

SUMMARY OF BRIDGE QUANTITIES
JOB NO. 1393

BRIDGE TITLE		PIECE NO.	CODE NO.	ITEM NO.	ITEM UNITS	801	SP#802	SP#802	SP#802	803	SP#804	SP804-6	SP#805-7	SP#806	812	817	817	817
						COMMON EXCAVATION FOR STRUCTURES	CLASS P CONCRETE	CLASS S CONCRETE	SEAL CONCRETE	REINFORCING STEEL	PRECAST CONCRETE PILING (16" Oct.)	PRECAST EQUIPMENT FOR DRAWING TEST PILES	STEEL PLATE GUARD BRIDGE RAILING (ALT. #1) ALUMINUM PLATE GUARD BRIDGE RAILING (ALT. #2)	STRUCTURAL STEEL IN BEAM SPANS	BRIDGE NAME PLATES (TYPE C)	PIER RAP	UNTREATED TIMBER PILING	REMOVAL OF EXISTING BRIDGE STRUCTURES
UNIT OF BRIDGE						CU. YD.	CU. YD.	CU. YD.	CU. YD.	LB.	LIN. FT.	COMP. ITEM	LIN. FT.	LB.	PLATE	CU. YD.	LIN. FT.	COMP. ITEM
END BLANK 1-22						50		13.84		2,360	288				1	270		
INT SPANS 1-23								161.73		26,316	3,280							
PIER #1						228	33.94	12.41	28.20	5,560								599
PIER #2						360	80.44	9.96	66.35	6,980								830
PIER #3						216	80.44	9.96	66.35	6,980								830
PIER #4						408	68.78	12.41	49.80	6,440								797
INT SPANS 2-20, 26-31								86.54		16,114			122					
INT SPANS 23-27								1,069.50		200,750			1,500					
INT SPANS 24-26								85.48		16,360			120	344				
INT SPANS 24-26								163.27		38,100			480	22,946				
TOTAL JOB NO. 1393						1262	283.60	1,625.20	210.70	325,860	4,168	100%	2,222	222,690	1	270	3,056	100%

Revised Excavation & Steel Concrete quantities 7-15-63, PMH

SUMMARY OF BRIDGE QUANTITIES
LITTLE MISSOURI RIVER
BRIDGE & APPROACHES
CLARK AND NEVADA COUNTY
ROUTE 53 SEC. 1 & 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: FE DATE: 6-4-63
TRACED BY: MEW DATE: 6-5-63
CHECKED BY: MEW DATE: 6-5-63
BRIDGE NO. 3476 DRAWING NO. 1-416

600

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	AL SHEETS
6	ARK.	5-314(S)		6	32
JOB No.		1333			

For R/W Data - See Roadway Plans

CURVE DATA

$\Delta = 87^{\circ}46'$ RT.
 $D = 3^{\circ}00'$
 $T = 1837.0'$
 $L = 2935.6'$
 $P.I. Sta. 155 + 45.3$

Note: Top of bed of Riprap to be a minimum of 1'-6" below ground elevation. Riprap is 1'-0" thick.

Total Length of Bridge = 1110'-2"
17-30'-0" RC Slab Spans (with bents) = 510'-0"

Beginning of Bridge
Sta. 141 + 13.0

Deck Elev. 179.5

0% Grade

Sta. 146 + 23.0

3' Long Fence - See
Roadway Plans
Concrete Posts

Top of Riprap Elev. 175.0'
Steel (10 Ga.) or Aluminum (0.156")
Plate Guard Bridge Railing (Concrete Posts)

Batter 1/2"
per Ft.

2'-11 1/2" x Deck
to Low Concrete
4'-0" Low Concrete
to High Water

H.W. Elev. 173.4 (March, 1945)

Elev. 159.21'

Elev. 158.61'

Elev. 162.1

Ground Line 50' ± Rt. 2'
Ground Line @ 2'

110'
195'

120'
201'

Bent No.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

Sta. 142 + 00
Lt. 2'

Sta. 145 + 94
Lt. 6'

Sta. 145 + 00
Rt. 12'

Sta. 146 + 00
Rt. 7'

ELEVATION

D.A. = 14.14 Sp. Mi. C=1.0

Note: For Pile Data & General Notes see
Sheet No. 2 Drawg. No. 11417A

SOIL LEGEND

Med Firm Brown Sandy Clay

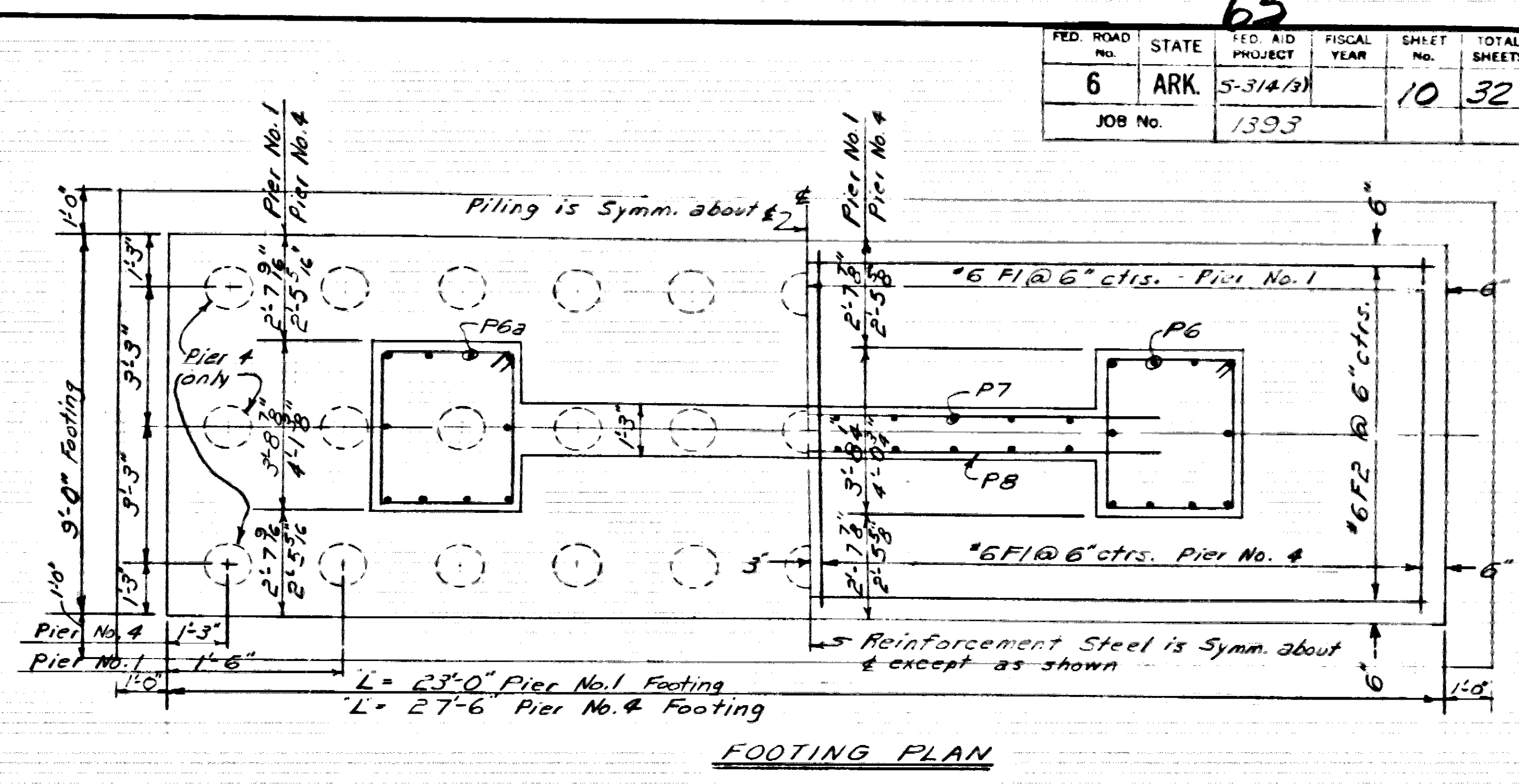
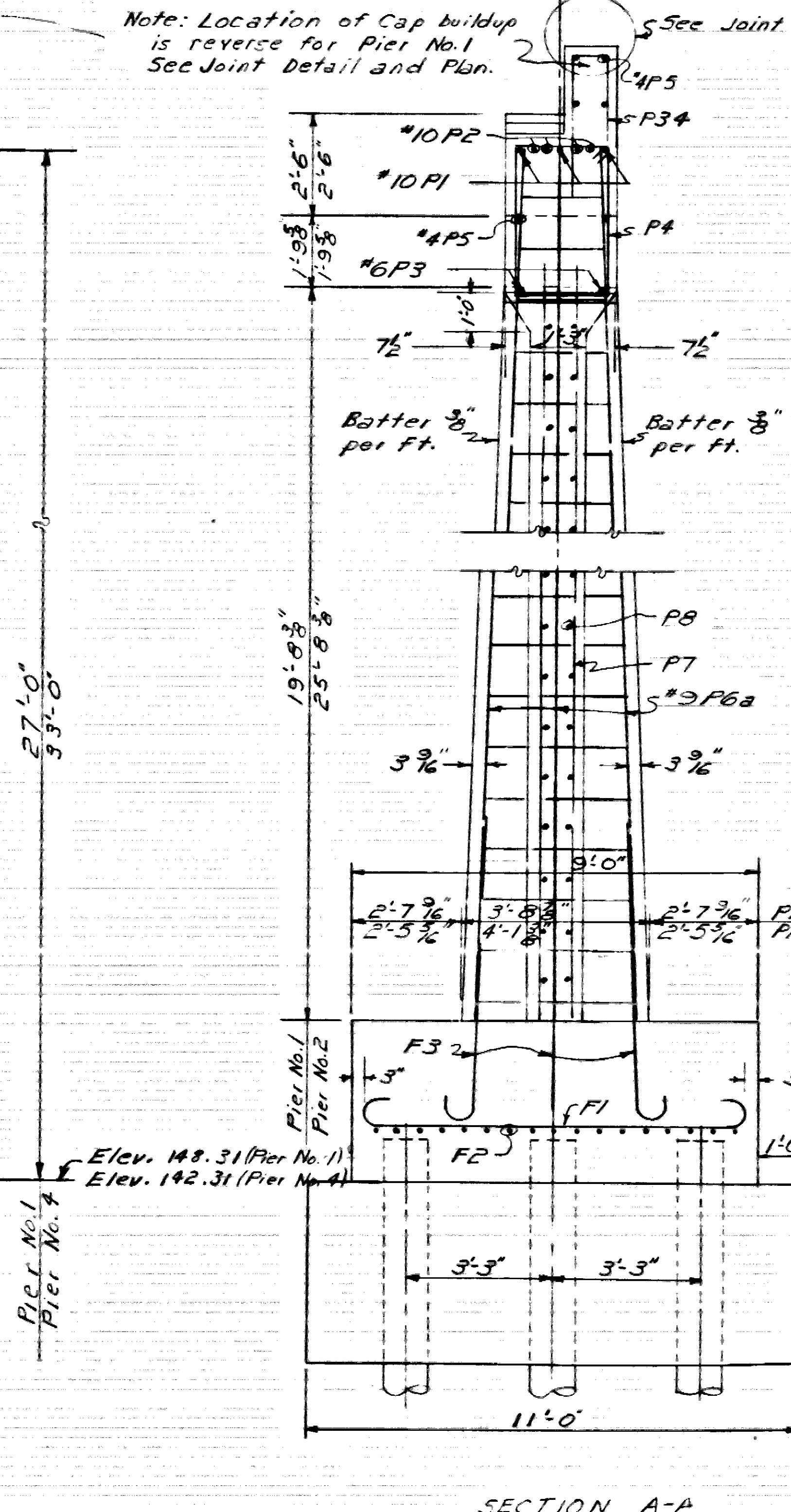
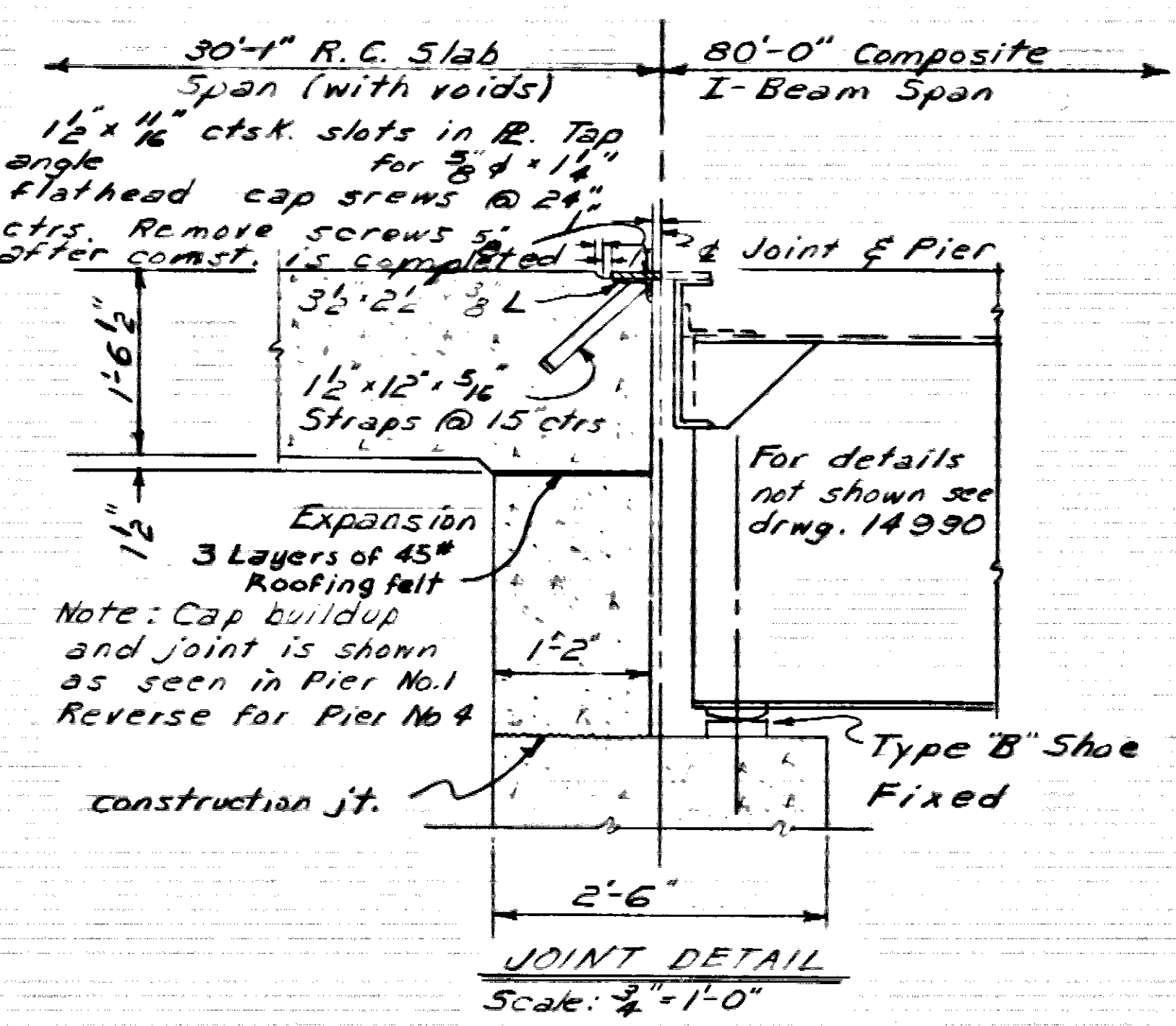
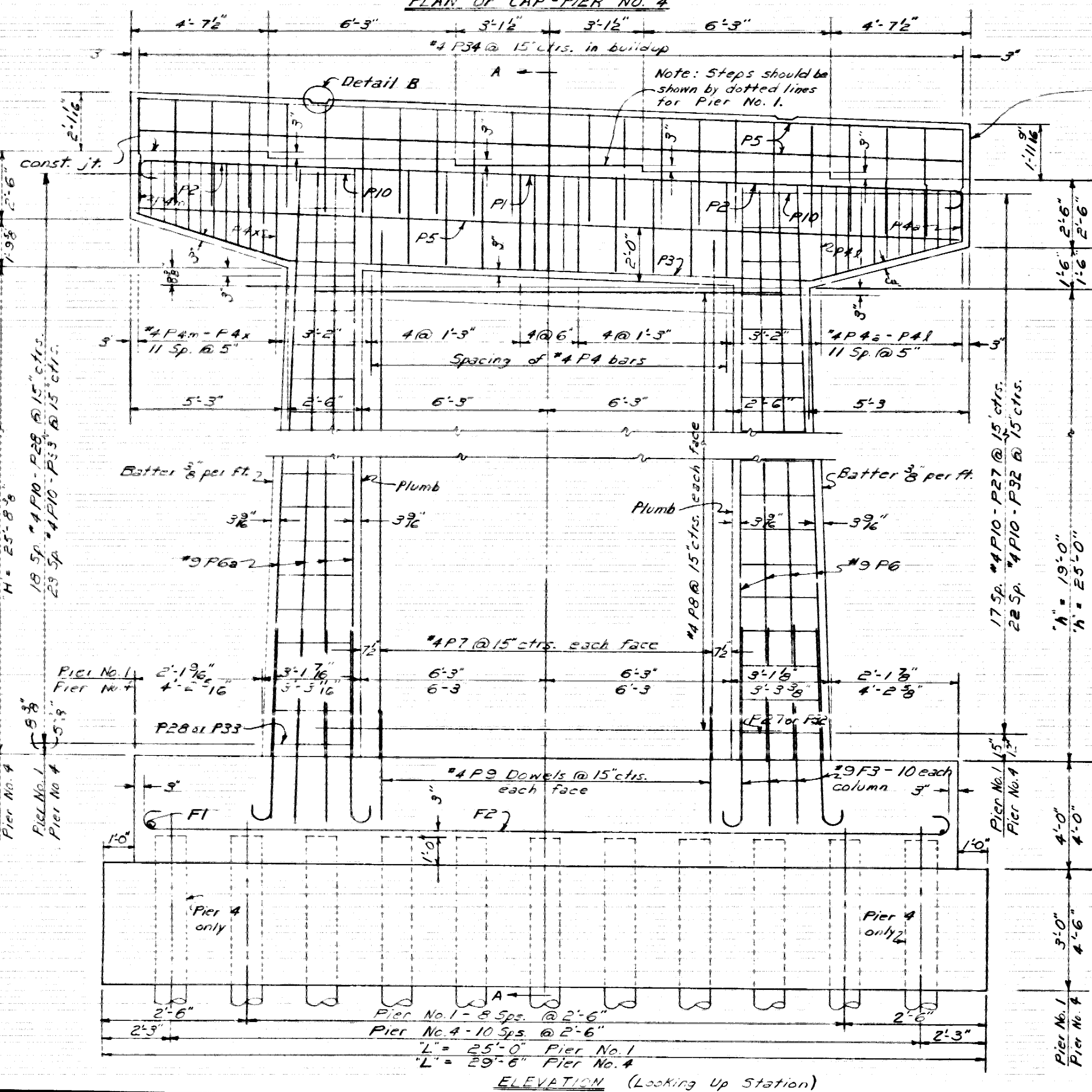
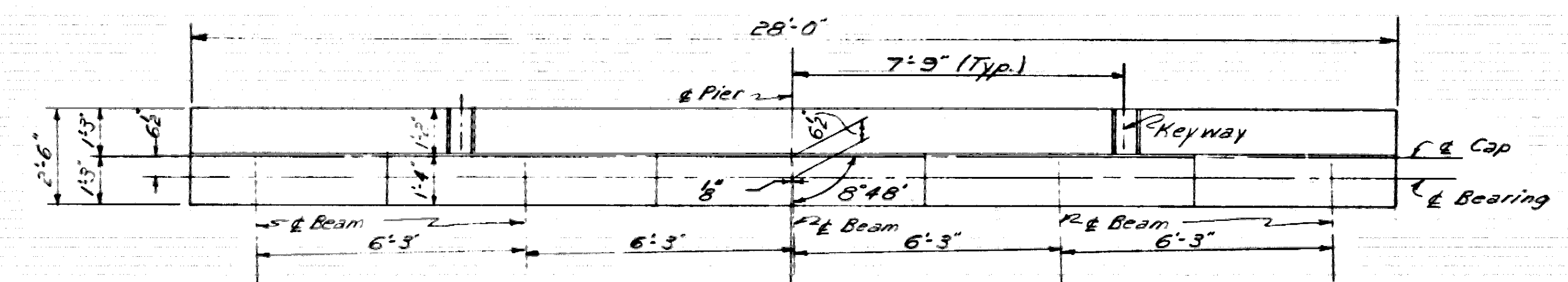
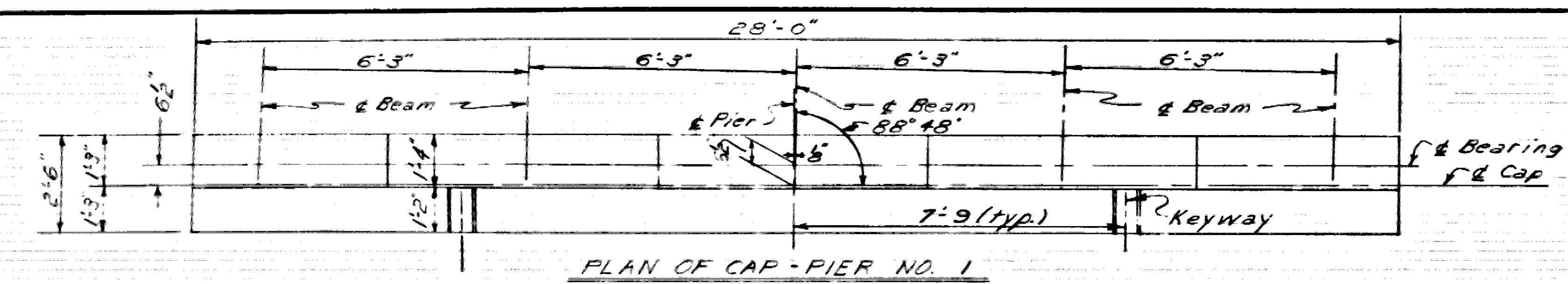
Firm Brown Sandy Clay & Gravel

Very Firm Blue Clay-Moist

SHEET NO. 1
LAYOUT OF BRIDGE
OVER LITTLE MISSOURI RIVER
LITTLE MISSOURI RIVER
BRIDGE & APPROACHES
CLARK AND NEVADA COUNTY
ROUTE 53 SEC. 182
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JAS DATE: 5-17-63
TRACED BY: DATE: SCALE: 1"=50'-0"
CHECKED BY: EE DATE: 5-20-63
BRIDGE NO. 3476 DRAWING NO. 11417

L. P. Wilson
BRIDGE ENGINEER



BAR LIST

Mark	Size	No.	Req'd	Length	A	B	Pin Dia.	Bending Diagram
P1	#10	3	3	30'-5"	27'-6"	11"	10"	
P2	#10	8	8	13'-1"	11'-8 1/2"	11"	10"	
P3	#6	2	2	28'-7"	2'-1 1/2"	3'-8"	12"	
P4	#4	13	13	12'-2"	2'-1 1/2"	3'-8"	12"	
P4a-1	#4	1 each	1 each	Varies 8'-11" to 11'-11"	2'-1 1/2"	Var. 2'-0 3/4" to 3'-6 1/2"	12"	
P4a-2	#4	1 each	1 each	Varies 8'-2" to 11'-11"	2'-1 1/2"	Var. 2'-5" to 3'-6 1/2"	12"	
P4a-3	#4	1 each	1 each	Varies 8'-2" to 11'-11"	2'-1 1/2"	Var. 2'-5" to 3'-6 1/2"	12"	
P4a-4	#4	1 each	1 each	Varies 8'-2" to 11'-11"	2'-1 1/2"	Var. 2'-5" to 3'-6 1/2"	12"	
P5	#8	6	6	27'-3"	-	-	5/16"	
P6	#8	10	10	11'-3 3/4"	-	-	5/16"	
P6a	#8	10	10	11'-3 3/4"	-	-	5/16"	
P7	#4	20	20	15'-10"	-	-	5/16"	
P8	#4	15	20	15'-10"	-	-	5/16"	
P9	#4	20	20	4'-4"	-	-	5/16"	
P10-P11	#4	2 each	-	Varies 8'-11" to 11'-11"	Var. 1'-10" to 1'-10"	Var. 1'-10" to 1'-10"	12"	
P12	#4	1	-	12'-5"	2'-7 1/2"	3'-2 1/2"	12"	
P10-P12	#4	-	2 each	Varies 8'-11" to 11'-11"	Var. 1'-11"	Var. 1'-10"	12"	
P13	#4	-	1	13'-6"	2'-10"	3'-7 1/2"	12"	
P14	#4	-	1	13'-6"	2'-10"	3'-7 1/2"	12"	
P15	#4	-	1	13'-6"	2'-10"	3'-7 1/2"	12"	
P16	#4	23	23	8'-11"	3'-2"	3'-8"	12"	
P17	#6	45	54	9'-11"	8'-6"	6"	4/8"	
P18	#6	17	17	4'-11"	4'-6"	6"	4/8"	
P19	#8	20	20	7'-9"	6'-6"	10"	3"	

NOTES
 Concrete in Cap to be Class "S".
 Concrete in Columns, Web Wall and Footings to be Class "A".
 All corners to be chamfered 3".
 All piling to be 12" Untreated Timber.
 For General Notes see Layout, Drawing No. 114/7A.
 Max. High Water Elevation for 3'-0" Seal Concrete (Pier No. 1) is 155.35'.
 Max. High Water Elevation for 4'-6" Seal Concrete (Pier No. 4) is 155.61'.

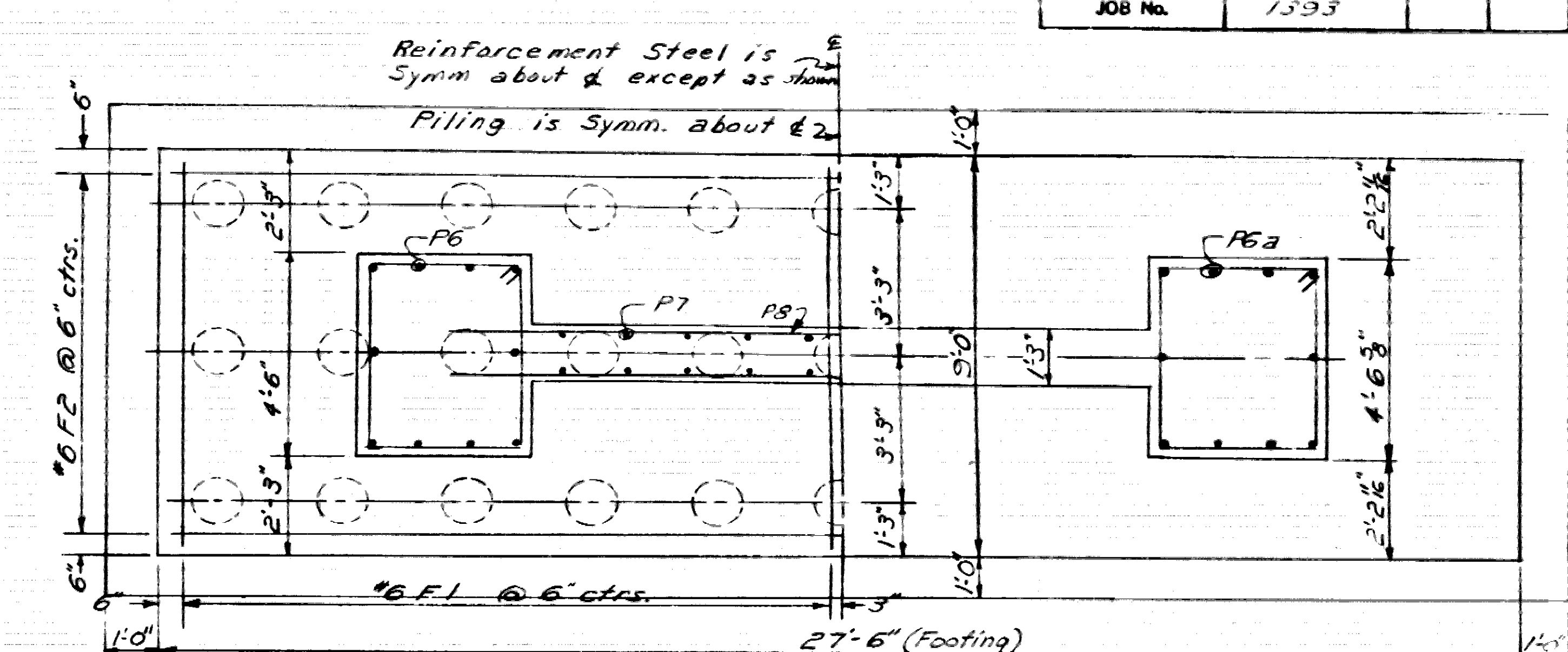
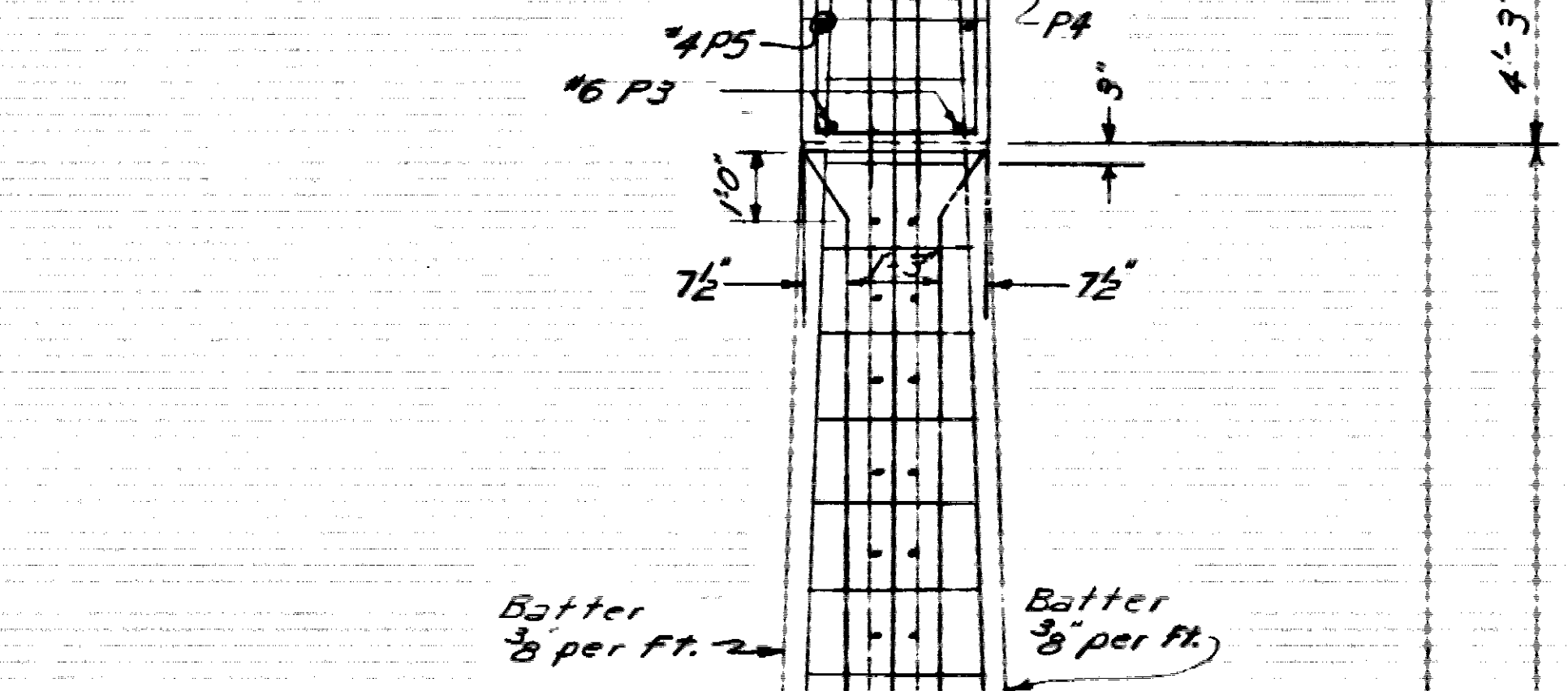
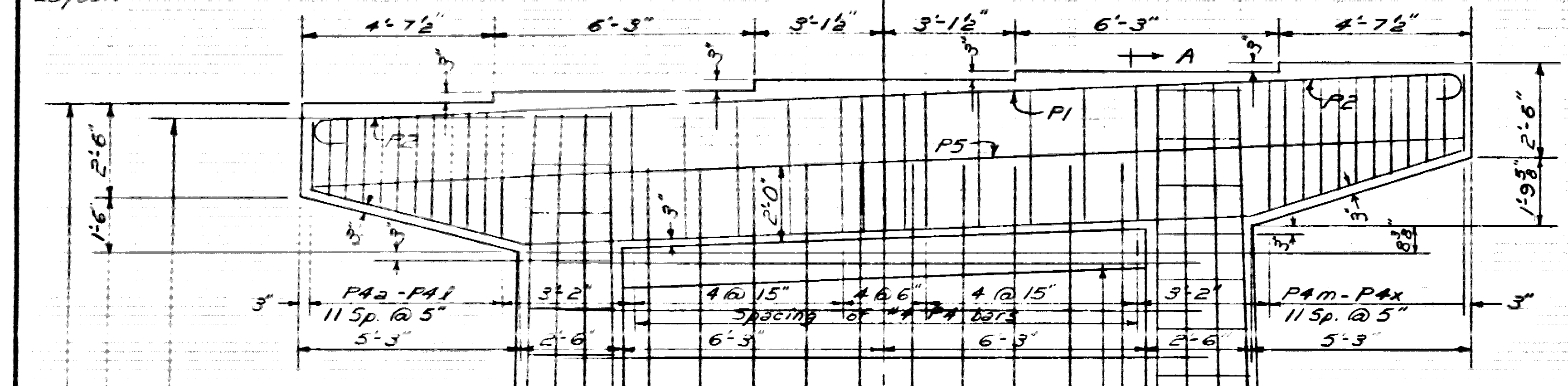
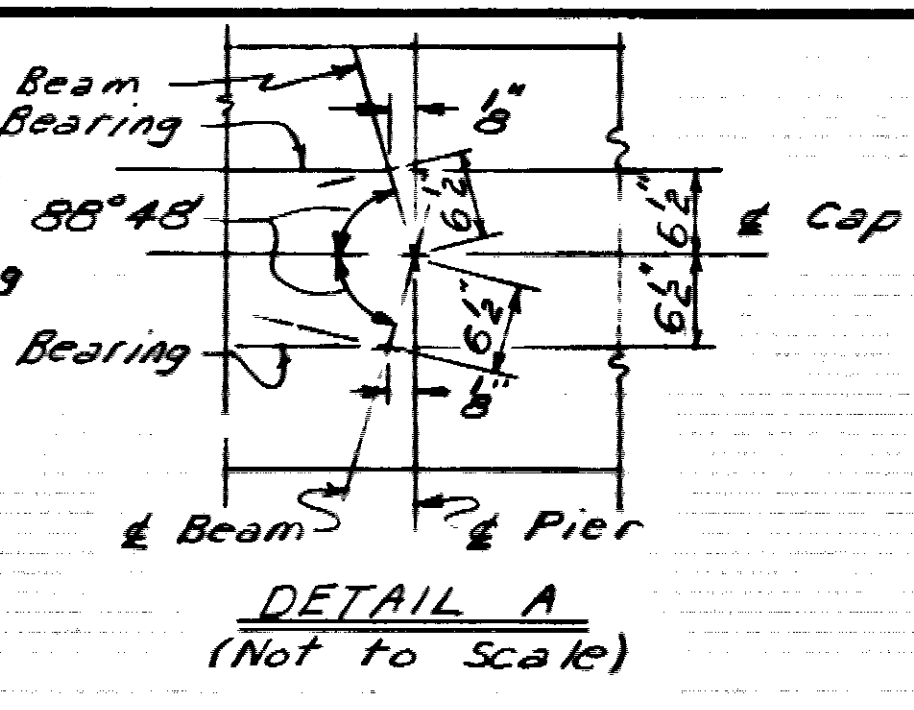
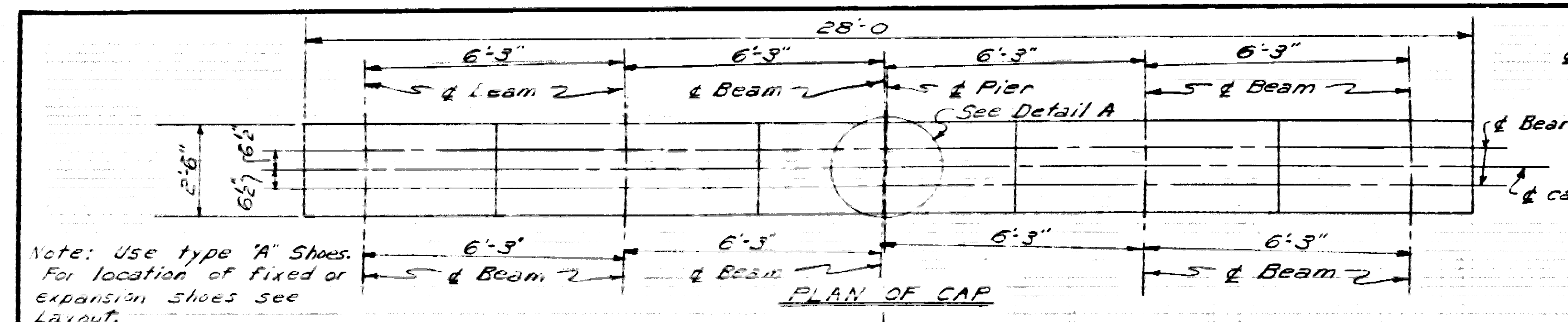
Revised Seal dimensions, 7-15-63, E.A.H., J.A.S.

DETAILS OF PIERS NO. 1 & 4
BRIDGE OVER LITTLE MISSOURI RIVER
LITTLE MISSOURI RIVER
BRIDGES & APPROACHES
CLARK AND NEVADA COUNTY
ROUTE 53 SEC. 1 & 2
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JAS. DATE: 5-22-63
 CHECKED BY: E.E. DATE: 6-3-63
 BRIDGE NO. 3476 DRAWING NO. 114/8

66

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.	5-31(13)	1993	11	32
JOB No.					



BAR LIST FOR PIER 2 OR PIER 3

Mark	Size	No. Reqd	Length	A	B	Pn	Bending Diagram
P1	#10	3	30'-3"	27'-6"	11"	10"	
P2	#10	3	18'-1"	11'-8 1/2"	11"	10"	
F3	#6	2	28'-1"	-	-	-	
F4	#4	13	16'-2"	2'-12"	3'-8"	12"	
P4-J	#4	1 each	Varies 9'-11" to 11'-11"	2'-12"	Varies 3'-8" to 5'-6 1/2"	15"	
P4m-A	#4	1 each	Varies 9'-3" to 11'-11"	2'-12"	Varies 3'-8" to 5'-6 1/2"	15"	
P5	#4	2	27'-7"	-	-	51"	
P6	#4	10	35'-5"	-	-	51"	
P7	#4	20	32'-4"	-	-	51"	
P8	#4	20	15'-10"	-	-	51"	
P9	#4	20	2'-4"	-	-	51"	
P10-P38	#4	2 each	Varies 8'-1" to 14'-7"	Var. 1'-11" to 3'-0"	Var. 1'-10" to 1'-0"	15"	
P6a	#9	10	36'-5"	-	-	51"	
F1	#6	54	9'-11"	8'-6"	6"	4 1/2"	
F2	#6	17	28'-5"	27'-0"	6"	4 1/2"	
F3	#3	20	7'-9"	6'-6"	10"	9"	

NOTES: Concrete in Cap to be Class 'S'
Concrete in Columns, Web Wall and Footings to be Class 'A'
All corners to be chamfered 2".
For General Notes see Drawing No. 114/7A
All Piling to be 12" Untreated Timber.
Max. High Water Elevation for 6'-0" Seal Concrete is 159.56

Revised Seal dimensions: 7-15-63, FMH, JAS

DETAILS OF PIERS NO. 2 & 3
BRIDGE OVER LITTLE MISSOURI RIVER
LITTLE MISSOURI RIVER
BRIDGES & APPROACHES
CLARK AND NEVADA COUNTY
ROUTE 53 SEC. 182
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JAS DATE: 5-2-63
TRACED BY: JAS DATE: 6-3-63
CHECKED BY: JAS DATE: 6-3-63
BRIDGE NO. 3476 DRAWING NO. 114/9

Dimension	Beam A	Beam B	Beam C	Beam D	Beam E
C to C Joint along beams	80'-6 1/2"	80'-3 1/2"	79'-11 1/2"	79'-5 1/2"	79'-5 1/2"
"d"	13'-11 1/2"	15'-10 1/2"	15'-2 1/2"	15'-7 1/2"	15'-5 1/2"

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.	5-314(9)		12	32
JOB No.		1393			

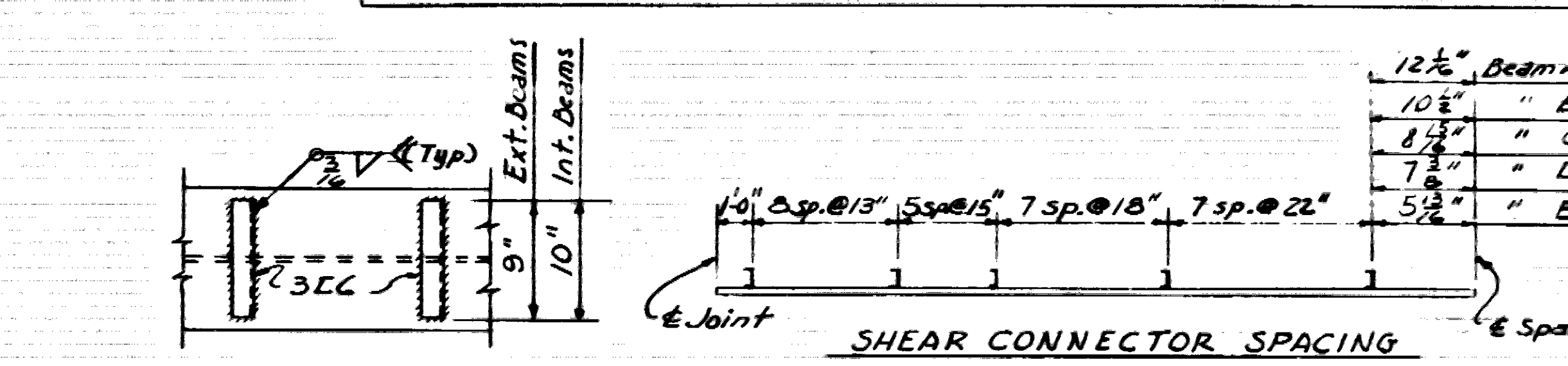
MARK	SIZE	NO.	LENGTH (IN.)	PI NO.
S1	#6	128	27'-2"	Str.
S2	#6	63	27'-10"	2 1/2"
S3	#4	216	27'-10"	Str.
S4	#4	129	5'-5"	1 1/2"
S5	#4	127	4'-3"	1 1/2"
PO1	#5	56	5'-10"	1 1/2"
PO2	#3	112	2'-8"	1 1/2"

Non pay items:

PO1	#5	56	5'-10"	1 1/2"
PO2	#3	112	2'-8"	1 1/2"

BENDING DIAGRAMS

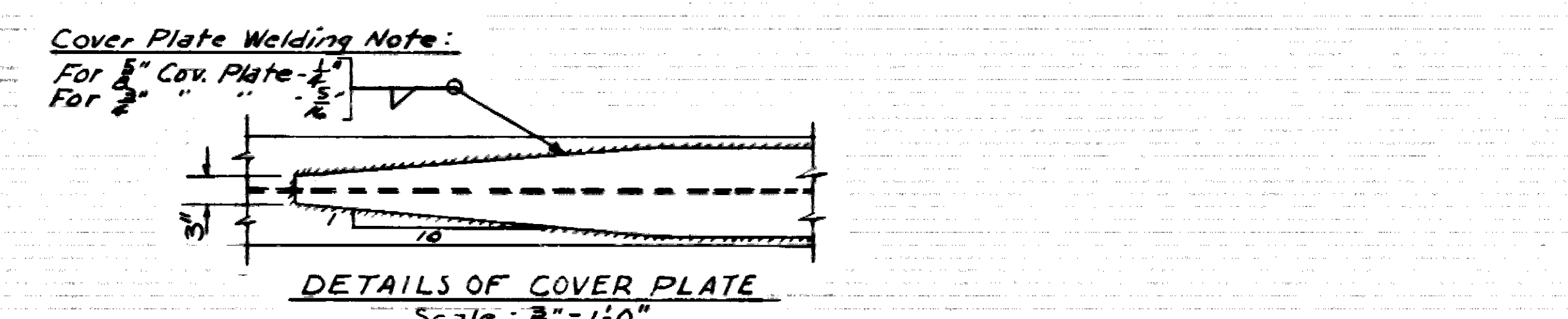
Note: Dimensions are ctr. to ctr. of bars.



DETAILS OF SHEAR CONNECTORS
Scale: 1" = 10'

Note: Stud shear connectors, granular flux filled, solid fluxed, or equal may be used in place of the channels shown at the following ratios: 3/4" diameter stud in place of 1.02 inches of channel, 3/4" diameter stud in place of 2.52 inches of channel. The studs shall be 4" long and automatically end welded to the beam flanges in accordance with recommendations of the manufacturer.

Channel sections will be used as basis for measurement of structural steel in shear connectors.

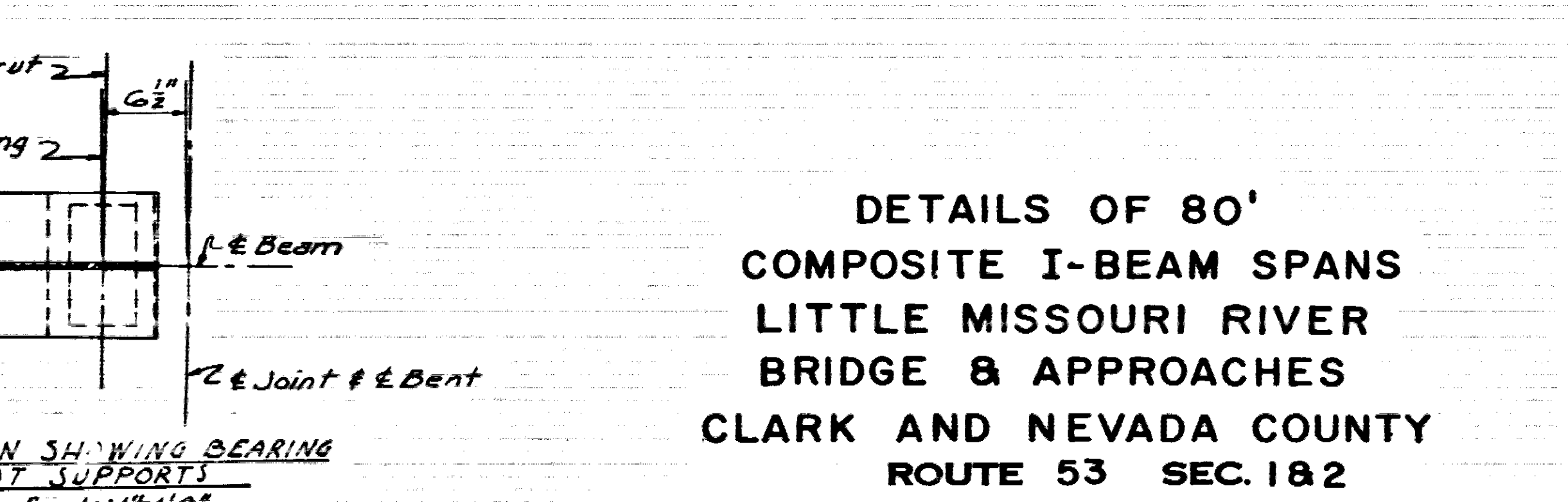


COVER PLATE WELDING NOTE:
For 1/2" Cover Plate - 1/2" V Groove
For 3/4" Cover Plate - 3/4" V Groove

NOTES
For General Notes and additional details, see Drawing No. 14990.
All steel in composite I-beam spans shall be ASTM A-36 steel.

LOADING H-20 A.A.S.H.O. 1961
Dead Load: Interior Beam 50% + 1.1 (Wt. of Wf) 60% + 1.1 (Wt. of Wf) Exterior Beam 60% + 1.1 (Wt. of Wf) 60%
Live Load: To each Comp. Beam 1.136 Wheel & Impact 1.124 Wheel & Impact
Unit Stresses: Class S Conc. (n=10) 1200 p.s.i. Structural Steel (A-36) 20,000 p.s.i. Reinforcing Steel 20,000 p.s.i.

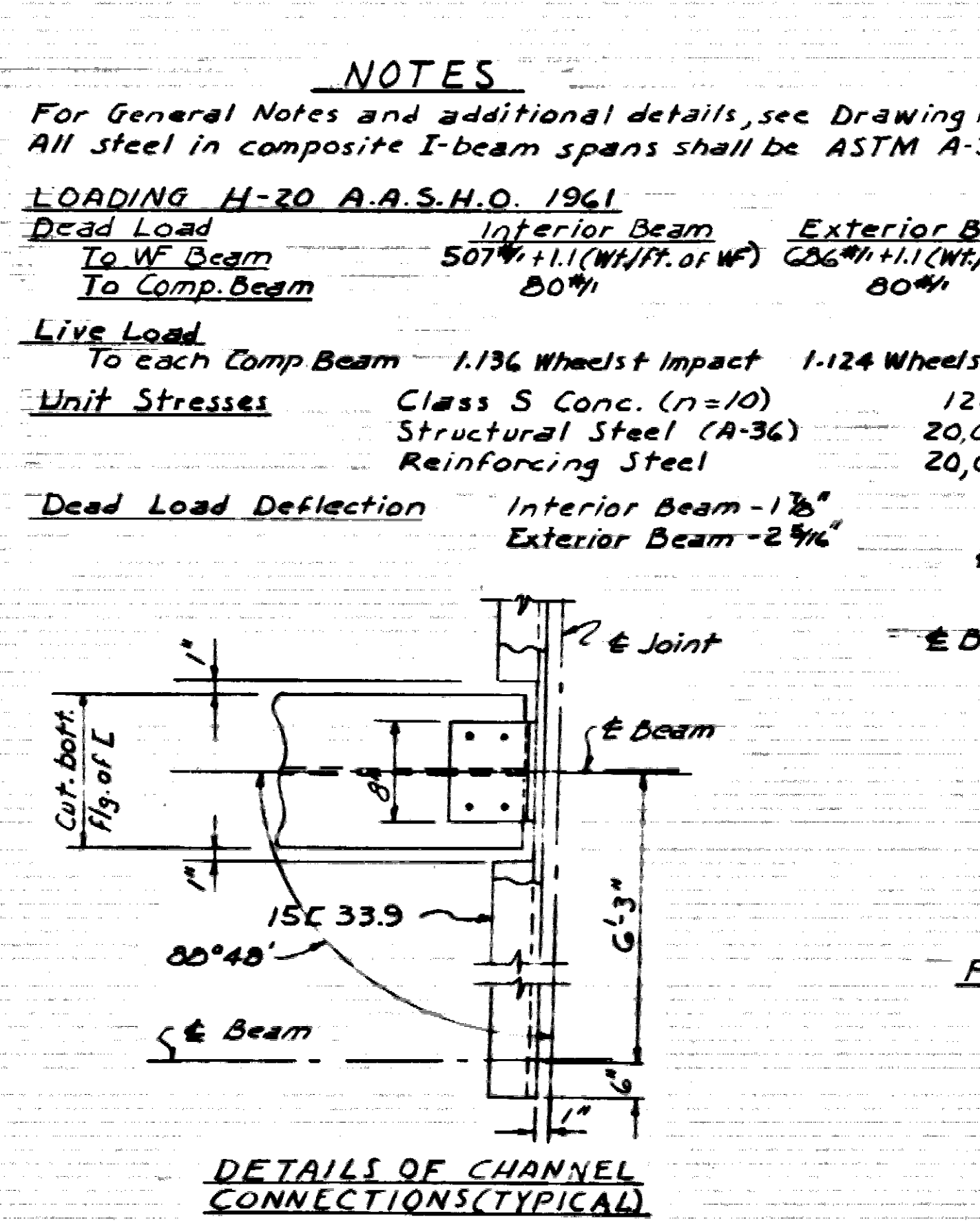
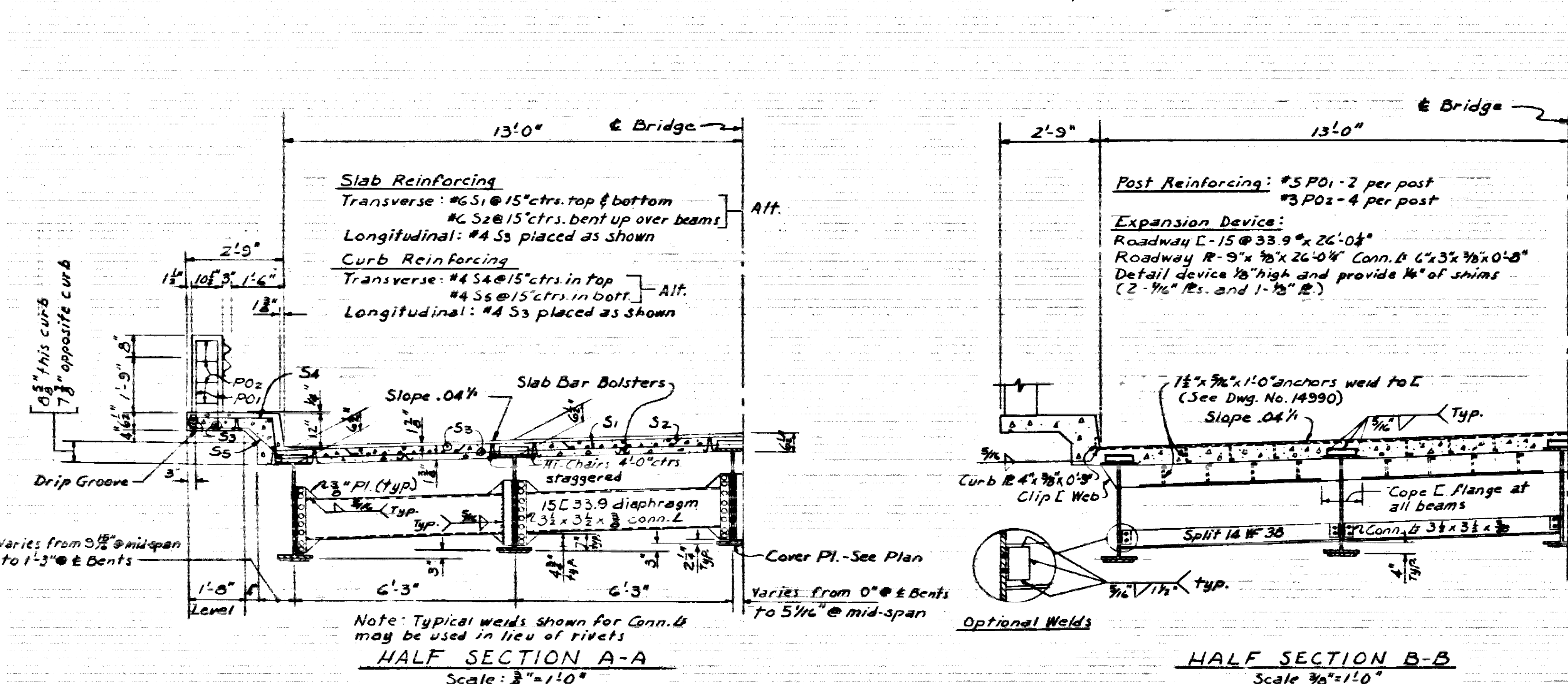
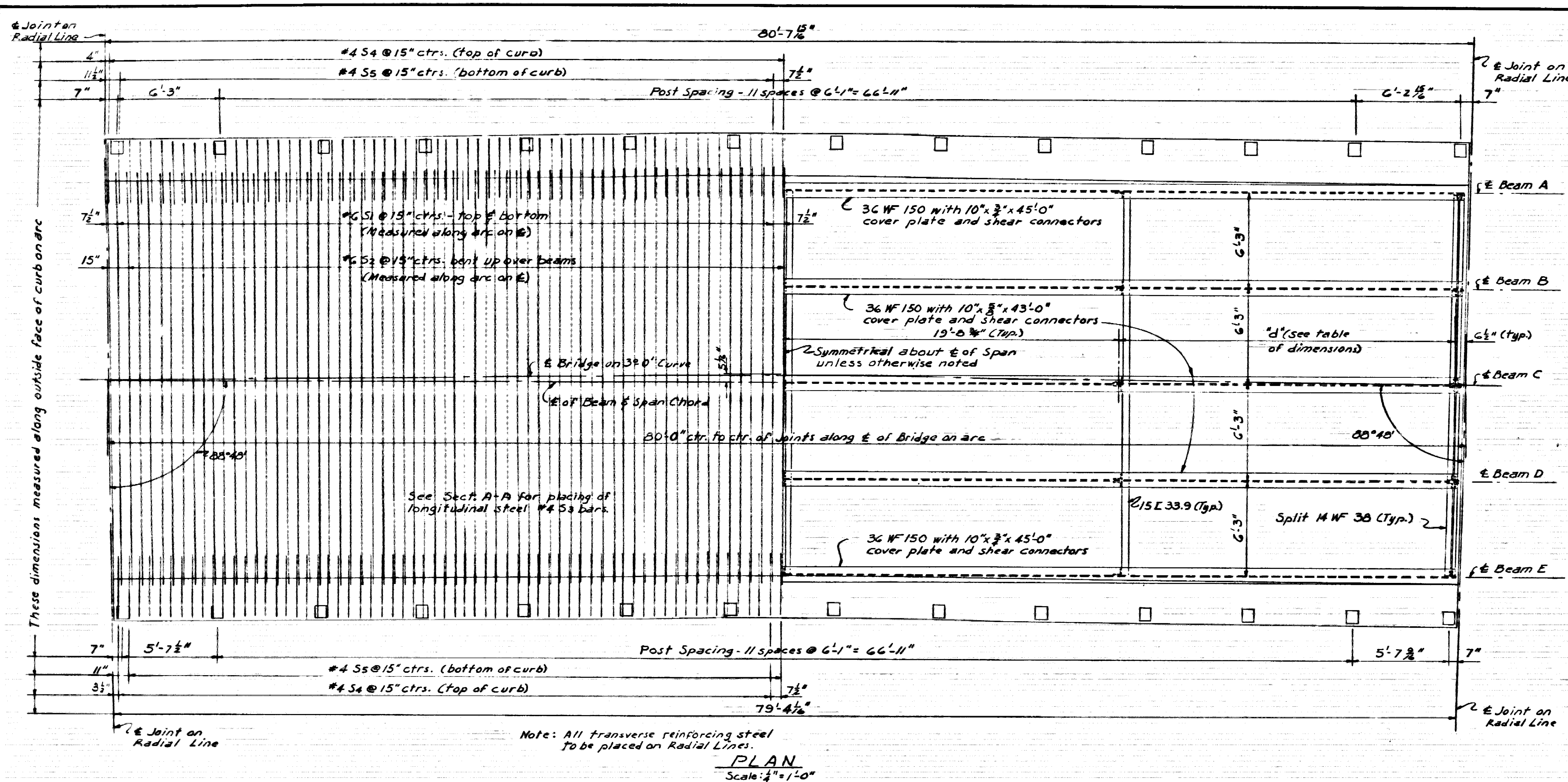
Dead Load Deflection: Interior Beam - 1 1/8" Exterior Beam - 2 3/4"

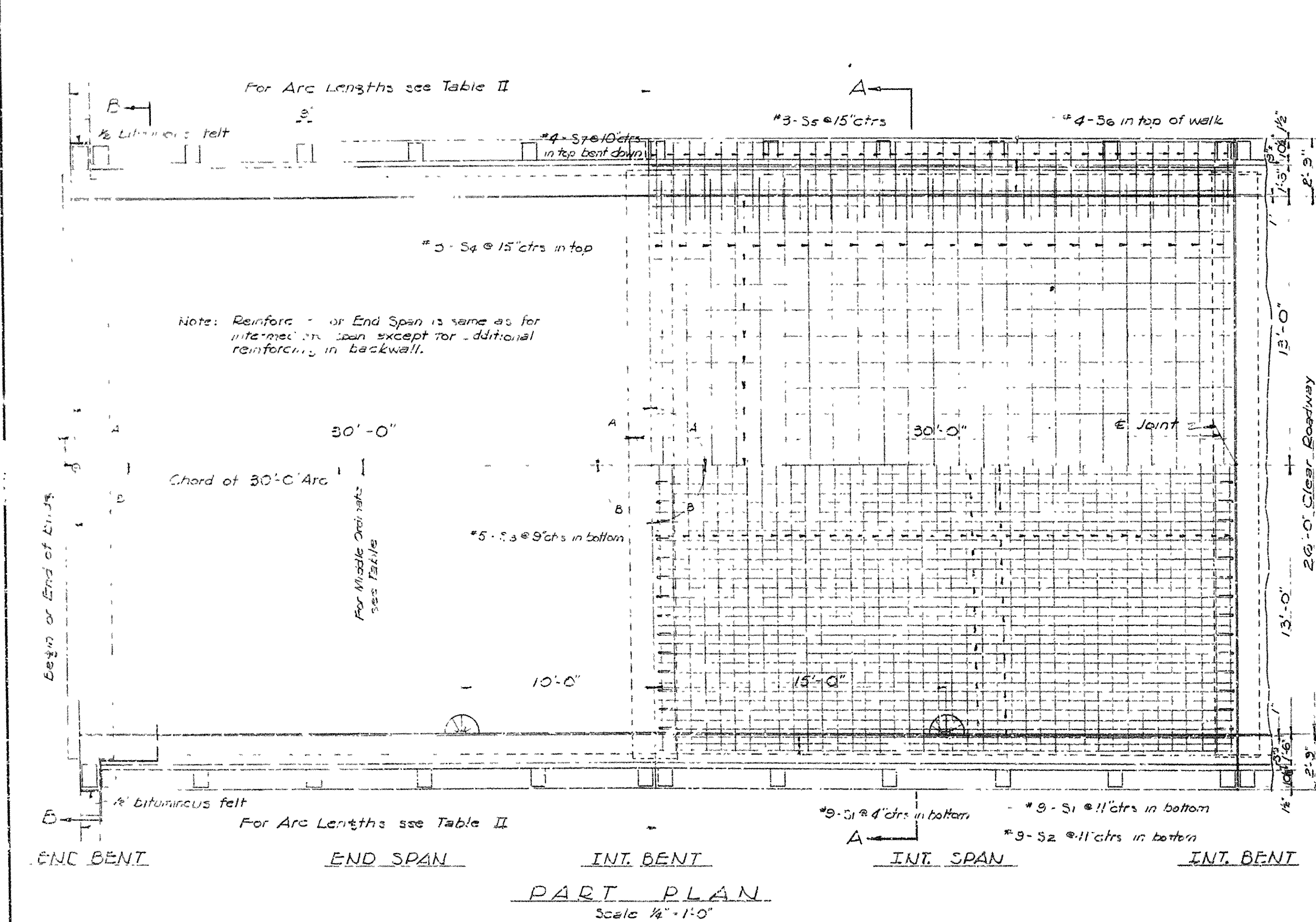
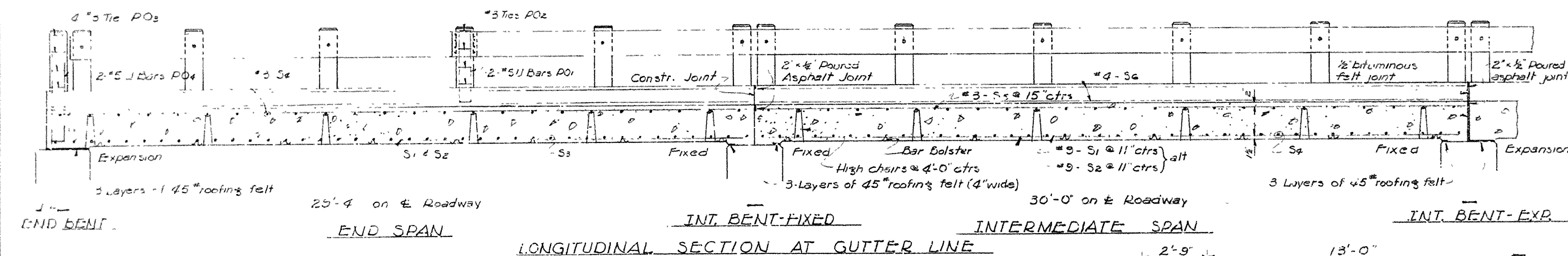
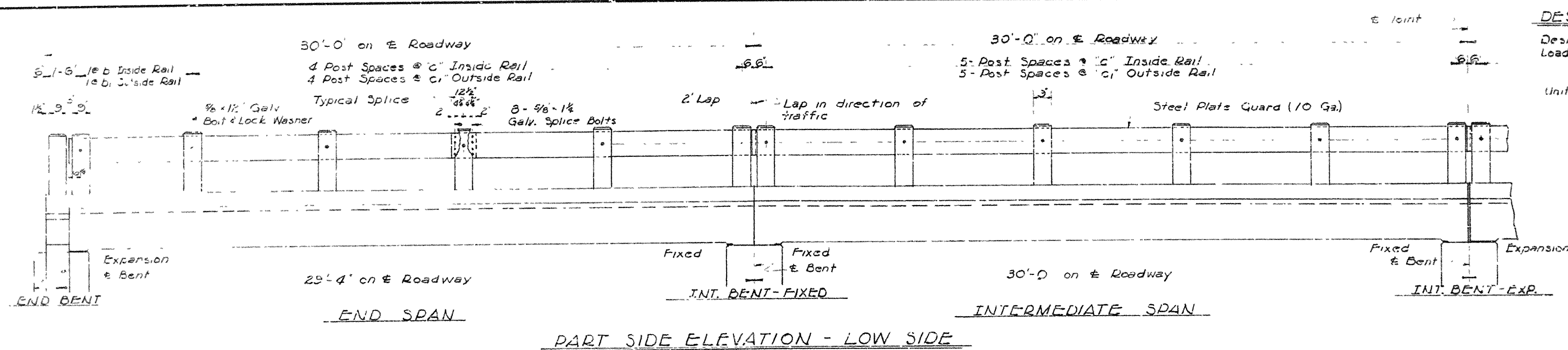


DETAILS OF 80' COMPOSITE I-BEAM SPANS LITTLE MISSOURI RIVER BRIDGE & APPROACHES CLARK AND NEVADA COUNTY ROUTE 53 SEC. 182 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.

DRAWN BY: A.N. DATE: 5-17-63
CHECKED BY: E.E. DATE: 5-24-63
BRIDGE NO. 3476 DRAWING NO. 11420

BRIDGE ENGINEER



DESIGN SPECIFICATIONS AASHTO 1953

Design Live Loading 420
Load distribution to slab Dead Load 232%
Live Load 0.175 Wheelst/ft with
with 20% Impact
Unit Stresses Class S Concrete (n=10) 1800%
Reinforcing Steel 20900%

GENERAL NOTES

All concrete to be Class S. All exposed corners to be chamfered ^{1/4"} unless otherwise noted. Reinforcing steel to be deformed bars of intermediate grade unless modified by Special Provisions. Shop lists and ordering diagrams must be submitted and approval secured before fabrication is begun.

All reinforcing steel shall be accurately located in the forms and firmly held in place by means of steel wire supports of sufficient size and number to prevent displacement during the course of construction. Keep the steel a proper distance from the forms. Wire supports will not be considered secondary but will be considered subsidiary to the item of Reinforcing Steel. Shop lists and diagrams must be submitted for approval.

Rowing felt, aluminum felt, and poured asphalt joints to be measured and paid for as Class S Concrete for Bridges.

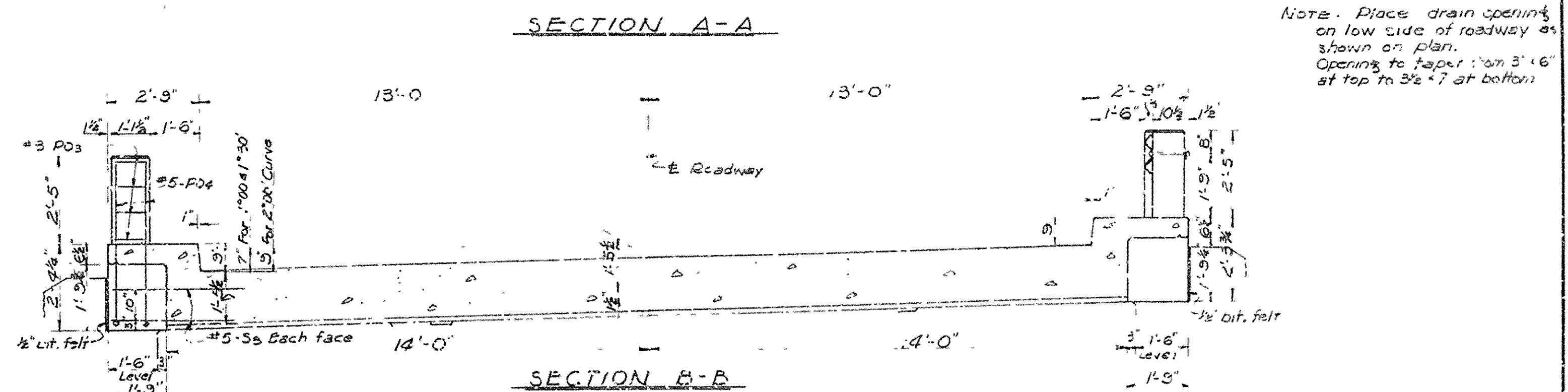
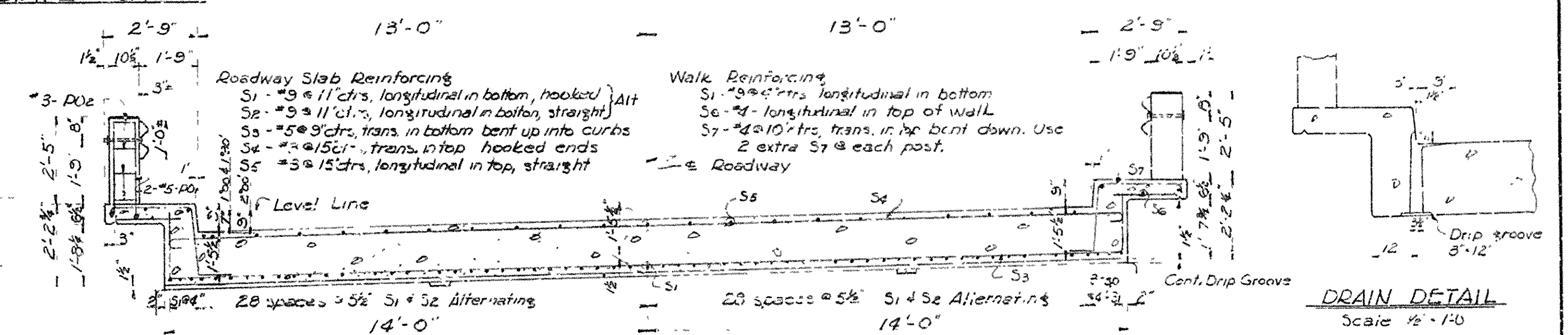
The steel plate guard shall be of the type shown or an equivalent rigid type as approved by the Engineer. The steel plate guard, including all concrete posts, shall be paid for at the unit price bid per linear foot for Steel Plate Guard.

SPECIFICATIONS Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1, 1940

DEGREE OF CURVE	POST SPACING					
	END SPAN			INT. SPAN		
	INSIDE RAIL	OUTSIDE RAIL		INSIDE RAIL	OUTSIDE RAIL	
	C ₁	C ₂	C ₃	C ₁	C ₂	C ₃
1° 00'	5'-5"	5'-9"	9'-3"	5'-9"	5'-9"	5'-9"
1° 30'	4'-5"	5'-3"	4'-9"	5'-9"	5'-9"	5'-9 1/2"
2° 00'	4'-5"	5'-3"	4'-9"	5'-10"	5'-9"	5'-10"

DEGREE OF CURVE	ARC LENGTHS		MID. ORD.
	INSIDE EDGE	OUTSIDE EDGE	
1° 00'	29'-11"	30'-1"	$\frac{1}{8}$ "
1° 30'	29'-10½"	30'-1½"	$\frac{3}{8}$ "
2° 00'	29'-10"	30'-2"	$\frac{1}{2}$ "

NOTE: Chord lengths same as arc lengths.



BAR LIST over SPAN

Mark.	Size	Min. Bar Per Span End Inter	Length	Banding Diagram
S ₁	*9	35	35	32'-1"
S ₂	*9	28	28	29'-7"
S ₃	*5	40	40	31'-0"
S ₄	*3	24	24	20'-6"
S ₅	*3	21	21	23'-7"
S ₆	*3	8	8	25'-"
S ₇	*1	96	96	7'-4"
S ₈	*3	8	8	3'-7"
*P ₀₁	*5	26	26	3'-8"
*P ₀₂	*3	48	48	2'-8"
*P ₀₃	*3	8	8	3'-2"
*P ₀₄	*3	8	8	9'-3"

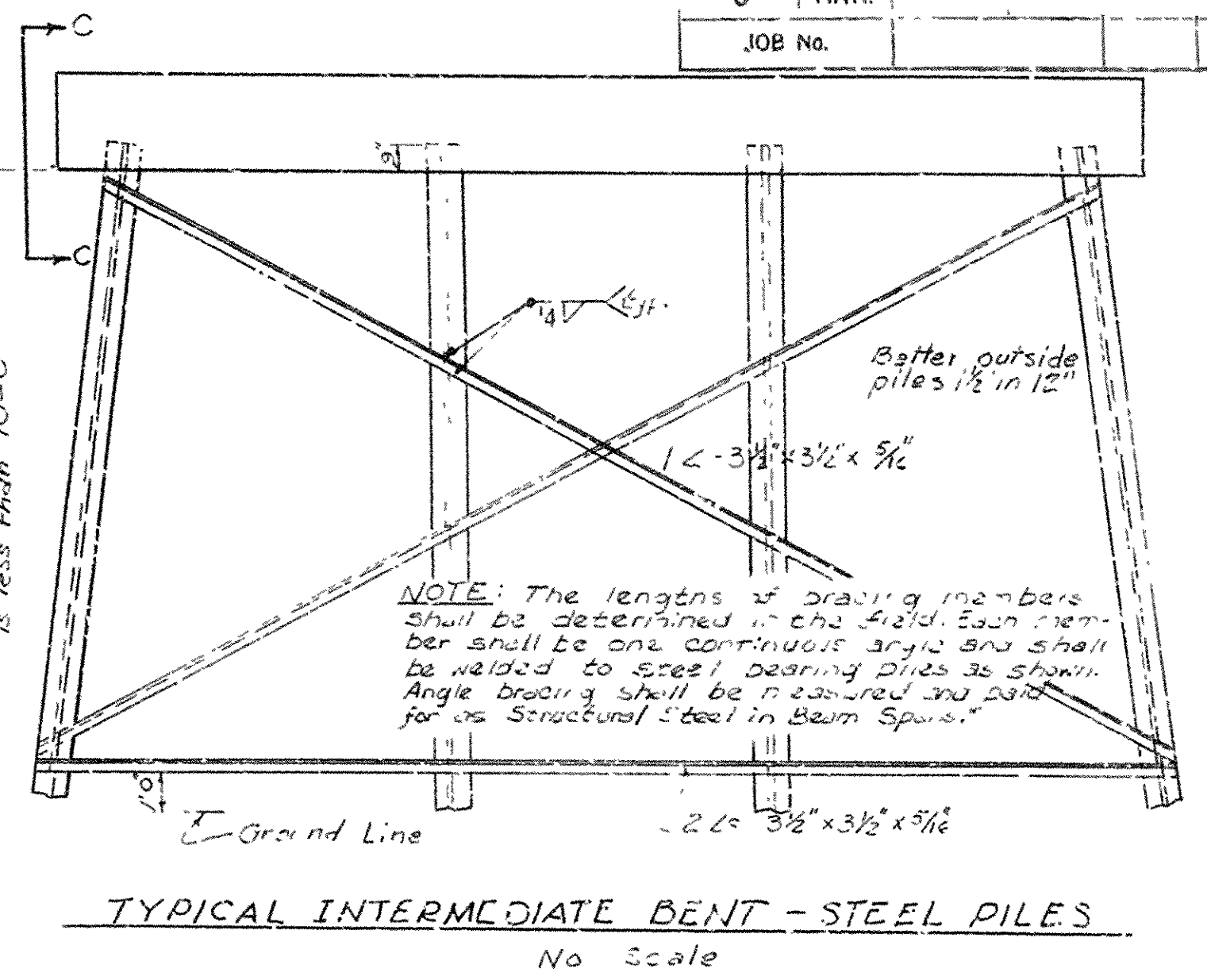
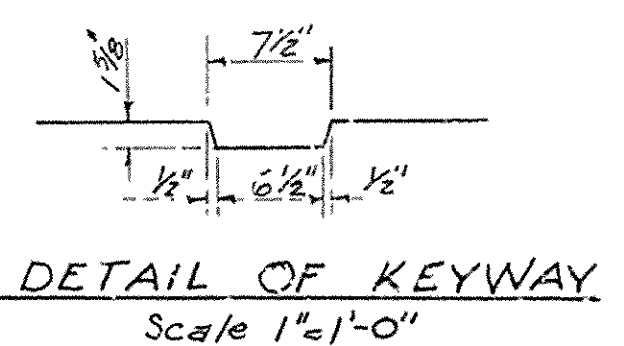
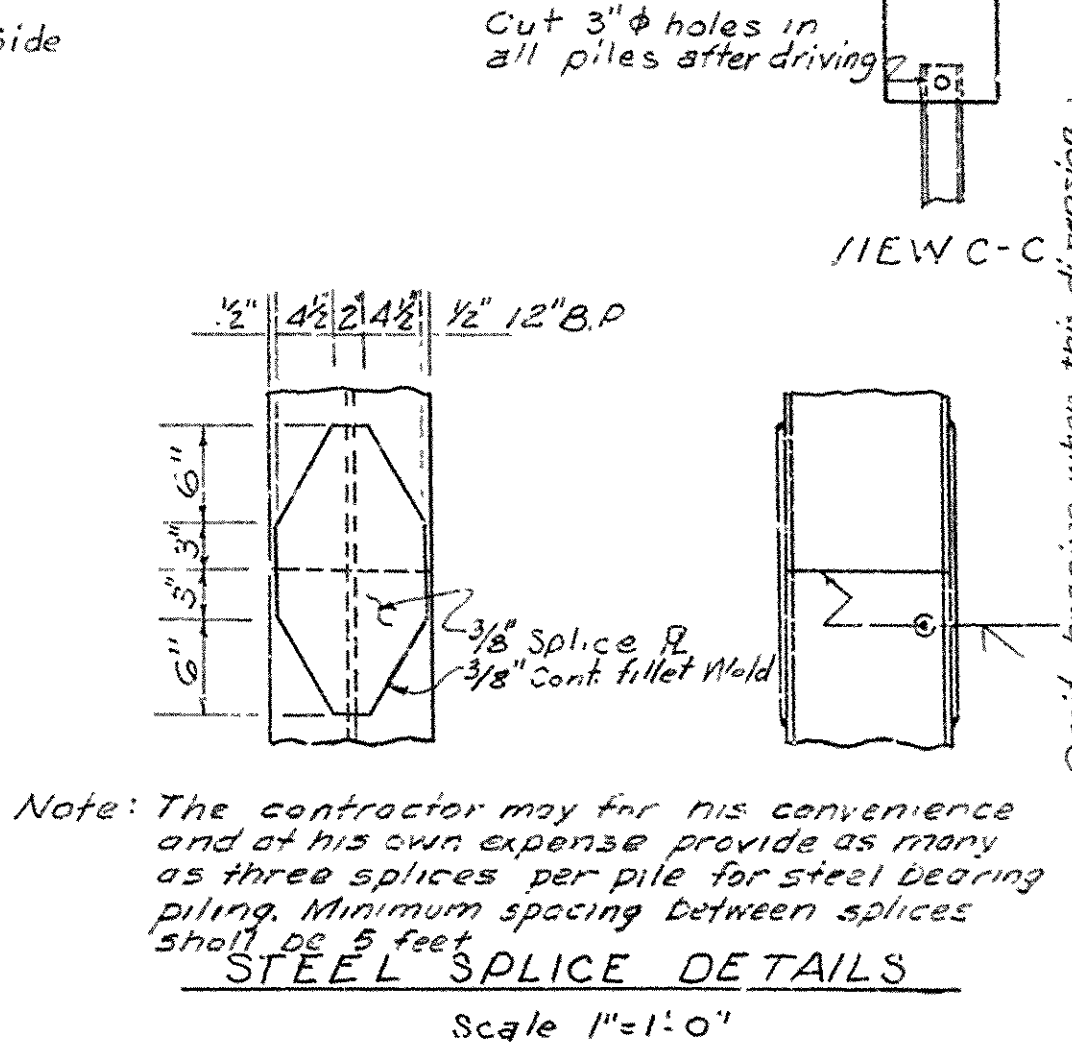
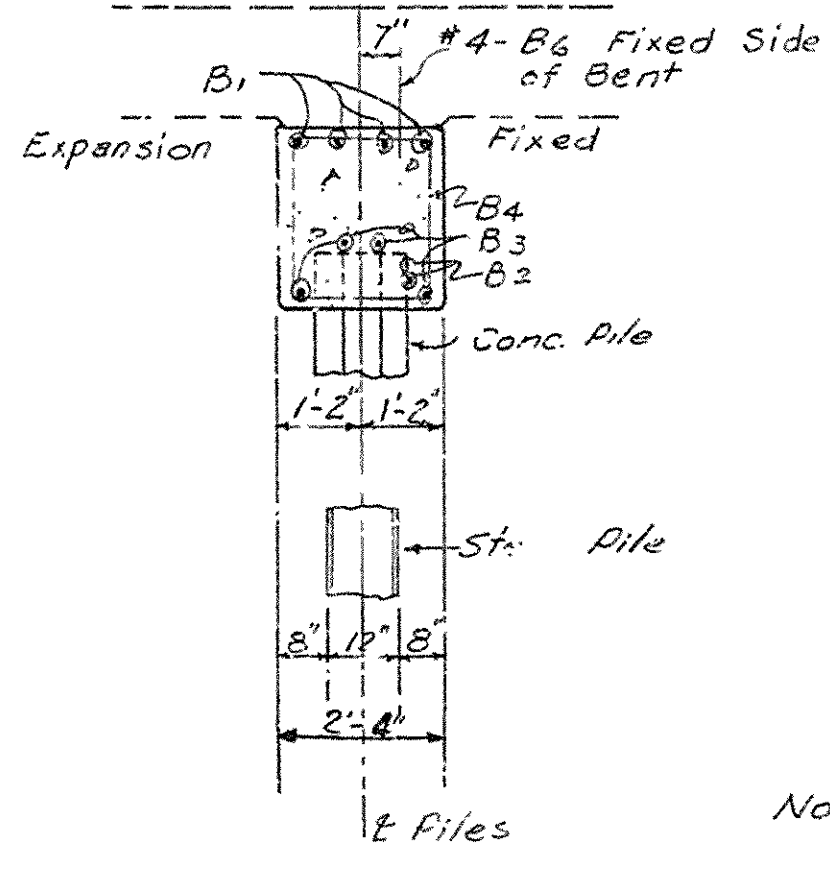
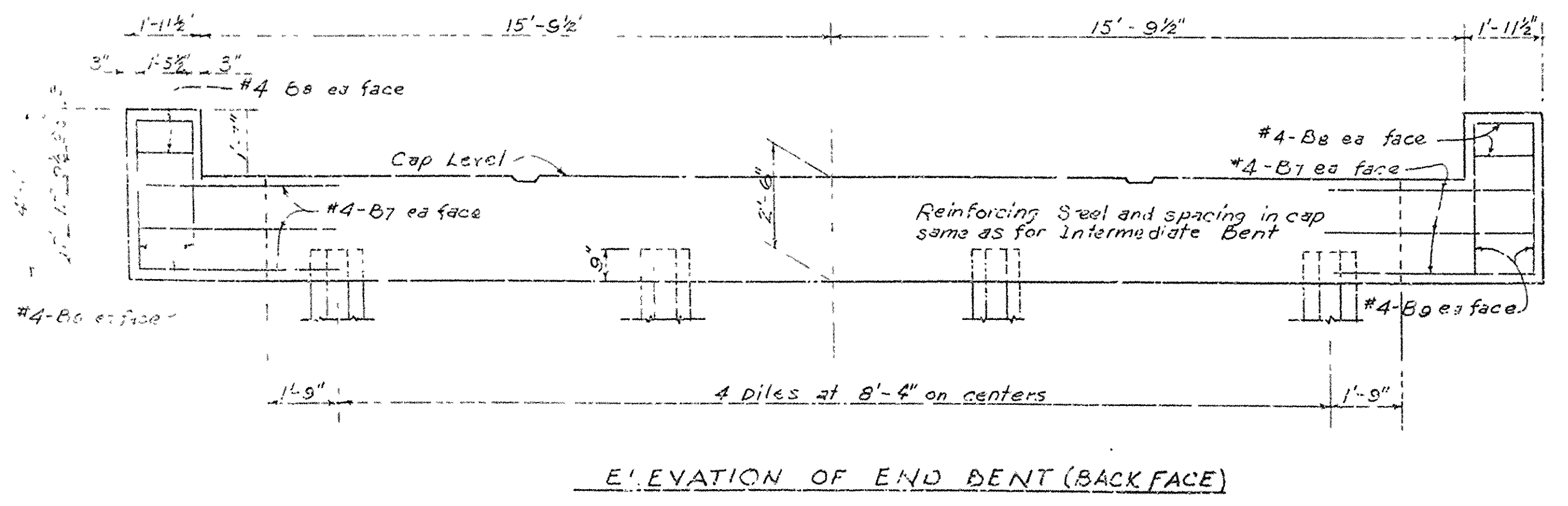
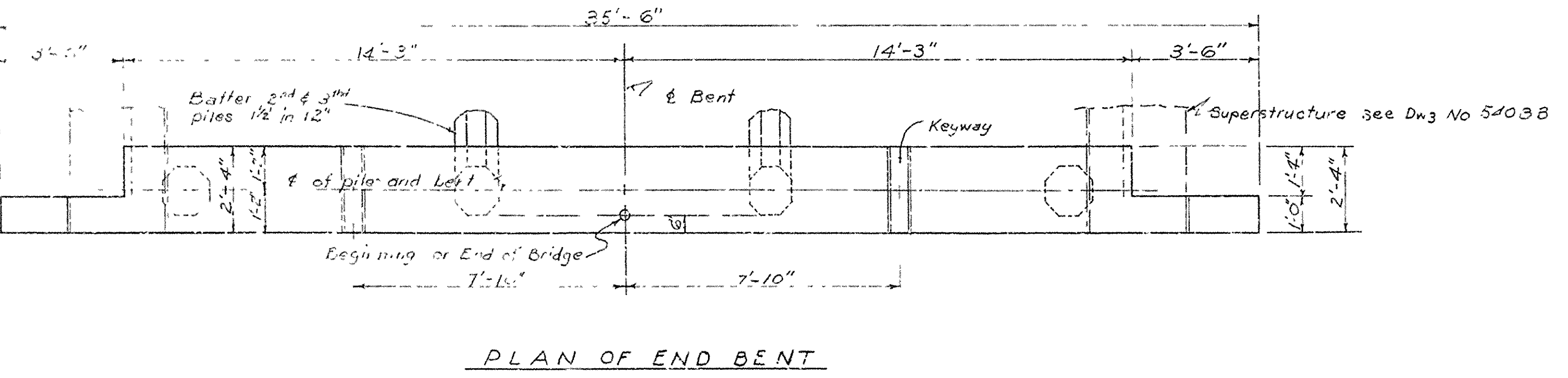
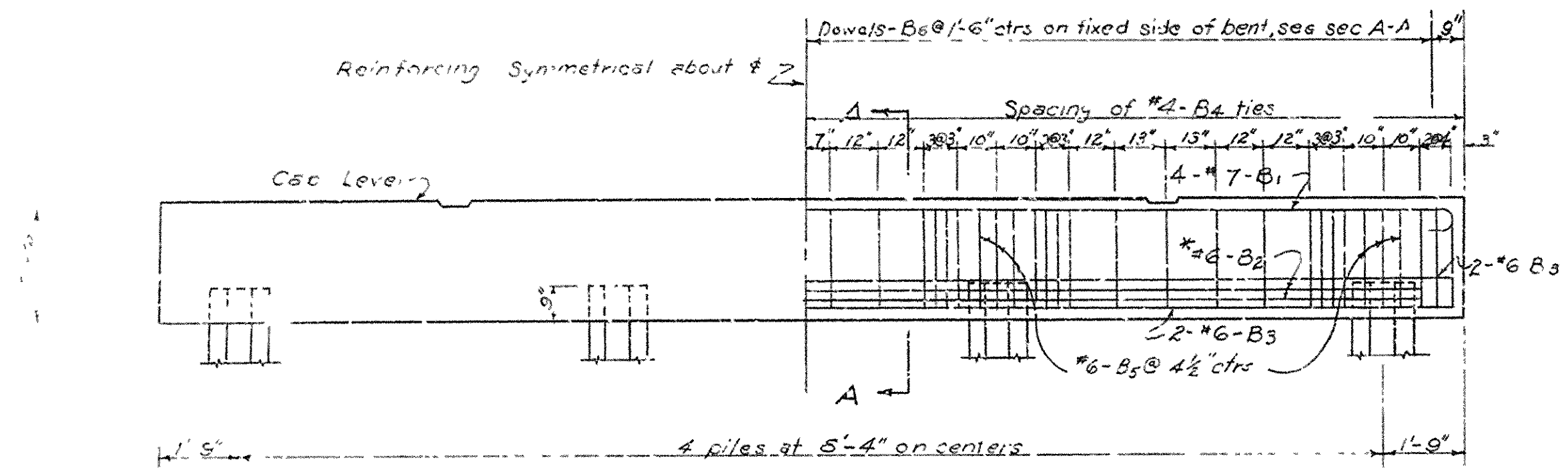
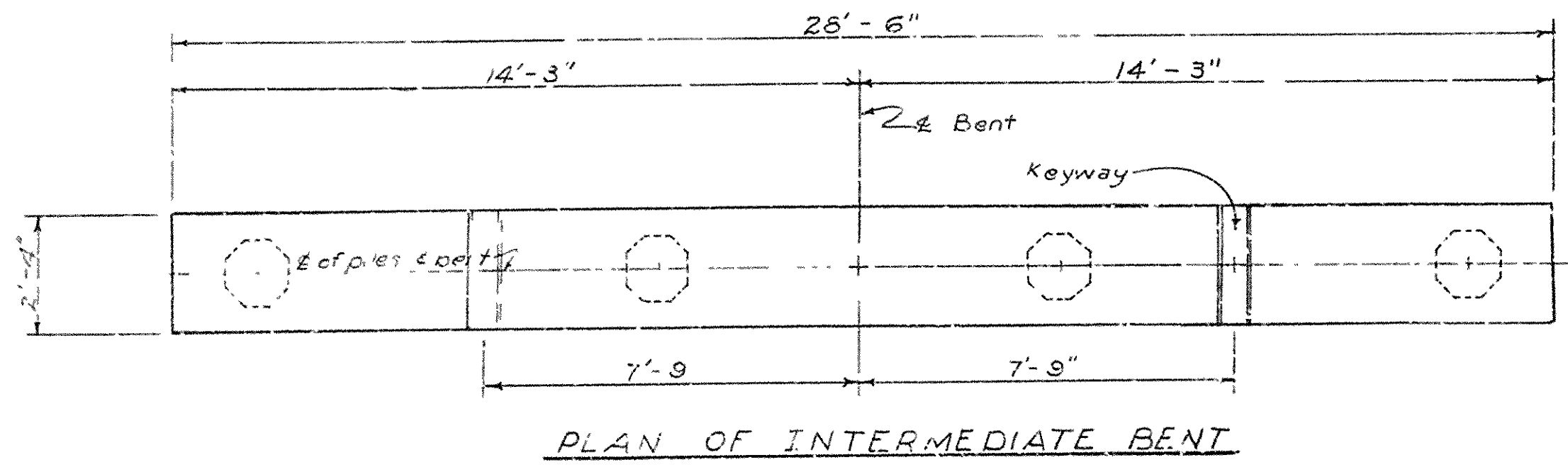
DEGREE OF CURVE	DEFLECTION ANGLE	CHORD ANGLE	
		A	B
1°00'	0°09'00"	90°09'00"	83°51'00"
1°30'	0°13'30"	90°13'30"	83°46'30"
2°00'	0°18'00"	90°18'00"	83°42'00"

DETAILS OF STANDARD
30'-0" R.C. SLAB SPANS (WITH
VOIDS)

1°00', 1°30', 2°00' CURVES
26'-0" CLEAR ROADWAY 2 CURBS @ 1'-6"

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: GWB. DATE: 12-27-56.
 TRACED BY: _____ DATE: _____
 CHECKED BY: gww DATE: 1-9-57
 SCALE: $\frac{3}{8}'' = 1' - 0''$
 Except as noted
 BRIDGE NO. _____ DRAWING NO. 5407B



GENERAL NOTES

All concrete to be Class S and shall be poured in the dry. All exposed corners to be chamfered 1/4" unless otherwise noted. Reinforcing steel to be deformed bars of intermediate or hard grade. Shop lists and bending diagrams are to be submitted for approval before construction is begun.

All piling shall be driven to a minimum capacity of 40 tons per pile. Piling shall be 12 3/4" x 53 steel bearing piles or 16" octagonal precast concrete piles as shown on the layout. Volume occupied by embedded pile heads will not be included in the pay quantities of concrete caps.

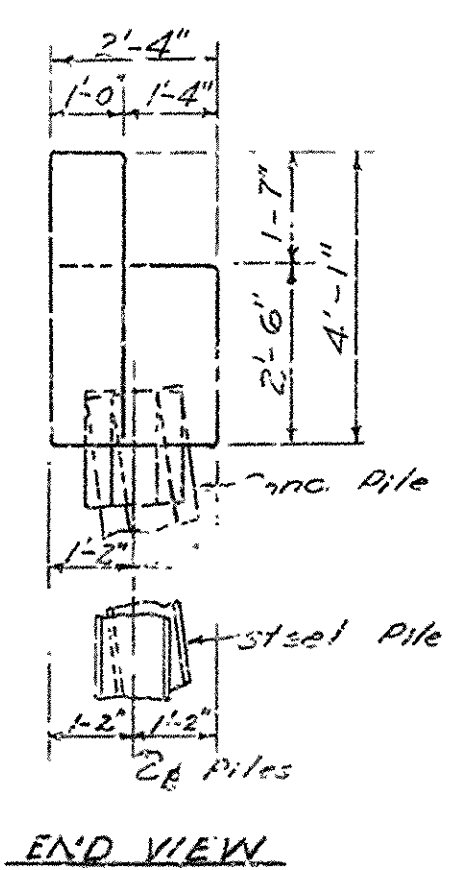
For details of standard 30'-0" R.C. Slab spans see Drawing No. 5408B.

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, edition of 1959.

BAR LIST PER BENT

MARK	SIZE	NO. PER BENT		LENGTH	BENDING DIAGRAM
		END	INT.		
B1	#7	4	4	29'-10"	
B2	#6	4	4	29'-10"	
B3	#6	4	4	28'-2"	
B4	#4	42	42	8'-11"	
B5	#5	12	12	6'-3"	
B6	#4	12	12	2'-5"	
B7	#4	12	12	5'-5"	
B8	#4	8	8	1'-8"	
B9	#4	8	8	3'-9"	

Dimensions are to centers of bars



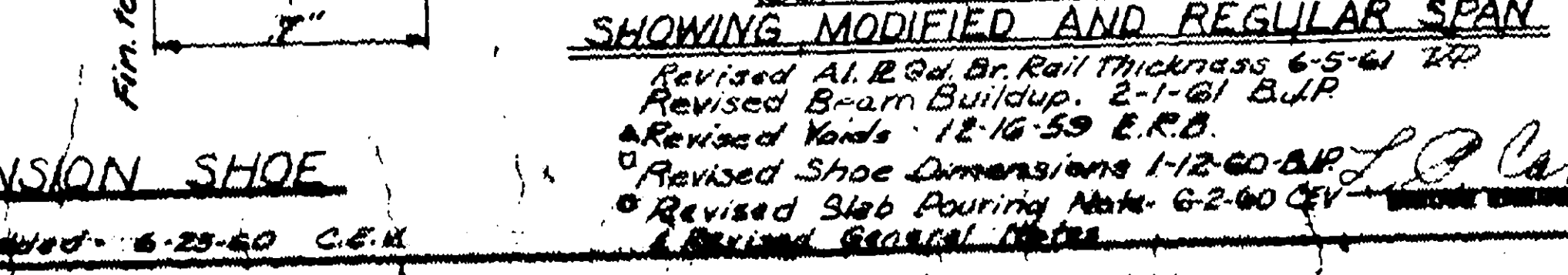
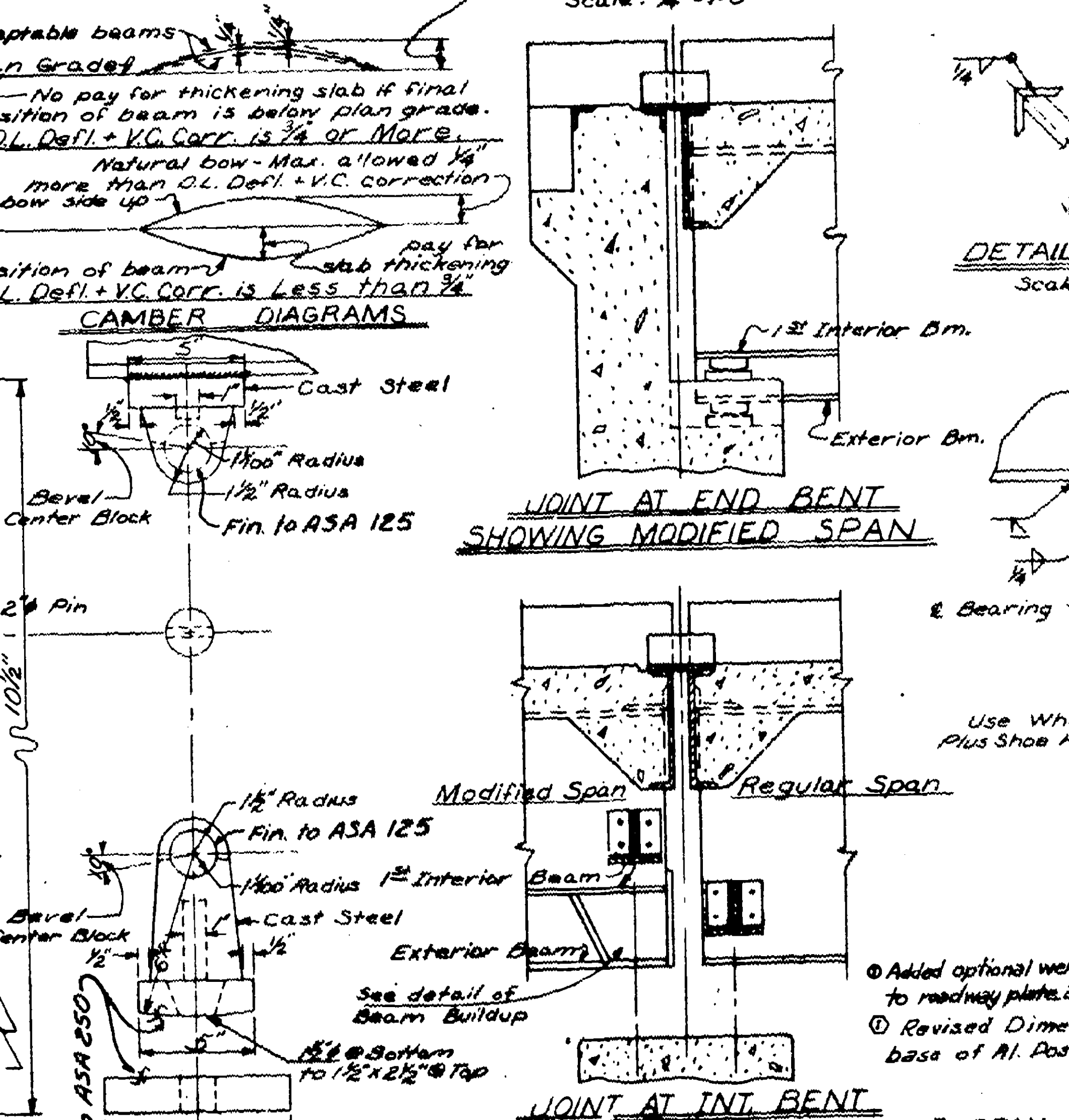
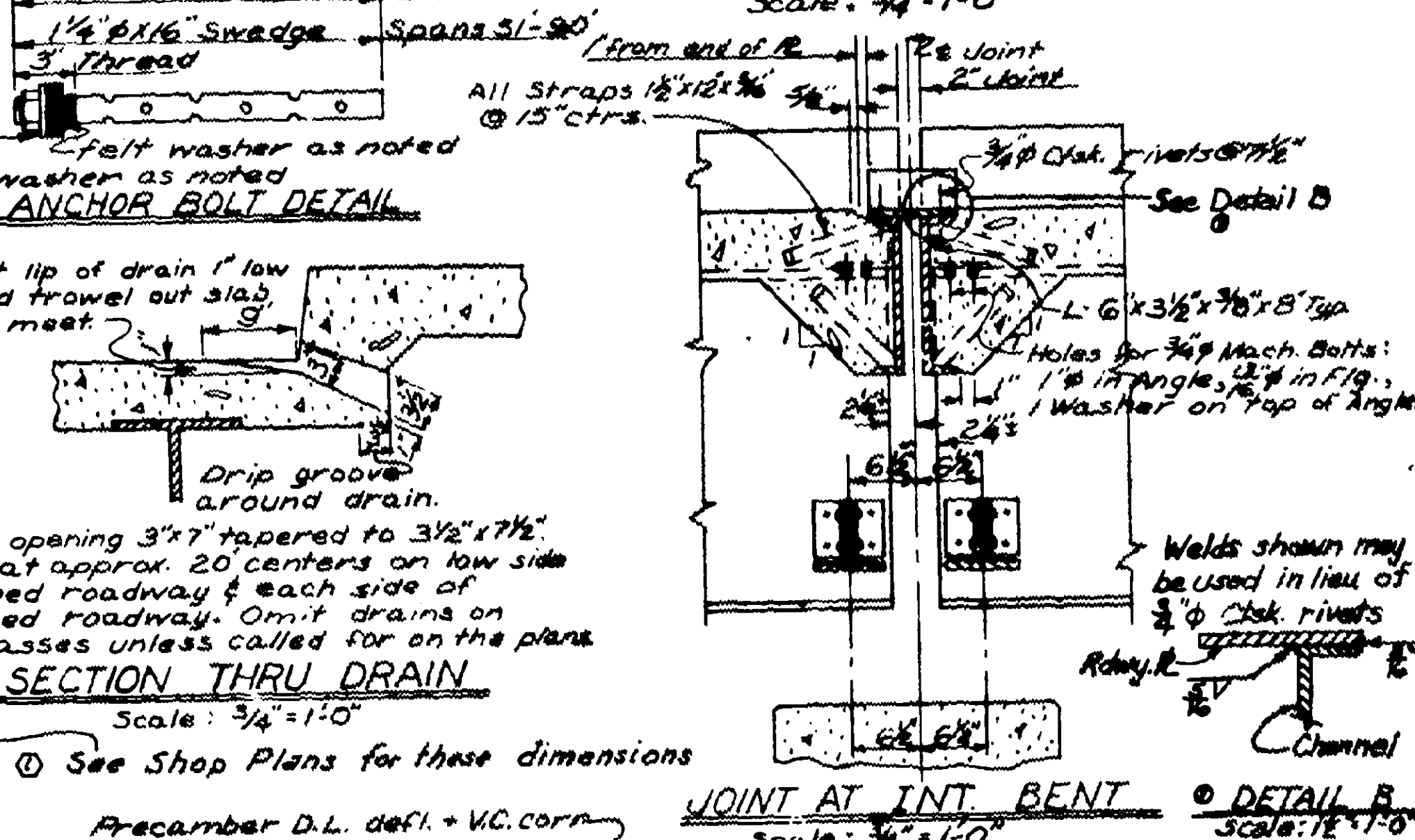
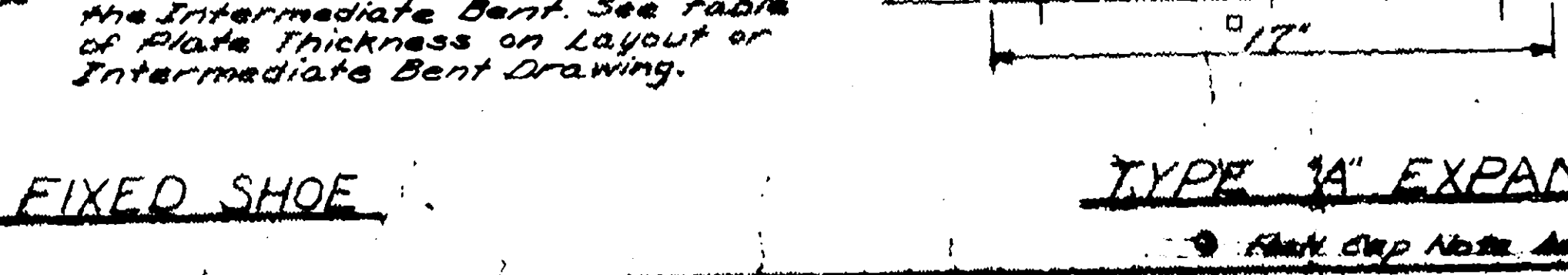
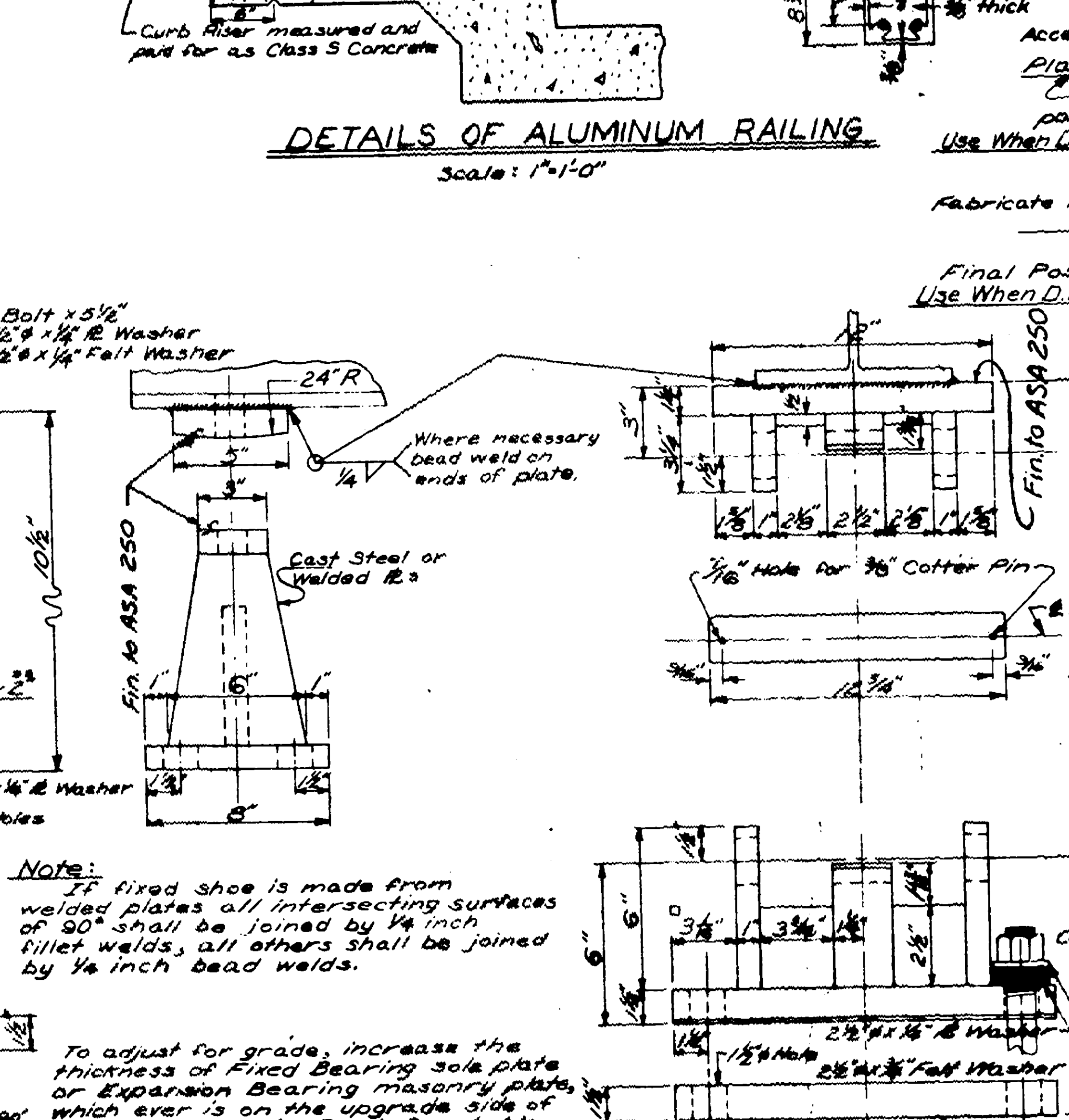
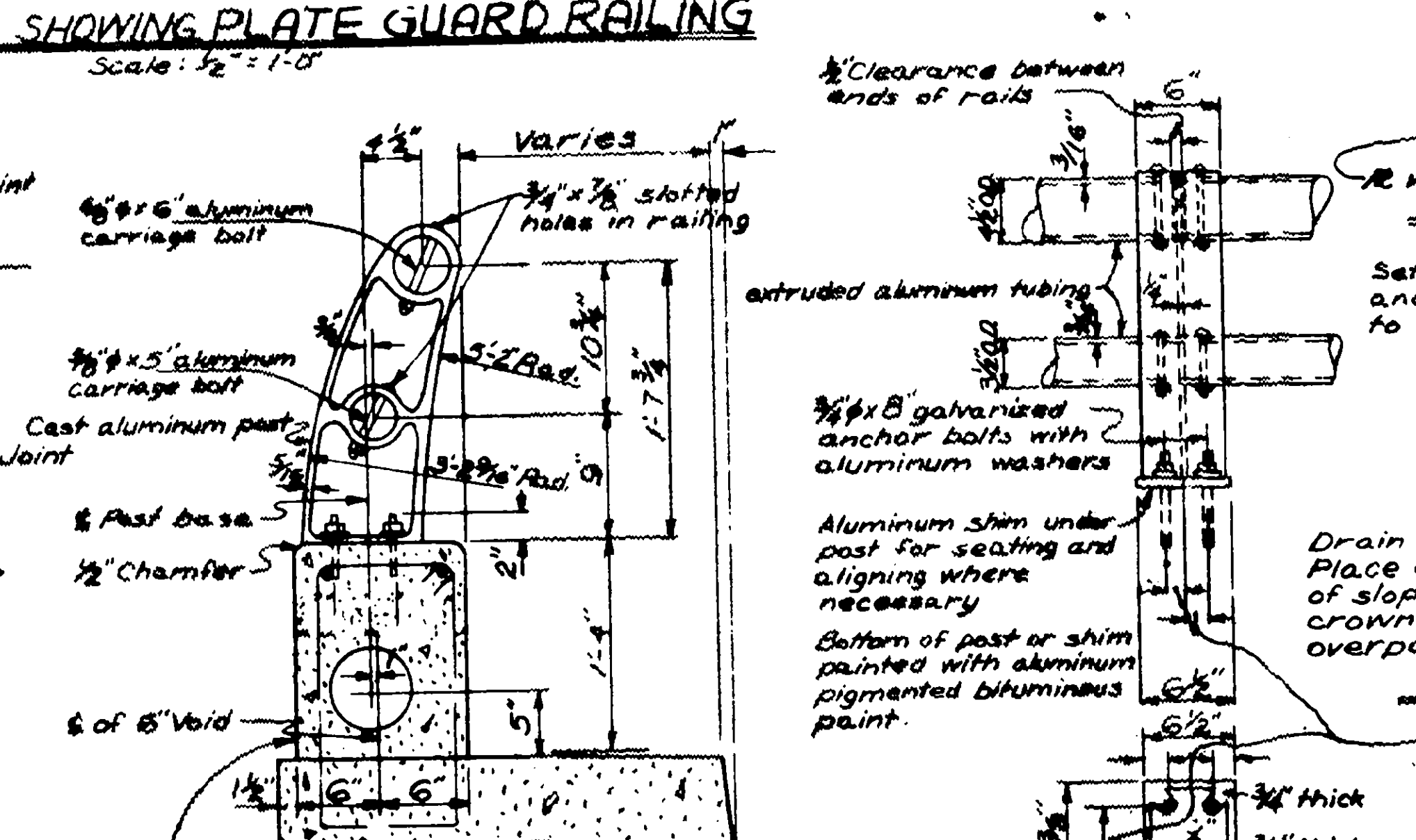
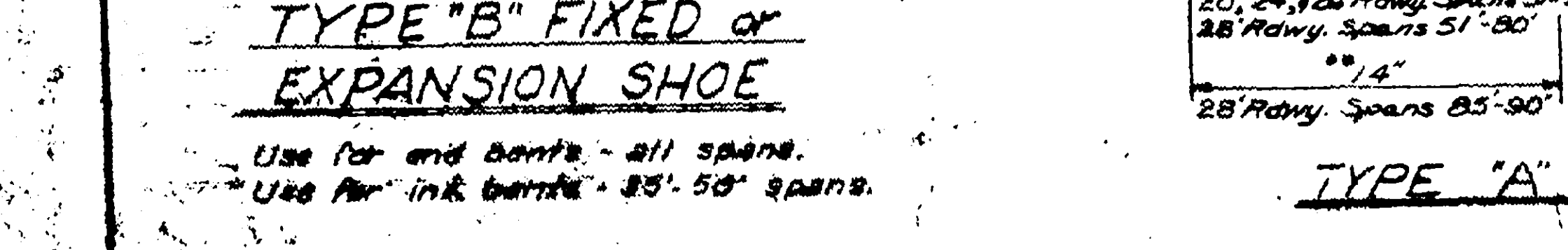
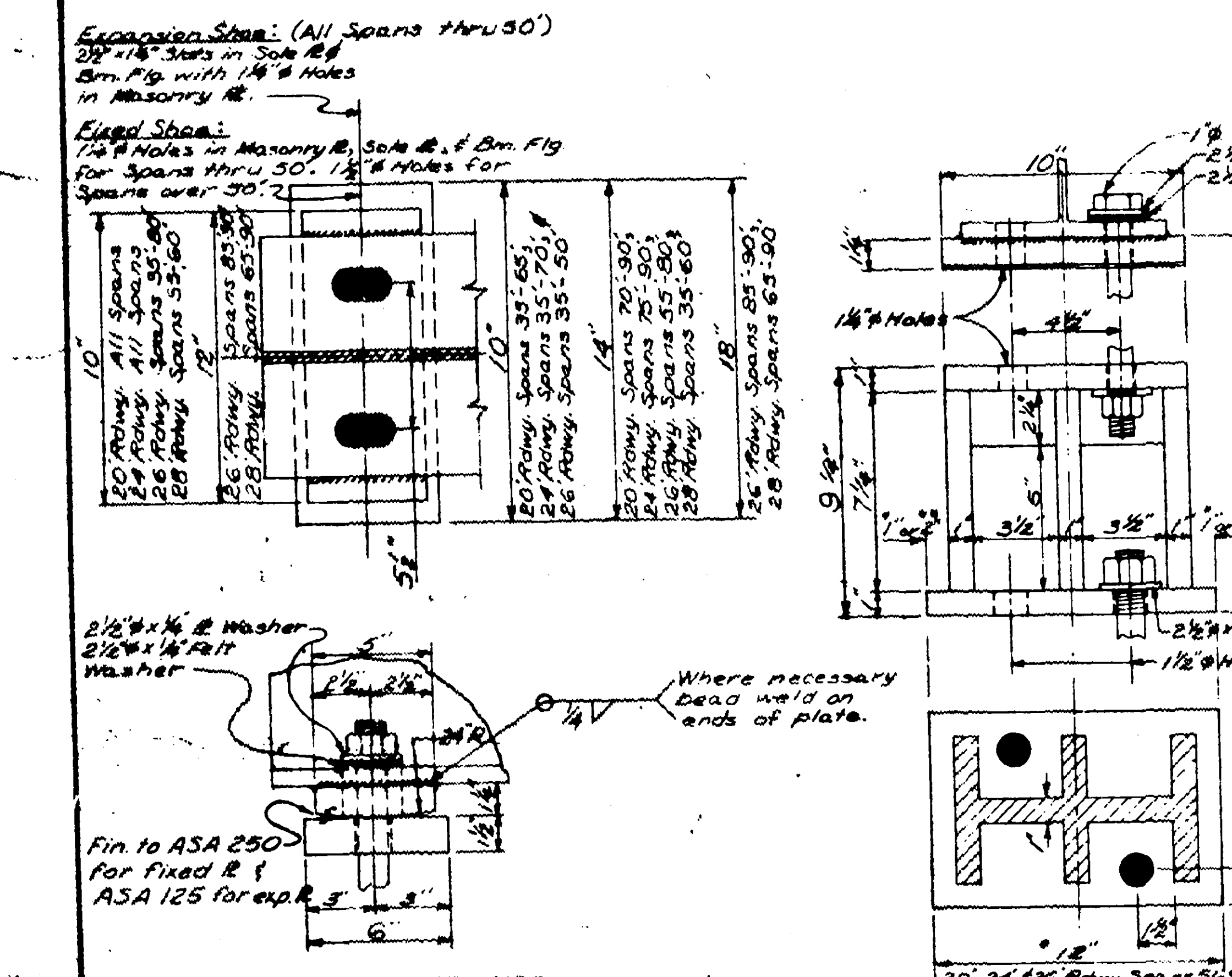
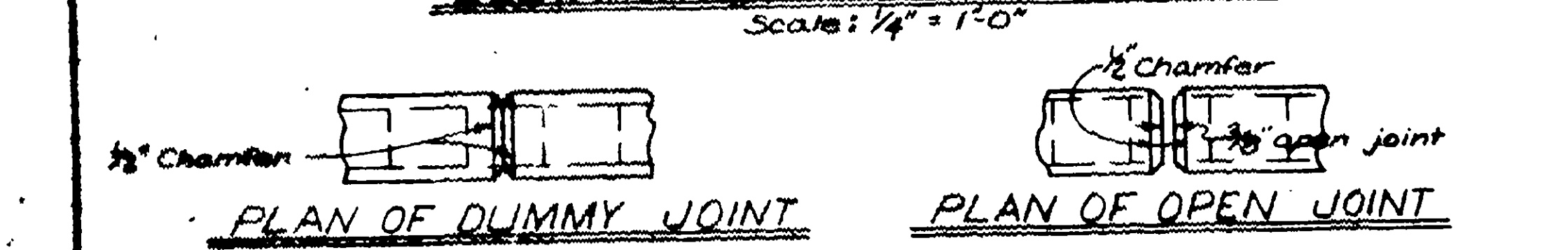
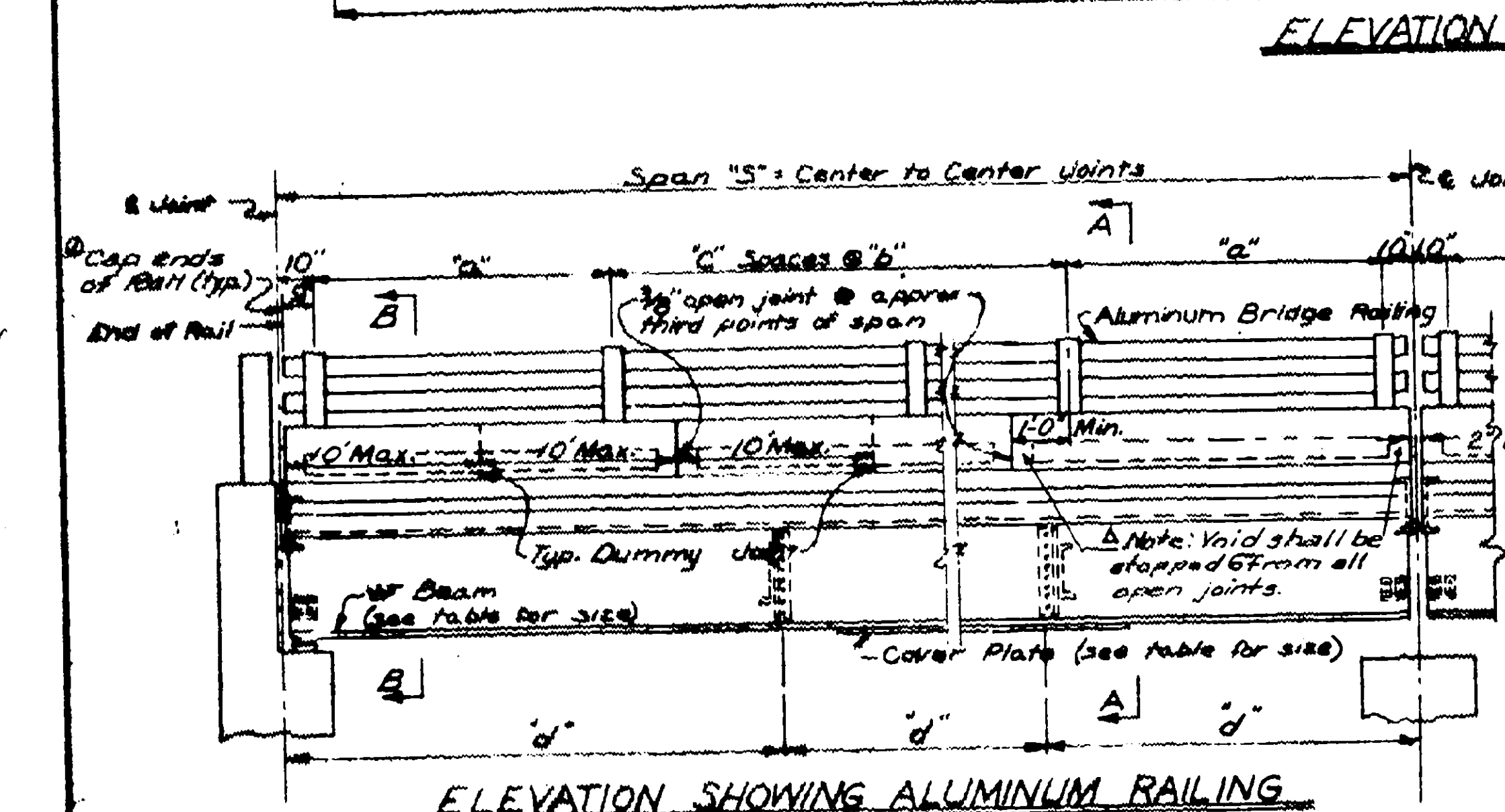
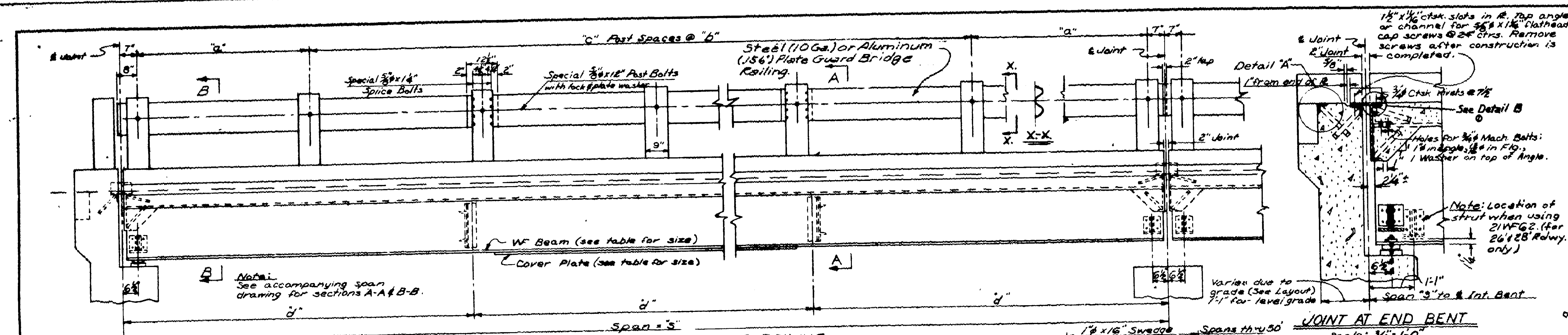
Revised: General Notes & Bracing Member. Vol. C.E.V. 4-17-61 Ch. B.B.P.
Revised pile splice note 2-23-62 JDE
* Revised Bar B2 R.W.M. 1-18-65

DETAILS OF STANDARD 4 PILE BENTS FOR STD. 30'-0" R.C. SLAB SPANS (WITH 26'-0" CLEAR ROADWAY 2 CURBS 1'-6")

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

BRIDGE NO. DRAWING NO. 5408F

PROJ. NO.	STATE	FED. AID	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.				
JOB NO.					



GENERAL NOTES

All concrete to be Class S. All exposed corners to be chamfered unless otherwise noted.

Field connections to be riveted or bolted with high strength bolts. Rivets: 3/4" open holes 3/8" except where noted otherwise. Structural shapes of equal or greater strength may be substituted for shapes shown, but payment will be made on the basis of shapes shown or those actually used, whichever is less.

All welded connections to be the filler shop welds except as noted. All welding shall conform to the American Welding Society, Standard Specification for Welded Highway and Railway Bridges, 3rd Edition, 1959.

Shop Paint: All structural steel except surfaces in contact with concrete shall be given one coat of red lead and black lined oil before shipment.

Field Paint: First coat - red lead tinted with lamp black. Second coat - aluminum paint.

All bearing plates and roadway expansion devices to be paid for as structural steel in beam spans. Bearings shall be finally sealed in a manner set forth in the Specifications. This work and material are to be considered as subsidiary to the item "Structural Steel in Beam Spans" and will not be paid for directly.

This drawing shows general features of design only. Shop drawings shall be made in accordance with the Specifications, submitted and approved secured before fabrication is begun.

Anchor bolts shall be galvanized to conform to ASTM Specification, Designation A 153.

Reinforcing steel to be deformed bars of intermediate or hard grade. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly but will be considered subsidiary to the item of "Reinforcing Steel."

Shop lists and bending diagrams of reinforcing steel, including wire supports, shall be submitted and approved secured before fabrication is begun.

All chamfers on concrete riser for rail are to be 1/4" x 1/4" x 1/4". Shop drawings showing details of railing shall be submitted and approved secured before fabrication is begun.

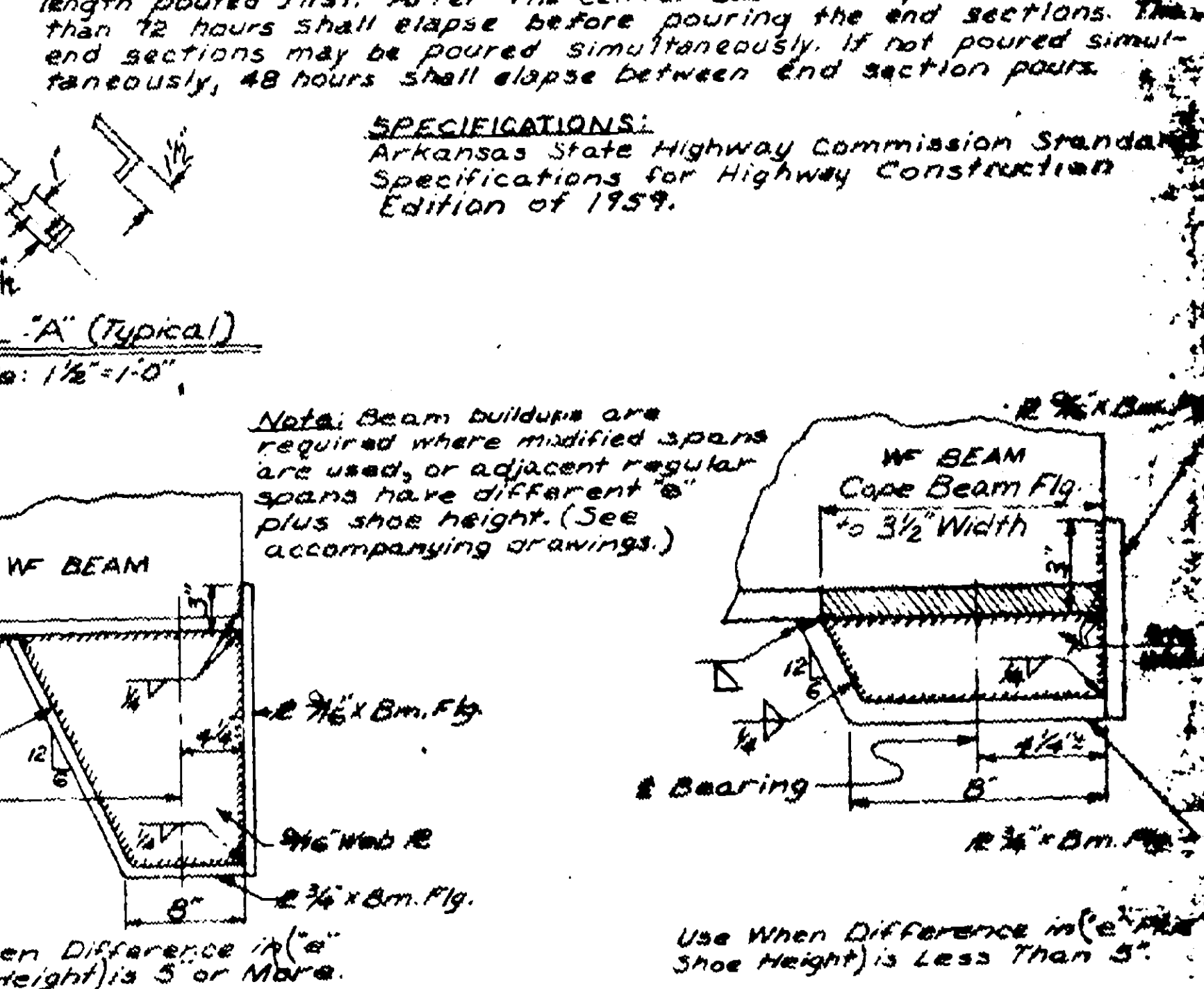
The aluminum bridge railing, including posts and fasteners, shall be paid for at the unit price bid per linear foot for "Aluminum Bridge Railing."

A rail connection utilizing set screws is an acceptable alternate and may be supplied at the Contractor's option.

Outside surfaces of cast aluminum posts shall be given a No. 220 grit belt finish after which all exposed surfaces of posts shall receive one coat of clear lacquer. The lacquer shall be applied in the shop or in the field as approved by the Engineer. The rail including posts and fasteners shall be paid for at the unit price bid per linear foot for "Steel or Aluminum Bridge Railing."

Slab casting notes:

Floor slabs may be poured in one continuous operation with a strikeoff extending over the whole span length, or may be poured in increments with the center one-third to one-half span length poured first. After the center section is poured not less than 10 hours shall elapse before pouring the end sections. The end sections may be poured simultaneously. If not poured simultaneously, 48 hours shall elapse between end section pours.



DETAILS COMMON TO STANDARD 35'-00" COMPOSITE I-BEAM SPANS

20', 24', 26', AND 28' ROADWAYS

ARKANSAS STATE HIGHWAY COMMISSION

BRIDGE NO. 5462

DRAWING NO. 5462

