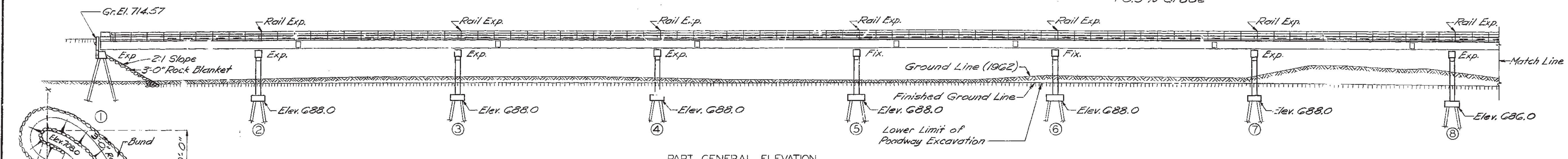


MISSOURI STATE HIGHWAY DEPARTMENT

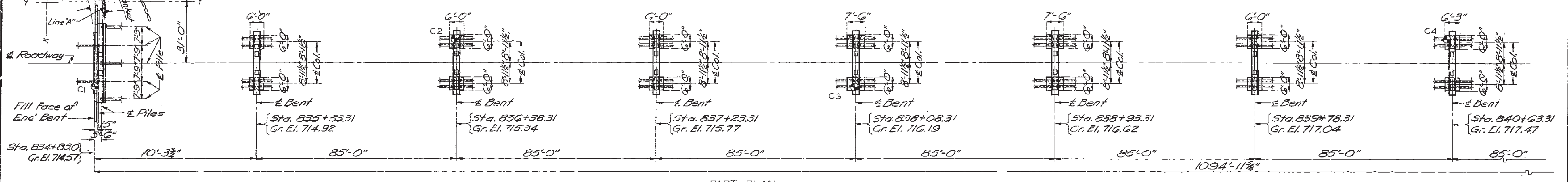
(G8'-7@85'-G3' Cont.), (5' Cont. - 2@150' Cont. - 5' Cont.) Welded I² Girders, 51' I-Bm Span (All Composite)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	18	

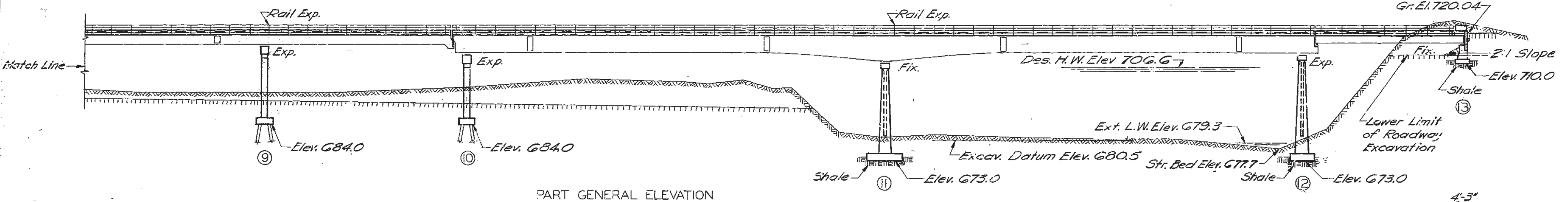
+0.5% Grade



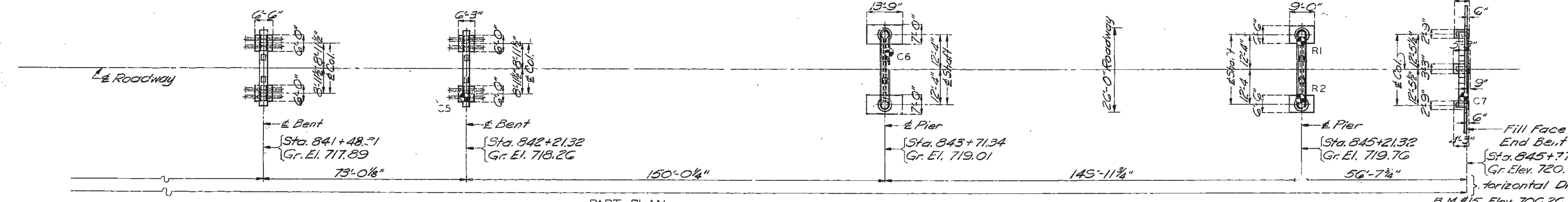
PART GENERAL ELEVATION



PART PLAN



PART GENERAL ELEVATION



PART PLAN

Note: Compacted roadway fill (full roadway width) shall be placed up to elevation of bottom of concrete beam in front of and not less than 25'-0" in back of End Bent No. 1 before steel piles are driven for End Bent No. 1.

Rock blanket shall be placed on fill 2'-0" above bottom of concrete beam on front slope of End Bent No. 1. See Road Plans for quantities.

In no case shall footings of Int. Piers No. 11 and 12 be placed higher than Elev. 673.0.

B.M. #15 Elev. 706.26 X on Top of Bolt East End of Thompson River Bridge East Pier South Side U.S.G.S. Datum

BRIDGE OVER THOMPSON RIVER

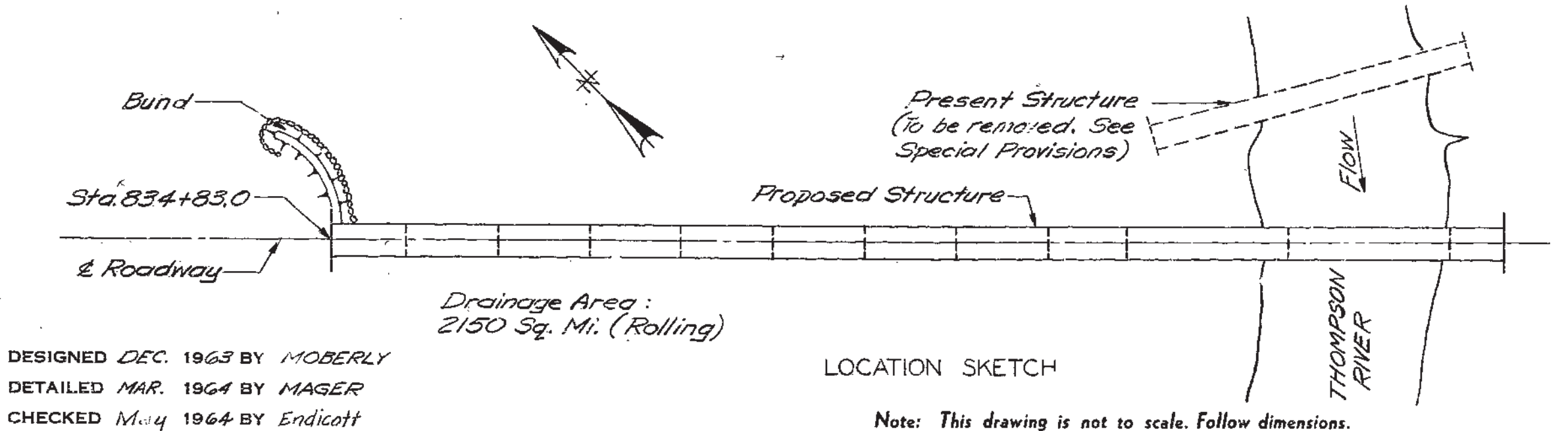
STA'E ROAD FROM CHILLICOTHE NORTHWEST
 ABOUT 4.5 MILES N.W. OF CHILLICOTHE
 PROJECT NO. S-537(7) SA(170) LTA. 834+83.0

LIVINGSTON COUNTY

SUBMITTED BY: *J. J. Jenkins* DATE: 6/19/64
 APPROVED BY: *M. J. Miller* DATE: 6/19/64

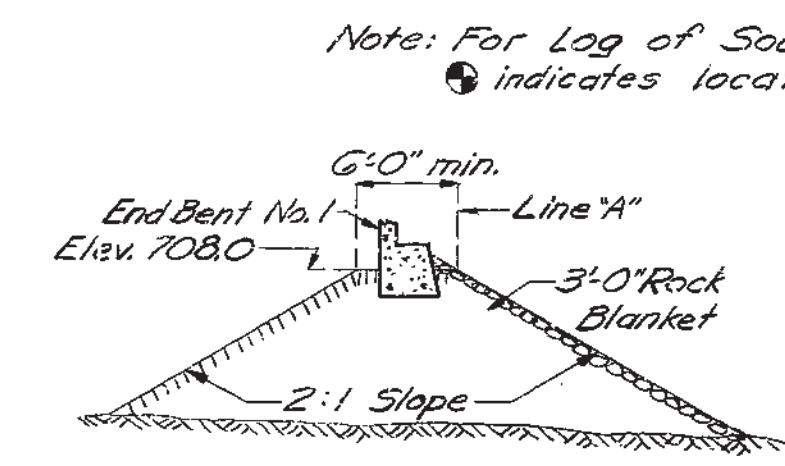
STD. 54.00

A-1376



LOCATION SKETCH

Drainage Area: 2150 Sq. Mi. (Rolling)



TYPICAL SECTION THRU BUND

Note: See Road Plans for limits of Bund and quantities.

Note: For Log of Soundings see Sheet No. 2 of 20
 indicates location of soundings.

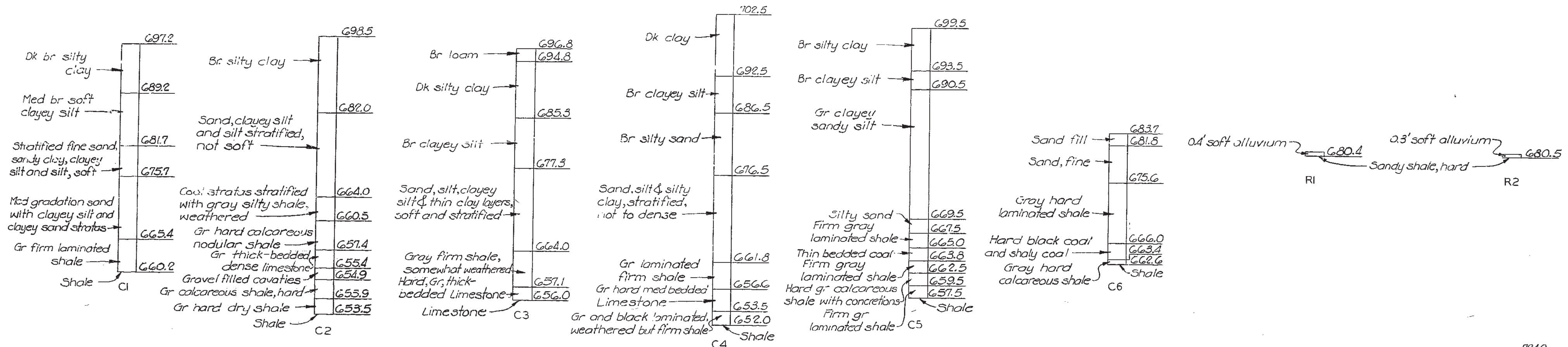
DESIGNED DEC. 1963 BY MOBERLY
 DETAILED MAR. 1964 BY MAGER
 CHECKED May 1964 BY Endicott

Note: This drawing is not to scale. Follow dimensions.

137

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	19	



LOG OF SOUNDINGS

Note: Soundings C1 thru C7 taken with a core drill, soundings R1 and R2 taken with a rod. See sheet No. 1 of 20 for location of soundings.

ESTIMATED QUANTITIES			
Item	Substr.	Superstr.	Total
Class 1 Excavation for Structures Cu.Yds.	535		535
Class 2 Excavation for Structures Cu.Yds.	156		156
Steel Piles in Place (12") Lin. Ft.	2,099		2,099
Steel Pile Cut-offs (12") Lin. Ft.	231		231
Class B Concrete Cu.Yds.	416.9		416.9
Class B1 Concrete Cu.Yds.		891.9	891.9
Reinforcing Steel Lbs.	58,600	243,640	302,240
* Fabricated Structural Carbon Steel (Hdl) Lbs.		73,660	73,660
Fabricated Structural Carbon Steel (R.G.R) Lbs.		666,840	666,840
Fabricated Structural Carbon Steel (FBM) Lbs.		296,660	296,660

Note: No payment for excavation will be allowed of End Bent No. 1.

Note: Excavation for Structures will be computed from the original ground line or from the lower limits of channel cleanup excavation, whichever is lower, regardless of the sequence of operations or the method of removal.

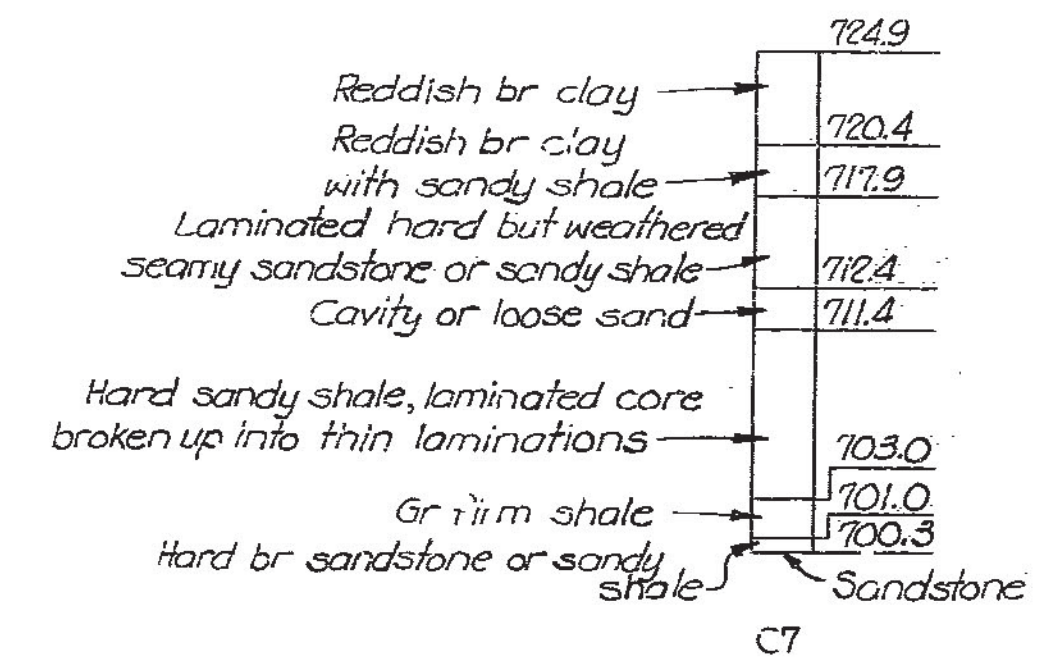
* Fabricated Structural Carbon Steel (handrail) includes weight of anchor bolts for rail posts.

FOOTING AND PILE DATA														
Bent No.		1	2	3	4	5	6	7	8	9	10	11	12	13
Spread Footings	Foundation Material												Shale	Shale
	Design Bearing Tons/sq.ft.												4.7	5.0
Bearing Pile	Pile Type and Size	12 BP 53	12 BP 53	12 BP 53	12 BP 53	12 BP 53	12 BP 53	12 BP 53	12 BP 53	12 BP 53	12 BP 53	12 BP 53	12 BP 53	12 BP 53
	Number	5	8	8	8	8	8	8	8	8	8	8	8	8
	Approximate Length Ft.	50	30	30	30	30	30	30	30	25	25			
	Plan Bearing Tons	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5			
	Minimum Required Bearing Tons Hammer	39.3	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0			

Note: All pile shall be driven to practical refusal on or into solid rock or other point bearing material at not less than the Plan Bearing shown, unless excessive splicing is required to obtain Plan Bearing, in which case the engineer will authorize a lesser bearing, but in no case less than the Minimum Required Bearing.

GENERAL NOTES:

Design Specifications A.A.S.H.O. - 1961
 Loading: H20-44 (15% Future Wearing Surface)
 Structural Steel (A.S.T.M. A36-C27) Stress: 20,000 psi
 Steel Pile shall be A.S.T.M. A36-C27
 Reinforcing Steel Stress: 20,000 psi
 Concrete, Class B Stress: 1,200 psi
 Concrete, Class B1 Stress: 1,600 psi
 Superstructure concrete shall be Class B1.
 Substructure concrete shall be Class B or B1 except payment will be on the basis of Class B.
 Superstructure deck to be surface sealed. (See special provisions).
 All dimensions to reinforcing steel are to E bar except where clear distance from face of concrete is indicated.
 Fabricated structural steel shall be A.S.T.M. A36-C27 except as noted. Payment will be made as Fabricated Structural Carbon Steel.
 See Standard Specifications 55.2.13 for qualification of welding operators.
 Details of welded joint shown are for manual arc welding except as noted.
 See Special provisions for welding inspection.
 Field connections, High Strength Bolts 3/4", holes 1 1/8" except as noted.
 Paint; shop, none; Field, none by contractor except as noted in Standard Specification 55.4.10.2.
 Contact surfaces of bearings and beam flanges connected with high strength bolts shall receive one coat of red lead.
 Where joint filler is specified on the plans it shall conform to Standard Specification 157.2.4.



BRIDGE OVER THOMPSON RIVER

STATE ROAD FROM CHILLICOTHE NORTHWEST
 ABOUT 4.5 MILES N.W. OF CHILLICOTHE
 PROJECT NO. S-537(7) SA(170) STA. 834+83.0
 LIVINGSTON COUNTY

DETAILED MAR. 1964 BY GAMET
 CHECKED May 1964 BY Endicott

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 2 of 20.

A-1376

SEE FINAL PLANS BROWN LINES

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		19	20	

COMPLETE BILL OF REINFORCING STEEL

Intermediate Bents No. 6 & 7 (Cont'd)				Piers No. 11 & 12 (Cont'd)					
NO.	SIZE	LENGTH	MARK	LOCATION	NO.	SIZE	LENGTH	MARK	LOCATION
8 #7	35'-9"	H1		Beam	48 #4	24'-0"	117		Web
2 #6	33'-9"	H2		"	6 #8	25'-9"	H18		Web
6 #4	34'-0"	H3		Backwall	15 #4	24'-0"	P1		Shaft-Per #11
2 #6	31'-0"	H4		"	16 #9	12'-0"	P2		"
6 #6	10'-0"	H5		Wing	56 #9	9'-0"	P3		Shaft-Per #12
3 #6	13'-9"	H6		"	22 #4	26'-0"	P4		Shaft-Per #11
4 #6	14'-6"	T1		Wing	17 #4	24'-3"	P5		"-Pier #12
4 #6	11'-9"	T2		"	18 #8	29'-0"	P6		"
					22 #4	29'-0"	P7		"
36 #4	14'-6"	U1		Beam	16 #9	26'-0"	P8		Shaft-Per #11
10 #4	4'-9"	U2		"	52 #6	6'-6"	U8		Cap
					48 #5	6'-9"	U9		"
					20 #4	4'-3"	U10		"
32 #5	7'-0"	V1		Backwall	4 #4	4'-0"	U11		"
8 #4	8'-9"	V2		Wing	48 #5	7'-9"	U12		Cap & Web
8 #4	10'-9"	V3		"	4 #6	5'-6"	U13		Cap
8 #2	19'-9"	W1		A.B. Wells					
Intermediate Bents No. 2 & 3									
32 #6	8'-6"	D1		Footings					
32 #7	4'-9"	D2		"					
Intermediate Bents No. 4 & 5									
16 #6	8'-6"	D1		Flg.-Bt #4					
16 #7	4'-9"	D2		"					
20 #10	6'-9"	D3		Flg.-Bt #5					
12 #8	7'-3"	D4		"					
4 #4	13'-6"	D6		"					
Intermediate Bent No. 10									
16 #7	4'-9"	D2		Footings					
4 #8	12'-3"	D7		"					
12 #8	2'-0"	D8		"					
16 #7	25'-0"	V15		Col.-Bt #9					
Superstructure									
20 #5	4'-9"	C1		Curb					
4 #5	4'-0"	C2		"					
4 #5	6'-0"	C3		"					
12 #6	35'-6"	C4		"					
12 #6	29'-9"	C5		"					
12 #6	35'-0"	C6		"					
48 #6	40'-3"	C7		"					
12 #6	27'-0"	C8		"					
24 #5	3'-9"	R1		Eng. Post					
20 #5	7'-3"	P2		"					
3,228 #5	29'-3"	S1		Slab					
180 #4	29'-6"	S2		"					
816 #5	32'-0"	S3		"					
261 #5	16'-0"	S4		"					
330 #4	29'-3"	S5		"					
374 #5	29'-9"	S6		"					
60 #4	20'-3"	S7		"					
68 #5	26'-9"	S8		"					
40 #5	2'-6"	S9		"					
32 #7	9'-6"	H13		Cap					
4 #6	27'-3"	H14		"					
8 #7	24'-9"	H15		"					
4 #4	24'-0"	H16		"					

BENDING SKETCHES & CUTTING DIAGRAMS

*BEND AS SHOWN

CUTTING SCHEDULE

REMARKS	a	b	c	d
3-HG, cut 3	18"	5'-4 1/2"	8'-4 1/2"	13'-9"
3-H25, cut 3	10 1/2"	9'-3"	11'-0"	20'-3"
15-P1, cut 15 *	3 1/2"	10'-2 1/2"	13'-9 3/4"	24'-0"
17-P5, cut 17 *	3 1/2"	10'-0"	14'-2 1/2"	24'-3"
8-V3, cut 8	10 1/2"	2'-4 1/2"	8'-4 1/2"	10'-9"
6-V16, cut 6	8"	2'-8 1/2"	6'-0"	8'-9"

H6-H25-P1-P5-V3-V16

C1-C2-D1-D6-D7-D9-R2
U2-U5-U7-U8-U10-U11-U12-U14

U3-U4-U13-V6-V9

D3-D5
H1-H7-H21

D3-H9-V17

C3-FI

TI-T2-T3

U9

Spot Weld #2 bars.

3" Pitch 1/2 turns

U1

PI-P5

H13

139
Revised Aug. 1963

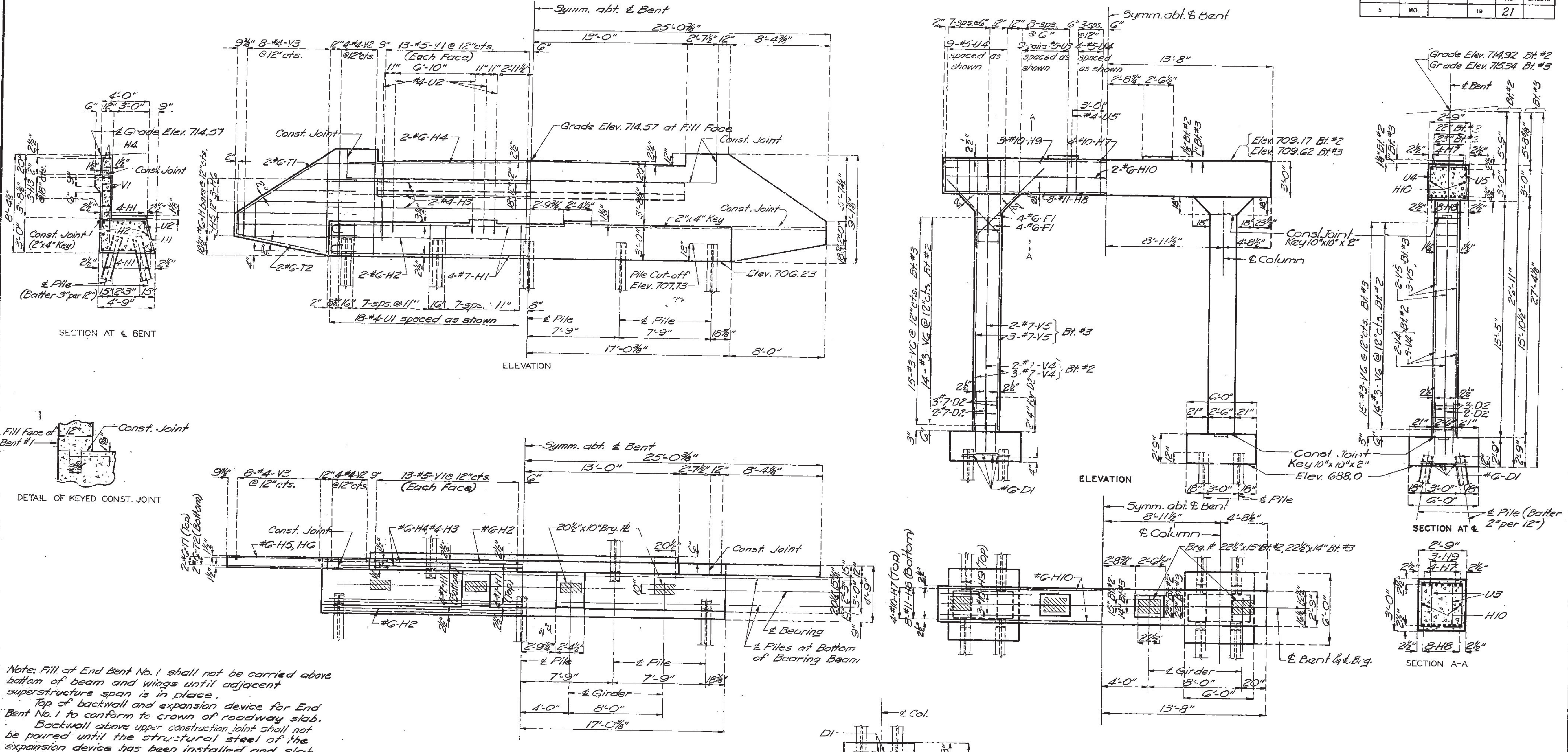
DETAILED MAR 1964 BY GAMBT
CHECKED MAY 1964 BY ENDICOTT

Note: This drawing is not to scale. Follow dimensions.

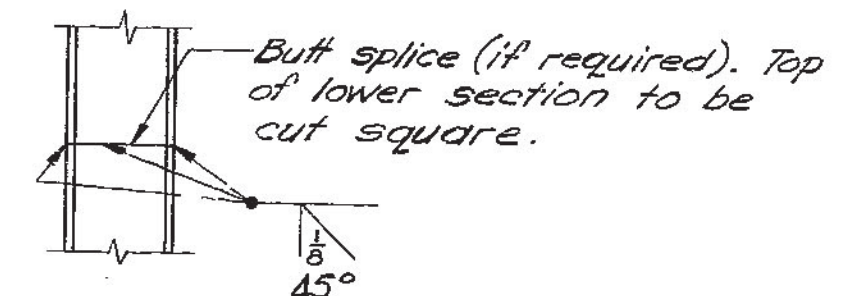
BRIDGE OVER THOMPSON RIVER
STATE ROAD FROM CHILLICOTHE NORTHWEST
ABOUT 4.5 MILES N.W. OF CHILLICOTHE
PROJEC. NO. S-537(7) SA(170) STA. 834+83.0
LIVINGSTON COUNTY

MISSOURI STATE HIGHWAY DEPARTMENT

STATE ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	21	



Notes: Fill at End Bent No. 1 shall not be carried above bottom of beam and wings until adjacent superstructure span is in place.
 Top of backwall and expansion device for End Bent No. 1 to conform to crown of roadway slab.
 Backwall above upper construction joint shall not be poured until the structural steel of the expansion device has been installed and slab has been poured in adjacent span.
 Bearing pads shall be poured monolithically with beam.
 Bearing pads may be eliminated, if desired, by increasing thickness of top plate of bearing by pad thickness. Payment for bearings will be on basis of details shown.



DETAIL OF STEEL PILE SPlice

Note: This drawing is not to scale. Follow dimensions.

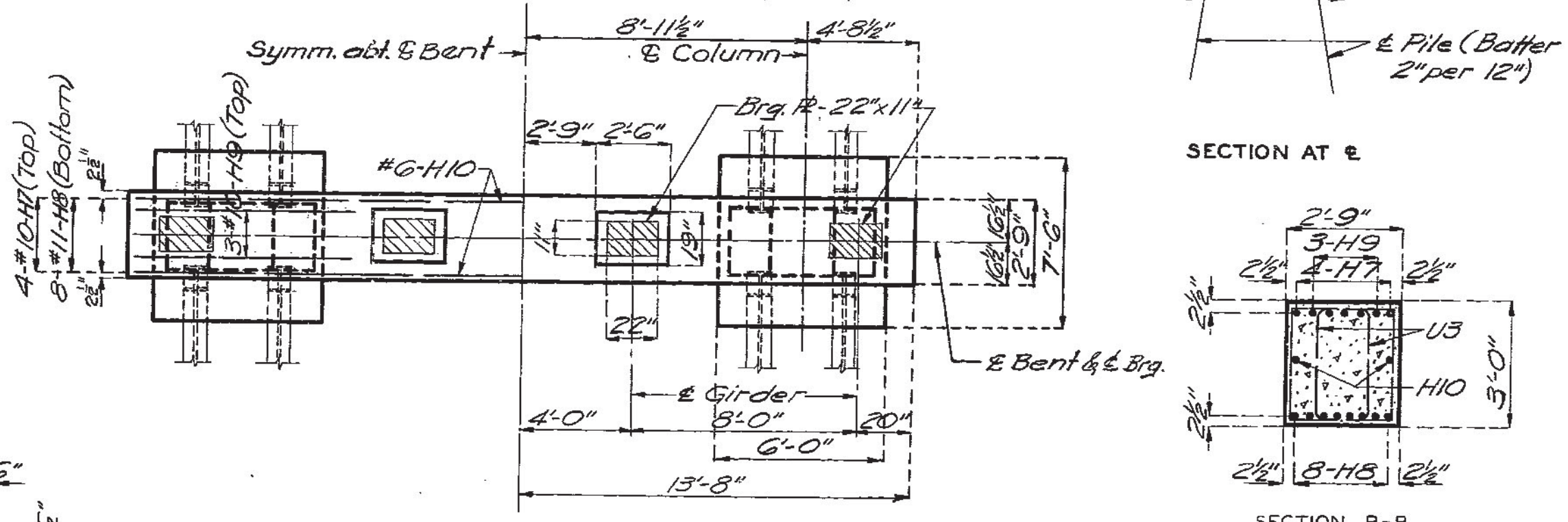
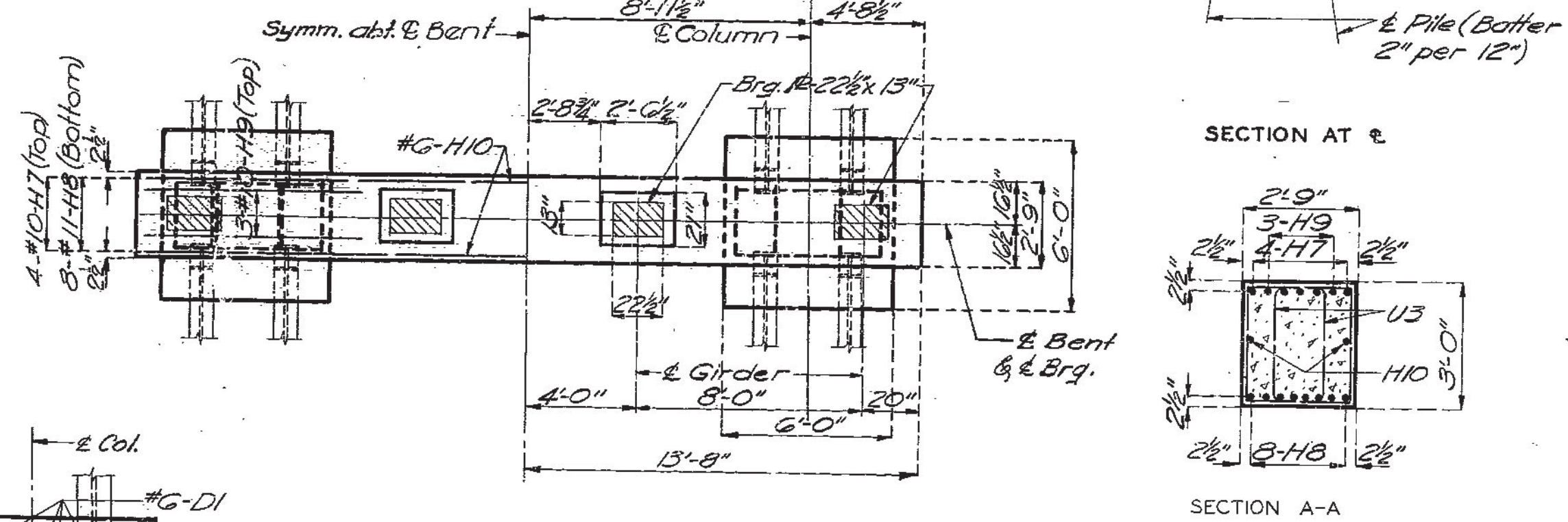
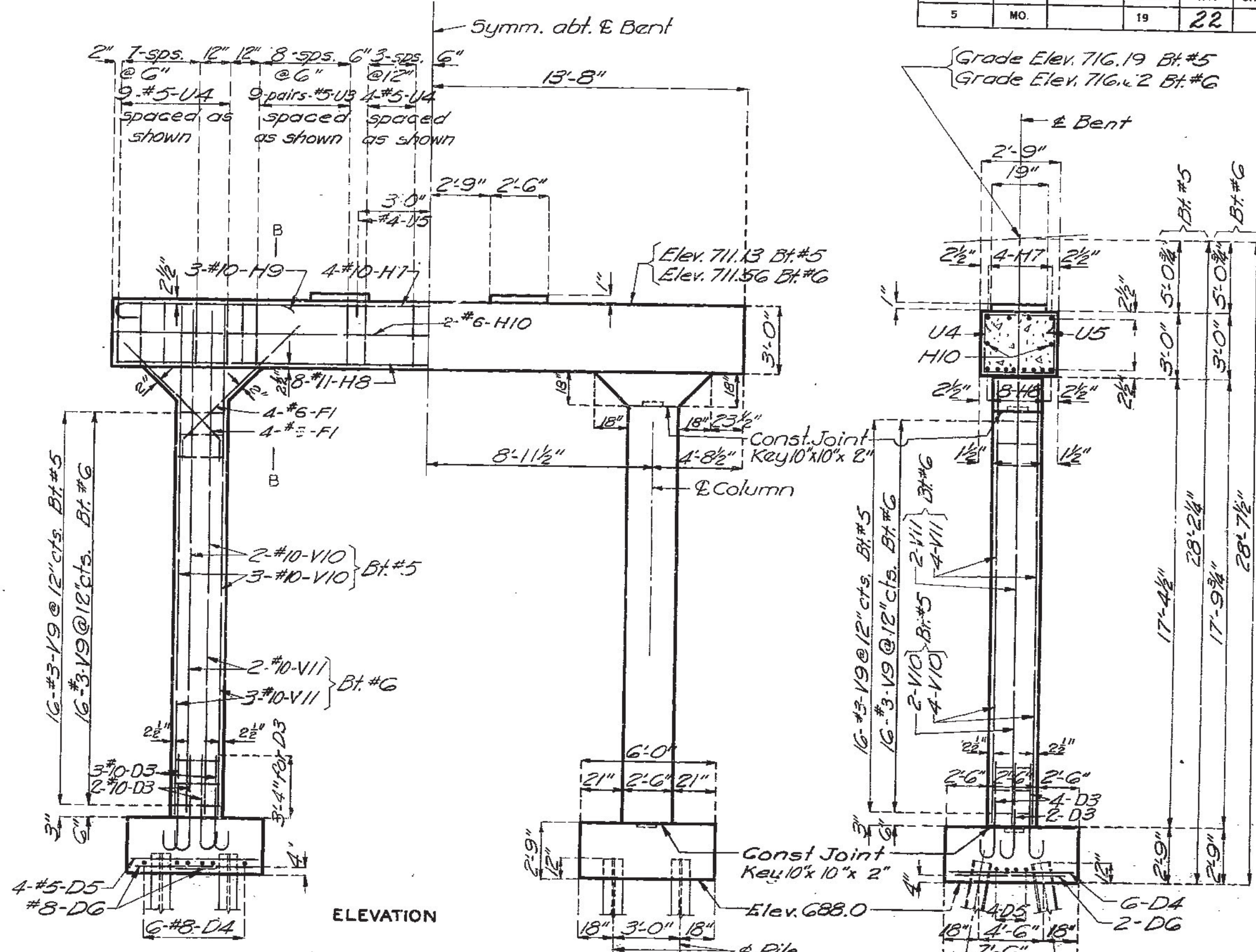
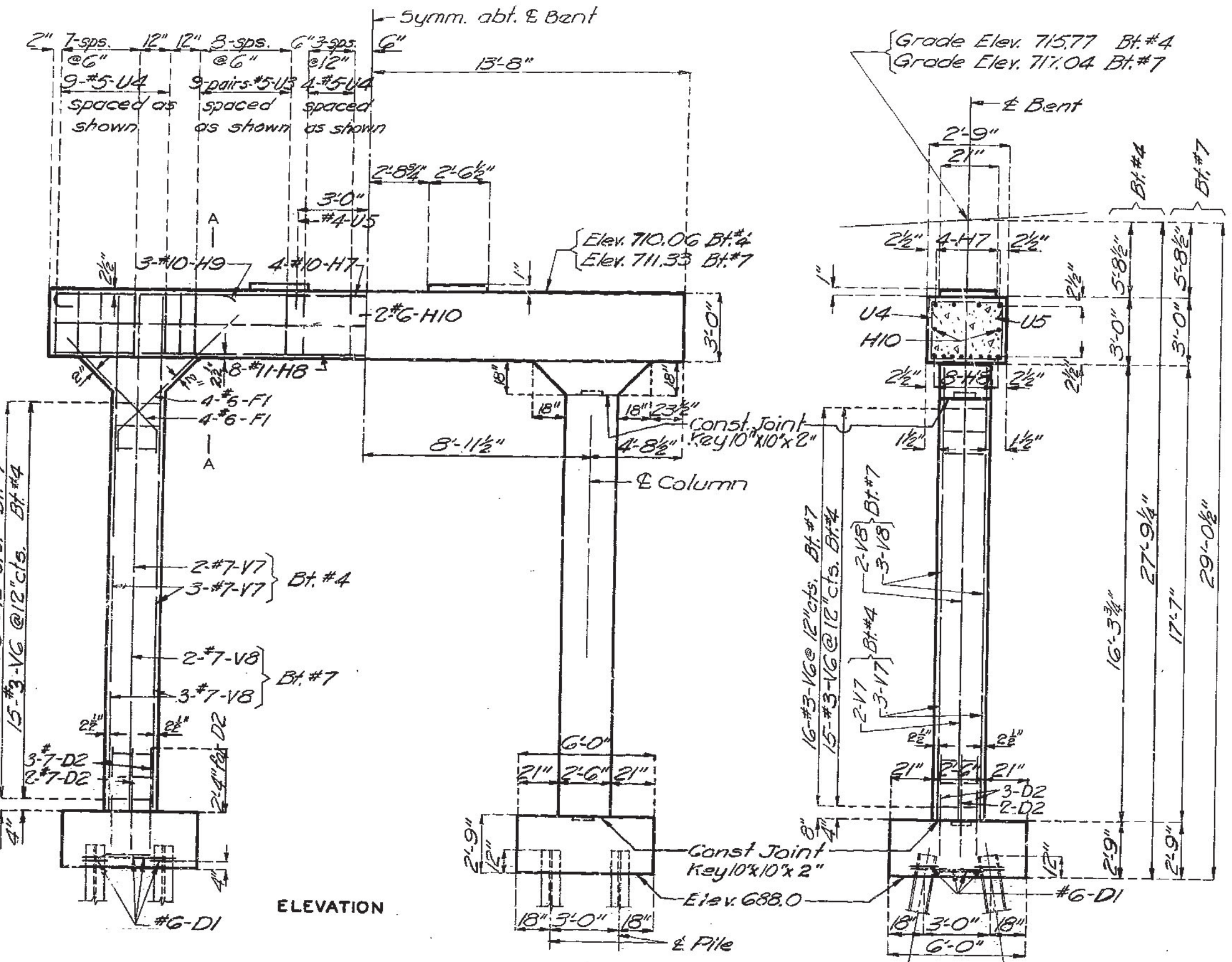
140

No. 13.1
 Revised
 Feb. 1962
 Drawn Feb. 1964 by Mager
 Checked May 1964 by Endicott

BRIDGE OVER THOMPSON RIVER
 STATE ROAD FROM CHILLICOTHE NORTHWEST
 ABOUT 4.5 MILES N.W. OF CHILLICOTHE
 PROJECT NO. S-537(7) SA(170) STA. 834+83.0
 LIVINGSTON COUNTY

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	22	



PLAN DETAILS OF INTERMEDIATE BENTS NO. 4 & 7

PLAN DETAILS OF INTERMEDIATE BENTS NO. 5 & 6

Note: Bearing pads shall be poured monolithically with beam.
 Bearing pads may be eliminated, if desired, by increasing thickness of top plate of bearing by pad thickness. Payment for bearings will be on the basis of details shown.

BRIDGE OVER THOMPSON RIVER
 STATE ROAD FROM CHILLICOTHE NORTHWEST
 ABOUT 4.5 MILES N.W. OF CHILLICOTHE
 PROJECT NO. S-537(7) SA(170) STA. 834+83.0
 LIVINGSTON COUNTY

141

No. 18.2	Revised
Feb. 1962	

Assembled Feb. 1964 by Mager
 Checked May 1964 by Endicott

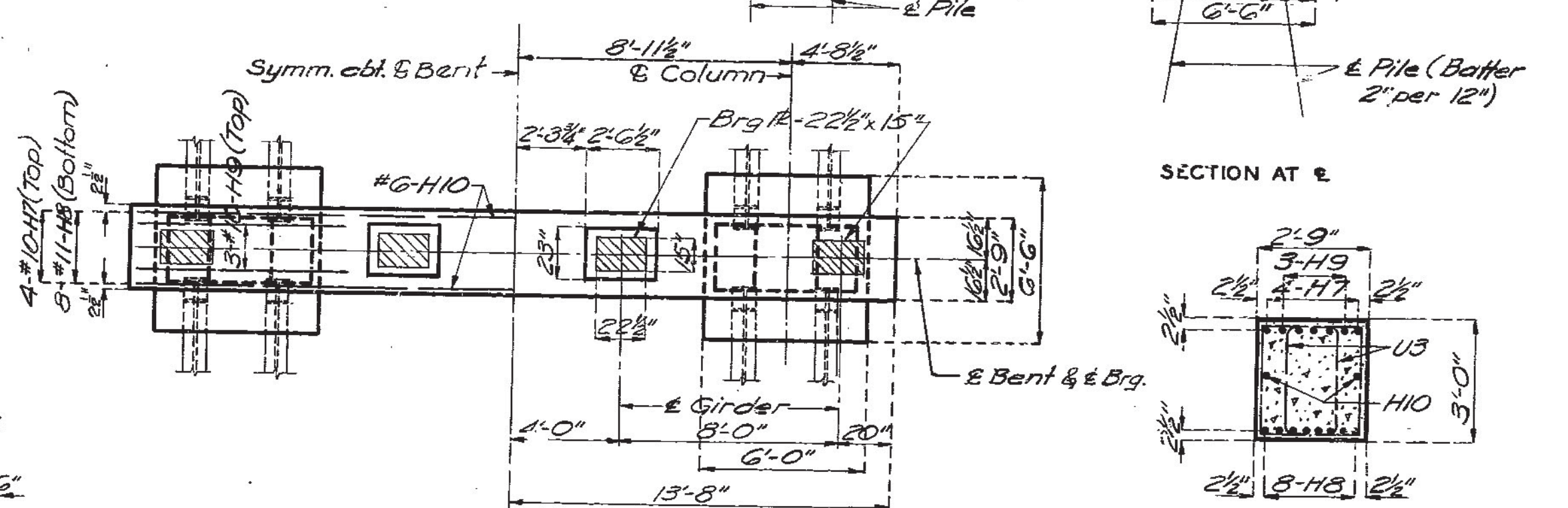
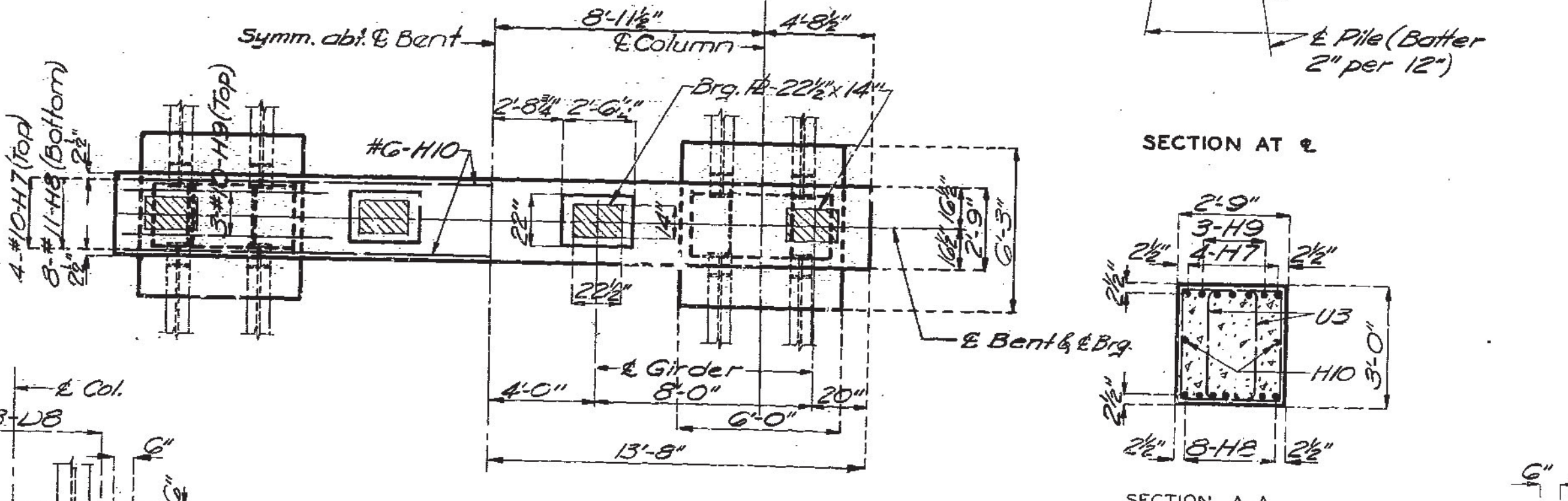
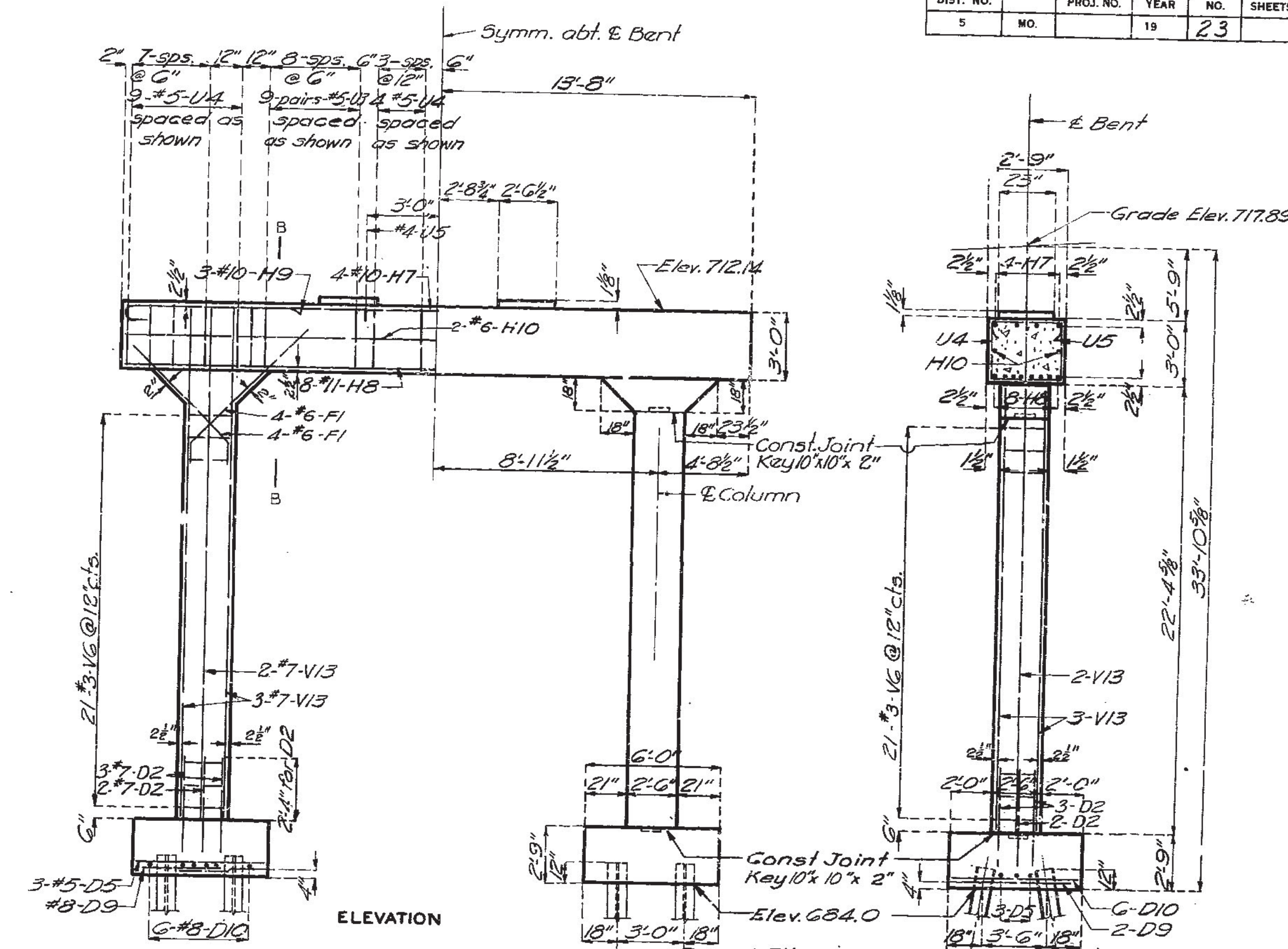
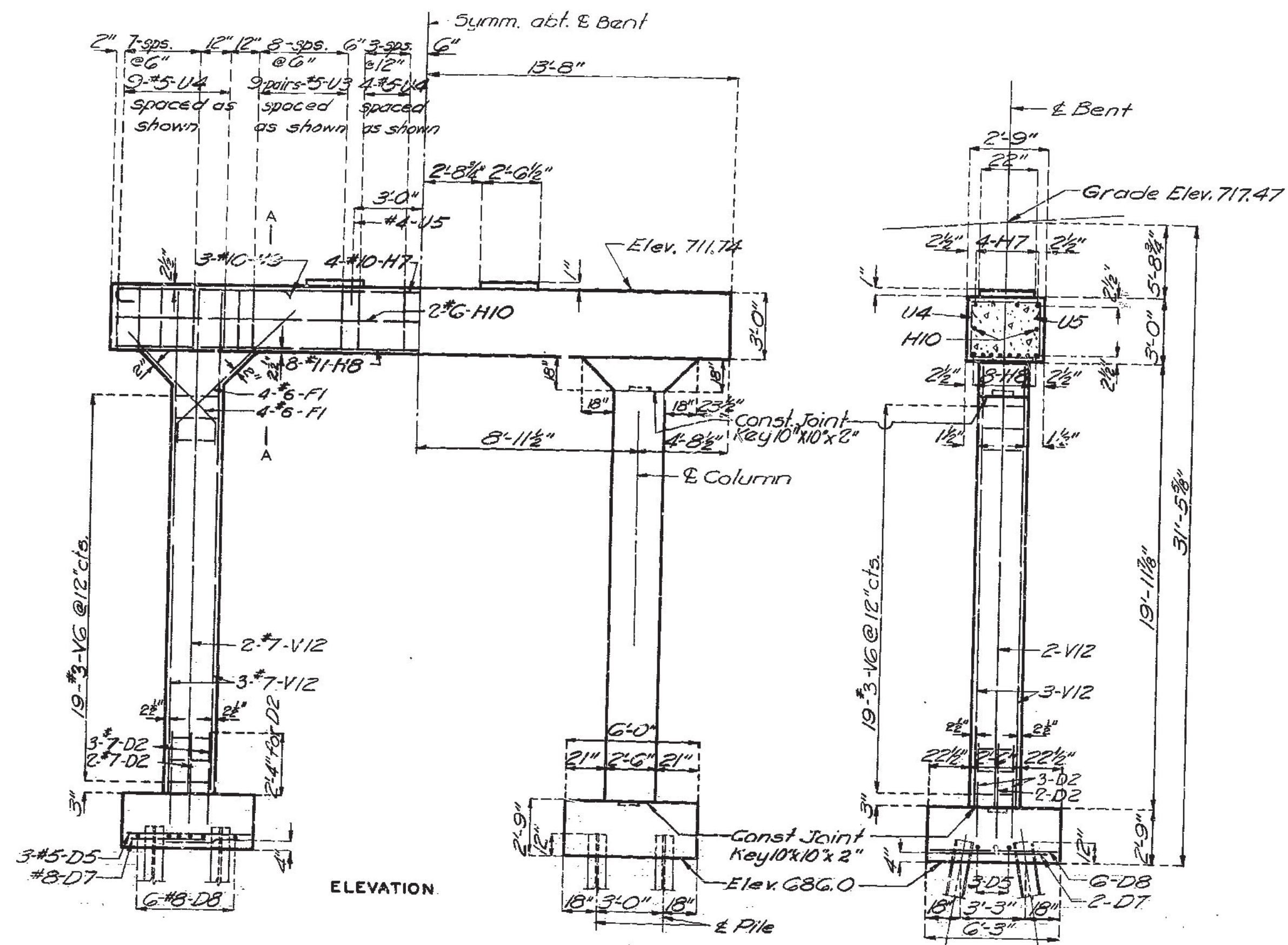
PLAN OF FOOTING BENTS NO. 4 & 7

PLAN OF FOOTING BENTS NO. 5 & 6

Note: This drawing is not to scale. Follow dimensions.

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	23	



DETAILS OF INTERMEDIATE BENT NO. 8

DETAILS OF INTERMEDIATE BENT NO. 9

Note: Bearing pads shall be poured monolithically with beam. Bearing pads may be eliminated, if desired, by increasing thickness of top plate of bearing by pad thickness. Payment for bearings will be on the basis of details shown.

BRIDGE OVER THOMPSON RIVER
 STATE ROAD FROM CHILLICOTHE NORTHWEST
 ABOUT 4.5 MILES N.W. OF CHILLICOTHE
 PROJECT NO. S-537(7) SA(170) STA. 834+83.0
 LIVINGSTON COUNTY

142

NO. 13.2 Revised Feb. 1962.
 Assembled Feb. 1964 by Mager
 Checked May 1964 by Endicott

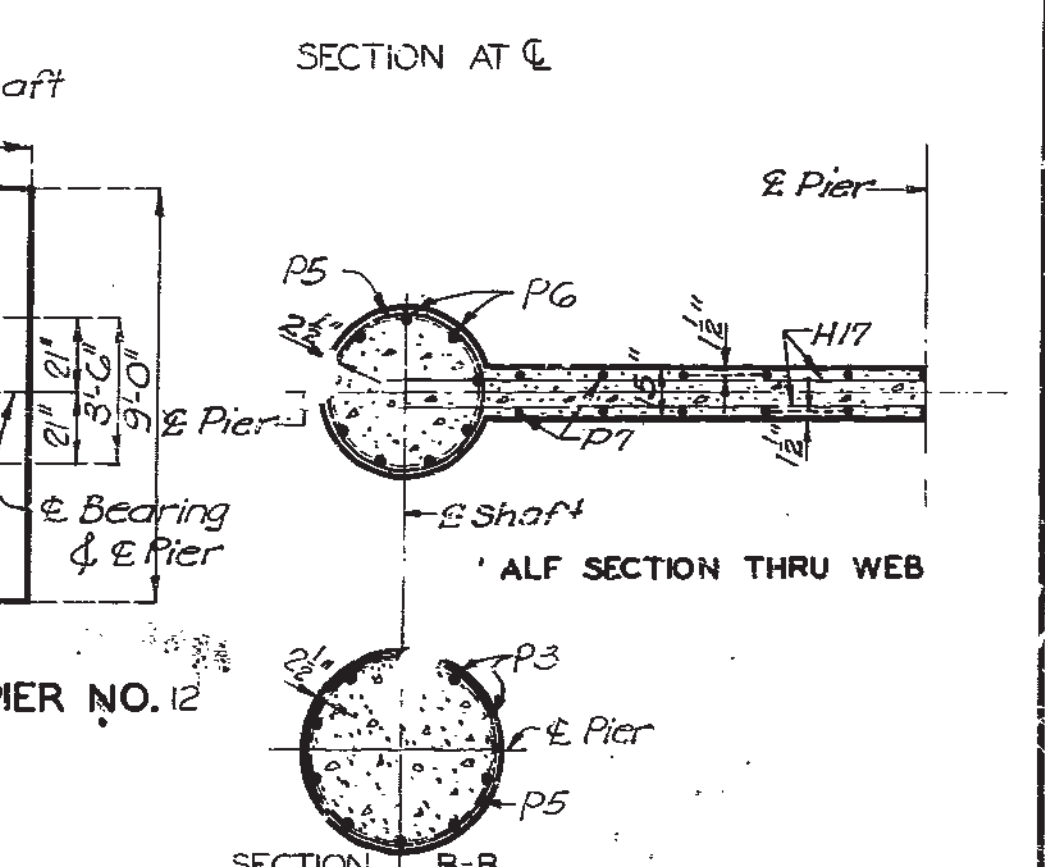
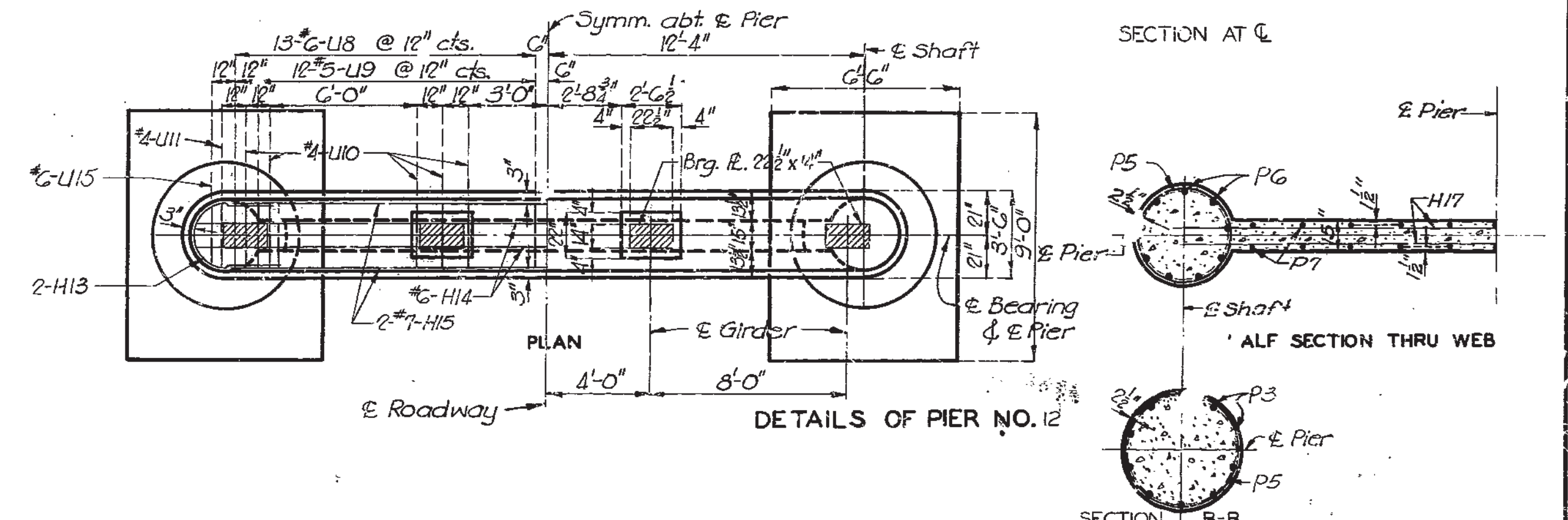
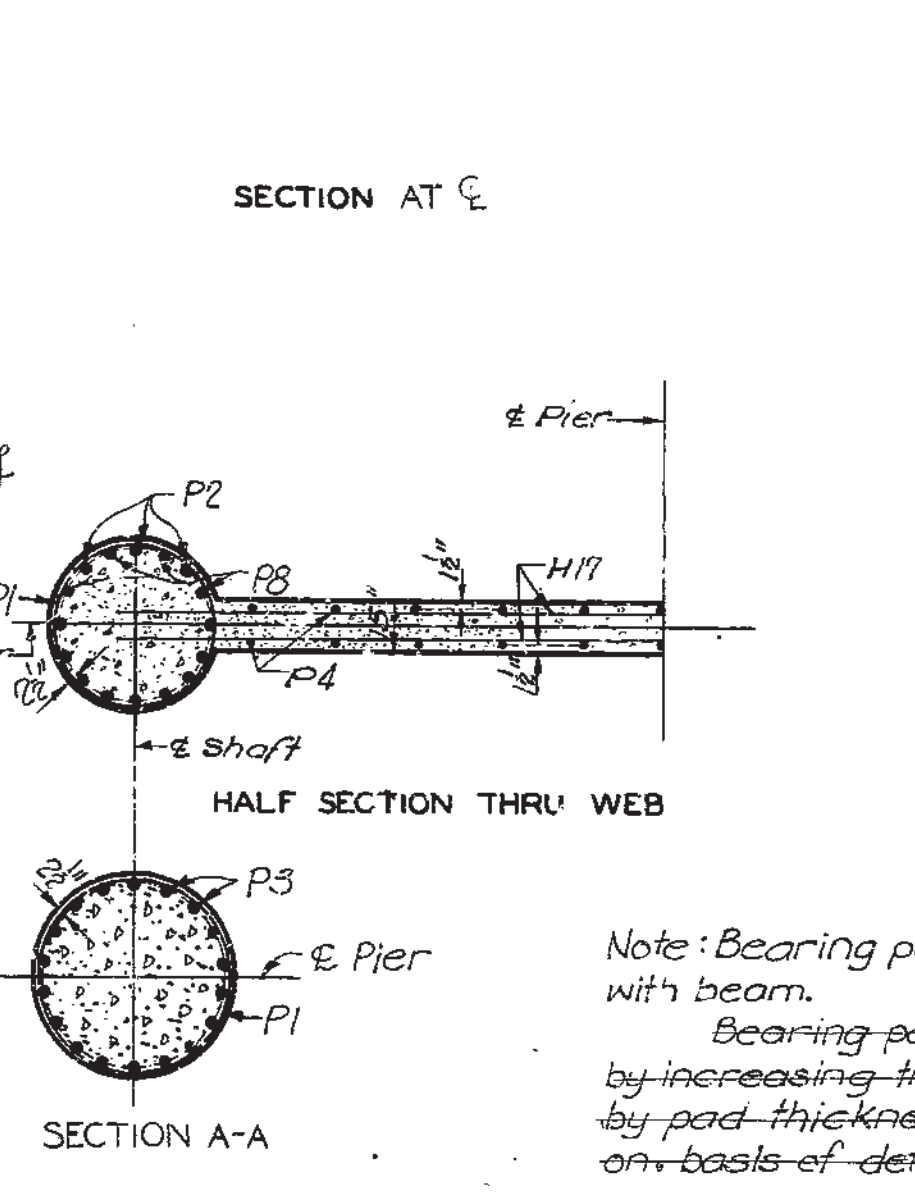
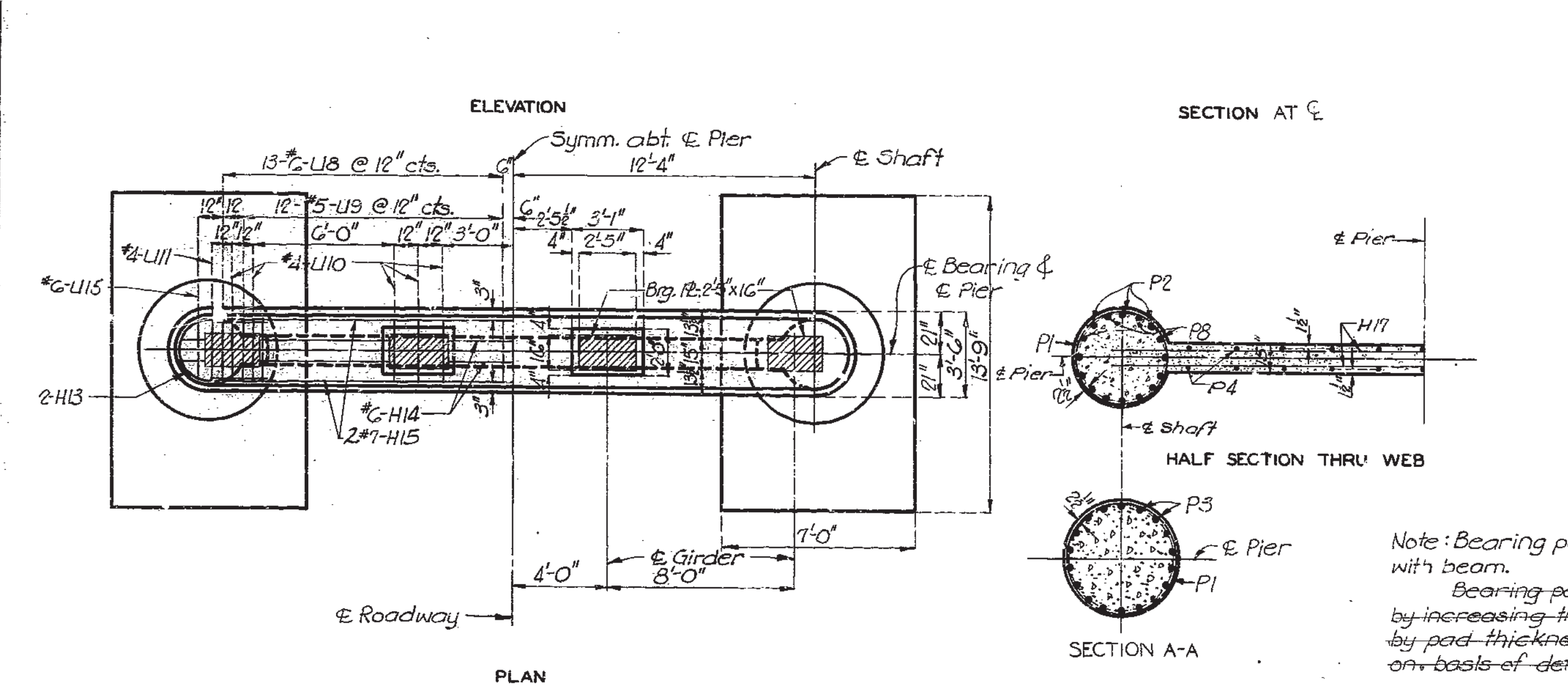
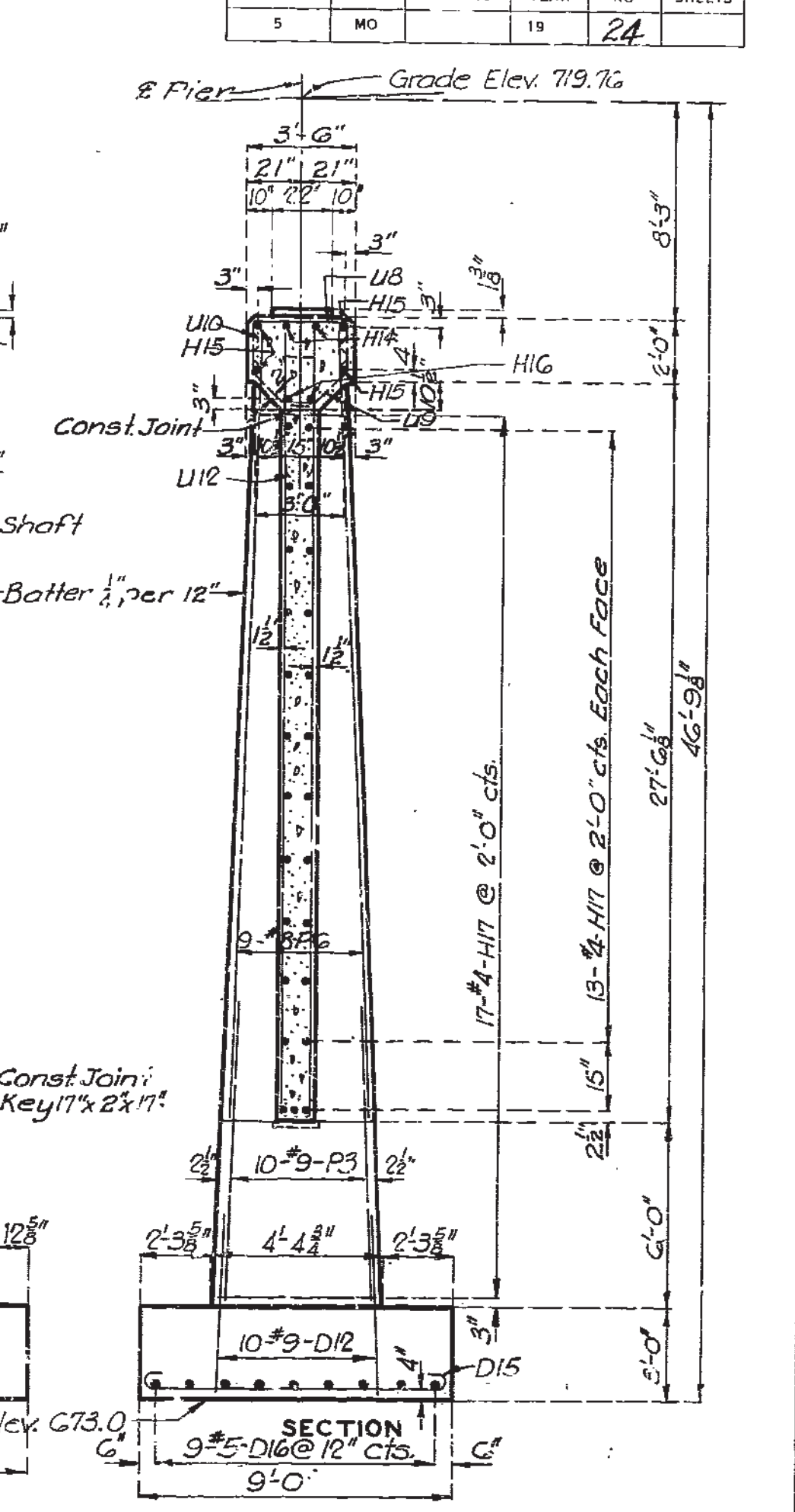
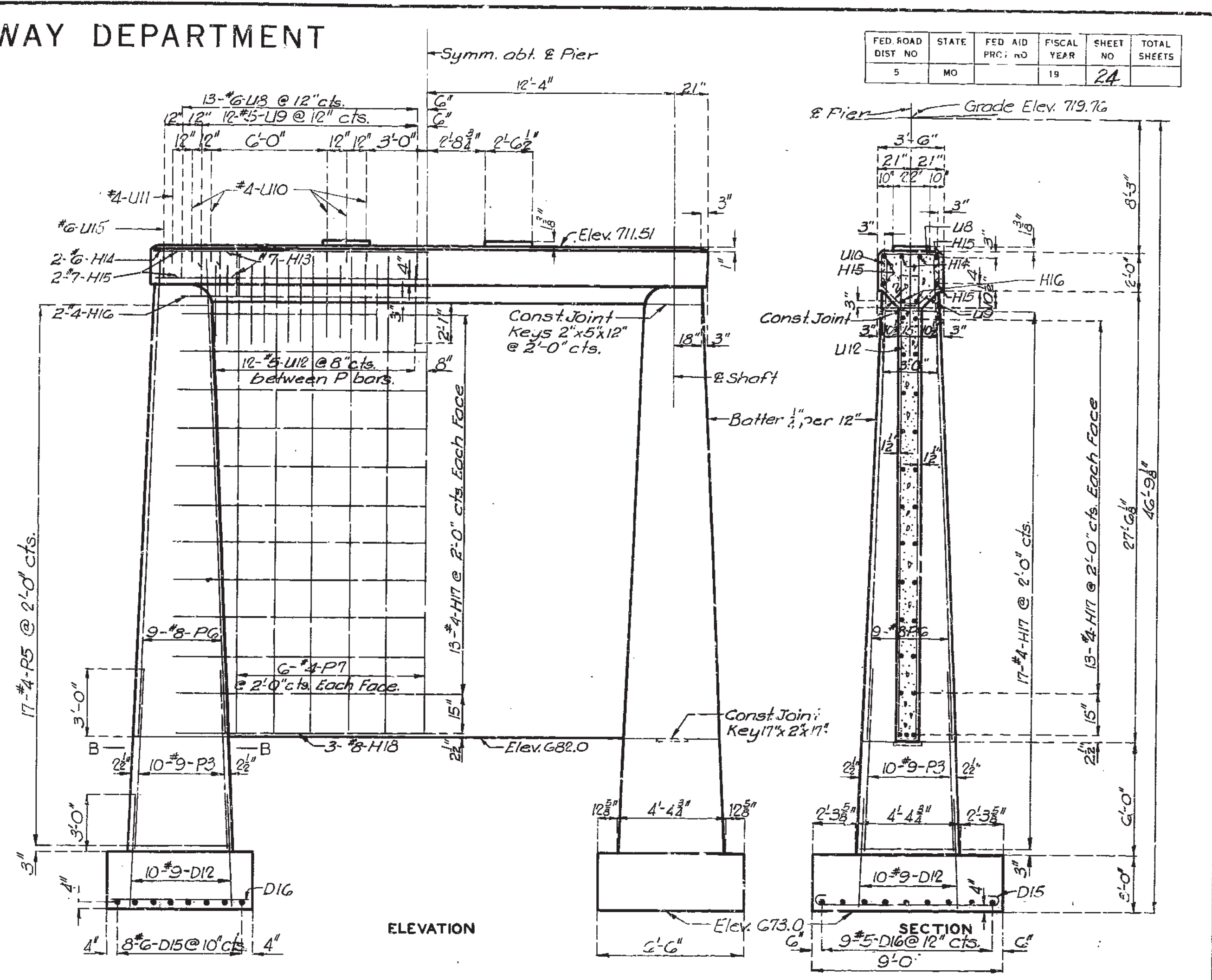
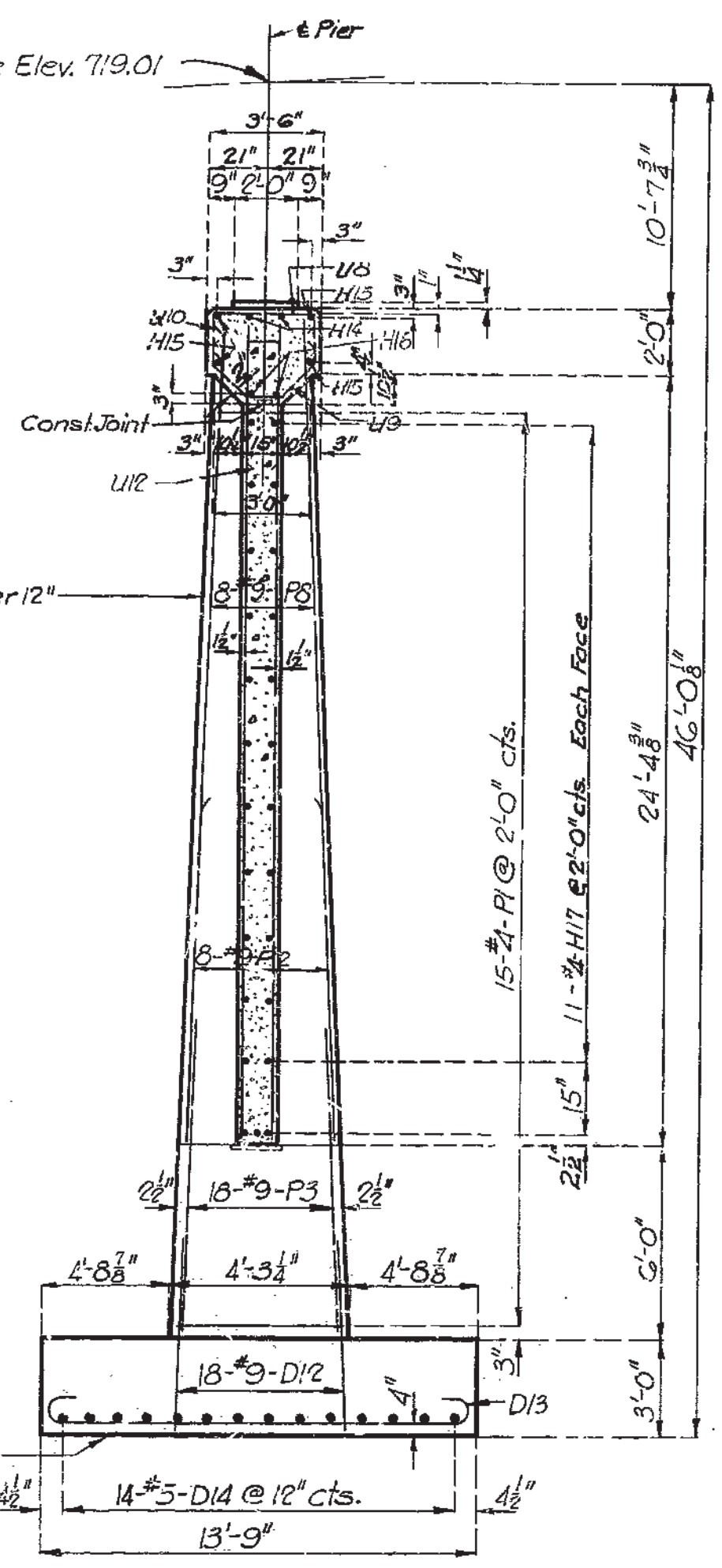
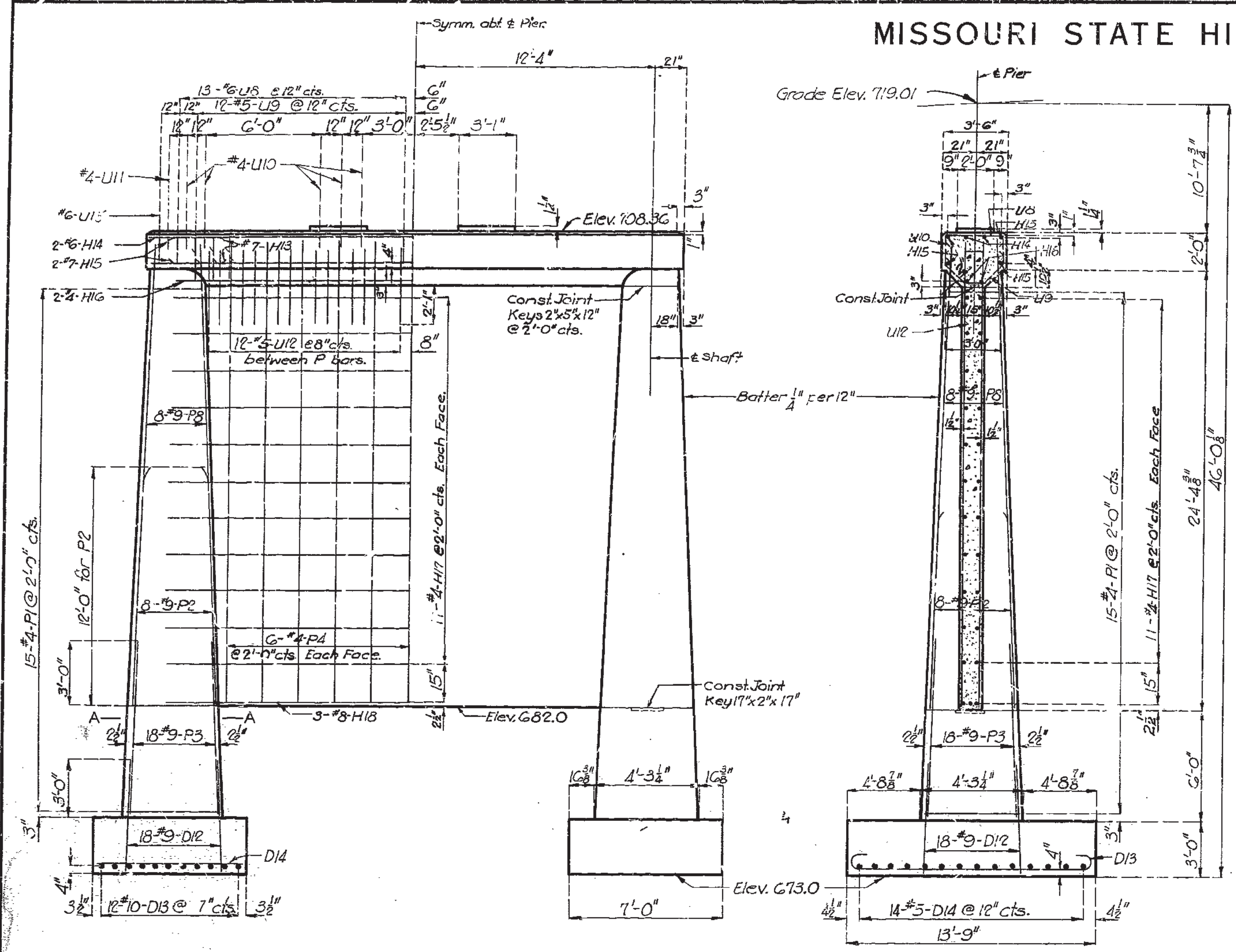
Note: This drawing is not to scale. Follow dimensions.

Sheet No 6 of 20

A-1376

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PRC. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		19	24	



Note: Bearing pads shall be poured monolithically with beam.
Bearing pads may be eliminated, if desired, by increasing thickness of top plate of bearing by pad thickness. Payment for bearings will be on basis of details shown.

BRIDGE OVER THOMPSON RIVER
STATE ROAD FROM CHILLICOTHE NORTHWEST ABOUT 4.5 MILES N.W. OF CHILLICOTHE.
PROJECT NO. S-537(7) SA(170) STA. 834 + 83.0
LIVINGSTON COUNTY

No. 205 Revised Feb. 1962
 143
 Checked May 1964 by Endicott

Assembled Feb 1964 by GAMET
Checked May 1964 by Endicott

DETAILS OF PIER NO. 11

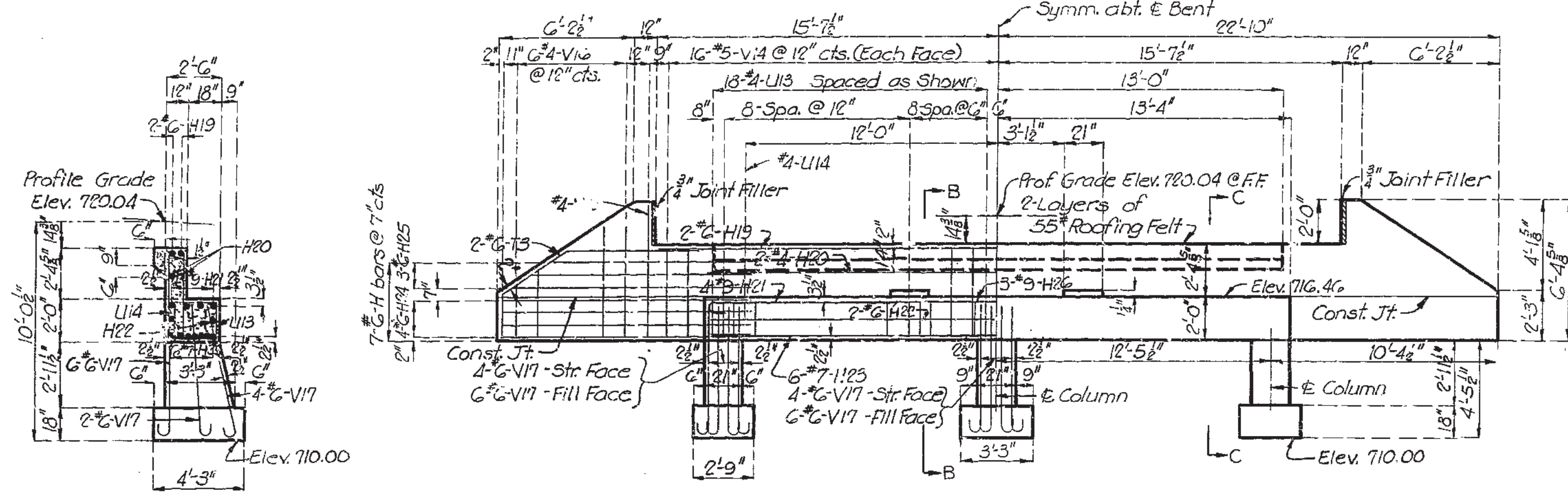
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 7 of 20

A-1376

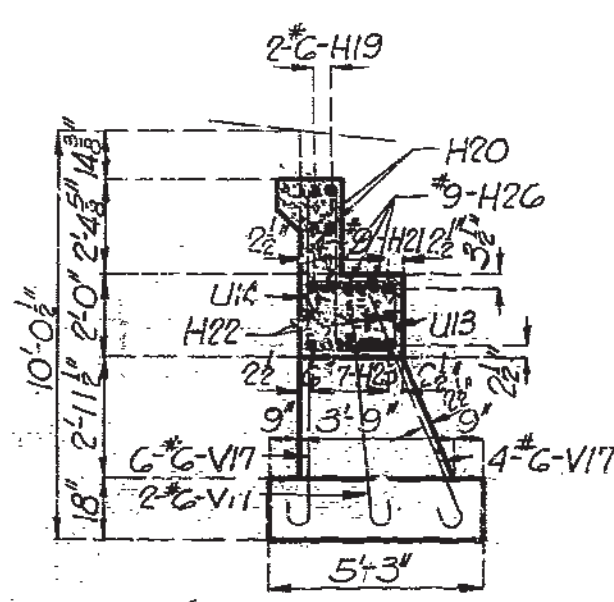
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE PROJ. NO.	FED. AID YEAR	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.	19	25		

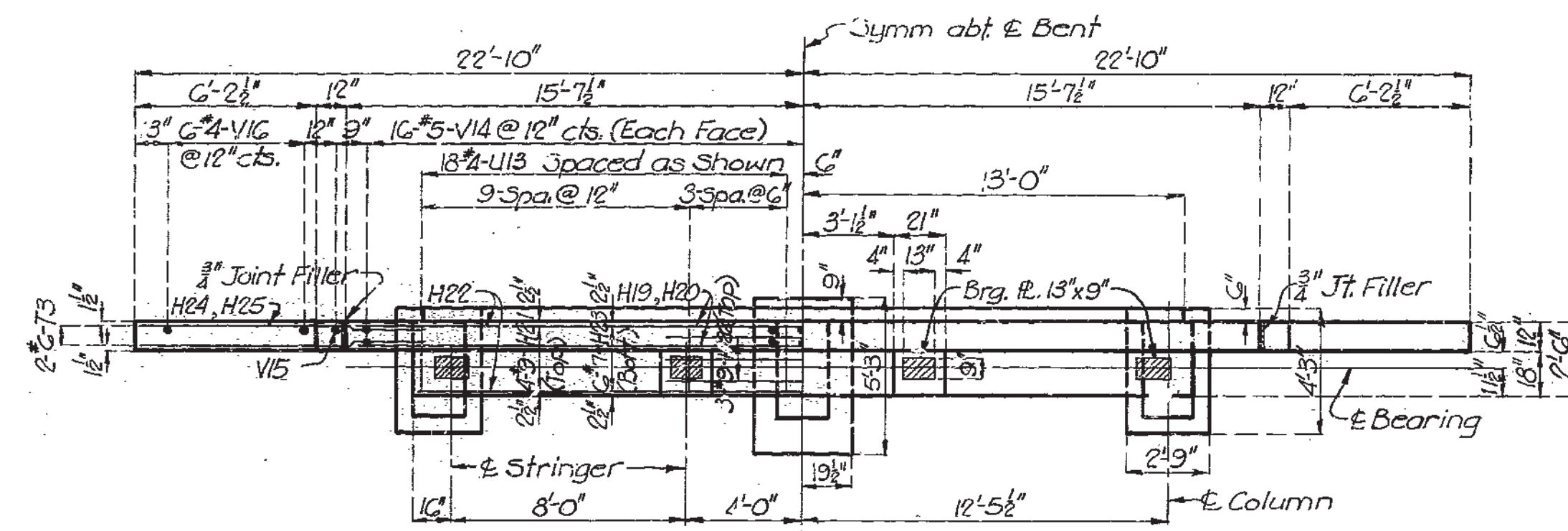


SECTION C-C

ELEVATION



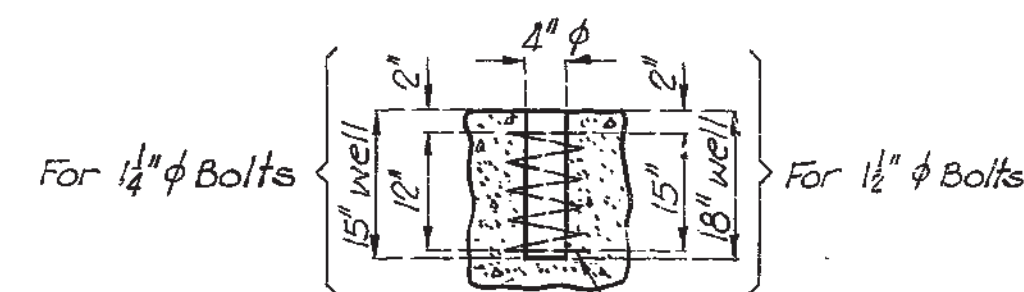
SECTION B-B



PLAN

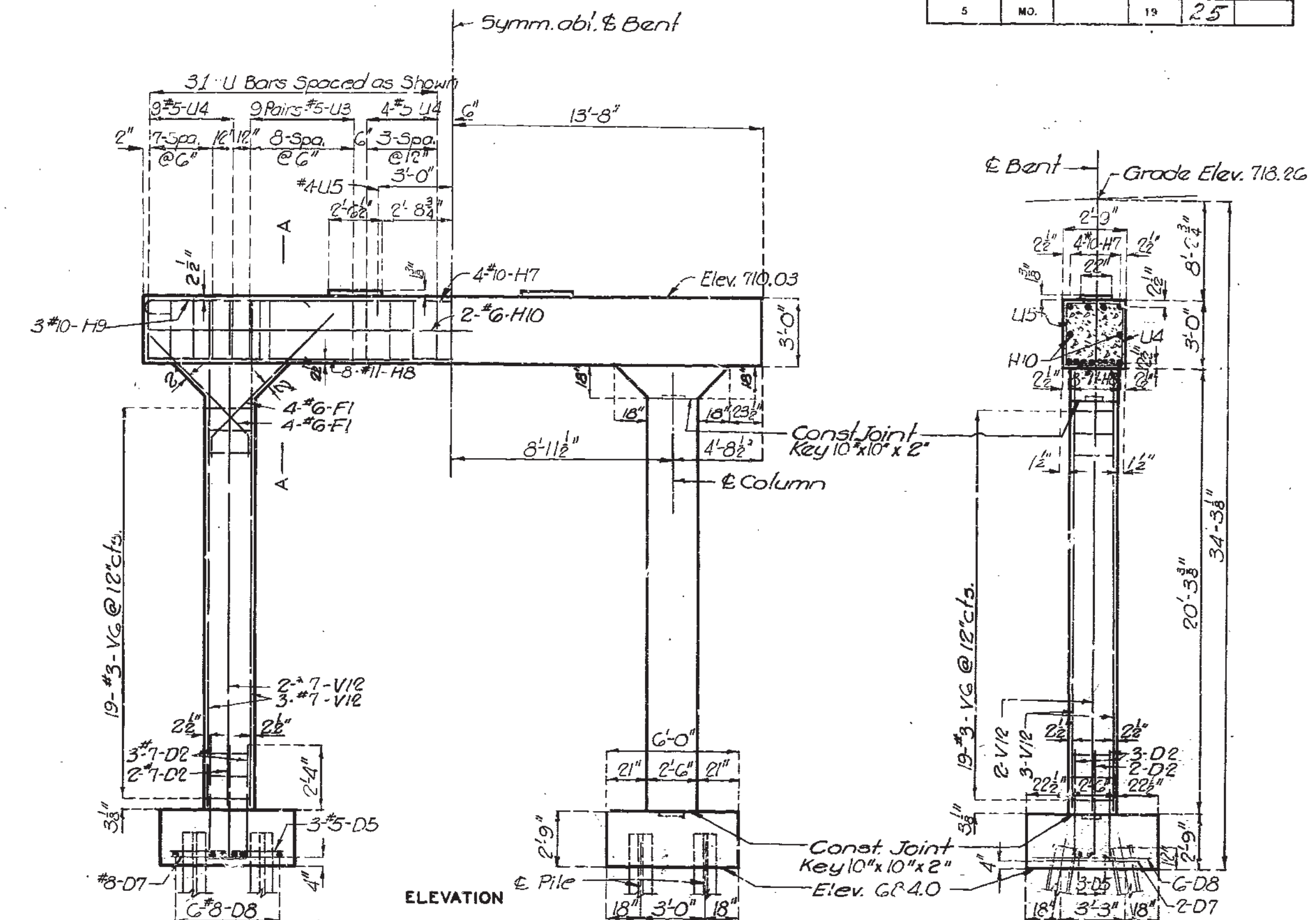
DETAILS OF END BENT NO. 13

Note: Bearing pads shall be poured monolithically with beam.
 Bearing pads may be eliminated, if desired, by increasing thickness of top plate of bearing by pad thickness. Payment for bearings will be on basis of details shown.

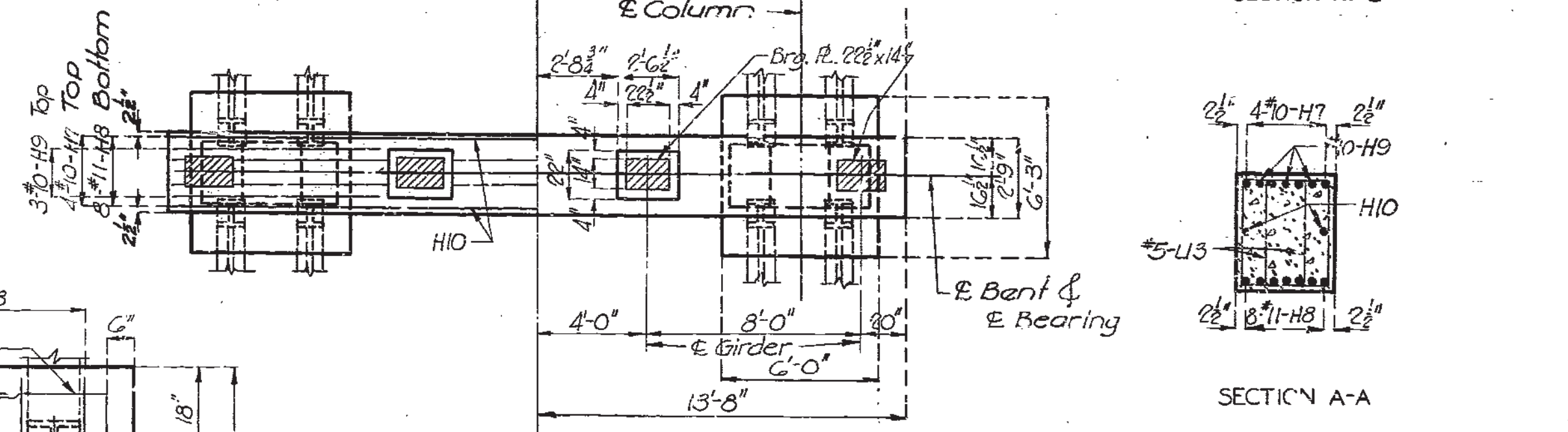


DETAIL OF ANCHOR BOLT WELLS

Note: Anchor bolts for Type "D" bearing may be set in wells as shown or in holes drilled into concrete substructure.



ELEVATION



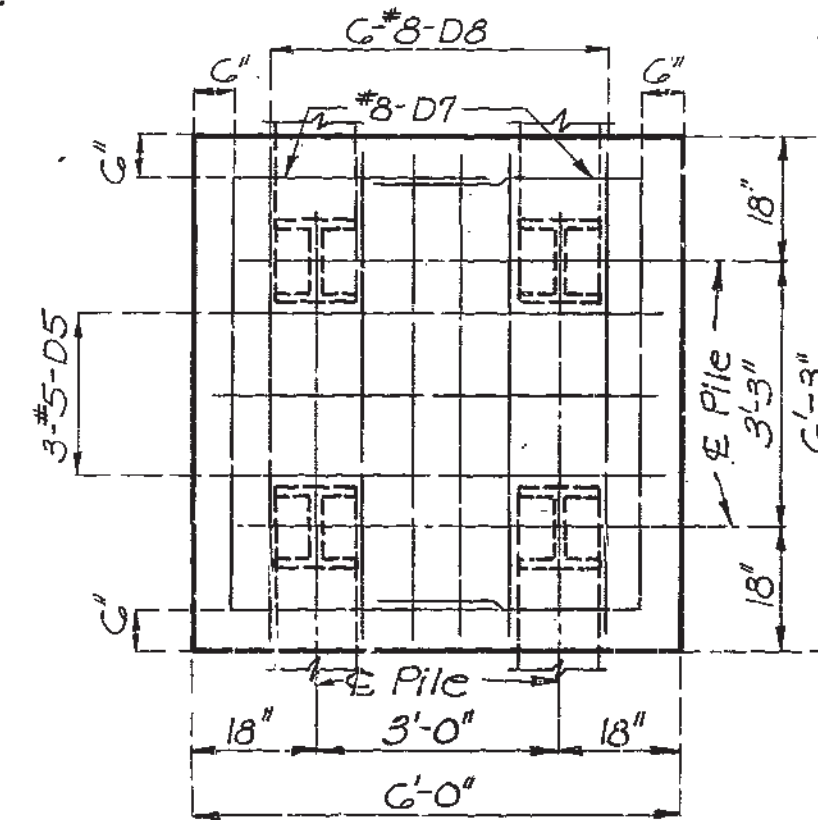
PLAN

DETAILS OF INTERMEDIATE BENT NO. 10

BRIDGE OVER THOMPSON RIVER

STATE ROAD FROM CHILLICOTHE NORTHWEST
 ABOUT 4.5 MILES NW OF CHILLICOTHE
 PROJECT NO. S-537(7) SA(170) STA. 834+83.0

LIVINGSTON COUNTY



PLAN OF FOOTING SHOWING REINFORCEMENT

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 8 of 20

A-1376

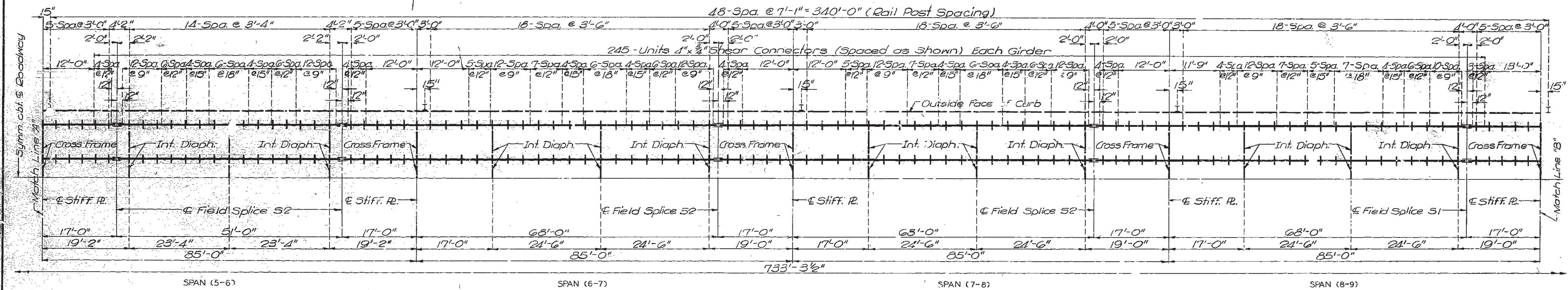
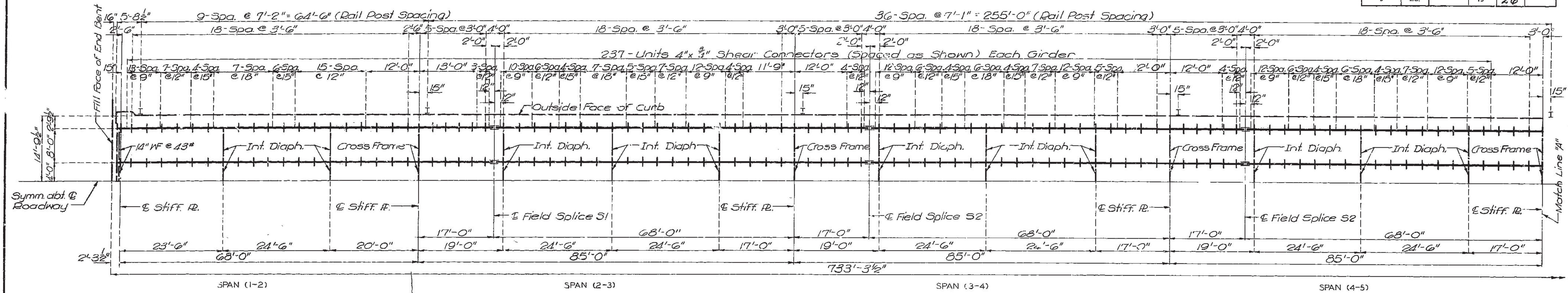
144

NO. 13.1
 Revised
 Feb. 1962

Drawn Mar. 1964 by Gamet
 Checked May 1964 by Endicott

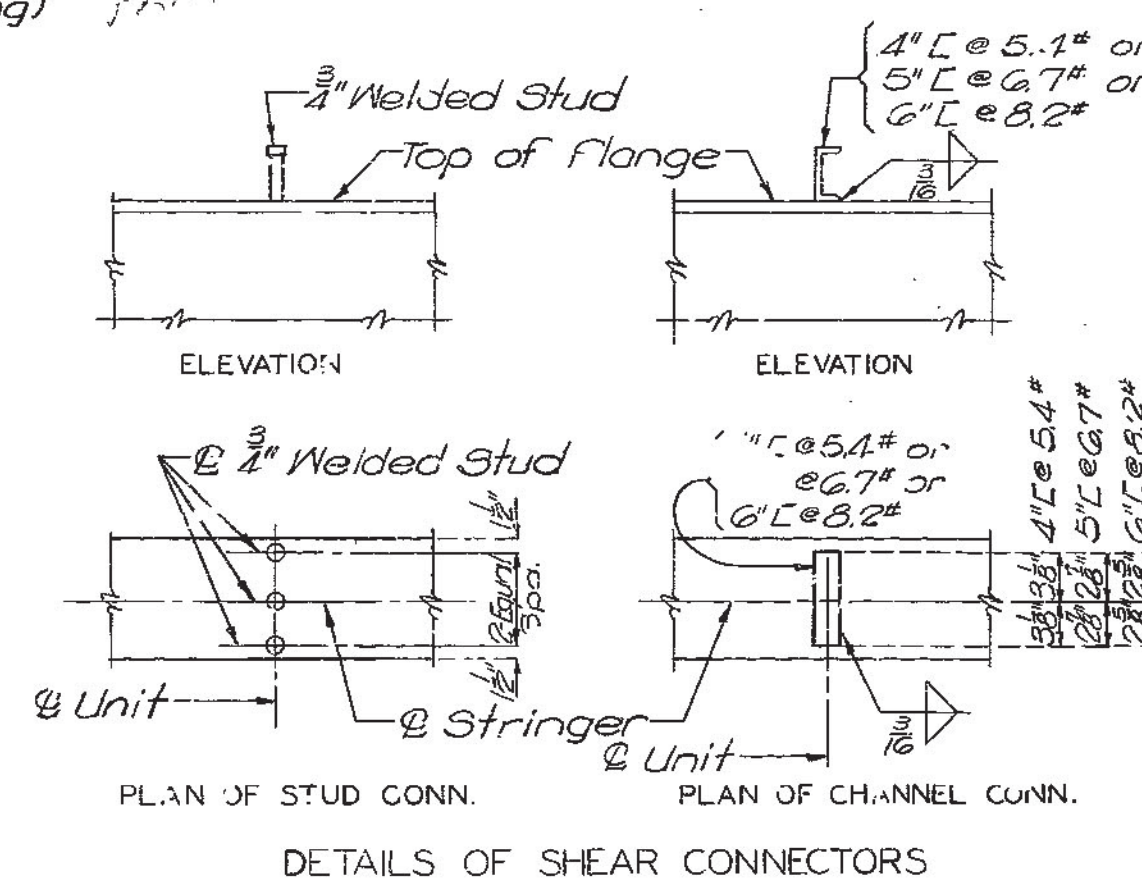
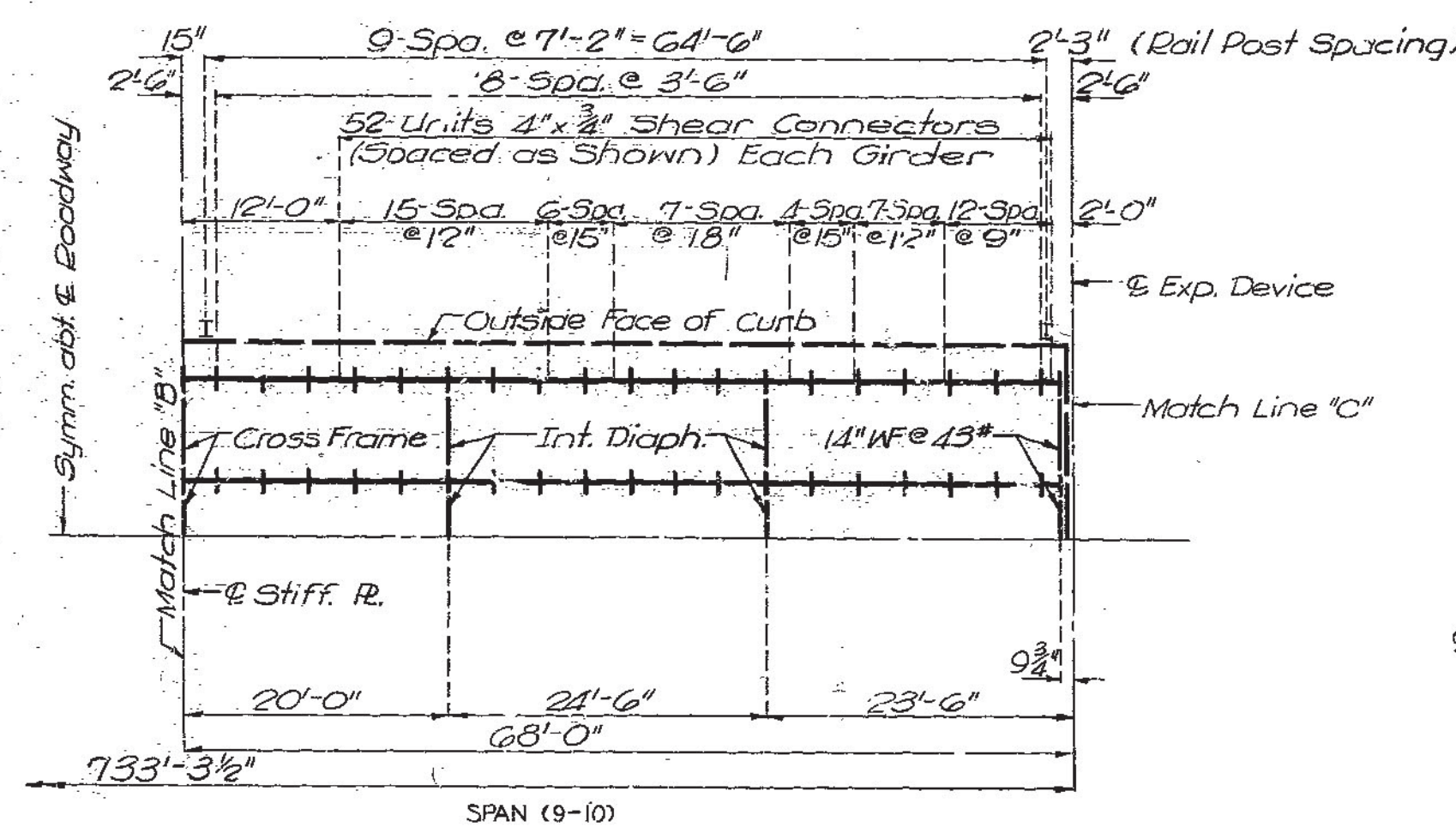
MISSOURI STATE HIGHWAY DEPARTMENT

ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	26	



PART PLAN OF STRUCTURAL STEEL

Note: Longitudinal dimensions shown are taken parallel to grade at crown of roadway.



Note: Locate shear connectors with backs toward ends of spans.
 Weight of 6320# of shear connectors (based on studs) is included in weight of fabricated structural carbon steel.
 Payweight for shear connectors will be based on the weight of studs regardless of the type actually furnished.
 See Special Provisions for shear connectors.

BRIDGE OVER THOMPSON RIVER

STATE ROAD FROM CHILLICOTHE NORTHWEST
 ABOUT 4.5 MILES N.W. OF CHILLICOTHE
 PROJECT NO. S-537(7) SA(170) STA. 834+83.0
 LIVINGSTON COUNTY

DETAILED NOV. 1963 BY WEAVER
 CHECKED MAY 1964 BY ENDICOTT

Note: This drawing is not to scale. Follow dimensions.

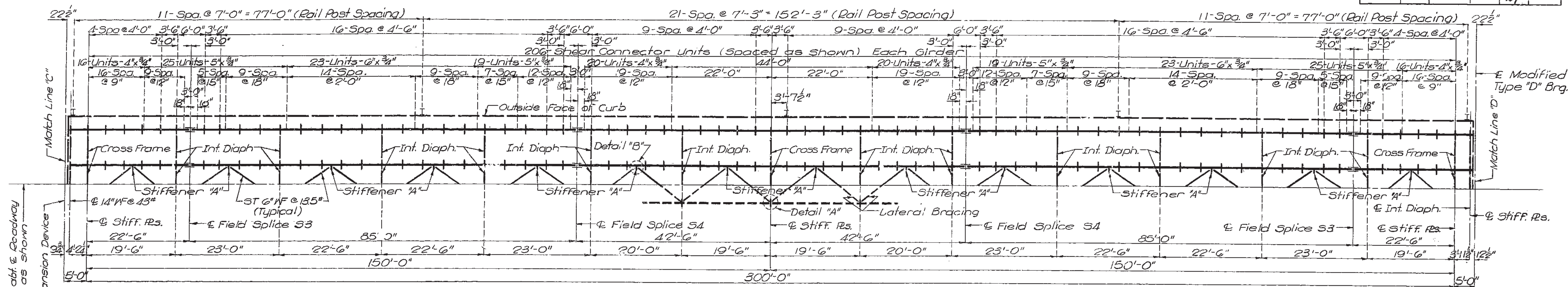
Sheet No. 9 of 20.

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MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	27	



PART PLAN OF STRUCTURAL STEEL

Note: Longitudinal dimensions shown are taken parallel to grade at crown of roadway.

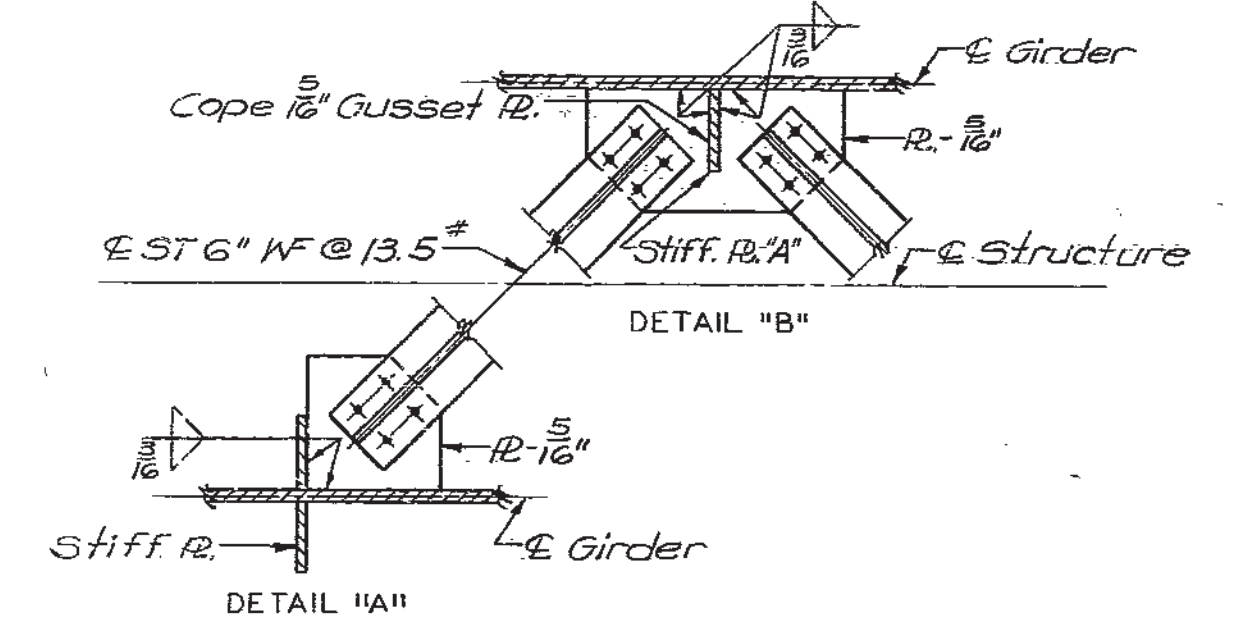
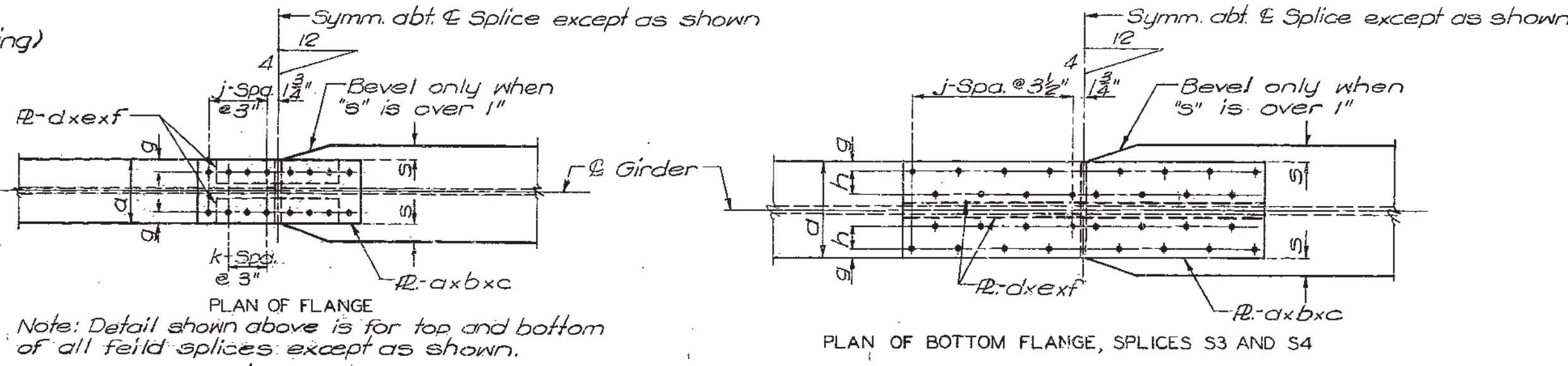
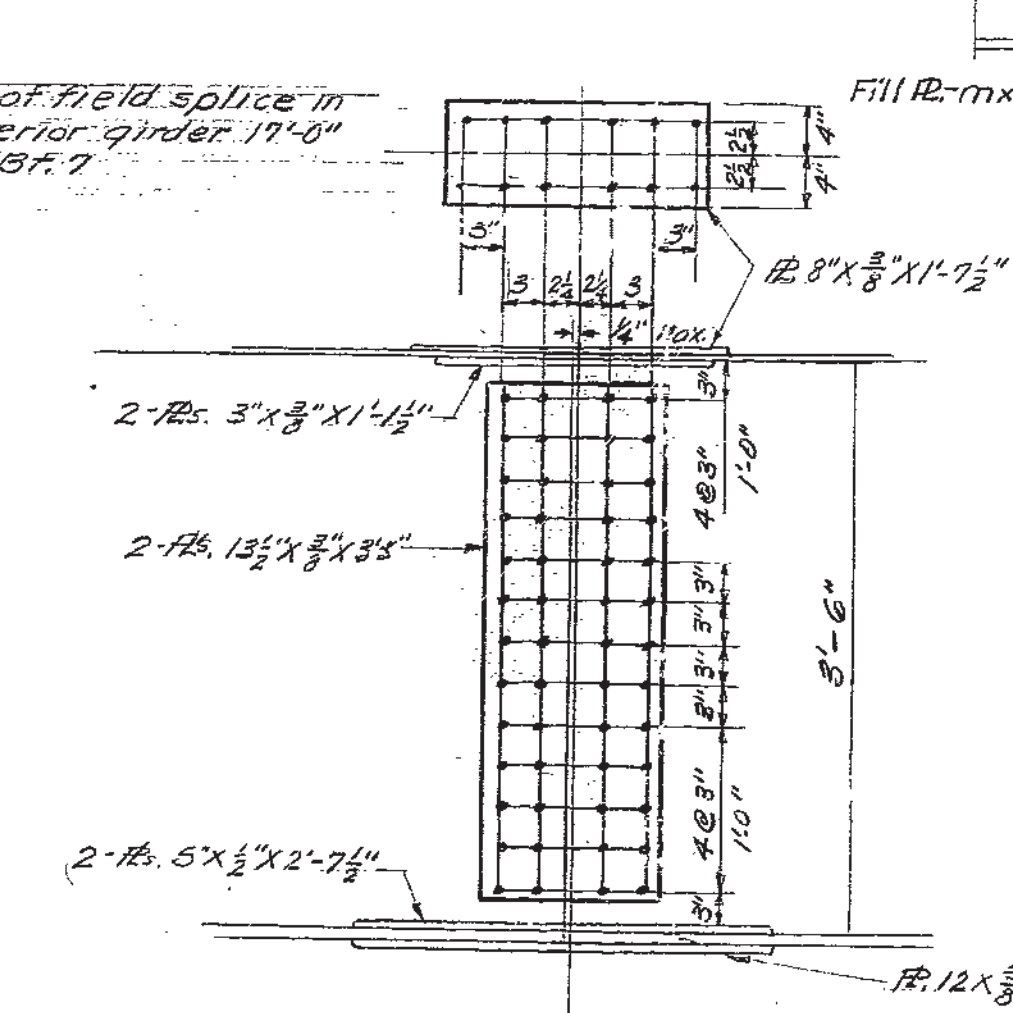
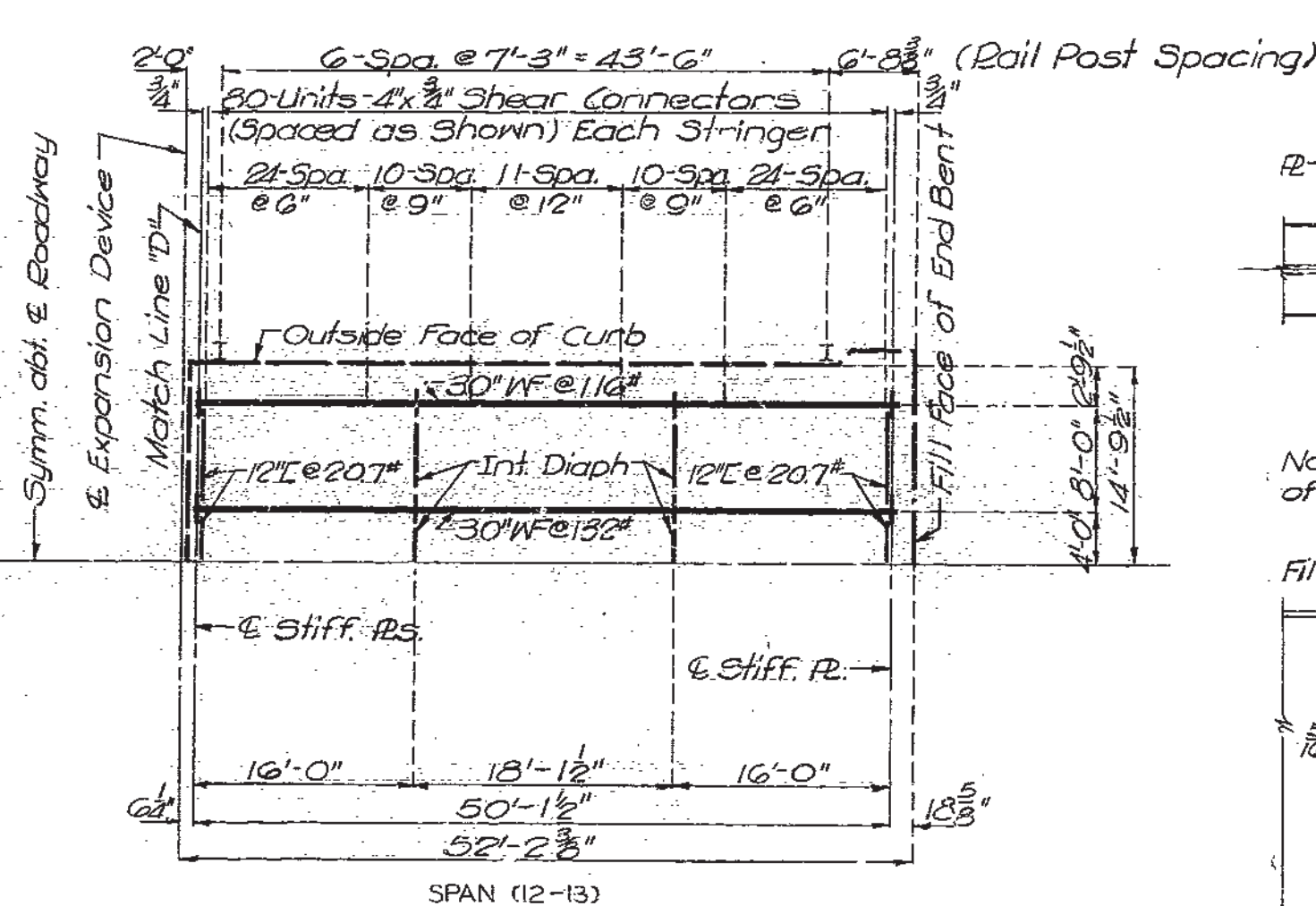


TABLE FOR FIELD FLANGE SPLICES

Splice	d	b	c	d	e	f	g	h	i	k	m	n	o	s
S1 Ext. Top	8"	3/8"	18 1/2"	3"	3/8"	12 1/2"	1 1/2"		2	1	8"	1/4"	9"	2"
S1 Ext. Bott.	11"	3/8"	2'-0 1/2"	4 1/2"	3/8"	18 1/2"	2 1/2"		3	2				1 1/2"
S1 Int. Top	8"	3/8"	18 1/2"	3"	3/8"	12 1/2"	1 1/2"		2	1	8"	1/4"	9"	2"
S1 Int. Bott.	12"	3/8"	2'-0 1/2"	5 1/2"	1/2"	2'-6 1/2"	2 1/2"		4	4				0
S2 Ext. Top	8"	3/8"	18 1/2"	3"	3/8"	12 1/2"	1 1/2"		2	1	8"	1/4"	9"	2 1/2"
S2 Ext. Bott.	12"	3/8"	2'-0 1/2"	5 1/2"	1/2"	2'-6 1/2"	2 1/2"		4	4				1 1/2"
S2 Int. Top	8"	3/8"	18 1/2"	3"	3/8"	12 1/2"	1 1/2"		2	1	8"	1/4"	9"	2"
S2 Int. Bott.	12"	3/8"	2'-0 1/2"	5 1/2"	1/2"	2'-6 1/2"	2 1/2"		4	4				0
S3 Ext. Top	10"	3/8"	2'-0 1/2"	4 1/2"	3/8"	18 1/2"	2"		3	2				0
S3 Ext. Bott.	14"	1/2"	4'-0 1/2"	6 1/2"	3/8"	4'-0 1/2"	1 1/2"		6	6				3"
S3 Int. Top	10"	3/8"	2'-0 1/2"	4 1/2"	3/8"	18 1/2"	2"		3	2	10"	1/4"	12"	1"
S3 Int. Bott.	15"	1/2"	4'-8"	6 1/2"	3/8"	4'-8"	1 1/2"		7	7	15"	1/4"	2'-3 1/2"	2 1/2"
S4 Ext. Top	10"	3/8"	2'-0 1/2"	4 1/2"	3/8"	18 1/2"	2"		3	2	10"	1/4"	12"	2 1/2"
S4 Ext. Bott.	15"	1/2"	4'-8"	6 1/2"	3/8"	4'-8"	1 1/2"		7	7				0
S4 Int. Top	10"	3/8"	2'-0 1/2"	4 1/2"	3/8"	18 1/2"	2"		3	2	10"	1/4"	12"	2 1/2"
S4 Int. Bott.	15"	1/2"	5'-3"	6 1/2"	3/8"	5'-3"	1 1/2"		8	8				0

TABLE FOR FIELD WEB SPLICE

Splice	W	Y	Z
Splice S1	3'-3"	4	2
" S2	3'-3"	4	2
" S3	5'-9"	7	4
" S4	5'-9"	7	4

Note: Use 3/8" High Strength Bolts with 1/2" reamed holes.

DETAILS OF GIRDER FIELD SPLICES

Note: 5/16" R shall be placed 4'-0" below bottom of top flange.

LATERAL BRACING DETAIL

146

DETAILED DEC. 1963 BY WEAVER
CHECKED May 1964 BY ENDICOTT

Note: This drawing is not to scale. Follow dimensions.

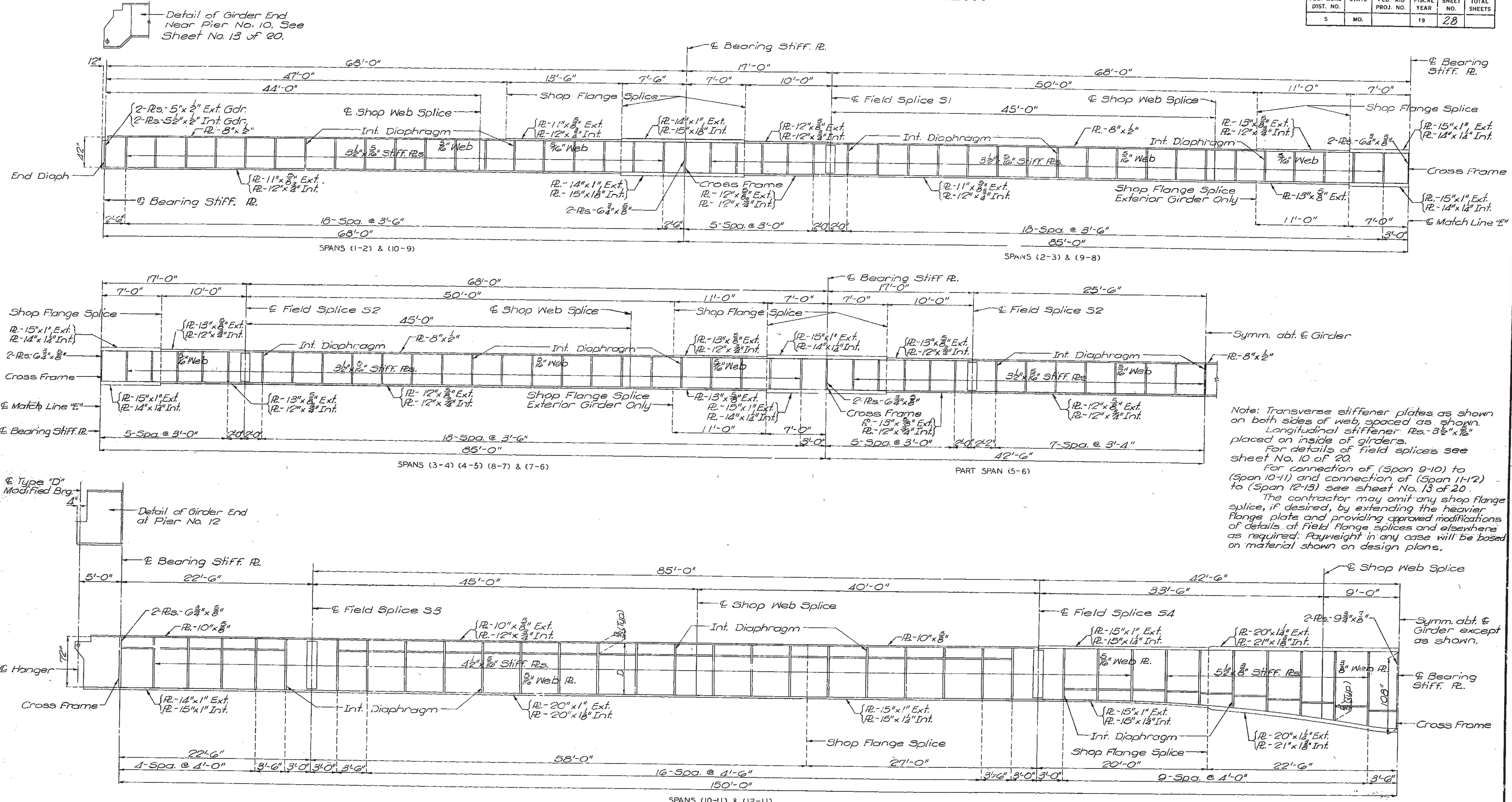
Sheet No. 10 of 20.

BRIDGE OVER THOMPSON RIVER
STATE ROAD FROM CHILICOTHE NORTHWEST
ABOUT 4.5 MILES N.W. OF CHILICOTHE
PROJECT NO. S-537(7) SA(170) STA. 834+83.0
LIVINGSTON COUNTY

A-1376

MISSOURI STATE HIGHWAY DEPARTMENT

FED. DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	28	



Note: Transverse stiffener plates as shown on both sides of web, spaced as shown. Longitudinal stiffener Rs-3 1/2"x 1/2" placed on inside of girders. For details of field splices see sheet No. 10 of 20. For connection of (Span 9-10) to (Span 10-11) and connection of (Span 11-12) to (Span 12-13) see sheet No. 13 of 20. The contractor may omit any shop flange splice, if desired, by extending the heavier flange plate and providing approved modifications of details at field splices and elsewhere as required. Payment in any case will be based on material shown on design plans.

Note: Longitudinal dimensions shown are taken parallel to grade at crown of roadway.

PART ELEVATION OF GIRDERS

Note: See Sheet No. 10 of 20 for location of Stiffener Plate "A".

BRIDGE OVER THOMPSON RIVER

STATE ROAD FROM CHILLICOTHE NORTHWEST ABOUT 4.5 MILES N.W. OF CHILLICOTHE PROJECT NO. S-537 (7) SA(170) STA. 834+83.0

LIVINGSTON COUNTY

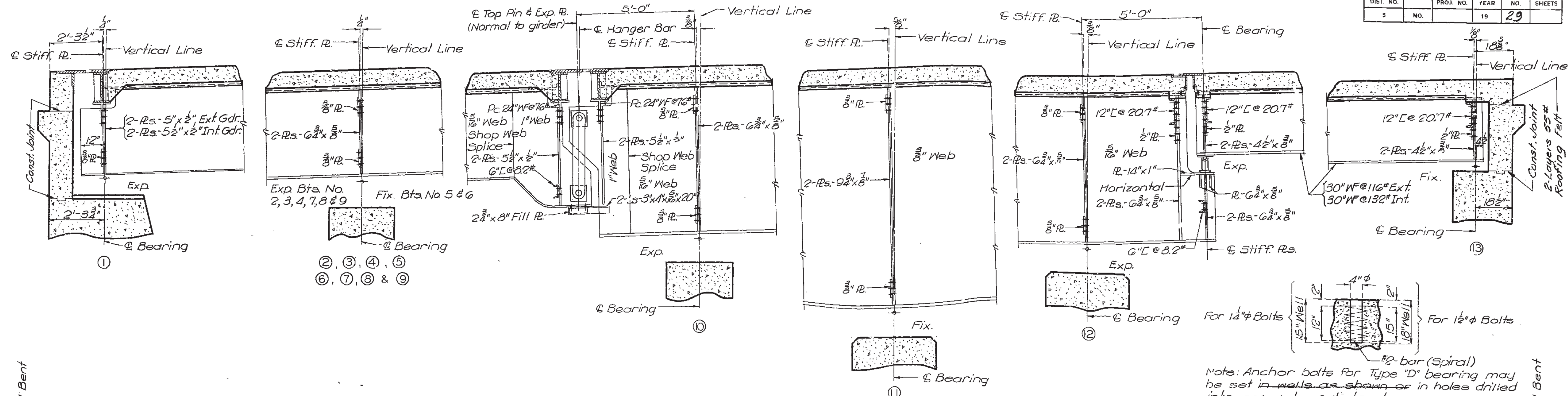
DETAILED DEC. 1965 BY WEAVER CHECKED May 1964 BY Endicott

Note: This drawing is not to scale. Follow dimensions.

147

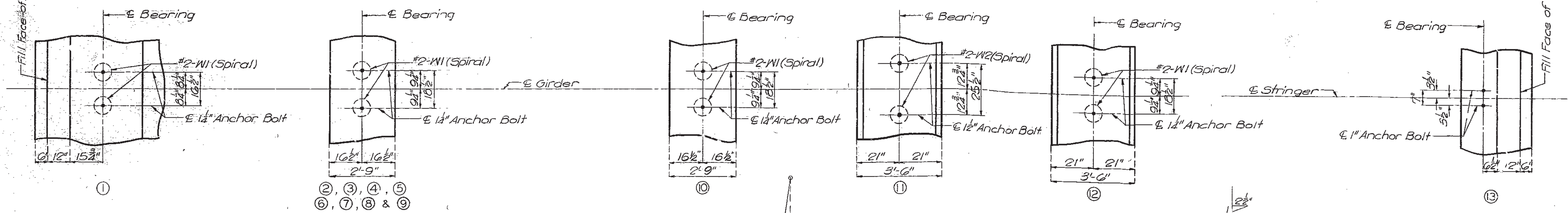
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	29	

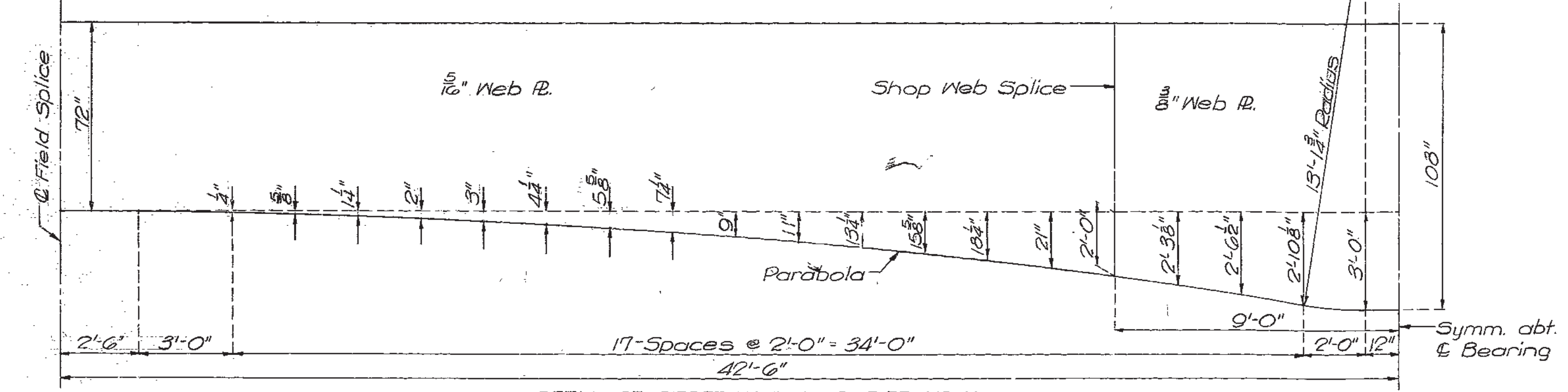


PART LONGITUDINAL SECTION

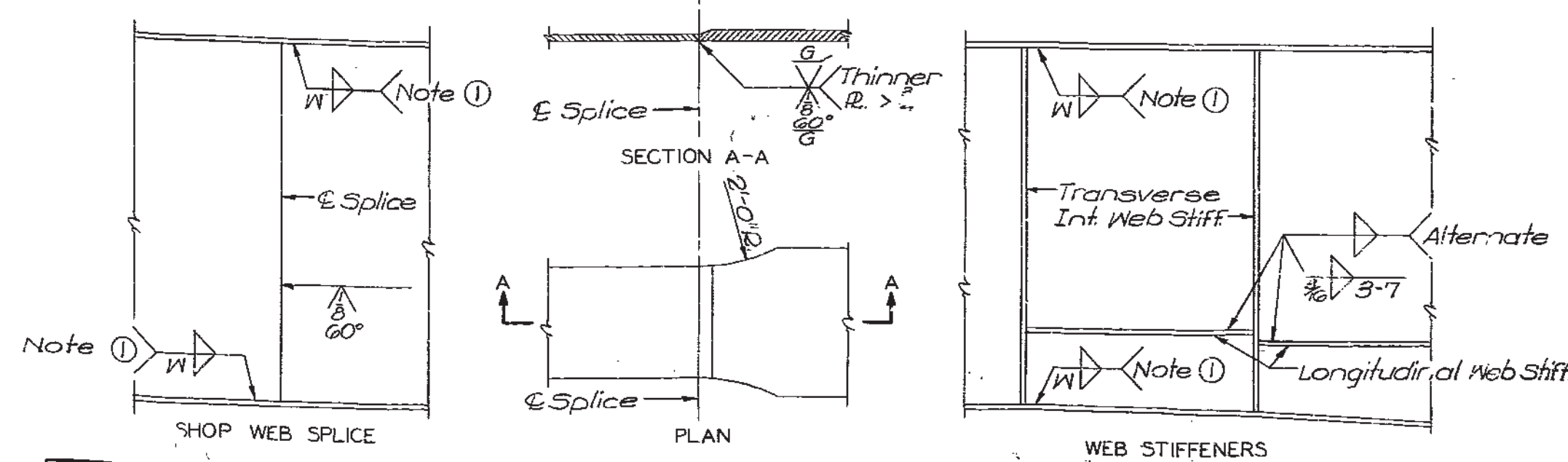
Note: Anchor bolts for Type "D" bearing may be set in wells as shown or in holes drilled into concrete substructure.
DETAIL OF ANCHOR BOLT WELLS



PART ANCHOR BOLT PLAN



DETAIL OF GIRDER HAUNCH AT PIER NO. 11



FLANGE THICKNESS	W
To 1/2" inclusive	3/16
Over 1/2" to 3/4" incl.	1/4
Over 3/4" to 1 1/2" incl.	3/8

Note 1: Fillet weld sizes greater than 3/8 may be reduced 1/8 if welding is done by submerged arc.

WELDING DETAILS

BRIDGE OVER THOMPSON RIVER
STATE ROAD FROM CHILLICOTHE NORTHWEST
ABO 1 4.5 MILES N.W. OF CHILLICOTHE
PROJECT NO. S-537(7) SA(70) STA. 834+83.0
LIVINGSTON COUNTY

DETAILED JAN. 1964 BY WEAVER
CHECKED MAY 1964 BY ENDICOTT

Note: This drawing is not to scale. Follow dimensions.

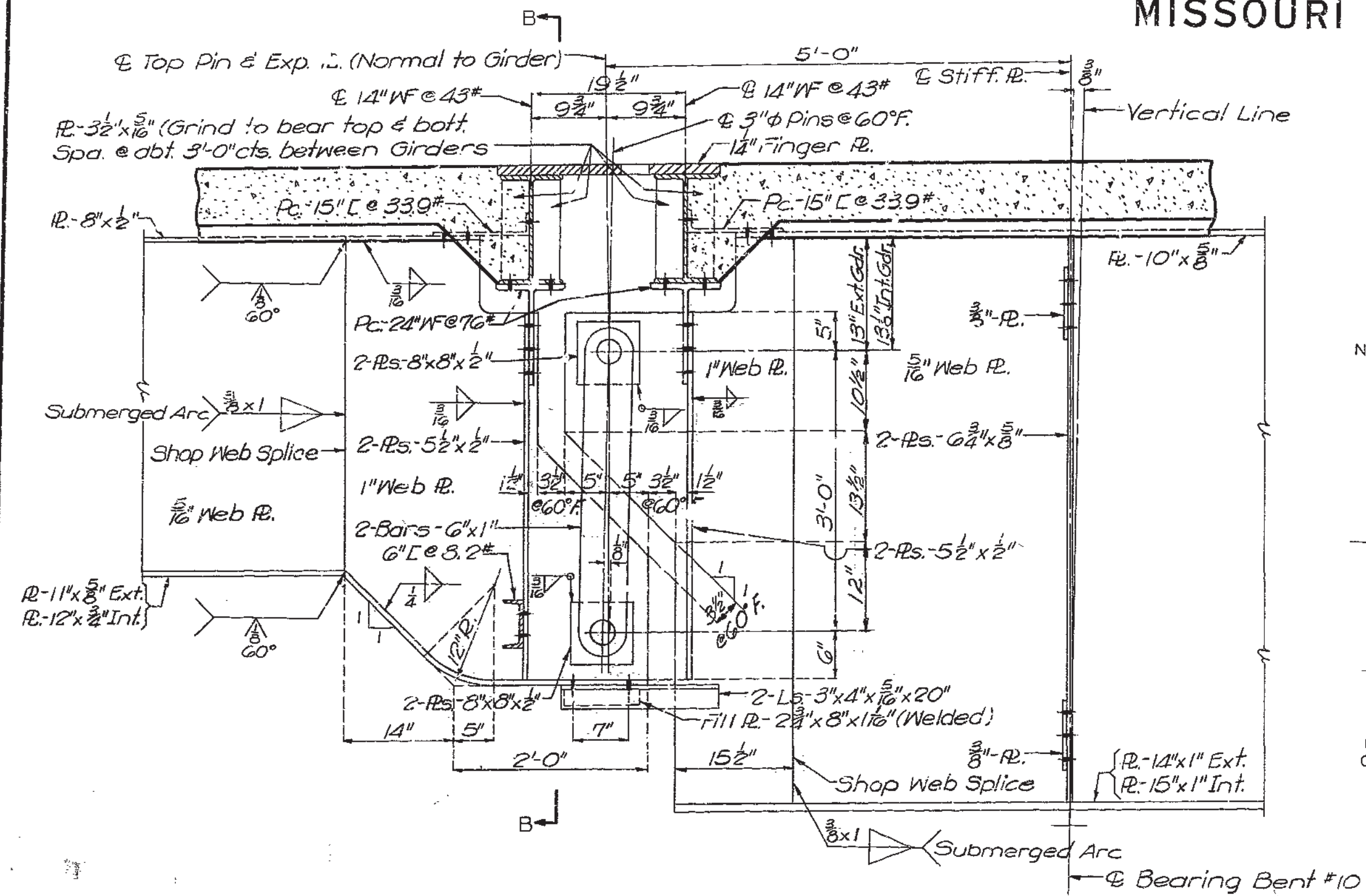
Sheet No. 12 of 20.

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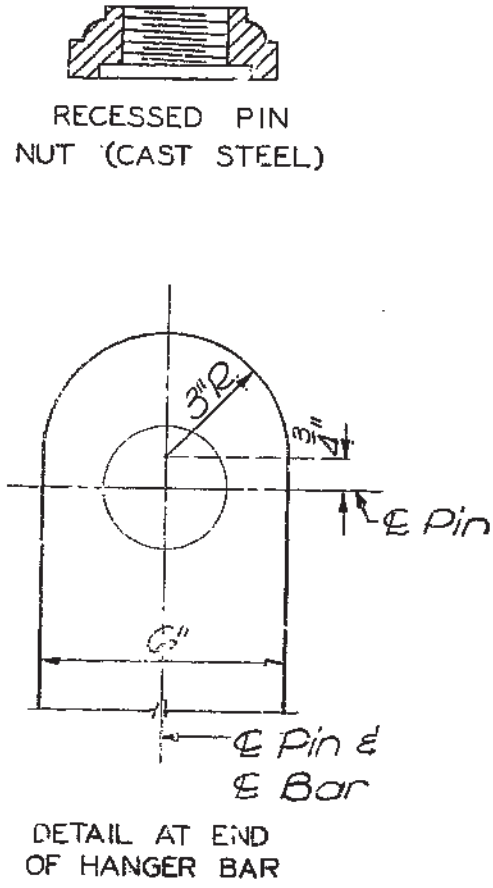
148

MISSOURI STATE HIGHWAY DEPARTMENT

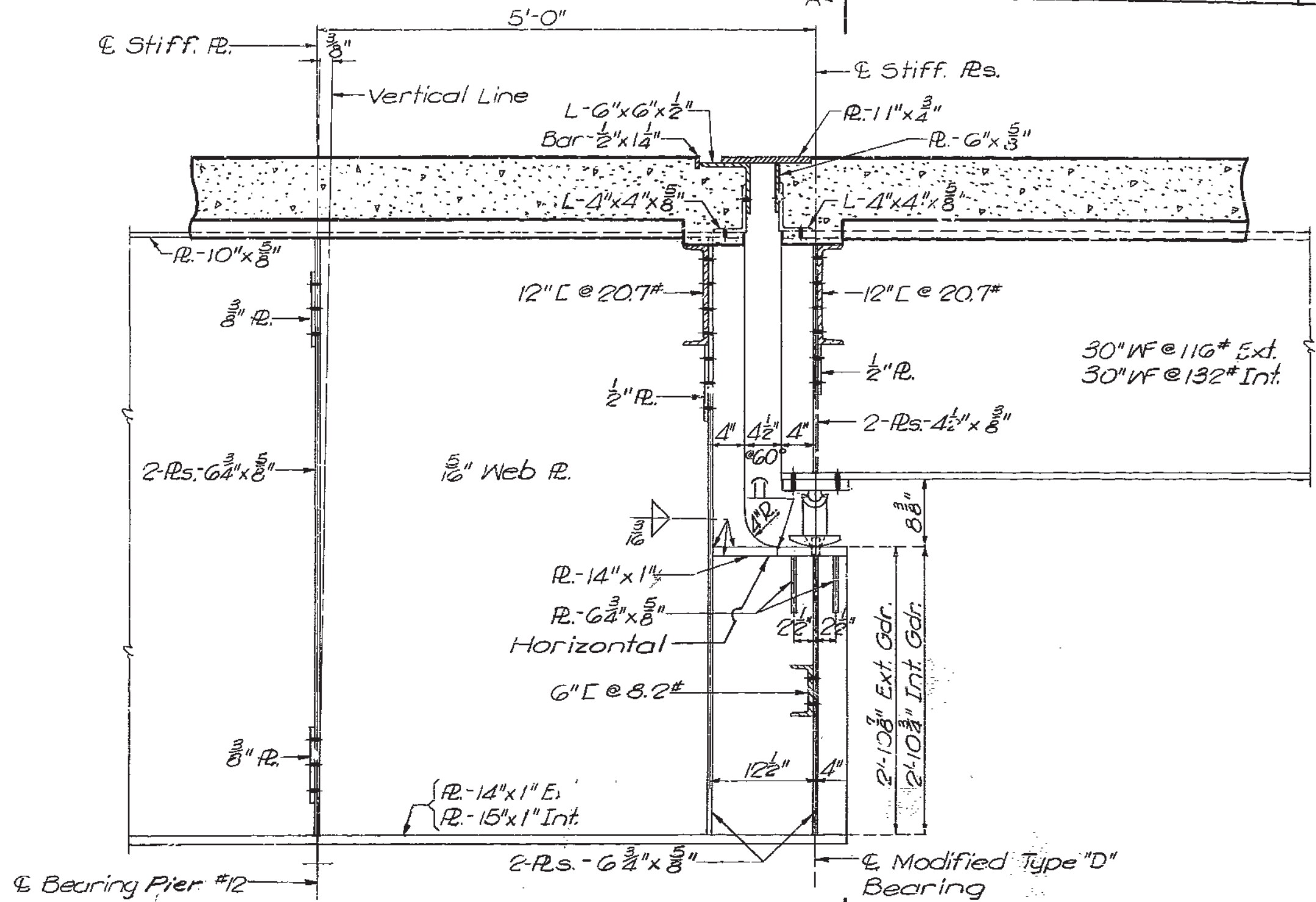
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	30	



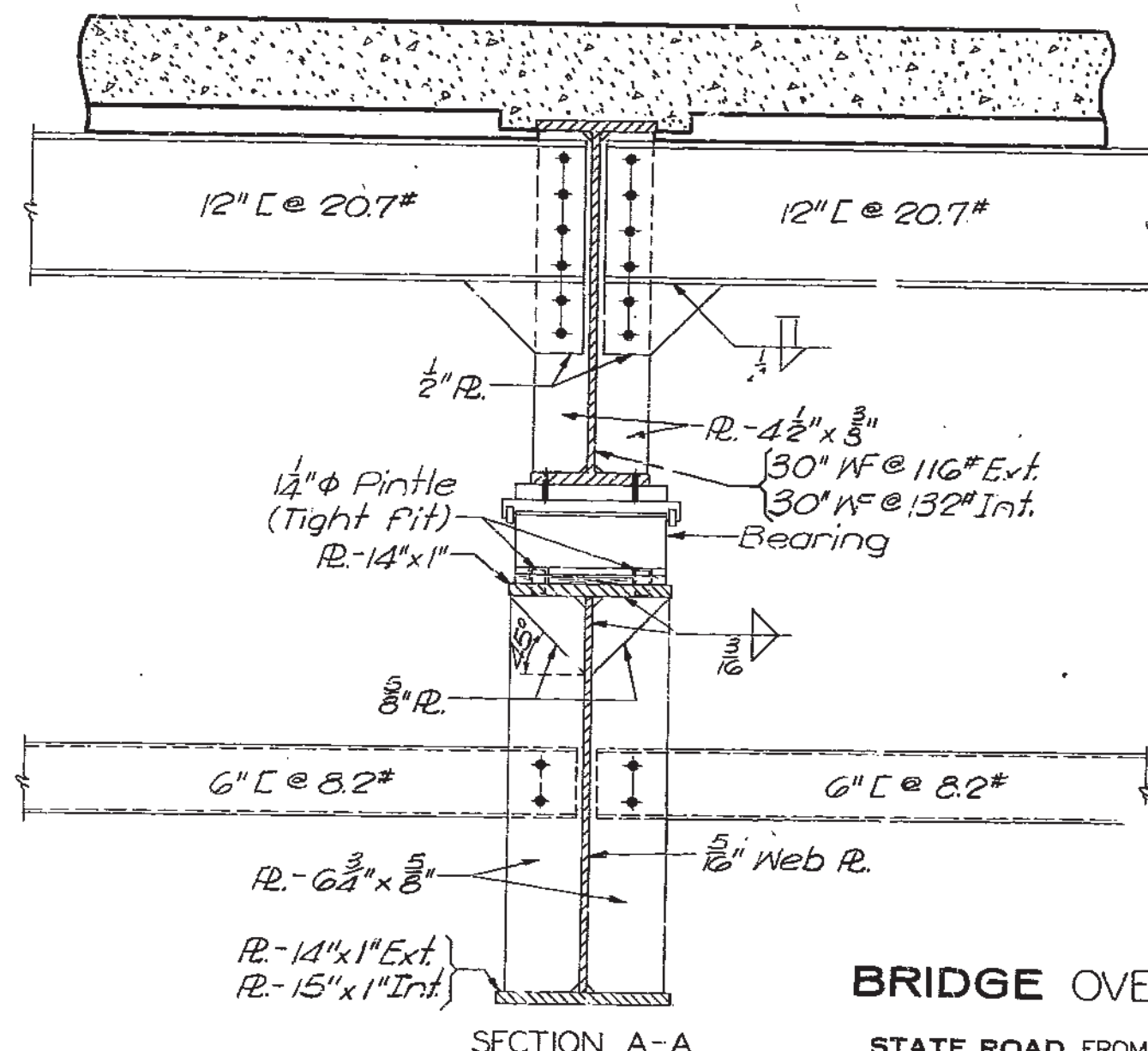
SECTION SHOWING HANGER BEAM CONNECTION



DETAIL AT END OF HANGER BAR



SECTION SHOWING HINGED BEAM CONNECTION



SECTION A-A

BRIDGE OVER THOMPSON RIVER
 STATE ROAD FROM CHILLICOTHE NORTHWEST
 ABOUT 4.5 MILES N.W. OF CHILLICOTHE
 PROJECT NO. S-537(7) SA(17) A. 834+83.0
 LIVINGSTON COUNTY

149

DETAILED FEB. 1964 BY WEAVER
 CHECKED May 1964 BY Endicott

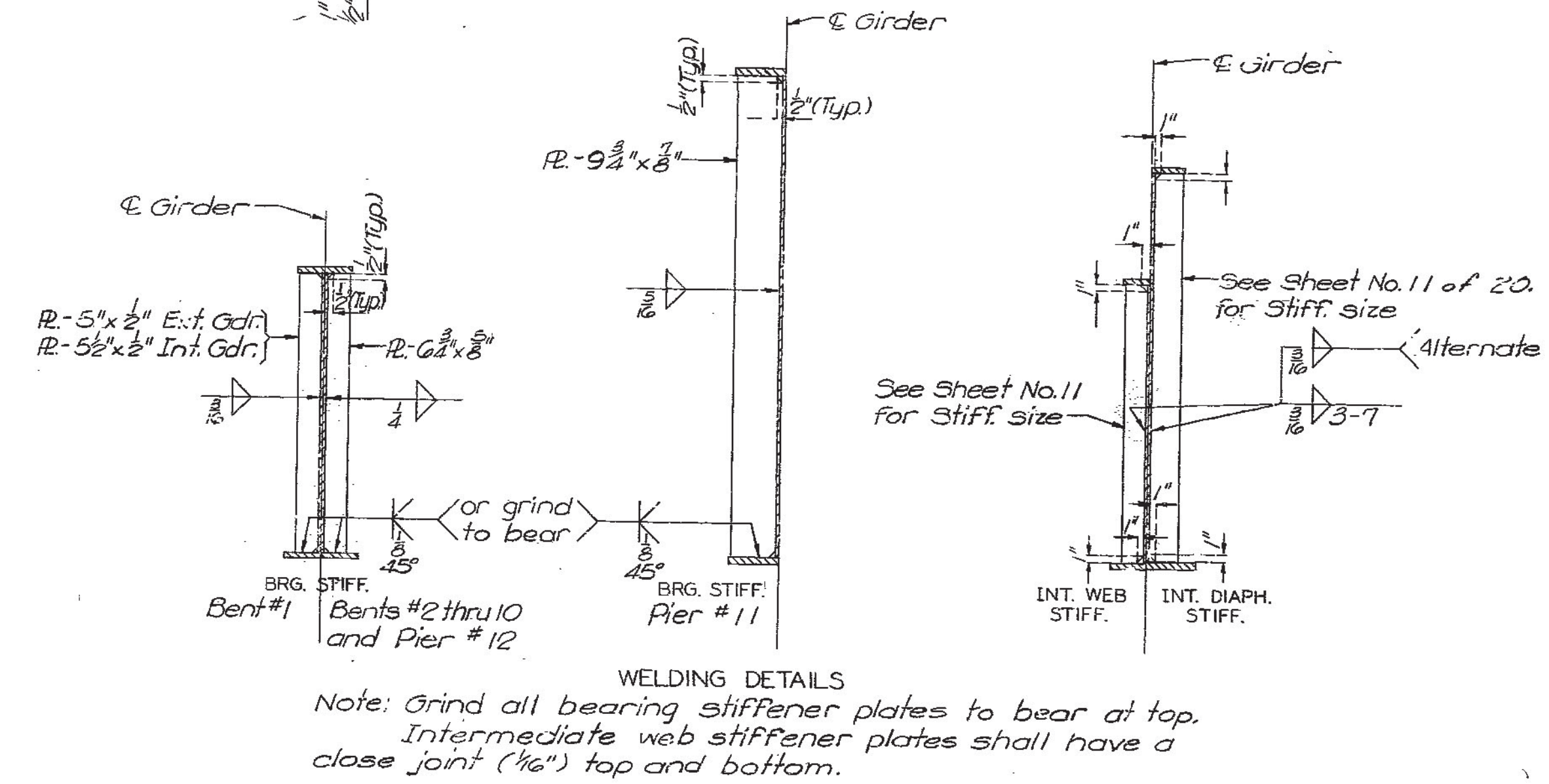
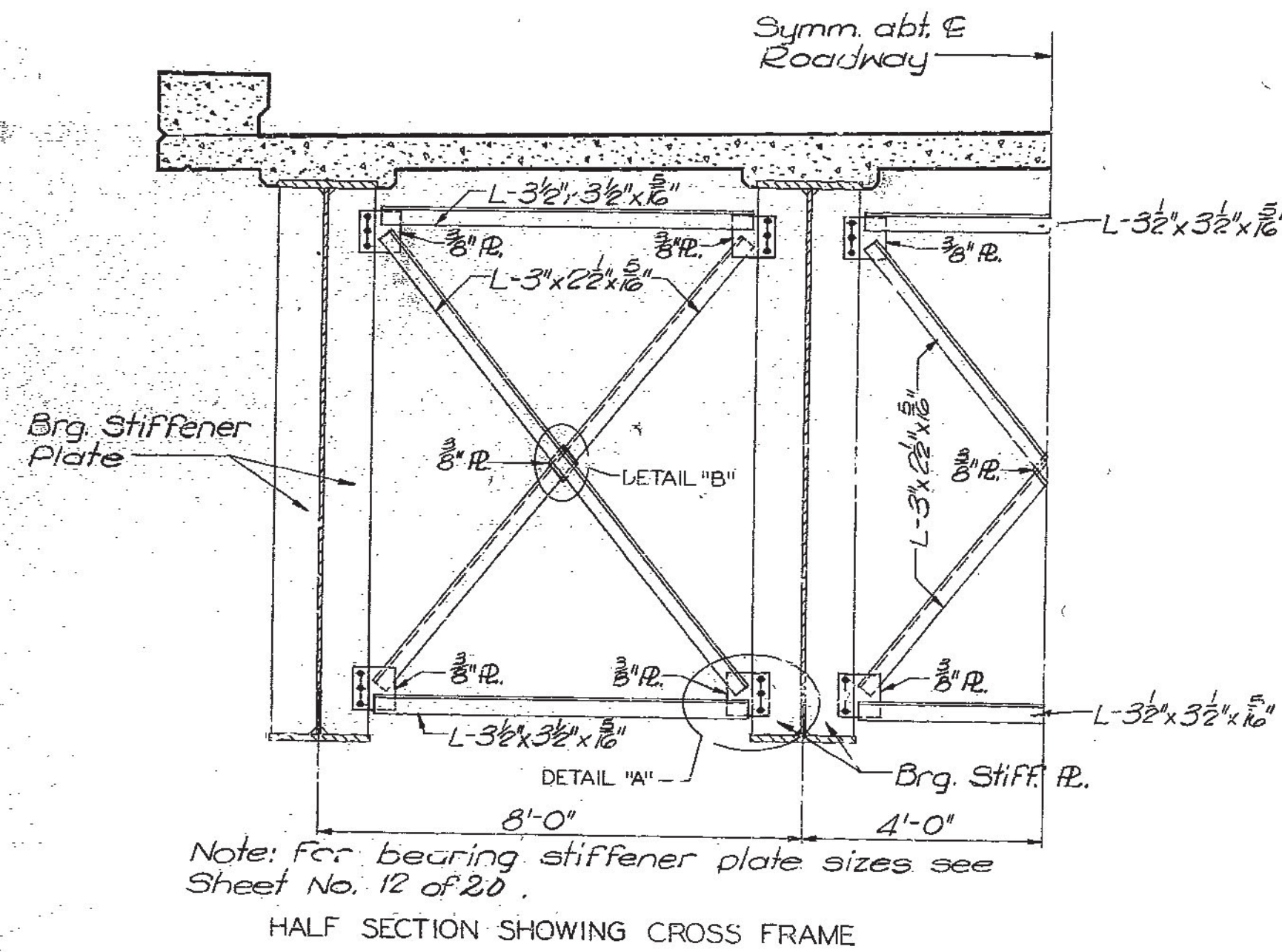
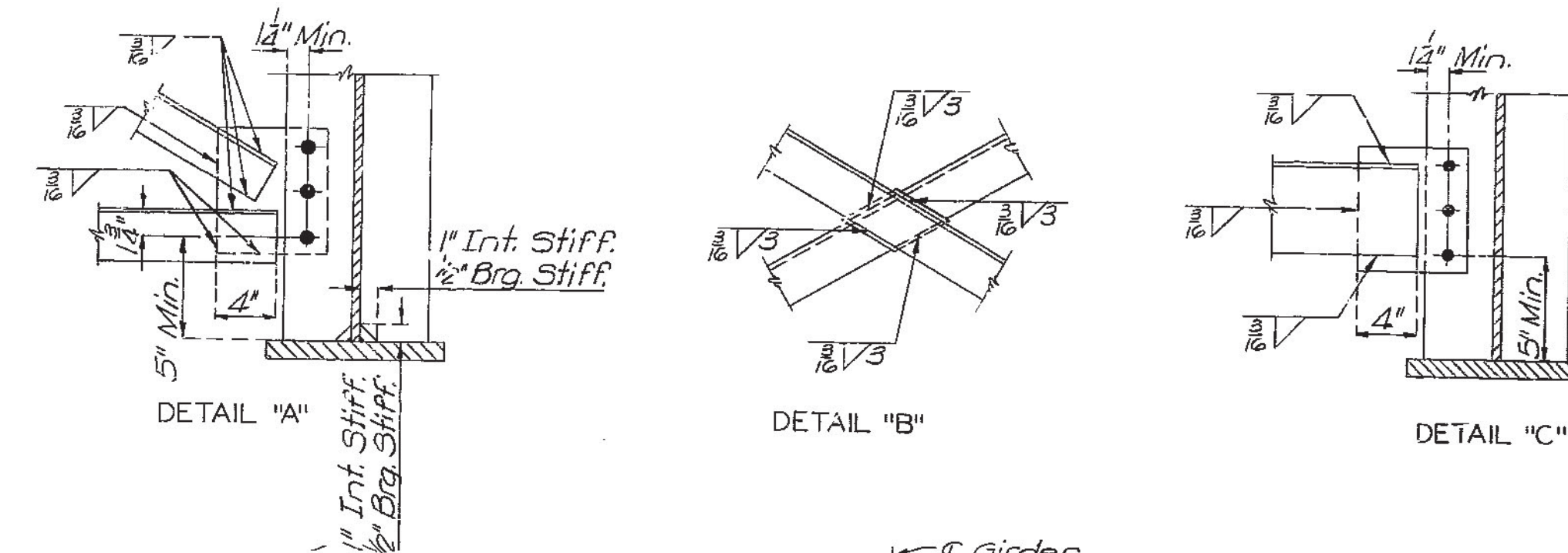
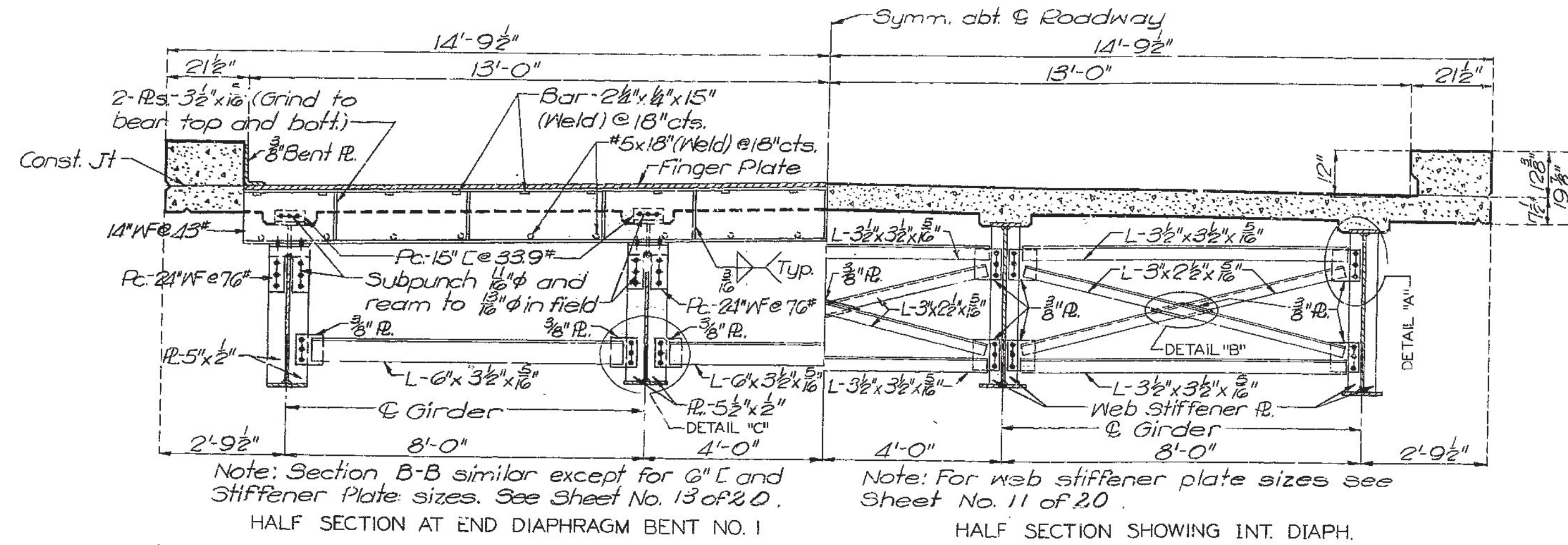
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 13 of 20.

A-1376

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	31	



150

DETAILED MAR 1964 BY WEAVER
CHECKED May 1964 BY ENDICOTT

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 14 of 20.

BRIDGE OVER THOMPSON RIVER

STATE ROAD FROM CHILLICOTHE NORTHWEST

ABOUT 4.5 MILES N.W. OF CHILLICOTHE

PROJECT NO. S-537(7) SA(170) STA. 834+83.0

LIVINGSTON

COUNTY

A-1376

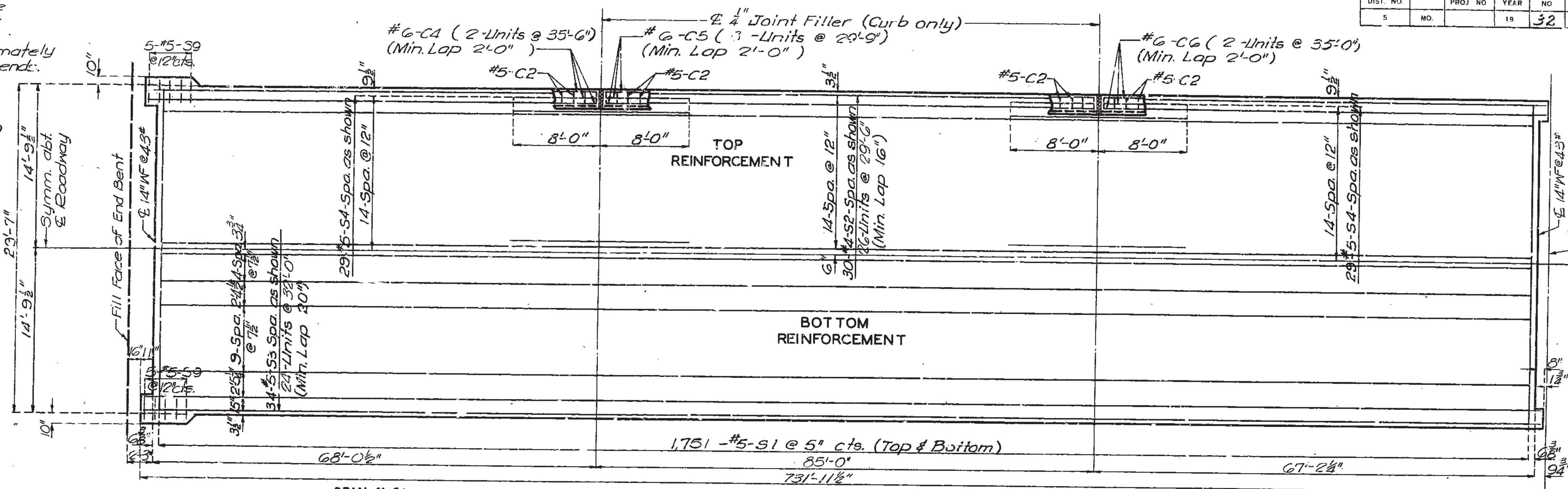
Note: Longitudinal reinforcing steel shall be placed so that ends shall not be more than 1"± from west of 14"± at finger expansion devices.

Space Jowel bars C2 approximately 10" centers between outlets and 12" at ends.

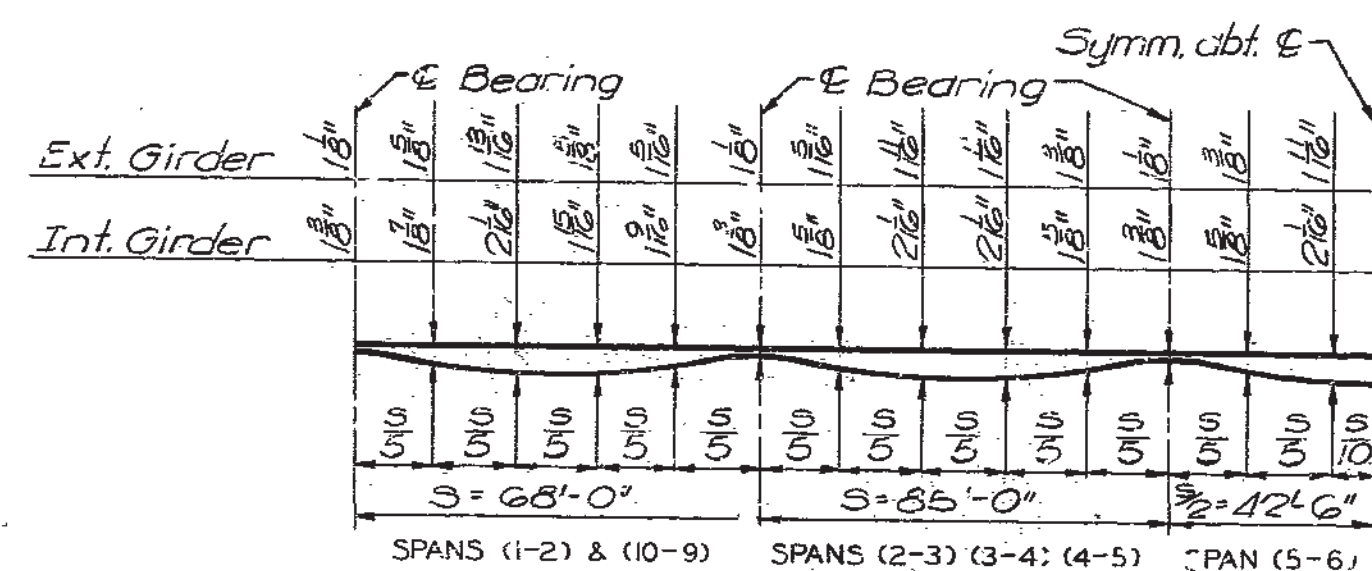
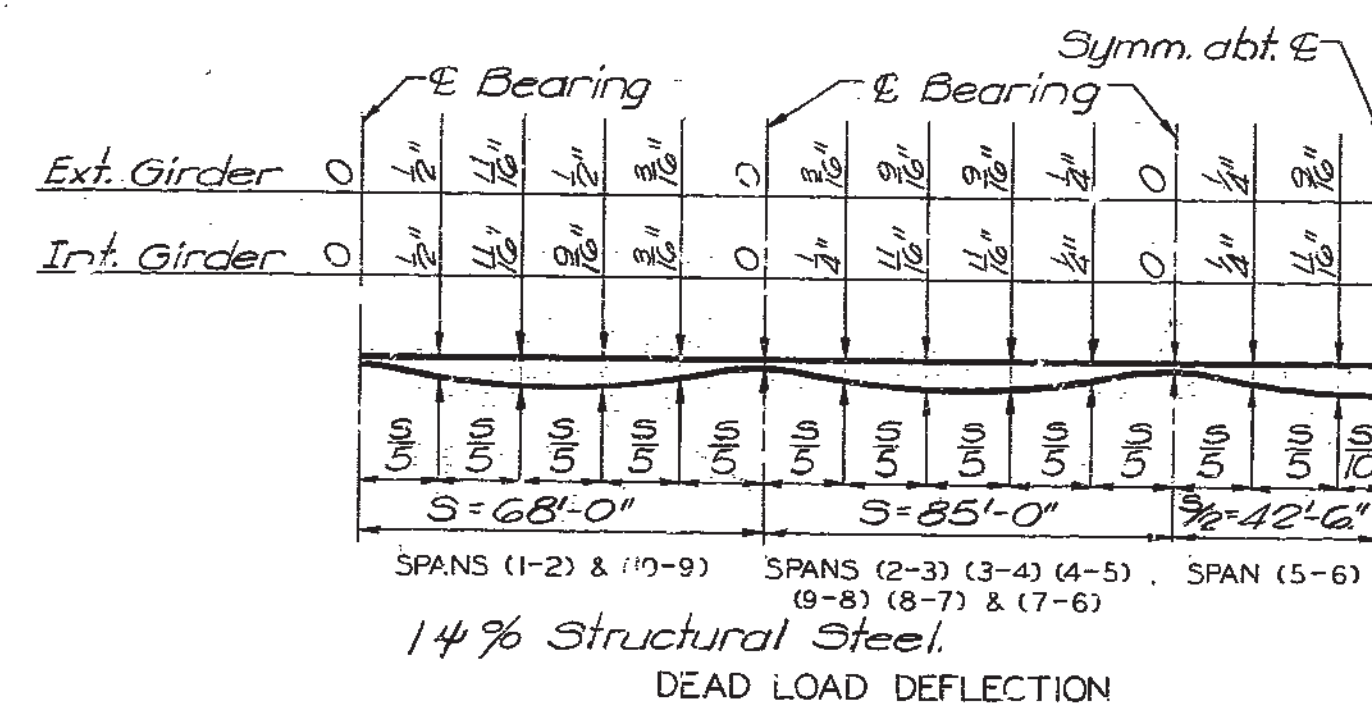
Note: Longitudinal dimensions shown are taken parallel to grade at crown of roadway.

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	32	

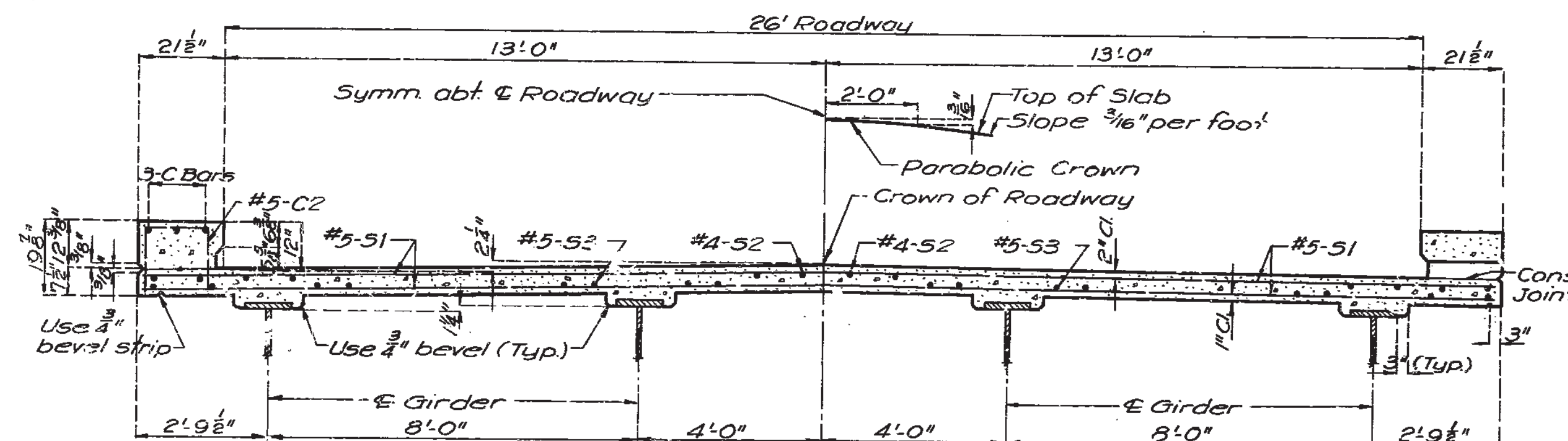


PLAN OF SLAB SHOWING REINFORCEMENT

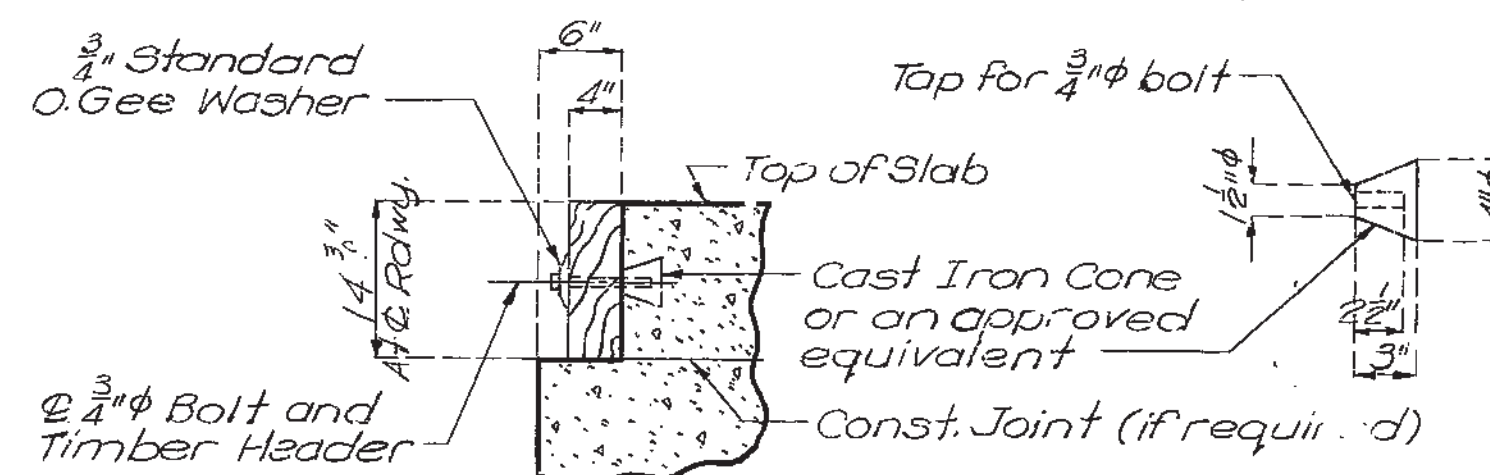


Note: Haunch slab to the bottom of top flange of girder by the dimensions shown. Dead load deflection is included in the haunches. The additional concrete (flange, flange plates, splice plates, etc. excluded) is included in Estimated Quantities.

SLAB HAUNCHING DIAGRAM



HALF SECTION THRU SLAB



Note: 3/4" φ bolt shall be 6"± long with hex. or square head, threaded 3" long and placed at about 3'-0"±.

Cost of timber headers complete in place to be included in price bid for concrete.

DETAIL OF TIMBER HEADER

Note: Curb to be cast independently of slab. For details of curb and handrail not shown see sheet No. 20 of 20. Slab to be constructed parallel to grade, and to a minimum thickness of 12" or, if desired, the bottom of the slab may be built on chords between tops of haunches at girders.

BRIDGE OVER THOMPSON RIVER

STATE ROAD FROM CHILLICOTHE NORTHWEST ABOUT 4.5 MILES N.W. OF CHILLICOTHE PROJECT NO. S-537(7) SA(170) STA. 834+83.0 LIVINGSTON COUNTY

DETAILED FEB. 1964 BY WEAVER CHECKED May 1964 BY Endicott

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 15 of 20.

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NO CONSTRUCTION CHANGES

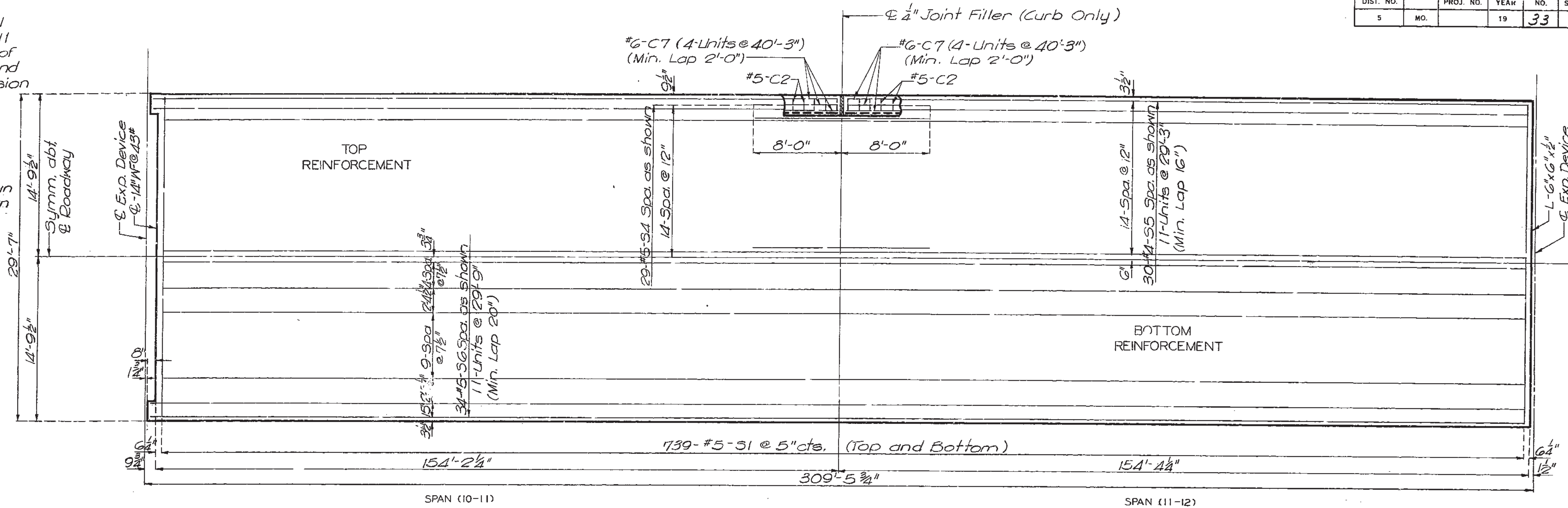
MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	33	

Note: Longitudinal reinforcing steel shall be placed so that ends shall not be more than 1"± from web of 14" WF at finger expansion device and vertical leg of angle at plate expansion device.

Space dowel bars C2 at approximately 10" centers between outlets.

Note: Longitudinal dimensions shown are taken parallel to grade at crown of roadway.



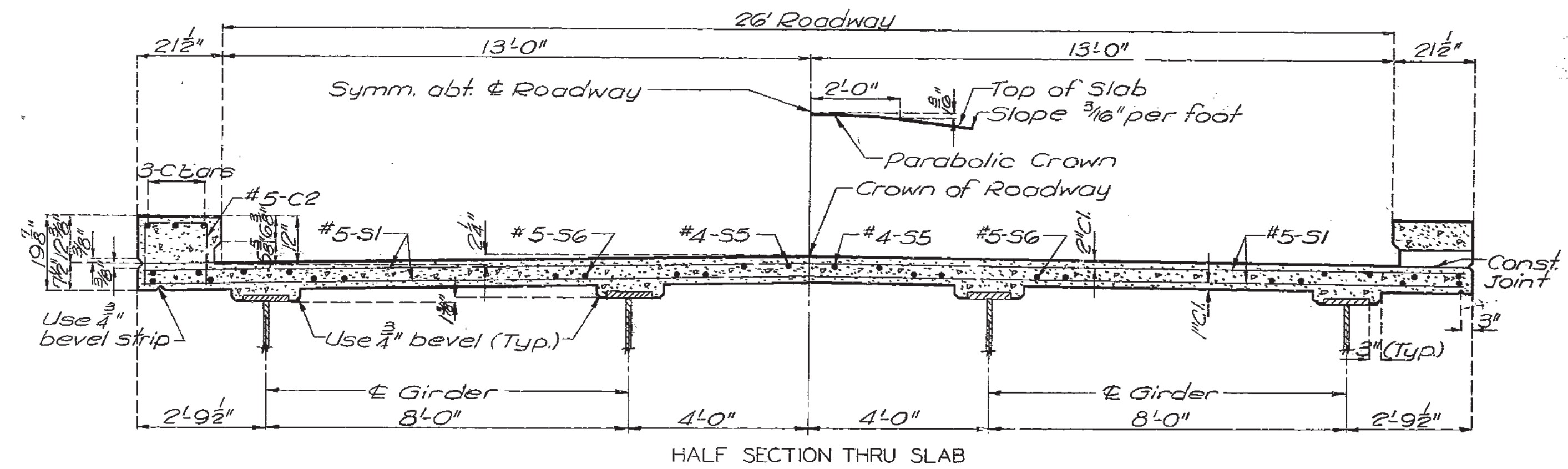
	E Bearing		Symm. abt. & Brg.																	
Ext. Girder	0	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	0
Int. Girder	0	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	0

S=150'-0"
SPANS (10-11) & (12-11)
1.8% Structural Steel
DEAD LOAD DEFLECTION

	E Bearing		Symm. abt. & Brg.																	
Ext. Girder	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Int. Girder	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2

S=150'-0"
SPANS (10-11) & (12-11)
Note: Haunch slab to the bottom of top flange of girder by the dimensions shown. Dead load deflection is included in the haunches. The additional concrete (flange, flange plates, splice plates, etc. excluded) is included in estimated quantities.

SLAB HAUNCHING DIAGRAM



Note: Curb to be cast independently of slab.
For details of curb and handrail not shown see sheet No. 20 of 20.
Slab to be constructed parallel to grade and to a minimum thickness of 7 1/2" or, if desired, the bottom of the slab may be built on chords between tops of haunches at girders.

BRIDGE OVER THOMPSON RIVER

STATE ROAD FROM CHILLICOTHE NORTHWEST
ABOUT 4.5 MILES N.W. OF CHILLICOTHE
PROJECT NO. S-537(7) SA(170) STA. 834+83.0

LIVINGSTON COUNTY

DETAILED FEB. 1964 BY WEAVER
CHECKED MAY 1964 BY ENDICOTT

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 16 of 20.

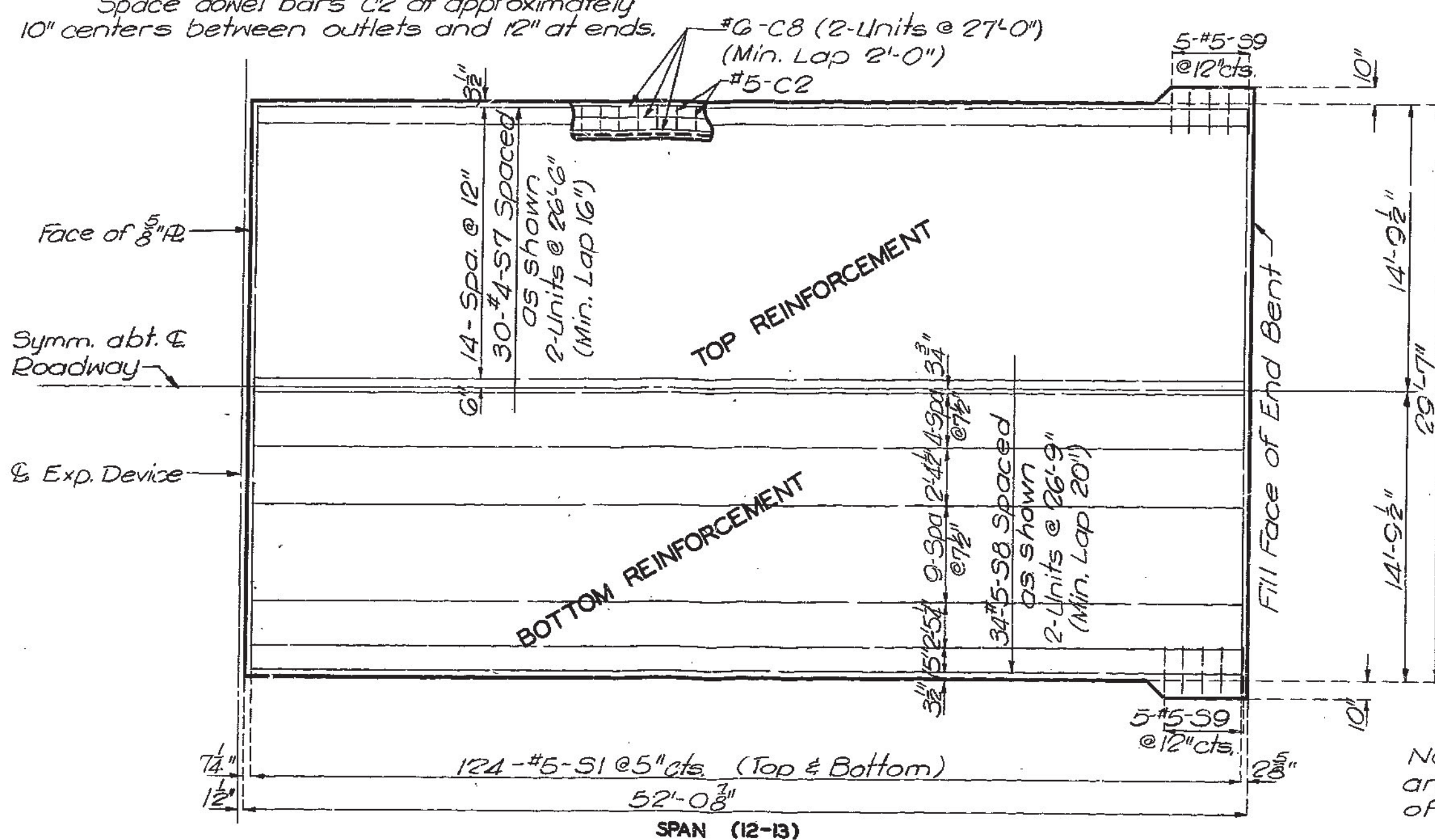
A-1376

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MISSOURI STATE HIGHWAY DEPARTMENT

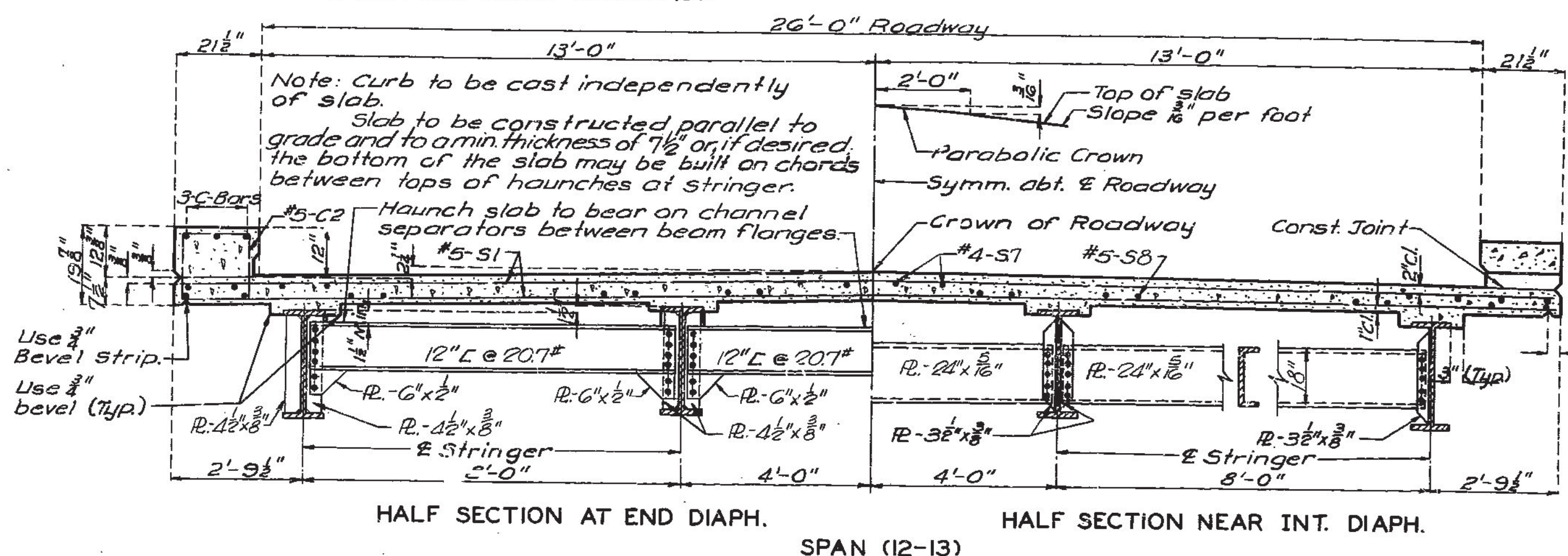
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		19	34	

Note: Longitudinal reinforcing steel shall be placed so that ends shall not be more than 1" ± from 3/8" R. at expansion device.
Space dowel bars C2 at approximately 10" centers between outlets and 12" at ends.



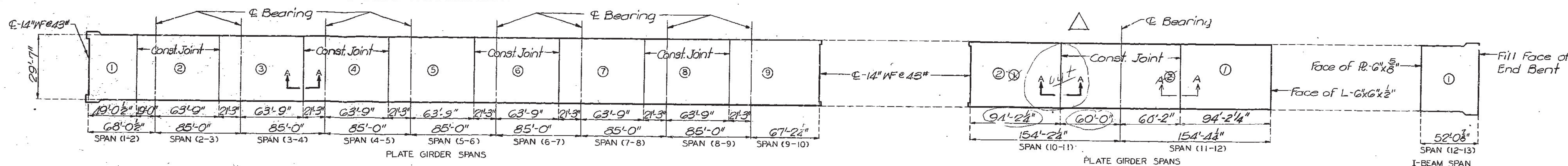
Note: Longitudinal dimensions shown are taken parallel to grade at crown of roadway.

Note: For details of curb and handrail not shown see sheet No. 20 of 20.



HALF SECTION AT END DIAPH. SPAN (12-13) HALF SECTION NEAR INT. DIAPH.

PLAN OF SLAB SHOWING REINFORCEMENT



Basic Sequence	Sequence of Pours								
	Direction								
Alternate "A" Pours	1+2	3+4	5	6+7	8+9				
Alternate "B" Pours	End to 3		2 to 5	4 to 6	5 to 8	7 to End			
Alternate "C" Pours	1+2+3			4+5+6			7+8+9		
Alternate "D" Pours	End to 4				3 to 7		6 to End		
	1+2+3+4+5					7+8+9			
	End to 6						6 to End		
	1+2+3+4+5+6+7+8+9								
	End to End								

Basic Sequence	Sequence of Pours	
	Direction	
Alternate "A" Pours	End to 2	1 to End
	1+2	
	End to End	

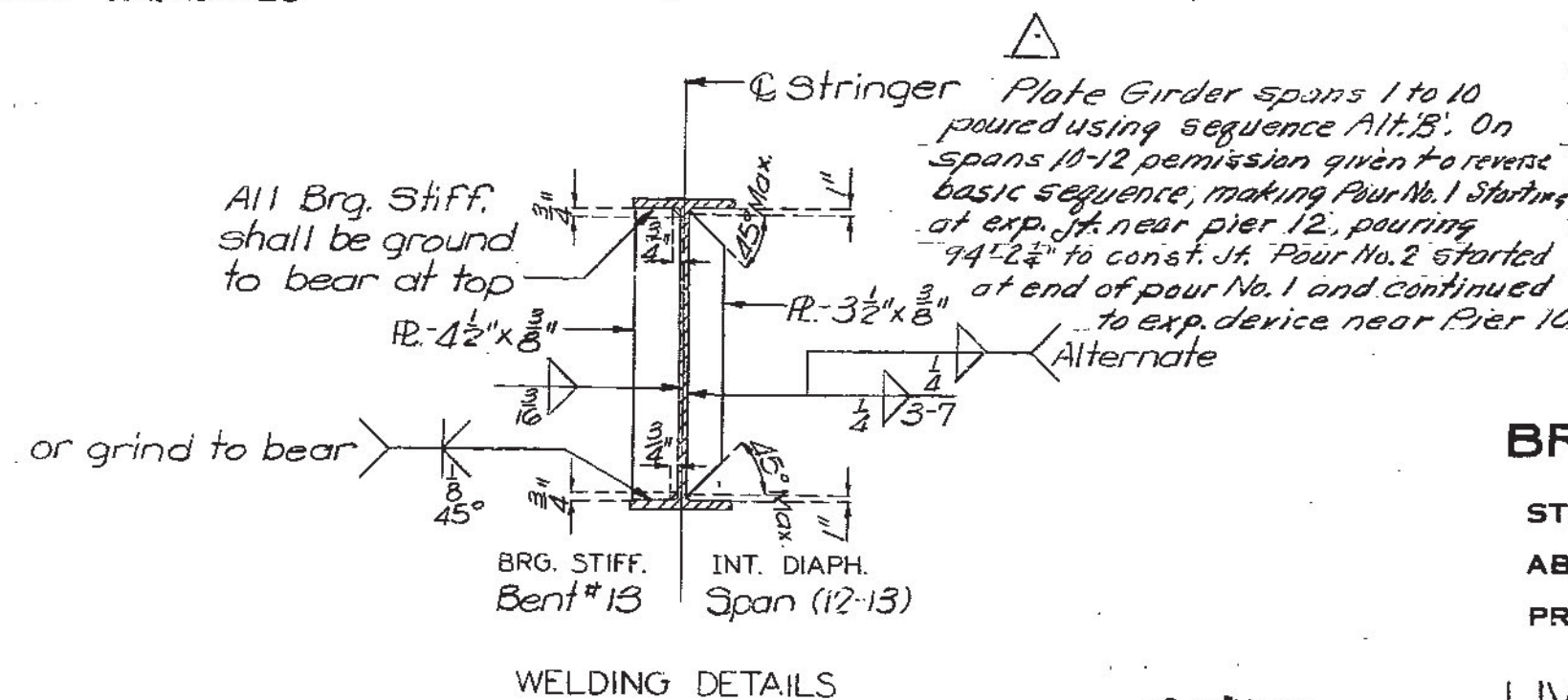
Note: The contractor shall use an approved oscillating screed type, self-propelled mechanical finishing machine. He shall pour and satisfactorily finish the 9-Span and Simple-Span slab pours at a rate of not less than 31 cubic yards per hour. For the 2-Span slab, he shall furnish an approved retarder to retard the set of the concrete to 2.5 hours and shall pour and satisfactorily finish the slab pours at a rate of not less than 44 cubic yards per hour. (See Standard Specification 47.8.1 for payment of retarder). He shall observe the basic pouring sequences unless he can demonstrate to the engineer that he can pour and satisfactorily finish one of the longer alternate pours. Finishing machine loads will not be permitted on concrete less than 48 hours old.

SLAB POURING SEQUENCES

Note: Haunch slab to the top of stringers by the dimensions shown. Dead load deflection is included in the haunches. The additional concrete (Flange, Flange plates, splice plates, etc. excluded) is included in Estimated Quantities.

SLAB HAUNCHING DIAGRAM SPAN (12-13)

Note: This drawing is not to scale. Follow dimensions.



WELDING DETAILS

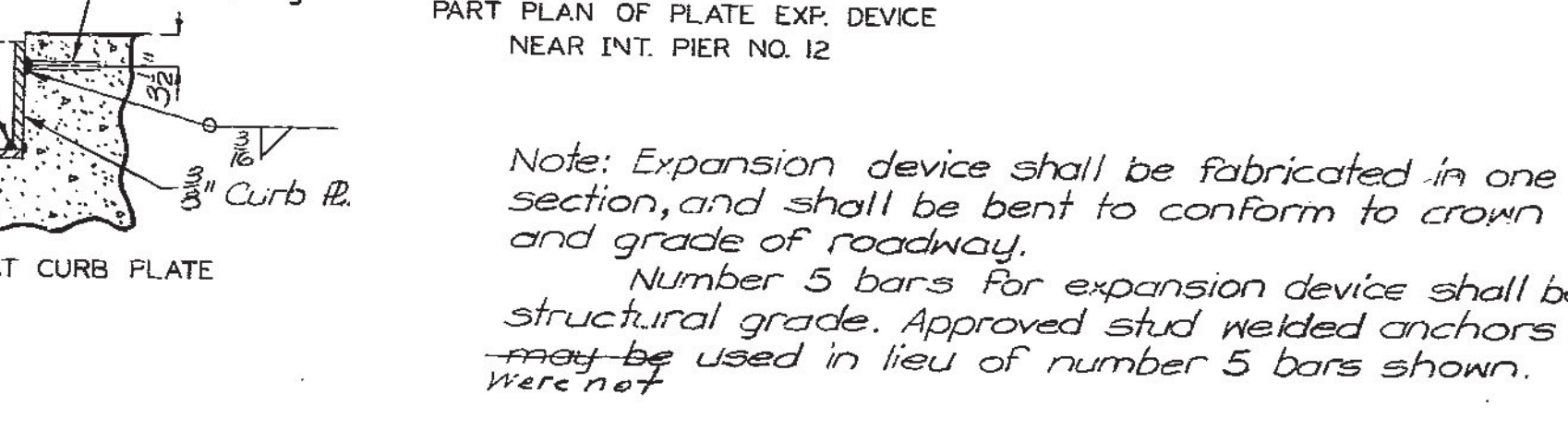
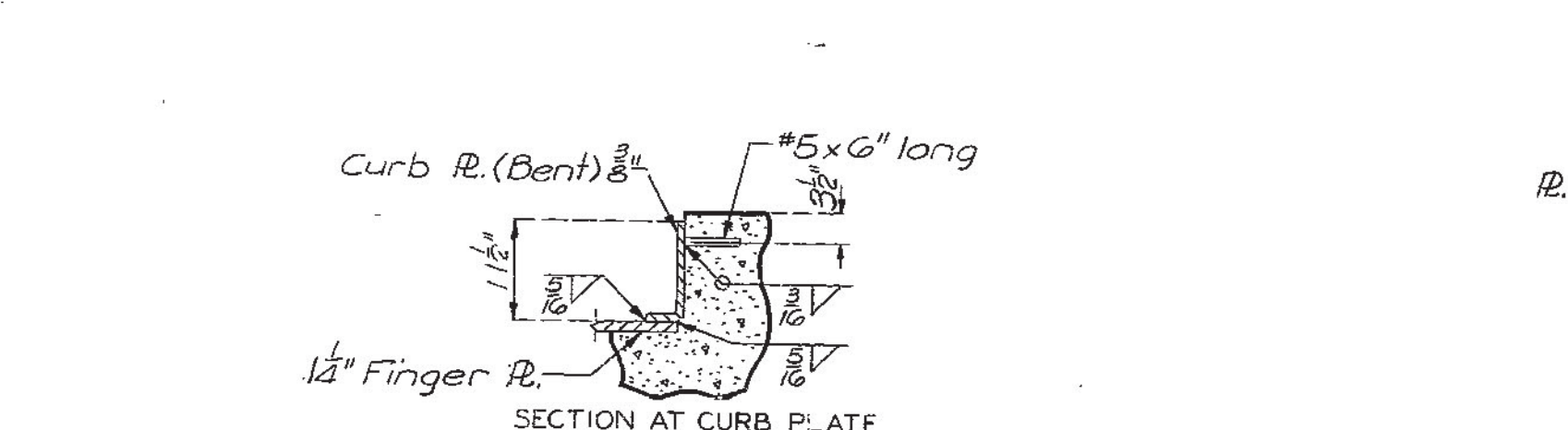
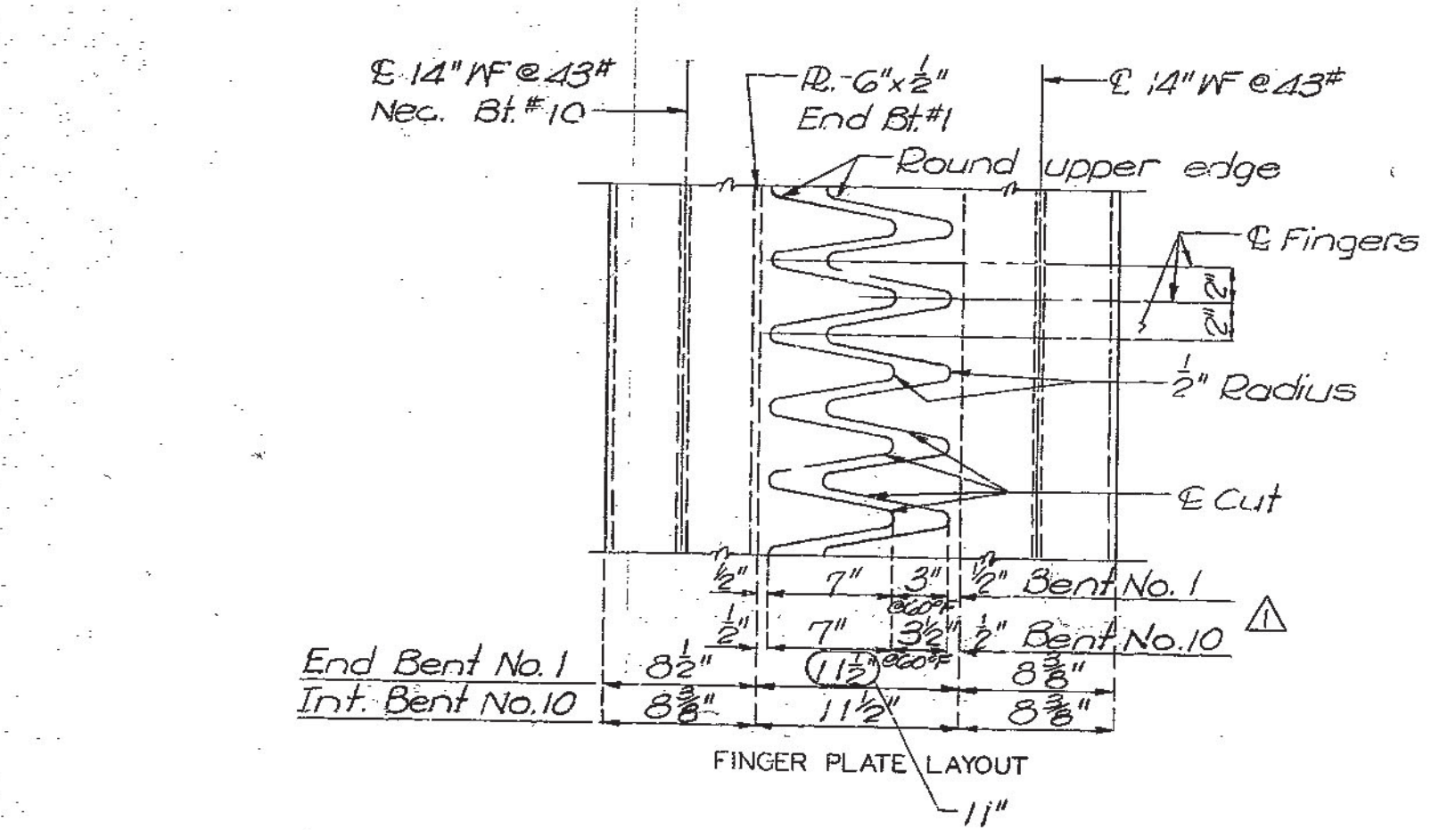
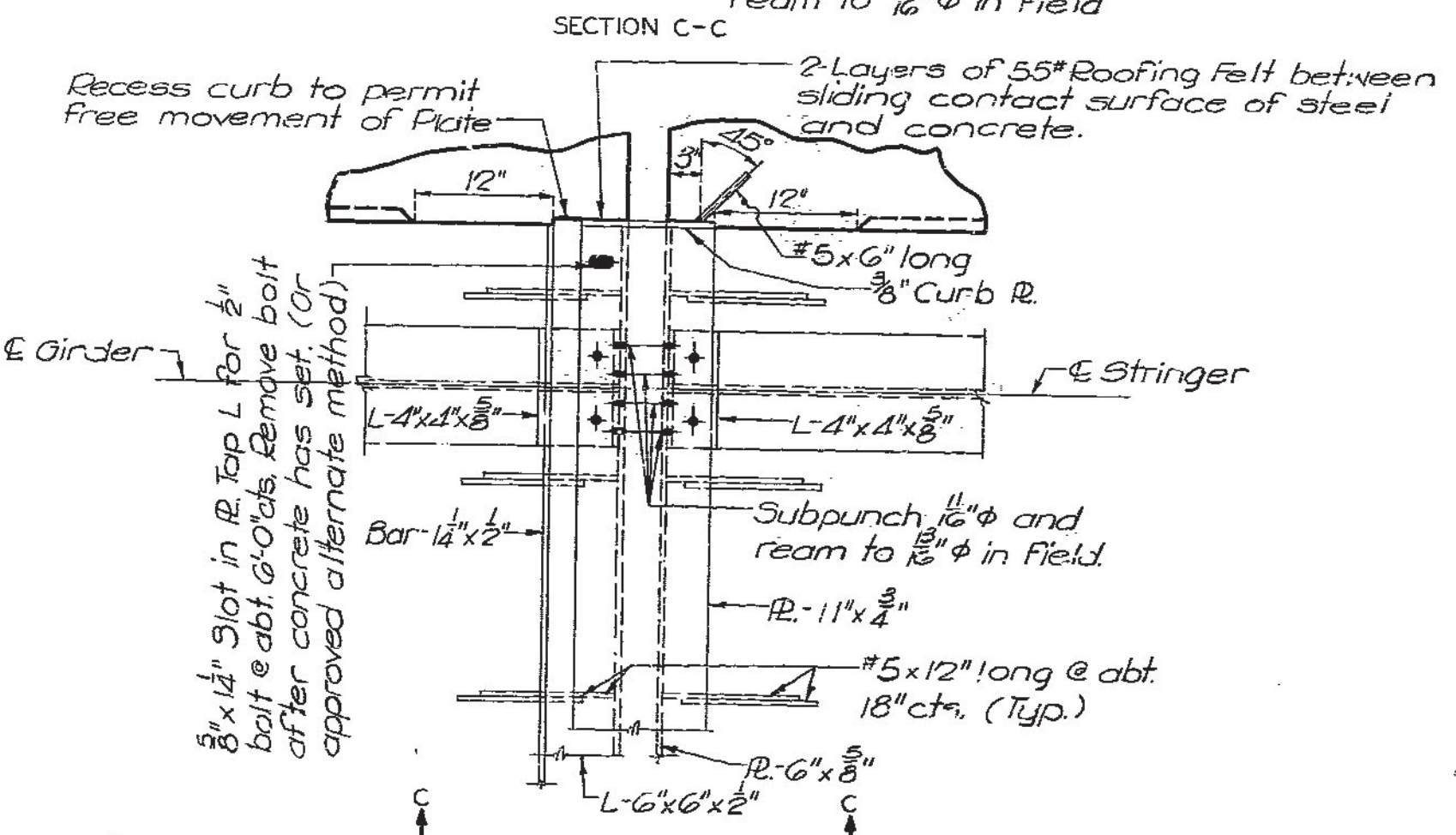
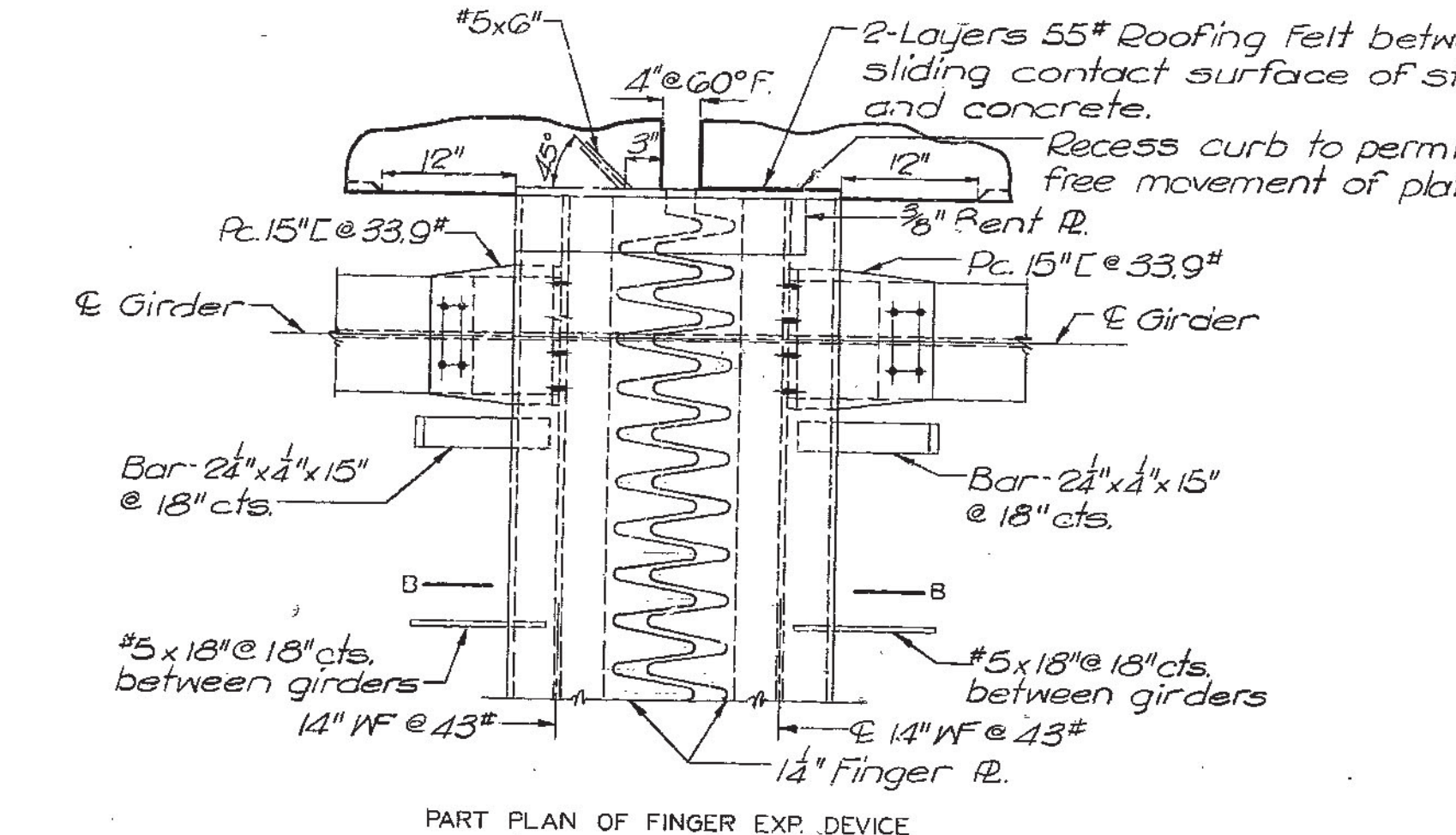
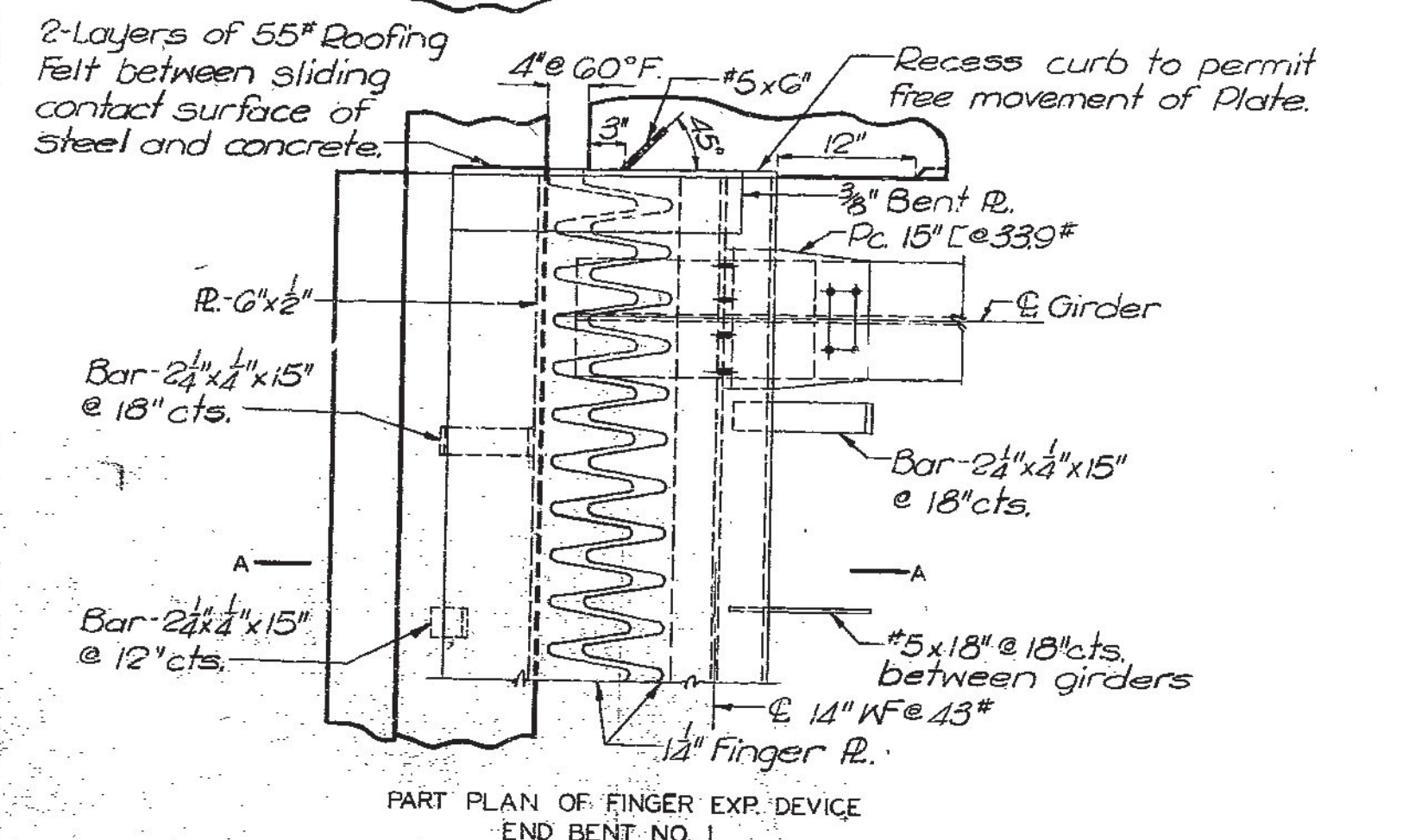
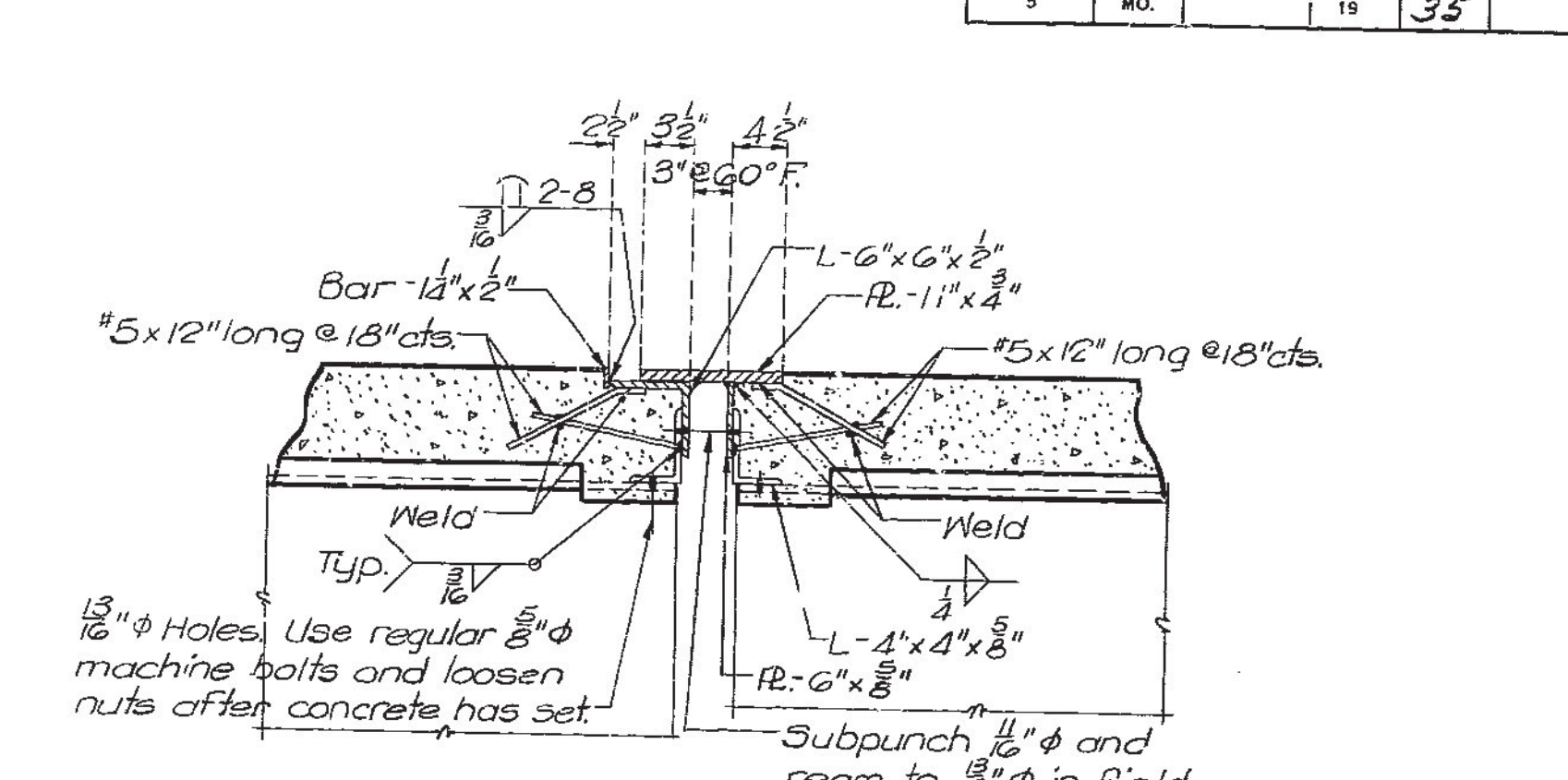
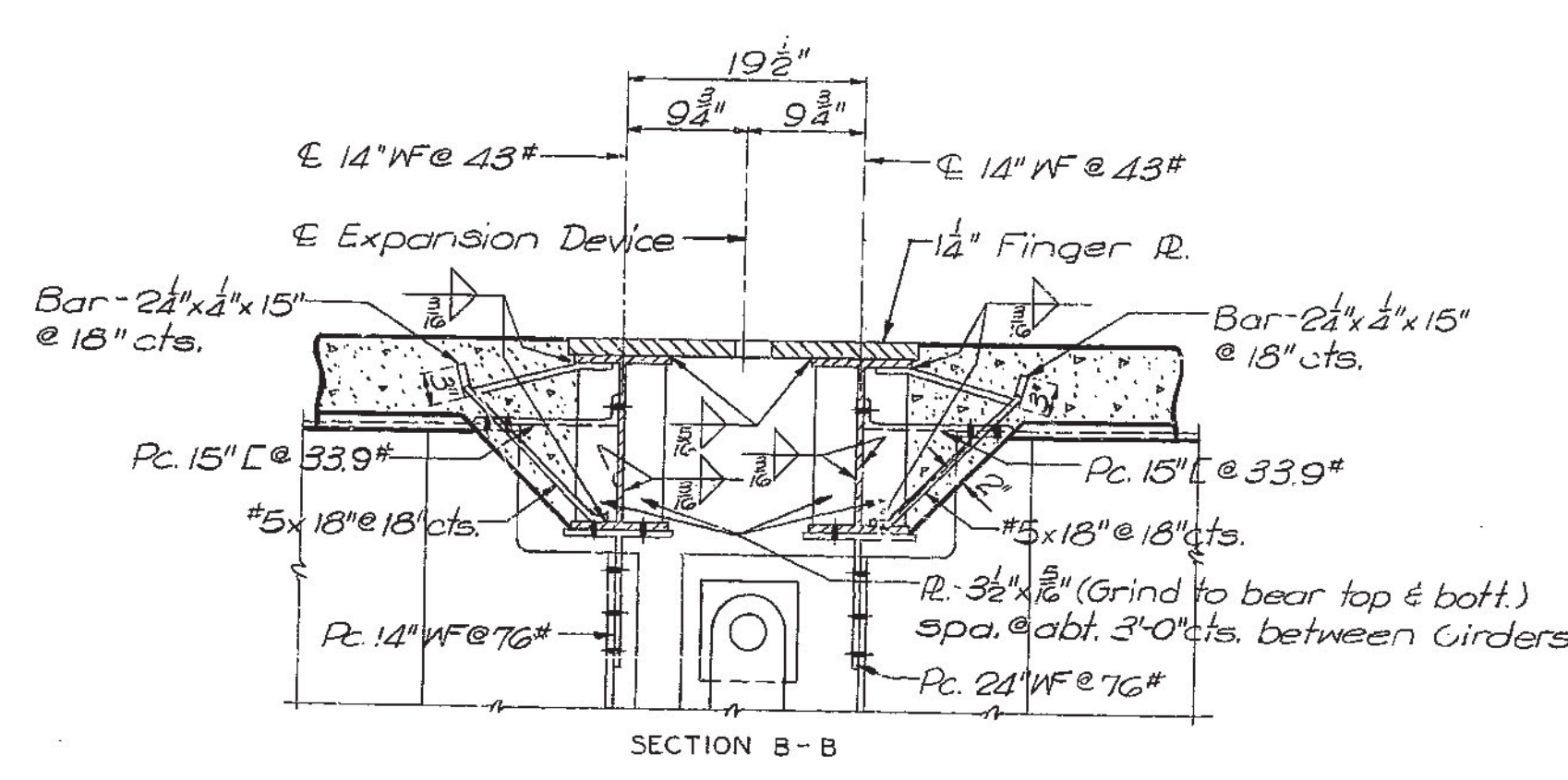
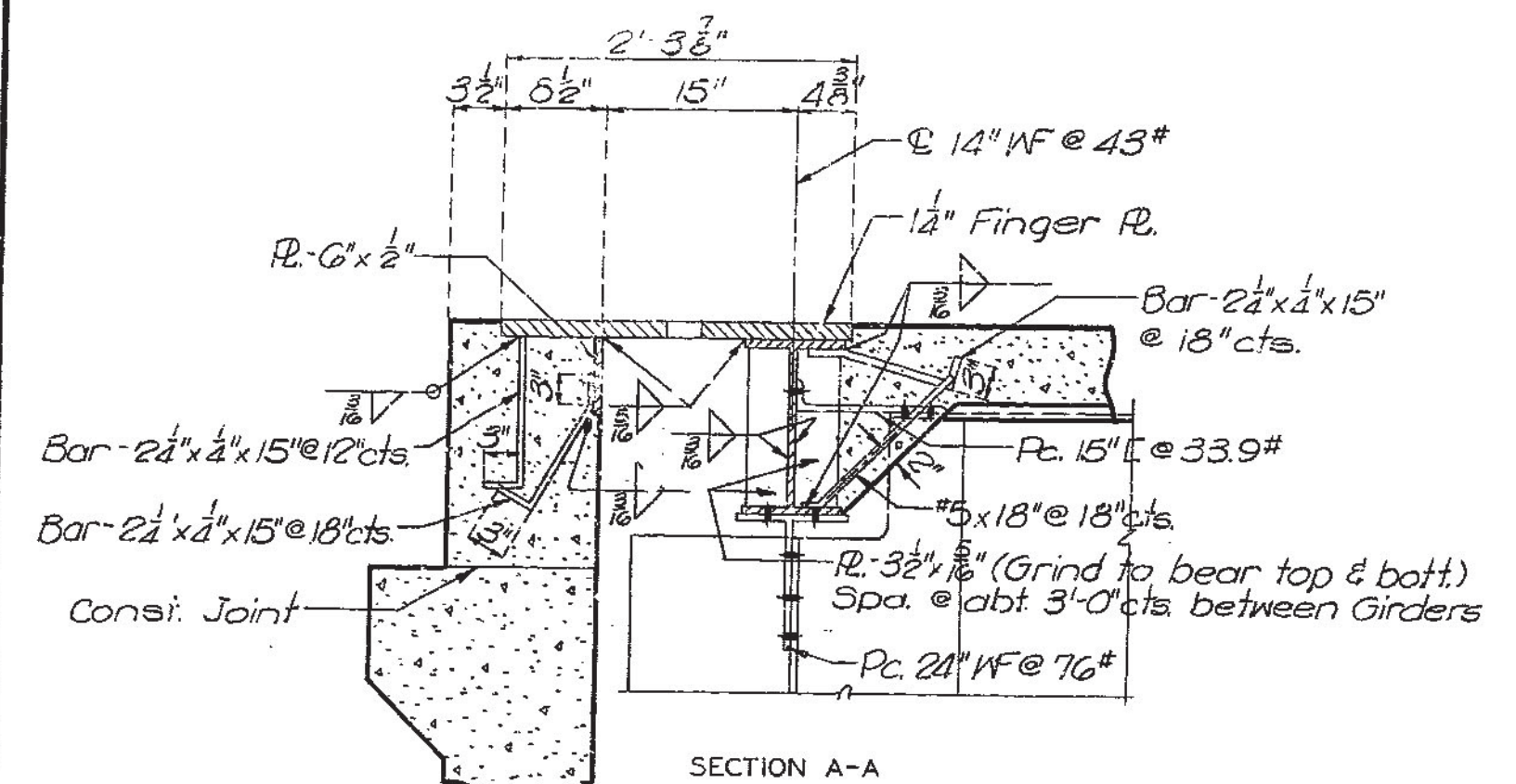
BRIDGE OVER THOMPSON RIVER

STATE ROAD FROM CHILLICOTHE NORTHWEST ABOUT 4.5 MILES N.W. OF CHILLICOTHE PROJECT NO. 5-537(7) SAI(70) STA. 834+83.0 LIVINGSTON COUNTY,

No. 4026 Revised Feb. 1963 Aug. 1963 CHECKED May 1964 BY Endicott

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	35	



Note: Finger plates shall be cut with a gas torch from one plate 2'-0 1/2" x 12" for end expansion device and one plate 2'-0 1/2" x 12" for intermediate expansion device. The surface of cut shall be perpendicular to the surface of plate. The cut shall not exceed 3/8" in width. The centerline of cut shall not deviate more than 1/16" from the position of centerline cut shown in Finger Plate Layout. No part of expansion device may be spliced.

1/2" finger plate and 14" WF @ 43# shall be bent to conform to crown of roadway.

All holes shown to be subpunched 1/16" φ and reamed to 13/16" φ in field.

Note: Expansion device shall be fabricated in one section, and shall be bent to conform to crown and grade of roadway.

Number 5 bars for expansion device shall be structural grade. Approved stud welded anchors may be used in lieu of number 5 bars shown, were not.

DETAILS OF FINGER PLATE EXPANSION DEVICES

DETAILS OF PLATE EXPANSION DEVICE

BRIDGE OVER THOMPSON RIVER
 STATE ROAD FROM CHILLICOTHE NORTHWEST
 ABOUT 4.5 MILE N.W. OF CHILLICOTHE
 PROJECT NO. 5-537(7) SA(170) STA. 834+83.0
 LIVINGSTON COUNTY

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DETAILED MAR. 1964 BY WEAVER
 CHECKED May 1964 BY Endicott

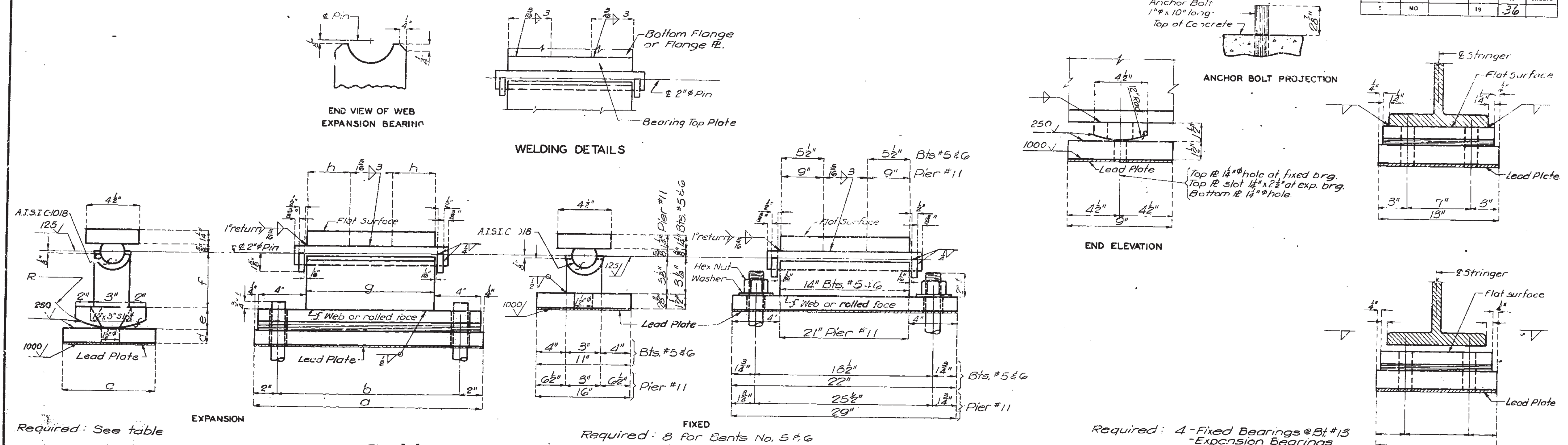
Note: This drawing is not to scale. Follow dimensions.

Revised Jan. 7, 1965 Sheet No. 18 of 20.

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MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		19	36	



TYPE "D" BEARINGS
(Estimated Weight 17,635#)

TYPE "C" BEARINGS
(Estimated Weight 273#)

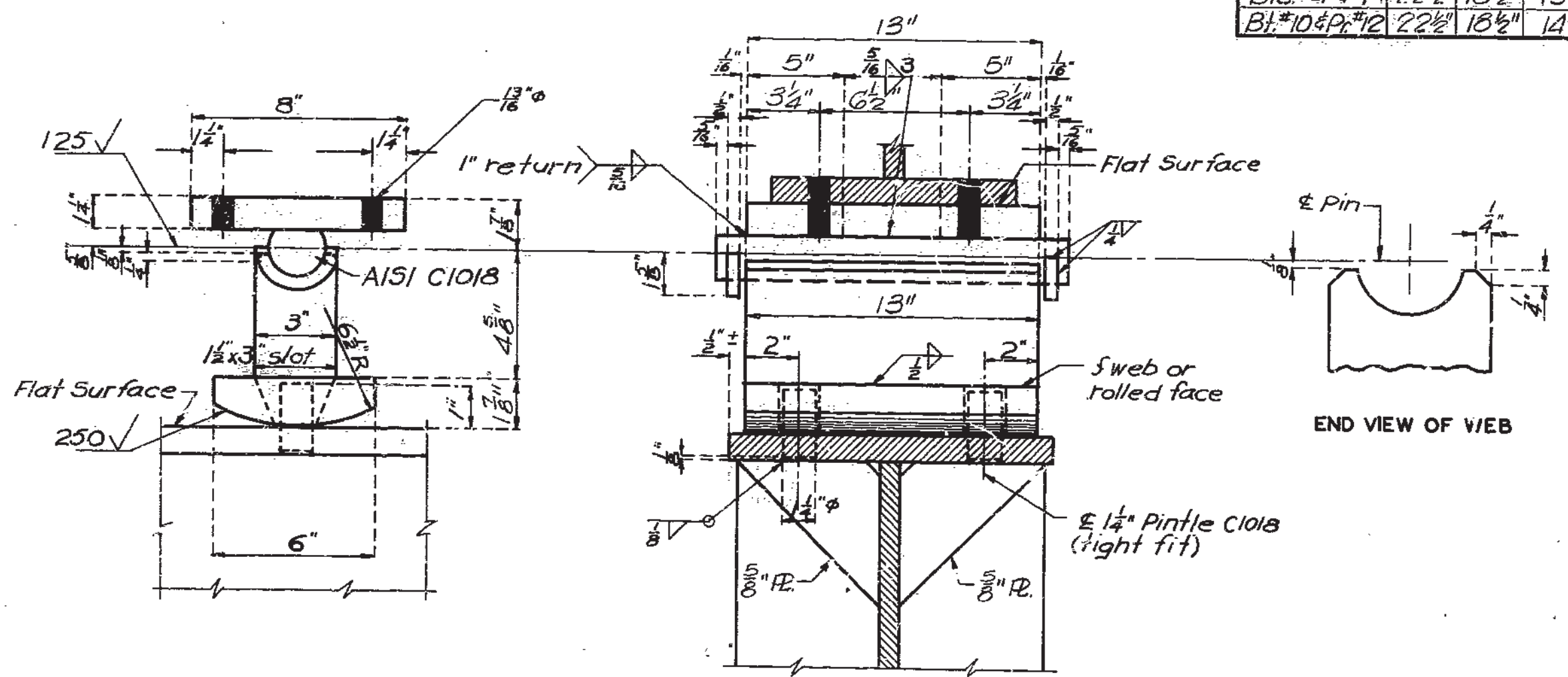
TABLE OF DIMENSIONS TYPE "D" EXP. BEARINGS

All Girders	a	b	c	d	e	f	g	h	R	Reqt. No.
Bt. #1	20 1/2"	16 1/2"	10"	1 1/2"	1 1/2"	5 1/2"	12"	1 1/2"	7 1/2"	4
Bts #2 & 9	22 1/2"	18 1/2"	15"	2 1/2"	2 1/2"	8 1/2"	14"	5 1/2"	10 1/2"	8
Bts #3 & 8	22 1/2"	18 1/2"	14"	2 1/2"	2 1/2"	8 1/2"	14"	5 1/2"	10 1/2"	8
Bts #4 & 7	22 1/2"	18 1/2"	13"	2 1/2"	2 1/2"	8 1/2"	14"	5 1/2"	10 1/2"	8
Bt. #10 & #12	22 1/2"	18 1/2"	14"	2 1/2"	2 1/2"	8 1/2"	14"	5 1/2"	10 1/2"	8

NOTES: TYPE "C" BEARINGS
Anchor Bolts for Type "C" Bearings shall be 1" swaged bolts, 1' long with no heads or nuts. Top of Anchor Bolts shall be set approximately 1/4" below top of bearing.

NOTES: TYPE "D" BEARINGS
Anchor Bolts for Type "D" Bearings shall be 1 1/2" swaged bolts and shall extend 12" into concrete, with hexagon nuts and plain washers for Fixed Bearings, no nuts for Expansion Bearings.

GENERAL NOTES:
Lead plates under bearings shall be approximately 3/8" thickness and weigh 8#/sq. ft. Cost of lead plates shall be included in price bid for other items.
"Estimated weight" does not include weight of anchor bolts.



TYPE "D" MODIFIED BEARINGS
(Estimated Wt. 530#)

BRIDGE OVER THOMPSON RIVER
STATE ROAD FROM CHILLICOTHE NORTHWEST
ABOUT 4.5 MILES N.W. OF CHILLICOTHE
PROJECT NO. S-537(7) SA(170) STA. 834+83.0
LIVINGSTON COUNTY

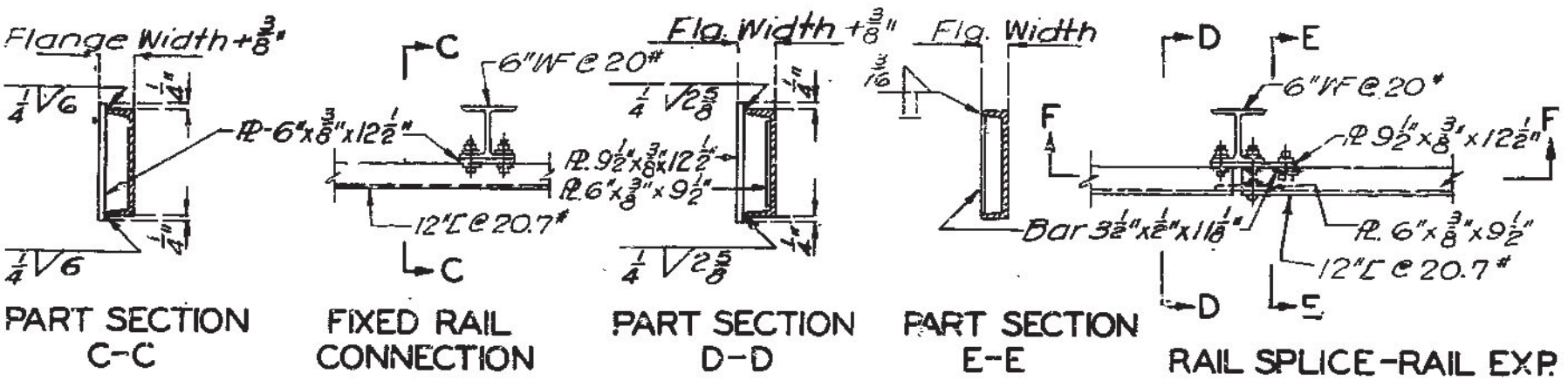
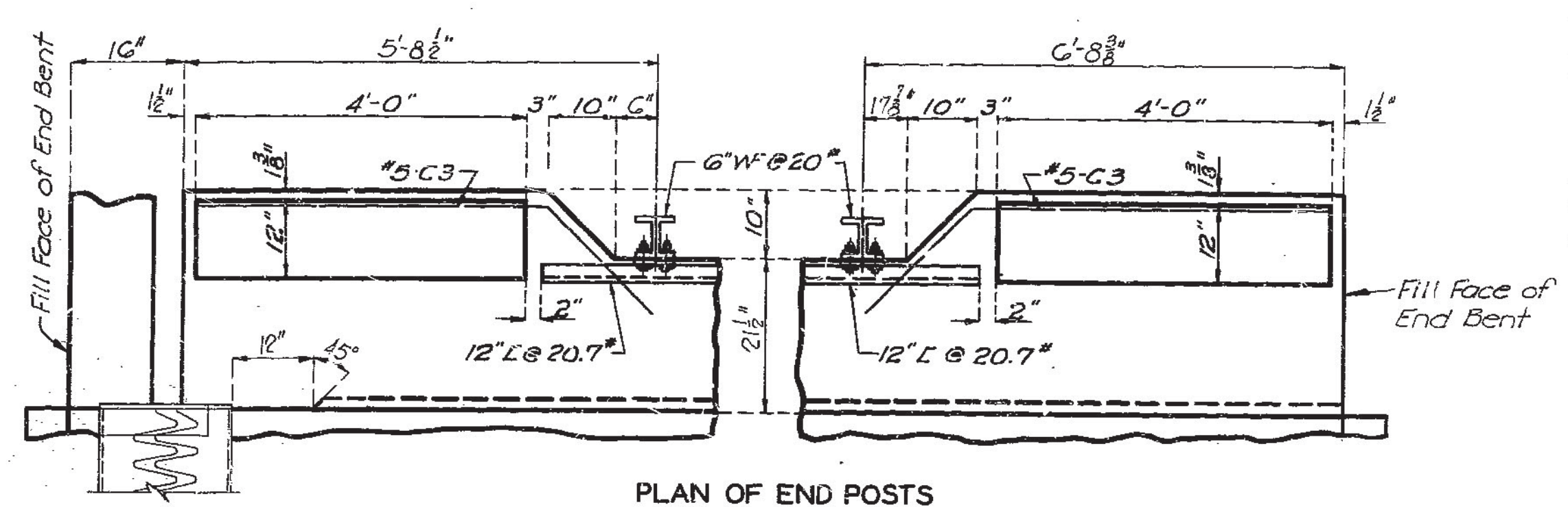
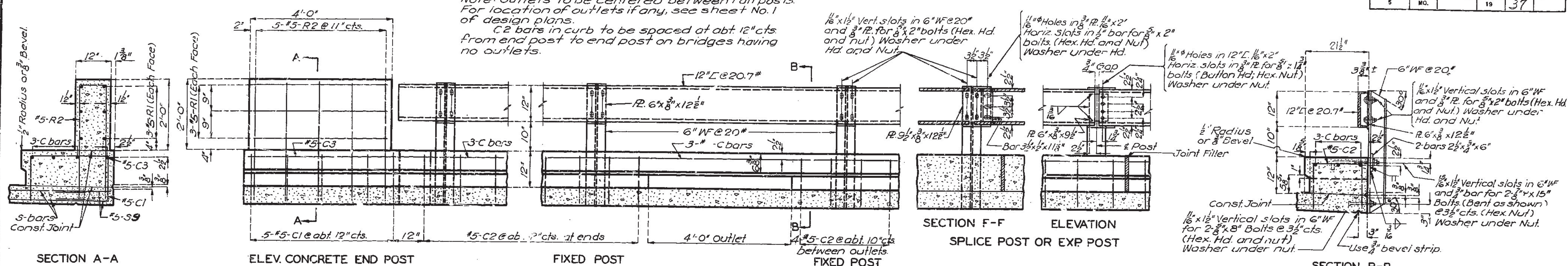
No. 41A Revised
 Dec. 1961 Nov. 1963
 Assembled Feb. 1964 by Weaver
 checked May 1964 by Endicott

Note: This drawing is not to scale. Follow dimensions

MISSOURI STATE HIGHWAY DEPARTMENT

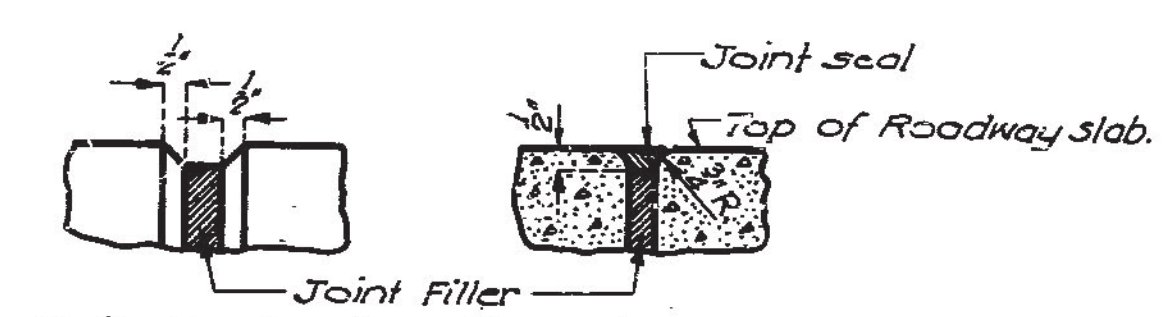
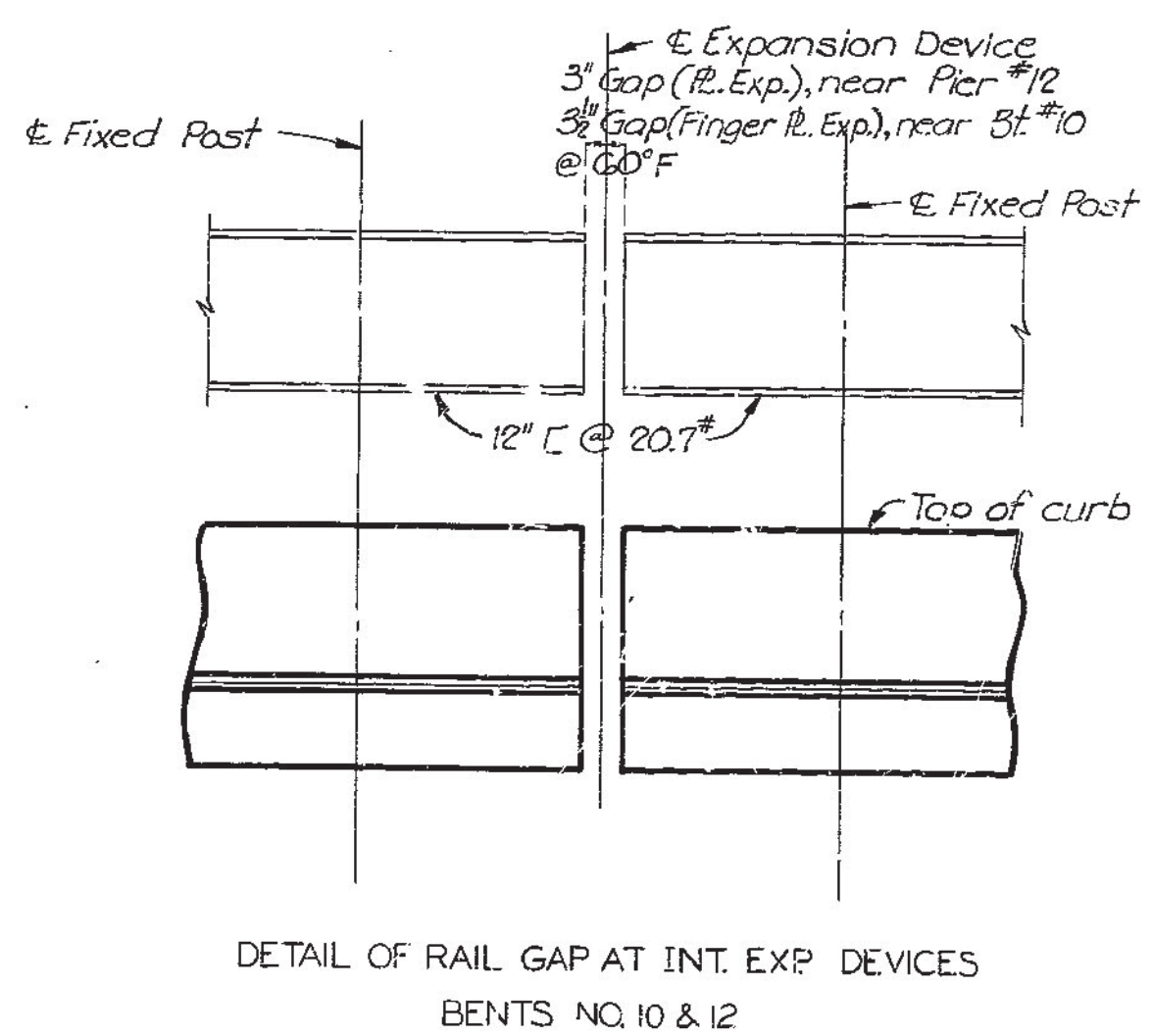
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	37	

Note: Outlets to be centered between rail posts.
For location of outlets if any, see sheet No. 1 of design plans.
C2 bars in curb to be spaced at abt. 12" cts from end post to end post on bridges having no outlets.



Note: Channel rail to be adjusted for horizontal alignment by use of full size metal shims placed between 6" WF and connection R. Shims 6" x 12" x 3/8" and 1/4" thickness with 1/8" x 1/2" vertical slots to be furnished with structural steel. Cost of shims to be included in price bid for other items.

GENERAL NOTES:
Top of curbs and end posts to be built parallel to grade. Vertical faces of end posts to be vertical. All exposed edges of end posts to be beveled 1/2". 6" WF posts to be set normal to grade. 12" L rails shall be fabricated to conform to horizontal and vertical alignment of curb.



Note: Use bevel as shown for exposed faces of all filled joints except at top surface of roadway slab. Use edging tool with 3/8" radius at top surface of roadway slab each side of joint and fill flush with joint seal as shown.

BRIDGE OVER THOMPSON RIVER
STATE ROAD FROM CHILLICOTHE NORTHWEST
ABOUT 4.5 MILES N. W. OF CHILLICOTHE
PROJECT NO. S-537(7) SA(170) STA. 834+83.0
LIVINGSTON COUNTY

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No. 1.2 Revised May 1962
Checked May 1964 by Endicott
Drawn MAR 1964 by GAMET
Checked May 1964 by Endicott

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 20 of 20

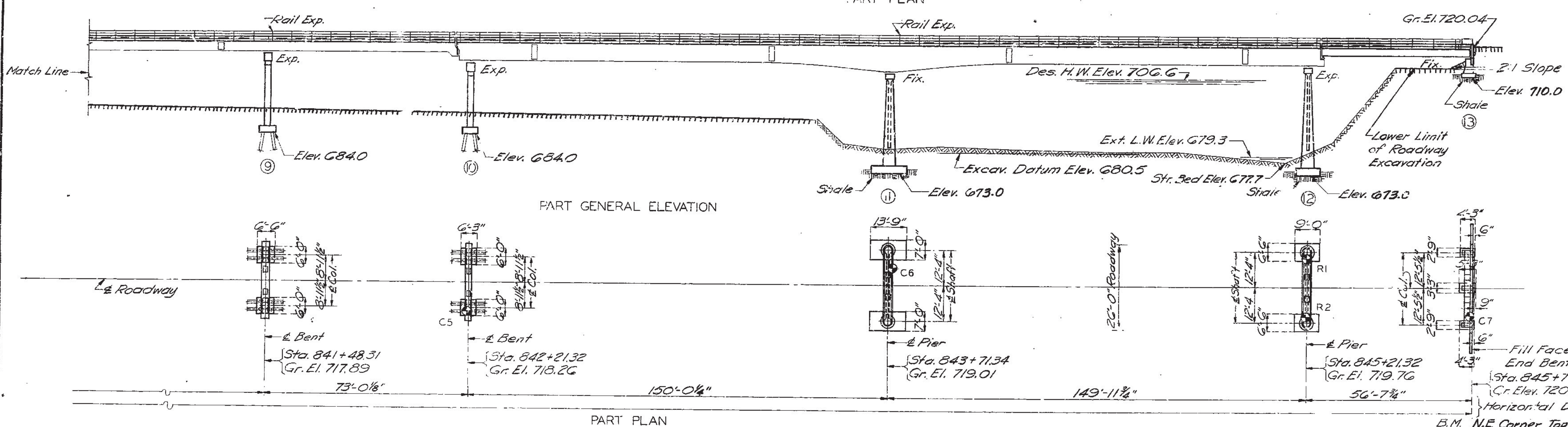
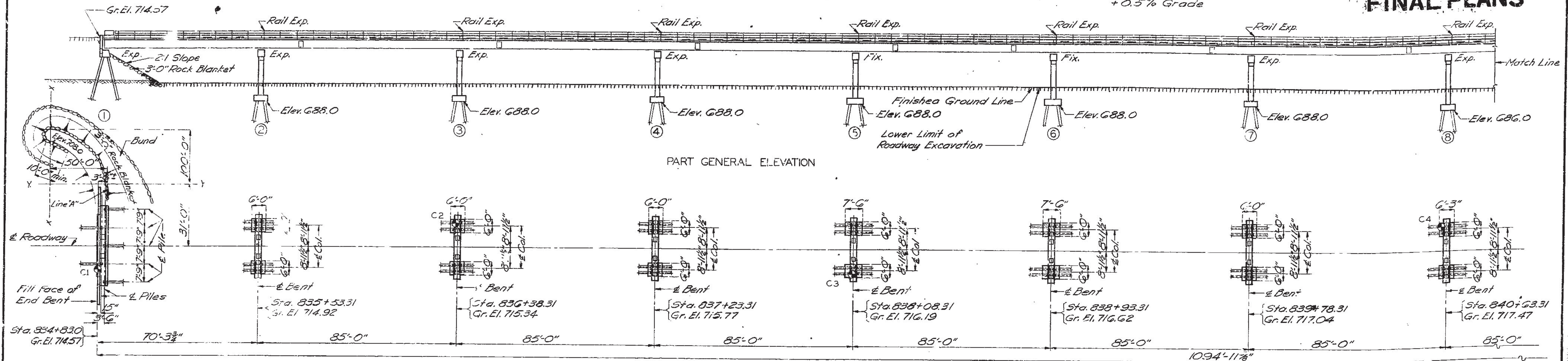
A-1376

MISSOURI STATE HIGHWAY DEPARTMENT

(Gr. - 7 @ 85' - 68' Cont.), (5' Cant. - 2 @ 150' Cont. - 5' Cant.) Welded I_r Girders, 51' I-Beam Span (All Composite) + 0.5% Grade

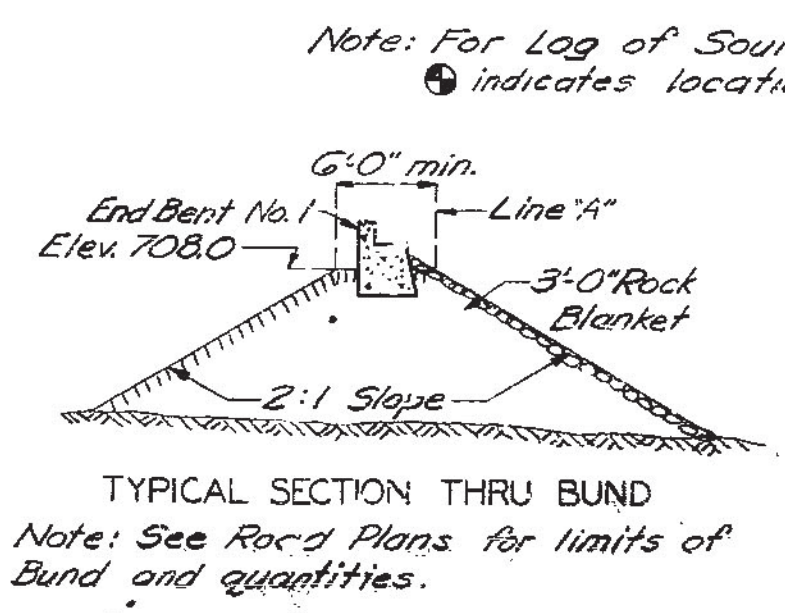
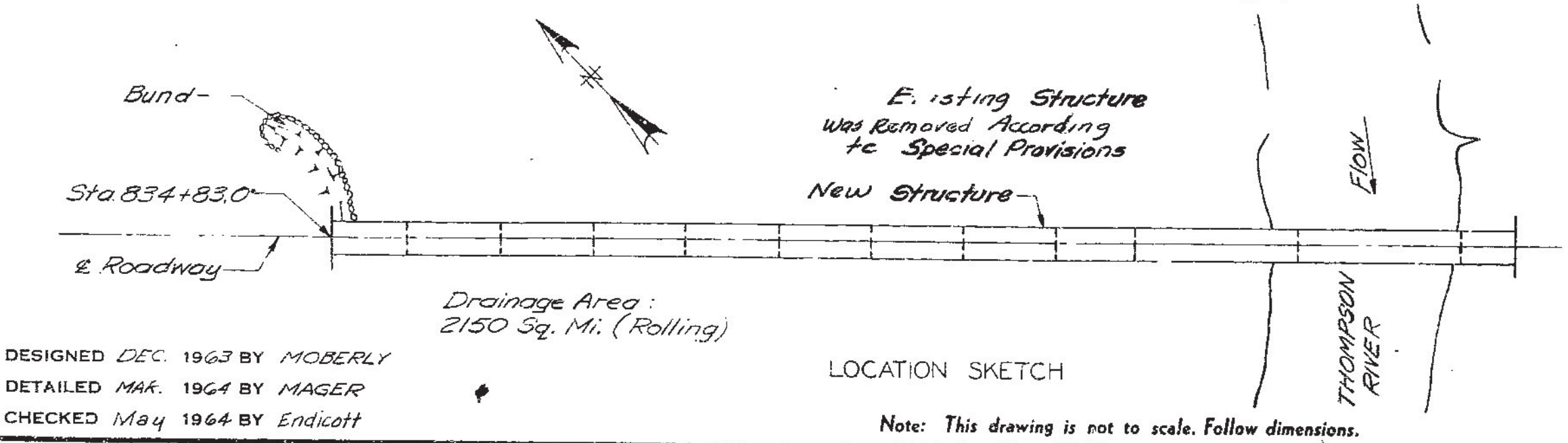
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	10	

FINAL PLANS



Note: Compacted roadway fill (full roadway width) was placed up to elevation of bottom of concrete beam in front of and not less than 25'-0" in back of End Bent No. 1 before steel piles were driven for End Bent No. 1. Rock blanket was placed on fill 2'-0" above bottom of concrete beam on front slope of End Bent No. 1. See Road Plans for quantities.

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Note: For Log of Soundings see Sheet No. 2 of 2C
 • indicates location of soundings.

Note: See Road Plans for limits of Bund and quantities.

BRIDGE OVER THOMPSON RIVER

STATE ROAD FROM CHILlicothe NORTHWEST
 ABOUT 4.5 MILES N.W. OF CHILlicothe
 PROJECT NO. 5-537(7) SA(170) STA. 834+83.0
 LIVINGSTON COUNTY

SUBMITTED BY: *D.H. Johnson* BRIDGE ENGINEER DATE: 3/1/64
 APPROVED BY: *M.G. Miller* CIVIL ENGINEER DATE: 6/17/64

DESIGNED DEC. 1963 BY MOBERLY
 DETAILED MAR. 1964 BY MAGER
 CHECKED MAY 1964 BY ENDICOTT

Note: This drawing is not to scale. Follow dimensions.

FINISHED

Sheet No. 1A of 2

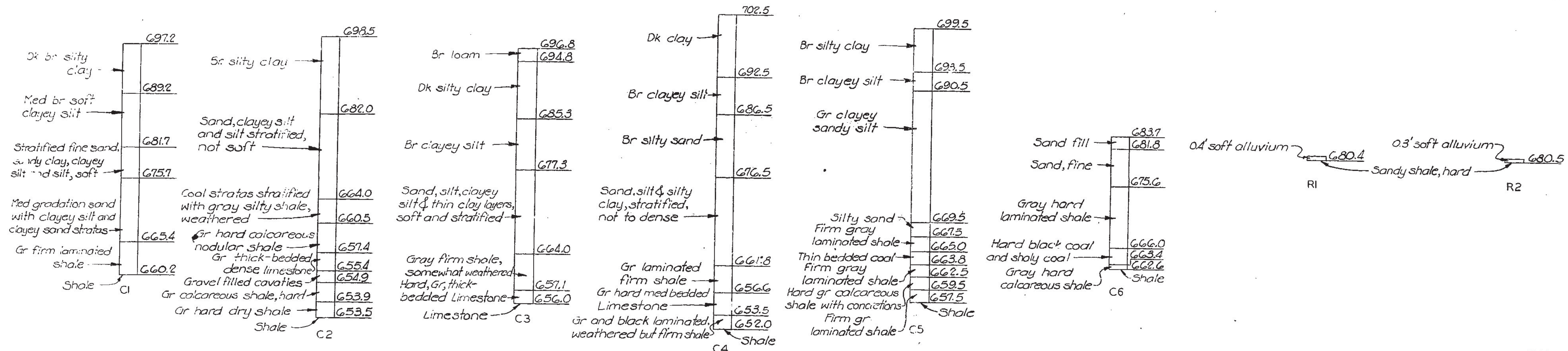
FINAL PLANS

STD. 54.00
 A-1376

MISSOURI STATE HIGHWAY DEPARTMENT

FED. ROAD DIST. NO.	STAT.	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	19	

FINAL PLANS



LOG OF SOUNDINGS

Note: Soundings C1 thru C7 taken with a core drill, soundings R1 and R2 taken with a rod. See sheet No. 1 of 20 for location of soundings.

Note: No payment for excavation was allowed for end bent No. 1.

GENERAL NOTES:

- Design Specifications A.A.S.H.O. - 1961
- Loading: H20-44 (5% Future Wearing Surface)
- Structural Steel (A.S.T.M. A36-G2T) Stress: 20,000 psi
- Steel Pile shall be A.S.T.M. A36-G2T
- Reinforcing Steel Stress: 20,000 psi
- Concrete, Class B Stress: 1,200 psi
- Concrete, Class B1 Stress: 1,000 psi
- Superstructure concrete was Class B1.
- Substructure concrete was Class B or B1 except payment was on the basis of Class B.
- Superstructure deck was surface sealed. (See special provisions).
- All dimensions to reinforcing steel are to 6 bar except where clear distance from face of concrete is indicated.
- Fabricated structural steel was A.S.T.M. A36-G2T except as noted. Payment was made as Fabricated Structural Carbon Steel.
- See Standard Specifications 55.3.13 for qualification of welding operators.
- Details of welded joint shown are for manual arc welding except as noted.
- See Special provisions for welding inspection.
- Field connections, High Strength Bolts 3/4", holes 1 1/8" except as noted.
- Paint; shop, none; Field, none by contractor except as noted in Standard Specification 55.4.10.2.
- Contact surfaces of bearings and beam flanges connected with high strength bolts did receive one coat of red lead.
- Where joint filler is specified on the plan; it did conform to Standard Specification 157.2.4.

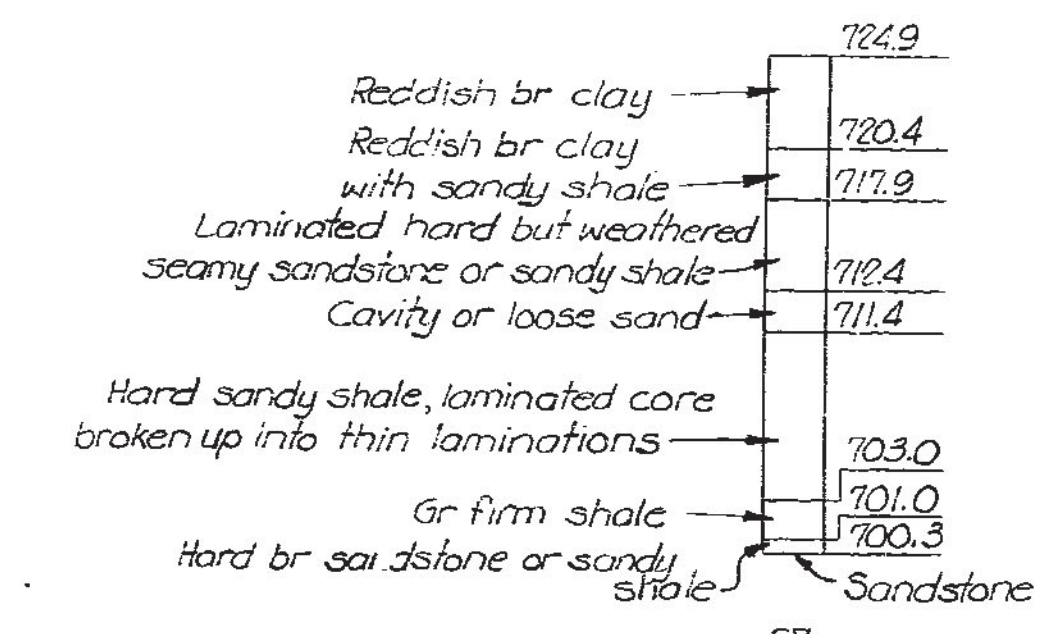
Note: Excavation for Structures was computed from the original ground line or from the lower limits of channel cleanup excavation, whichever was lower, regardless of the sequence of operations or the method of removal.

* Fabricated Structural Carbon Steel (handrail) includes weight of anchor bolts for rail posts.

Item	FINAL QUANTITIES		
	Substr.	Superstr.	Total
Class 1 Excavation for Structures	Cu. Yds. 567		567
Class 2 Excavation for Structures	Cu. Yds. 140.5		140.5
Steel Piles in Place (12")	Lin. Ft. 2285		2285
Steel Pile Cut-offs (12")	Lin. Ft. 153		153
Class B Concrete	Cu. Yds. 416.4		416.4
Class B1 Concrete	Cu. Yds. 891.9		891.9
Reinforcing Steel	Lbs. 58600	243640	302240
Fabricated Structural Carbon Steel (Htbl) Lbs.		73630	73630
Fabricated Structural Carbon Steel (R Gr) Lbs.		670040	670040
Fabricated Structural Carbon Steel (I-Beam) Lbs.		30110	30110
Drilling Foundation Test Holes	L.F. 60		60
Retarder	Gal. 40		40

Scent No.	FOOTING AND PILE DATA														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Spread Footings	Foundation Material														
	Design Bearing Tons/sq ft														
	See Standard Specifications 50.4.2														
Sealing Pile	Pile Type and Size														
		12 BP 53	12 BP 53	12 BP 53	12 BP 53	12 BP 53	12 BP 53	12 BP 53	12 BP 53	12 BP 53	12 BP 53	12 BP 53	12 BP 53	12 BP 53	12 BP 53
	Number	5	8	8	8	8	8	8	8	8	8	8	8	8	8
	Approximate Length Ft.	50	30	35	30	30	30	30	30	30	25	25			
	Plan Bearing Tons	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5			
Minimum Required Bearing Tons	39.3	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	43.7				
Hammer	Power	Power	Power	Power	Power	Power	Power	Power	Power	Power	Power				
	See Standard Specification 52.2.6														

Note: All piles were driven to practical refusal on or into solid rock or other point bearing material of not less than the Plan Bearing shown.



BRIDGE OVER THOMPSON RIVER
STATE ROAD FROM CHILLICOTHE NORTHWEST
ABOUT 4.5 MILES N.W. OF CHILLICOTHE
PROJECT NO. S-537(7) SA(170) STA 834+83.0
LIVINGSTON COUNTY