

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
CONSTRUCTION PLANS FOR WIDENING BRIDGE NO. 7279
RAMSEY COUNTY
LOCATED ON SECTION LINE ABOUT 1300 FT. EAST OF N.W. CORNER SEC. 10, T29N, R22W

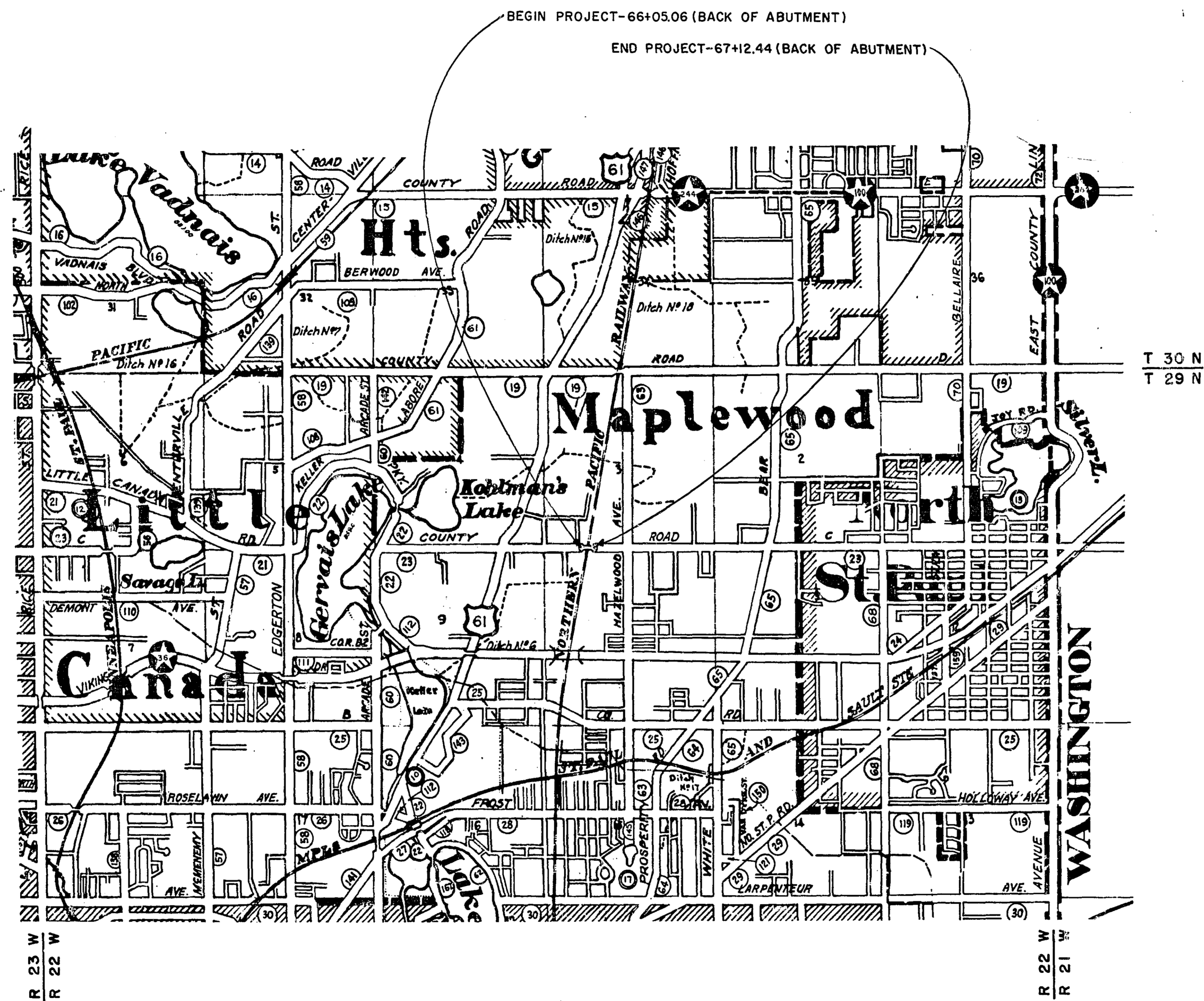
OFFICE OF COUNTY ENGINEER
RAMSEY COUNTY

CONVENTIONAL SIGNS	
STATE LINE	TIMBER
COUNTY LINE	BRUSH
TOWNSHIP OR RANGE LINE	ORCHARD
SECTION LINE	ROCK LEDGE
QUARTER LINE	SAND
SIXTEENTH LINE	EDGE OF CUT
RIGHT-OF-WAY LINE	TOE OF EMBANKMENT
PRESENT ROAD $\frac{1}{2}$ IN. LINE	CATCH BASIN
LIMITED ACCESS	MANHOLE
PROPERTY LINE (Except Land Lines)	DROP INLET
VACATED PLATTED PROPERTY	FIRE HYDRANT
CORPORATE OR CITY LIMITS	ARC LAMP
TRUNK HIGHWAY CENTER LINE	OTHER LAMPS (Twin Kind)
RETAINING WALL	RAILROAD CROSSING SIGN
STEAM RAILROAD	RAILROAD CROSSING BELL
ELECTRIC RAILROAD	ELECTRIC WARNING SIGN
RAILROAD RIGHT-OF-WAY LINE	CROSSING GATE
CREEK	CATTLE GUARD
RAPIDS OR WATERFALL	OVERHEAD (Highway Over)
DRY RUN	UNDERPASS (Highway Under)
DRAINAGE DITCH	ABUTMENT, WALL & PIER
HIGH TENSION LINE	BRIDGE
POWER POLE LINE	CULVERT
TELEPHONE OR TELEGRAPH LINE	BUILDING (One Story Frame)
TELEPHONE CONDUIT	C-CONCRETE S-STONE T-TILE B-BRICK ST-STUCCO
GUARD RAIL	HEDGE
WIRE FENCE	IRON PIPE
RAILROAD SNOW FENCE	STONE MONUMENT
BOARD OR HIGHWAY SNOW FENCE	WOOD STAKE OR HUB
STONE WALL OR FENCE	MEANDER CORNER
GAS MAIN	
WATER PIPE	
SEWER PIPE	
DRAIN TILE	
GRAVEL PIT	
SAND PIT	
CLAY PIT	
ROCK QUARRY	
SPRINGS	
MARSH	

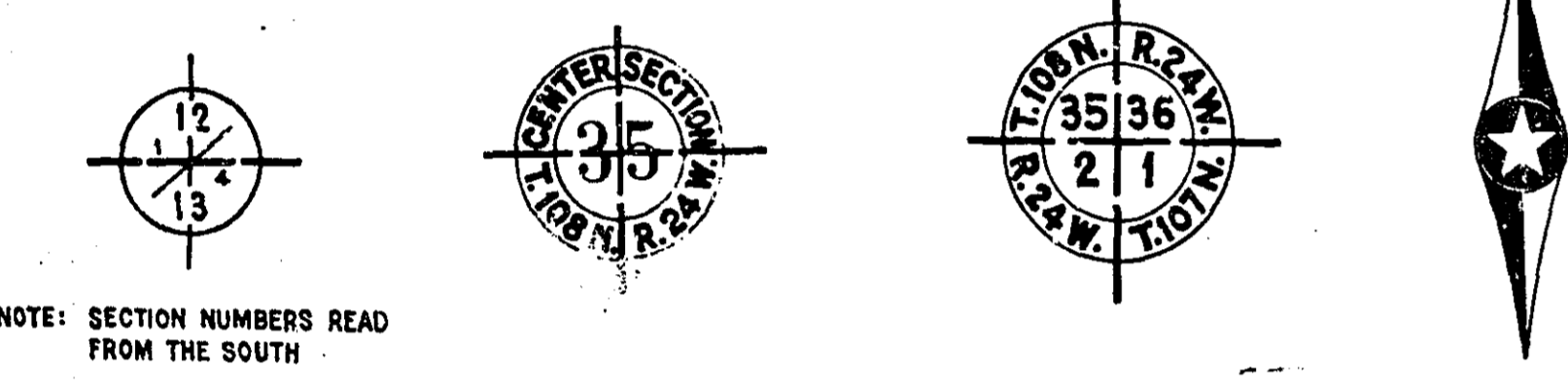
S.A.P. NO. 62-623-01

GROSS LENGTH	— FEET —	MILES
BRIDGE—LENGTH	107.38 FEET	0.020 MILES
EXCEPTIONS—LENGTH	— FEET —	MILES
NET LENGTH	107.38 FEET	0.020 MILES

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL NOTES, GENERAL PLAN, ESTIMATED QUANTITIES
3	SUBSTRUCTURE
4	SUPERSTRUCTURE
5	RAILING, BORINGS
6	STD. PLATES
7	STD. PLATES



LOCATION PLAN
SCALE: 1" = 2640'



NOTE: SECTION NUMBERS READ FROM THE SOUTH

PIT NO.	Located in
.....	Dead Haul
.....	Located in Dead Haul
.....	Located in Dead Haul
.....	Located in Dead Haul

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Robert W. Snyder REG. NO. 3129 DATE July 21, 1960

RECOMMENDED FOR APPROVAL *James H. Johnson* DATE 7/24/60
COUNTY ENGINEER
APPROVED *E. D. O'Donnell* DATE 7/24/60
VICE-CHAIRMAN OF RAMSEY COUNTY BOARD

MINNESOTA STATE HIGHWAY DEPARTMENT
RECOMMENDED FOR APPROVAL *Edmondson* DATE 7/26/60
DEPUTY DISTRICT ENGINEER
RECOMMENDED FOR APPROVAL *W. C. Retard* DATE 7/28/60
ASS'T BRIDGE ENGINEER
APPROVED *W. J. Gannon* DATE 7/29/60
STATE AID ENGINEER

NORTHERN PACIFIC RAILWAY
APPROVED *C. F. King* DATE July 21-1960
BRIDGE ENGINEER
MICROFILMED
RAMSEY CO. ENGR.

ESTIMATED QUANTITIES FOR ENTIRE PROJECT							
ITEM NO.	DESCRIPTION	UNIT	ABUTS.	PIERS	SUPER.	GEN'L.	TOTAL
2401.501	CONCRETE, MIX NO. 1C9	CU. YD.	10	—	—	—	10
2401.501	CONCRETE, MIX NO. 1A6	CU. YD.	20	—	—	—	20
2401.501	CONCRETE, MIX NO. 3Y60	CU. YD.	—	—	42	—	42
2401.501	CONCRETE, MIX NO. 3Y6	CU. YD.	59	41	109	—	209
2401.541	REINFORCEMENT BARS	LB.	5,366	—	18,367	—	23,733
2401.542	STEEL FABRIC	LB.	—	1,600	—	—	1,600
2402.521	STRUCTURAL STEEL	LB.	—	38,450	—	—	38,450
2402.577	STANDARD NAME PLATES	EACH	—	—	—	1	1
2402.583	ORNAMENTAL METAL RAILING	LIN. FT.	—	—	215	—	215
2433.501	LUMP SUM REMOVAL	LUMP SUM	—	—	—	1	1
2433.516	ANCHORAGE-IN PLACE	EACH	24	128	54	—	206
2451.501	CLASS DE EXCAVATION	CU. YD.	200	—	—	—	200
2481.501	THREE-PLY JOINT WATERPROOFING	LIN. FT.	50	—	—	—	50

GENERAL NOTES

SCOPE OF PROJECT:
 1. Extension of all four wings of existing abutments.
 2. Addition of encased structural steel cap beams on all four piers.
 3. Removal of existing bituminous wearing surface, curbs, parapets.
 4. Addition of new reinforced concrete beams, slabs, curb, sidewalk, parapets, railings.

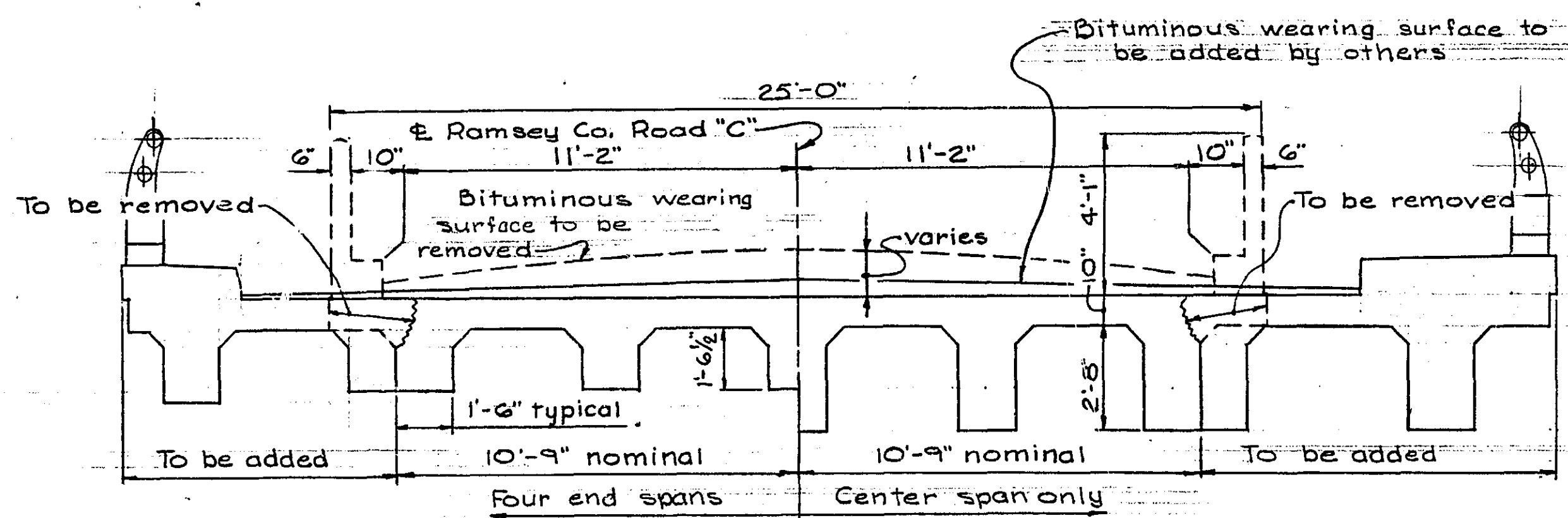
DESIGN SPECIFICATIONS: "Standard Specifications for Highway Bridges, American Association of State Highway Officials, 1957."

DESIGN DATA:
 1. Live load: H20-S16-44
 2. Unit stresses
 a. Structural concrete:
 Ultimate, $f'_c = 4300$ psi ($n=6$)
 Compression, $f_c = 1720$ psi
 Bearing, $f_b = 525$ psi
 b. Structural steel:
 Bending, $f_b = 18,000$ psi
 Shear, $f_v = 11,000$ psi
 c. Reinforcing steel:
 Tension, $f_s = 20,000$ psi
 d. Rivet steel:
 Bearing, $f_b = 27,000$ psi
 Shear, $f_s = 13,500$ psi
 e. Welded wire fabric
 (not used for computed stresses)

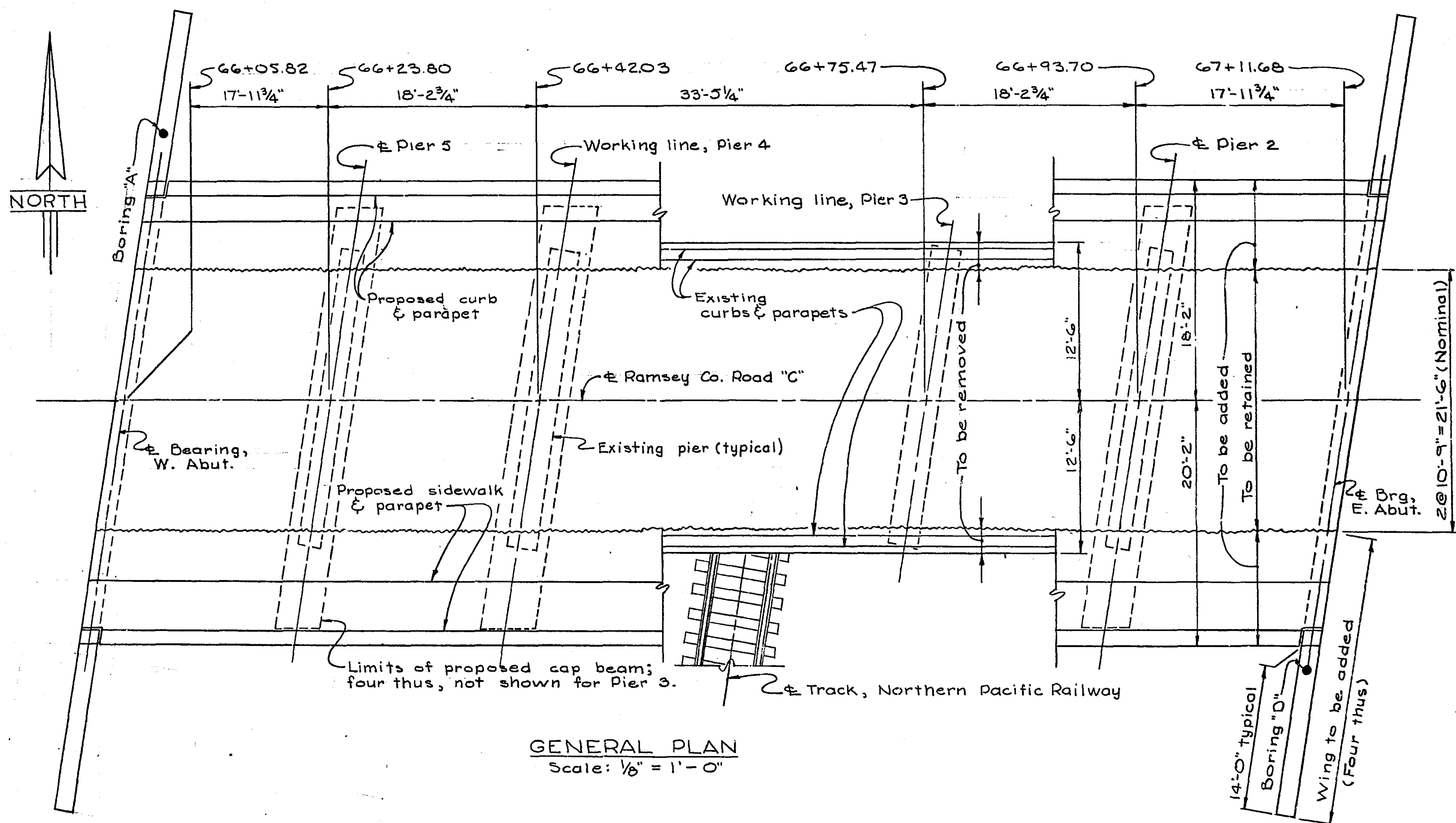
CONSTRUCTION SPECIFICATIONS:
 "Specifications for Highway Construction, Minnesota Department of Highways, dated May 1, 1959, and submitted for approval by the Division Engineer of the Bureau of Public Roads on March 26, 1959, supplemented by the Special Provisions."

NOTES:

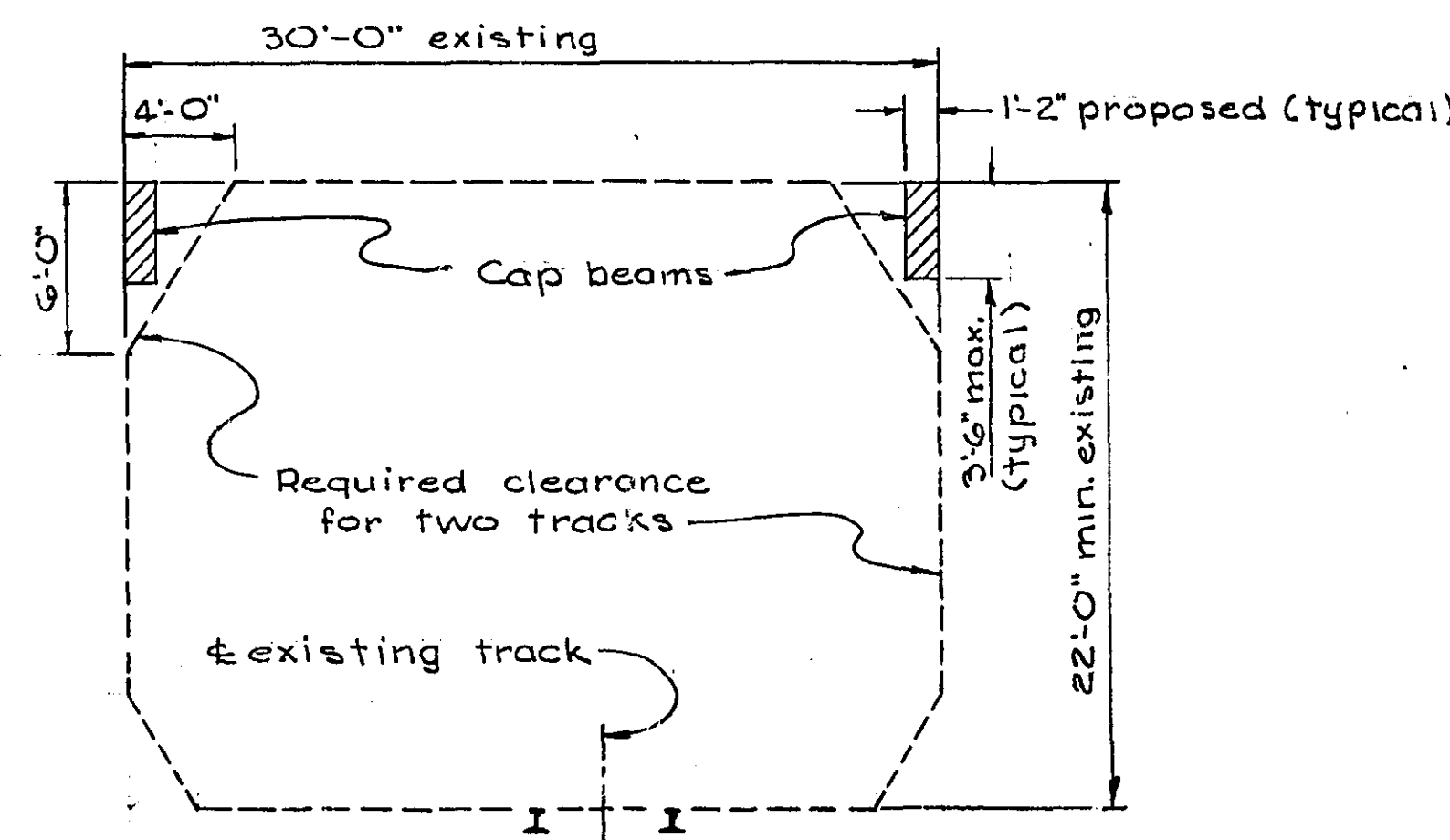
- The provisions of Par. 1404 (M.H.D. Specifications) shall not apply to Item 2401.501, Concrete, Mix No. 1C9 or to Item 2431.501, Class DE Excavation.
- $\frac{1}{2}$ " Bituminous Felt for new beam seats on abutments and on piers, conforming to M.H.D. 3701; 1" Preformed Expansion Joint Filler over Pier 4, conforming to M.H.D. 3702; and $\frac{1}{4}$ " Preformed Expansion Joint Filler over Piers 2, 3 and 5, and between new concrete and inside faces of existing fascia beams, conforming to M.H.D. 3702; shall all be included for payment with Item 2401.501, Concrete, Mix No. 3Y6.
- Cork for expansion joints in parapets, conforming to M.H.D. 3702, shall be included for payment with Item 2401.501, Concrete, Mix No. 3Y60.
- $\frac{1}{8}$ " Sheet Lead for seats under "I" sections on top of piers, conforming to M.H.D. 3335, shall be measured by weight and included for payment with Item 2402.521, Structural Steel.
- The approximate amounts of materials described in Notes 2, 3, and 4 above, are tabulated on Sh. 3, for information only.
- The Standard Name Plate of Item 2402.577 is to be furnished and installed by the contractor.
- For the scope of Item 2433.501, Lump Sum Removal, see the Special Provisions.
- For materials to be included for payment with Item 2402.583, Ornamental Metal Railing, see Sh. 5.



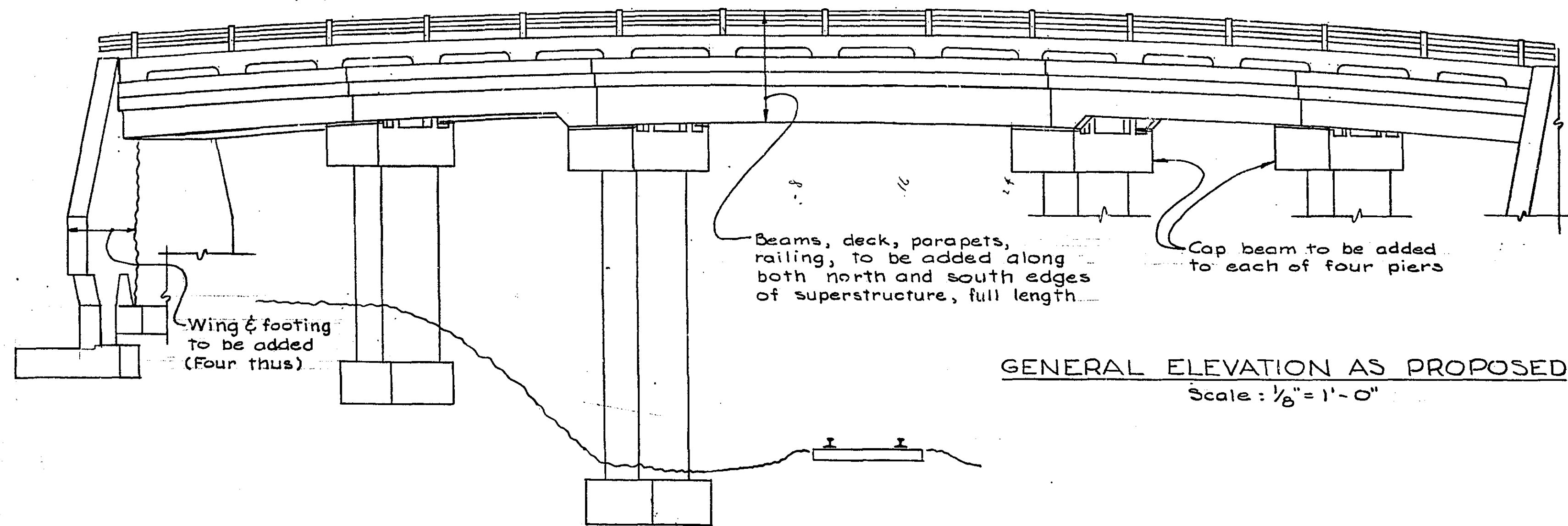
TYPICAL SECTION
 Scale: $\frac{1}{4}'' = 1'-0''$



GENERAL PLAN
 Scale: $\frac{1}{8}'' = 1'-0''$



CLEARANCE AS PROPOSED
 Scale: $\frac{1}{8}'' = 1'-0''$



GENERAL ELEVATION AS PROPOSED
 Scale: $\frac{1}{8}'' = 1'-0''$

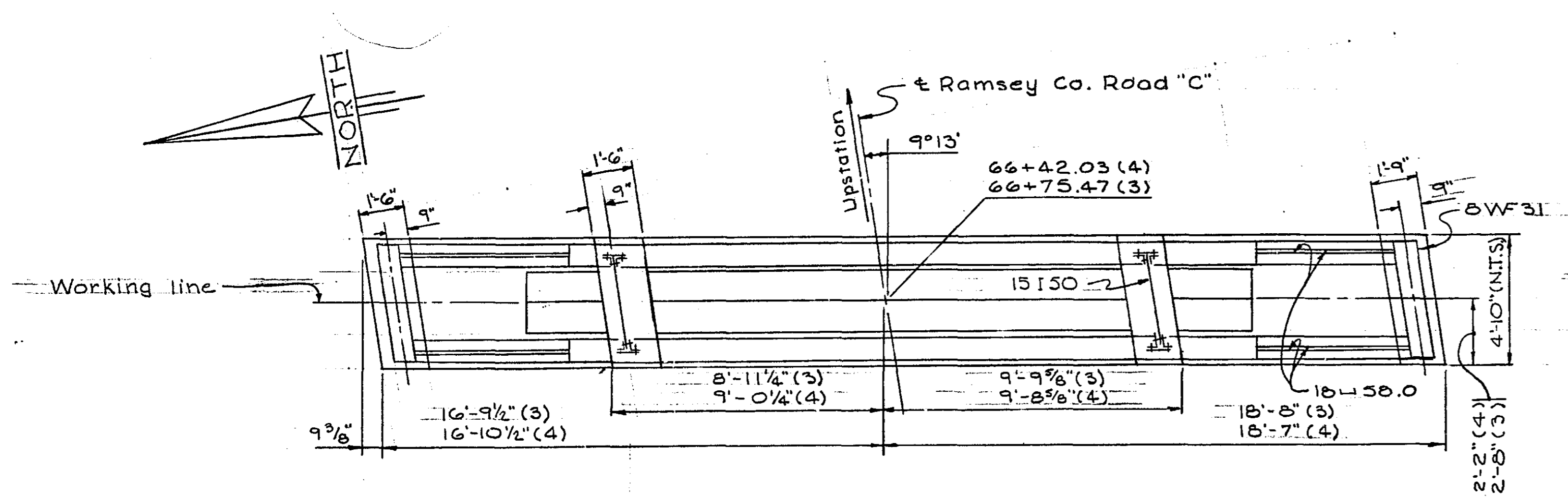
DESIGNED BY
 TOLTZ, KING, DUVALL, ANDERSON
 AND ASSOCIATES, INC.
 ENGINEERS AND ARCHITECTS
 ST. PAUL MINNESOTA

COUNTY ROAD "C"
 RAMSEY COUNTY, MINNESOTA

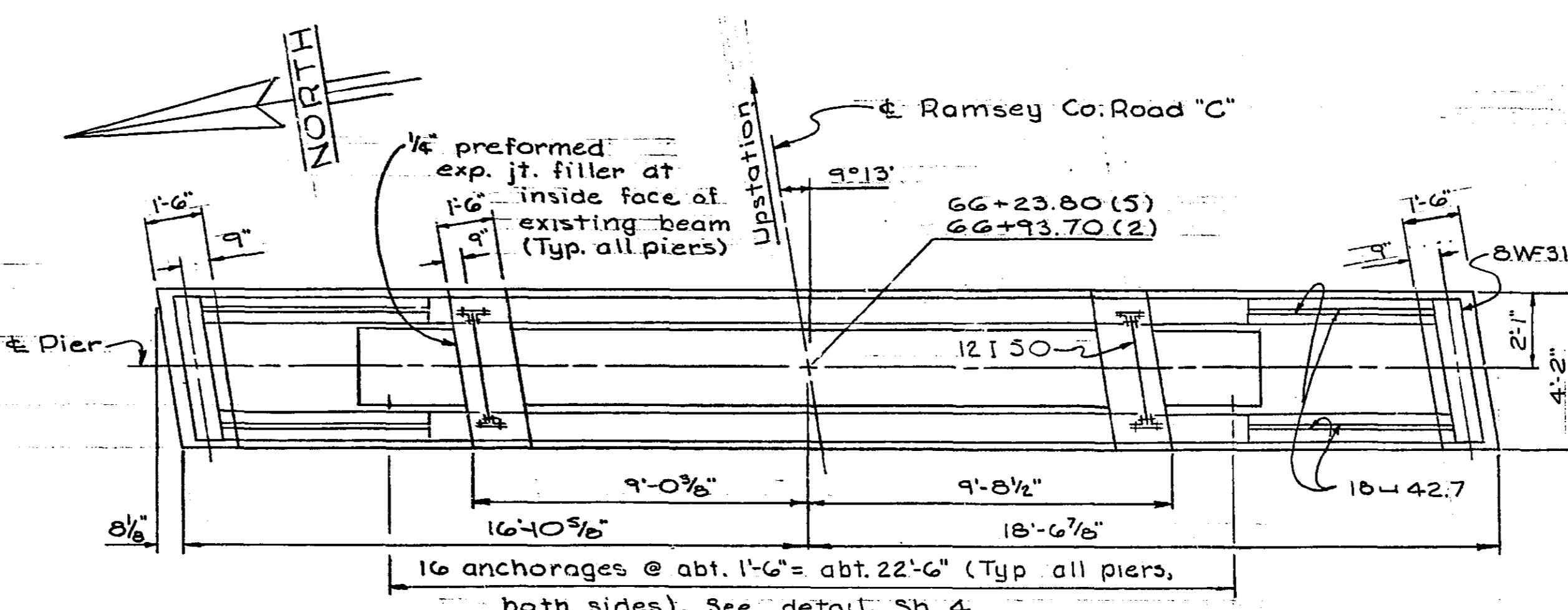
BRIDGE NO. 7279
 C.S.A.H. 23
 OVER N.P. RY. TRACKS NEAR C.S.A.H. 63
 WIDENING FROM 22'-4" TO 30'-0" ROADWAY
 SEC'S 3 & 10 TWP. 29N R22W
 MAPLEWOOD TWP. RAMSEY CO.

GENERAL NOTES,
 GENERAL PLAN,
 ESTIMATED QUANTITIES

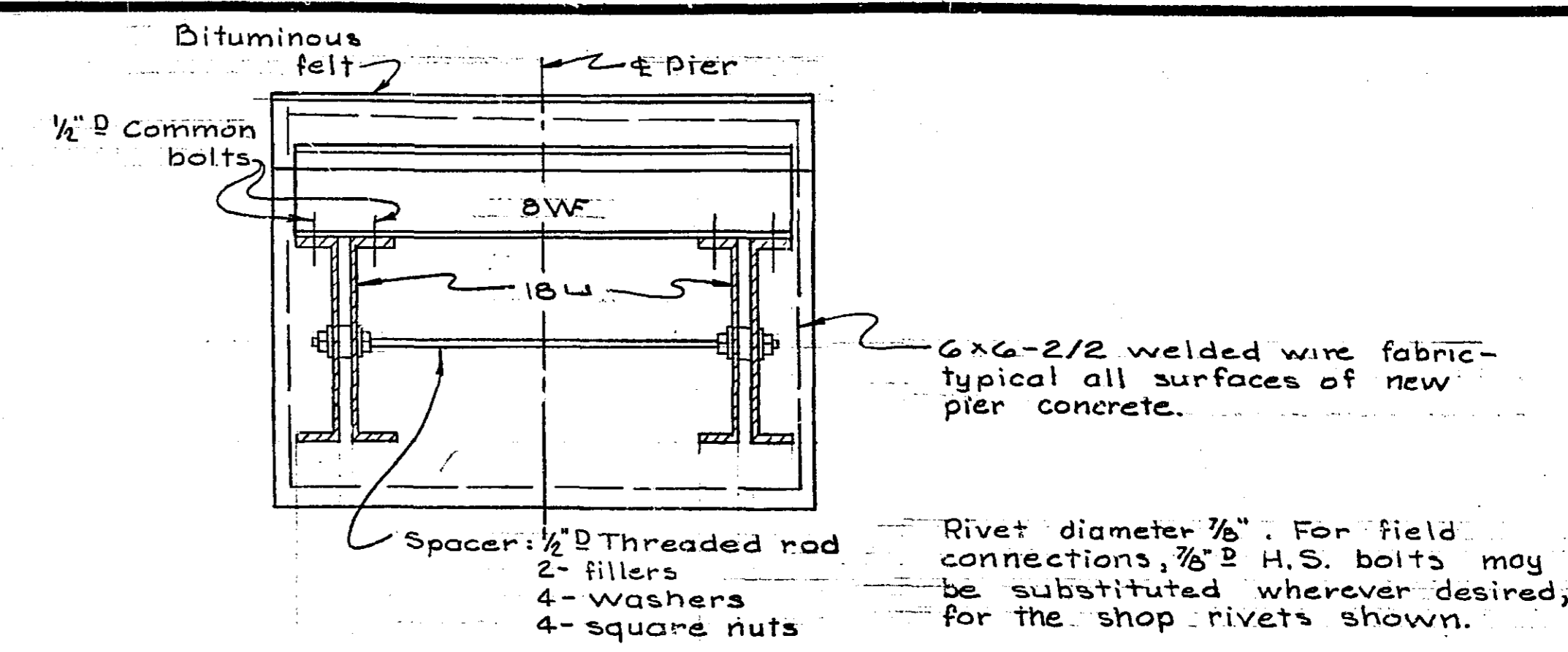
MICROFILMED
 RAMSEY CO. ENGR.
 APPROVED 7-28-60
 B.C. [Signature]
 BRIDGE ENGINEER



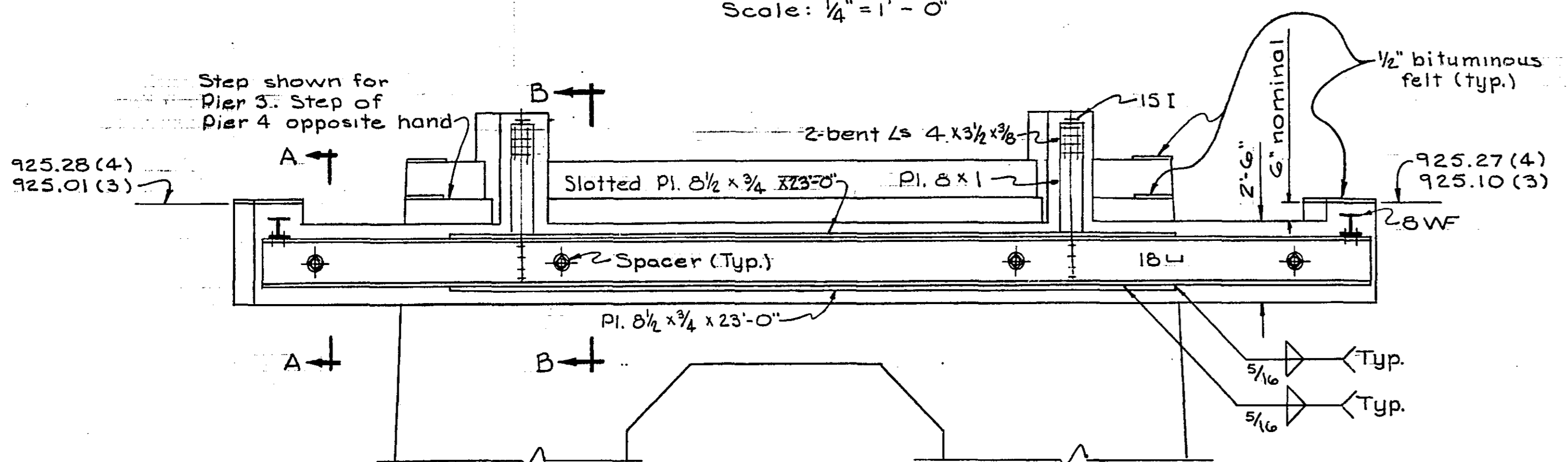
PLAN-PIERS 3&4
Scale: 1/4" = 1'-0"



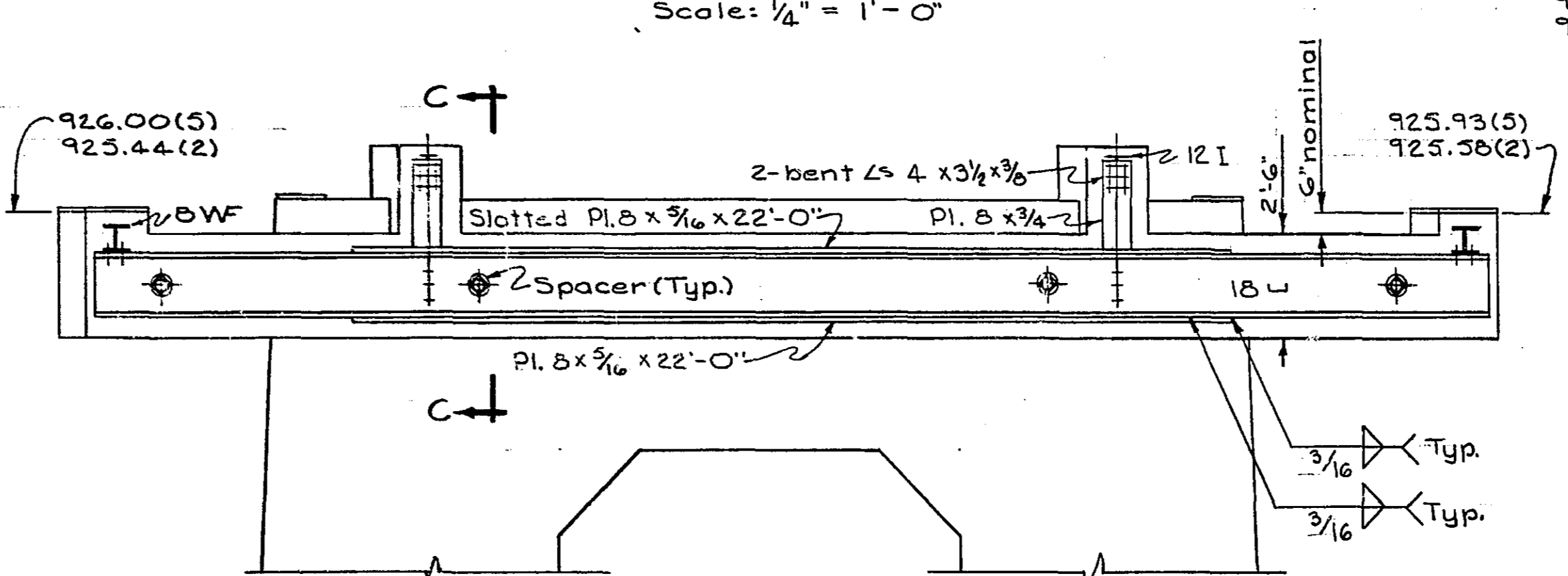
PLAN-PIERS 2&5
Scale: 1/4" = 1'-0"



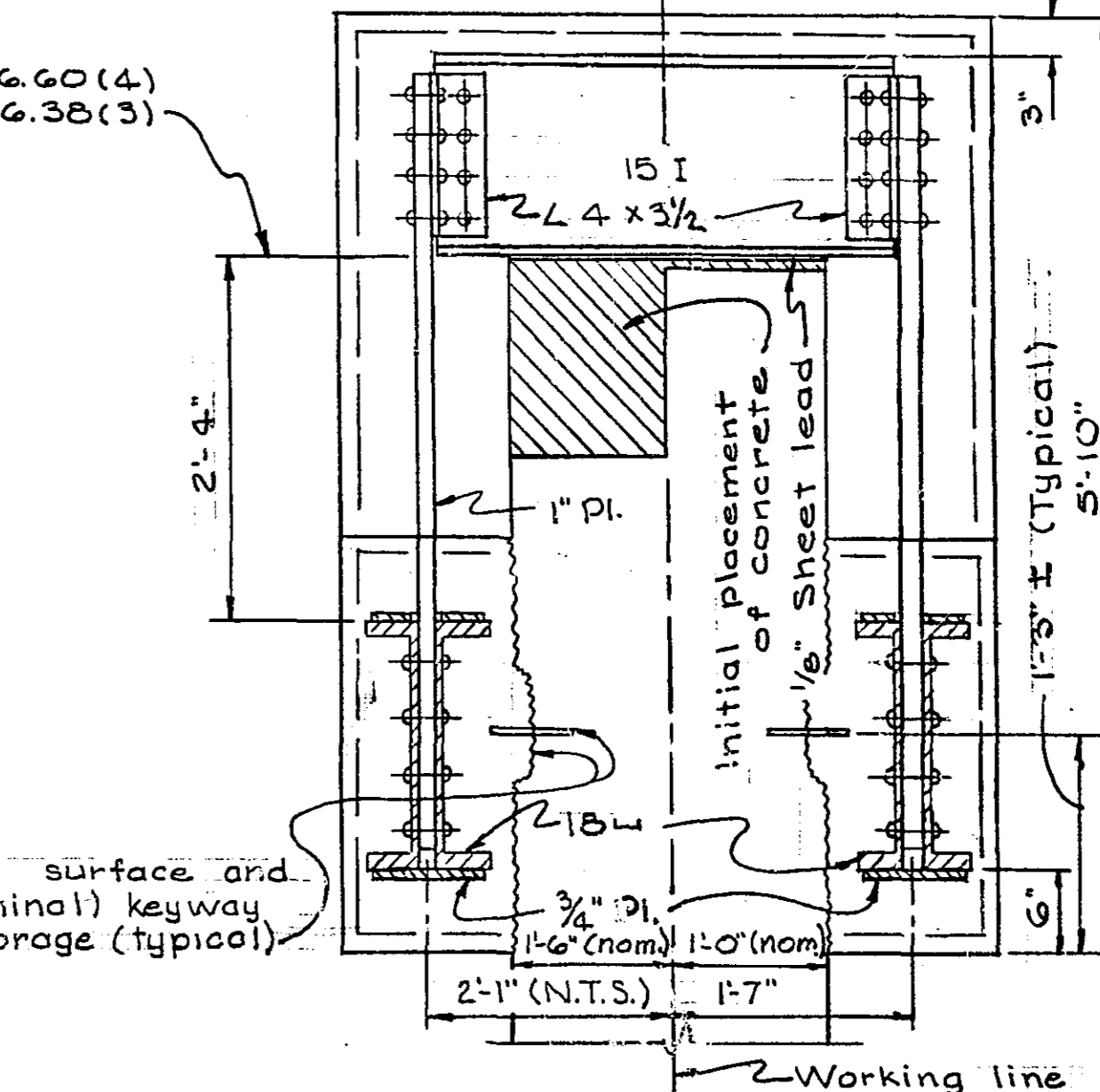
SECTION A-A
Scale: 3/4" = 1'-0"



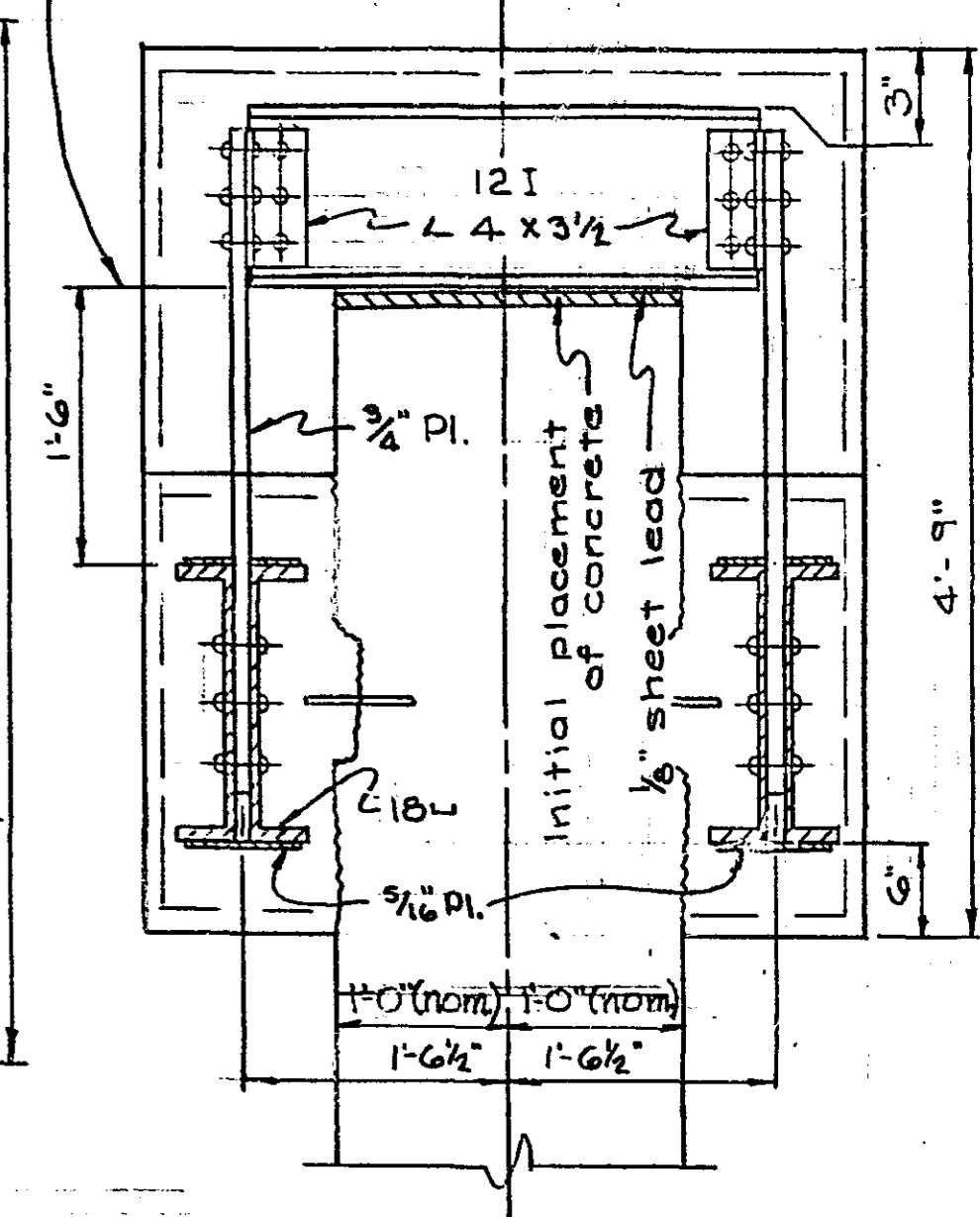
ELEVATION
Scale: 1/4" = 1'-0"



ELEVATION
Scale: 1/4" = 1'-0"



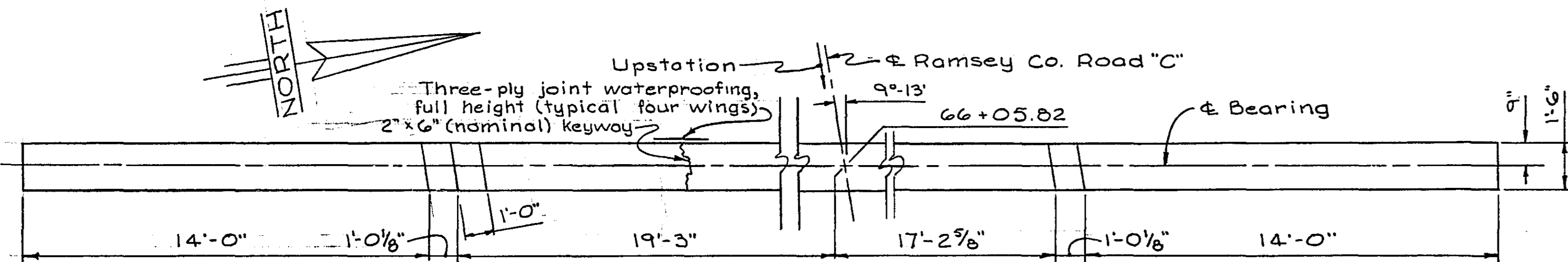
SECTION B-B
Scale: 3/4" = 1'-0"



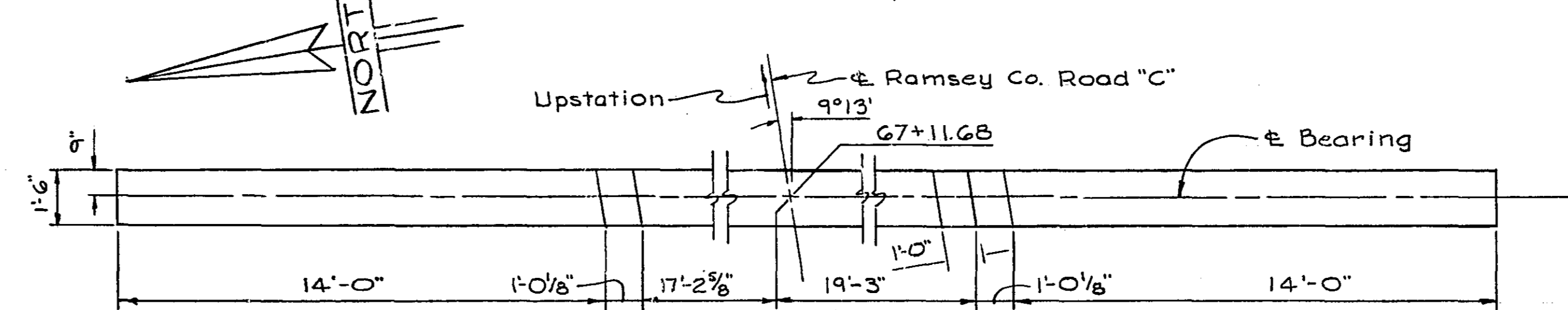
SECTION C-C
Scale: 3/4" = 1'-0"

Note: All concrete for pier additions shall be Mix No. 3YG.

Roughened surface and 2"x8" (nominal) keyway with anchorage (typical).

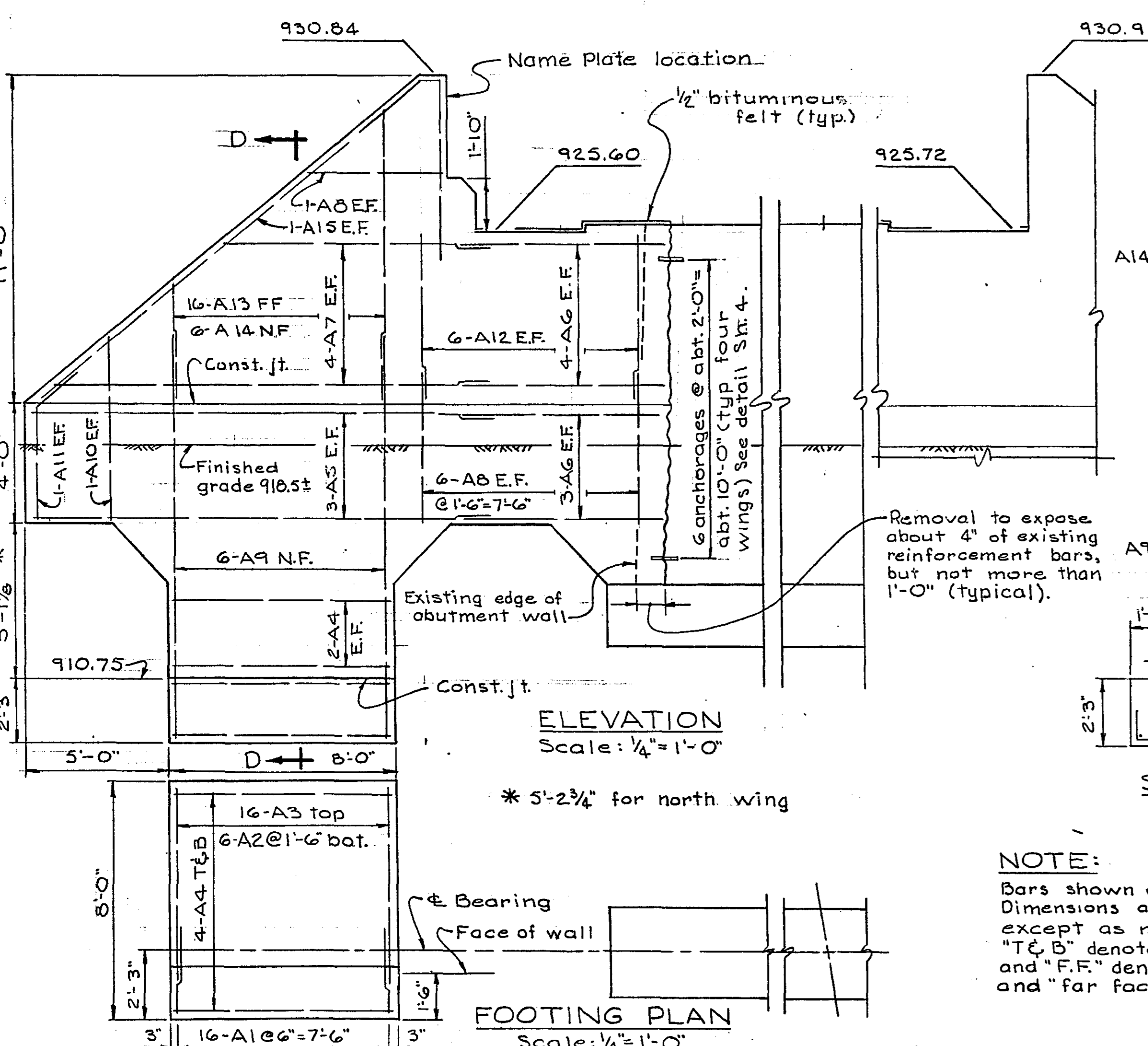


PLAN-WEST ABUTMENT
Scale: 1/4" = 1'-0"

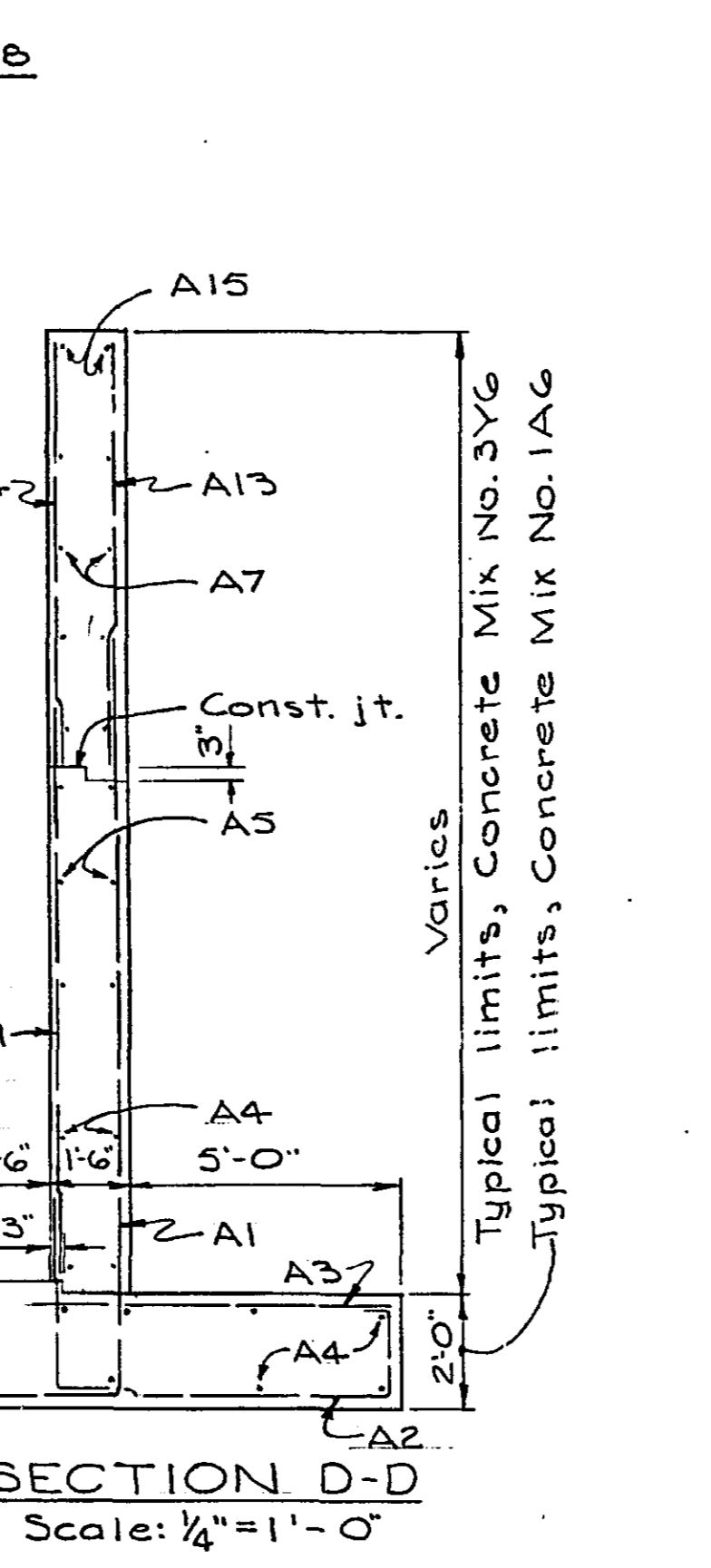


PLAN-EAST ABUTMENT
Scale: 1/4" = 1'-0"

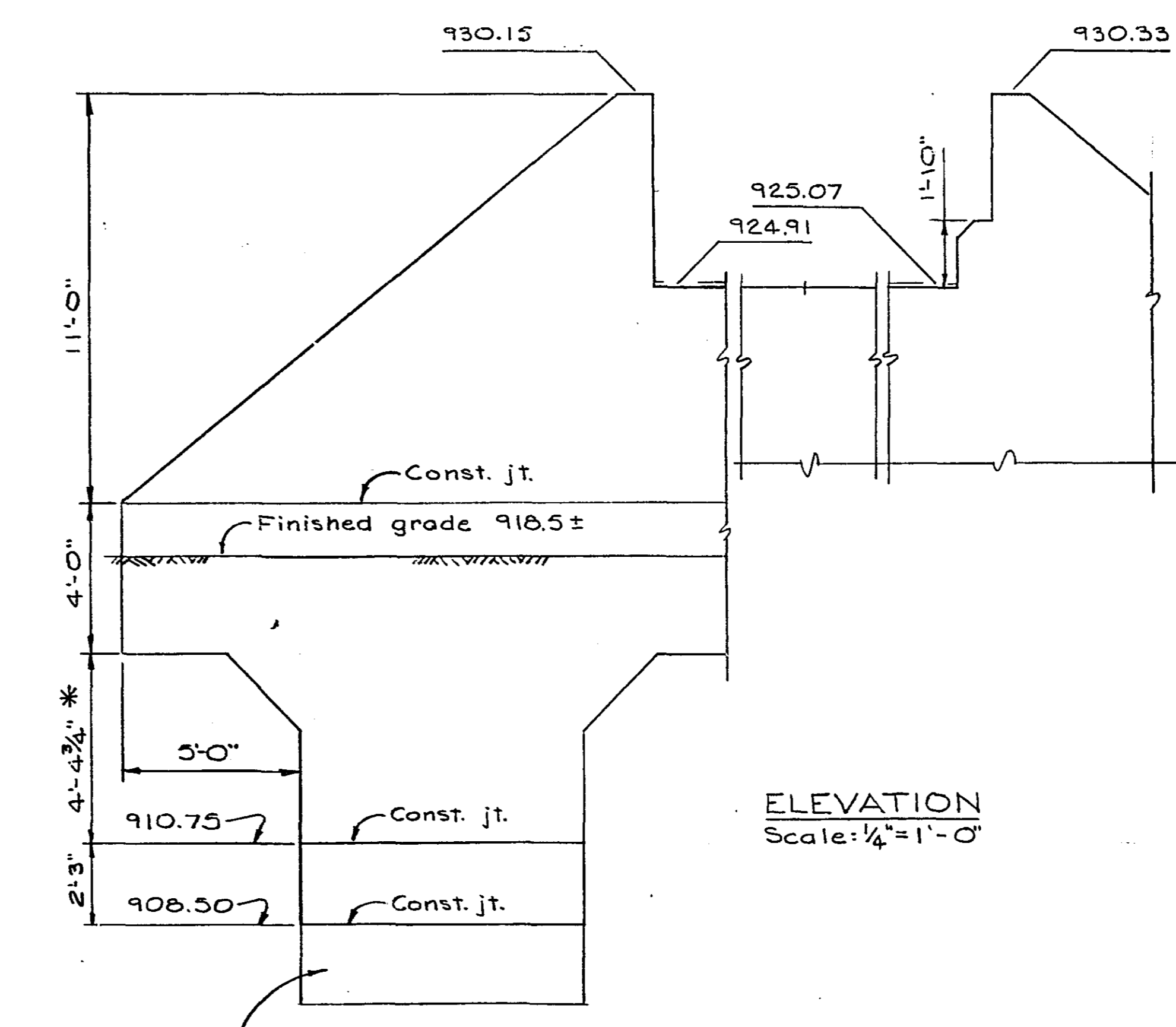
- INCIDENTAL MATERIALS
- 1/2" Bituminous Felt, abt. 120 sq. ft.
 - 1" Preformed Exp. Jt. Filler, abt. 40 sq. ft.
 - 1/4" Preformed Exp. Jt. Filler, abt. 185 sq. ft.
 - 1/4" Cork (parapets), abt. 6 sq. ft.; 1" Cork (parapets), abt. 2 sq. ft.
 - 1/8" Sheet Lead, abt. 70 lb.
- (See Notes, Sh. 2)



FOOTING PLAN
Scale: 1/4" = 1'-0"



SECTION D-D
Scale: 1/4" = 1'-0"

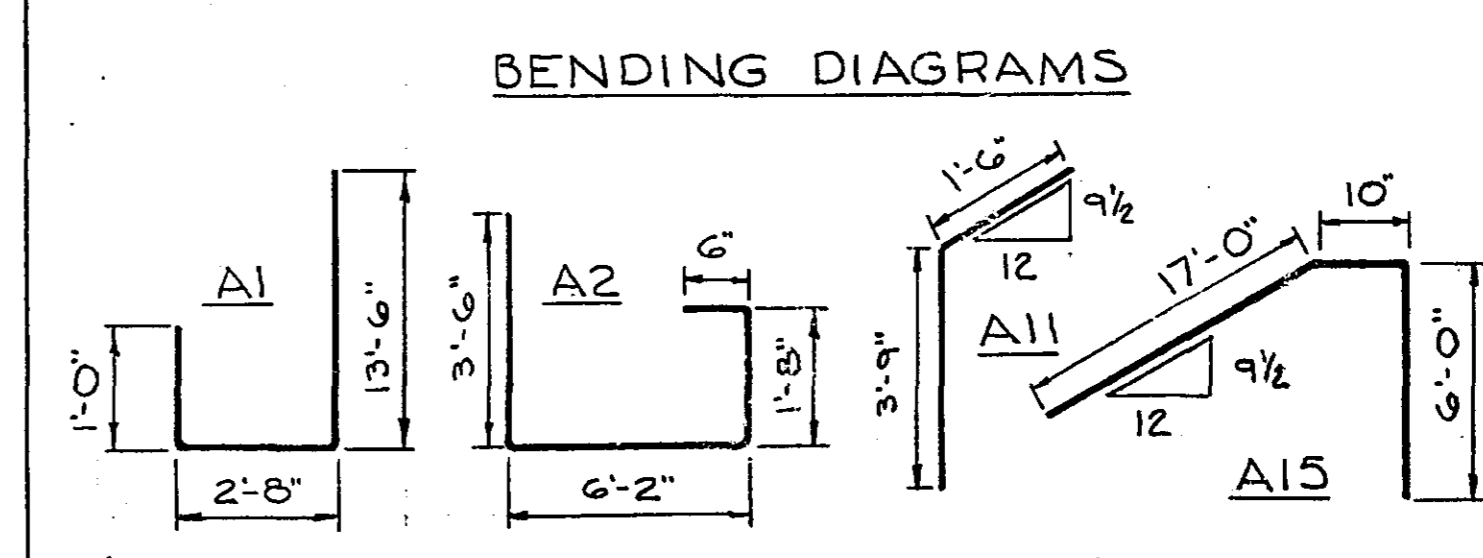


ELEVATION
Scale: 1/4" = 1'-0"

NOTE: Bars shown are typical for four wings. Dimensions and elevations are typical except as noted. "T, B" denotes top & bottom; "E.F.", "N.F.", and "F.F." denote "each face", "near face", and "far face".

BILL OF REINFORCEMENT BARS (ABUTMENTS)

MARK	SIZE	LENGTH	SHAPE	NUMBER	WEIGHT
A 1	7	16'-10"	Bent	64	2202
A 2	4	11'-7"	Bent	24	186
A 3	6	6'-6"	Str.	64	625
A 4	4	7'-8"		48	246
A 5	4	16'-6"		24	265
A 6	4	7'-3"		56	271
A 7	4	Note 1		Note 2	267
A 8	4	5'-0"		56	217
A 9	4	10'-0"		24	160
A 10	4	6'-0"	Str.	8	32
A 11	4	3'-3"	Bent	8	28
A 12	4	5'-6"	Str.	48	176
A 13	5	Note 1	Str.	Note 2	455
A 14	4	Note 1	Str.	Note 2	109
A 15	4	23'-9"	Bent	8	127



- NOTES
1. Lengths: A7, varies 9'-6" to 15'-6", increment 2'-0"
A13, varies 4'-0" to 9'-7 1/2", increment 4 1/2"
A14, varies 4'-0" to 9'-7 1/2", increment 1'-1 1/2"
 2. Numbers: A7, 8 series of 4
A13, 4 series of 16
A14, 4 series of 6

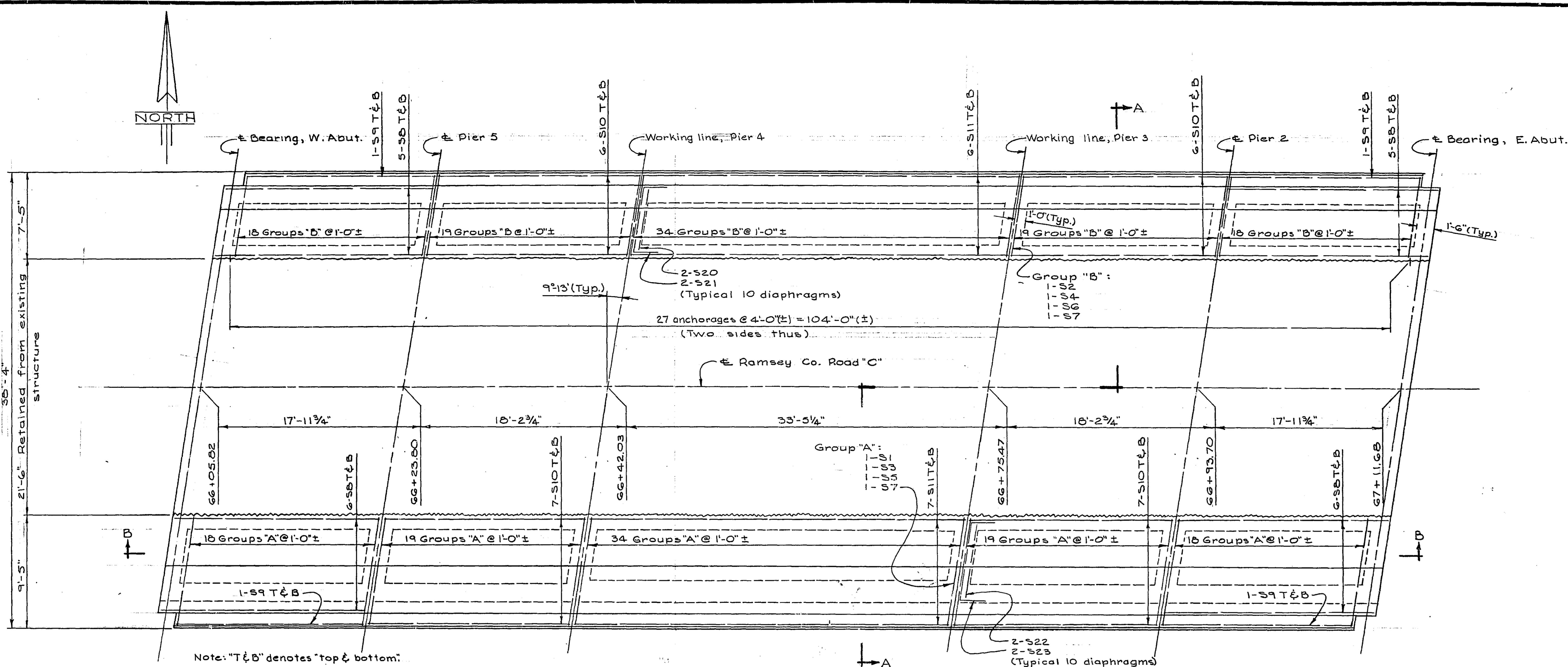
DESIGNED BY
TOLTZ, KING, DUVALL, ANDERSON
AND ASSOCIATES, INC.
ENGINEERS AND ARCHITECTS
ST. PAUL MINNESOTA

COUNTY ROAD "C"
RAMSEY COUNTY, MINNESOTA

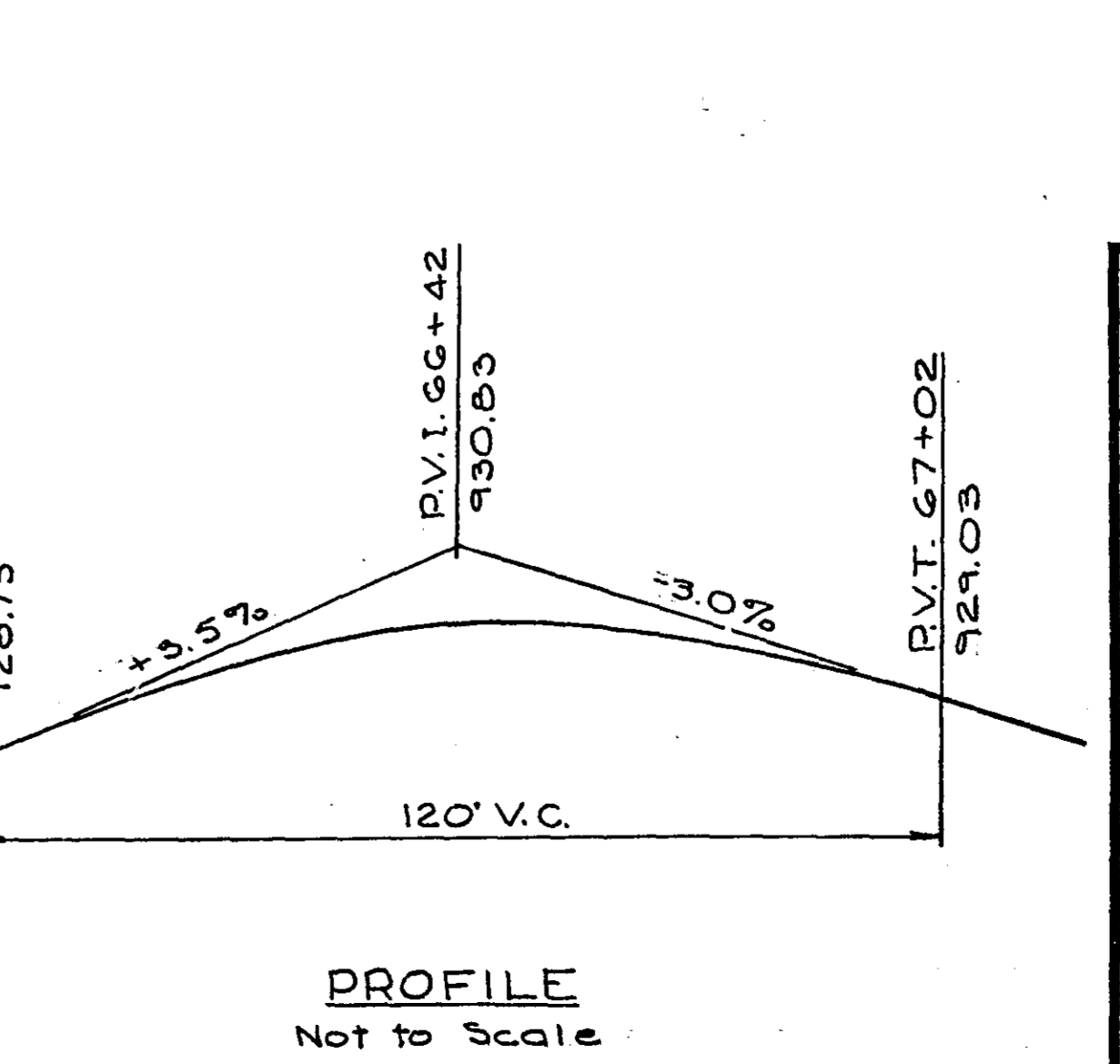
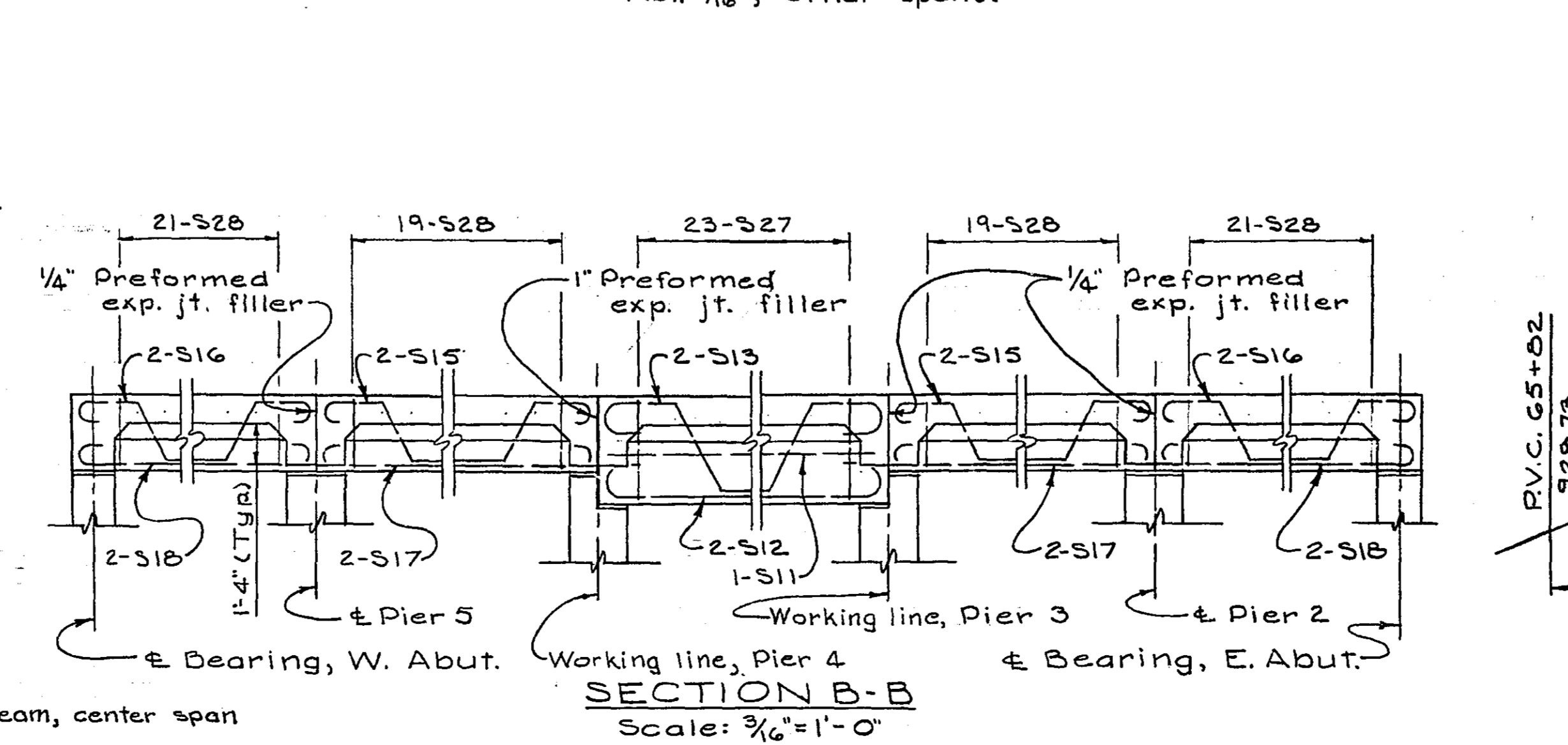
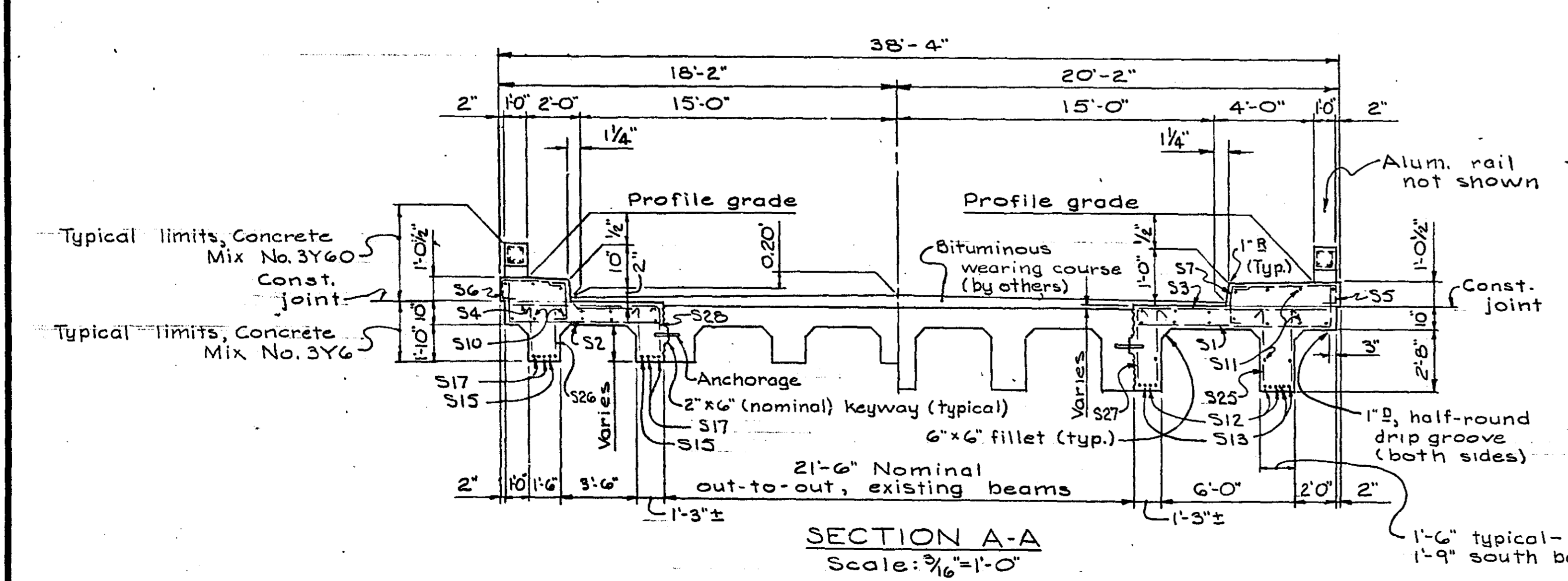
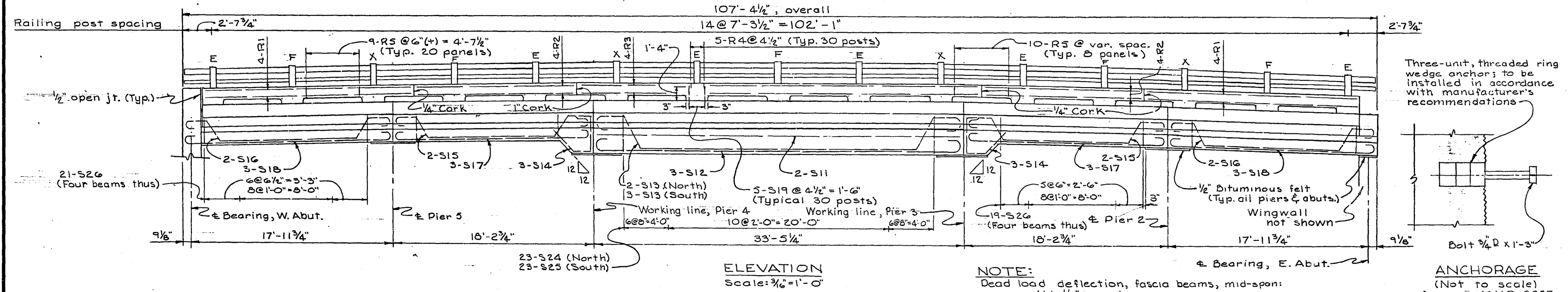
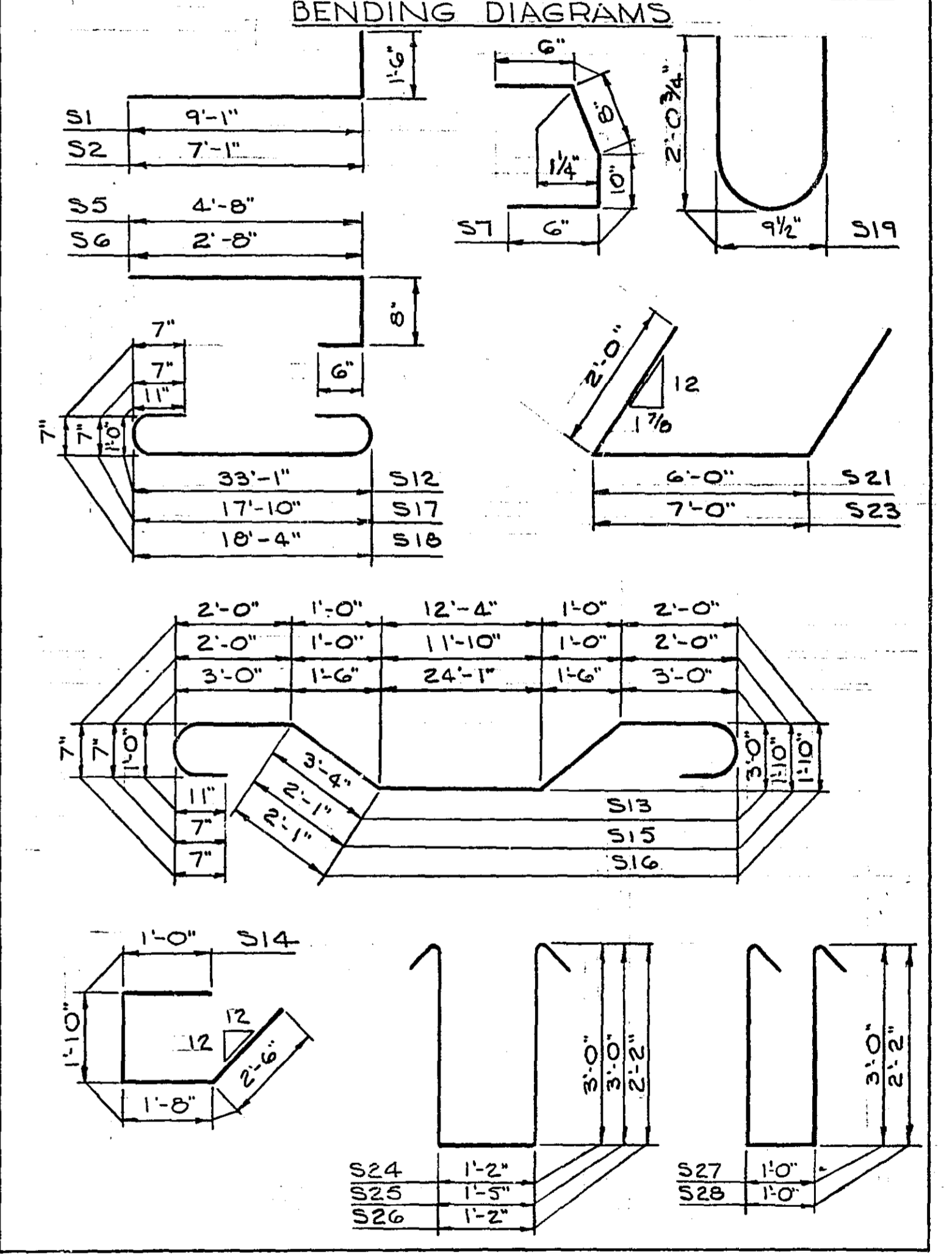
BRIDGE NO. 7279
WIDENING FROM 22'-2" TO 30'-0" ROADWAY

SUBSTRUCTURE

APPROVED 7-28-60



BILL OF REINFORCEMENT BARS						
MARK	SIZE	LENGTH	SHAPE	NUMBER	WEIGHT	
S 1	6	10'-5"	Bent	108	1690	
S 2	6	8'-5"	Bent	108	1325	
S 3	4	9'-1"	Str.	108	653	
S 4	4	7'-1"	Str.	108	511	
S 5	4	5'-8"	Bent	108	409	
S 6	4	3'-8"		108	265	
S 7	4	2'-4"	Bent	216	337	
S 8	4	18'-5"	Str.	44	541	
S 9	4	16'-9"		8	90	
S 10	4	17'-10"		32	619	
S 11	4	33'-1"	Str.	32	707	
S 12	10	35'-11"	Bent	10	1545	
S 13	10	39'-7"		9	1535	
S 14	7	6'-8"		12	164	
S 15	7	2'-8"		16	709	
S 16	7	22'-2"		16	725	
S 17	7	19'-6"		20	797	
S 18	7	20'-0"		20	818	
S 19	6	4'-7"	Bent	150	1033	
S 20	5	6'-0"	Str.	20	125	
S 21	5	9'-9"	Bent	20	203	
S 22	5	7'-0"	Str.	20	146	
S 23	5	10'-9"	Bent	20	224	
S 24	3	7'-8"		23	66	
S 25	3	7'-11"		23	68	
S 26	3	6'-0"		160	361	
S 27	3	7'-6"		46	130	
S 28	3	3'-10"	Bent	100	351	



DESIGNED BY
TOLTZ, KING, DUVALL, ANDERSON
AND ASSOCIATES, INC.
ENGINEERS AND ARCHITECTS
ST. PAUL MINNESOTA

COUNTY ROAD "C"
RAMSEY COUNTY, MINNESOTA

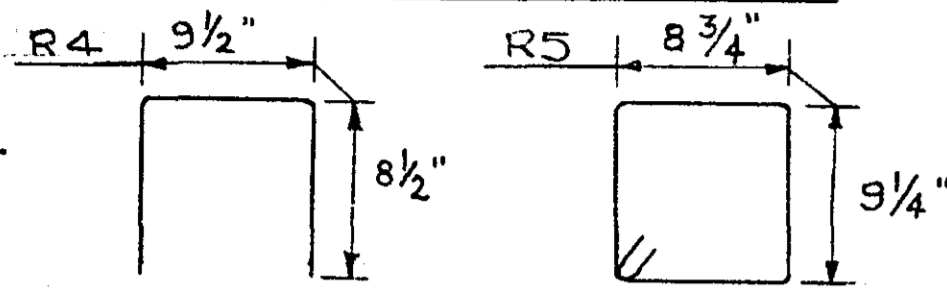
BRIDGE NO. 7279
WIDENING FROM 22'-4" TO 30'-0" ROADWAY

SUPERSTRUCTURE

APPROVED 7-28-60

BILL OF REINFORCEMENT BARS					
MARK	SIZE	LENGTH	SHAPE	NUMBER	WEIGHT
R1	7	18'-9"	STR.	16	613
R2	7	14'-2"	STR.	16	463
R3	7	36'-0"	STR.	8	529
R4	4	2'-1"	BENT	150	209
R5	3	3'-4"	BENT	260	326

BENDING DIAGRAMS

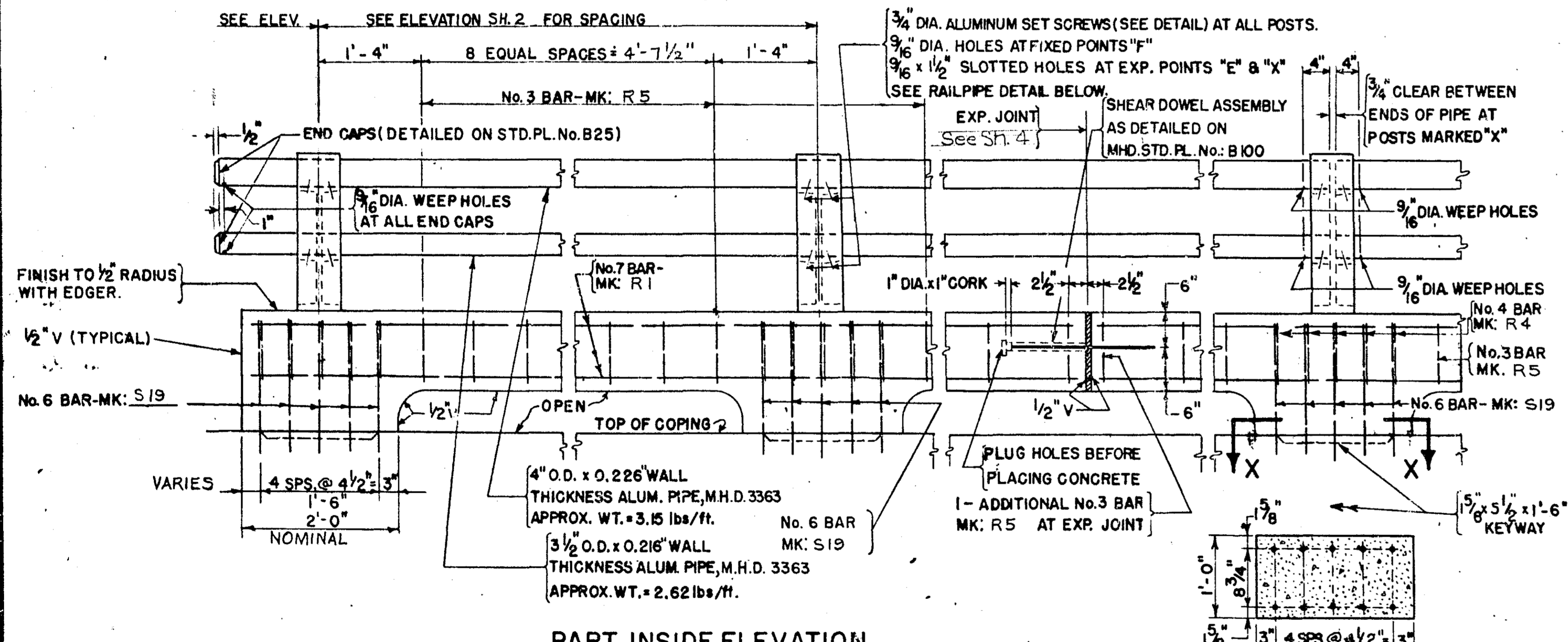


Depth	Sp. 917.1	
2	Fill	
5	Fill	
7	Fill	
13	Light brown medium sand	
18	Light brown medium sand	
24	Light brown medium sand	
30	Light brown medium sand	
23'	30	Brown loamy sand
27'	24	Brown loamy sand
28	28	Brown well-graded sand
32'	31	Brown well-graded sand

BORING A
(22' N. of E. Co. Rd. "C" at West Abutment)

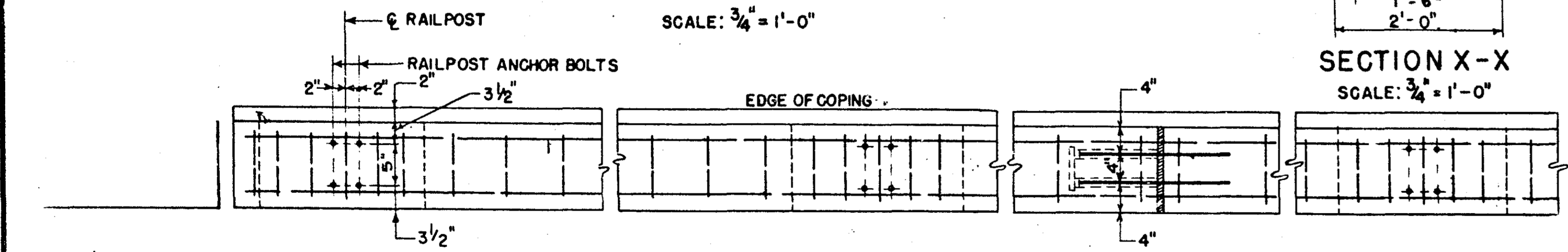
Depth	Sp. 920.8		
2	Fill		
1 1/2	Fill		
3	Fill		
4	Black silty clay loam		
5	Greyish brown silty clay loam		
15'	14 1/2	13 1/2	Black silty clay loam
18	10	Brown silty clay loam	
23	25	Light brown medium sand	
27	8	Dark brown sandy loam	
17	32'	20	Brown well-graded sand

BORING D
(22' S. of E. Co. Rd. "C" at East Abutment)

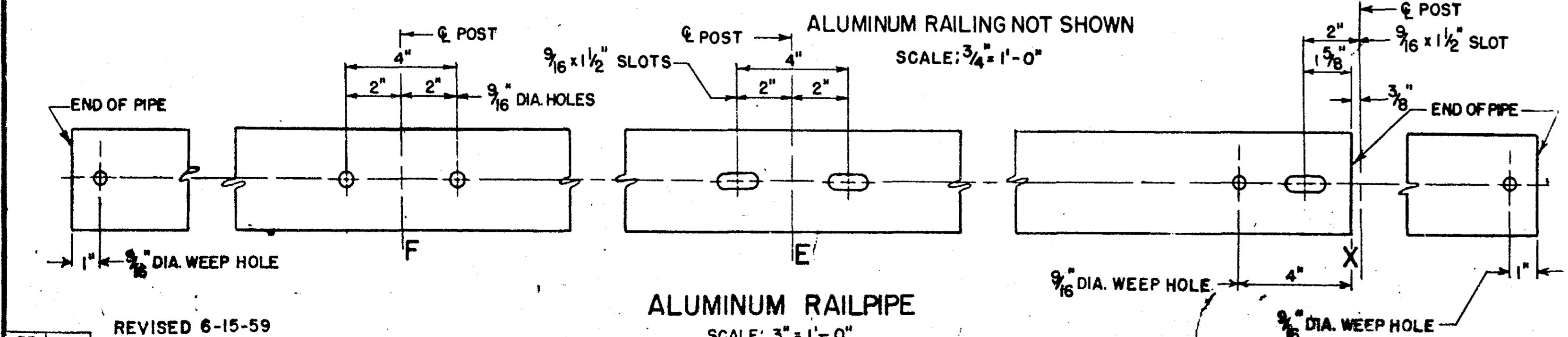


PART INSIDE ELEVATION

SCALE: 3/4" = 1'-0"



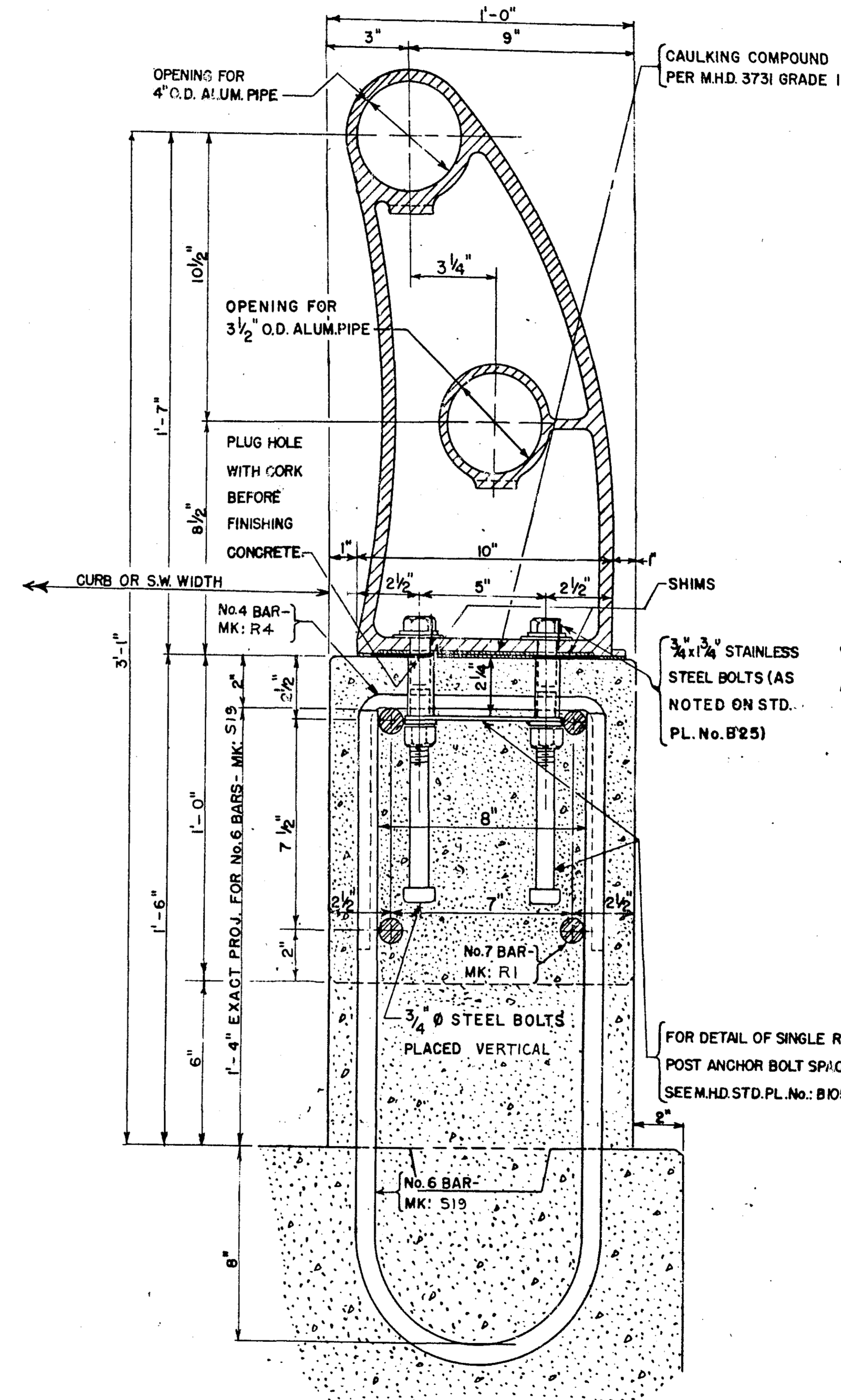
PART PLAN



ALUMINUM RAILPIPE

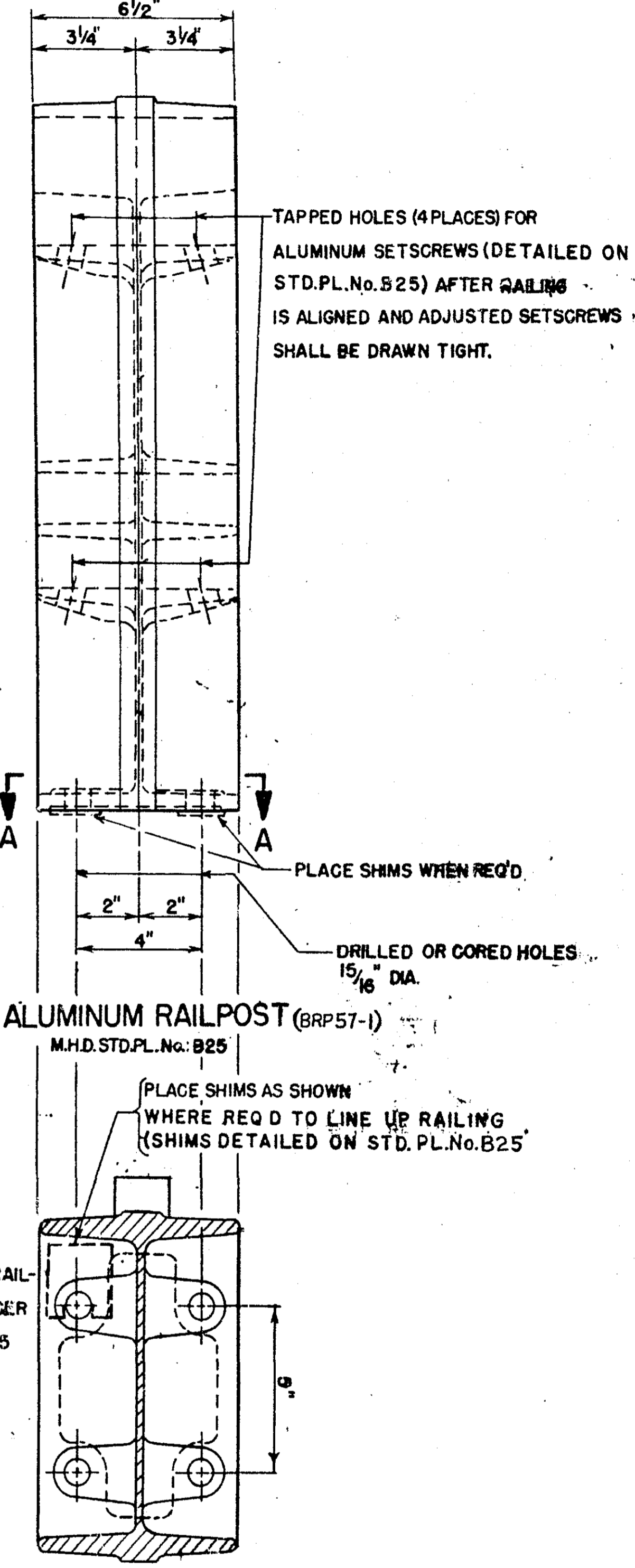
SCALE: 3" = 1'-0"

TYPICAL FOR RECEIVING SETSCREWS AS INDICATED IN "PART INSIDE ELEVATION" FOR CONNECTION TO ALUMINUM RAILPOST



SECTION THROUGH RAILING

SCALE: 3" = 1'-0"



SECTION A-A

ALL RAILPOSTS TO BE SET VERTICAL
CONCRETE POSTS AND CONCRETE BASE TO BE MIX NO. 3Y60.
ALL PIPE, RAIL POSTS, ANCHOR BOLT ASSEMBLIES, BOLTS, SCREWS, SHEAR DOWEL ASSEMBLIES, CAPS, SHIMS, PINS, AND COMPOUND TO BE INCLUDED IN PRICE BID FOR ORNAMENTAL METAL RAILING.
LENGTH OF RAILING FOR PAYMENT TO BE MEASURED BETWEEN RAIL CAPS
FOR CONSTRUCTION REQUIREMENTS SEE SPECIAL PROVISIONS.

COUNTY ROAD "C"
RAMSEY COUNTY, MINNESOTA

BRIDGE NO. 7279
WIDENING FROM 22'-4" TO 30'-0" ROADWAY
RAILING, BORINGS

APPROVED: 7-28-60

MICROFILMED
RAMSEY CO. ENGRS.

DR RSM
TR BEM
CK GEX
REVISED 6-15-59
REVISED 4-24-59
REVISED 2-26-58

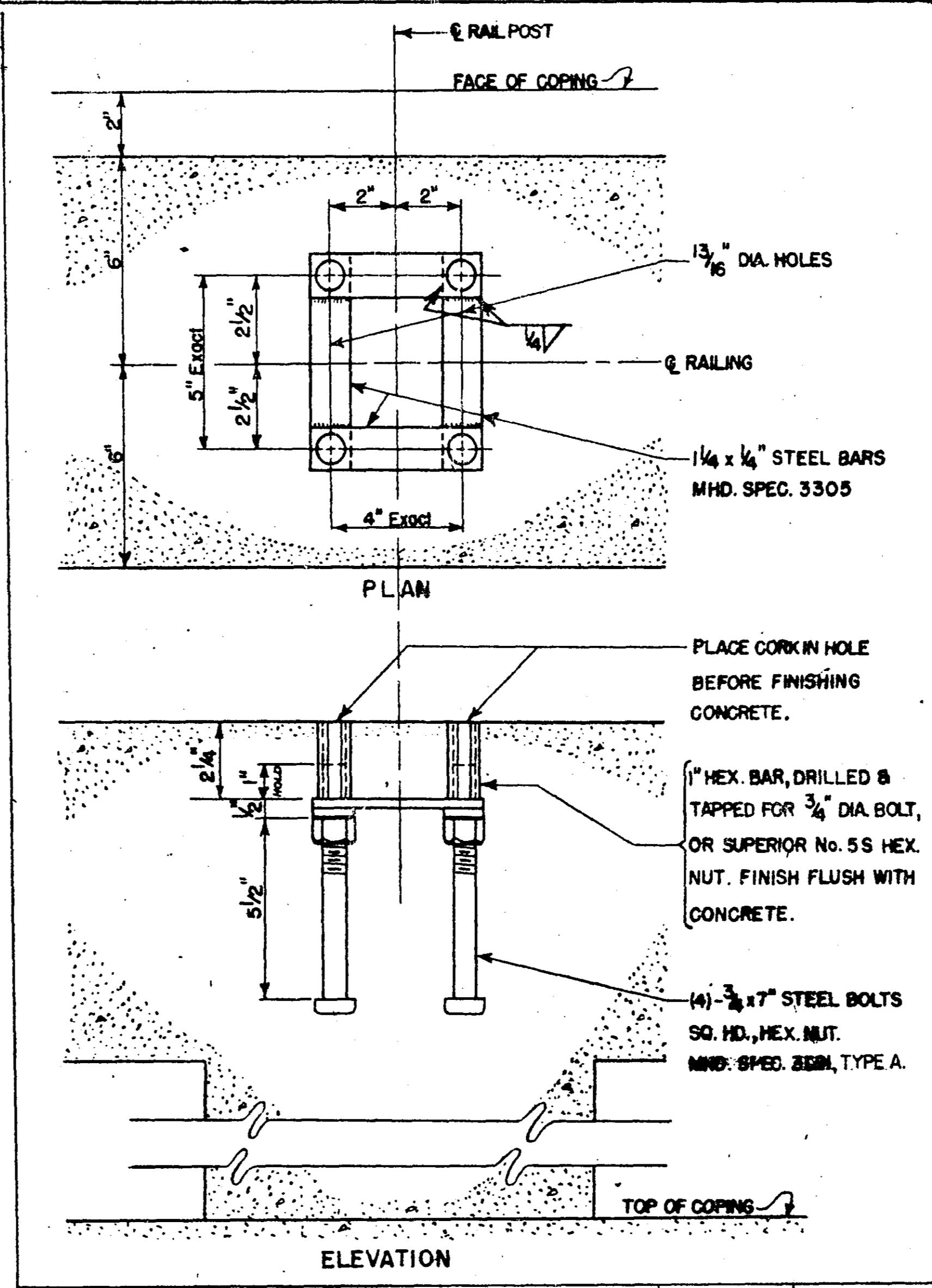
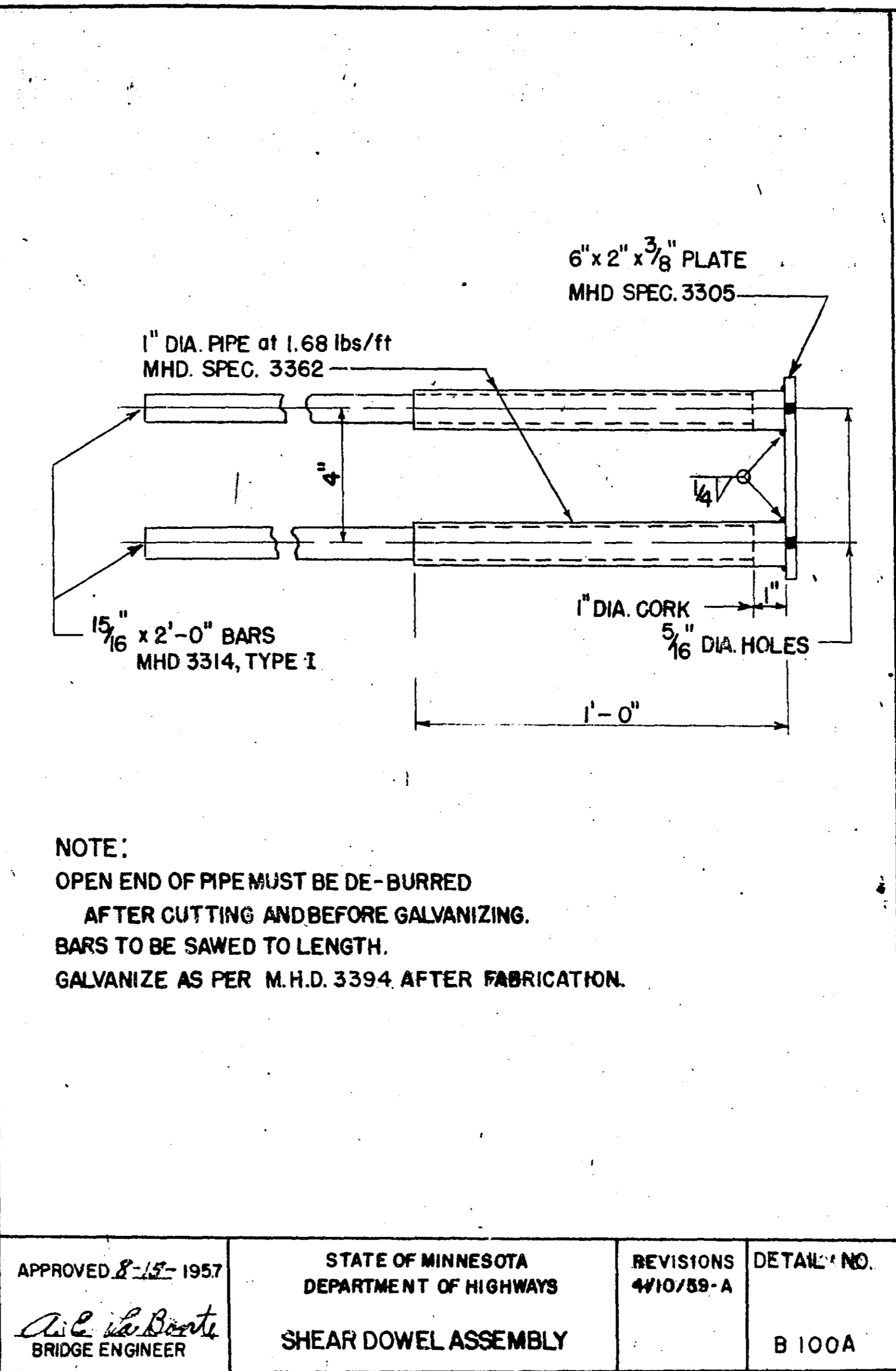
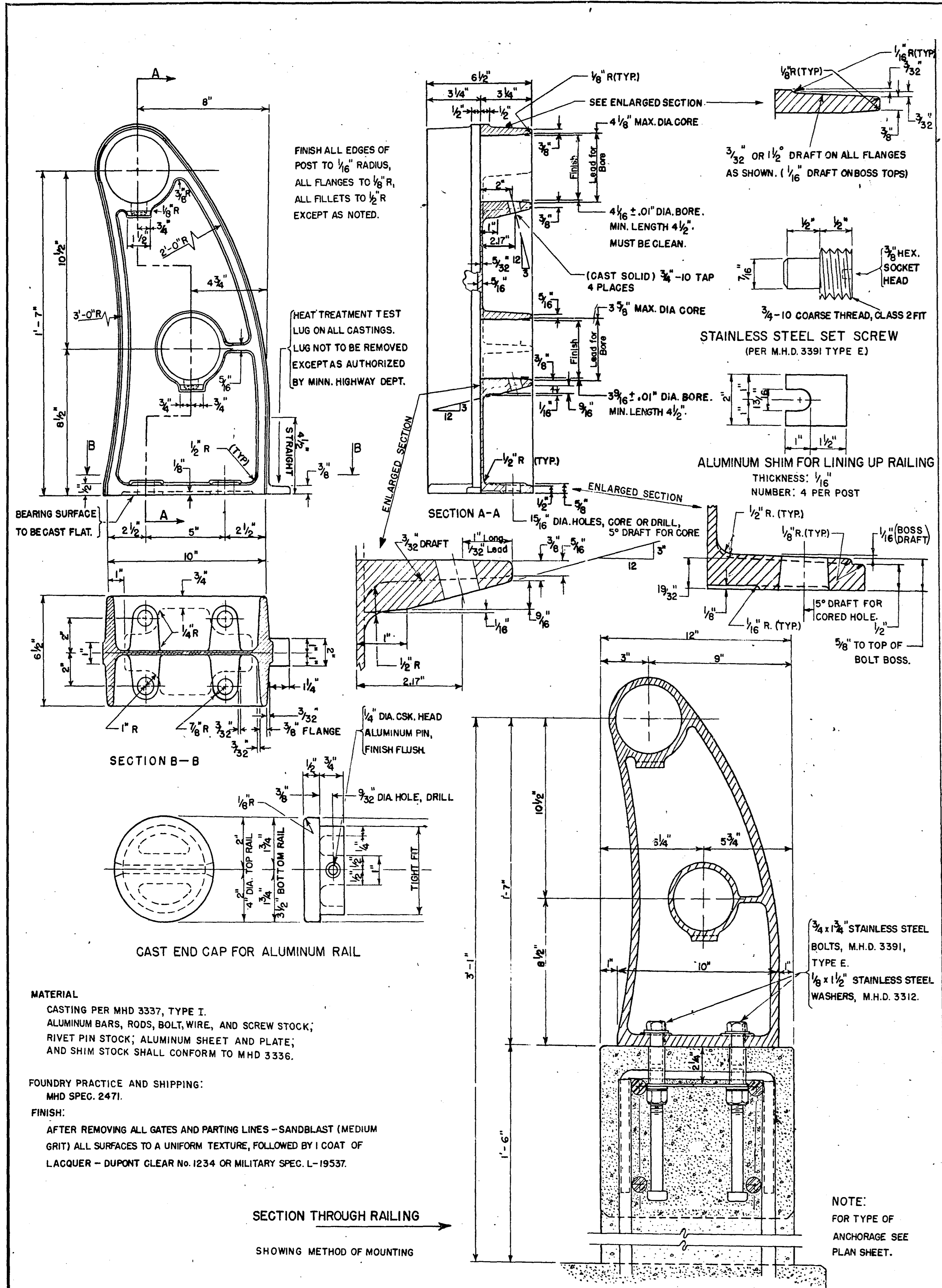
STD. PL. REFERENCE: B25, B100, B105

S.A.P. No. 62-623-01

SHEET NO. 5 OF 7 SHEETS

7279

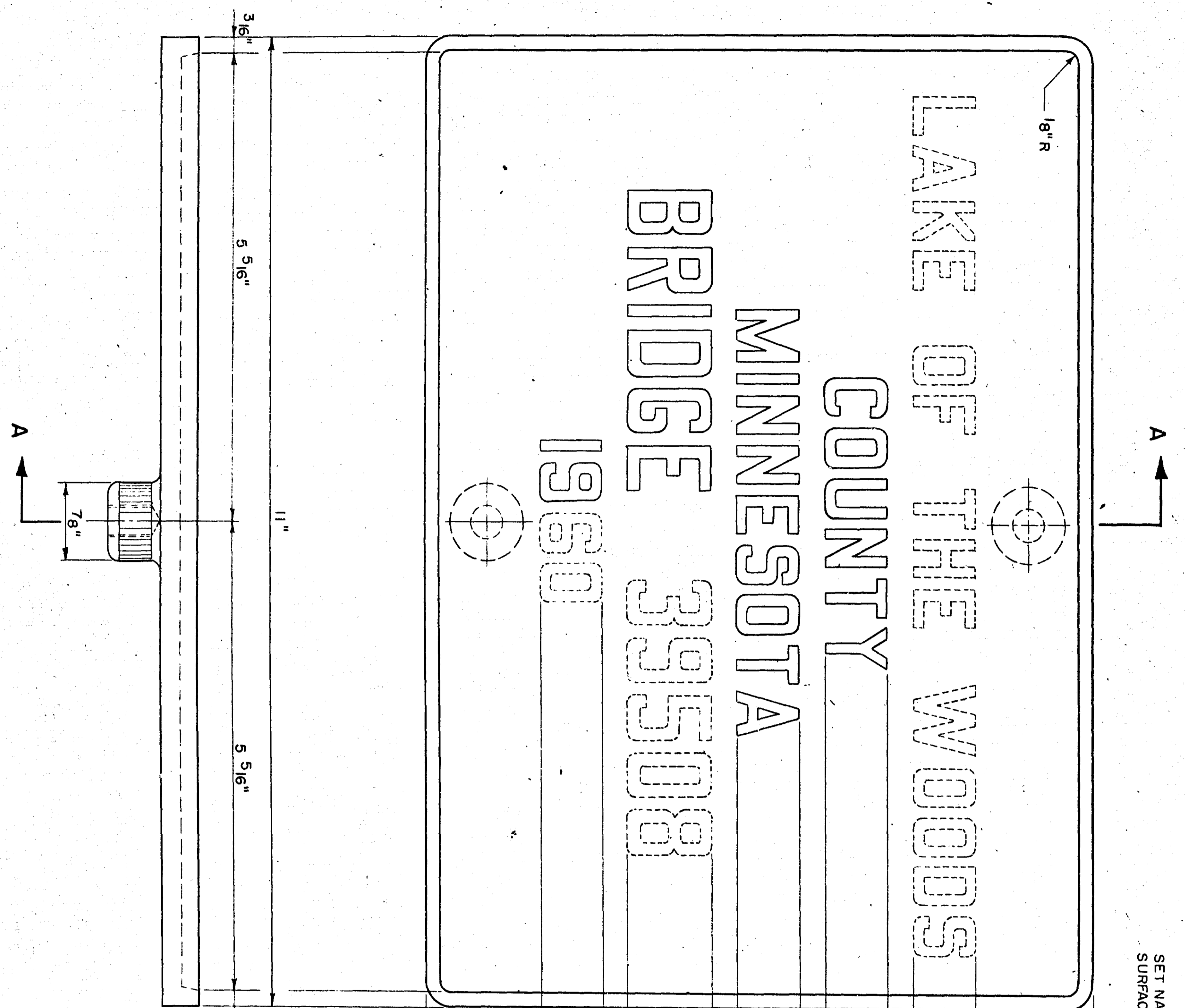
6852



APPROVED 8-15-1957 A. C. La Bonte BRIDGE ENGINEER	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS ALUMINUM RAIL POST - TYPE - BRP-57-1 FOR 2-LINE RAIL	REVISIONS 1/9/59-A 6/15/59-B	DETAIL NO. B 25B
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APPROVED 8-15-1957 A. C. La Bonte BRIDGE ENGINEER	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS ANCHOR BOLT ASSEMBLY FOR SINGLE ALUM. RAIL POST	REVISIONS 12/21/59-A	DETAIL NO. B 106A
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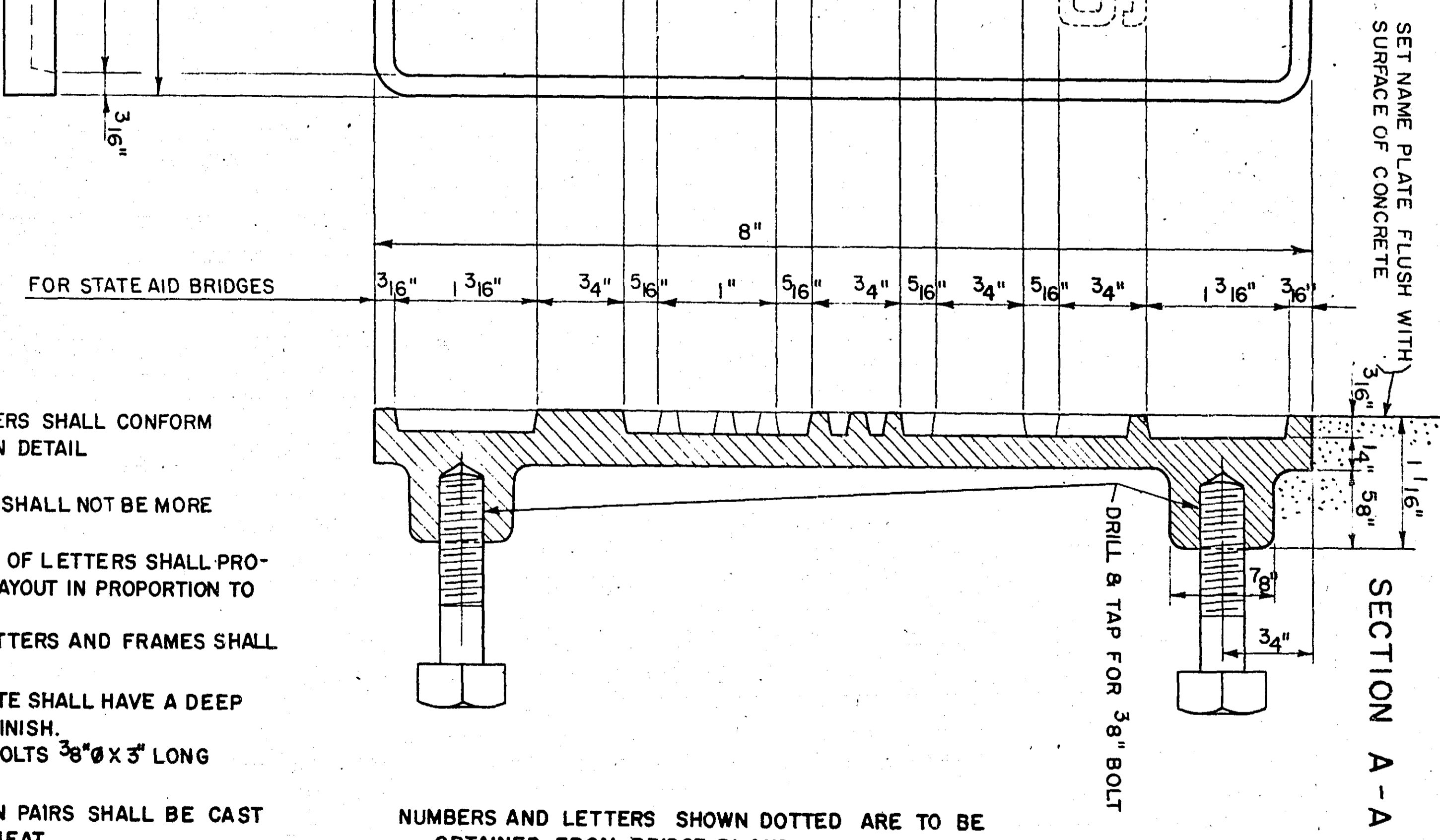
STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS BRIDGE NO. 7279 STANDARD DETAILS APPROVED: 7-29-1959 RAMSEY, CH. ENGR.



A B C D E F G H I J K L M N
 O P Q R S T U V W X Y Z
 1 2 3 4 5 6 7 8 9 0

NOTE:
 ALL DIMENSIONS FOR 3/4" HIGH LETTERS AND NUMBERS SHALL BE IN DIRECT PROPORTION TO THOSE SHOWN ABOVE FOR THE 1" HIGH LETTERS AND NUMBERS. THE THICKNESS OF THE LETTERS AND NUMBERS SHALL BE 3/16".

APPROVED <u>7/2</u> 1959	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS	DETAIL NO.
<i>A. E. de Smet</i> BRIDGE ENGINEER	LETTERS FOR BRIDGE NAME PLATES		2102



NOTES:
 NUMBERS AND LETTERS SHALL CONFORM TO THOSE SHOWN ON DETAIL NO. 2102.
 DRAFT ON LETTERS SHALL NOT BE MORE THAN 3" IN 12"
 HORIZONTAL SPACING OF LETTERS SHALL PRODUCE A BALANCED LAYOUT IN PROPORTION TO SPACING SHOWN.
 TOP SURFACE OF LETTERS AND FRAMES SHALL BE BURNISHED.
 BACKGROUND OF PLATE SHALL HAVE A DEEP BROWN OXIDIZED FINISH.
 FURNISH 2 STEEL BOLTS 3/8" x 3" LONG WITH EACH PLATE.
 PLATES ORDERED IN PAIRS SHALL BE CAST FROM THE SAME HEAT.

NUMBERS AND LETTERS SHOWN DOTTED ARE TO BE OBTAINED FROM BRIDGE PLANS.

SPECIFICATION REFERENCE 2471.3 H, 3327 (BRONZE CASTINGS TYPE 2)

APPROVED _____ 1959	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS	DETAIL NO.
BRIDGE ENGINEER	BRIDGE NAME PLATE FOR COUNTY BRIDGES		2104

STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS
BRIDGE NO. 7279
STANDARD DETAILS
MICROFILMED RAMSEY CO. ENGR. APPROVED: 7-28-60