

**GENERAL NOTES**

For general steel notes see Index 23212

Concrete " 23210

Proposed falsework to be placed as shown on HALF PLAN above. 22' I-Beam spans to be set aside.

Proposed Piers and Bents to be built as detailed. Any exist. piles which interfere with proposed piles are to be pulled out.

Care must be taken when handling treated timber. Holes drilled after treatment to be pressure treated in field followed by a swabbing of hot asphalt. Bolts and drift bolts placed thru these holes to be dipped in hot asphalt before placing. Cuts & abrasions made after treatment to be swabbed with hot creosote followed by a swabbing of hot asphalt.

Cut-off of treated piles to be protected as shown on Std. Plan 8-2-1.

COMPLETE SET OF PLANS

Index 23209 General Plan

" 23210 Concrete Pier Details

" 23211 Tmbr. Details & Tie Plan Bill of Material

" 23212 Detail 50' T.P.G.

Std. Plan 8-1-2b, 8-1-2, 8-1-1, 8-2-1

REF: VF 1074-18 sheet C1

VF 1061-17 Div. Engrs. File 3159

**NORTHERN PACIFIC RAILWAY**  
ST. PAUL DIV. 4<sup>TH</sup> SUB. MPLS. BRANCH

**BRIDGE No. 9**  
OVER EDGERTON ST.

**REBUILDING BRIDGE**  
**GENERAL PLAN**

Scale: 1/8" = 1'-0" unless noted

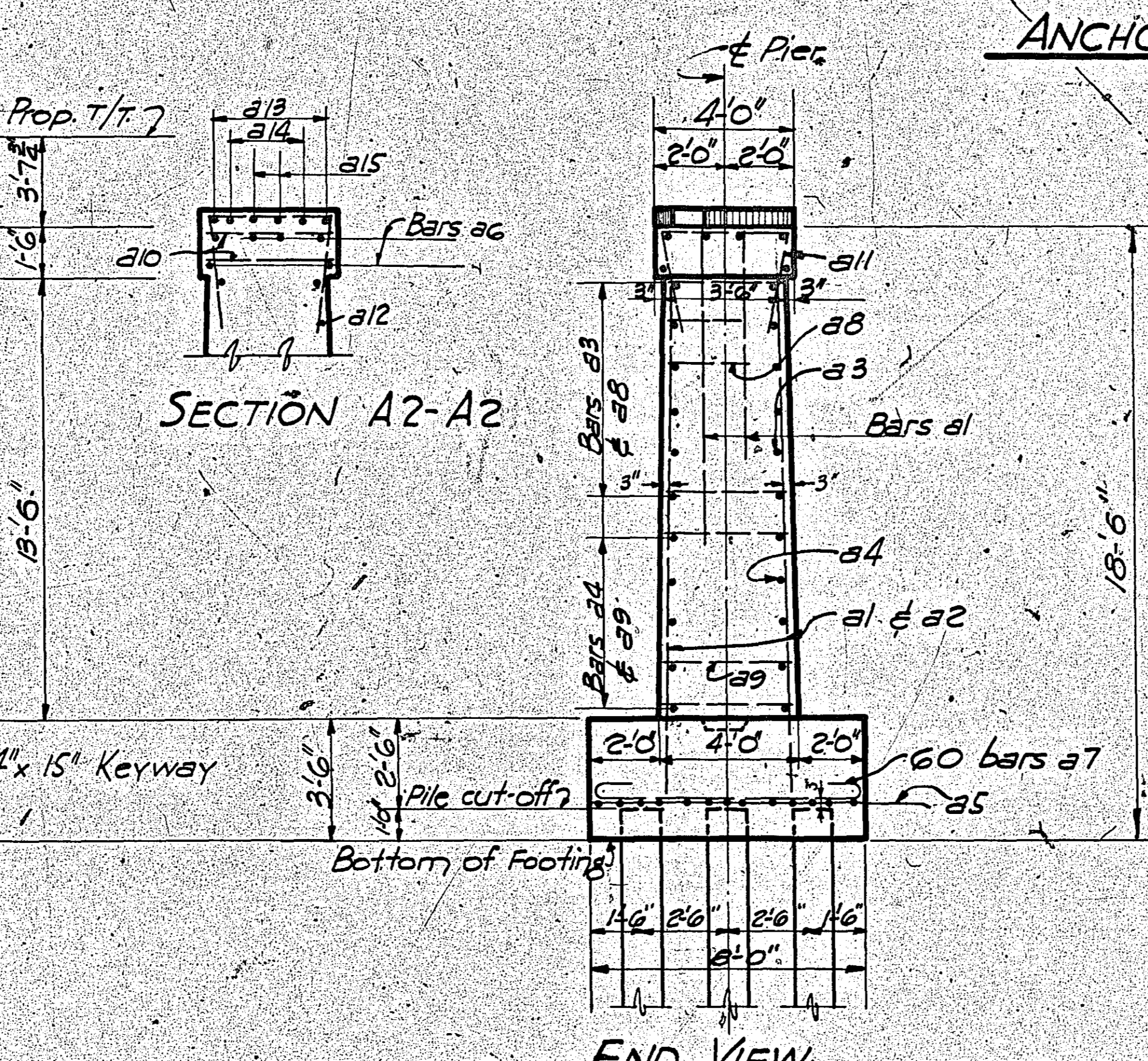
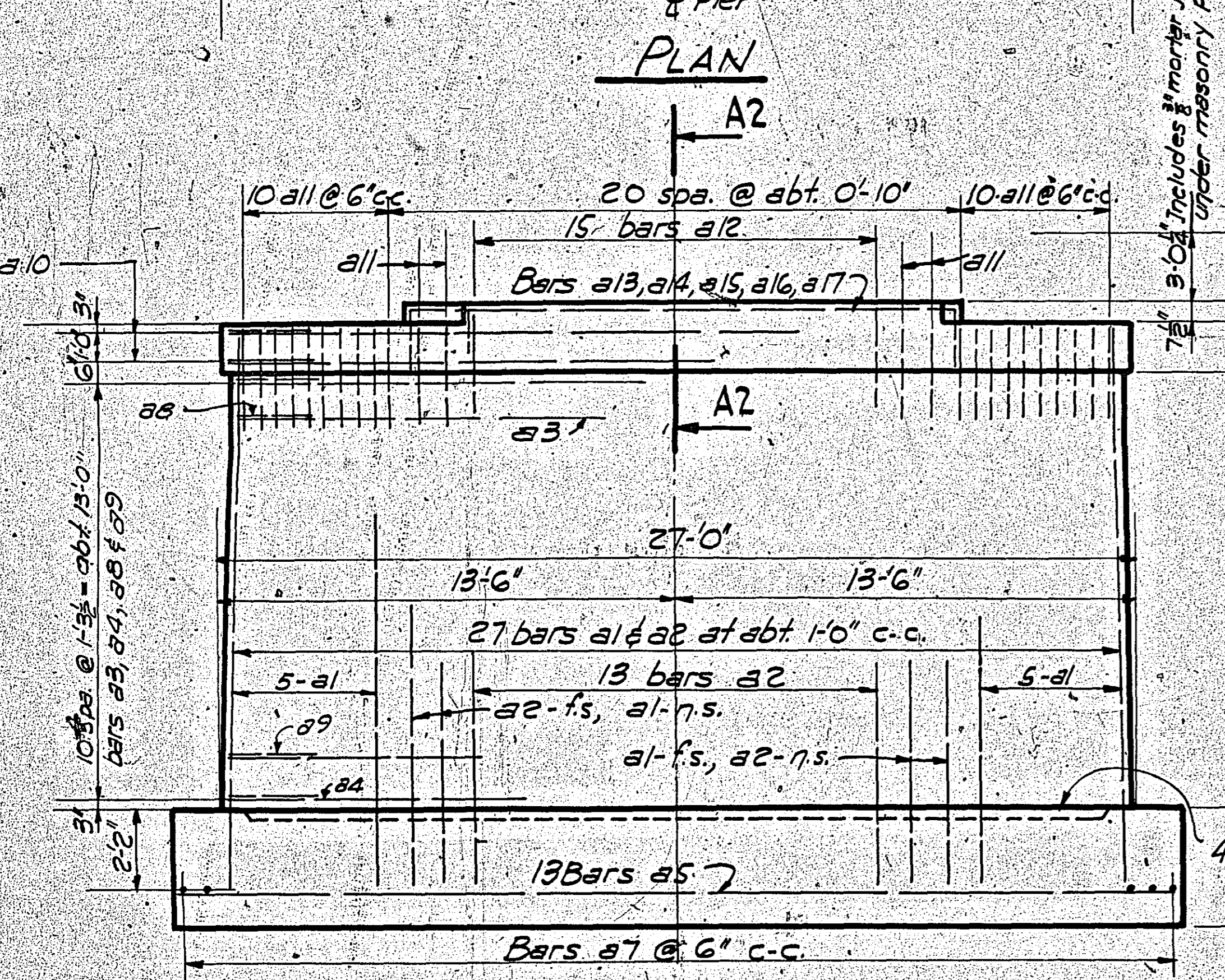
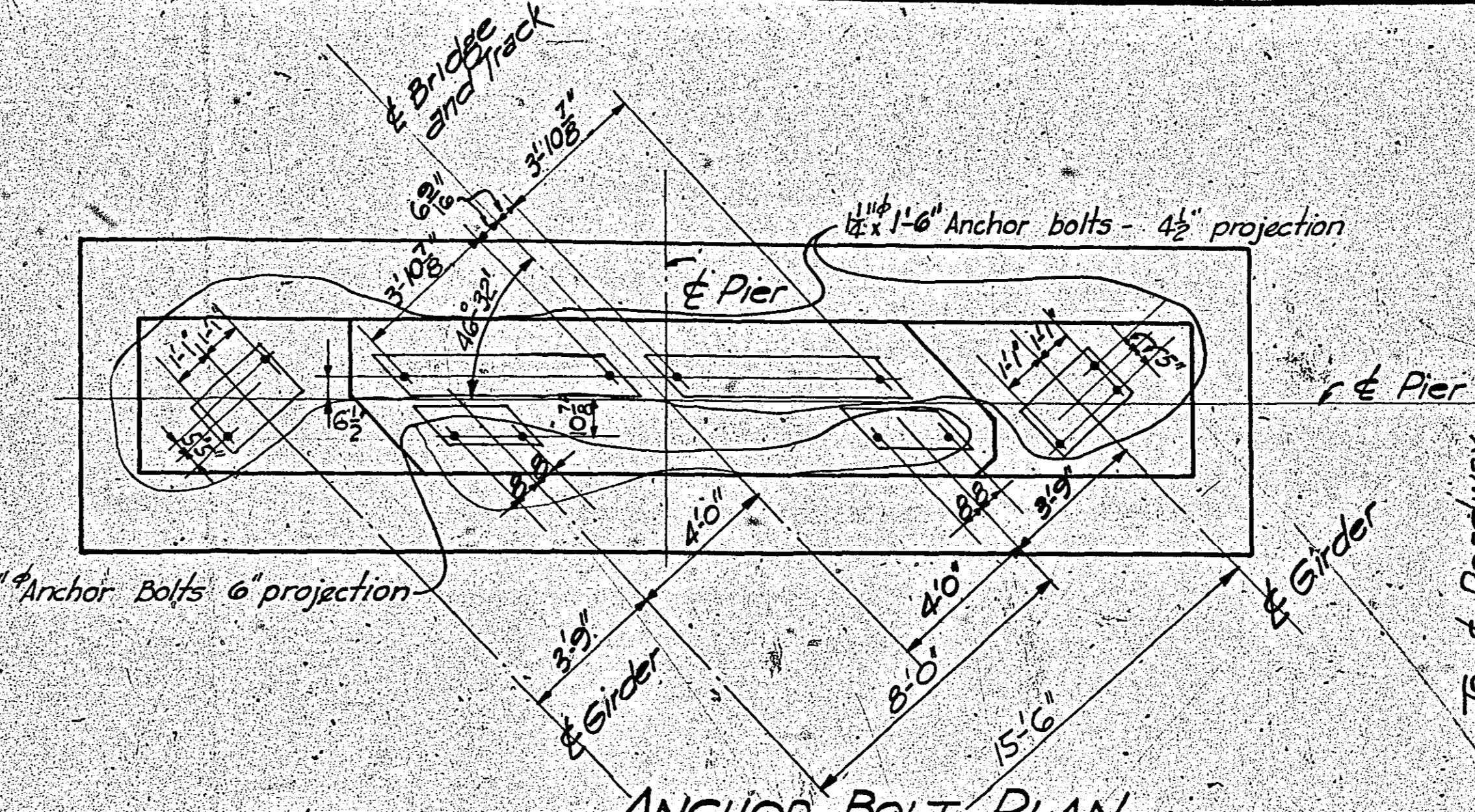
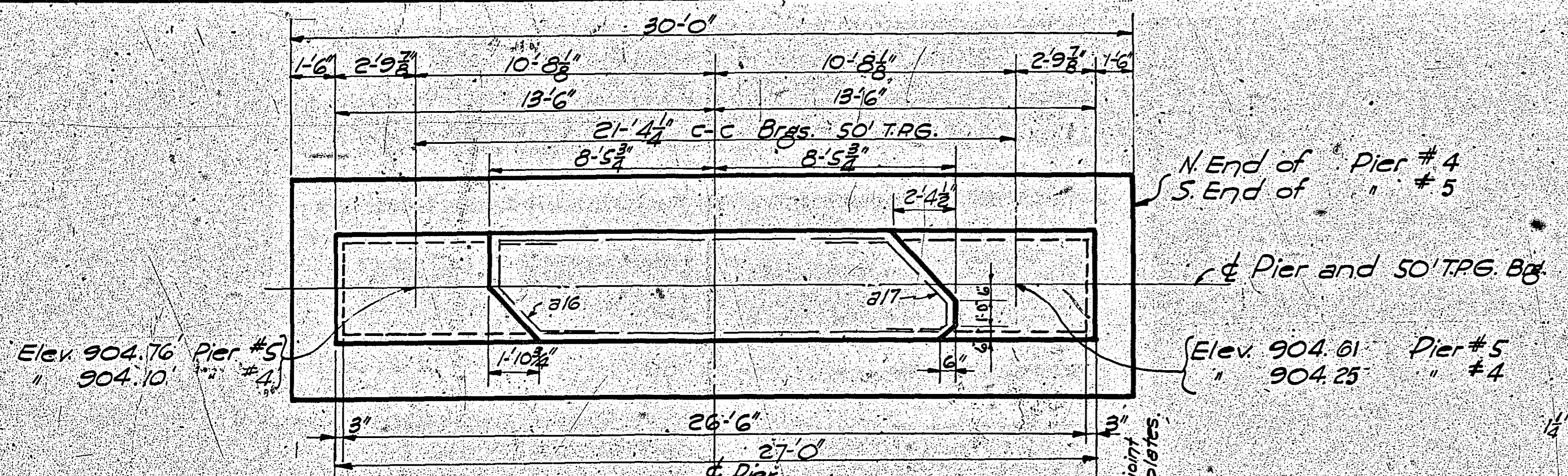
Office of Bridge Engineer St. Paul, Minn. July 10, 1948

Approved:

*C. E. Ekblom*  
Chief Engineer

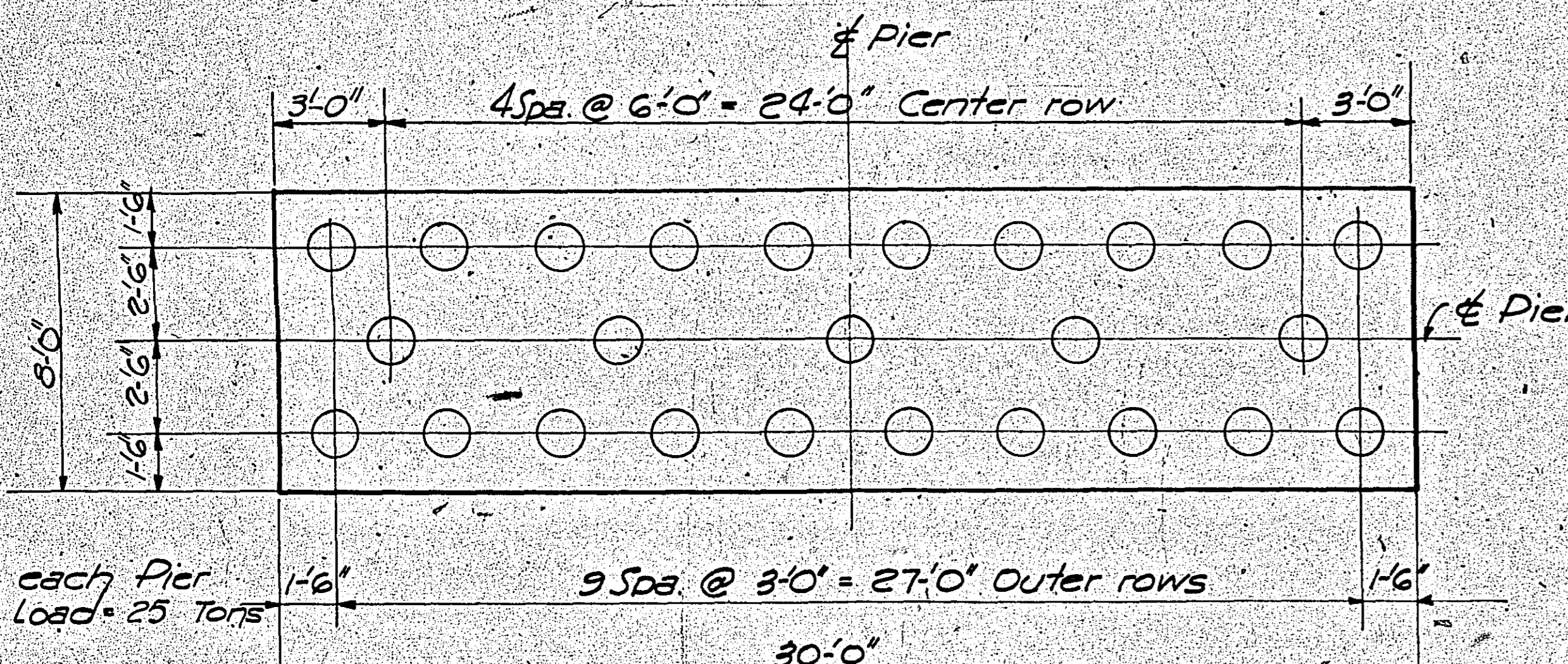
Bridge Engineer

Revision of	D	C	Date	Index No.	23209
				Sheet No.	1 of 4
				D.	T.
				V.F.D.	K.H.
				NAB	8-12-48



SIDE ELEVATION  
LOOKING FROM E ROADWAY

END VIEW



PILE PLAN  
DETAIL OF PROPOSED PIERS NOS. 4 and 5  
Scale 1/4" = 1'-0"

BILL OF MATERIAL - 2 PIERS  
 50 pcs. 25' long Treated piles  
 160 cu yd. Concrete Class "B"  
 15 "C"  
 26 " 1 1/2" 1 1/2" Anchor Bolts as detailed on 3rd Plan R-10-276A

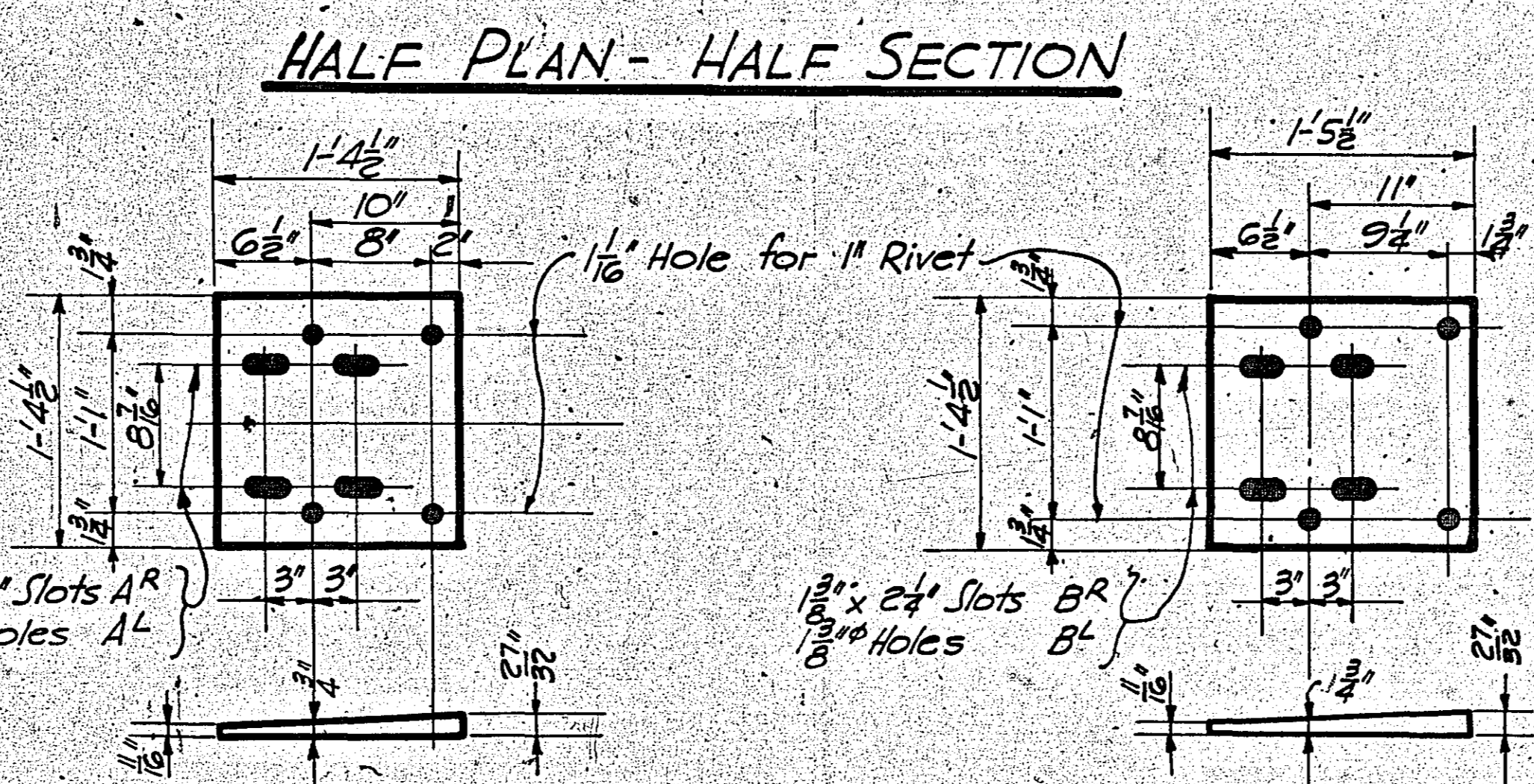
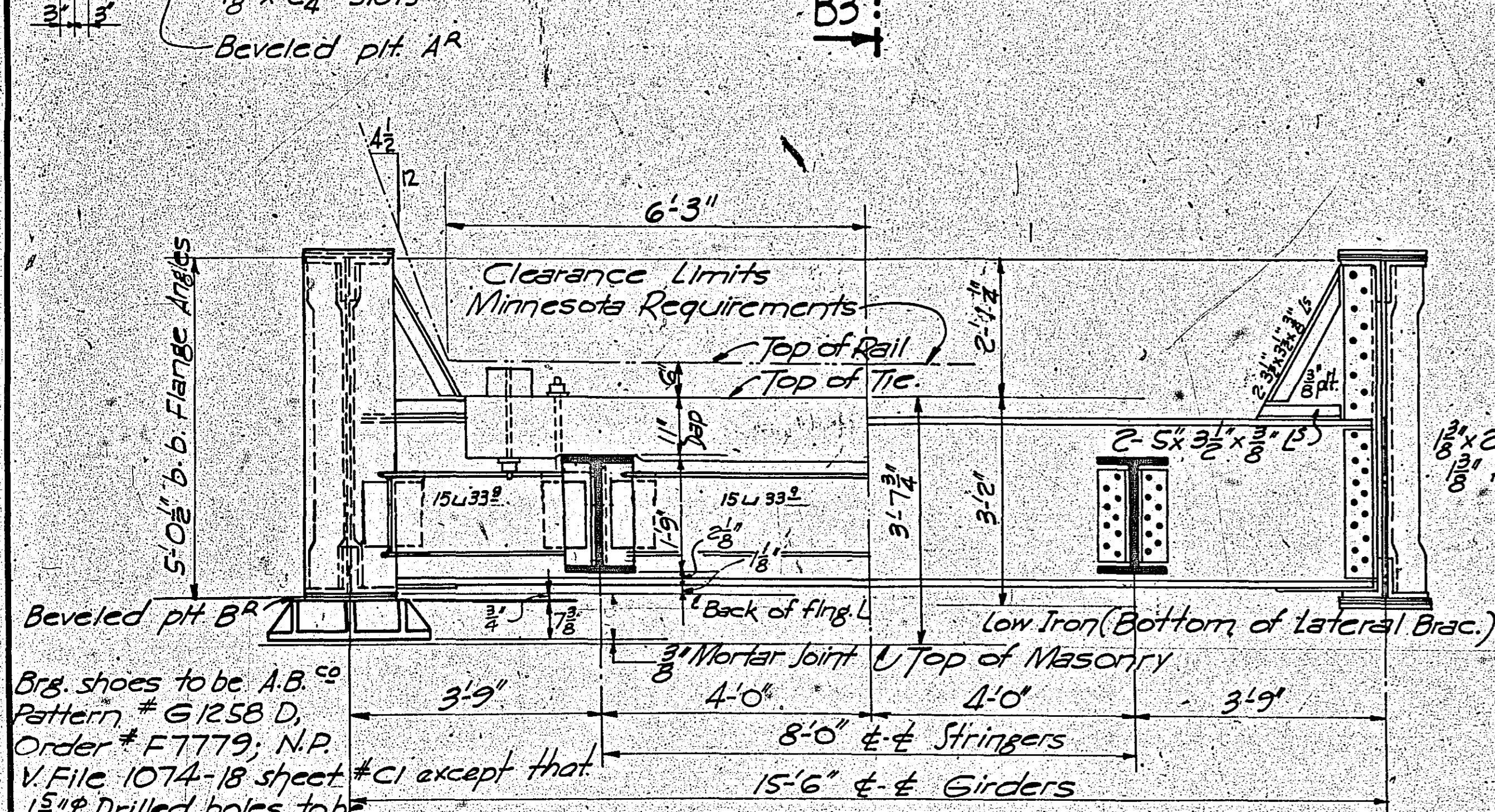
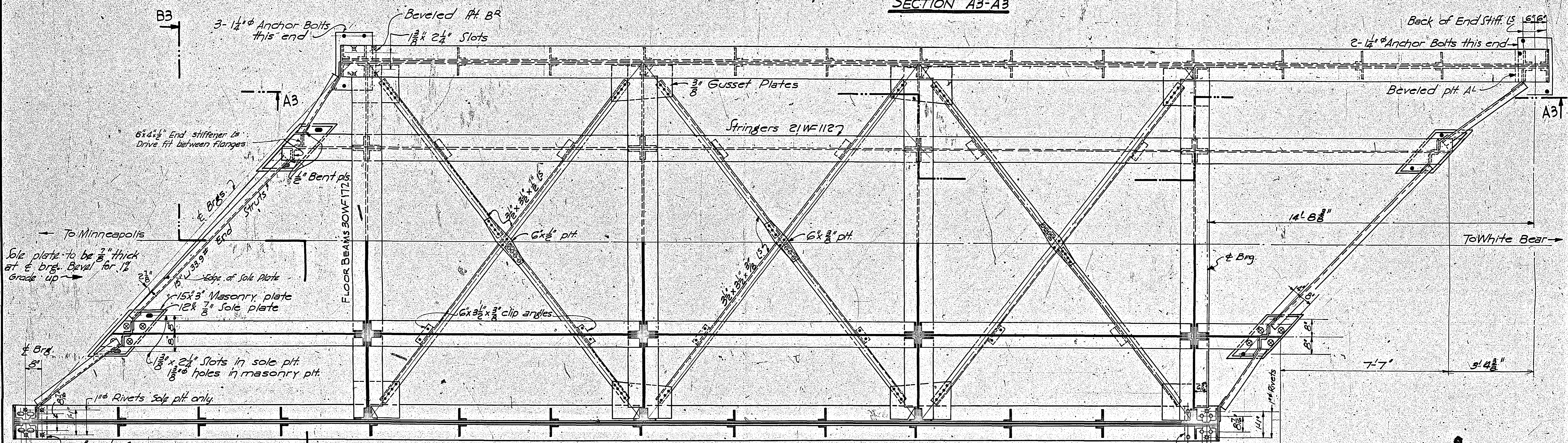
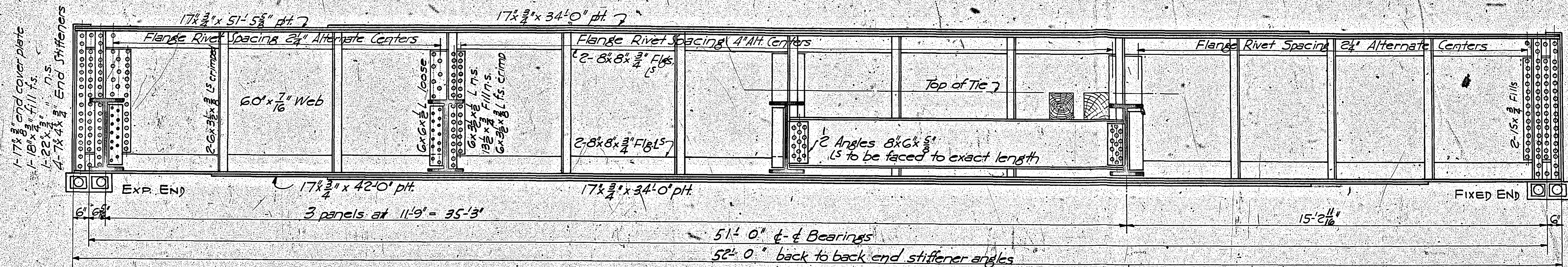
Footing and shaft to be of Class "B" concrete,  
 Coping to be of Class "C" concrete.  
 Material and Workmanship shall conform to  
 N.P. Co. Spec. E114, Sect. 13 dated Sept. 1946.  
 Top of Piers to be finished level under  
 bearings to the Elev. shown, and shall be sloped  
 to drain away from bearings.

NO. BARS	NO. PER PIER	MARK	SIZE	DETAIL
48	24	a1	3/4" x 17'-0"	Straight
60	30	a2	1" x 17'-6"	
27	12	a3	1/2" x 26'-0"	
20	10	a4	3/8" x 26'-3"	
20	10	a5	3/8" x 29'-6"	
12	6	a6	1" x 26'-6"	
120	60	a7	3/4" x 9'-2"	
24	12	a8	1/2" x 7'-0"	
20	10	a9	1/2" x 7'-3"	
8	4	a10	1" x 7'-6"	

NO. BARS	NO. PER PIER	MARK	SIZE	DETAIL
48	24	a11	1/2" x 10'-0"	
30	15	a12	1/2" x 11'-0"	
4	2	a13	1/2" x 18'-0"	
4	2	a14	1/2" x 18'-3"	
4	2	a15	1/2" x 19'-0"	

NORTHERN PACIFIC RAILWAY  
 ST. PAUL DIVN. 4TH SUB. MPLS. BRANCH  
**BRIDGE No. 9**  
 OVER EDGERTON ST.  
**REBUILDING BRIDGE CONCRETE PIER DETAILS**  
 Scale: 1/4" = 1'-0"  
 Office of Bridge Engineer St. Paul, Minn. June 28, 1948  
 Approved:   
 Chief Engineer  
 Bridge Engineer  
 Revision of \_\_\_\_\_ Date \_\_\_\_\_ Index No. 23210  
 Sheet No. 2 of 4  
 V.F.D. K.H. NAB 912-40  
 6661

Cover plate rivets to have 4" Min. & 7" max. pitch. Spacing at ends of plts. to be 4" for a distance sufficient to develop that plate.



**NOTE**  
 Design and Workmanship to conform to N.P.Ry. Co. Spec. E-112 dated June 1, 1925.  
 Structural Steel to be O.H. steel conforming to A.S.T.M. Spec. A7.  
 Rivet Steel to conform to A.S.T.M. Spec. A141, most recent editions.  
 Rivets shall be 3/8" except where noted.  
**SHOP PAINT:** All surfaces to be thoroughly cleaned before painting. All surfaces to be one (1) coat, contact surfaces and those inaccessible after erection to be given two (2) coats of Red Lead and Boiled Linseed oil.  
**FIELD PAINT:** shall be two (2) coats of approved Black Bridge Paint except on top surfaces of stringer and flr. br. flanges and upper surfaces of lateral bracing, which shall be given one (1) heavy coat of Bridge Cement.  
 Shop Drawings to be made in ink on tracing cloth and shall become the property of the Ry. Co.  
 Inspection by H.G. Burnham, Engr. of Tests.

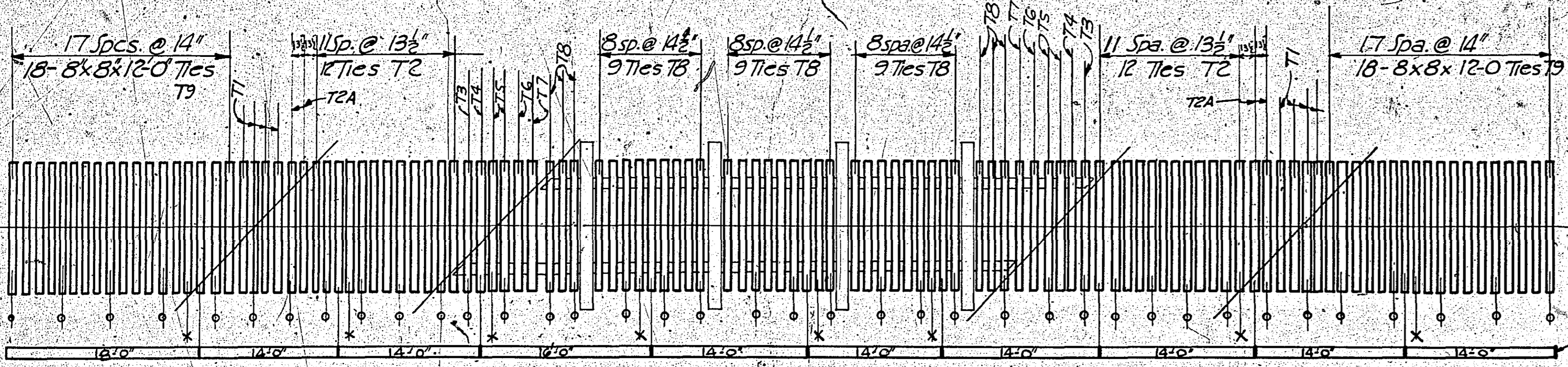
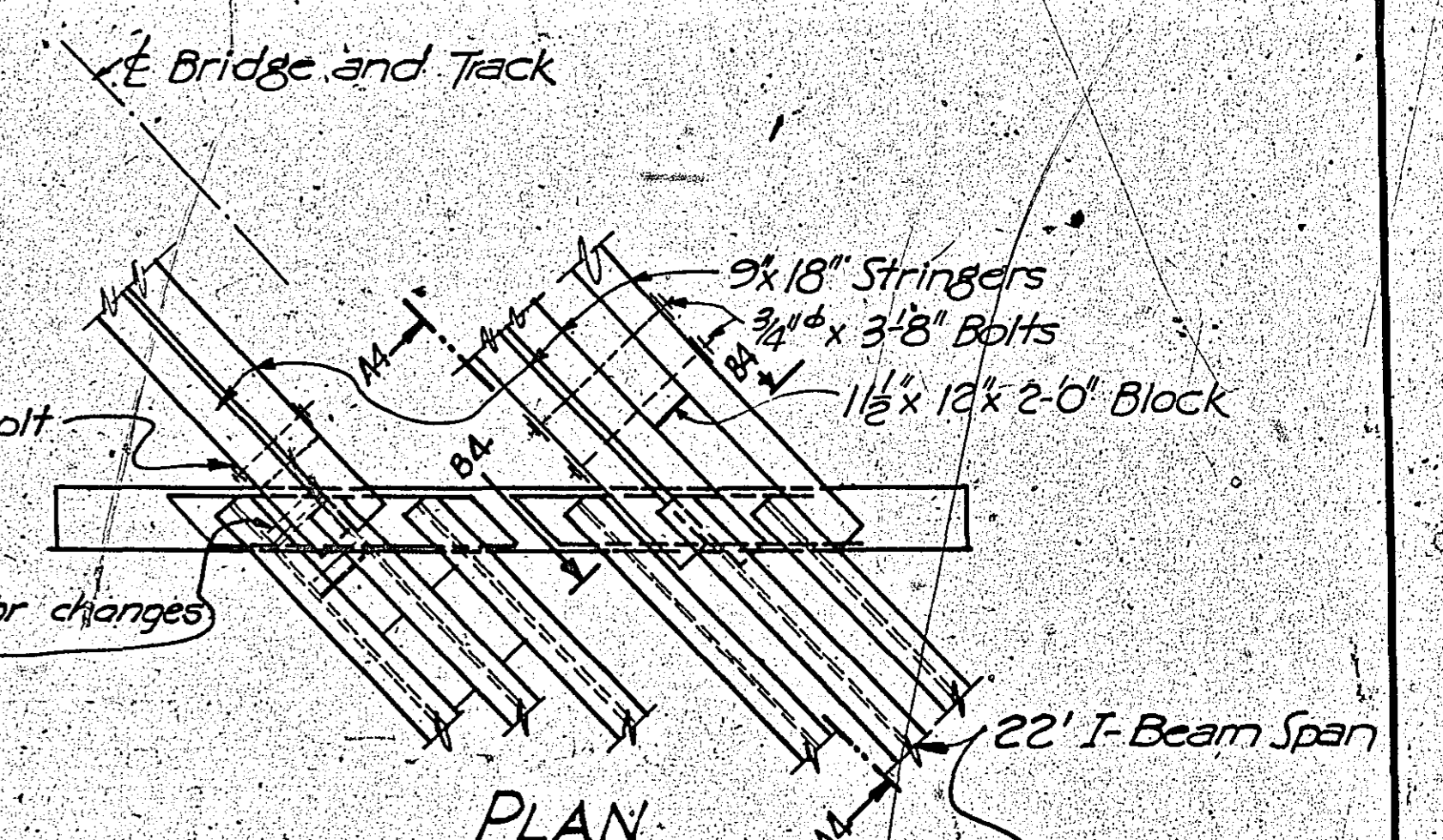
**BASIS OF CALCULATION:**  
 Dead Load - 2000# per foot of span.  
 Live Load - 2 Coopers E-65 locom. followed by U.L. of 6500# per ft of track.  
 Impact percentage: 300 + 300 + 100 L. span length in feet.  
 Lateral Forces:  
 Wind on Structure 350# per lin. ft.  
 Train 300#  
 Sway of 400#

NORTHERN PACIFIC RAILWAY  
 ST. PAUL DIVN. 4TH SUB. MPLS. BRANCH

**BRIDGE No. 9**  
 OVER EDGERTON ST.  
**REBUILDING BRIDGE**  
**SKewed T.P.G.**

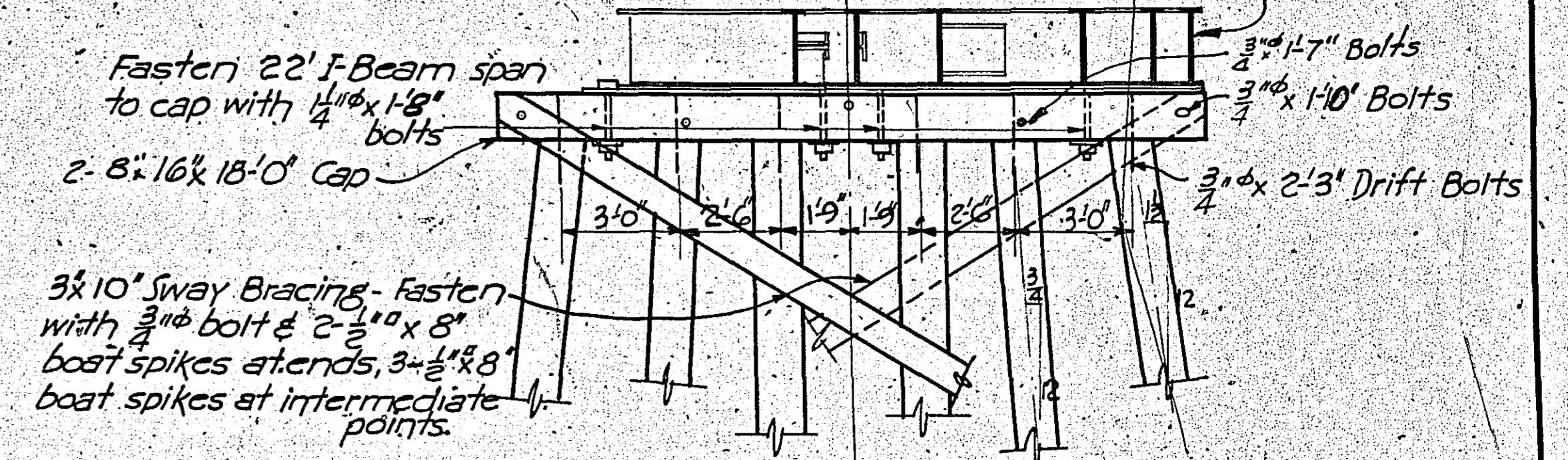
Scale: 1/4" = 1'-0" and as noted  
 Office of Bridge Engineer St. Paul, Minn. June 13, 1948  
 Approved:

Chief Engineer  
 Revision of \_\_\_\_\_ Date \_\_\_\_\_ Index No. 23212  
 Sheet No. 4 of 4  
 V.F.D. K.H. D.L.D.

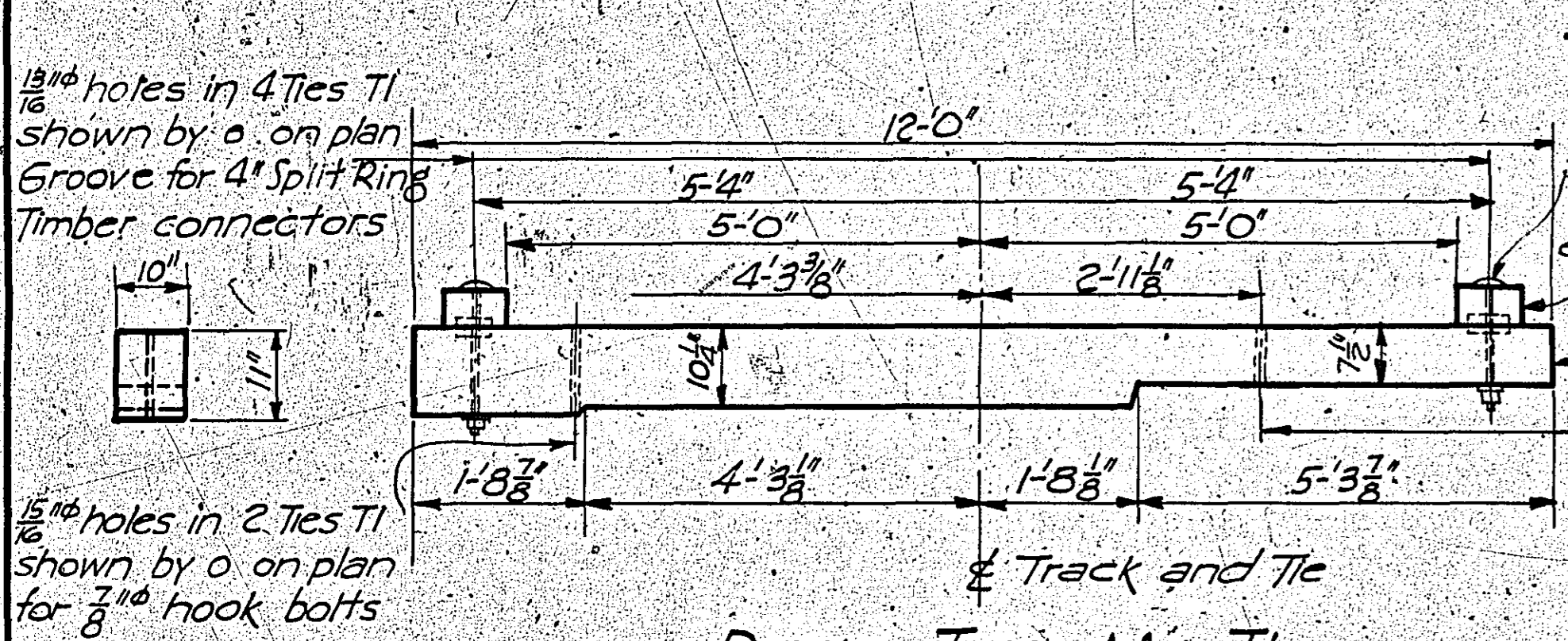


To White Bear -  
o Indicates Hook Bolts on steel spans or 5/8" Bolts on timber spans and Lewis Guard Rail Bolt  
x Indicates Lewis Guard Rail Bolts only.

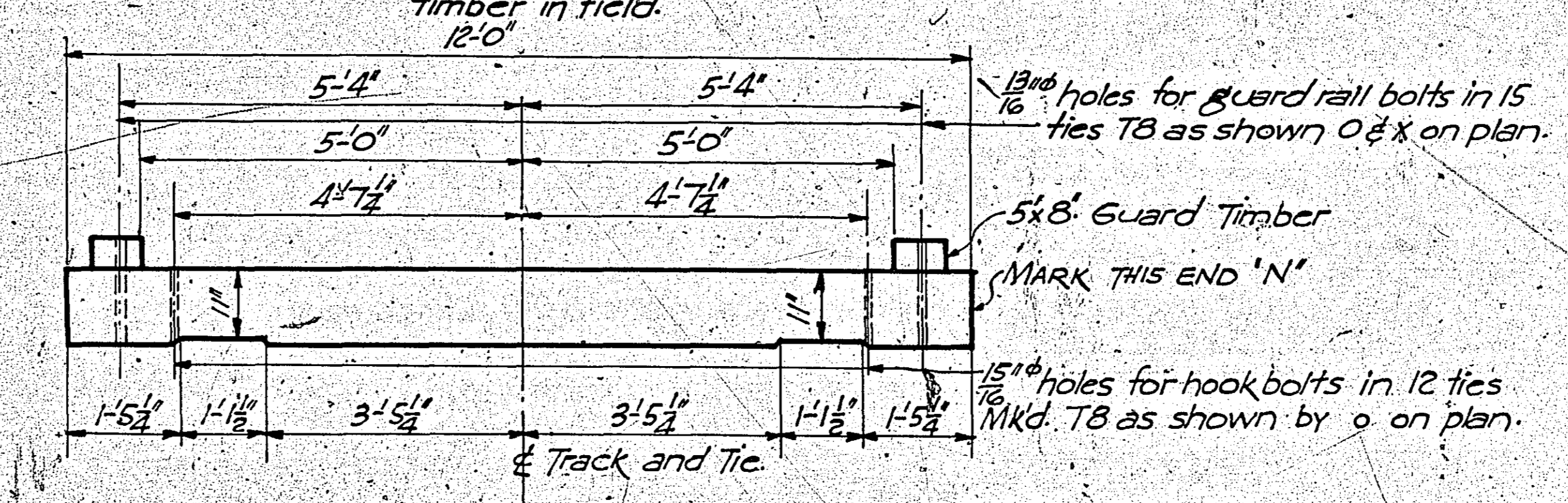
5x8" Guard Timber spliced over ties indicated by heavy lines. 3/4" Lewis Guard Rail Bolts ties MKd. 0 & x. 3/4" x 10" Boat spikes in other ties. Bore and cut grooves in guard timber in field.



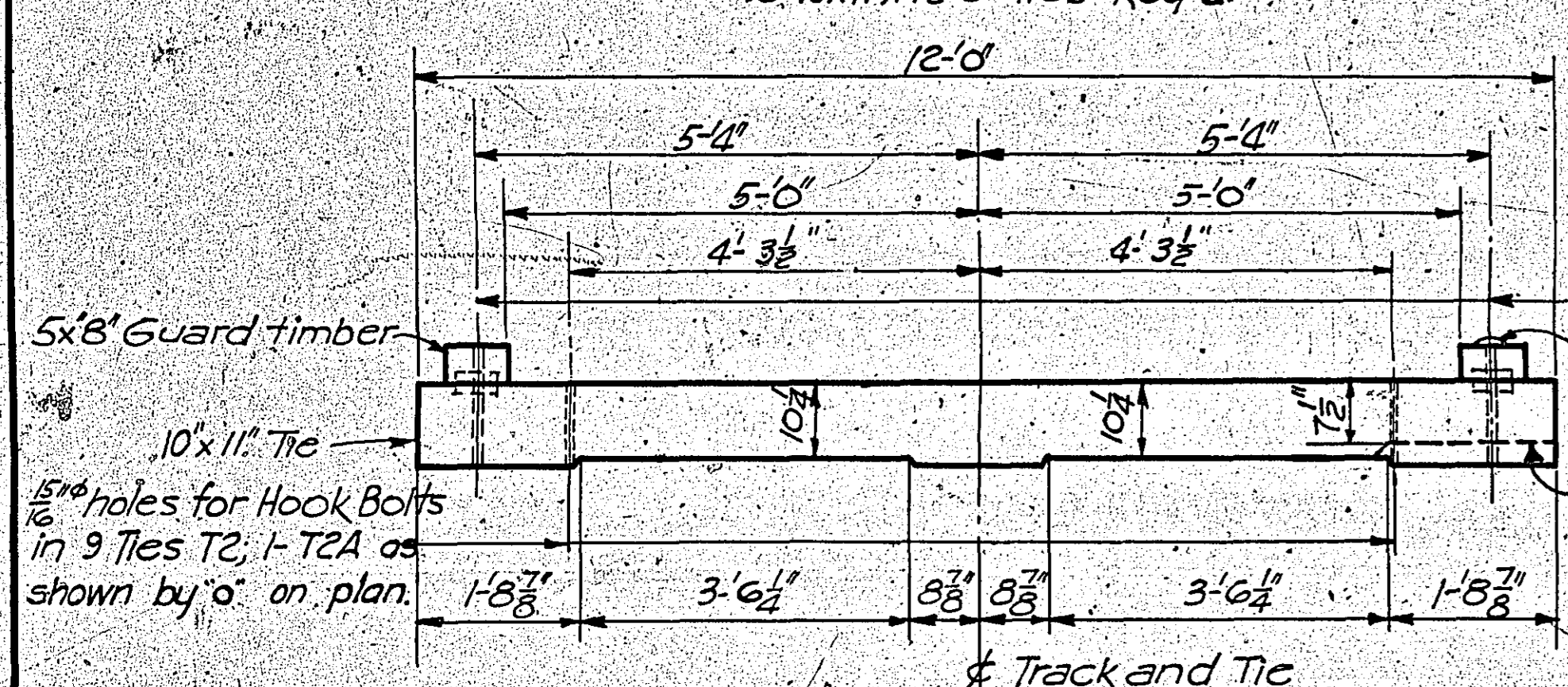
SECTION A1-A1  
See Index 23209 for location of Section A1-A1  
DETAIL OF PROPOSED BENTS #3 & #6  
Scale 1/4" = 1'-0"



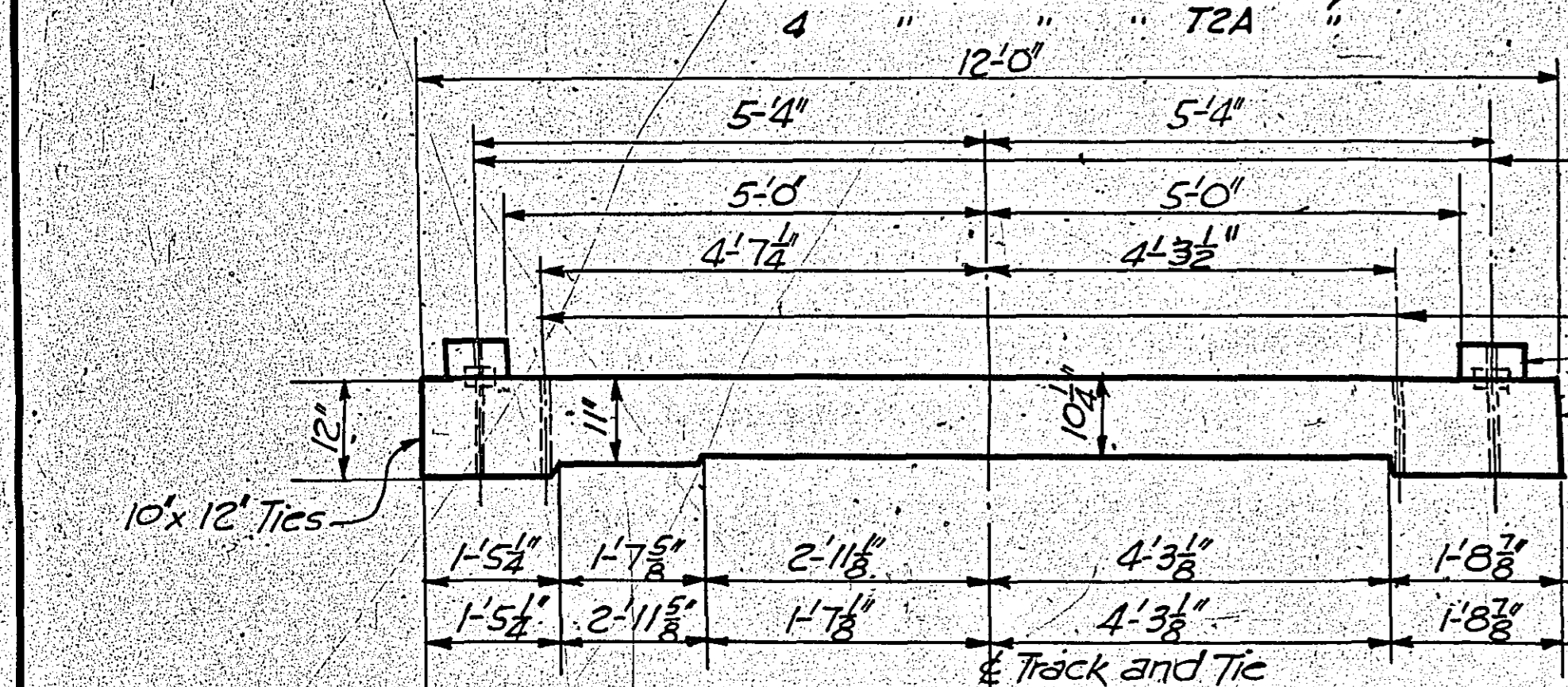
DETAIL TIES MK. T1  
8-10x11x12-0 Ties Req'd.



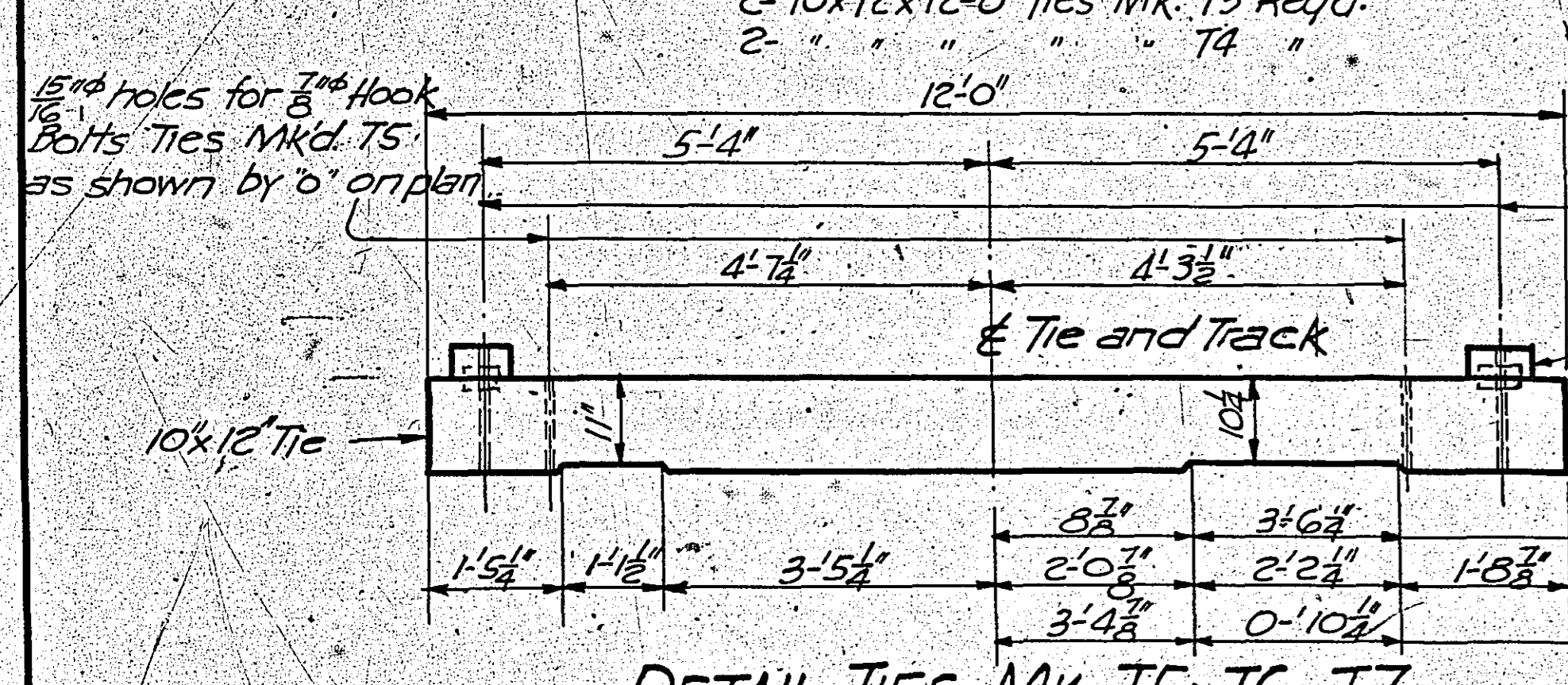
DETAIL TIES MK. T8  
33-10x12x12-0 Ties MK. T8 Req'd.



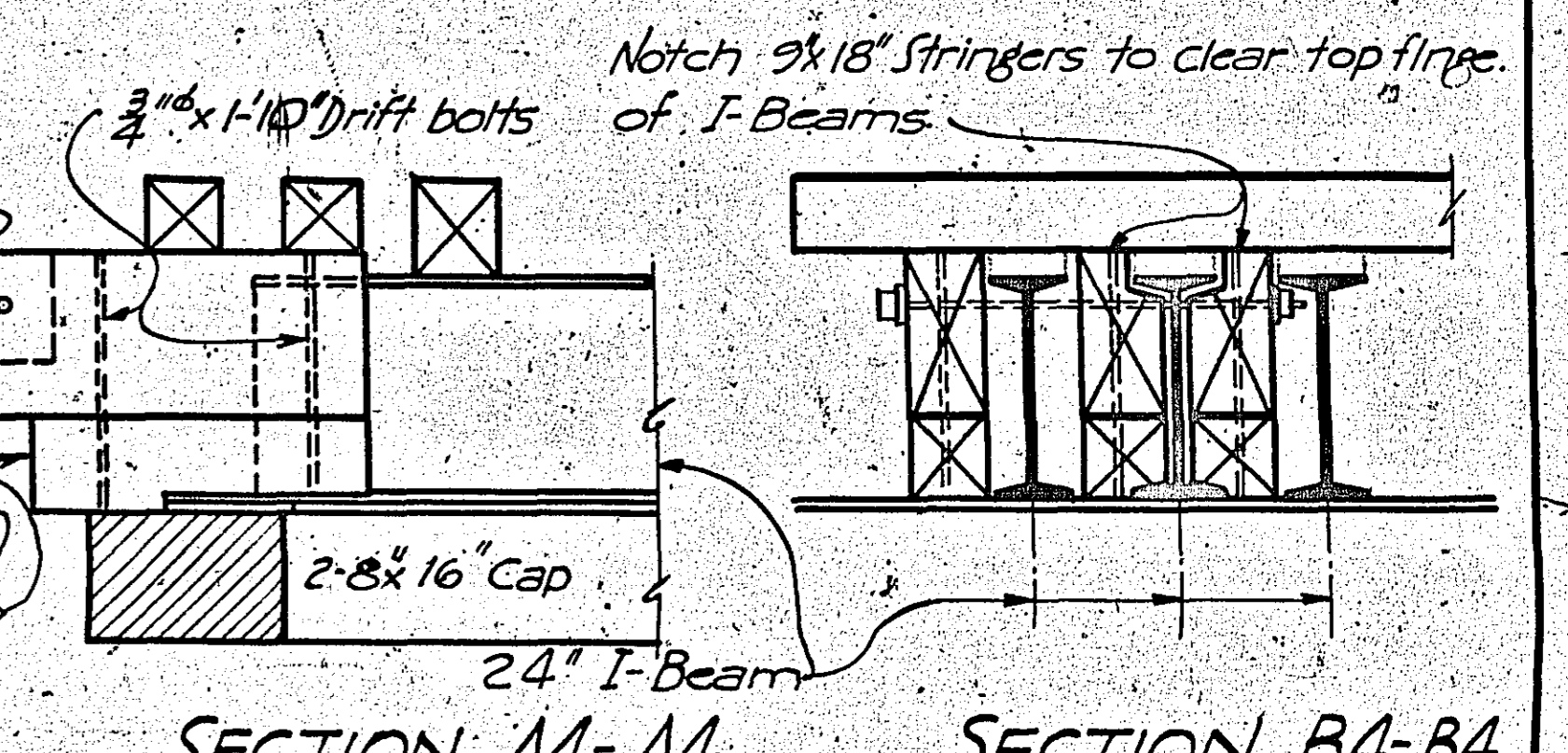
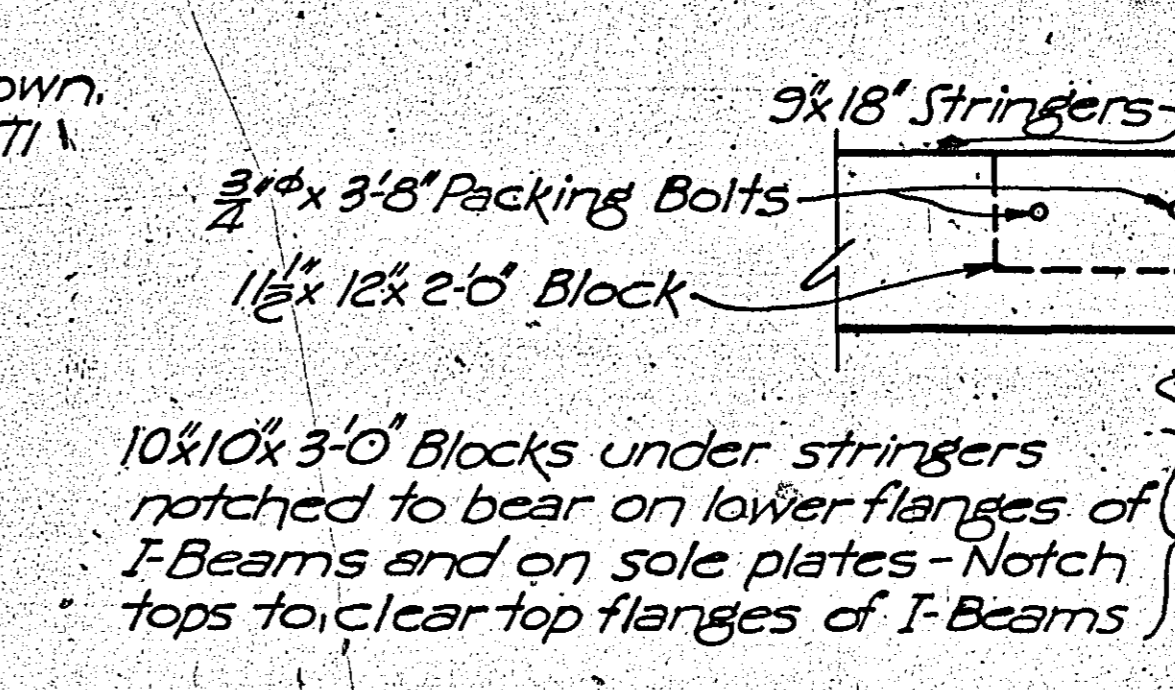
DETAIL TIES MK. T2 & T2A  
24-10x12x12-0 Ties MK. T2 Req'd.  
4 " " " " T2A



DETAIL TIES MK. T3 & T4  
2-10x12x12-0 Ties MK. T3 Req'd.  
2 " " " " T4



DETAIL TIES MK. T5, T6, T7  
4-10x12x12-0 Ties T5 Req'd.  
2 " " " " T6  
2 " " " " T7



BILL OF MATERIAL - PROPOSED BRIDGE			BILL OF MATERIAL - FALSEWORK		
No. Req'd	Size	Description	No. Req'd	Size	Description
All		Timber to be Treated	20	40' long	Falsework piles
10	25' long	Piles	4	14 1/2 x 14 x 16'-0"	Caps
22	35' "	"	2	3' x 18' x 36'-0"	Stringers
4	8' x 16' x 18'-0"	Caps	8	" x 34'-0"	"
8	" x 18'-0"	"	4	" x 18'-0"	"
4	9' x 18' x 28'-0"	Stringers	8	3' x 10' x 24'-0"	Bracing
4	" x 22'-0"	"	4	6' x 10' x 22'-0"	Long "
8	" x 16'-0"	"	4	" x 16'-0"	"
2	" x 14'-0"	"			
10	10' x 10' x 3'-0"	Blocks			
2	1 1/2 x 12 x 2'-0"	"	12	6 x 3 x 1 1/2	LAB Detailed on 5th Plan 8-1-2
2	3 x 10 x 24'-0"	Sway Brace	38	3/4" x 2 1/2"	Bolts - sq. hd. & nuts
6	" x 22'-0"	"	24	" x 1 1/2"	" " " " "
4	6 x 10 x 22'-0"	Long. brace	16	" x 1 1/2"	" " " " "
4	" x 10'-0"	"	16	" x 1 1/2"	" " " " "
10	2 1/2 x 4 x 4'-6"	Bulkhead Spacers	20	" x 2'-0"	Drift bolts - no hd. or pt.
2	9' x 18' x 28'-0"	(SH Stringers to be treated for Bulkheads	32	1/2" x 1'-0"	Boat Spikes
2	" x 24'-0"	"	100	" x 10"	"
2	" x 20'-0"	"	128	" x 8"	"
4	3/8" x 1 1/2" long	Structural Rib bolts Anco Nuts			
4	" x 1 1/2"	"			
8	6 x 3 x 1 1/2	Bolts - sq. hd. & nut			
4	3/8" x 4-5"	" " " " "			
4	" x 3-8"	" " " " "			
20	" x 3-6 1/2"	" " " " "			
20	" x 1'-10"	" " " " "			
16	" x 1'-11"	" " " " "			
22	" x 1'-7"	" " " " "			
16	" x 1'-6 1/2"	" " " " "			
8	1 1/2" x 12-6"	" 1-1/2" wash. ea.			
32	3/8" x 2-5"	Drift bolts - no hd. or pt.			
10	" x 1'-10"	" " " " "			
84	Patt. B-217	C.I. separators			
192	F-1159	O.G. washers			
140	1/2" x 8"	Boat spikes			
32	1/2" x 10"	"			

BILL OF MATERIAL - TIES & FASTENINGS			
No. Req'd	Mark	Size	Description
8	T1	10x11x12-0"	Ties as Detailed - Treated
24	T2	" " " "	" " " "
4	T2A	" " " "	" " " "
2	T3	10' x 12' x 12'-0"	" " " "
2	T4	" " " "	" " " "
4	T5	" " " "	" " " "
2	T6	" " " "	" " " "
2	T7	" " " "	" " " "
33	T8	" " " "	" " " "
36	T9	8' x 8' x 12'-0"	525 7/8" "
2		5' x 8' x 18'-0"	Guard Timber - Rough
2		" x 16'-0"	" " " "
16		" x 14'-0"	" " " "
28		3/8" x 1 1/2" Type C	Hook bolts, Anco nuts, 1-3" x 3/8"
24		" x 1 1/2" B	Wash. - Detailed on R-10-276A
24		3/8" x 2-1/2"	Bolts - Anco nuts - 20G wash. ea.
40		3/8" x 1-7"	Lewis Guard Rail bolts
24		" x 1-6"	Anco nuts - 1-3" x 3/8"
28		" x 1-2"	washer each
92		4" Split Ring Timber Connectors	
160		1 1/2" x 10"	Boat Spikes

NORTHERN PACIFIC RAILWAY  
St. Paul Div. 4th Sub. MPLS BRANCH  
**BRIDGE No. 9**  
OVER EDGERTON ST.  
**REBUILDING BRIDGE**  
**TIMBER DETAILS**  
**TIE PLAN - BILL OF MATERIAL**  
Scale: NOTED  
Office of Bridge Engineer, St. Paul, Minn. July 18-1948  
Approved: \_\_\_\_\_  
C. E. Johnson  
Bridge Engineer  
Revision of \_\_\_\_\_ Date \_\_\_\_\_  
Chief Engineer  
Index No. 23211  
Sheet No. 3 of 4  
D. F. C.  
V.F.D. K.H. NAB 8-12-48  
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