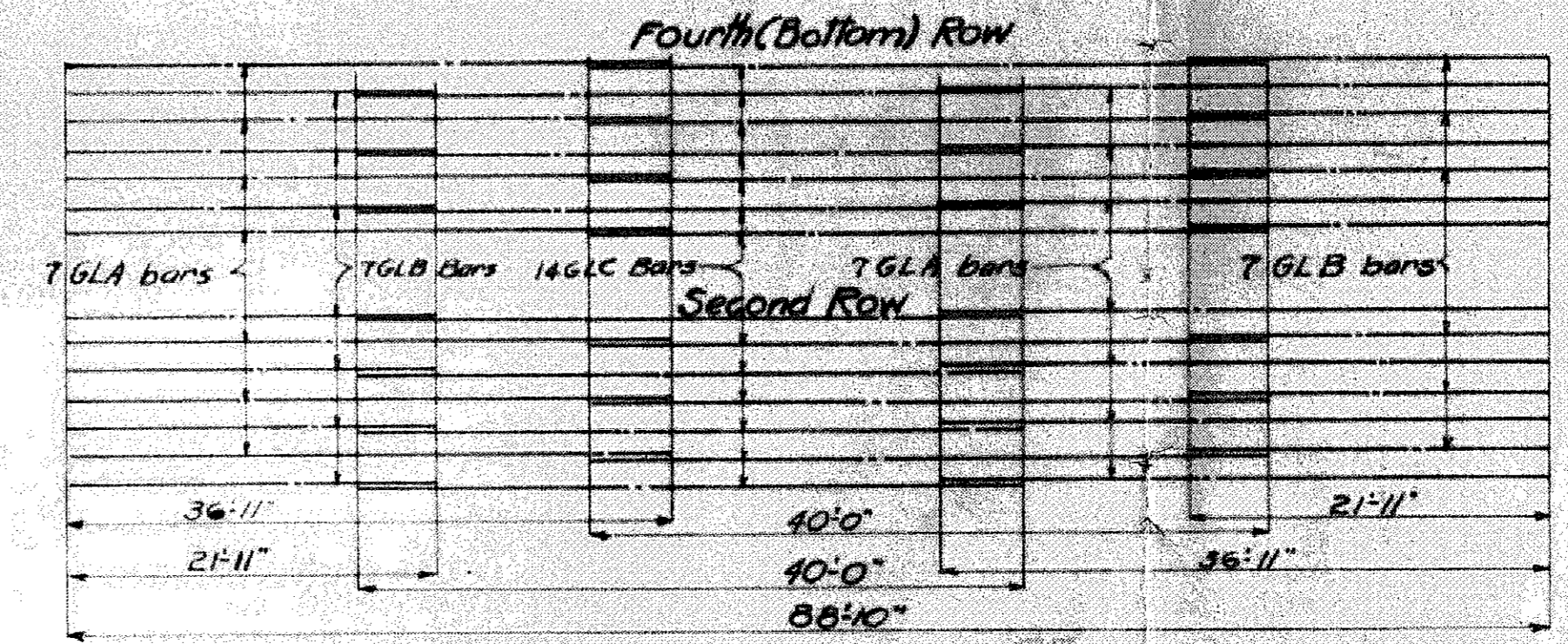


END ELEVATION OF PILASTER

DETAIL OF DRAIN HOLE FORM

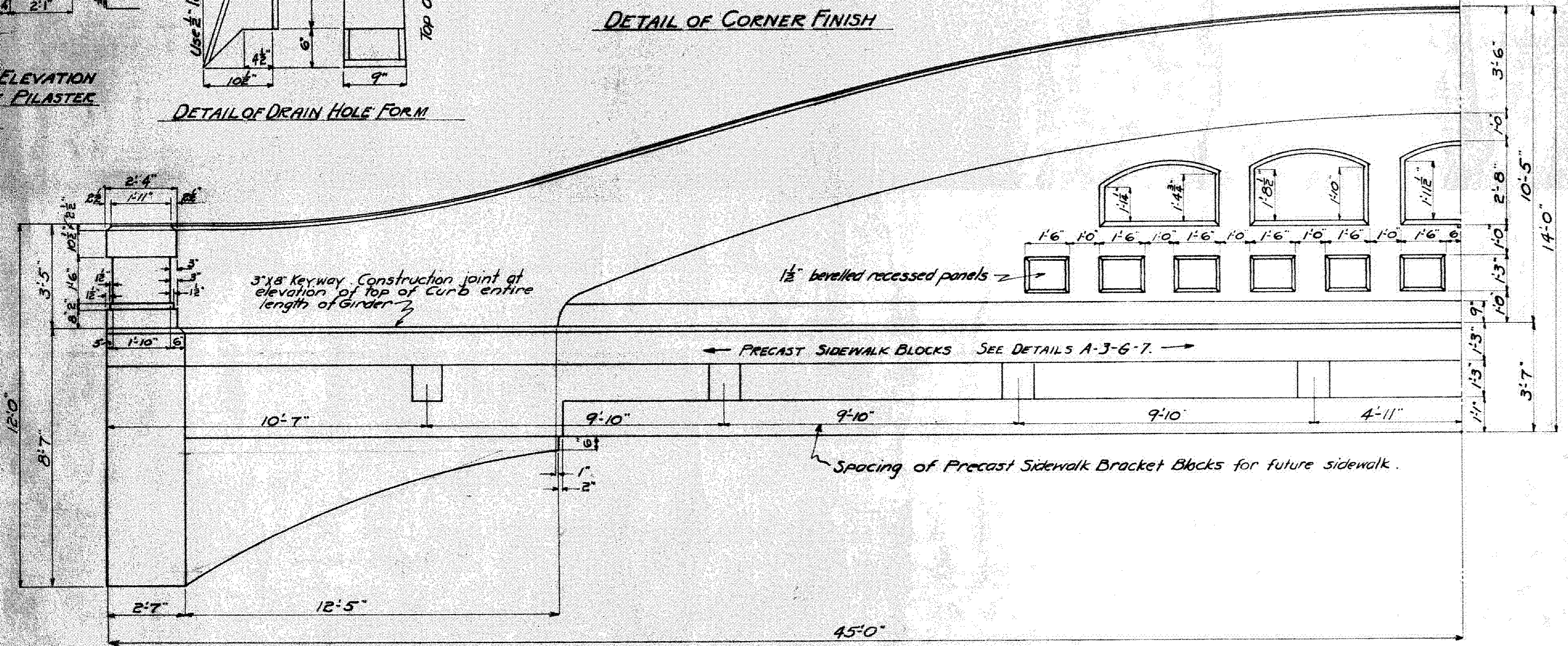


ENLARGED CROSS SECTION
 NOTES:
 Lapping of bars at splices to be in a vertical plane as shown in X-section and elevation.
 Bars in first and second rows and in the third and fourth rows are to be securely wired together in pairs for their entire length with N#18 wire (B.W.G.), as shown in X-section.



PLAN OF GIRDER STEEL SHOWING LAPS

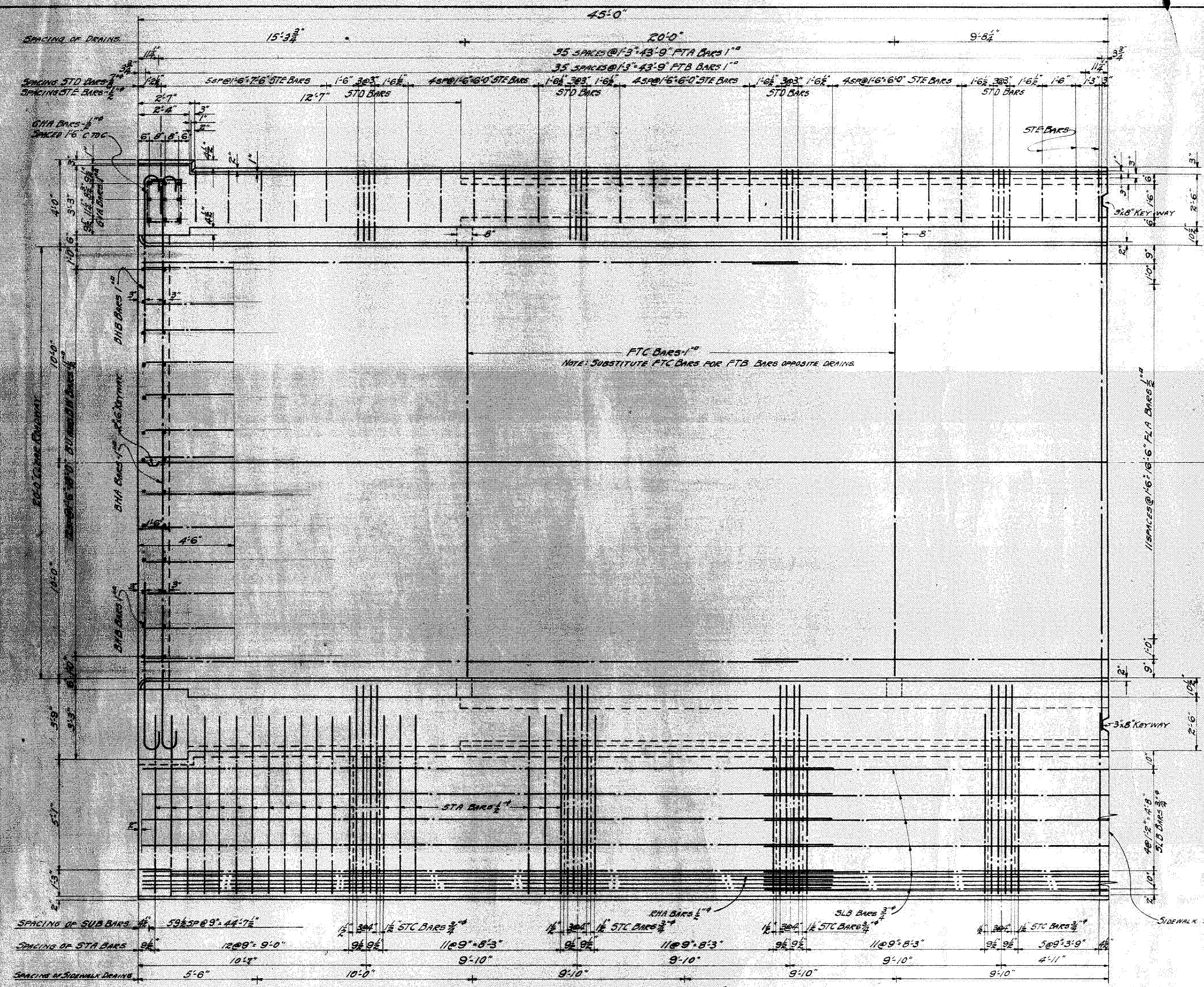
Notes:
 All material and workmanship to be in accordance with Michigan State Highway Department's Specifications for Steel and Concrete Highway Bridges, 1922 Edition, (revised).
 All sections shown as distinct units on these plans are to be poured in one continuous run.
 Grade A concrete to be used for superstructure.
 Substitutions of reinforcing steel will not be permitted unless it can be shown that sections called for on these plans cannot be secured in the open market.
 No unscreened gravel will be permitted.
 The Contractor will sort and store 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 floated and troweled to produce a smooth hard surface and true to the section shown.
 The reinforcing steel in the girders is to be supported on metal bar chairs of an approved pattern spaced not more than six feet apart. The reinforcing steel in the floor slab is to be supported on metal bar chairs spaced not more than six feet apart in either direction.
 The use of muscils for falsework will be permitted only with written permission of the State Highway Commissioner.
 All exposed surfaces are to be rubbed with carborundum brick within the time set and in the manner specified by clause 129 of the specifications.



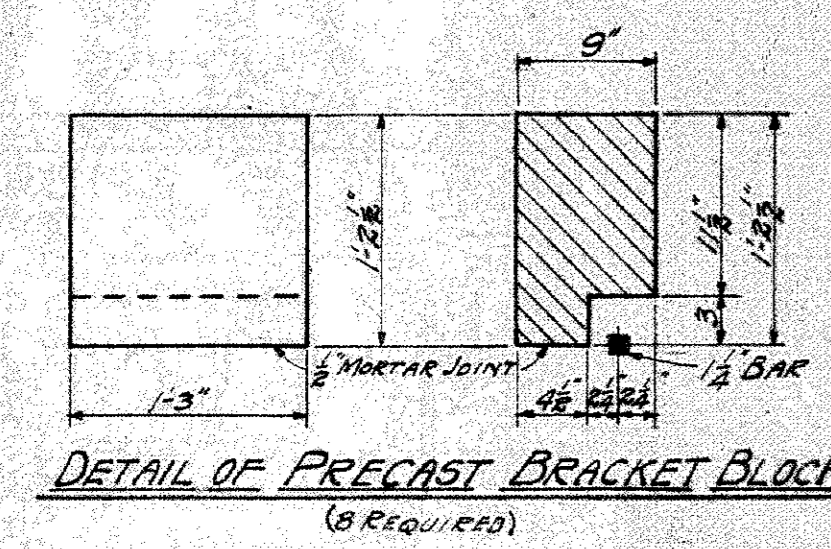
HALF ELEVATION WITH PROVISION FOR FUTURE SIDEWALK

MICHIGAN STATE HIGHWAY DEPARTMENT
 STANDARD 90 FT. R.C. GIRDER 20 FT. ROW'Y
 1-5' FOOT SIDEWALK PROVISIONS-1-5' FOOT SIDEWALK

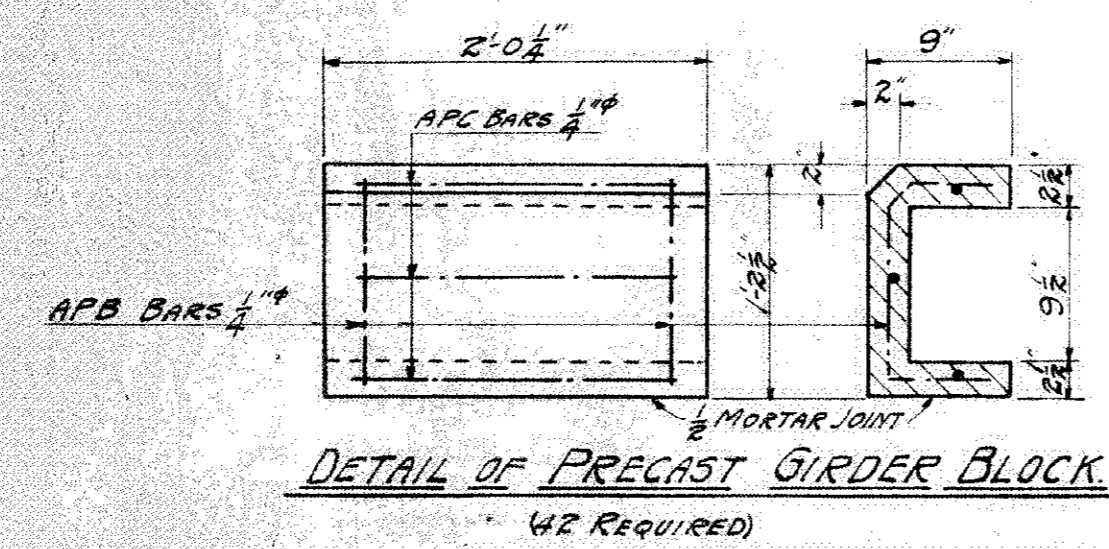
CORRECTED BY	Asst Bridge Engineer	DRAWN BY	C.P.U.	3-7-23
APPROVED BY	Bridge Engineer	TRACED BY	C.P.U.	3-12-23
		CHECKED BY	W.M.V.	6-15-23
		FILED BY	S.P.S.	5-18-23
				A-3-G-6



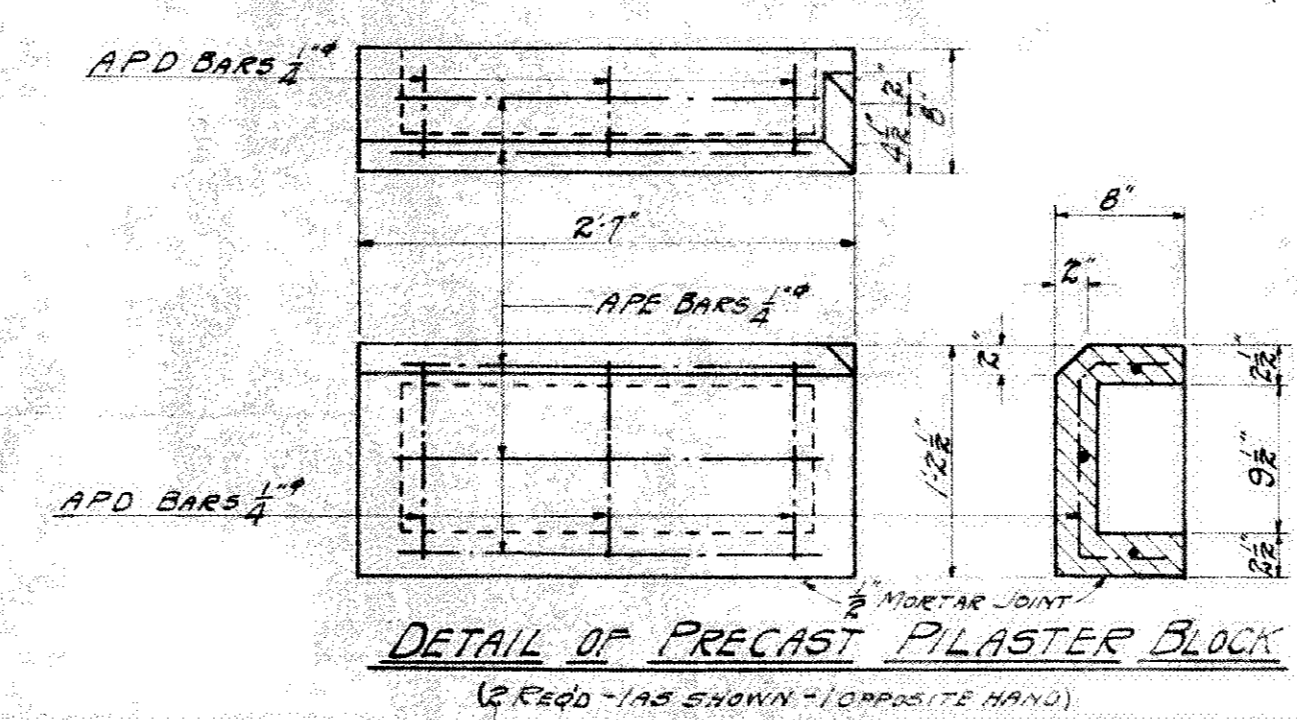
HALF FLOOR PLAN



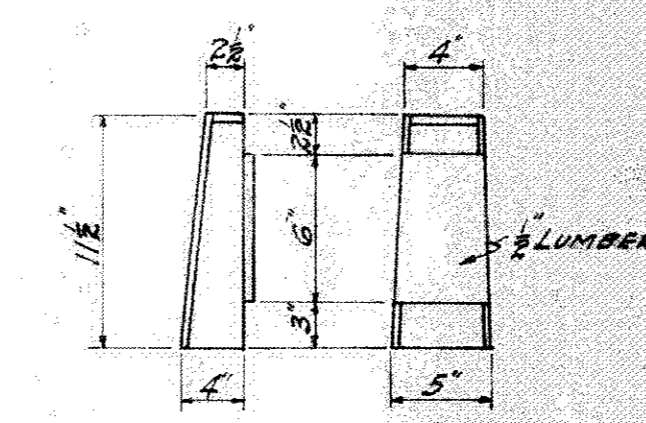
DETAIL OF PRECAST BRACKET BLOCK
(8 REQUIRED)



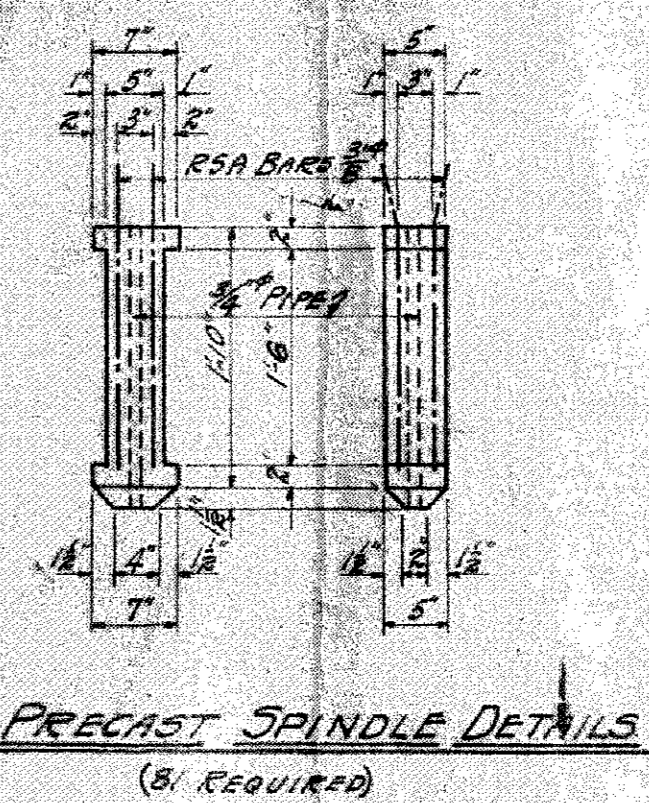
DETAIL OF PRECAST GIRDER BLOCK
(42 REQUIRED)



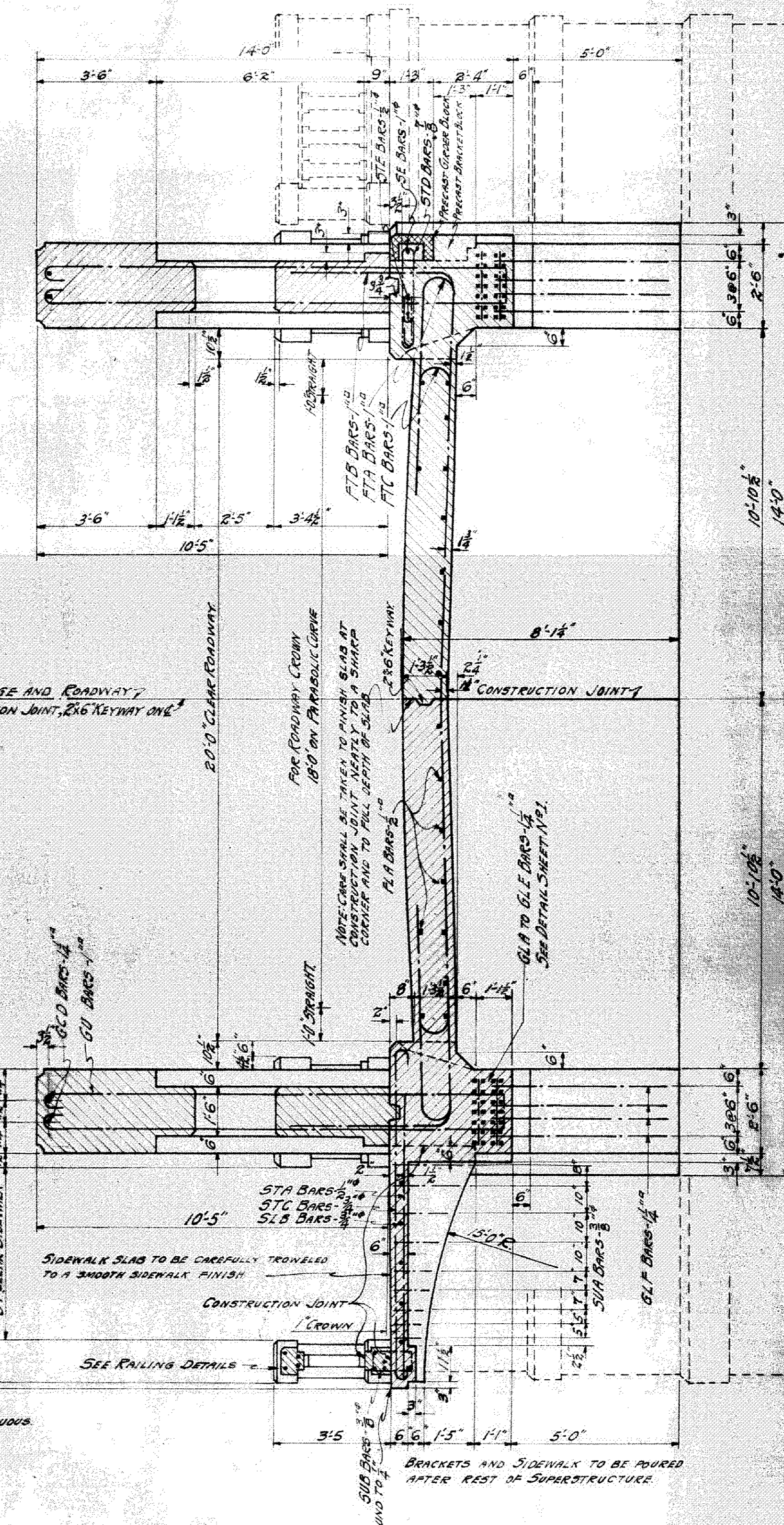
DETAIL OF PRECAST PLASTER BLOCK
(2 Rows - 1 AS SHOWN - 1 OPPOSITE HAND)



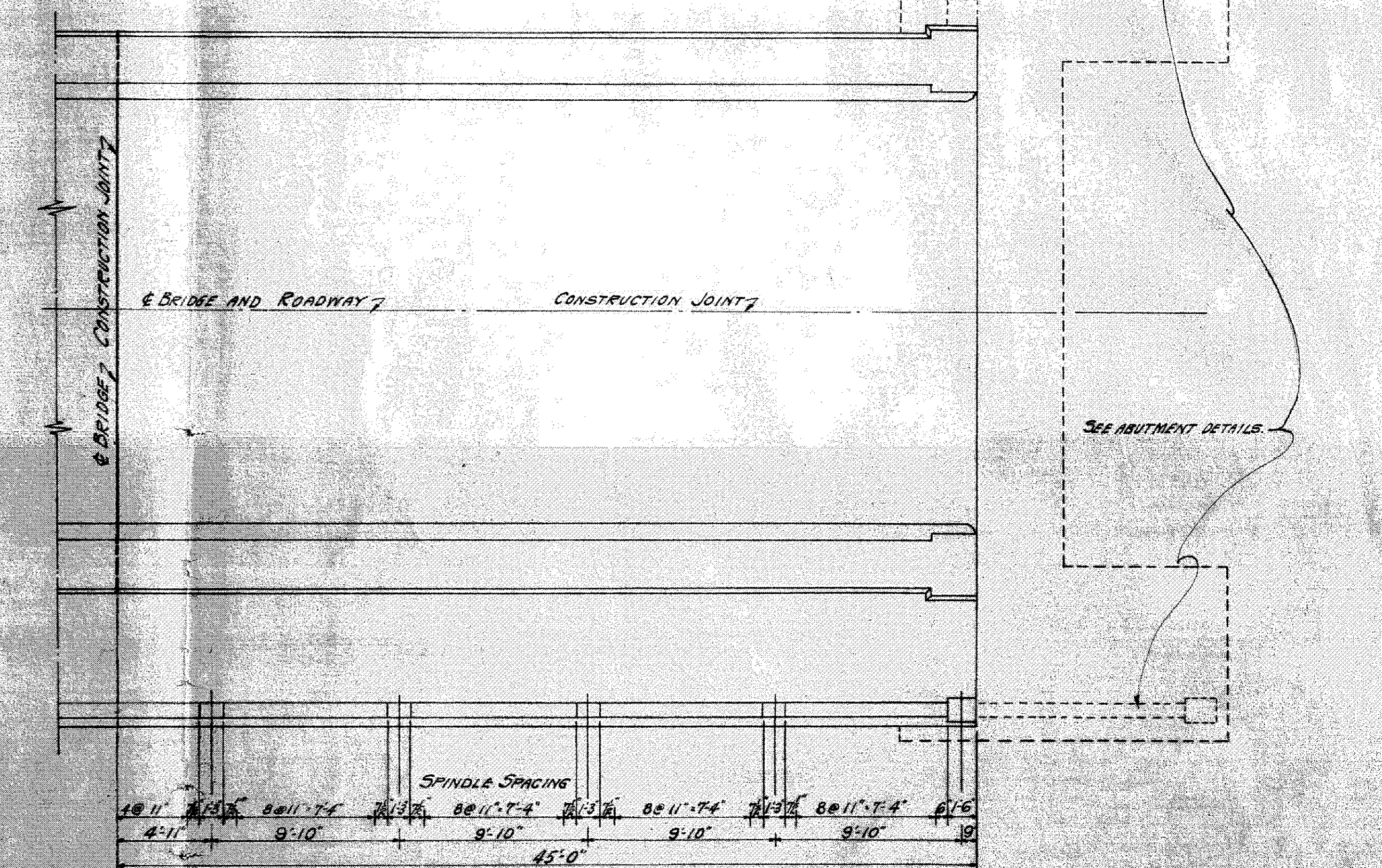
DETAILS OF SIDEWALK DRAIN HOLE FORMS



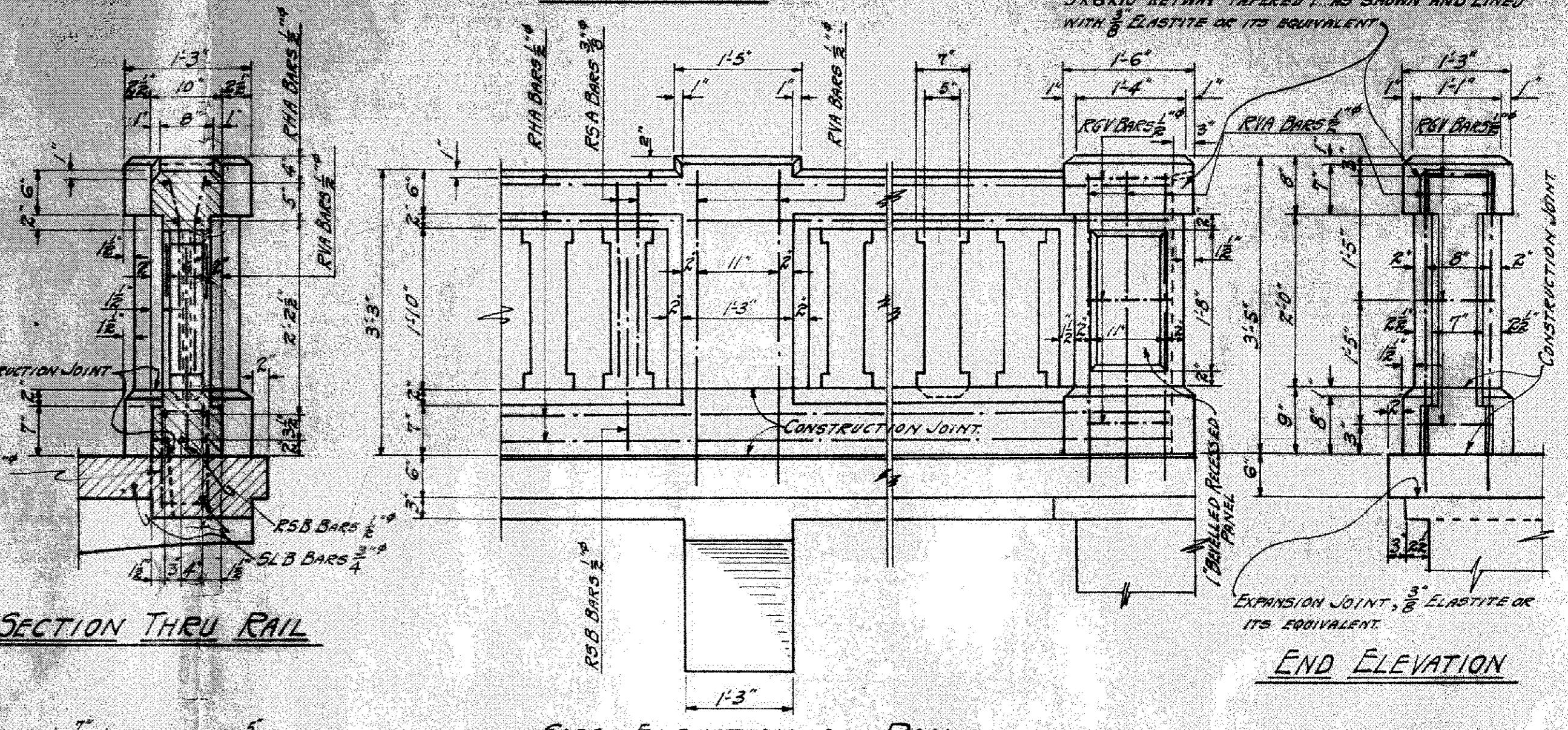
PRECAST SPINDLE DETAILS
(8 REQUIRED)



SECTION THRU RAIL



HALF PLAN



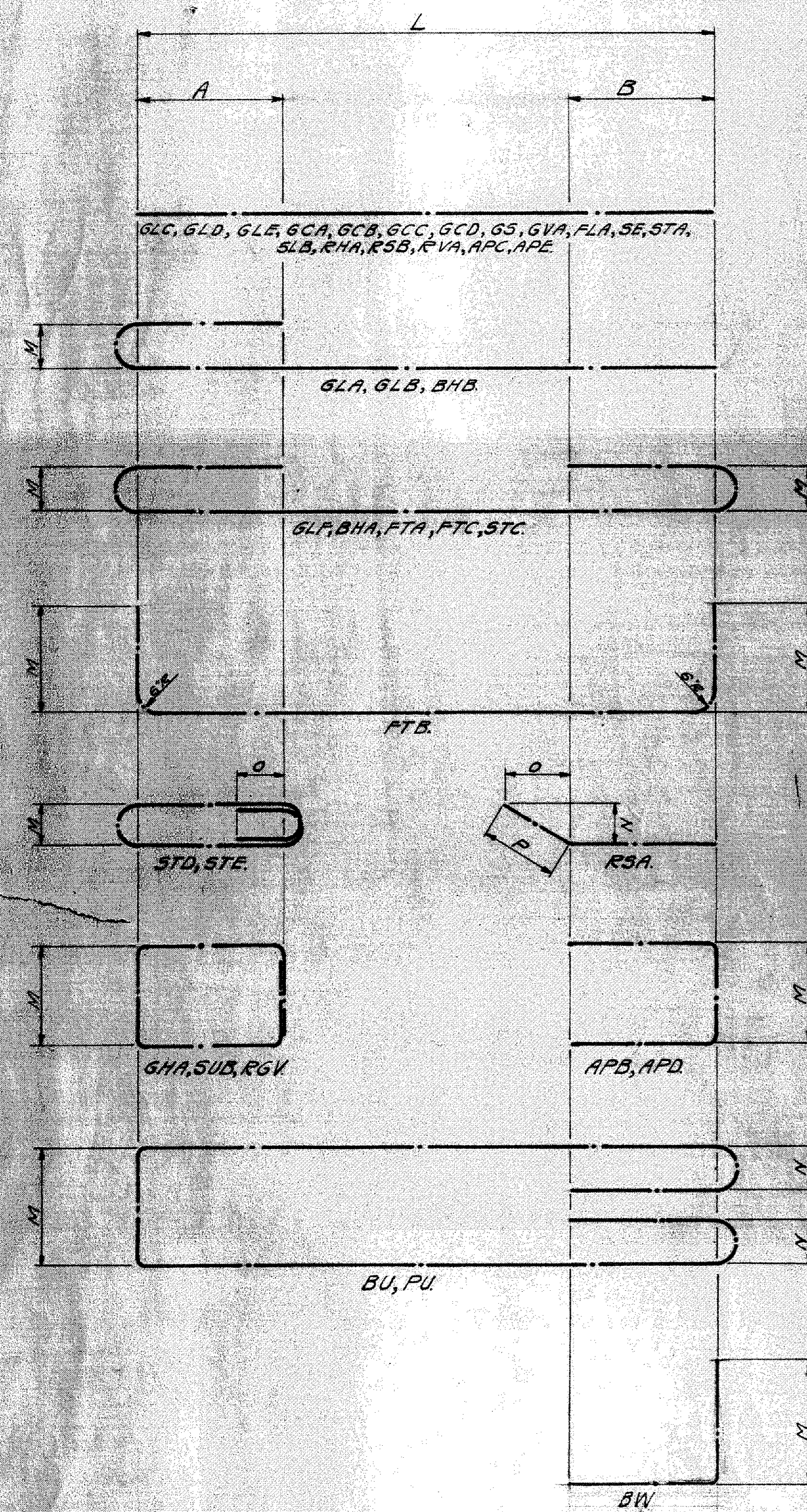
SIDE ELEVATION OF RAIL

END ELEVATION

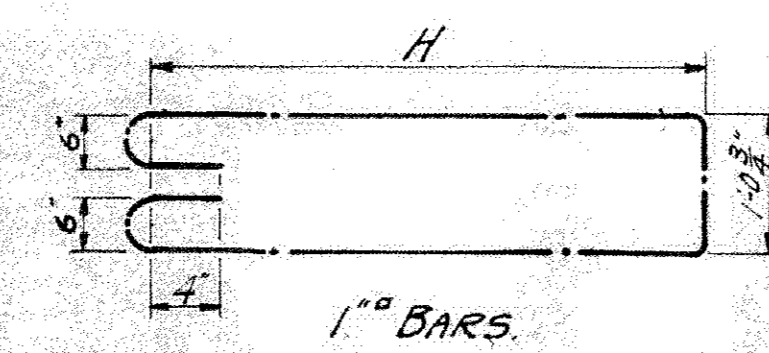
MICHIGAN STATE HIGHWAY DEPARTMENT
STANDARD 90 FT. R.C. GIRDER 20 FT. RDWY
1-5 FOOT SIDEWALK PROVISIONS FOR 1-5 FT. SIDEWALK.

Corrected by _____
Approved by _____
Checked by _____
Drawn by _____
Date _____

BAR BENDING DIAGRAM

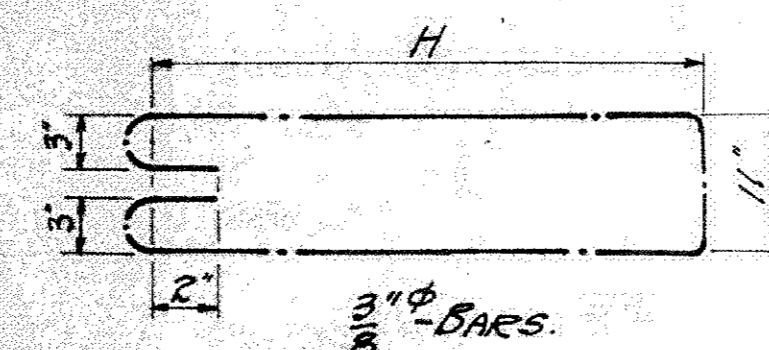


GU BAR TABLE



MARK	Nº	H	LENGTH	WEIGHT
GU1	4	10'-7"	24'-6"	333
2	4	10'-3"	23'-10"	324
3	4	9'-11"	23'-2"	315
4	4	9'-7"	22'-6"	306
5	4	9'-4"	22'-0"	299
6	4	9'-1"	21'-6"	292
7	4	8'-9"	20'-10"	283
8	4	8'-7"	20'-6"	279
9	4	8'-5"	20'-2"	274
10	4	8'-3"	19'-10"	268
11	4	8'-1"	19'-6"	265
12	4	7'-11"	19'-2"	261
13	4	7'-9"	18'-10"	256
14	4	7'-8"	18'-8"	253
15	4	7'-11"	19'-2"	261
16	4	8'-2"	19'-8"	267
17	4	8'-6"	20'-4"	276
18	4	8'-9"	20'-10"	283
19	4	9'-0"	21'-4"	291
20	4	9'-4"	22'-0"	299
21	4	9'-7"	22'-6"	306
22	4	9'-11"	23'-2"	315
23	4	10'-4"	24'-0"	326
24	4	10'-9"	24'-10"	337
25	4	11'-2"	26'-8"	349
26	4	11'-7"	26'-6"	360
27	4	12'-0"	27'-4"	372
28	4	12'-5"	28'-2"	381
29	4	13'-0"	29'-4"	398
30	4	13'-0"	29'-4"	398
31	4	13'-2"	29'-8"	405
32	4	13'-2"	29'-8"	405
TOTAL WEIGHT				10037

SUA BAR TABLE



MARK	Nº	H	LENGTH	WEIGHT
SUA1	8	0'-8"	3'-6"	11
2	8	0'-9"	3'-8"	11
3	8	0'-9"	3'-8"	11
4	8	0'-10"	3'-10"	11
5	8	1'-0"	4'-2"	12
6	8	1'-3"	4'-8"	14
7	8	1'-5"	5'-0"	15
8	8	1'-9"	5'-8"	17
9	8	2'-0"	6'-2"	19
TOTAL WEIGHT				121

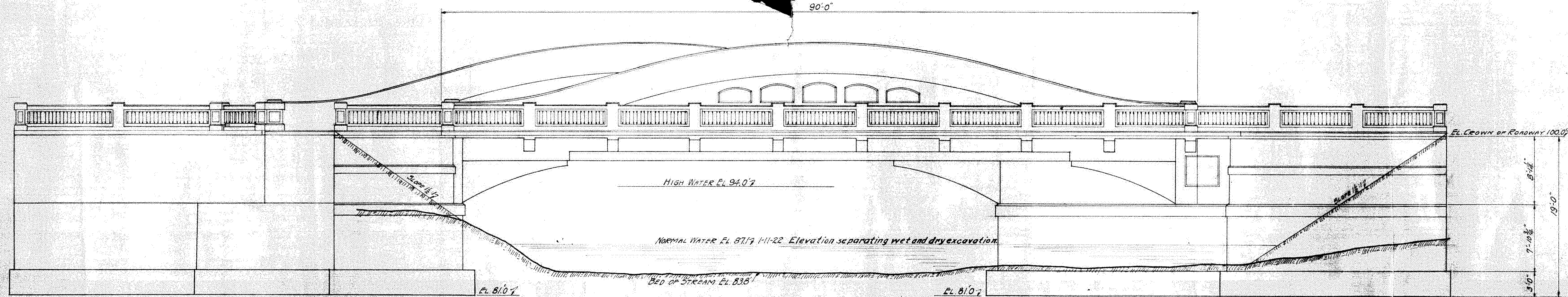
BAR LIST

LOCATION	MARK	A	B	M	N	O	P	L	Nº	SIZE	KIND	SPACING	LENGTH	WEIGHT	
GIRDER	GLA	0'-5"		0'-7 1/2"				36'-11"	28	1 1/2"	Def.	0'-3 3/4"cc	38'-4"	3702	
	GLB	0'-5"		0'-7 1/2"				24'-11"	28	1 1/2"	"	0'-3 3/4"cc	23'-4"	3471	
	GLD							40'-0"	56	1 1/2"	"	0'-3 3/4"cc	40'-0"	11901	
	GLE							27'-3"	28	1 1/2"	"	0'-3 3/4"cc	27'-3"	4054	
	GLF							32'-3"	28	1 1/2"	"	0'-3 3/4"cc	32'-3"	4799	
	GLF	0'-5"	0'-5"		0'-7 1/2"				16'-6"	16	1 1/2"	"	6'-0"cc	19'-4"	1644
	GS								2'-0"	32	1 1/2"	"		2'-0"	340
	GCA								33'-5"	28	1 1/2"	"	0'-3 3/4"cc	33'-5"	4972
	GCB								39'-5"	20	1 1/2"	"		39'-5"	4189
	GCC								34'-5"	8	1 1/2"	"		34'-5"	1463
	GCD								33'-0"	4	1 1/2"	"		33'-0"	701
	GVA								11'-0"	32	1 1/2"	"		11'-0"	1188
	GVA	1'-9"			1'-5 1/2"					32	1 1/2"	"	1'-6"cc	7'-6"	160
	GU										1 1/2"	"			10037
BACKWALL	BHA	0'-4"	0'-4"	0'-6"				26'-0"	24	1 1/2"	"		28'-3"	2308	
	BAB	0'-4"		0'-6"				7'-6"	32	1 1/2"	"		8'-8"	844	
	BU	0'-2"		1'-1"	0'-3"			7'-5"	26	1 1/2"	"	1'-6"cc	17'-2"	378	
BVA	4'-0"		2'-6"					26	1 1/2"	"	1'-6"cc	6'-6"	144		
BVA	0'-3"			1'-0"	0'-2 1/2"			1'-0"	8	1 1/2"	"		4'-0"	13	
FLOOR SLAB	FTA	6'-0"	6'-0"	1'-0"				24'-0"	72	1 1/2"	"	1'-3"cc	39'-2"	9588	
	FTB			4'-9"				25'-0"	68	1 1/2"	"	1'-3"cc	34'-0"	7861	
	FTC	3'-4"	3'-4"	1'-0"				18'-8"	4	1 1/2"	"		28'-6"	388	
	FLA							31'-6"	42	1 1/2"	"	1'-6"cc	31'-6"	112	
SIDEWALK	STA							8'-0"	110	1/2"	"	0'-9"cc	8'-0"	588	
	STC	0'-3"	0'-3"	0'-4 1/2"				9'-2"	32	1 1/2"	"	0'-4"cc	10'-10"	520	
	STD	2'-4"		0'-4 1/2"	0'-4"				32	1 1/2"	"	0'-3"cc	7'-1"	460	
	STE	2'-0"		0'-4 1/2"	0'-4"				47	1 1/2"	"	1'-6"cc	6'-5"	202	
	SE							10'-0"	9	1 1/2"	"		10'-0"	240	
	SLB							32'-0"	18	3/8"	"	1'-2"cc	32'-0"	864	
	SUA										3/8"	"			121
SUB	1'-2"			0'-8"					120	3/8"	"	0'-9"cc	4'-2"	186	
RAILING	RMA							32'-0"	24	1/2"	RAIN		32'-0"	513	
	RSA					0'-4 1/2"	0'-5 1/2"	0'-6"	324	3/8"	"		2'-4"	284	
	RSB							2'-3"	81	1/2"	"		2'-3"	122	
	RVA							3'-7"	44	1/2"	"		3'-7"	105	
	RVB	1'-0"			0'-9"				6	1/2"	"		4'-0"	16	
PRECAST BLOCKS	APB	0'-7"		1'-0"					84	1/4"	"		2'-2"	30	
	APC							1'-9"	126	1/4"	"		1'-9"	37	
	APD	0'-6"		1'-0"					6	1/4"	"		2'-0"	2	
	APE							2'-4"	6	1/4"	"		2'-4"	2	
TOTAL WEIGHT OF STEEL IN SUPERSTRUCTURE														80660	
305.6 CU. YDS. GRADE A CONCRETE IN SUPERSTRUCTURE.															

MICHIGAN STATE HIGHWAY DEPARTMENT

STANDARD 90 FT. R.C. GIRDER 20 FT. ROW WY
1-5 FOOT SIDEWALK PROVISIONS FOR 1-5 FT. SIDEWALK

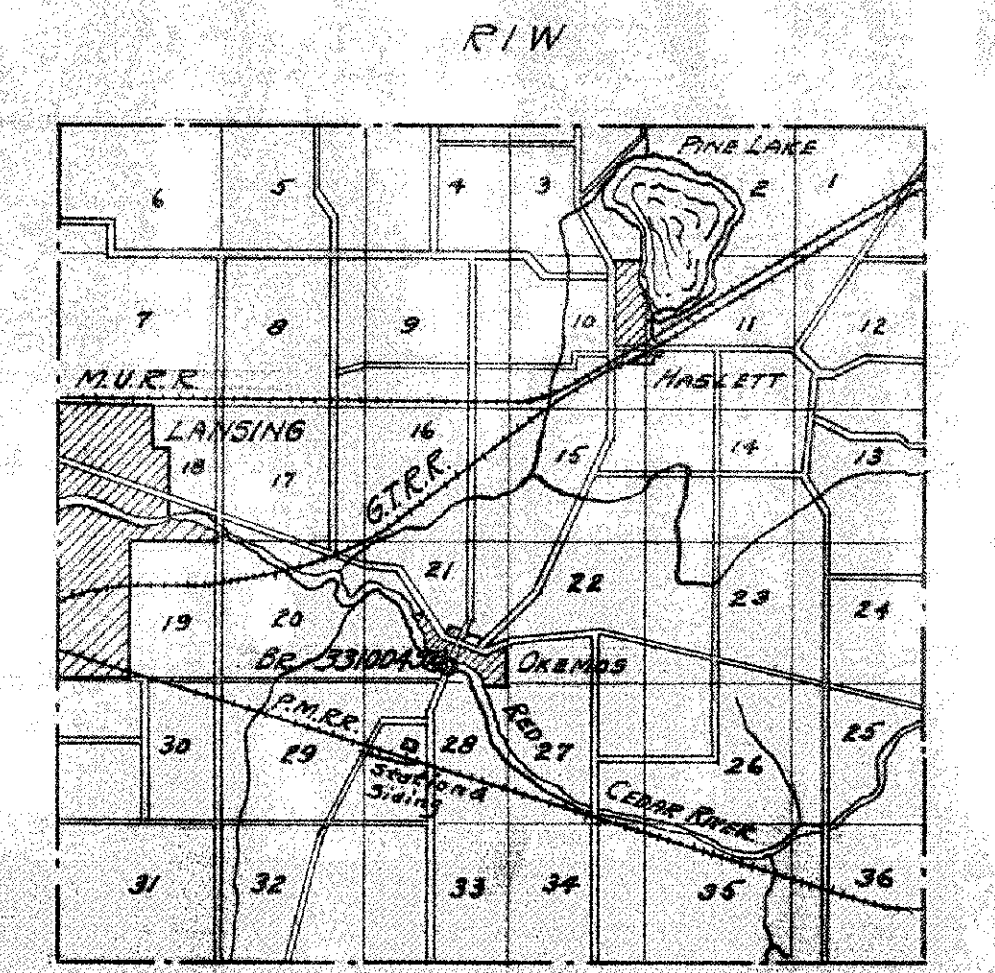
CORRECTED BY: _____
APPROVED BY: _____
Checked By: W.A.V. 6-15-23
Drawn By: E.P.S. 5-18-23
SHEET 3 OF 3 SHEETS
A-3-G-8



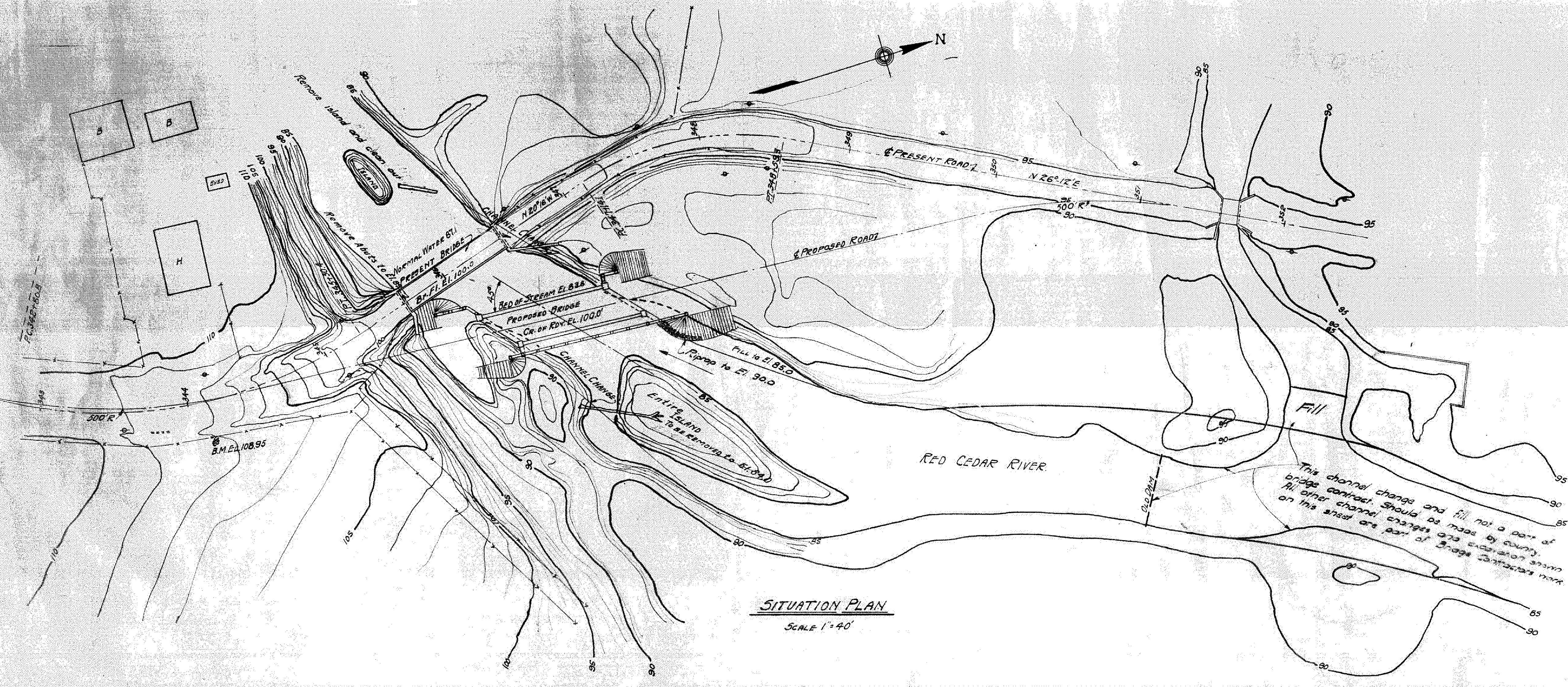
ABUTMENT A (South)

SIDE ELEVATION

ABUTMENT B (North)



MERIDIAN TWP., INGHAM CO.
LOCATION SKETCH



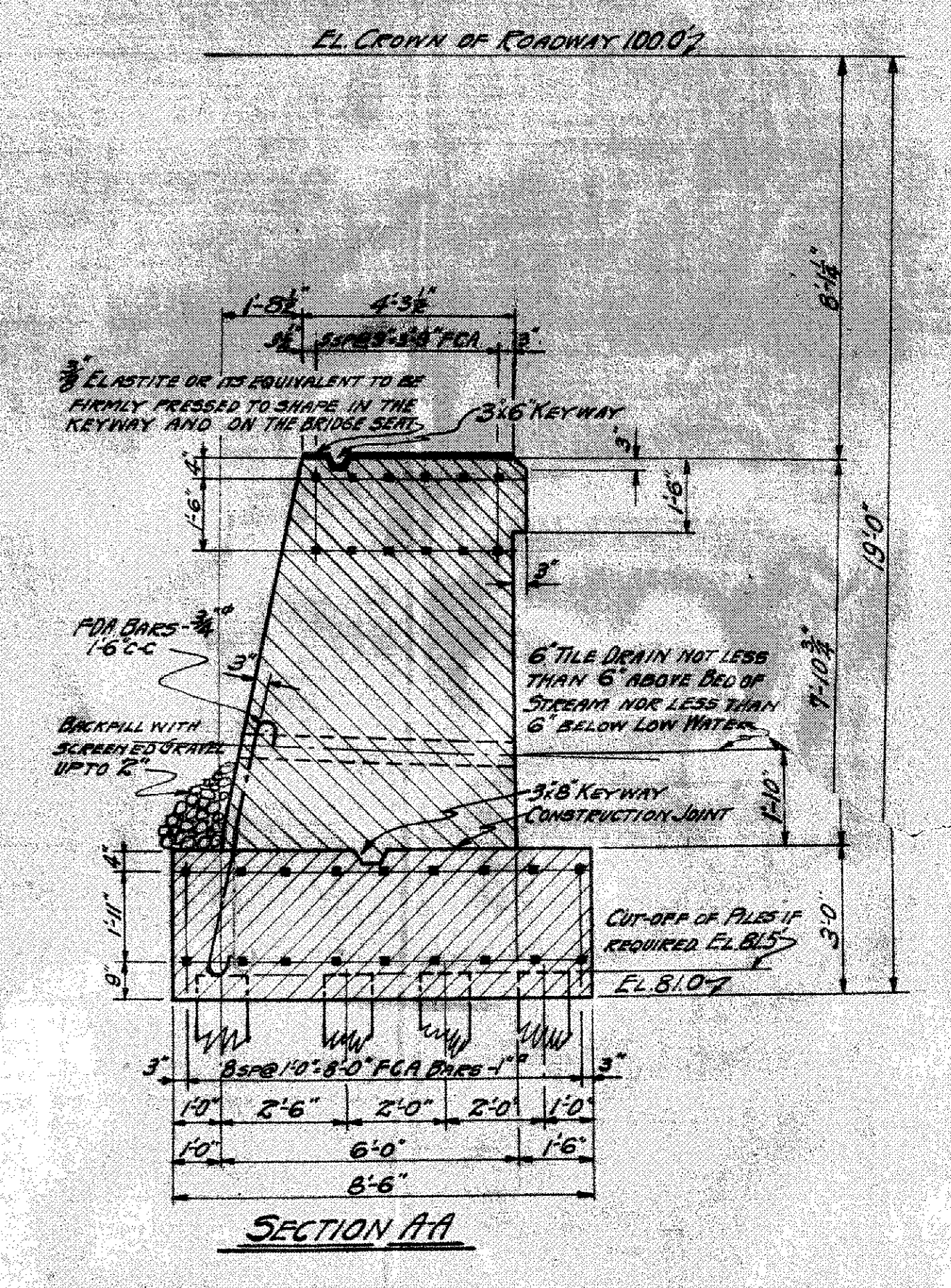
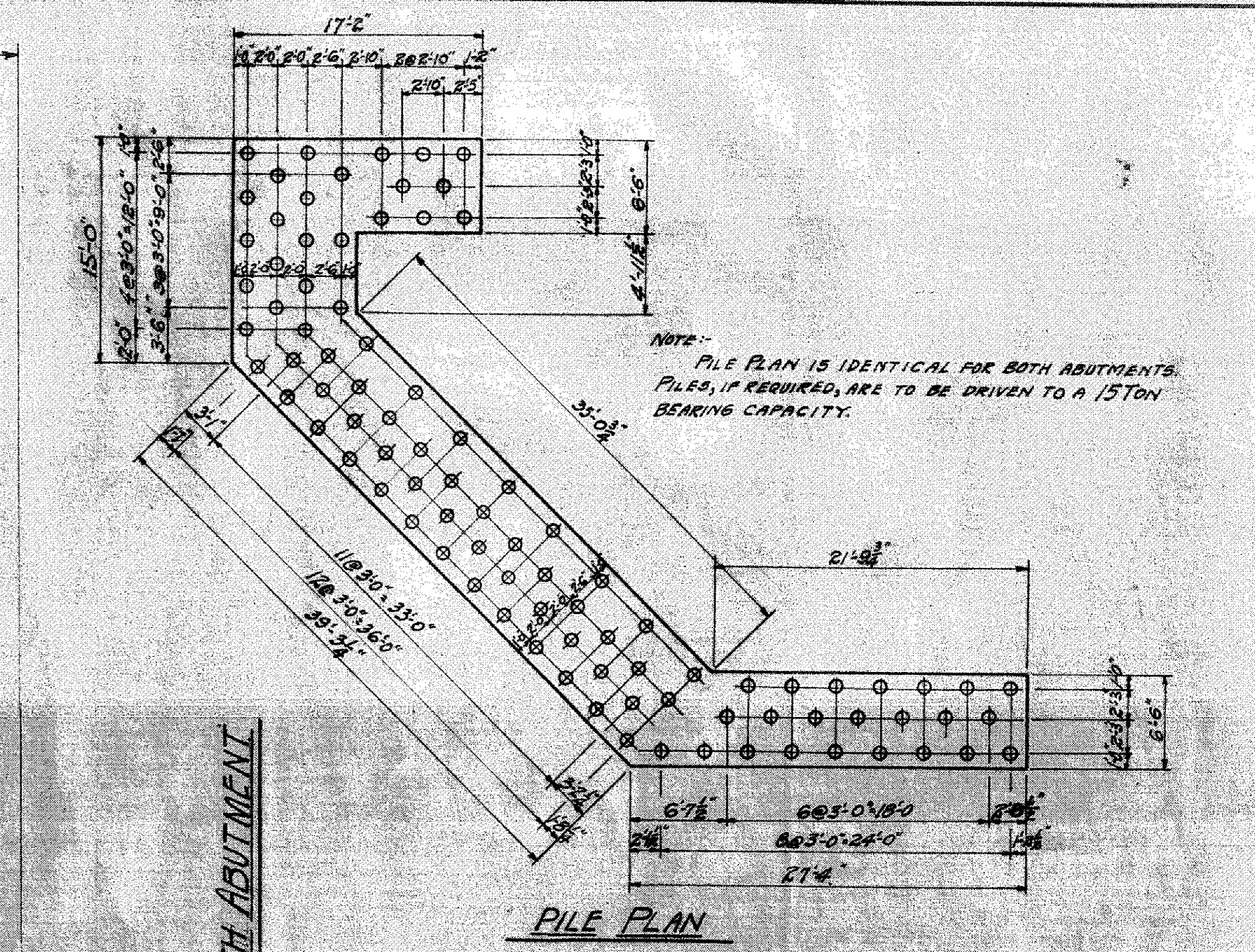
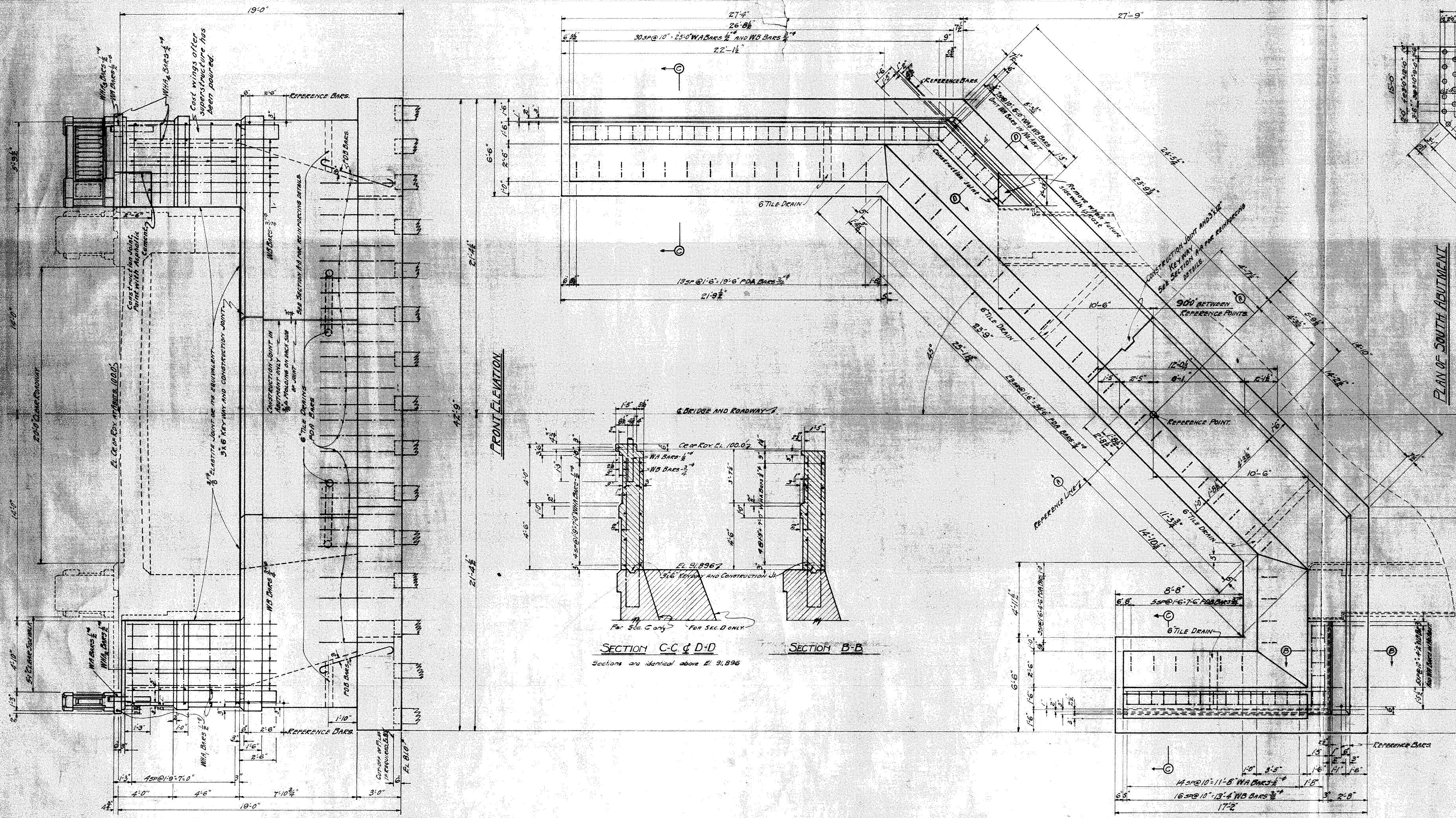
SITUATION PLAN
SCALE 1"=40'

NOTES:
 ALL MATERIAL AND WORKMANSHIP TO BE IN ACCORDANCE WITH MICHIGAN STATE HIGHWAY DEPARTMENT'S SPECIFICATIONS FOR STEEL AND CONCRETE HIGHWAY BRIDGES 1922 EDITION (REVISED).
 ALL SECTIONS SHOWN AS DISTINCT UNITS ON THESE PLANS ARE TO BE POURED IN ONE CONTINUOUS RUN.
 NO UNSCREENED GRAVEL WILL BE PERMITTED.
 GRADE "A" CONCRETE TO BE USED IN THE SUPERSTRUCTURE. GRADE "C" CONCRETE TO BE USED IN THE SUBSTRUCTURE.
 PILES WILL NOT BE REQUIRED UNLESS ORDERED BY THE ENGINEER AFTER EXCAVATIONS ARE MADE. IF REQUIRED, THEY SHALL BE DRIVEN TO A 150% BEARING CAPACITY.
 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 FLOATED AND TROWELED TO PRODUCE A SMOOTH HARD SURFACE TRUE TO THE SECTION SHOWN.
 THE REINFORCING STEEL IN THE GIRDERS IS TO BE SUPPORTED ON METAL BAR CHAIRS OF AN APPROVED PATTERN, SPACED NOT MORE THAN 6 FT. APART. THE REINFORCING STEEL IN THE FLOOR SLAB IS TO BE SUPPORTED ON METAL BAR CHAIRS SPACED NOT MORE THAN 6 FT. APART IN EITHER DIRECTION.
 BRASS REFERENCE BARS, 1/2" x 1/2", FURNISHED BY THE STATE HIGHWAY DEPARTMENT ARE TO BE CAREFULLY PLACED BY THE INSPECTOR IN THE POSITIONS SHOWN SO AS TO PROJECT 1/2" OUT FROM THE SURFACE. AFTER PLACING THE INSPECTOR IS TO FURNISH A DISSEMINARY SHOWING THE ELEVATIONS OF THE BARS AND THEIR DISTANCES FROM REFERENCE LINES, USING MONUMENT PLAN FURNISHED BY THE DISTRICT ENGINEER.
 TRAFFIC WILL BE MAINTAINED OVER THE PRESENT STRUCTURE.
 THE CONTRACTOR WILL BACKFILL BOTH IN FRONT AND BEHIND THE NEW ABUTMENTS TO THE NATURAL GROUND SURFACE. ANY EXCESS MATERIAL EXCAVATED IS TO BE SPOSED OR AS DIRECTED BY THE ENGINEER.
 ALL EXPOSED SURFACES ARE TO BE FINISHED WITH CARBORUNDUM SAND, WITHIN THE TIME SET AND IN THE MANNER PRESCRIBED BY CLAUSE 11129 OF THE SPECIFICATIONS.
 THE USE OF MUD SILLS WILL BE PERMITTED ONLY WITH THE WRITTEN PERMISSION OF THE STATE HIGHWAY COMMISSIONER. FALSEWORK PILING IS TO BE DRIVEN TO 150% CAPACITY.
 THE CHANNEL CHANGE AS SHOWN ON THE SITUATION PLAN IS TO BE MADE BY THE BRIDGE CONTRACTOR. APPROXIMATE EXCAVATION OF 650 CU. YDS. MATERIAL FROM THE CHANNEL CHANGE TO BE USED IN MAKING FILL ON NORTH BANK AND GRADING THE APPROACHES.
 THE CONTRACTOR WILL DISMANTLE THE OLD SUPERSTRUCTURE, AND REMOVE THE PRESENT ABUTMENTS, PILING ALL SALVAGED MATERIAL NEATLY ON THE BANK AS DIRECTED BY THE ENGINEER. THE OLD MASONRY TO BE PLACED ON RAPRAZ AS SHOWN OR DIRECTED BY THE ENGINEER.
 BENCH MARK LOCATED ON LINE WITH AND 170 FT. SOUTH OF EAST TRUSS SPIKE IN 24" WALNUT, EL. 108.95 OR EL. 71.02 OF ROAD SURVEY.
 WET EXCAVATION 350 CU. YDS. APPROX.
 DRY EXCAVATION 50 CU. YDS. APPROX.

LOCATION	APPROXIMATE CU. YDS. OF CONCRETE GRADE "A"	NO. OF PILES IN REQUIRED	STEEL	FOR DETAILS SEE-
ABUTMENT A	198.2	93	4210'	331004-2
ABUTMENT B	199.4	93	4210'	331004-2
PILE PLAN				331004-2
STANDARD GIRDER				A-3-B-6.748
GIRDER MODIFICATION	312.4		82,260	331004-3
SITUATION PLAN				331004-1
BAR LISTS				331004-4
TOTAL	312.4	186	90680'	
GRAND TOTAL FOR CONCRETE = 710.0 cu. yd.				
Wet Excavation	+ 350 cu. yd.			
Dry Excavation	+ 50 cu. yd.			
Channel Change, estimated	+ 650 cu. yd.			

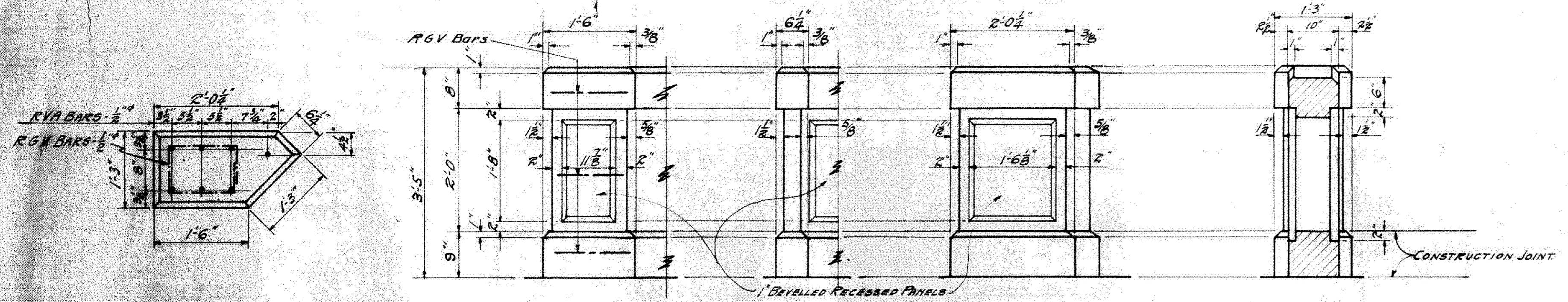
Extra excavation and concrete when piles are used - none.

MICHIGAN STATE HIGHWAY DEPARTMENT
 SEC 21, T 4 N, R 1 W, MERIDIAN TWP., INGHAM CO.,
 BRIDGE FILE NO. 331004 SR. OVER RED CEDAR RIVER.
 SITUATION PLAN
 50 FT. RC GIRDER, 20 FT. ROADWAY, 1.5 FT. SIDEWALK, PROJ. FOR ENCL. SWK., 1991 PL. CONC. ABUT.
 45° CROSSING
 CORRECTED BY: [Signature] ABUT. BRIDGE ENGINEER
 APPROVED BY: [Signature] BRIDGE ENGINEER
 DRAWN BY: H.W.H. 5-15-23
 TRACED BY: H.W.H. 5-15-25
 CHECKED BY: W.A.V. 6-20-23
 FILED BY: E.A.S. 5-18-23
 SHEET 1 OF 6 SHEETS
 331004 - 1/4

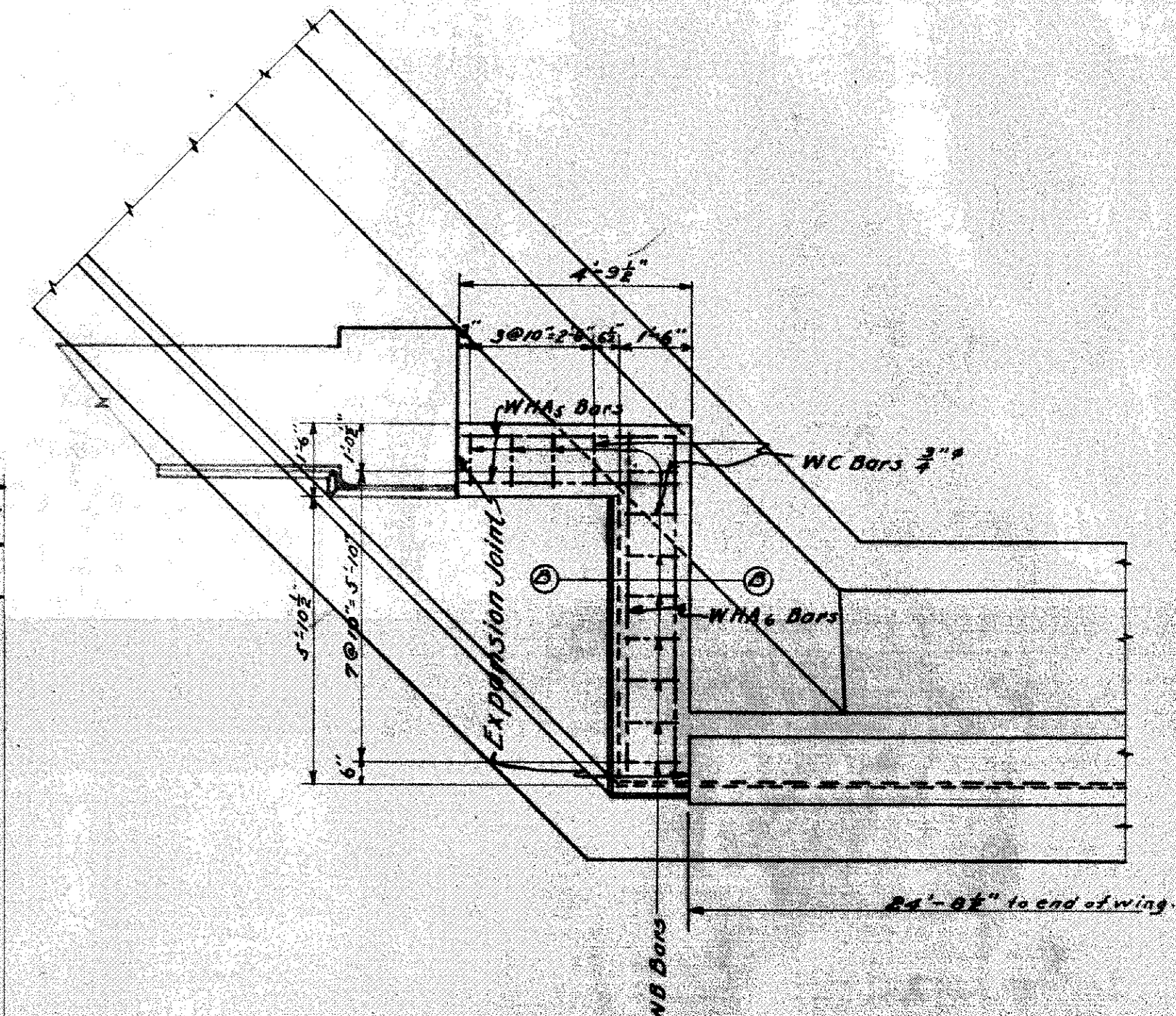
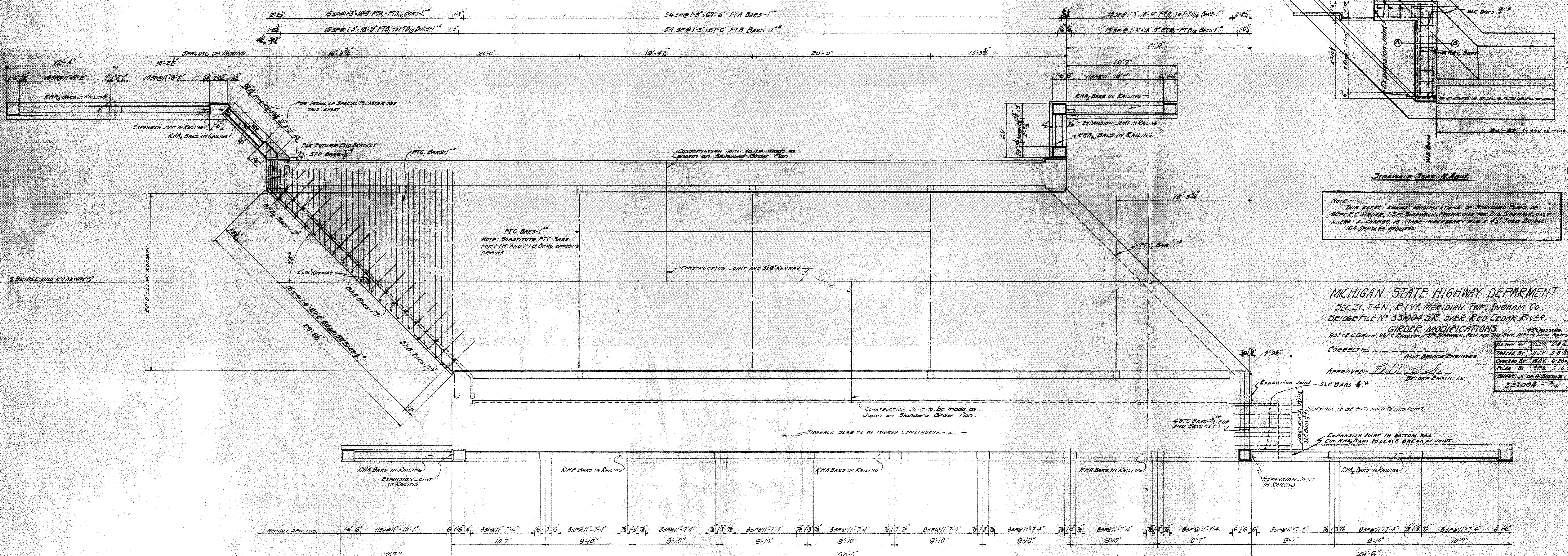


MICHIGAN STATE HIGHWAY DEPARTMENT
 SEC. 21, T. 4N, R. 1W, MERIDIAN TWP., INGHAM CO.,
 BRIDGE FILE NO. 331004 SR OVER RED CEDAR RIVER.
 ABUTMENT DETAILS.
 90 FT. ROADWAY, 20 FT. SIDEWALK, 1.5 FT. SIDEWALK, 18 IN. CONC. ACROSSING.
 CORRECTED BY _____ ASST. BRIDGE ENGINEER.
 APPROVED BY _____ BRIDGE ENGINEER.

DRAWN BY	H.J.H.	3-1-23
CHECKED BY	H.J.H.	5-1-23
FILED BY	W.A.S.	5-18-23
SHEET 2 OF 4 SHEETS		331004 - 2/4



DETAIL OF SPECIAL PILASTER



SIDEWALK SEAT ABUT.

NOTE: THIS SHEET SHOWS MODIFICATIONS OF STANDARD PLANS OF 90'-E.C. GIRDER, 20'-R. ROADWAY, 1.5'-R. SIDEWALK, FOR 45° CROSSING. WHERE A CHANGE IS MADE NECESSARY FOR A 45° SCREW BRIDGE, 164 SPIGULES REQUIRED.

MICHIGAN STATE HIGHWAY DEPARTMENT
 SEC. 21, T. 4N, R. 1W, MERIDIAN TWP, INGHAM CO.,
 BRIDGE FILE NO. 331004 SR. OVER RED CEDAR RIVER.
 GIRDER MODIFICATIONS
 90'-E.C. GIRDER, 20'-R. ROADWAY, 1.5'-R. SIDEWALK, FOR 45° CROSSING.
 CORRECTED BY: [Signature] ASST. BRIDGE ENGINEER
 APPROVED BY: [Signature] BRIDGE ENGINEER
 DRAWN BY: A.L.H. 5-8-23
 TRACED BY: A.L.H. 5-8-23
 CHECKED BY: H.A.V. 6-20-23
 FILED BY: E.R.S. 5-18-23
 SHEET 3 OF 6 SHEETS
 331004 - 3/4

