

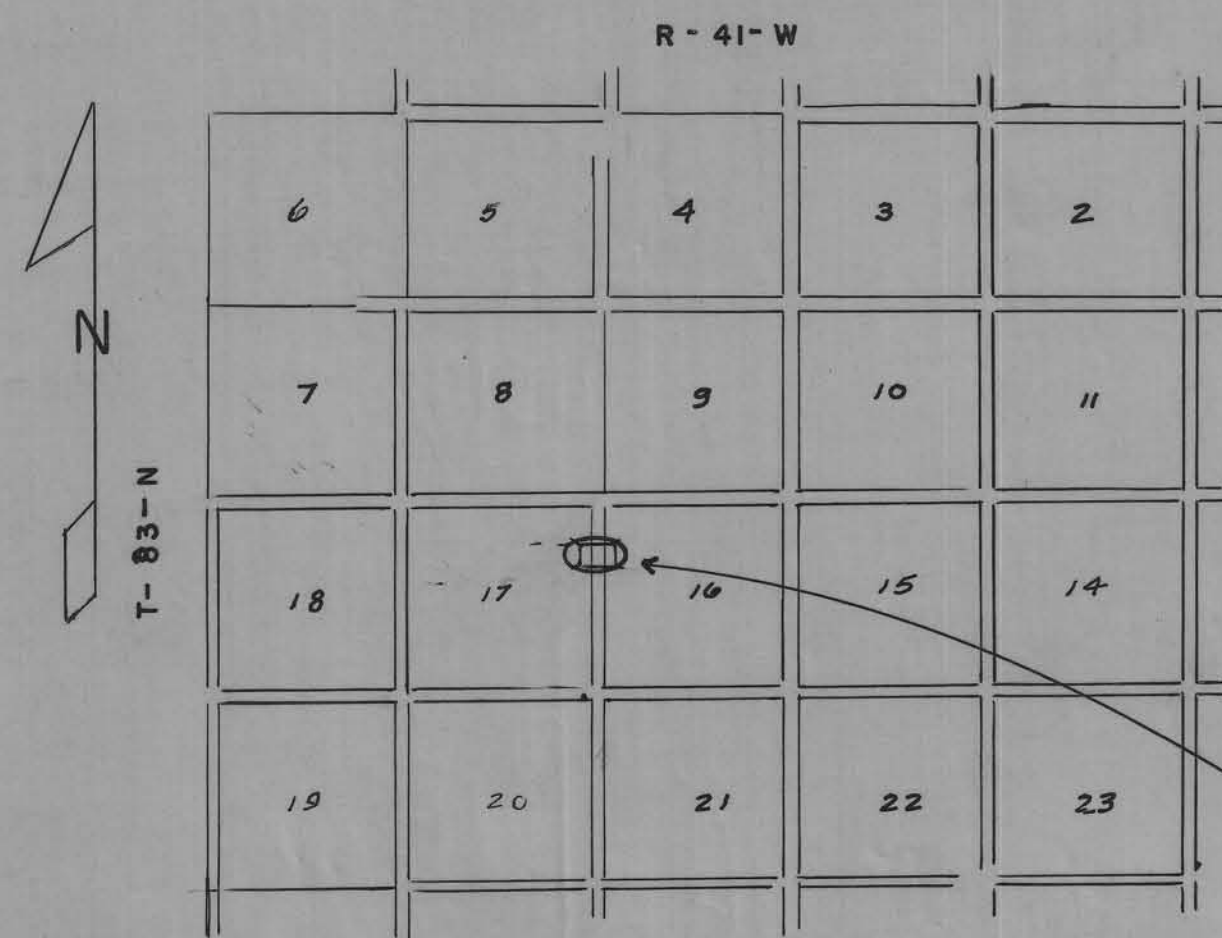
STATE OF IOWA
 STATE HIGHWAY COMMISSION
 DESIGN FOR
 70'x20' PONY TRUSS BRIDGE
 SECONDARY ROAD SYSTEM CO. PROJ.- 61-3
 CRAWFORD COUNTY
 FEBRUARY 1961

ESTIMATE OF QUANTITIES

DESCRIPTION	ABUTMENT	SUPERSTRUCTURE	TOTAL
STRUCTURAL CONCRETE	31.44 CU.YDS	38.95 CU.YD.	70.39 CU.YDS.
REINFORCING STEEL	3058 LBS.	7791 LBS.	10,849 LBS.
CREOSOTED LUMBER	5416 FBM.		5,416 FBM.
STRUCTURAL STEEL	3358 LBS.	160 LBS	3518 LBS.
GALVANIZED HARDWARE	164 LBS.		164 LBS.
TREATED TRESTLE PILING	8-30' = 240' 32-35' = 1120'		1360 LF.
EXCAVATION CLASS 10 CHANNEL	956 CU.YDS.		956 CU.YDS. ⁽²⁾⁽³⁾
EXCAVATION CLASS 20	279 CU.YDS.		279 CU.YDS. ⁽³⁾
EXCAVATION CLASS 21	16 CU.YDS.		16 CU.YDS. ⁽³⁾
REMOVAL OF OLD BRIDGE			LUMP SUM
TRANSPORTING TRUSS TO SITE			BY COUNTY
ERECTING TRUSS, FURNISH & PLACE RIVETS, CLEANING & PAINTING TRUSS			LUMP SUM ⁽¹⁾

MILEAGE SUMMARY

73'-5" = 0.0139 Mile



CRAWFORD COUNTY

STA. 88+15.0
PROJECT 61-3

⁽¹⁾ BRIDGE SHALL BE CLEANED IN ACCORDANCE WITH SECTION 2508.05 OF STANDARD SPECIFICATIONS, SPOT PAINTED WITH SHOP COAT, AND PAINTED WITH FIRST & SECOND FIELD COAT.

PRICE BID FOR ERECTION TO INCLUDE ALL FIELD BOLTS AND RIVETS FOR SUPERSTRUCTURE, RAIL CONNECTIONS, AND METAL CHAIRS.

⁽²⁾ CHANNEL EXCAVATION TO BE USED FOR BRIDGE APPROACH FILL.

⁽³⁾ EXCAVATION TO BE USED TO BACKFILL TO ELEVATION 445.00

APPROVED

Walter P. Wathe

Otto Kuehl

Carl Weddermeyer

H. J. Dressman

Earth Fuller
BOARD OF SUPERVISORS DATE

FILE NO. 21280

CRAWFORD COUNTY

PROJECT 61-3

SHEET 1

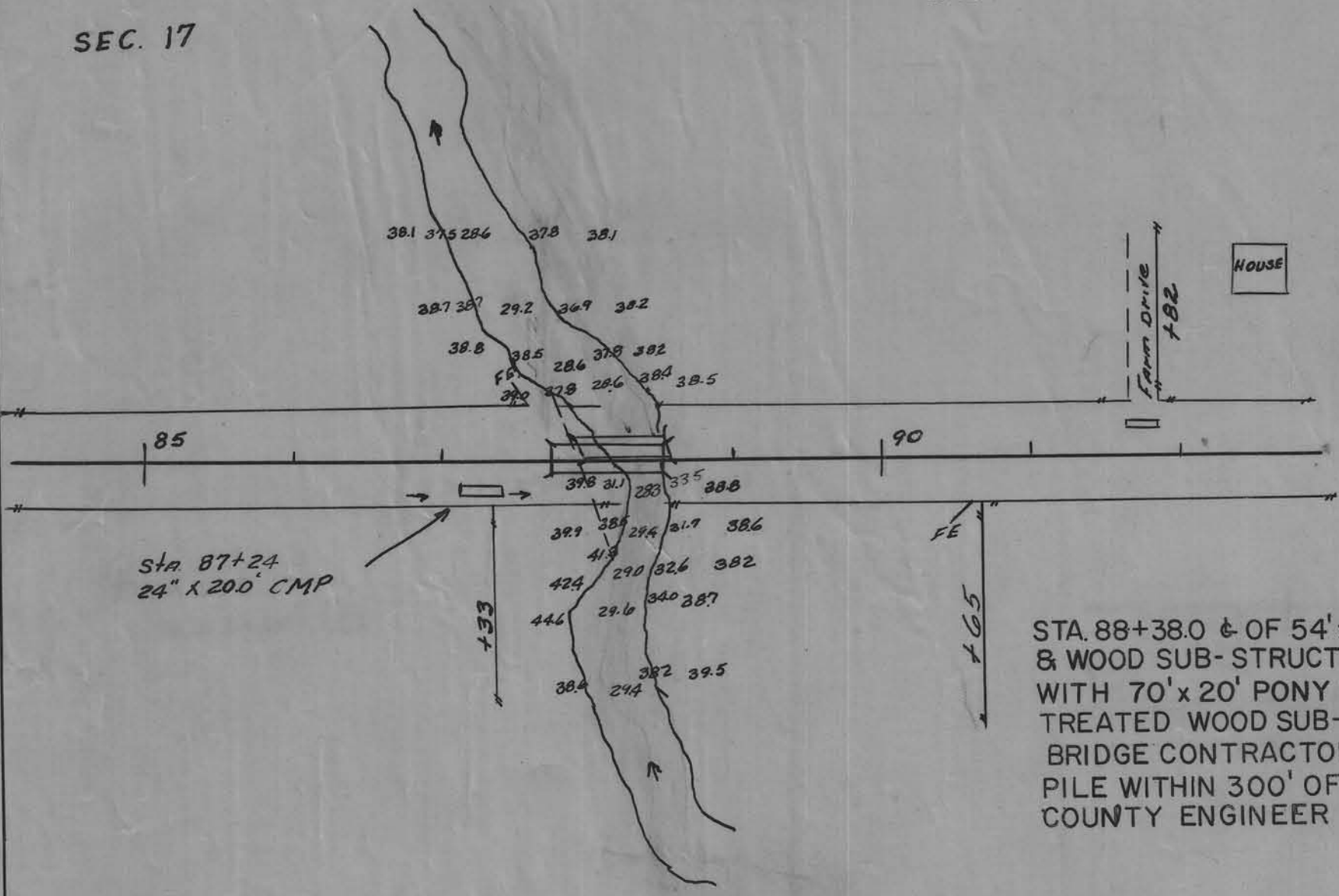
10/11

Willow Prod. 61-3 Local

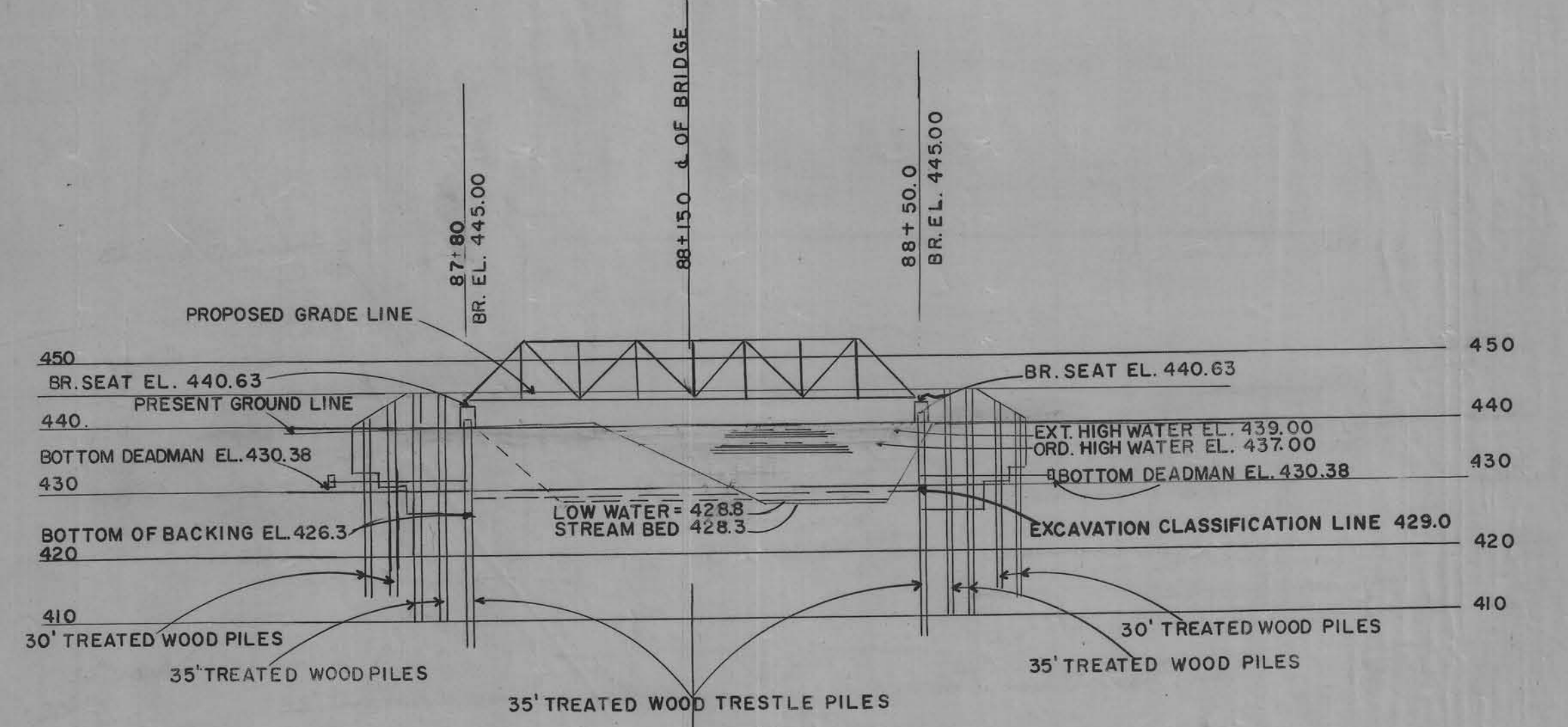
Drawn By Paul Carey

WILLOW TOWNSHIP
T-83-N R-41-W
BET. 16-17

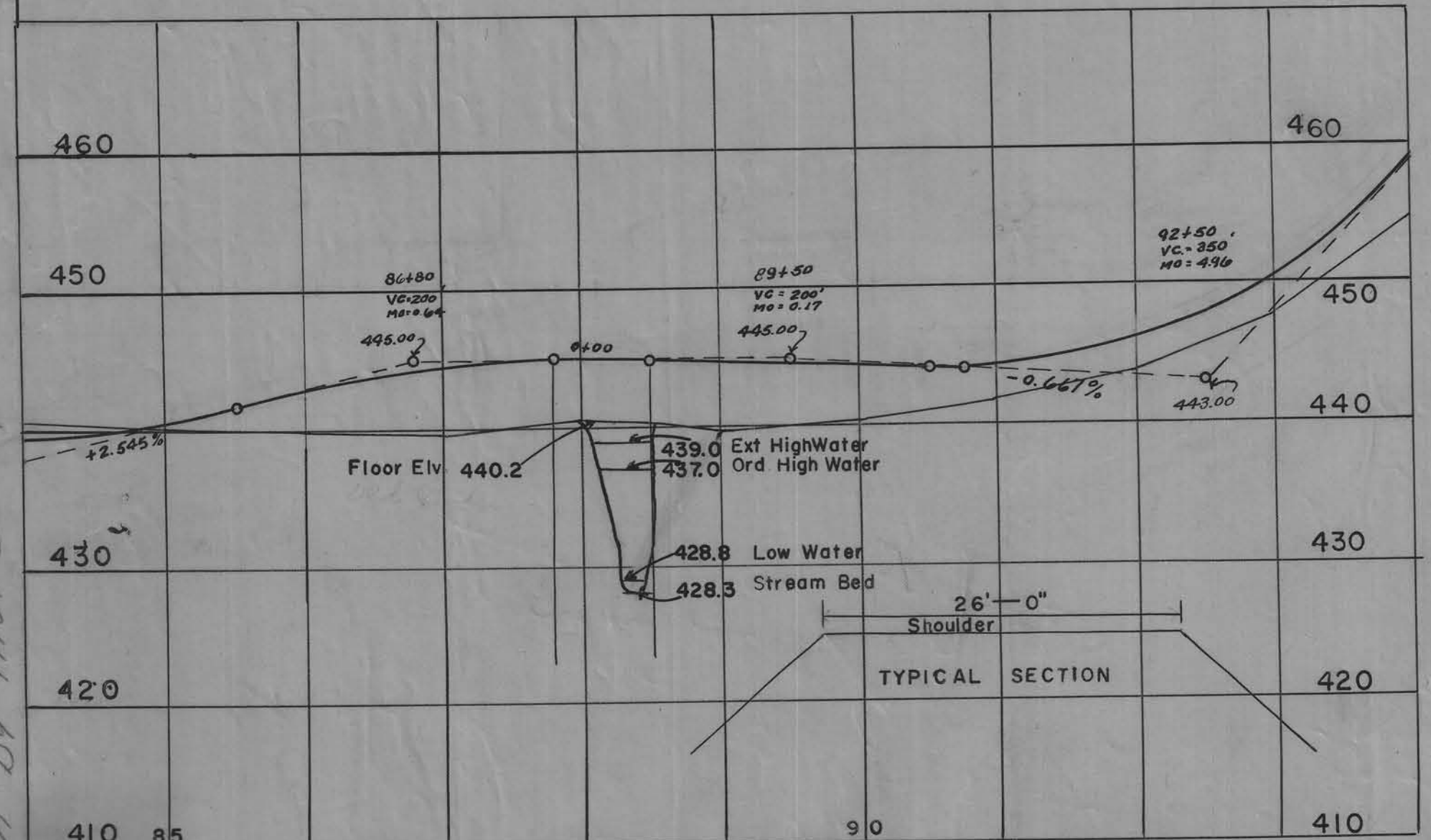
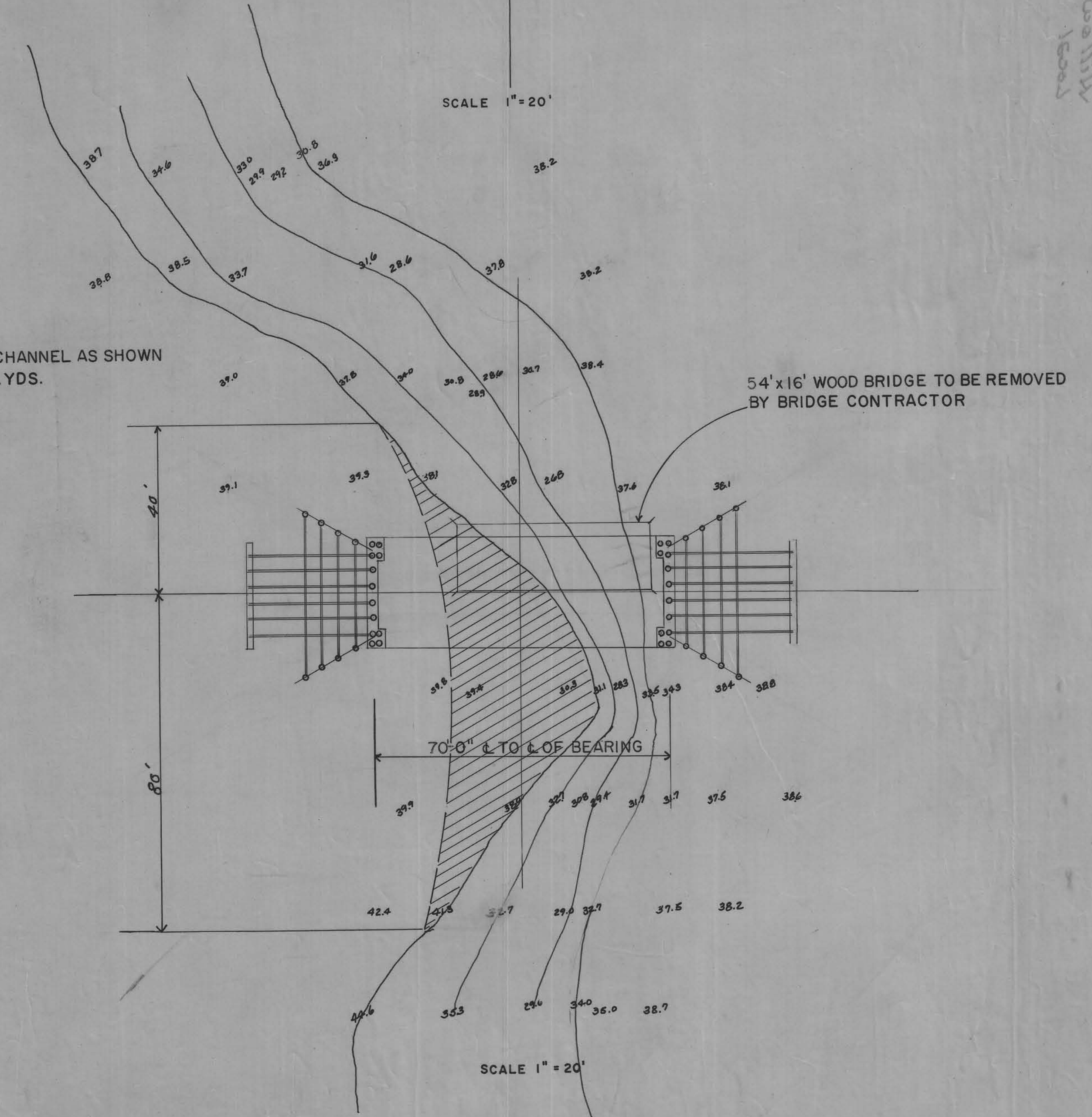
SEC. 17



STA. 88+38.0 & OF 54'x16' WOOD BRIDGE, WOOD FLOOR, & WOOD SUB-STRUCTURE. DA. = 4500 AC. REPLACE WITH 70'x20' PONY TRUSS AT STA. 88+15.0 TREATED WOOD SUB-STRUCTURE, CONCRETE FLOOR. BRIDGE CONTRACTOR TO REMOVE OLD BRIDGE & PILE WITHIN 300' OF BRIDGE SITE AS DIRECTED BY COUNTY ENGINEER



BRIDGE CONTRACTOR TO CLEAR CHANNEL AS SHOWN
CLASS 10 EXCAVATION = 956 CU.YDS.

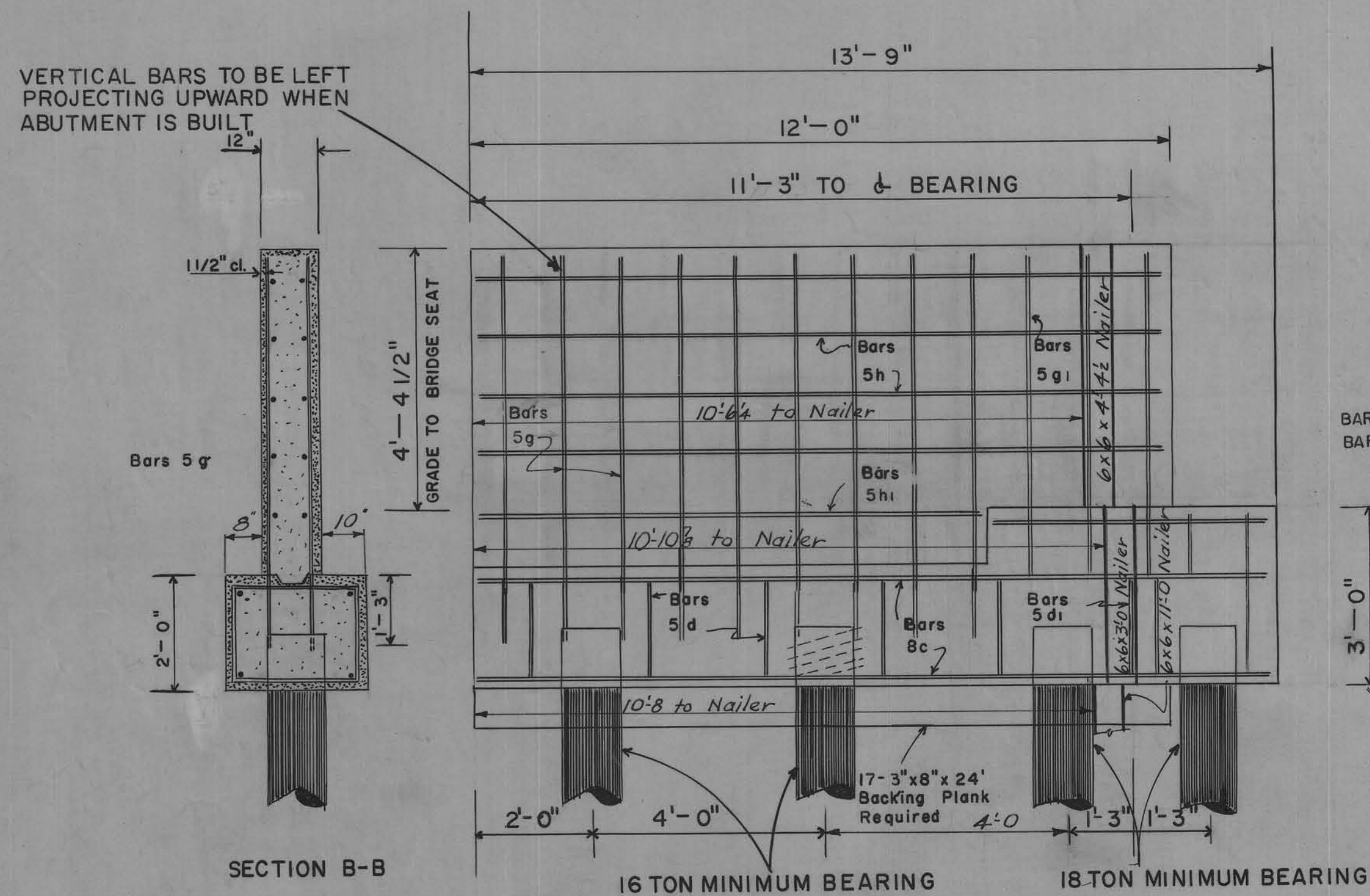


ROAD PROFILE
HORIZ = 1" = 100 FT.
SCALE VERT. = 1" = 10 FT.

DRAWN BY PAUL CAVEY

LUDOVIC-2-21-1986
15001
M11100

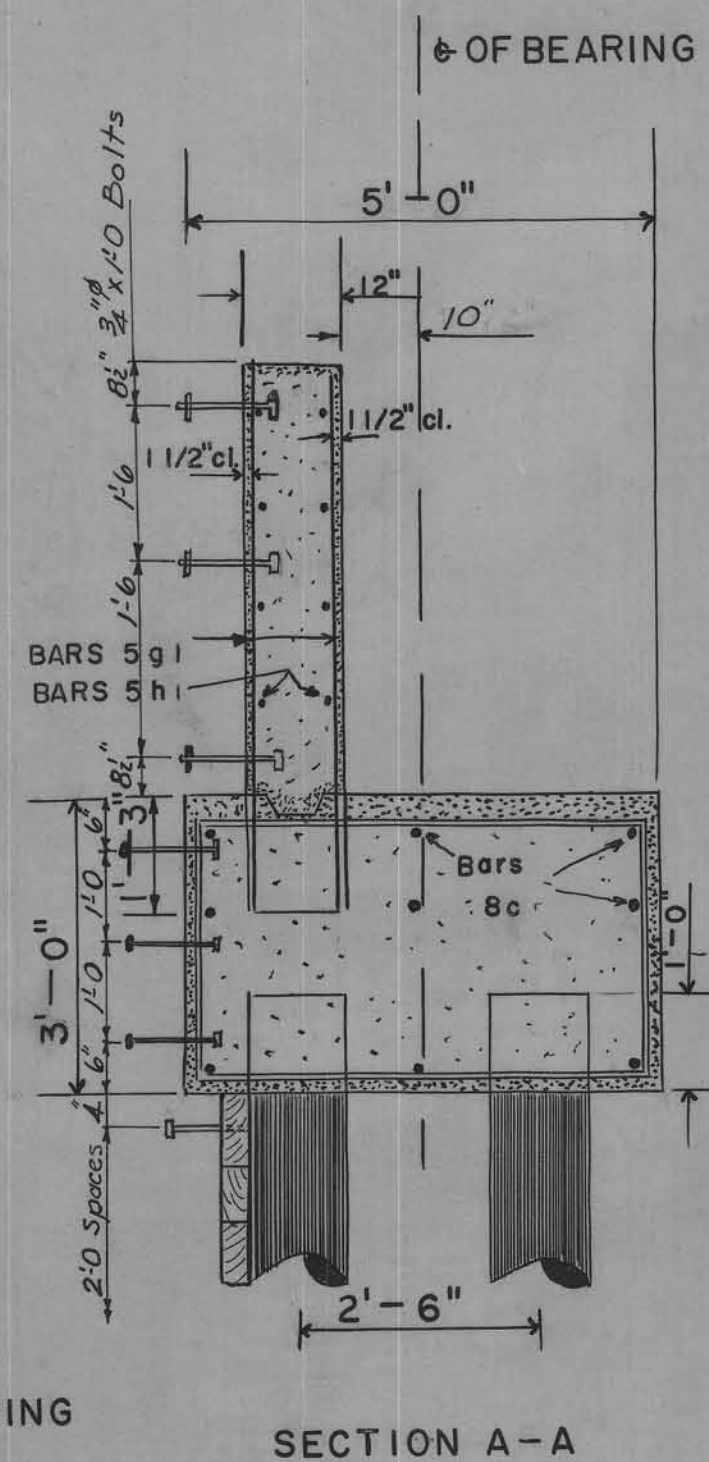
DETAILS OF ABUTMENT CAP



EACH PILE IS TO BE CAPPED WITH A SPIRAL. SEE STD. DESIGN H-11-4

SCALE = 1/2" = 1'-0" HALF PLAN

BACKWALL TO BE BUILT AFTER STRUCTURAL STEEL IS ERECTED:

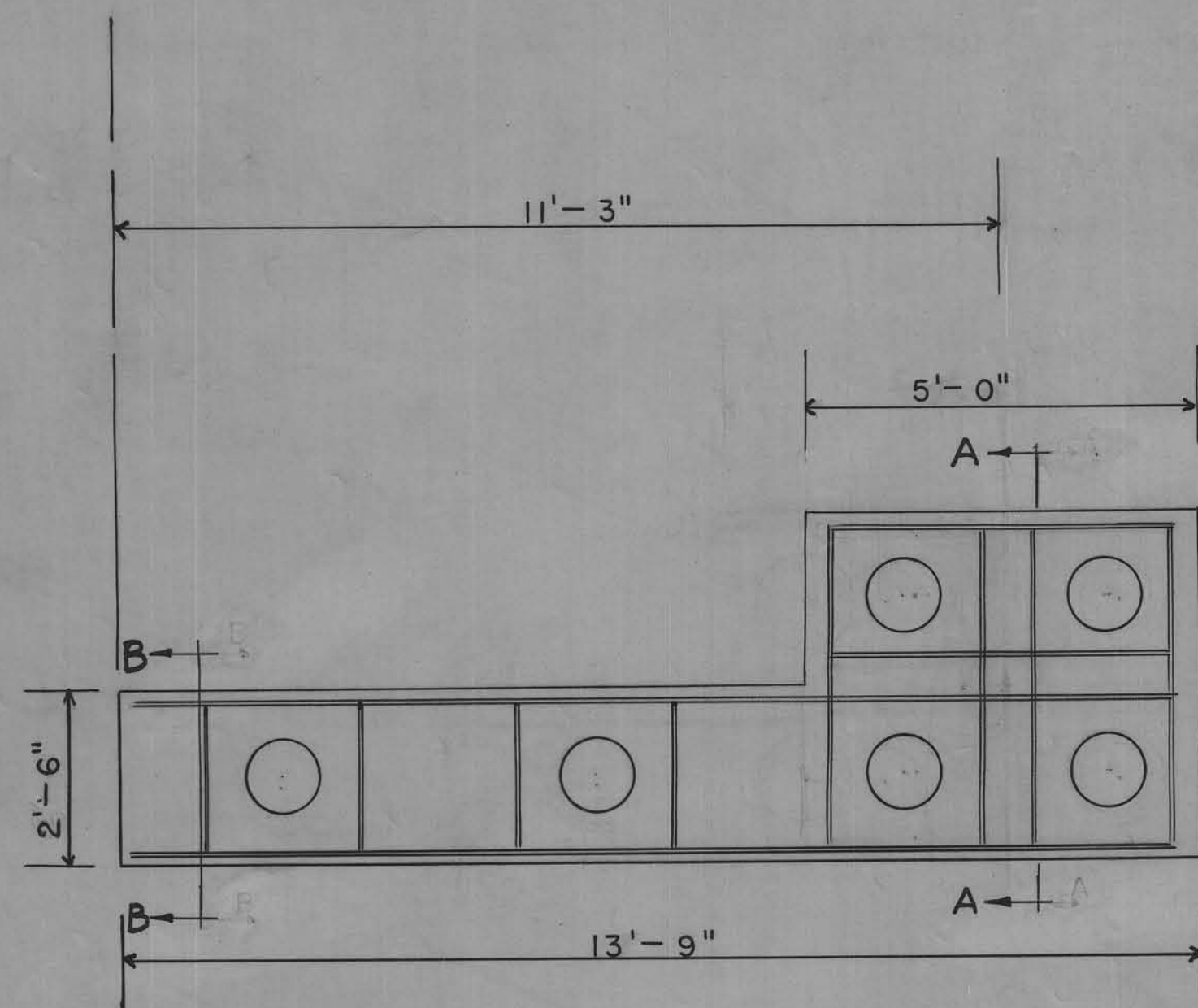


SECTION A-A

GENERAL NOTES

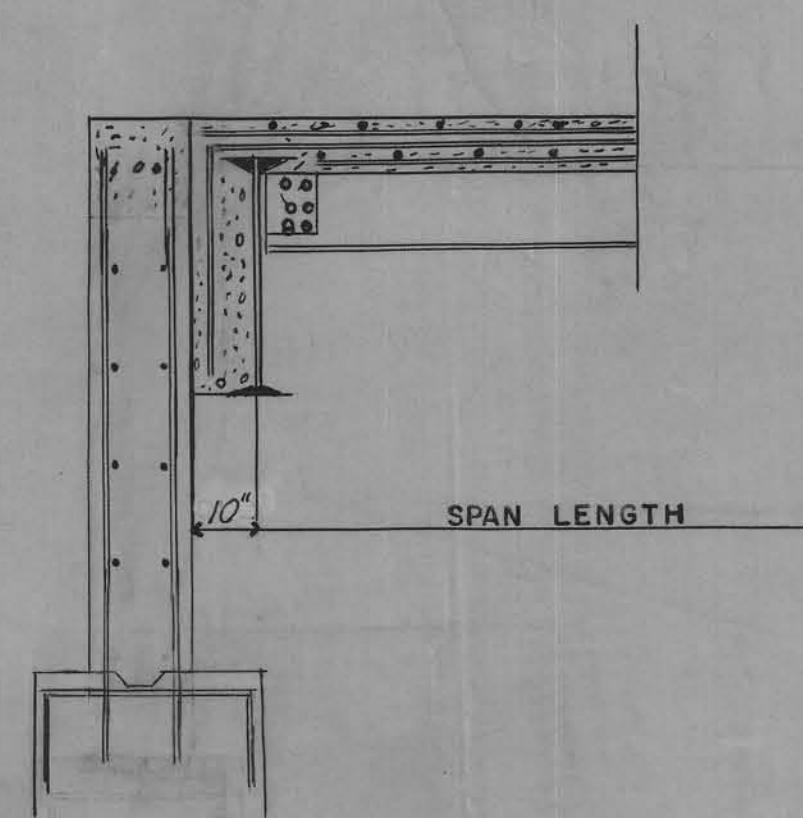
THESE ABUTMENTS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH IOWA STATE HIGHWAY COMMISSION STANDARD DESIGN H-11-4 FEBRUARY 1958, REVISED 3-30-60, EXCEPT AS SHOWN OR NOTED.
H = 17'

Following corrections are for one abutment:
Omit two backing plank decreasing Std. quantity by 96 FBM.
Add two 3/4" x 10" nailer bolts and omit two timber connectors, increasing Std. hardware quantity by 3 lbs.
The reinforcing steel and concrete for the cap and backwall to be changed as detailed on this sheet.
The tie rods and deadman are the same as Std. H-11-4.
The standard quantities used are for a U of 3:5 1/2.



PLAN

SCALE = 1/2" = 1'-0" HALF PLAN



DETAIL OF END FLOOR BEAM ENCASEMENT

REINFORCING BAR LIST - ONE CAP & BACKWALL

BAR	LOCATION	SHAPE	NO	LENGTH	WEIGHT LBS.
8c	Cap Longitudinal		4	27'-6"	293.7
8c	" " "		10	4'-9"	126.8
5d	Cap Hoops		8	9'-0"	75.1
5d	" " "		8	16'-0"	133.5
5g	Backwall		36	6'-6"	244.1
5gl	" " "		12	5'-6"	68.8
5h	" " "		8	23'-9"	198.2
5hl	" " "		2	17'-6"	36.5
2f	Spiral Spacer		12		74
TOTAL					1251

CONCRETE ONE CAP ————— 8.45 CU. YDS
 CONCRETE ONE BACKWALL ————— 4.54 CU. YDS.
 TOTAL ————— 12.99 CU. YDS.

*SUPERSTRUCTURE REINFORCING STEEL RE-ERRECTION 70'x20' PONY TRUSS

DESCRIPTION	NO	SIZE	SPACING	LENGTH	WEIGHT
TRANSVERSE TOP	105	5/8" φ	0'-8"	20'-11"	2291 LBS.
TRANSVERSE BOTTOM	104	5/8" φ	0'-8"	22'-5"	2432 LBS.
LONGITUDINAL TOP	51	5/8" φ	1'-4"	25'-1"	1334 LBS.
LONGITUDINAL BOTTOM	48	5/8" φ	1'-4"	26'-4"	1318 LBS.
LONGITUDINAL CURBS	6	1/2" φ		27'-0"	108 LBS.
DOWELS IN CURB	144	1/2" φ	1'-0"	2'-11"	280 LBS.
FL.BEAM ENCASEMENT	2	1/2" φ		21'-1"	28 LBS.
TOTAL WEIGHT					7791 LBS.

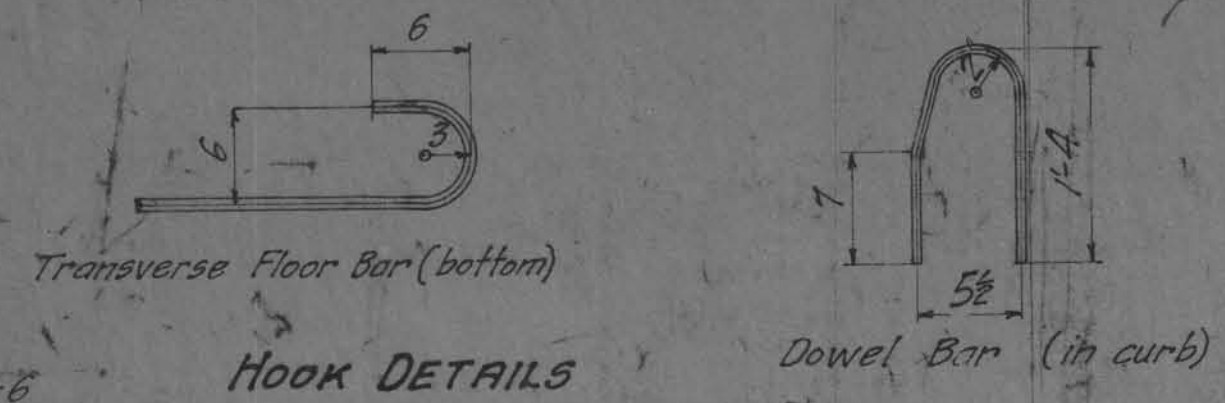
*See sheet 4 for bar details.

	Concrete	Reinf. Steel
Cap and Backwall	12.99	1251
Deadman	2.73	278
One Abut. Total	15.72	1529

CRAWFORD COUNTY
 70'x20' PONY TRUSS RE-ERRECTION
 PROJECT NO 61-3 STA. 88+15.0
 WEST OF SEC. 16 WILLOW TWP.
 FEBRUARY 1961

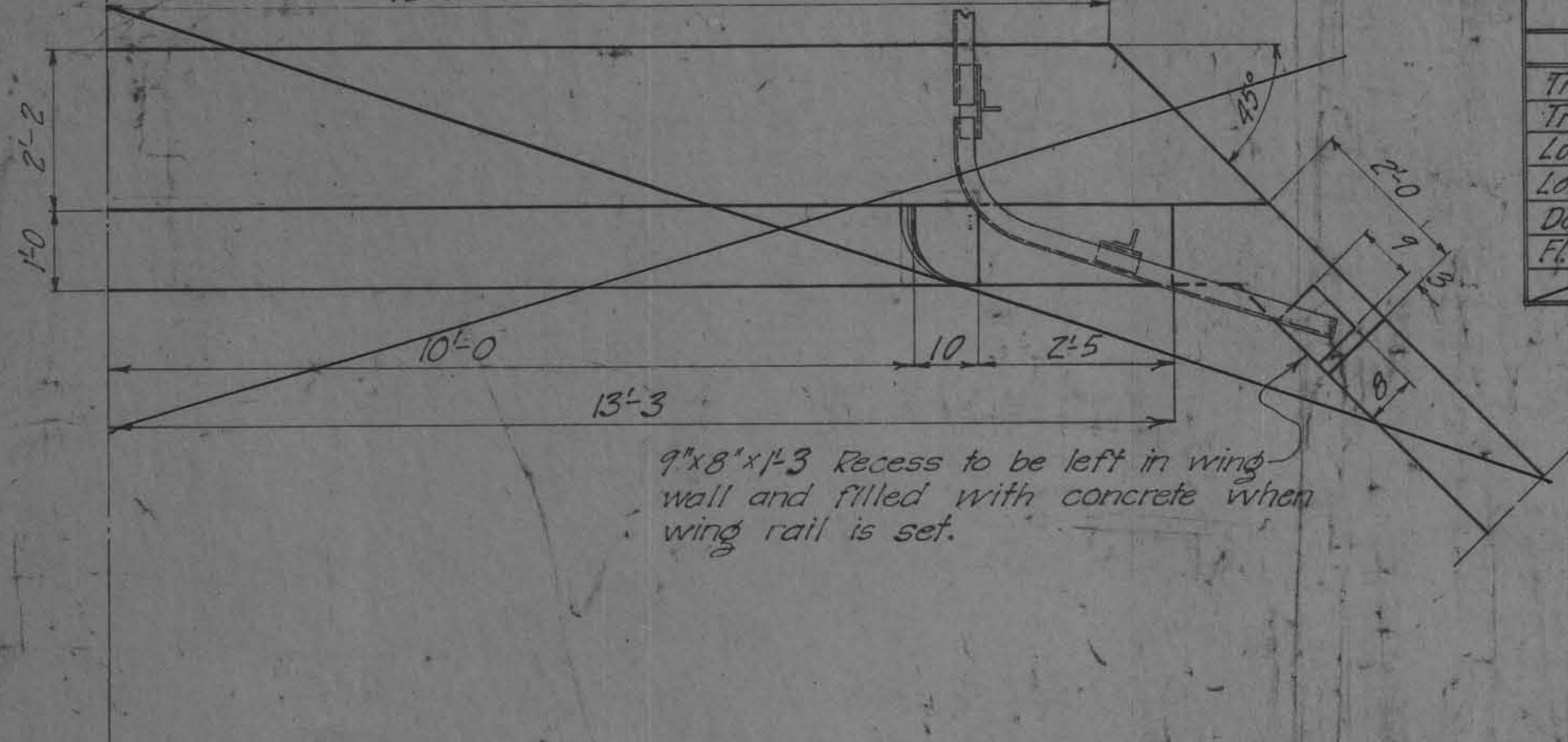
BRIDGE WAS LOCATED OVER EAST BOYER RIVER
 ON PRIMARY ROAD NO. 30 SEC. 10 DENISON TWP.
 CRAWFORD COUNTY
 OBTAINED FROM HIGHWAY COMMISSION JANUARY 1961

Drawn By Paul Carey



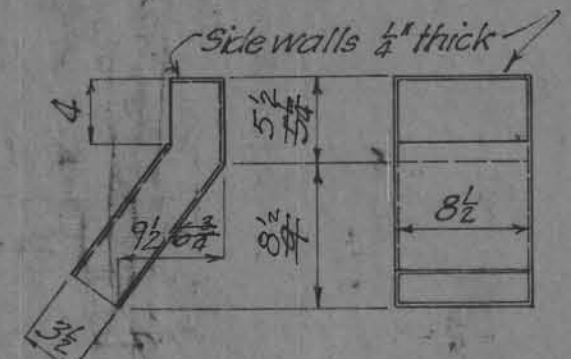
BILL OF FLOOR REINFORCING

Description	50' Span			60' Span			70' Span		
	Number	Size	Length Weight	Number	Size	Length Weight	Number	Size	Length Weight
Transverse - Top	68	3/8"	2136	71	3/8"	2260	74	3/8"	2453
Transverse - Bottom	67	3/8"	2256	70	3/8"	2300	73	3/8"	2453
Longitudinal - Top	20	3/8"	356	27	3/8"	401	24	3/8"	401
Longitudinal - Bottom	14	3/8"	268	18	3/8"	276	19	3/8"	263
Dowels - in curb	104	3/8"	211	124	3/8"	241	144	3/8"	280
Fl. Beam Encasement	2	3/8"	28	2	3/8"	28	2	3/8"	28
Total Weight			5246			6826			7056

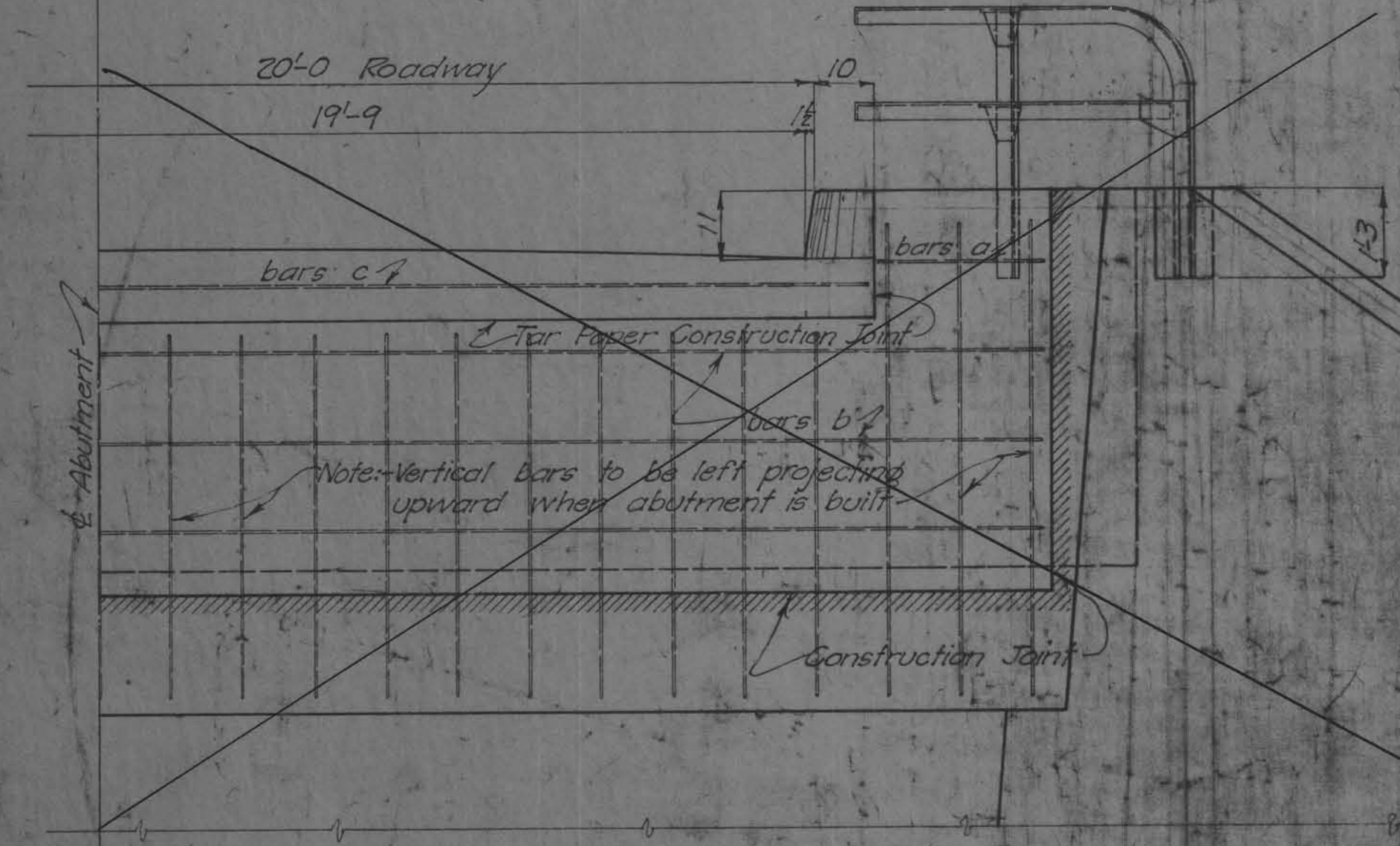


BILL OF BACKWALL REINFORCING

Span	Bars	Number	Size	Length	Weight
50' and 60'	a	2	3/8"	2'-2"	4
	b	2	3/8"	28'-0"	54
	c	2	3/8"	21'-4"	28
				Total Weight	86
70' and 80'	a	2	3/8"	2'-2"	4
	b	3	3/8"	28'-0"	81
	c	2	3/8"	21'-4"	28
				Total Weight	113

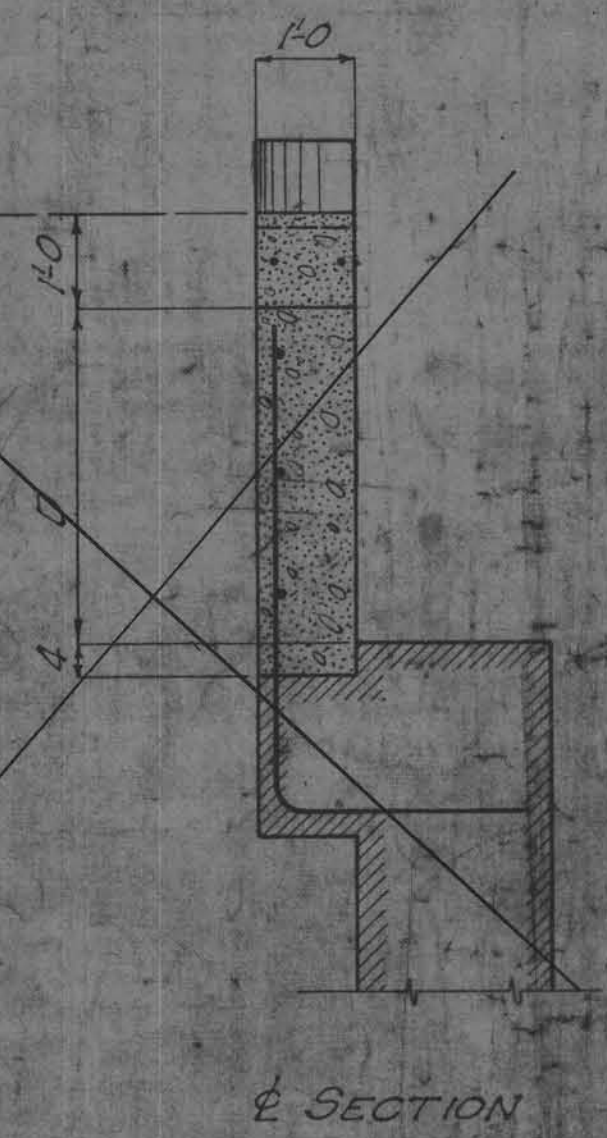


G.I. DRAIN
See Stress Sheet for number & Spacing
Weight of 1 Drain = 20#
8 new drains required



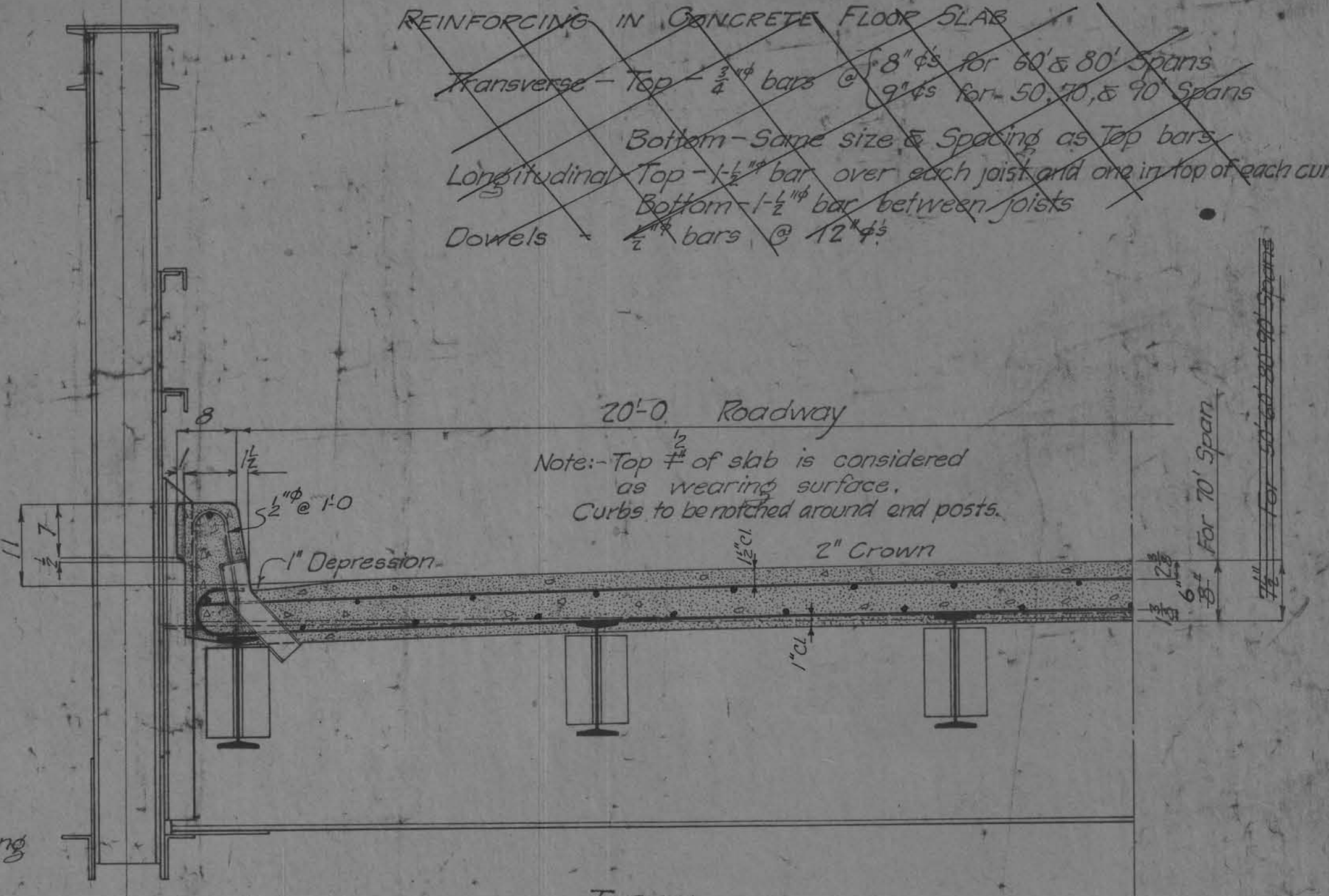
HEIGHT OF BACKWALL

Span	H
50'	2'-8 1/2"
60'	2'-8 1/2"
70'	3'-8 1/2"
80'	3'-6 1/2"
90'	3'-6 1/2"

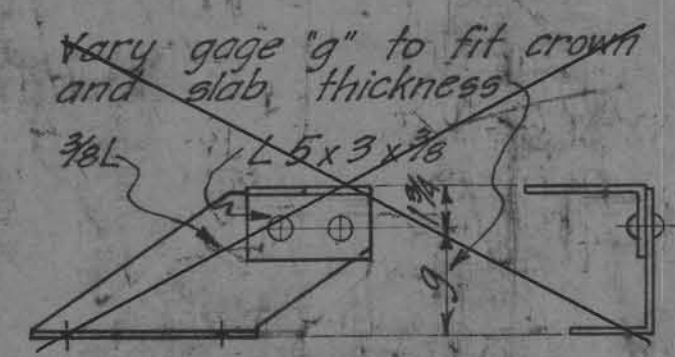


REINFORCING IN CONCRETE FLOOR SLAB

Transverse - Top - 3/8" bars @ 18" for 60' & 80' spans
 Transverse - Bottom - Same size & Spacing as Top bars
 Longitudinal - Top - 1/2" bar over each joist and one in top of each curb
 Longitudinal - Bottom - 1/2" bar between joists
 Dowels - 3/8" bars @ 12" for 70' spans

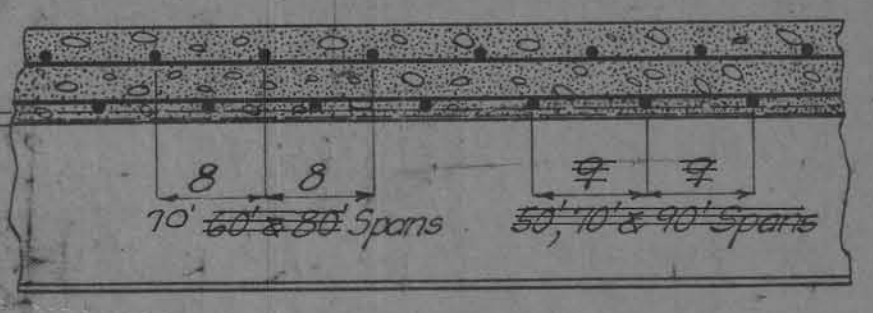


TYPICAL HALF SECTION



EXP. PLATE SUPPORTS
6 Required

Note: Rocker bolt heads to be recessed in bottom of masonry pl. as shown. All angles to be filleted. Castings to be set with anchor bolt holes on side nearest backwall.

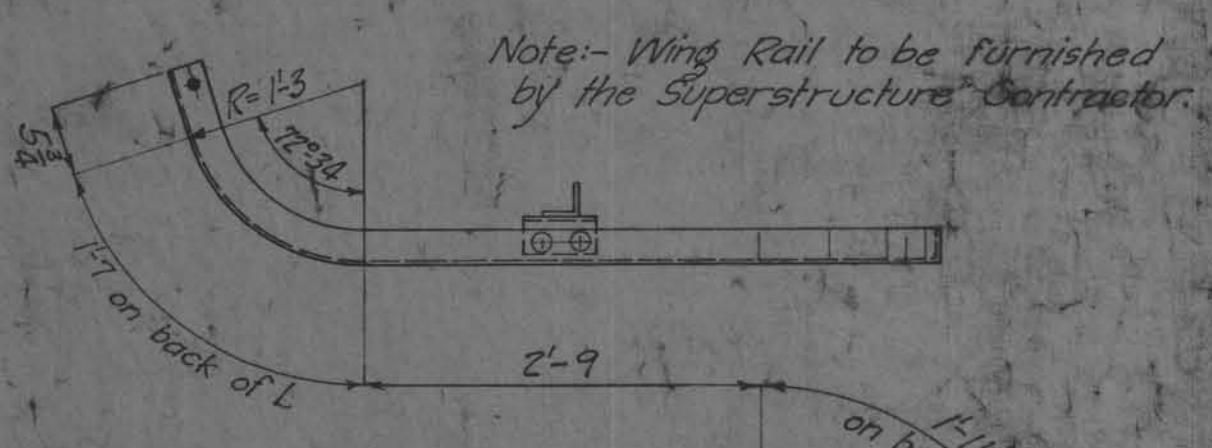


LONGITUDINAL SECTION THRU FLOOR



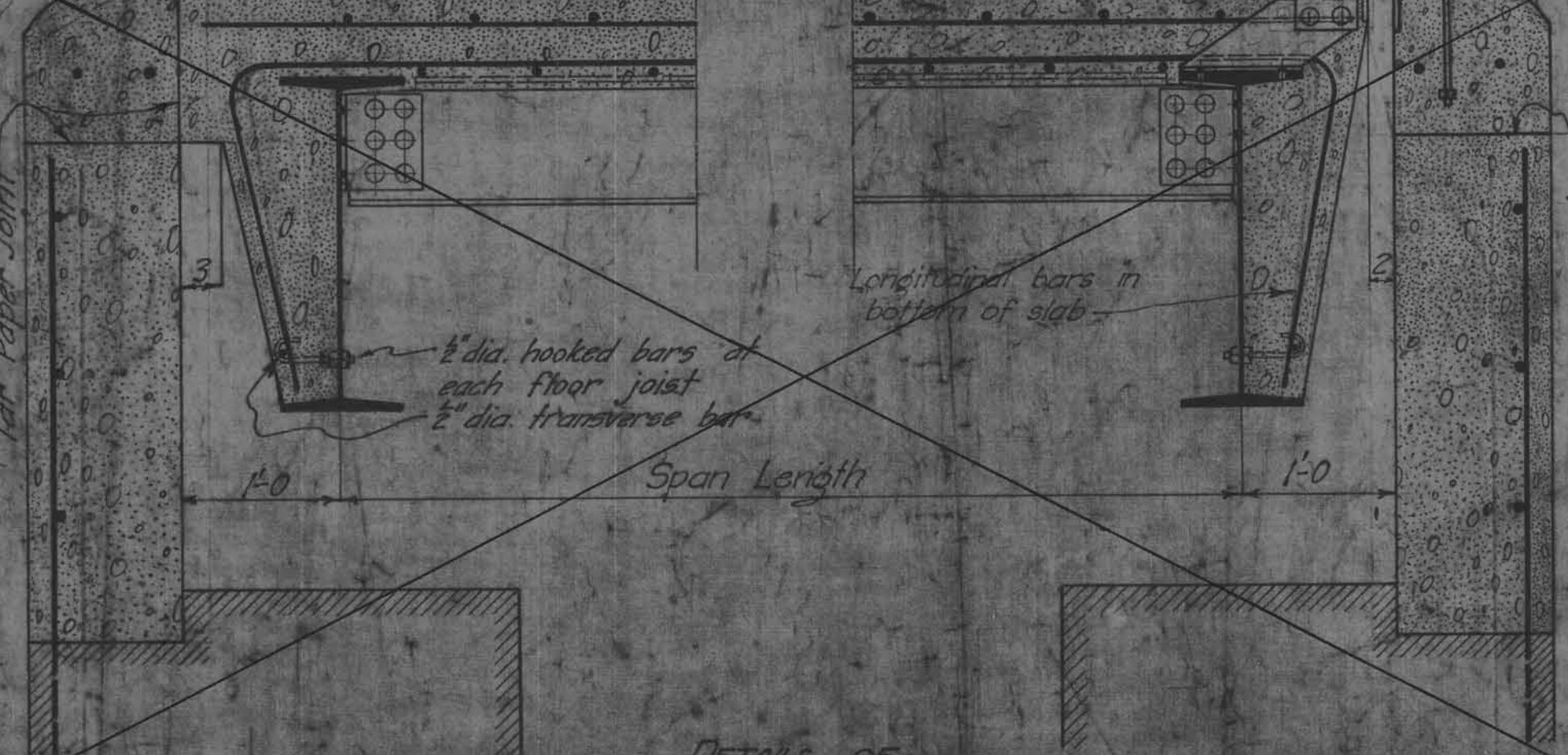
G.I. MAS. PL. for 50' & 60' spans
Weight = 140#

DETAILS OF BACKWALL
To be built after Structural Steel is erected



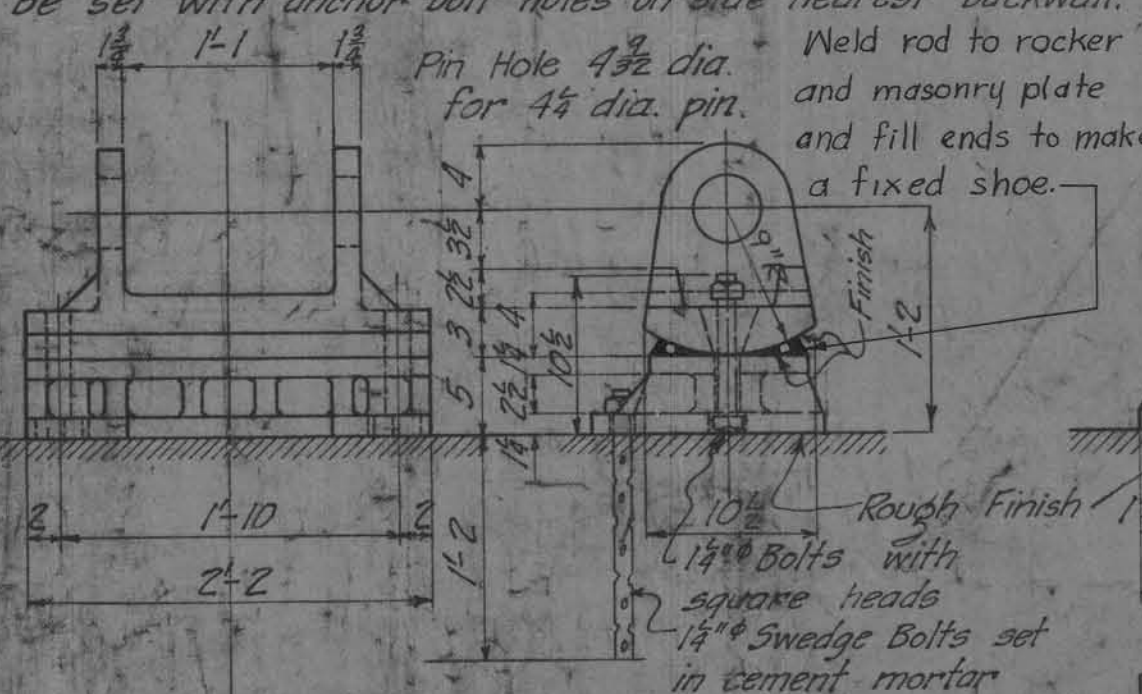
DETAILS OF WING RAIL
Weight = 115#

This block to be removed when road is paved. Expansion plate to be re-set in pavement at Exp. end.



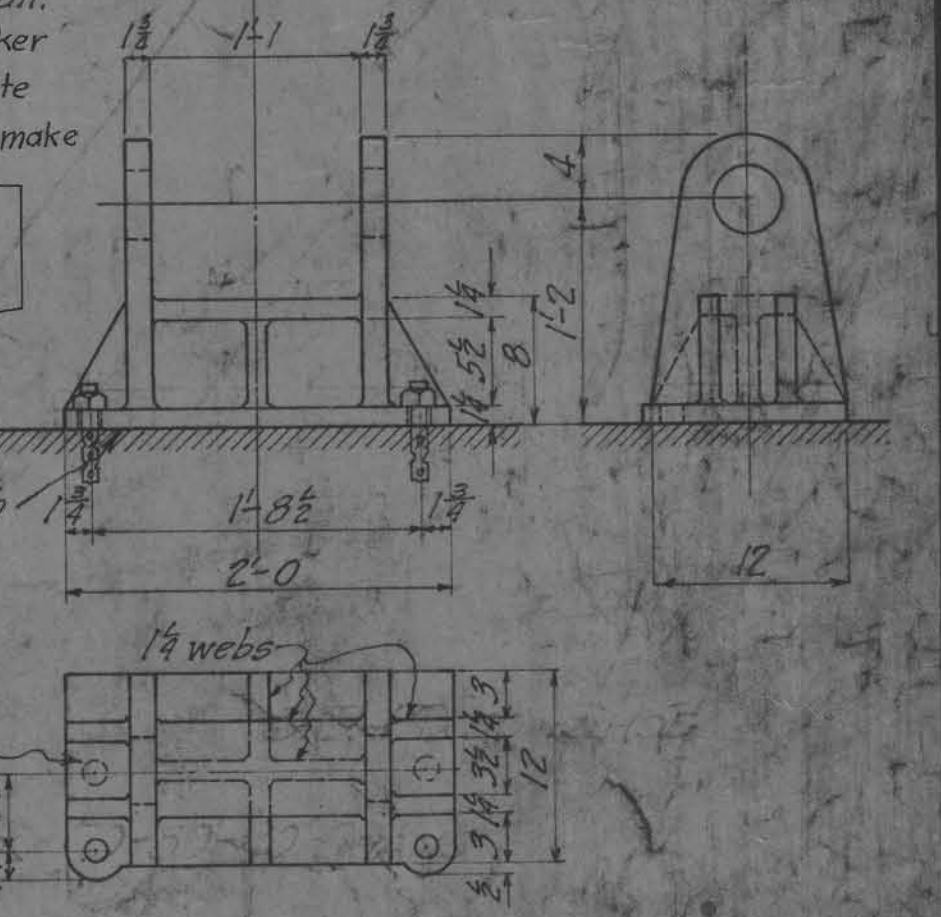
DETAILS OF END FLOOR BEAM ENCASUREMENT & EXPANSION PLATES

Weight of Exp. Pl. = 155#



G.I. ROCKER & MAS. PL.

Additional anchor bolt holes to be cored for skew spans only



G.I. FIXED SHOE

CASTINGS FOR 70', 80' & 90' SPANS

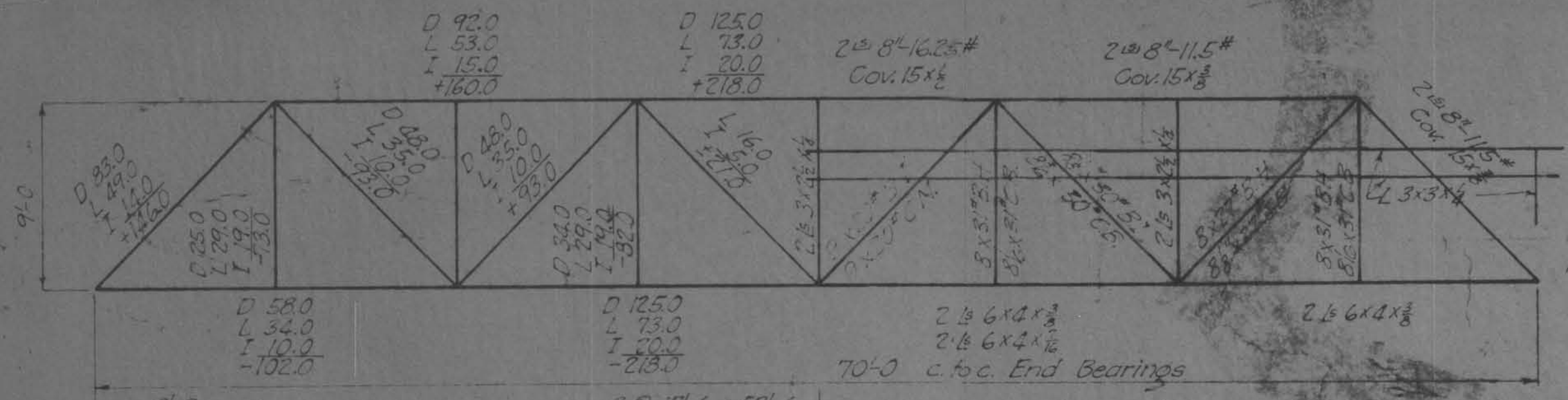
STANDARD DESIGN

Weight of 1 Rocker	280
Mas. Pl.	280
Fixed Shoe	310
Pin	75
2 Nuts	10

MISCELLANEOUS DETAILS FOR SERIES W PONY TRUSSES

CLASS A LOADING
IOWA STATE HIGHWAY COMMISSION

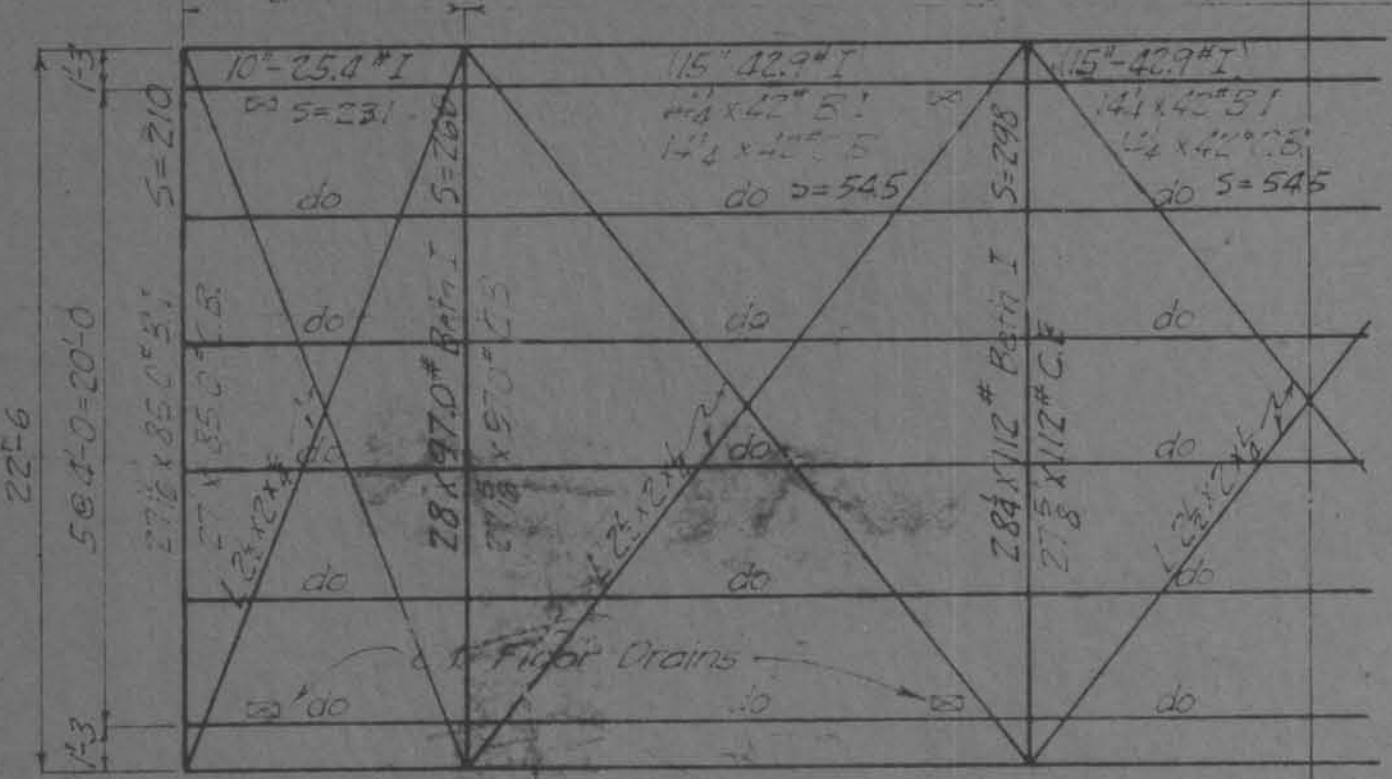
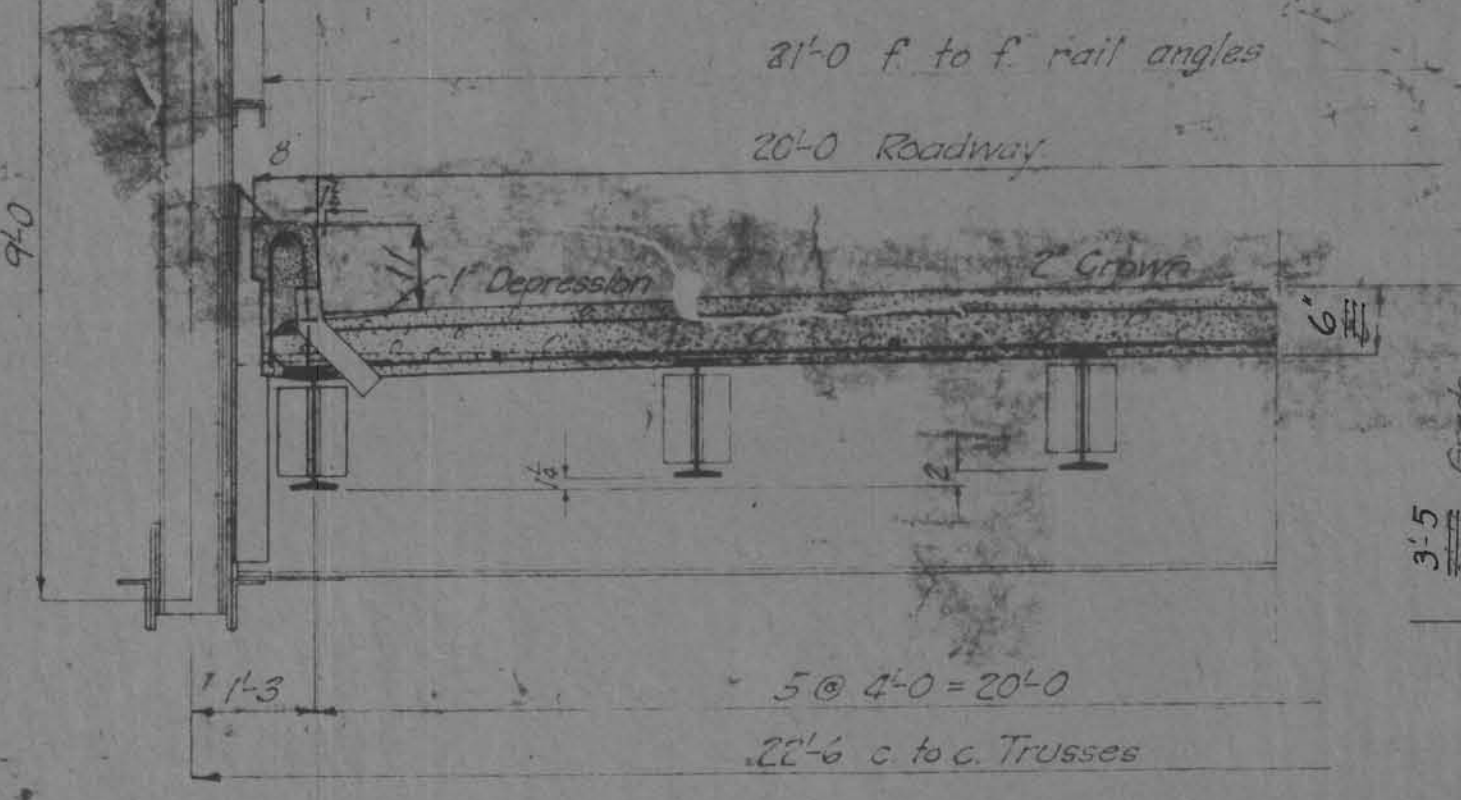
Note: Backwall and expansion details revised March, 1928. Castings, backwall and reinforcing revised; bills of reinforcing added May 1928. Casting details revised Jan 29, 1929. Backwall details revised Dec 7, 1929.



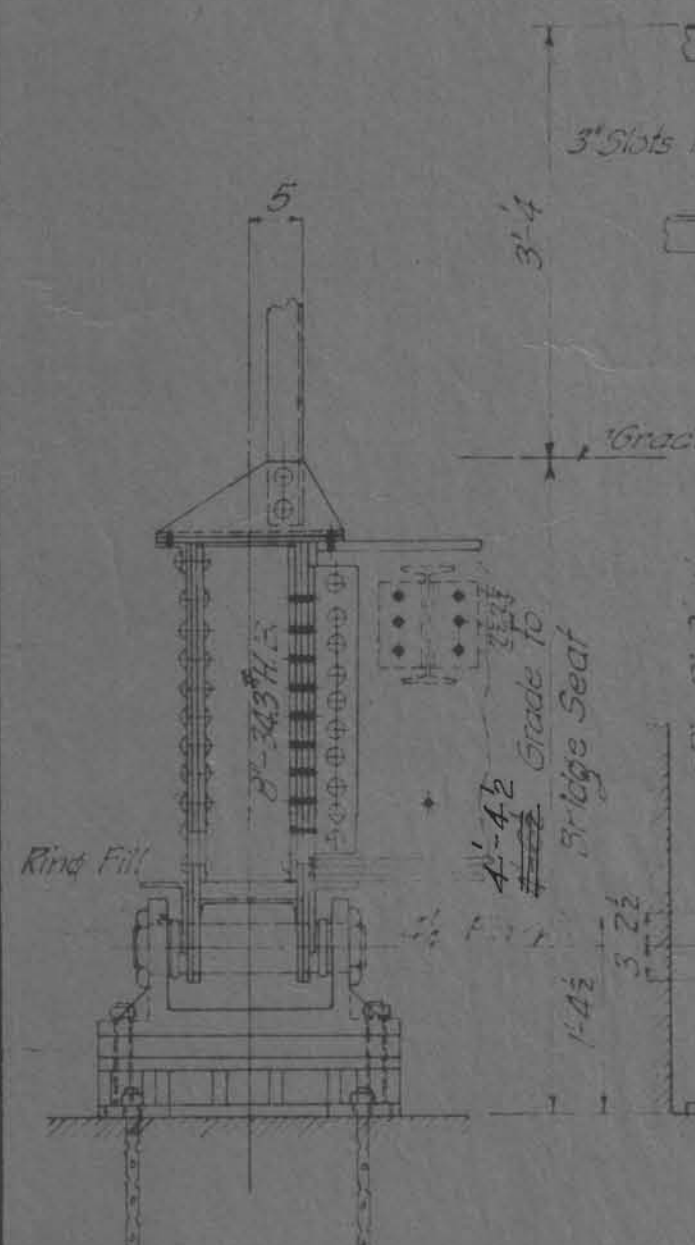
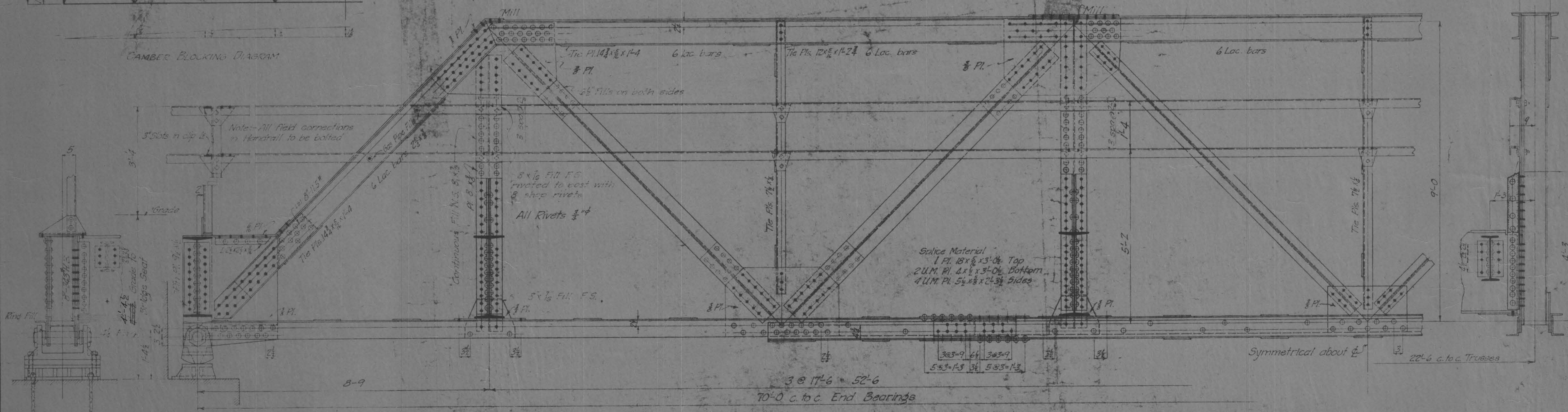
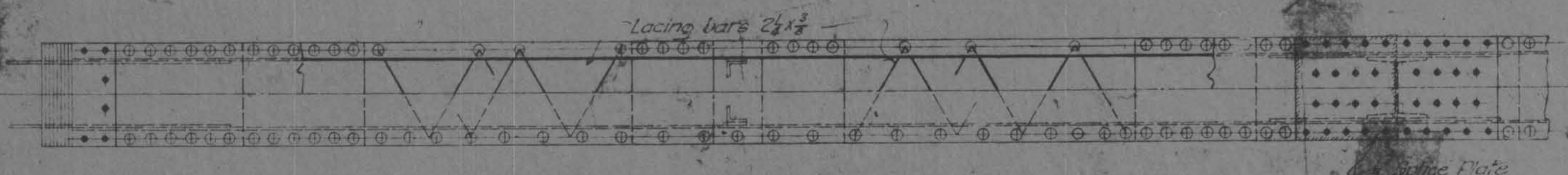
Maximum Reaction
 D 68.0
 L 40.0
 I 11.0
 119.0

ASSUMED LOADINGS
 Dead Load—
 Floor System—Weight of material plus 33% of Roadway for future Wearing Surface.
 Trusses—1945% of Truss including 33% of Roadway for future Wearing Surface.
 Live Load & Impact—See Specifications for Class 'A' Loading.
 Wind Load—200' per lineal ft. of bridge.

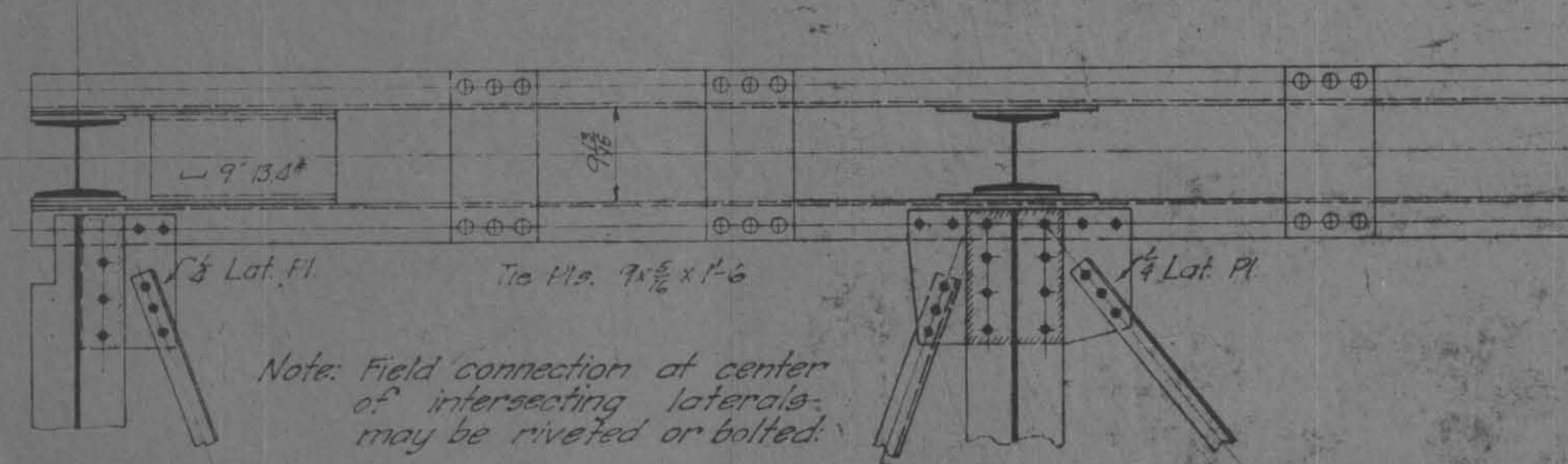
Note:—Curbs to be notched in 1/2" around end posts for details of Concrete Floor, Wing Rail, and Miscellaneous parts, see Sheet W6.



Note: Allowable substitutions shown in parenthesis.
 Note: Trusses to be cambered by increasing the length of the top chord 1/2" per panel.
 Total Camber
 D.L. Deflection
 Permanent Camber 1/8"



Floor Beam Connection is 10" Joint Connection is 15" Joint Connection is 15" x 1/2"



Note: Field connection at center of intersecting laterals may be riveted or bolted.
 Note: Trusses to be assembled at the shop for inspection, laterals and rail on bridge after which field holes shall be cleared by reaming. See IT 305H, 1930 Specifications.
 Note: Item marked "Trusses" includes wing rail, expansion pl., floor drains, castings, pins and nuts, anchors, bolts, and field rivets.

ESTIMATED QUANTITIES

Structural Steel			
Part	Gross	Waste	Net
Trusses	33300	400	32900
Floor beam	13600	100	13700
Joints	17000	300	16700
Miscal	2100	—	4800
Totals	68000	800	68100

Concrete		
Part	Concrete	Rein. Steel
Floor	416 cy	7055
Beams	35 cy	755

Note: Rail clearance, laterals, splice pl's, minor details and quantities revised May 1926.
 Diagonals and quantities revised Jan. 22, 1925.
 Substitutions added, and quantities and floor beams revised March 1928.
 Connections, quantities and location of all revised May 1926.
 Connections and quantities revised July 1926.

STANDARD DESIGN
70' X 20' PONY TRUSS SPAN
 CLASS A LOADING
 REINFORCED CONCRETE FLOOR
 IOWA STATE HIGHWAY COMMISSION