

FED. ROAD DIST. NO.	STATE	F. A. PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	E.R. 5	1944	1	13
STATE JOB NO. 5252					

STATE OF ARKANSAS  
STATE HIGHWAY COMMISSION

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7	6523	Details of End I-Beam Spans and Continuous I-Beam Spans
8	6523A	Details of Continuous I-Beam Spans
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13	11	Standard Barricade, Warning and Signs

**PLAN OF PROPOSED BRIDGE**  
**OVER LITTLE RED RIVER**  
**HIGDEN-STARK ROAD**  
**CLEBURNE COUNTY**  
**ROUTE SEC.**  
**JOB No 5252**  
**FEDERAL AID PROJECT NO. E.R.5**

QUANTITIES

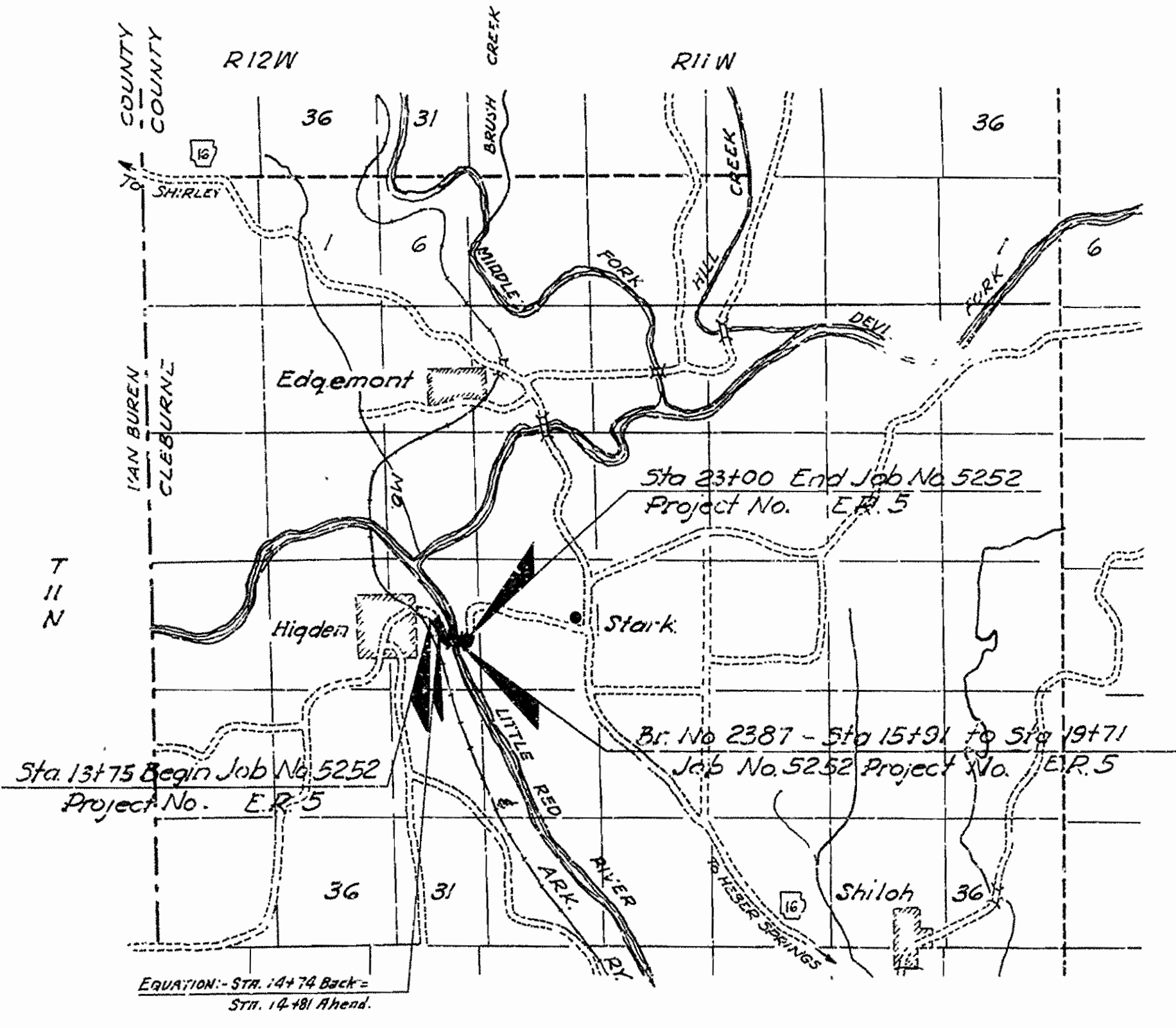
Item No.	Item	Quantity	Unit
102	Unclassified Excavation	101	Cu. Yds.
103	Dry Excavation for Structures	185	Cu. Yds.
103	Wet Excavation for Structures	140	Cu. Yds.
103	Solid Rock Excavation for Structures	122	Cu. Yds.
S.P. # 104	Embankment Material	1556	Cu. Yds.
S.P. # 802	Concrete for Bridges	371.5	Cu. Yds.
S.P. # 802	Concrete for Bridges	120.3	Cu. Yds.
S.P. # 803	Reinforcing Steel	51,700	Lbs.
805	Concrete Railing	770	Lin. Ft.
S.P. # 807	Structural Steel in Beam Spans	134,890	Lbs.
904	Cement Rubble Masonry	7	Cu. Yds.
909	Riprap	200	Cu. Yds.
S.P.	Removal of Existing Suspension Bridge	100%	Comp. Item
S.P.	Removing and Replacing Riprap	52	Cu. Yds.
825	Steel Plate Guard Fence	462	Lin. Ft.

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

- PAMPHLETS
- Division I Part I
  - Division II Part 8a, Part 8b, Part 9
  - Division III
  - Division IV

SPECIAL PROVISIONS

NO.	Required Contract Provisions	NO. SHEETS
	Required Contract Provisions	3
2-1	Revision of Article 211 (Appx 2-3-41)	1
2-2	Equipment List Required	1
2-4	State License for Contractors	1
4-1	Revision of Article 4.9	1
5-3	Emergency Relief Projects off State Highway System	1
8-3	Special Provision Pertaining to Required Contract Provisions for Federal Aid Projects	2
9-4	Partial Payments	1
104-14	Embankment Material	2
803-1	Revision of Article 803.21	1
807-5	Revision of Article 807.23	1
350-1	Engineers Field Office	1
853-1	Machins. Mixing	1
655252	Removal of Existing Suspension Bridge	2
Job 5252	Removing and Replacing Riprap	1
655252	Special Order of Construction (10-13-41)	2



LAYOUT  
Scale: 1" = 1 Mile

LENGTH OF PROJECT=	918'-0" = 0.172 Mi.
LENGTH OF BRIDGE =	330'-0" = 0.071 "
LENGTH OF EMBANKMENT=	538'-0" = 0.101 "
LENGTH OF JOB=	918'-0" = 0.174 "

*Superseded*

APPROVED

CHRISTIAN - STATE HIGHWAY COMMISSION

APPROVED

STATE HIGHWAY ENGINEER

RECOMMENDED FOR APPROVAL

DISTRICT ENGINEER  
PUBLIC ROADS ADMINISTRATION  
FEDERAL WORKS AGENCY

APPROVED

COMMISSIONER  
PUBLIC ROADS ADMINISTRATION  
FEDERAL WORKS AGENCY

REVISIONS - Revised for I-Beam Structure.  
7-21-44 H.F.B.  
Add Special Provision 7-5-45 General H.B. 7-16-46 & 10-23-47

BRIDGE No. 2387

DRAWING No. 6518

FED. ROAD DIST. NO.	STATE	FAP PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	ARK.	WER. 5	1946	2	8
STATE JOB NO. 5252					

### SCHEDULE OF BRIDGE QUANTITIES- SUBSTRUCTURE

CODE No. 927

ITEM NO.	ITEM	UNIT	QUANTITY					TOTALS	UNIT	
			ABUTMENT No. 1	PIER No. 1	PIER No. 2	PIER No. 3	PIER No. 4			ABUTMENT No. 5
103	DRY EXCAVATION FOR STRUCTURES	CU.YD.	6	45			24	102	CU.YD.	
103	WET EXCAVATION FOR STRUCTURES	CU.YD.		81		22	37	140	CU.YD.	
103	SOLID ROCK EXCAVATION FOR STRUCTURES	CU.YD.		21	40	35	24	120		
SPE 802	CLASS "A" CONCRETE FOR BRIDGES	CU.YD.	13.9	84.0	91.9	85.9	76.5	19.3	371.5	
SPE 803	REINFORCING STEEL	LB.	1070	6880	7330	7000	6430	1770	30,480	LB.
805	CONCRETE RAILING	LIN.FT.	7.2					7.2	14.4	LIN.FT.
SPE 807	STRUCTURAL STEEL IN BEAM SPANS	LB.	90					90	180	LB.
SP	REMOVAL OF EXISTING SUSPENSION BRIDGE	COMPLETE ITEM							100%	COMPLETE ITEM

SCHEDULE OF BRIDGE QUANTITIES  
BRIDGE OVER LITTLE RED RIVER  
HIDDEN-STARK ROAD  
CLEBURNE COUNTY

ROUTE SEC.

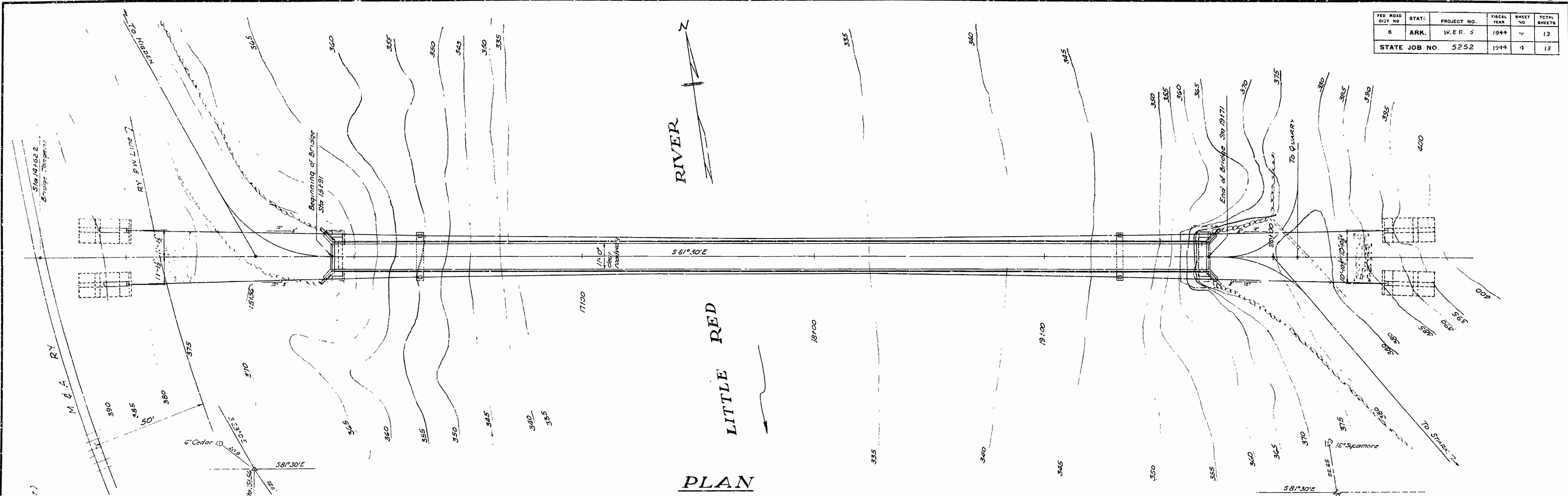
ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.

Drawn By: H.B. Date: 7-18-46  
 Traced By:     Date:      
 Checked By:     Date:    

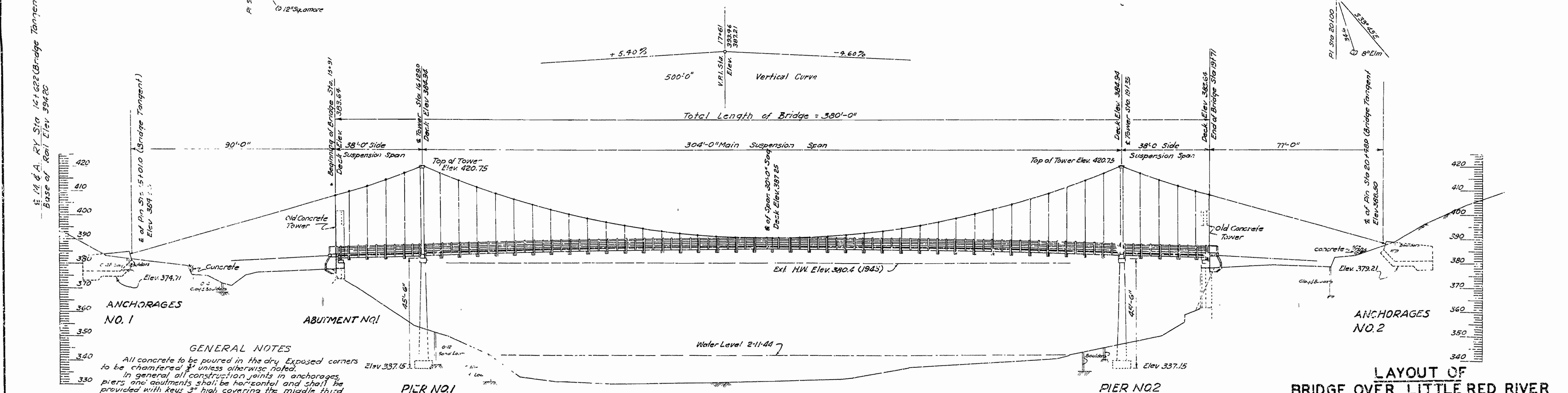
Scale:     ft. =     in.  
 BRIDGE NO. 2387 DRAWING NO. 6519

Revisions: Roadway Items Deleted. 7-18-46. H.B.

FED. ROAD DIST. NO.	STAT.	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	W.E.R. 5	1944	13	13
STATE JOB NO. 5252			1944	13	13



PLAN



ELEVATION

**GENERAL NOTES**

All concrete to be poured in the dry. Exposed corners to be chamfered  $\frac{3}{4}$ " unless otherwise noted.

In general all construction joints in anchorages, piers and abutments shall be horizontal and shall be provided with keys 3" high covering the middle third of both dimensions.

Rock excavation shall be made to neat lines of concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting.

Concrete in anchorages shall be poured directly against the excavated surfaces of rock and earth. Material which has been approved for backfill for anchorages shall be thoroughly compacted before the cables are attached.

Removal of existing anchorages or portions thereof, if necessary, shall be paid for as "Solid Rock Excavation for Structures."

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

For Details of Anchorages See Drawing No. 6522.

For Details of Abutments and Piers, see Drawing No. 6523.

For Details of Towers and Hanger Clamps see Drawing No. 6511.

For Details of 304' Suspended Span see Drawing No. 6512.

For Details of 38' Suspended Span see Drawing No. 6514.

**MAXIMUM FOUNDATION PRESSURE:** Anchorages 3500 #/sq ft  
4500 #/sq ft

**LIVE LOAD:** H-10 LOADING, A.S.H.C. 1941

**UNIT STRENGTHS:** Class "A" Concrete (min) 4500 #/sq ft  
Timber 1400 #/sq ft  
Structural Steel 18000 #/sq ft  
Cast Steel 18000 #/sq ft  
Reinforcing Steel 18000 #/sq ft  
One 2 1/2" Cable (breaking strength) 208 Tons

Drainage Area 1050 Sq. Mils., C = 0.7

B.M. Elev. 377.93  
Nail in side of 12" Sycamore  
20' Lt. Sta. 191.92

**LAYOUT OF  
BRIDGE OVER LITTLE RED RIVER  
HIDDEN-STAR ROAD  
CLEBURNE COUNTY**

ROUTE SEC.

**ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.**

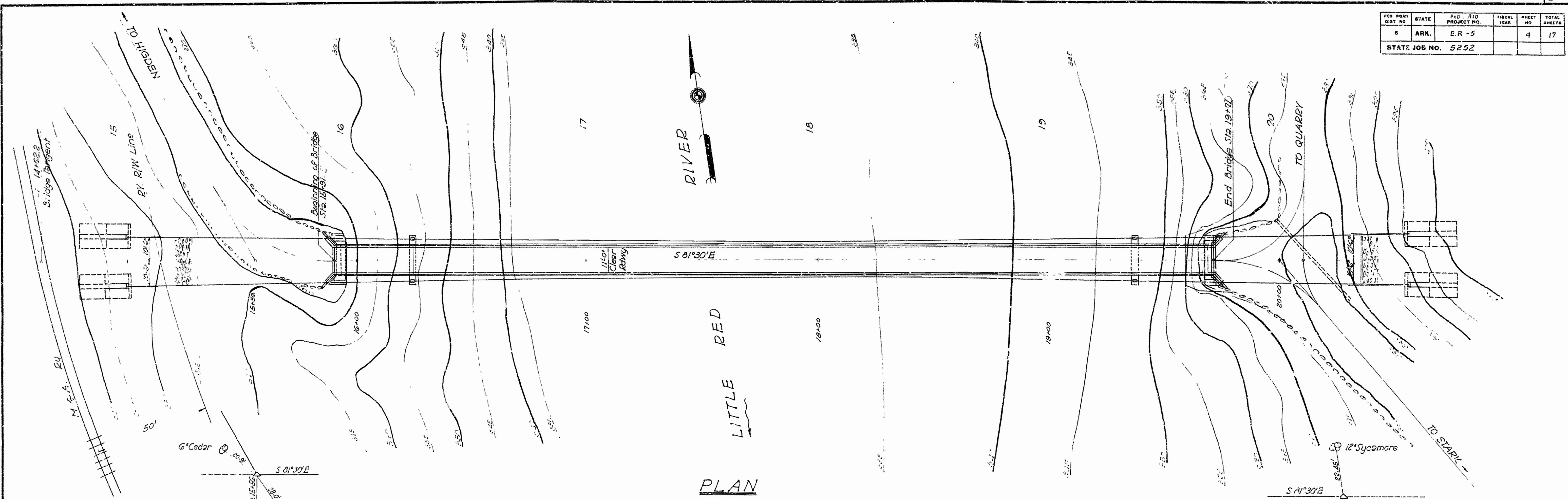
Drawn By: *W.C.H.* Date: 3-1-44  
Traced By: *L.H.* Date: 3-3-44  
Checked By: \_\_\_\_\_ Date: \_\_\_\_\_

Scale: 1 in. = 20 ft

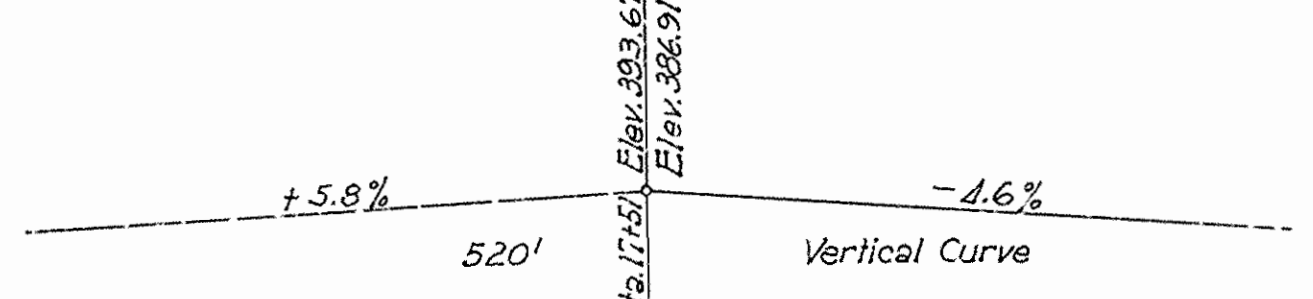
**BRIDGE NO. 2387 DRAWING NO. 6521**

*W.C.H.*  
PRINCIPAL HIGHWAY ENGINEER (BRIDGE)

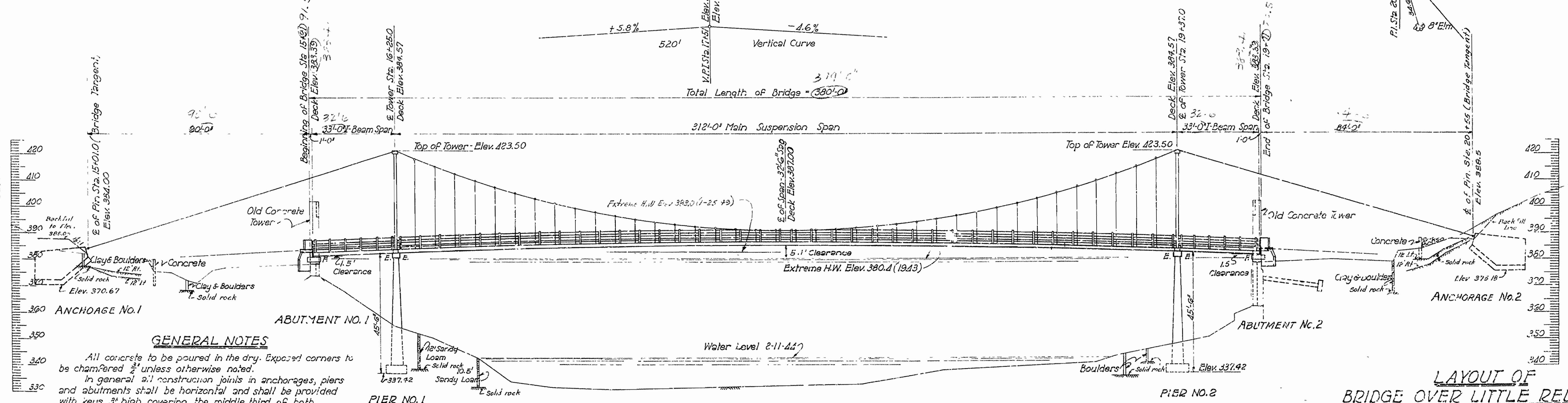
FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	E.R.-5		4	17
STATE JOB NO. 5252					



PLAN



Total Length of Bridge = 390'-0"



ELEVATION

**GENERAL NOTES**

All concrete to be poured in the dry. Exposed corners to be chamfered  $\frac{3}{4}$ " unless otherwise noted.

In general all construction joints in anchorages, piers and abutments shall be horizontal and shall be provided with keys 3" high covering the middle third of both dimensions.

Rock excavation shall be made to neat lines of concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting.

Concrete in anchorages shall be poured directly against the excavated surfaces of rock and earth.

Material which has been approved for backfill for anchorages shall be thoroughly compacted before the cables are attached.

Removal of existing anchorages or portions thereof, if necessary, shall be paid for as "Solid Rock Excavation For Structures".

**SPECIFICATIONS:** Arkansas State Highway Commission Standard Specifications For Road and Bridge Construction, adopted March 1, 1940.

For Details of Anchorages, see Drwg. No. 6522-B.

For Details of Abutments & Piers, see Drwg. No. 6522-C & 6522-D.

For Details of Towers and Hanger Clamps, see Drwg. No. 6523-B.

For Details of 312'-0" Suspended Span, see Drwg. No. 6523-C & 6523-D.

For Details of 33'-0" I-Beam Spans, see Drwg. No. 6523-E.

LIVE LOAD: H-10 LOADING A.A.S.H.O 1941

UNIT STRESSES: Class "A" Concrete (1-15) 650#/#  
 Class "S" Concrete (1-10) 1000#/#  
 Structural Steel 18000#/#  
 Cast Steel 13500#/#  
 Reinforcing Steel 18000#/#  
 One 2 1/2" Cable (Breaking Strength) 203 Tons

MAXIMUM FOUNDATION PRESSURE:  
 Anchorages 1.9 Tons/sq.ft.  
 Piers 3.65 Tons/sq.ft.

B.M. - Elev. 377.93  
 Nail in stile of 2" sycamores  
 20' L.H. Sta. 19+32  
 Drainage Area 1050 Sq. Ft.  
 C = 0.7

LAYOUT OF  
 BRIDGE OVER LITTLE RED RIVER  
 HIGDEN - STARK ROAD  
 CLEBURNE COUNTY  
 ROUTE SEC. 19

ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.

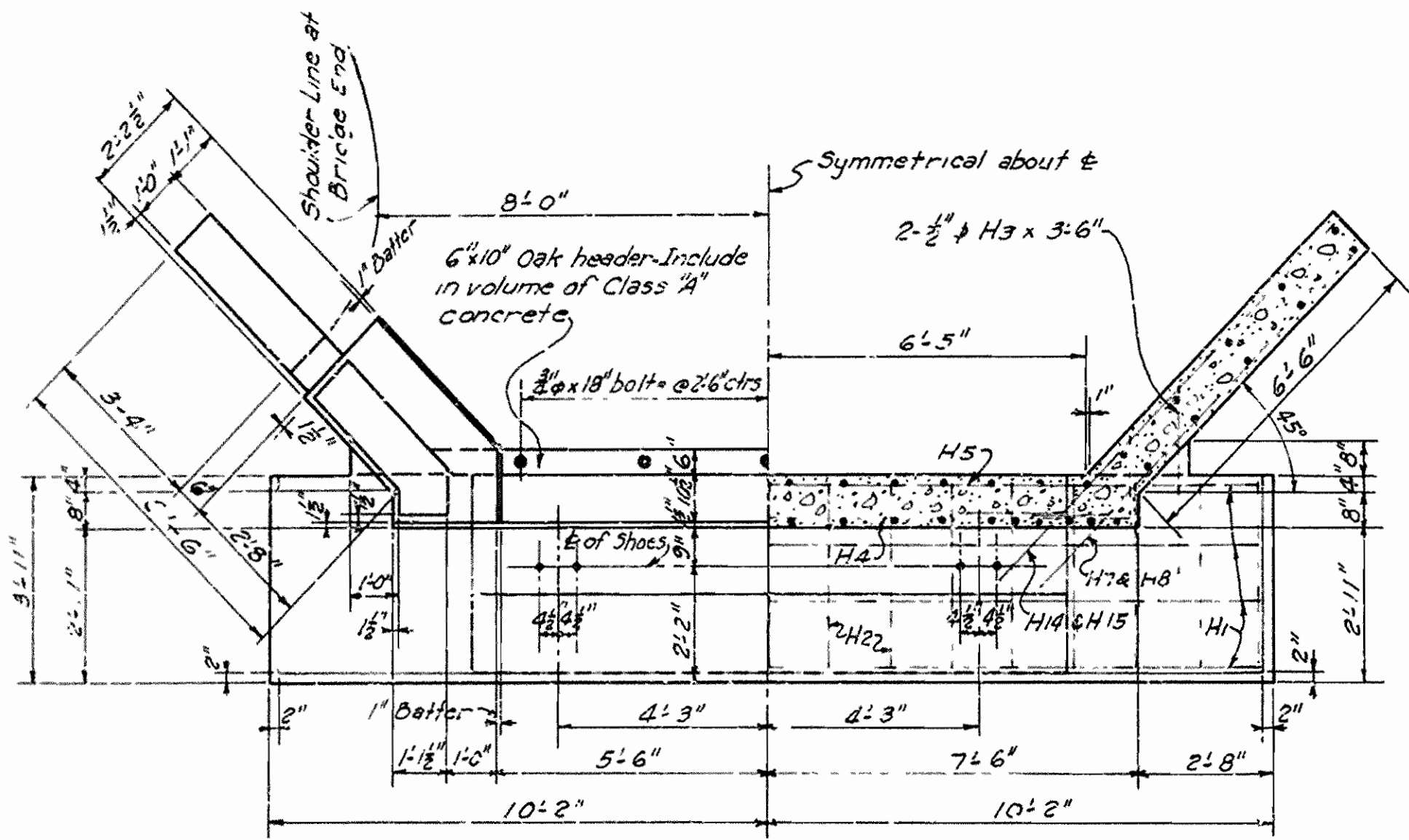
Drawn By: W.C.H. Date: 1-2-46  
 Traced By: B.B.E. Date: 2-16-47  
 Checked By: \_\_\_\_\_ Date: \_\_\_\_\_

Scale: 1 in. = 20 ft.

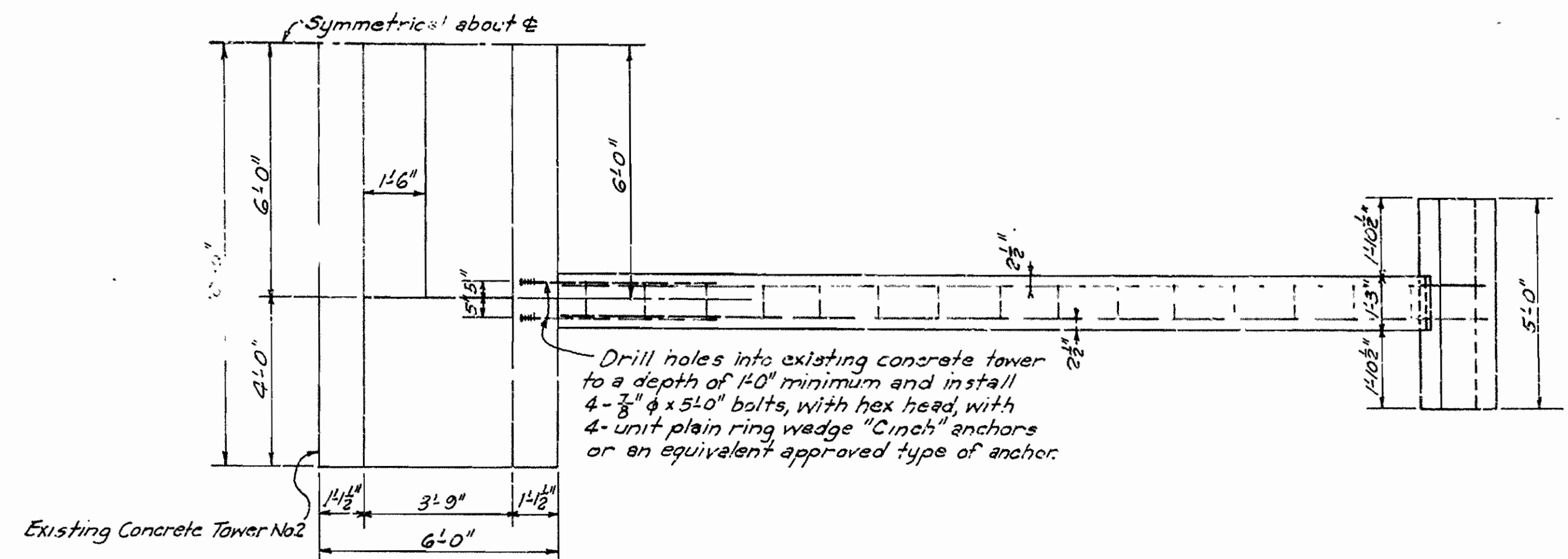
BRIDGE NO. 2367 DRAWING NO. 6521-B

N.B. GAMES  
 PRINCIPAL HIGHWAY ENGINEER (LICENSED)

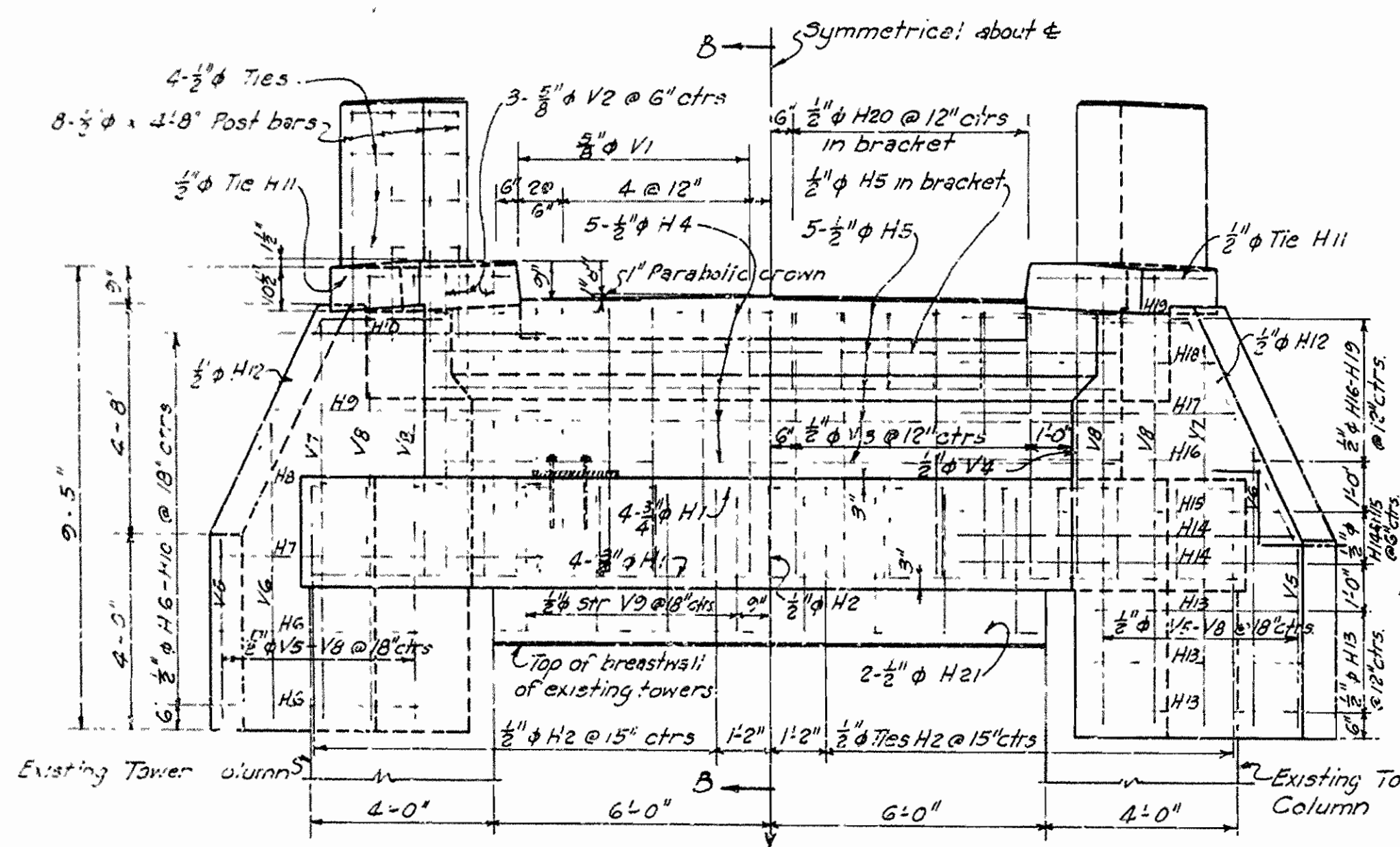
PROJECT NO.	STAT.	PROJECT I.O.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
0	ARR.	E.R.-5	1947	5	13
STATE JOB NO 5262			1947	5	13



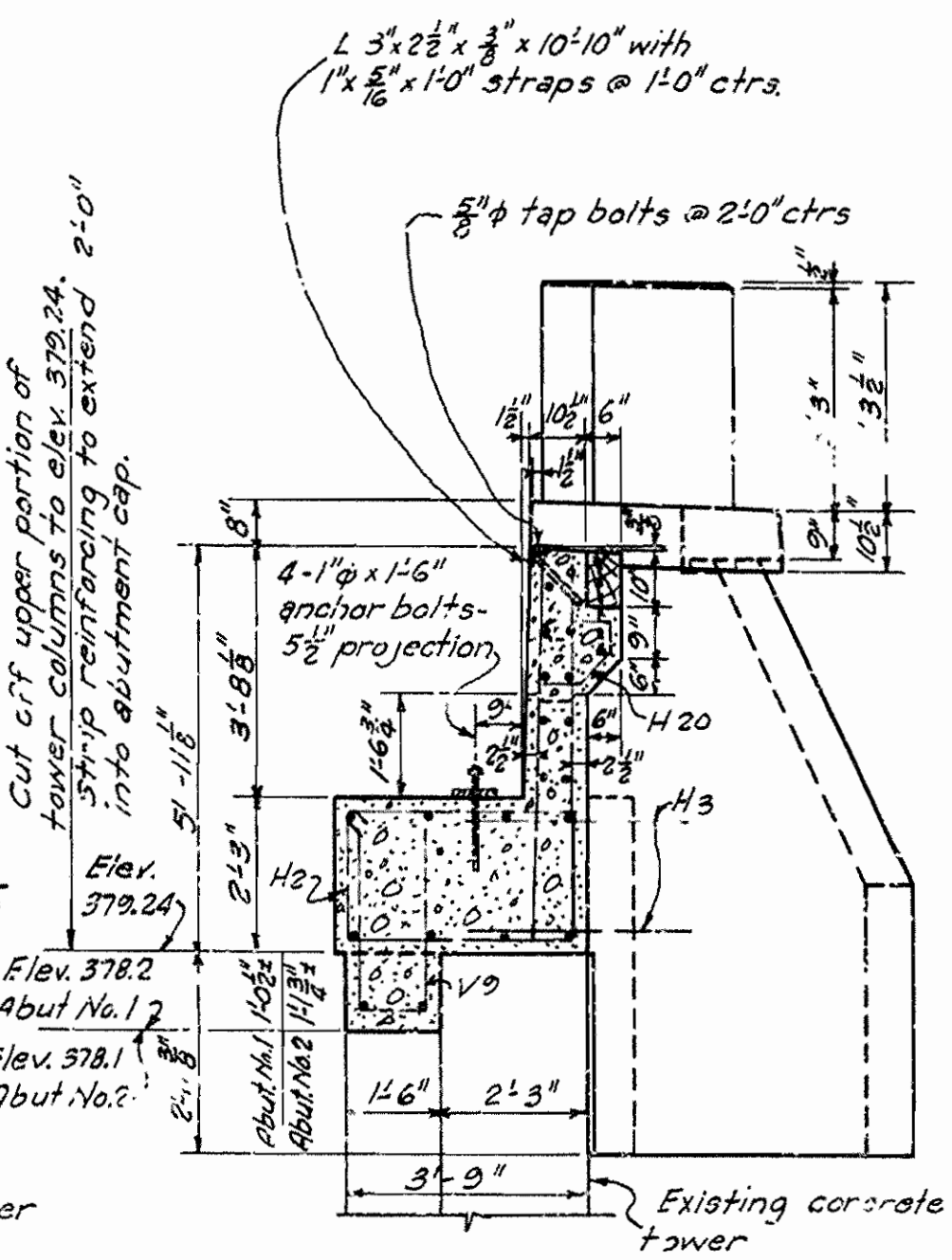
**HALF PLAN HALF SECTION A-A**



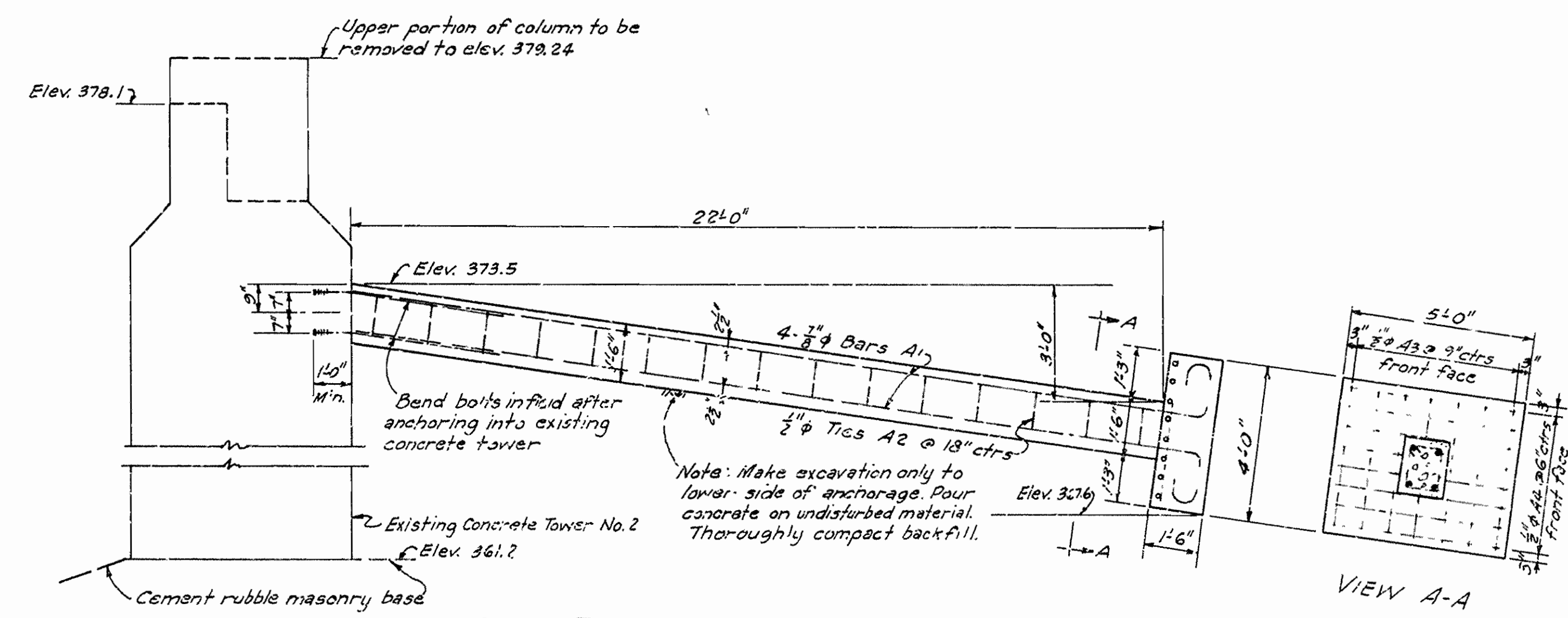
**HALF PLAN- ANCHORAGE FOR TOWER NO. 2**



**HALF FRONT ELEVATION HALF REAR ELEVATION  
DETAILS OF ABUTMENTS**



**SECTION B-B**



**SIDE ELEVATION-ANCHORAGE FOR TOWER NO. 2**

**LIST OF BENT BARS**

MARK	SIZE	LENGTH	BENDING DIAGRAM
H2	3/8"	11'-7"	
H4	3/8"	17'-7"	
H9	3/8"	7'-2"	
H10	3/8"	6'-1"	
H11	3/8"	11'-4"	
H12	3/8"	8'-6"	
H16	3/8"	8'-6"	
H17	3/8"	7'-10"	
H18	3/8"	7'-2"	
H19	3/8"	6'-6"	
H20	3/8"	3'-4"	
V9	3/8"	7'-0"	
A1	3/8"	25'-3"	
A2	3/8"	5'-1"	

**General Notes**  
 All concrete to be Class 2 and to be poured in the dry. All exposed corners to be chamfered 3/8" unless otherwise noted.  
 In general construction joints shall be horizontal and shall be provided with keys not less than 3" high covering the middle third of both dimensions.  
 All anchor rods, bolts, washers, etc. shall be paid for at the unit price bid for "Reinforcing Steel".  
 Oak header shall be included in the quantity of Class 2 Concrete.  
 Reinforcing steel shall be deformed bars of structural or intermediate grade. Shop lists and bending diagrams shall be submitted and approval secured before fabrication is begun. All dimensions relating to reinforcing steel are to centers of bars.  
 The Contractor shall exercise care in removing upper portions of existing concrete towers to provide level bearing for abutment caps. Vertical reinforcing bars in towers to be stripped back to provide, where practicable, a minimum projection of 2'-0" into abutment cap.  
 The work of drilling holes into concrete towers for anchorage bolts will not be paid for directly, but will be considered subsidiary to the item of Reinforcing Steel.

**DETAILS OF  
 ABUTMENTS & TOWER ANCHORAGE  
 BRIDGE OVER LITTLE RED RIVER  
 CLEBURNE COUNTY**

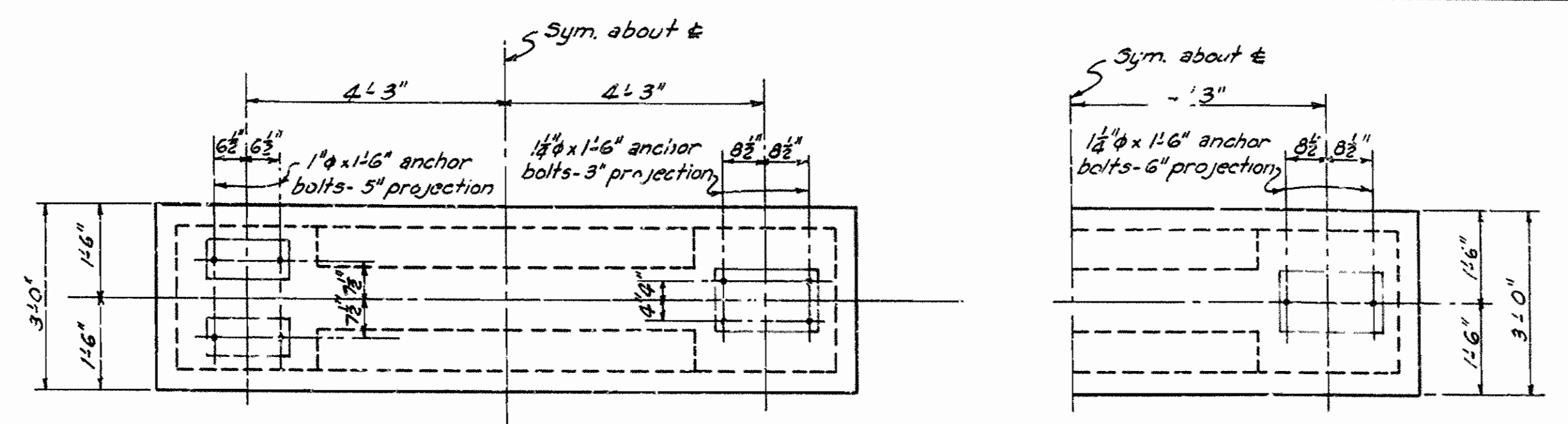
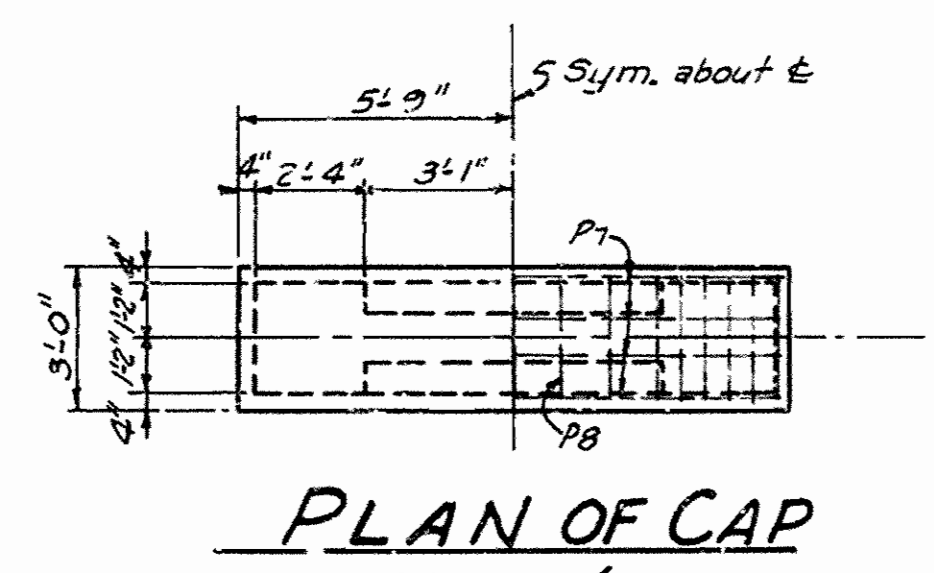
ROUTE SEC.  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.  
 Drawn By: *W.B. Scarce* Date: 7-1-47  
 Traced By: *H.B.* Date: 7-19-47  
 Checked By: \_\_\_\_\_ Date: \_\_\_\_\_  
 BRIDGE NO. 2387 DRAWING NO. 6522

*W.B. Scarce*  
 PRINCIPAL HIGHWAY ENGINEER (BRIDGE)

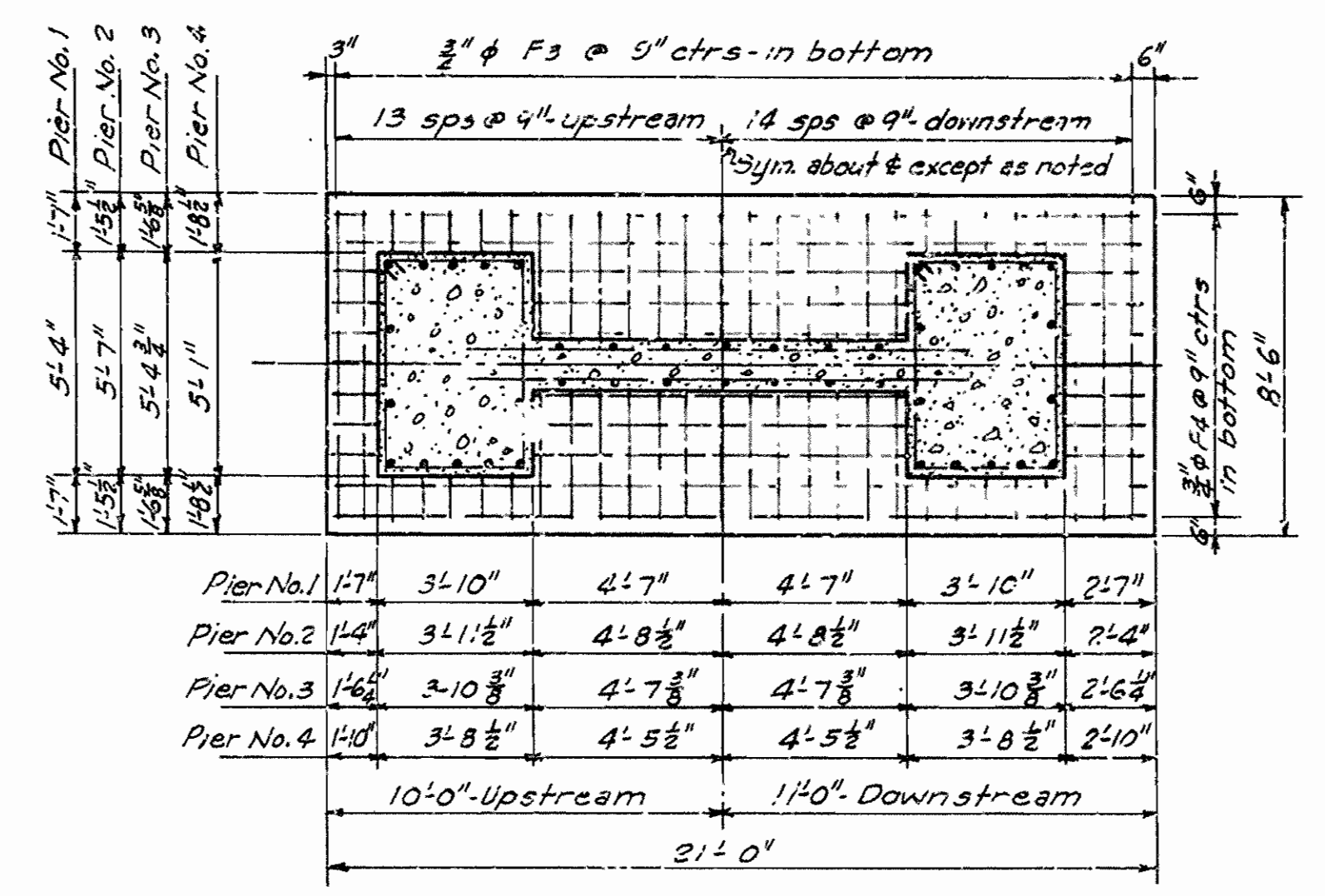
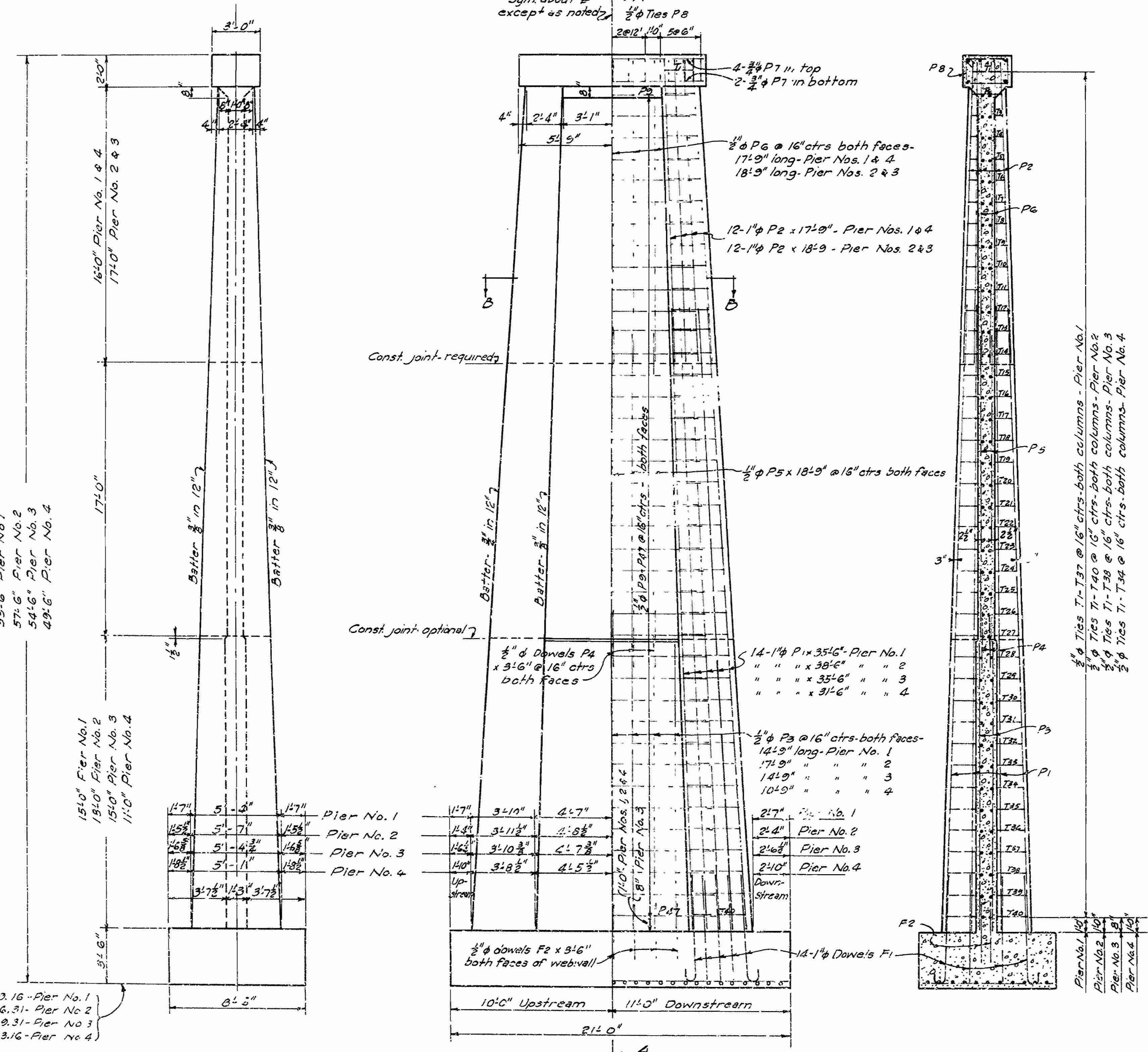
*Superseded*



FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	E.R.-5	1947	6	13
STATE JOB NO.		5252	1947	6	13

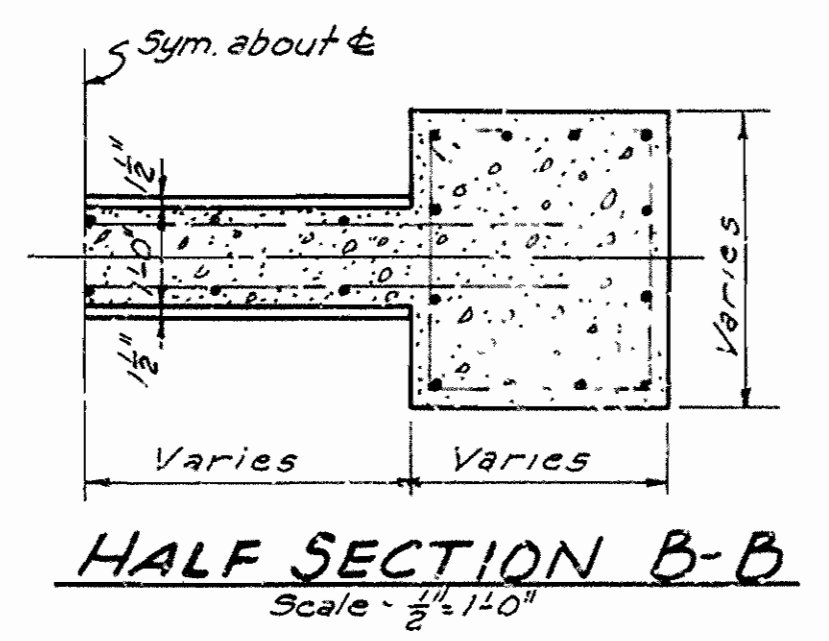


PLAN OF PIER CAPS - SHOWING LOCATION OF ANCHOR BOLTS  
Scale: 1/2" = 1'-0"



BENT BAR LIST

MARK	SIZE	LENGTH	A	B	BENDING DIAGRAM
F1	1" φ	7'-9"			
P8	1/2" φ	9'-3"	2'-7 1/2"	1'-7 1/2"	
T1-T40	1/2" φ	Varies from 9'-4" to 18'-1"	Varies by 1" from 1'-0 1/2" to 5'-1 1/2"	Varies by 1/2" from 1'-11" to 3'-6 1/2"	



*Superseded*

General Notes  
 All concrete to be class "A" and to be poured in the dry. Exposed corners to be chamfered 3/4". In general all construction joints shall be horizontal and shall be provided with keys not less than 3" high covering the middle third of both dimensions. Reinforcing steel shall be deformed bars of structural or intermediate grade. Shop lists and bending diagrams must be submitted and approved before fabrication is begun. All dimensions relating to reinforcing steel are to centers of bars.  
 Anchor bolts to be P11, P12, P13, P14, P15, P16, P17, P18, P19, P20, P21, P22, P23, P24, P25, P26, P27, P28, P29, P30, P31, P32, P33, P34, P35, P36, P37, P38, P39, P40.

*Superseded*

DETAILS OF PIERS  
 BRIDGE OVER LITTLE RED RIVER  
 HIGDEN- STARK ROAD  
 CLEBURNE COUNTY  
 ROUTE SEC.

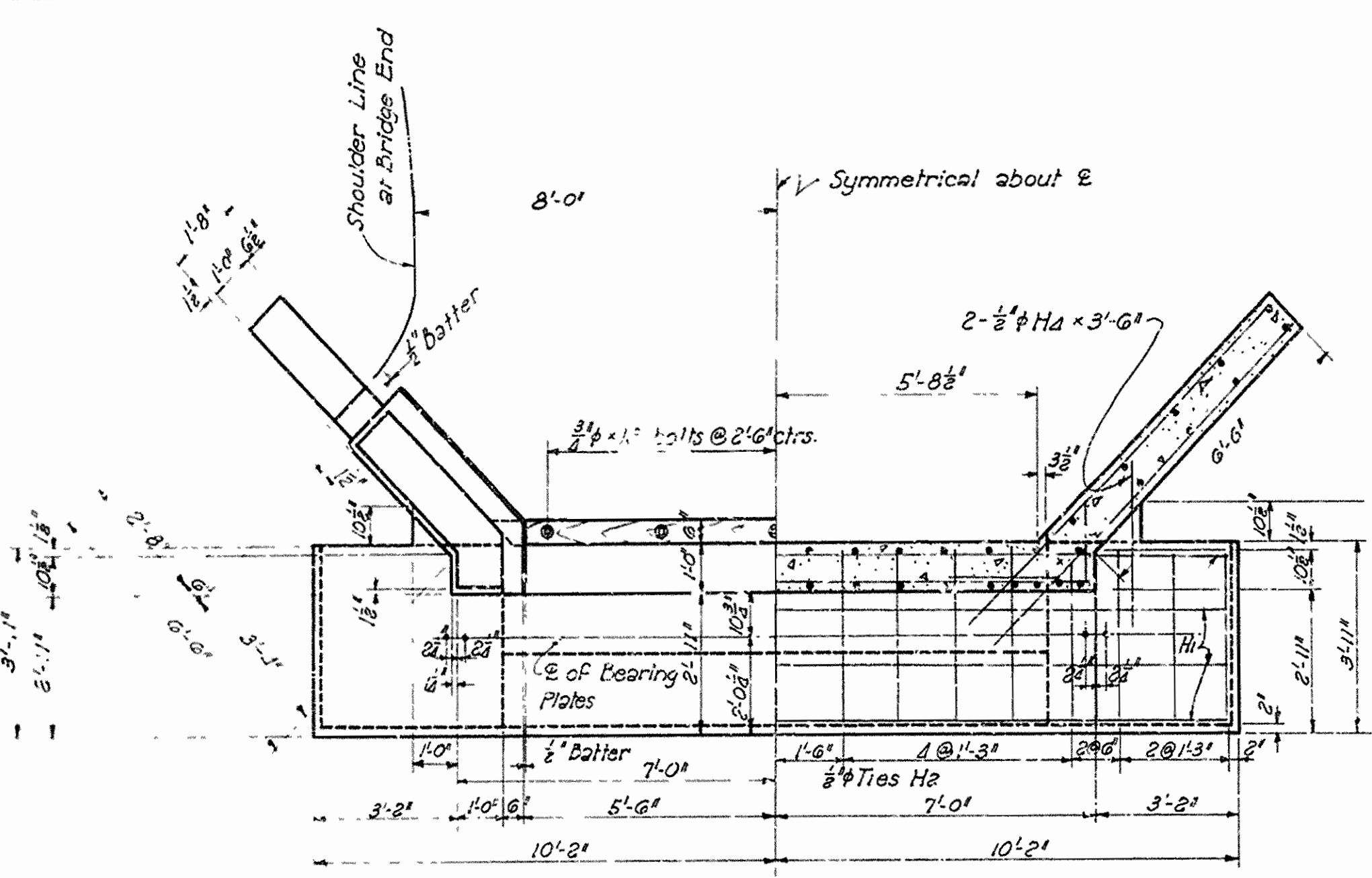
ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.  
 Drawn By: H.B. Date: 7-14-44  
 Traced By: H.B. Date: 7-20-44  
 Checked By: Date:  
 BRIDGE NO. 2387 DRAWING NO. 6522-A

M.C. Garner  
 PRINCIPAL HIGHWAY ENGINEER (BRI02)

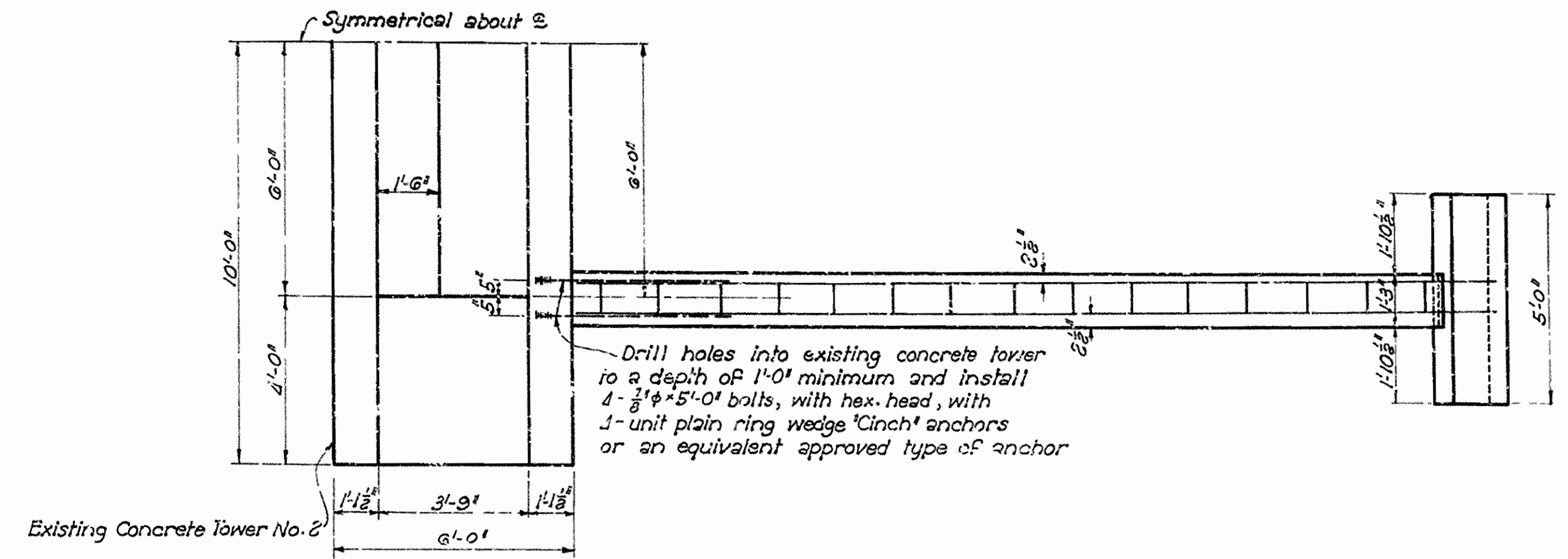




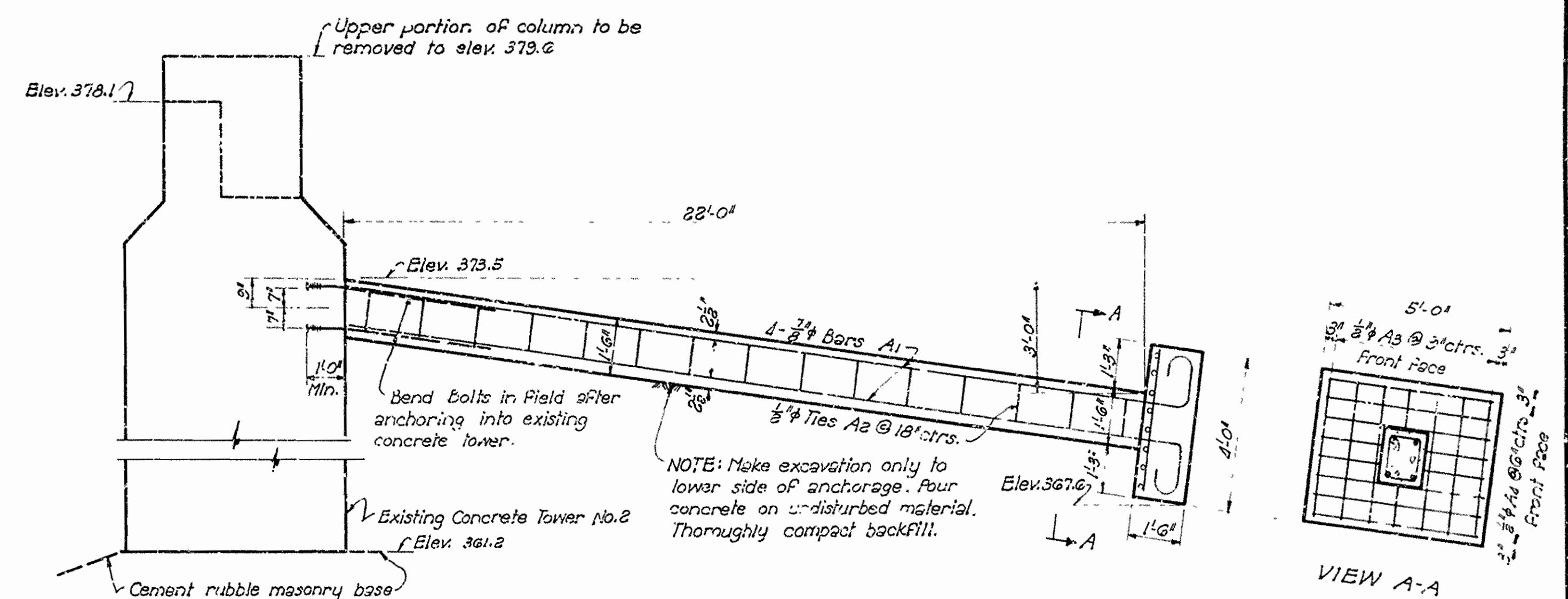
FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	E. R. 5		6	17
STATE JOB NO. 5252					



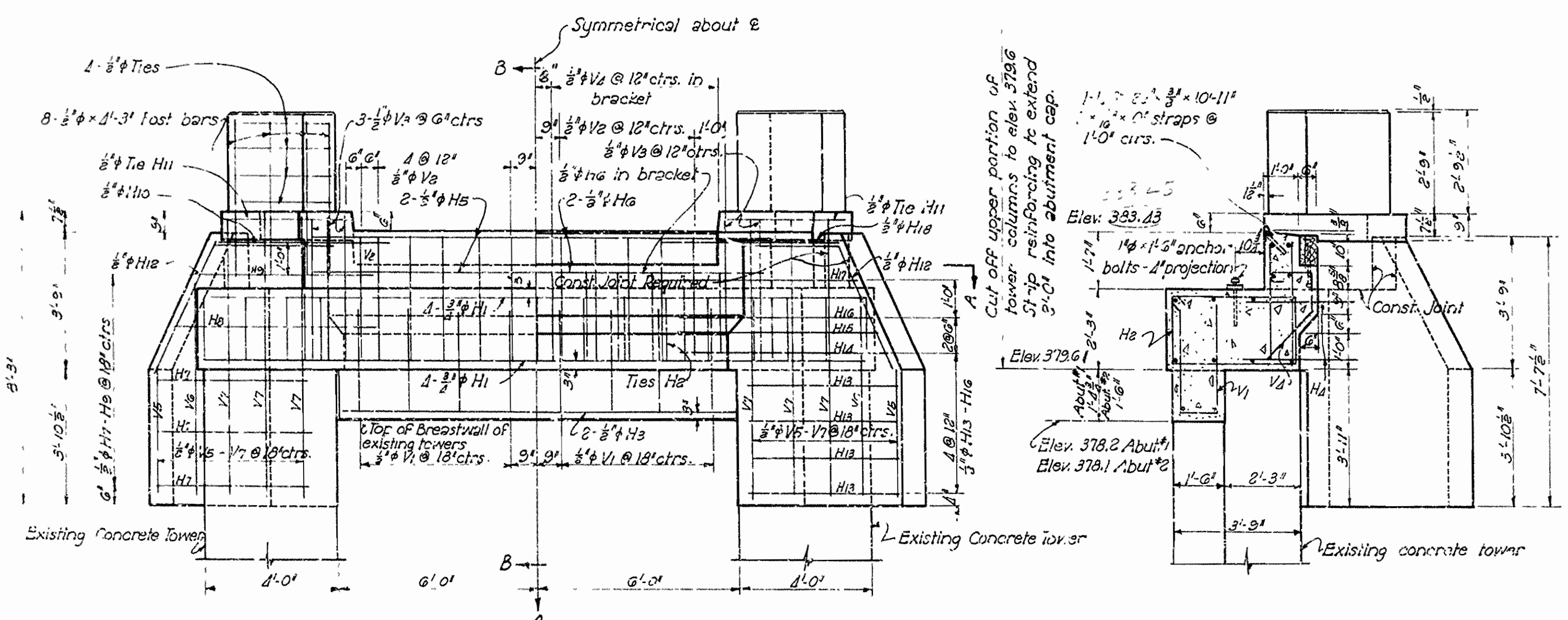
HALF PLAN HALF SECTION A-A



HALF PLAN - ANCHORAGE FOR EXISTING TOWER NO. 2



SIDE ELEVATION - ANCHORAGE FOR EXISTING TOWER NO. 2



HALF FRONT ELEVATION HALF REAR ELEVATION SECTION B-B

DETAILS OF ABUTMENTS

GENERAL NOTES

All concrete to be Class 'A' and to be poured in the dry. All exposed corners to be chamfered 3/4" unless otherwise noted.  
 In general, construction joints shall be horizontal and shall be provided with keys not less than 3" high covering the middle third of both dimensions.  
 All anchor rods, bolts, washers, etc. shall be paid for at the unit price bid for Reinforcing Steel.  
 Cast header shall be included in the quantity of Class 'A' Concrete.  
 Reinforcing steel shall be deformed bars of structural or intermediate grade. Shop lists and bending diagrams shall be submitted and approval secured before fabrication is begun. All dimensions relating to reinforcing steel are to centers of bars.  
 The Contractor shall exercise care in removing upper portions of existing concrete towers to provide level bearing for abutment caps. Vertical reinforcing bars in towers to be stripped back to provide, where practicable, a minimum projection of 2'-0" into abutment cap.  
 The work of drilling holes into concrete towers for anchorage bolts will not be paid for directly, but will be considered subsidiary to the item of Reinforcing Steel.

REINFORCING BAR SCHEDULE

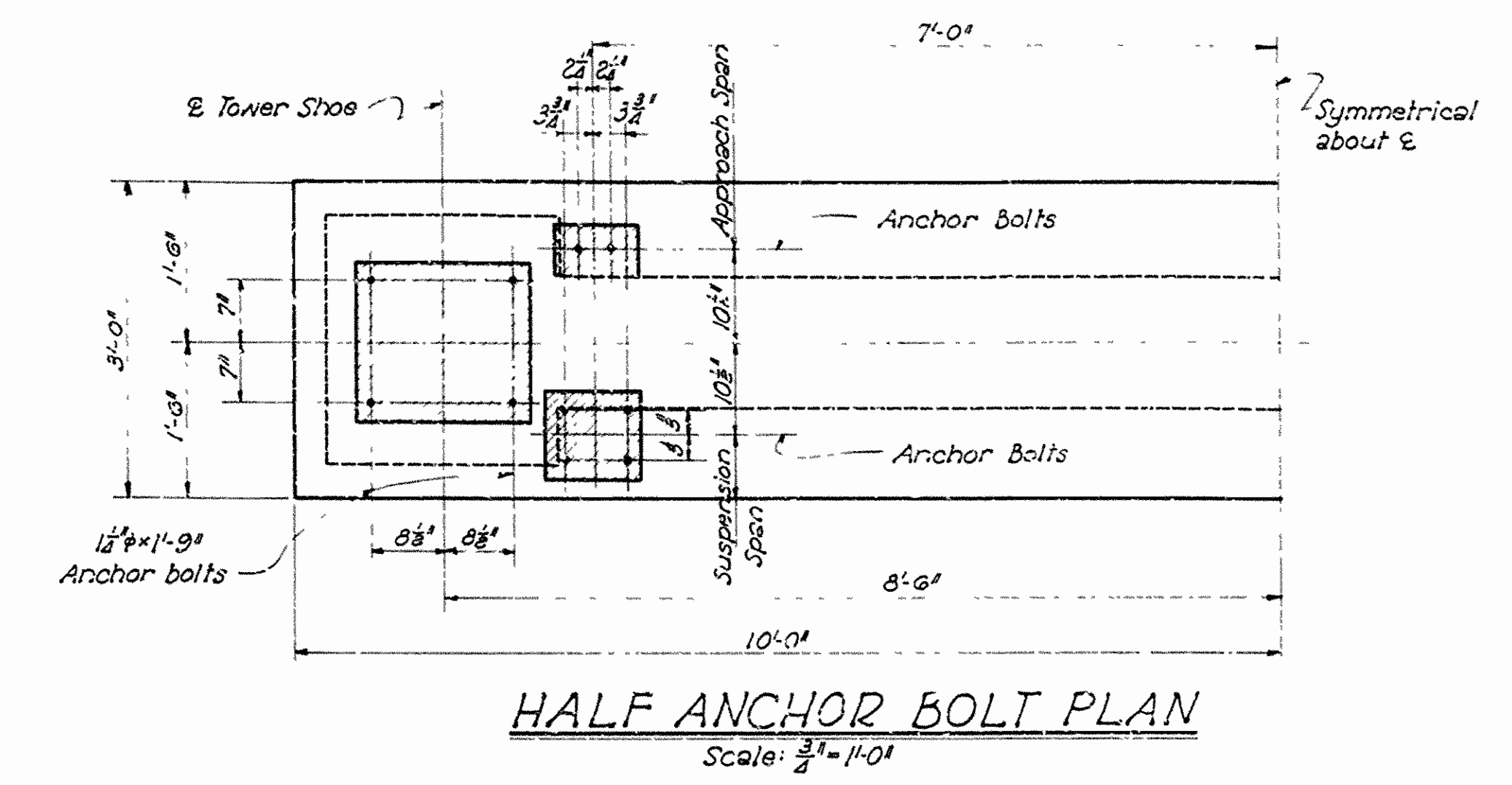
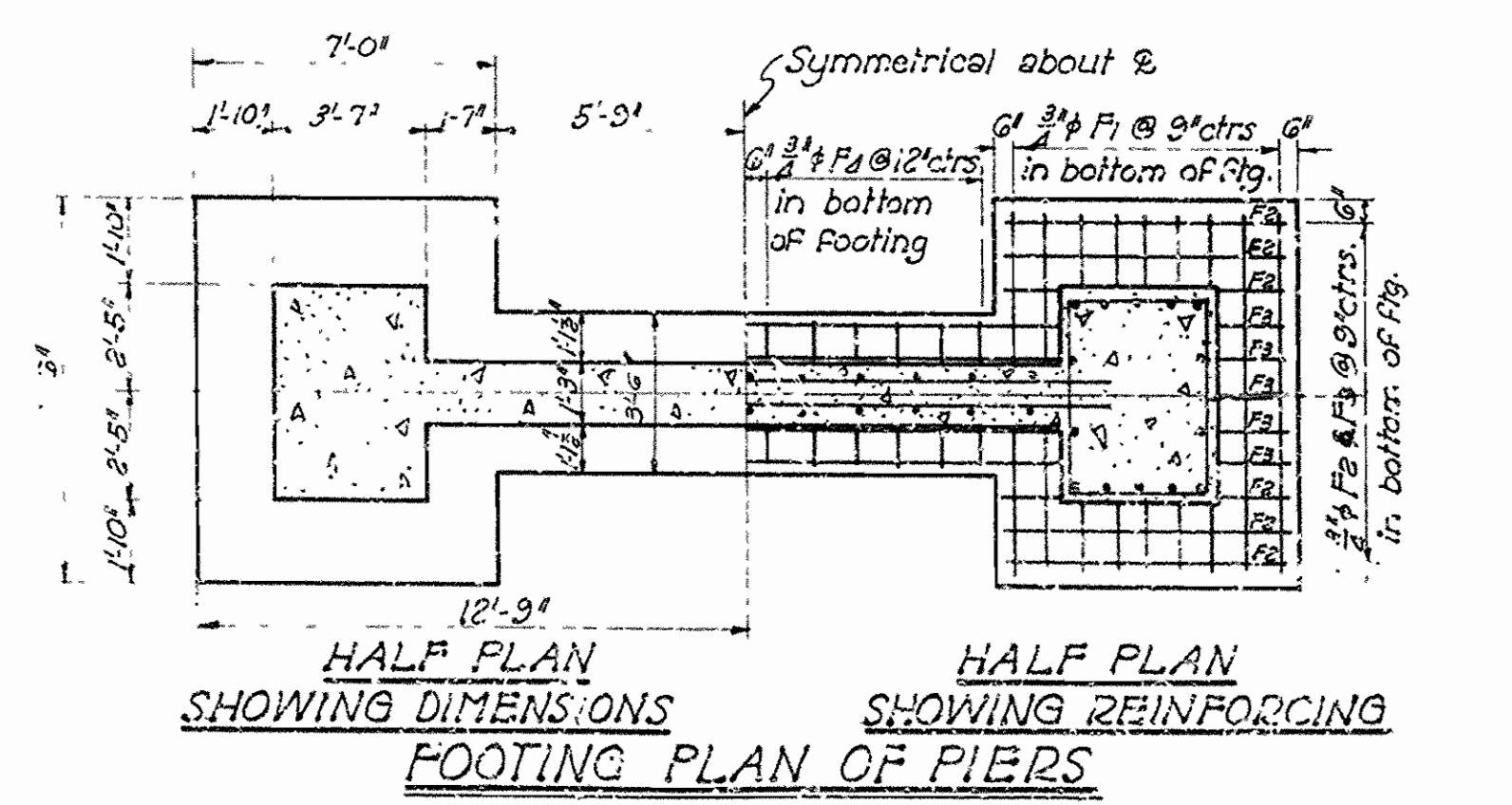
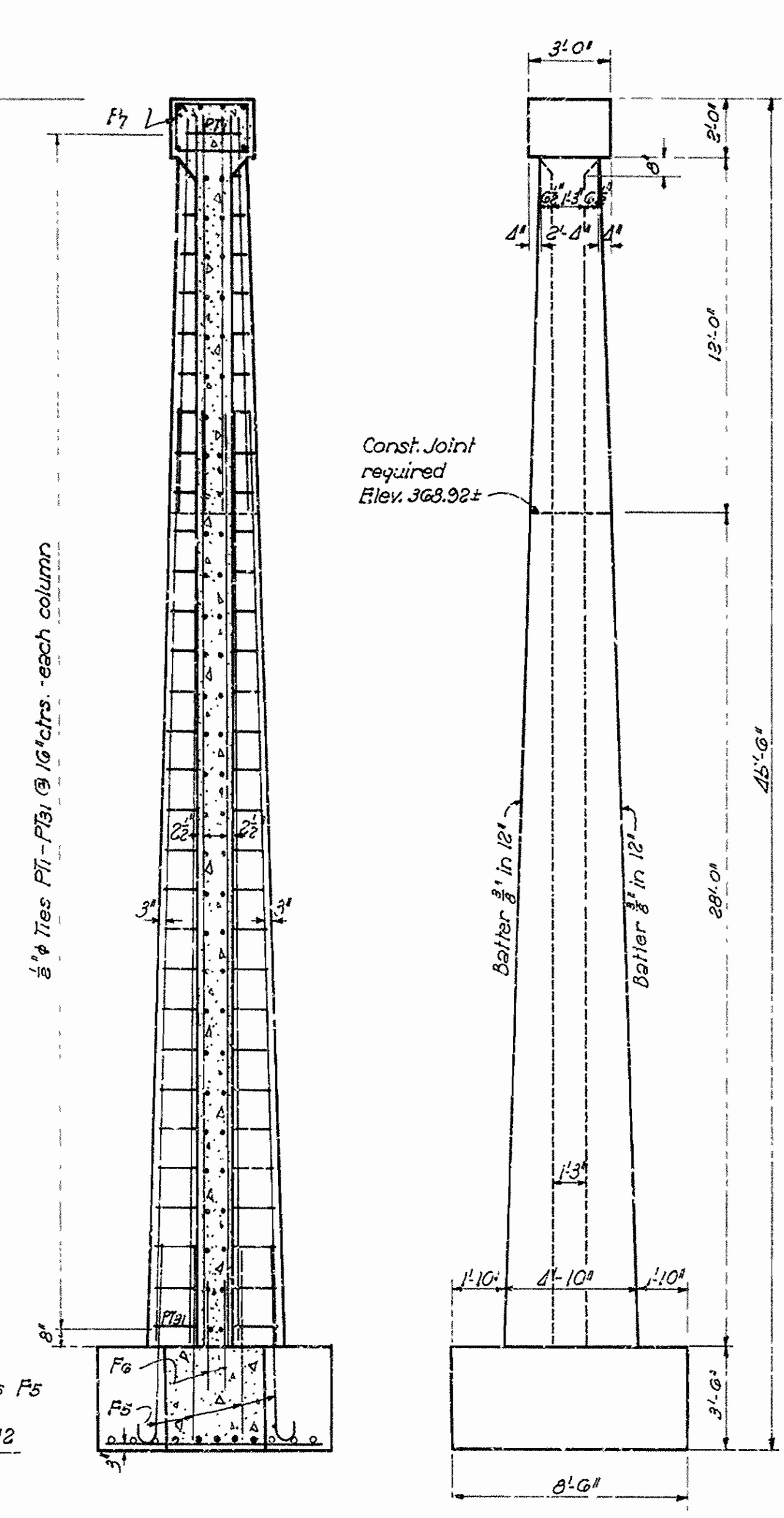
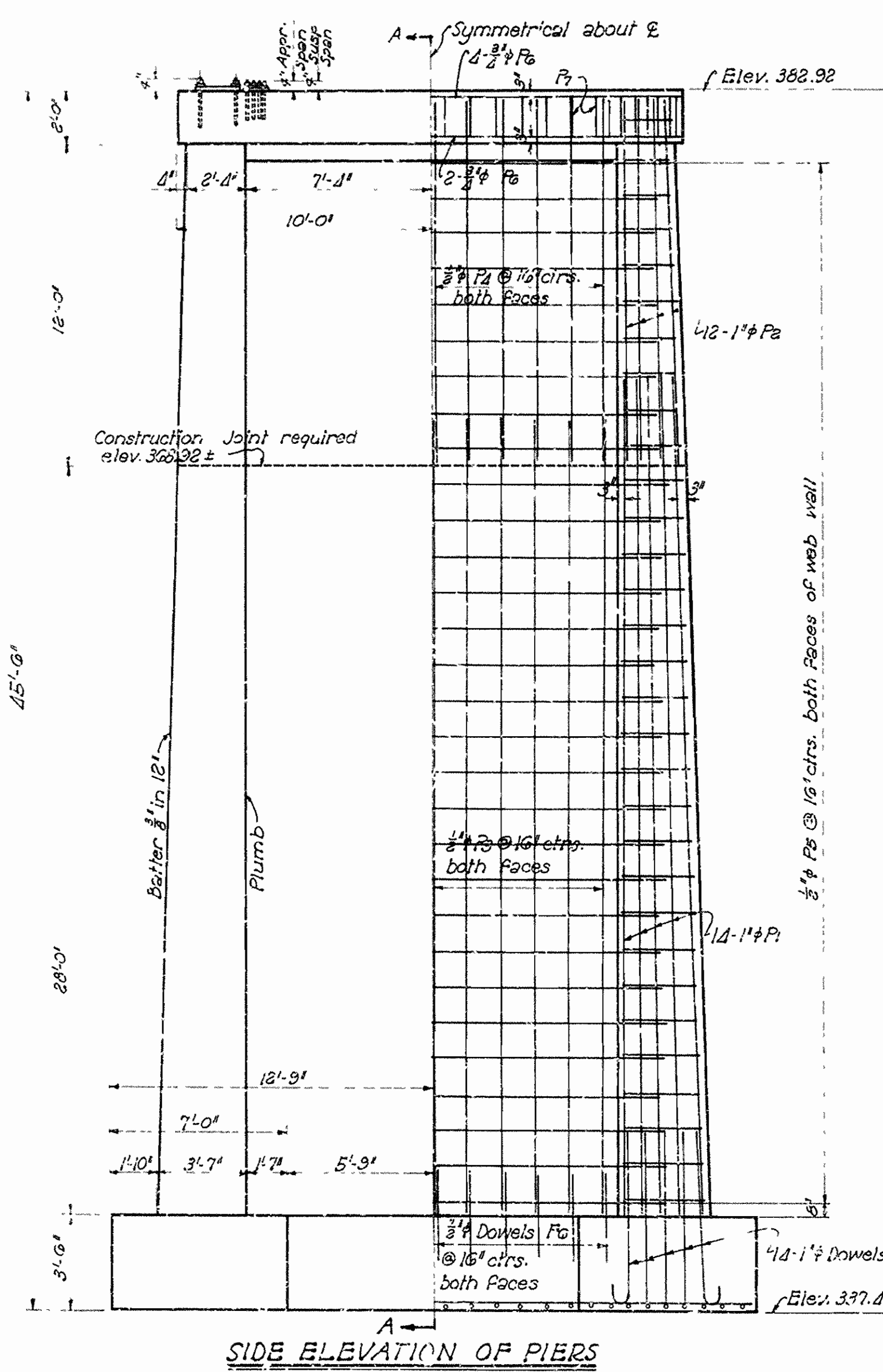
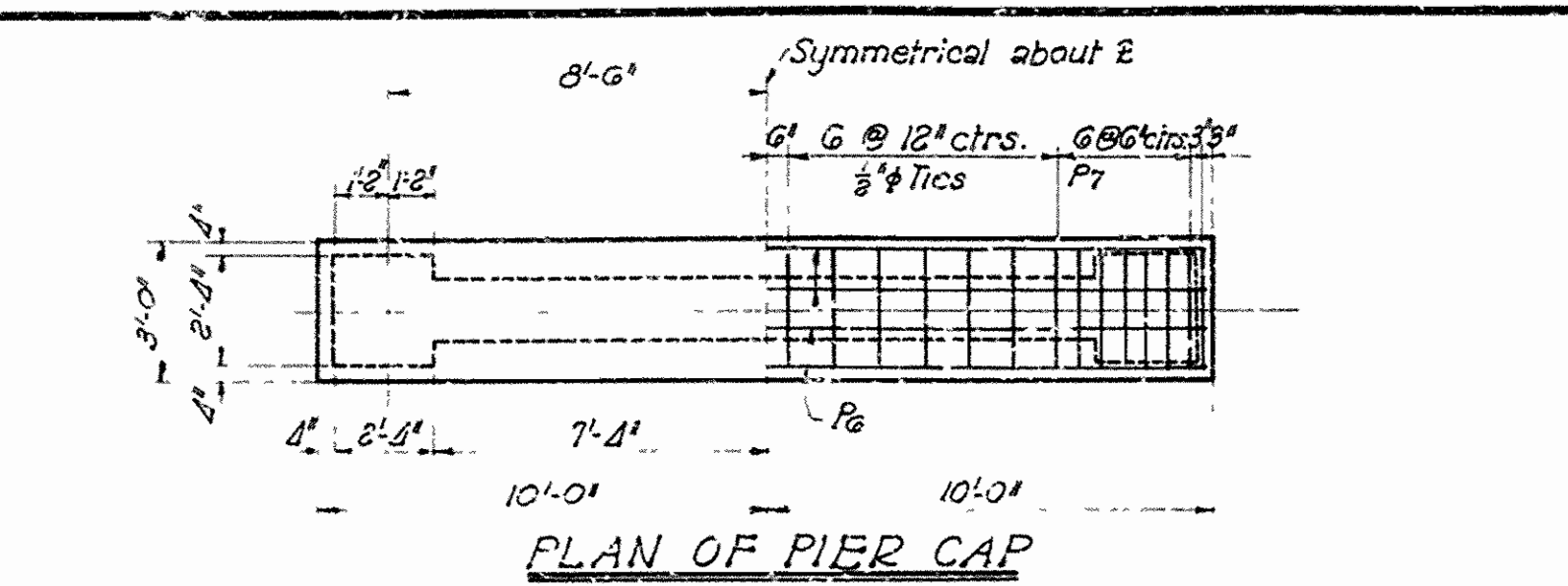
MARK	NO.	SIZE	LENGTH	BENDING DIAGRAM
H1	8	3/4"	20'-0"	Str.
H2	19	3/4"	11'-7"	Str.
H3	2	3/4"	11'-6"	Str.
H4	4	3/4"	3'-6"	Str.
H5	2	3/4"	16'-7"	Str.
H6	3	3/4"	13'-7"	Str.
H7	6	3/4"	6'-0"	Str.
H8	2	3/4"	8'-6"	Str.
H9	2	3/4"	6'-8"	Str.
H10	2	3/4"	8'-10"	Str.
H11	2	3/4"	11'-11"	Str.
H12	1	3/4"	7'-0"	Str.
H13	1	3/4"	6'-7"	Str.
H14	2	3/4"	9'-0"	Str.
H15	2	3/4"	8'-6"	Str.
H16	2	3/4"	8'-3"	Str.
H17	2	3/4"	7'-7"	Str.
H18	2	3/4"	6'-10"	Str.
H19	2	3/4"	7'-2"	Str.
V1	8	3/4"	3'-8"	Str.
V2	22	3/4"	3'-8"	Str.
V3	10	3/4"	3'-8"	Str.
V4	12	3/4"	4'-5"	Str.
A1	3	3/4"	25'-2"	Str.
A2	30	3/4"	5'-11"	Str.
A3	14	3/4"	3'-7"	Str.
A4	16	3/4"	4'-7"	Str.
V5	4	3/4"	3'-8"	Str.
V6	4	3/4"	5'-9"	Str.
V7	12	3/4"	7'-10"	Str.

DETAILS OF ABUTMENTS & EXISTING TOWER ANCHOR BRIDGE OVER LITTLE RED RIVER CLEBURNE COUNTY

ROUTE SEC.  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.  
 Drawn By: H.B. Date: 12-2-47  
 Traced By: B.S. Date: 12-13-47  
 Checked By: Date:  
 BRIDGE NO. 2387 DRAWING NO. 6522-C

M.A. Harvey  
 PRINCIPAL HIGHWAY ENGINEER (BRIDGE)

FED. ROAD DIST. NO.	STATE	F.F.D. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	E.R.-5		7	17
STATE JOB NO. 5252					



REINFORCING BAR SCHEDULE - EACH PIER

MARK	NO.	SIZE	LENGTH	BENDING DIAGRAM
F1	18	3/4" φ	2'-0"	Str.
F2	12	3/4" φ	6'-6"	1
F3	5	3/4" φ	25'-0"	1
F4	12	3/4" φ	3'-11"	1
F5	20	1" φ	7'-6"	1
F6	22	3/4" φ	3'-4"	Str.
F7	28	1" φ	31'-4"	1
P2	24	1" φ	13'-9"	1
P3	22	3/4" φ	28'-8"	1
P4	22	3/4" φ	12'-9"	1
P5	60	1/2" φ	18'-0"	1
P6	6	3/4" φ	13'-7"	1
P7	28	3/4" φ	9'-2"	1
PT1-PT3	62	1/2" φ	25 to 15'-11"	1

GENERAL NOTES

All Concrete to be Class 'A'. Exposed corners to be chamfered 3/4" unless otherwise noted. In general, all construction joints shall be horizontal and shall be provided with keys not less than 3" high covering the middle third of both dimensions. Anchor bolts to be paid for at the unit price bid for "Structural Steel in Beam Spans". Reinforcing steel shall be deformed bars of structural or intermediate grade. Shop lists and bending diagrams shall be submitted and approval secured before fabrication is begun. All dimensions relating to reinforcing steel are to centers of bars.

SPECIAL NOTES:

Construction of piers shall be carried to about elevation 368.92 before existing bridge is removed and river crossing is closed to traffic.

DETAILS OF PIERS  
BRIDGE OVER LITTLE RED RIVER  
HIDDEN-STARK ROAD  
CLEBURNE COUNTY

ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
Drawn By: H.B. Date: 10-11-47  
Traced By: B.B.S. Date: 10-15-47  
Checked By: Date:  
BRIDGE NO. 2387 DRAWING NO. 6522-D

H.B. Conner  
PRINCIPAL HIGHWAY ENGINEER (BRIDGE)

FED. ROAD DIST. NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
8	ARK.	E.R.-5	1947	7	13
STATE JOB NO. 5252			1947	7	15

### DESIGN LIVE LOAD H-10 LOADING A.A.S.H.O. 1947

LOAD DISTRIBUTION TO EACH BEAM:- Dead Load - 1015' / Lin. Ft.  
 Live Load - 112 Wheels or 0.56 lanes  
 Impact - Varies

UNIT STRESSES:- Class 3 Concrete (1000)<sup>psi</sup>  
 Reinforcing Steel 18000<sup>psi</sup>  
 Structural Steel 18000<sup>psi</sup>

### GENERAL NOTES

All concrete to be Class 3. All exposed corners to have chamfers unless otherwise noted.  
 The concrete deck for the continuous I-beam spans shall be poured in accordance with the schedule shown on the plans. Pours having the same number may be poured separately or at the same time.  
 All field connections to be riveted unless otherwise noted.  
 Rivets 3/8". Open holes 1/4". Machine bolts to be used where bolt connections are to be subpunched, and connections are to be subpunched, and reamed to a metal template.  
 Ends of all stiffener angles and plates shall be ground to bear against beam flanges.

All shop weld connections shall be made by the electric arc process. All welds to be 1/4" fillet welds unless otherwise noted. All design, material and workmanship shall be in accordance with the specifications for Fusion Welding.  
 All longitudinal beams are to be cambered in accordance with the plans. The ends of the beams at the splices shall be milled so as to be normal to each beam at the splices. The holes for all beam splices shall be subpunched or drilled to 1/4" and reamed to size while the beams are assembled in the shop. While assembled for reaming all parts are to be matched-marked. A match-marking system shall be such as to prevent interchanges or reversal of splice material. A match-marking diagram shall be furnished the Engineer.

The continuous I-beam spans are to be erected and riveted completely before any forms or other loads are placed thereon.

Shapes of equal or greater strength may be substituted for structural shapes shown but payment will be made on shapes shown or actually used whichever is the lesser.

Shop Paint:- All structural steel shall be given one coat of red lead and raw linseed oil before shipment, except parts to be in contact with concrete.

Field Paint:- 1st coat, white lead, 2nd coat, white lead tinted with lamp black.

All shoes to be built from structural steel plates and shapes. All material to be welded together with 3/8" fillet welds extending entire length of all edges and surfaces in contact. Surfaces in contact to be milled to bear before welding.

Masonry plates shall be finally seated with layers of burlap saturated with red lead. This work and material to be included in the unit price bid for structural steel in beam spans. All shoes, bearing plates, and roadway expansion devices to be paid for as structural steel in beam spans.

Reinforcing steel to be deformed bars of structural or intermediate grade. Shop lists and bending diagrams must be submitted and approval secured before fabrication is begun. Cast iron drains to be paid for as reinforcing steel and to be painted the same as structural steel.

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

In shipment, all 36" beams are to be supported at points approximately one sixth of the length of the beams from each end. Both points of support are to be on the same car.

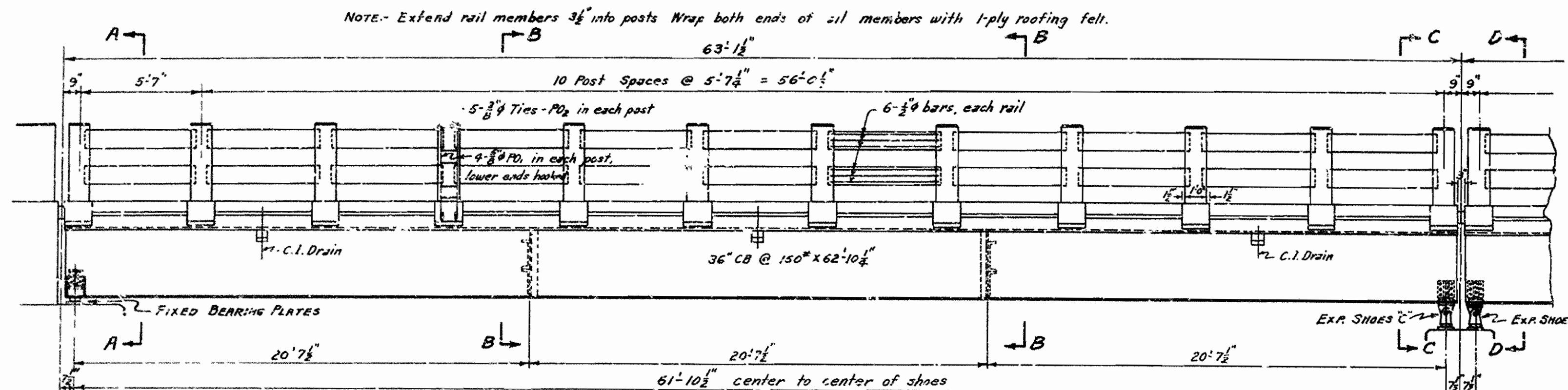
This drawing shows general features of design only. Shop drawings shall be made in accordance with the specifications, and shall be submitted and approval secured before fabrication is begun.

For remainder of details see Drawing No. 6523-A.

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

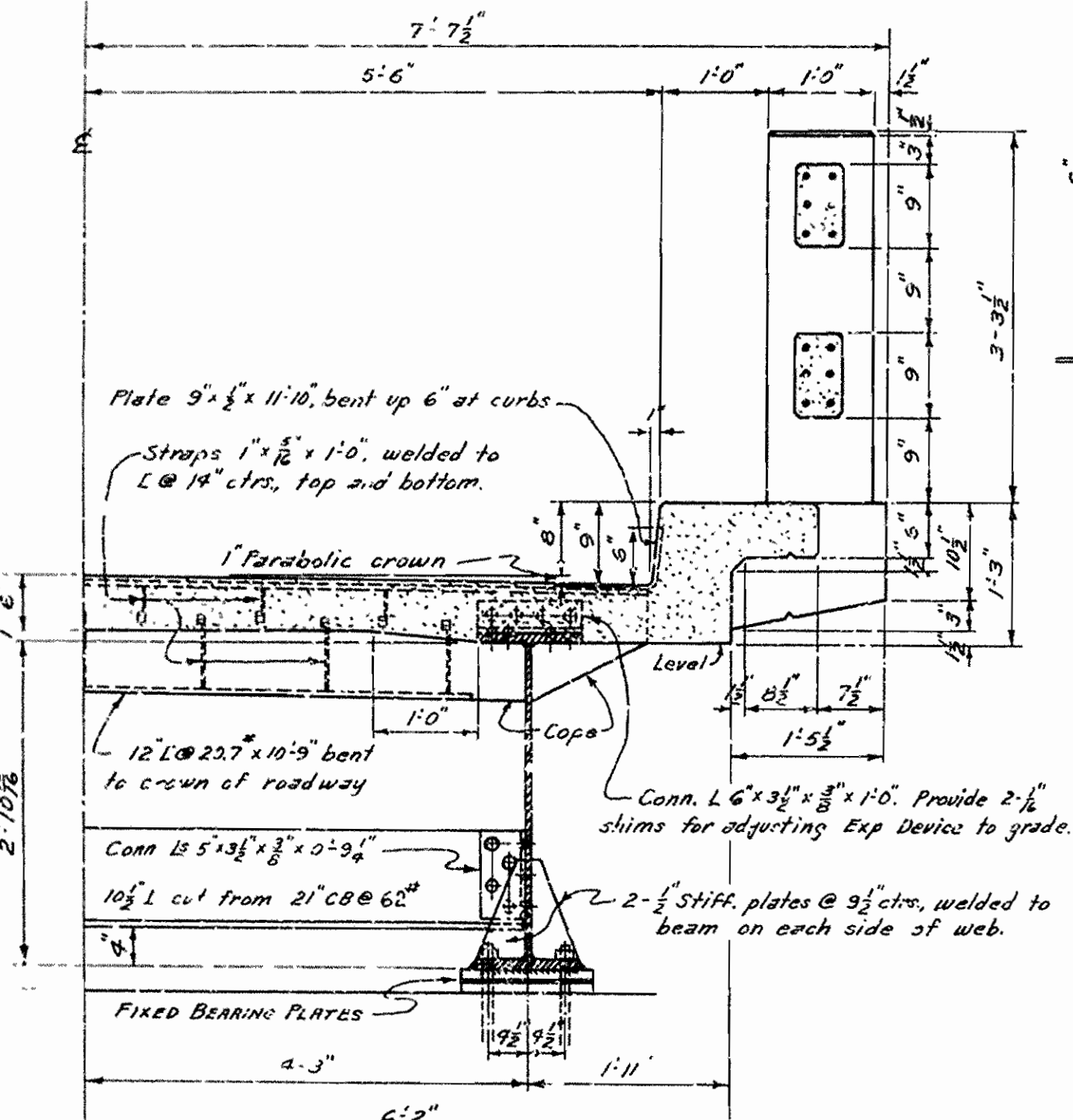
*Approved*

NOTE: For details of Continuous I-beam Spans, see Drawing No. 6523-A.

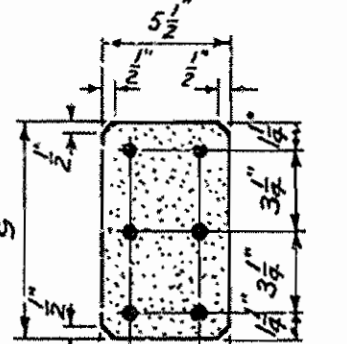


SIDE ELEVATION END I-BEAM SPANS

Scale: 1/4" = 1'-0"  
 Dimensions shown are horizontal only.

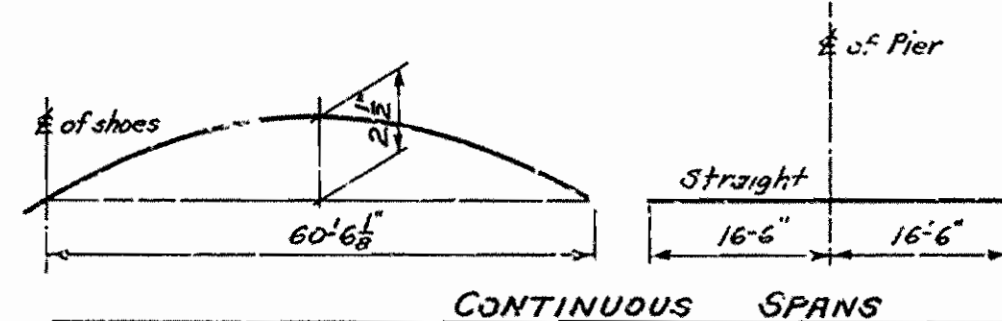
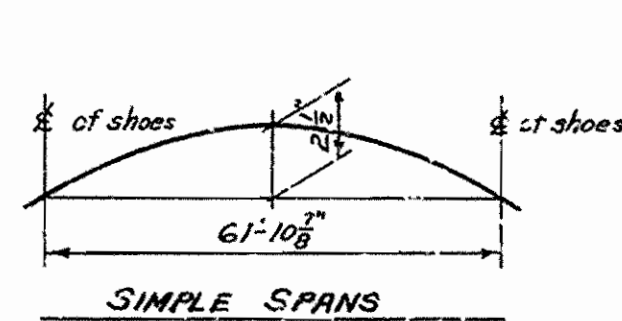


HALF SECTION A-A AT ABUTMENTS



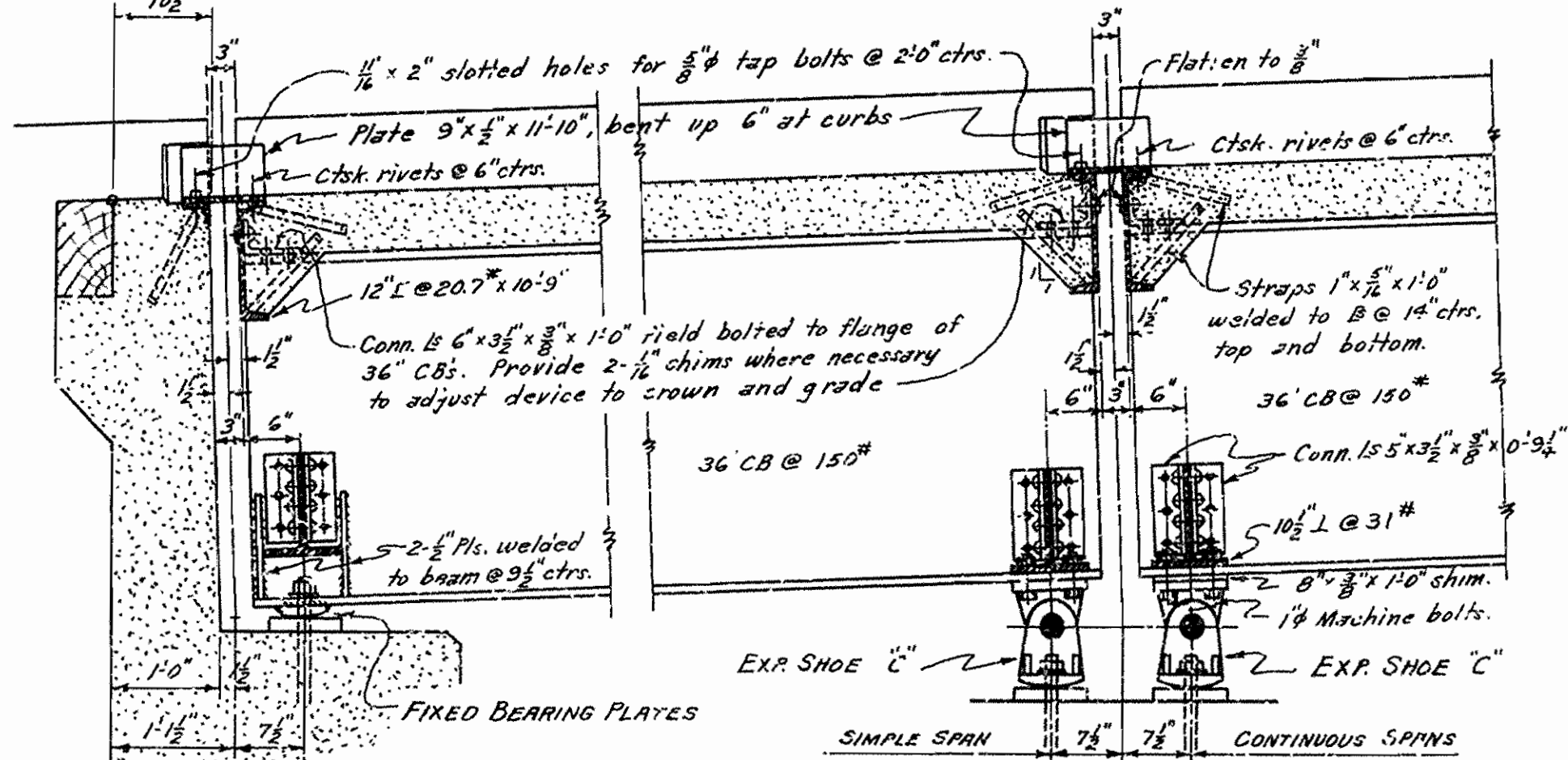
RAIL SECTION

Scale: 1/2" = 1'-0"



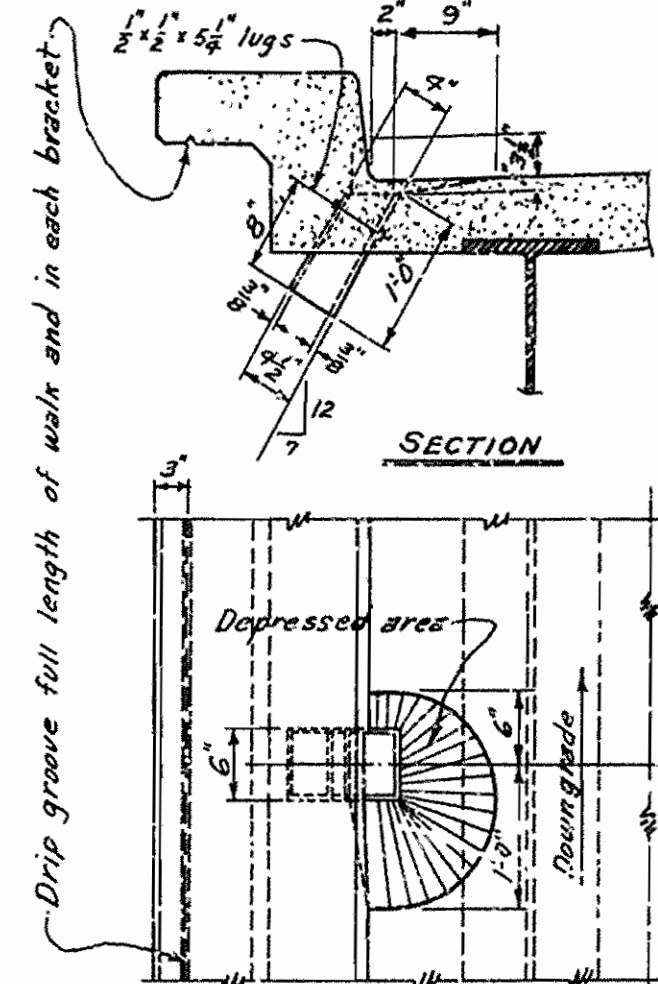
CAMBER DIAGRAM FOR BEAMS

Camber to be rolled into beams at mill.  
 Dimensions shown are along beam on grade.



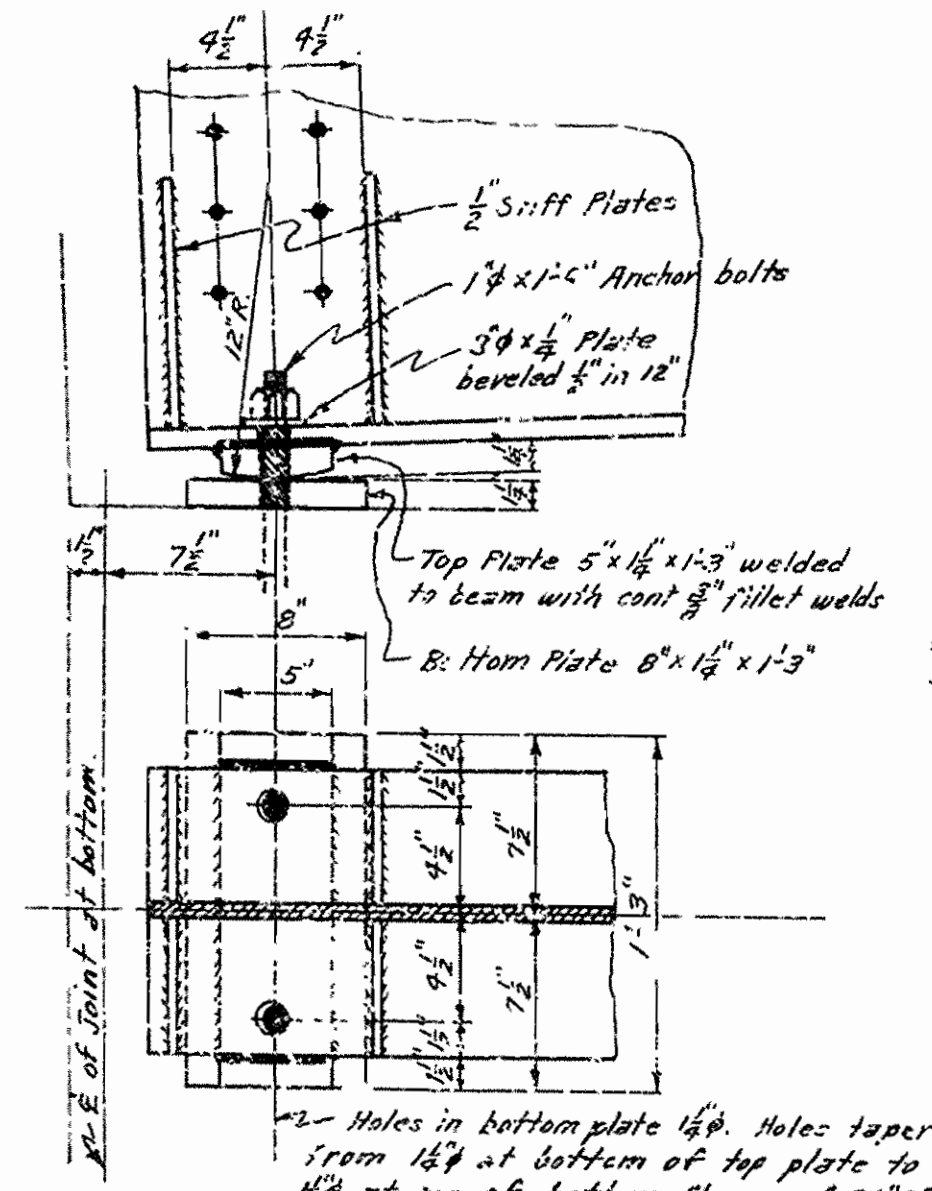
SECTION AT ABUTMENTS

SECTION AT PIERS NO. 1 AND 4



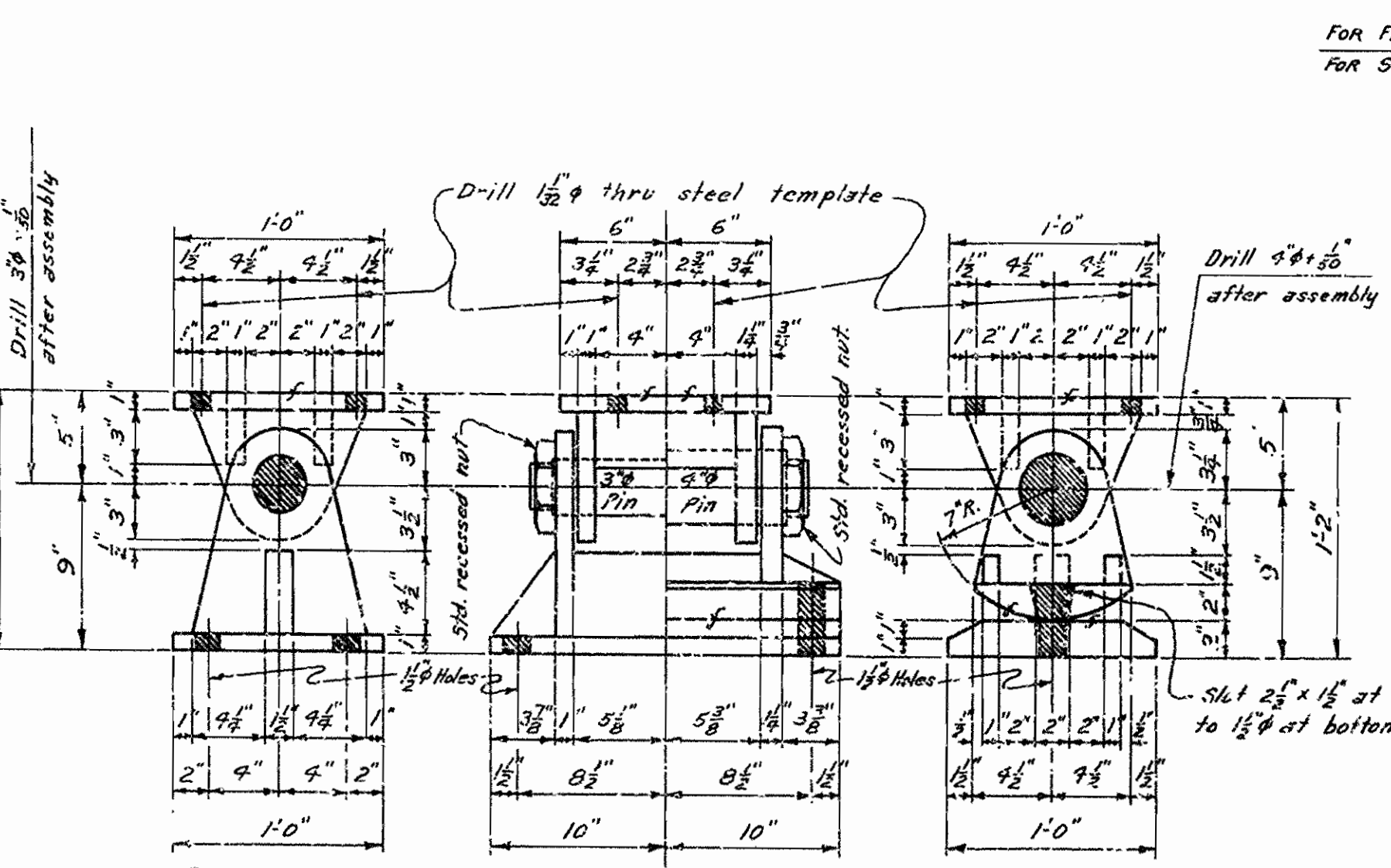
DETAIL OF C. I. DRAIN

NOTE:- Use 6 C.I. Drains on End I-beam Spans, 3 on each side of roadway. See Elevation for location. Use 20 C.I. Drains on Cont. I-beam Spans, 10 on each side of roadway. See Elevation for location. Weight of C.I. Drains - 24 lbs. each.



DETAIL OF FIXED BEARING PLATES

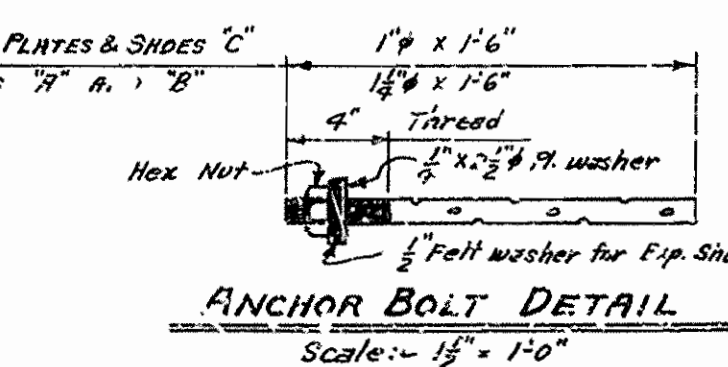
Scale: 1/2" = 1'-0"



DETAILS OF FIXED SHOE 'A'

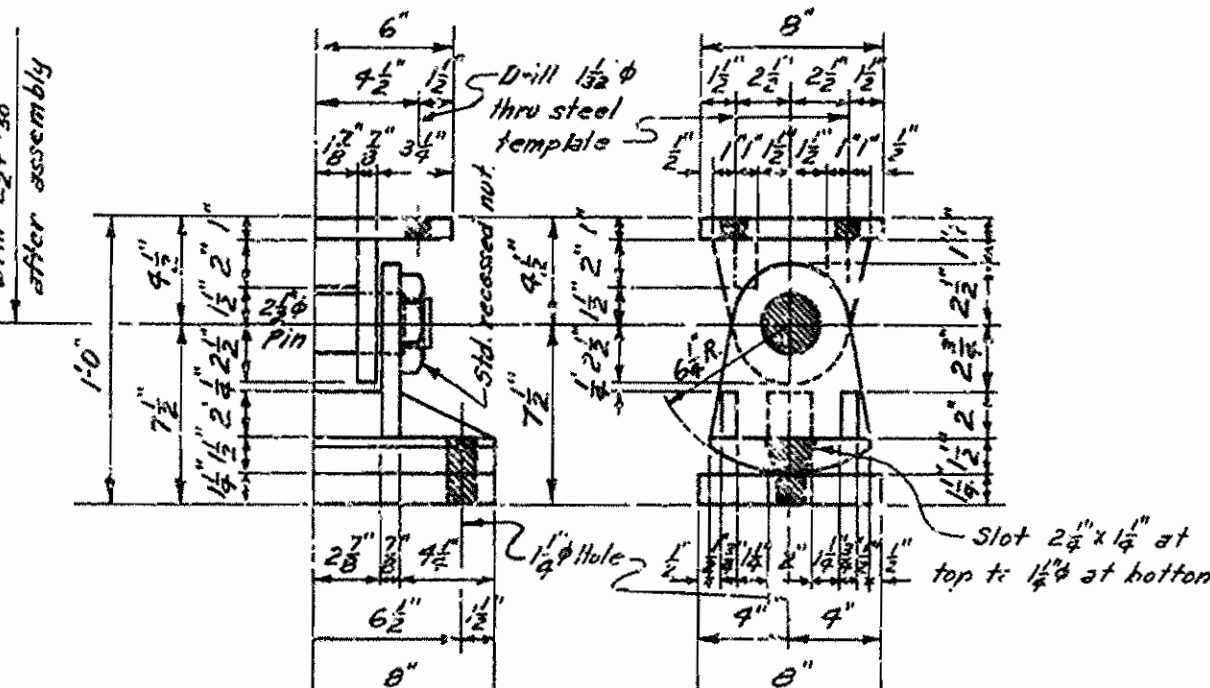
DETAILS OF EXPANSION SHOE 'B'

Scale: 1/2" = 1'-0"



ANCHOR BOLT DETAIL

Scale: 1/2" = 1'-0"



DETAILS OF EXPANSION SHOE 'C'

Scale: 1/2" = 1'-0"

REVISIONS:- Wt. of 21'CBs 10-23-47 W.C.H.

*W.C.H.*  
 PRINCIPAL HIGHWAY ENGINEER (B.S. 1922)

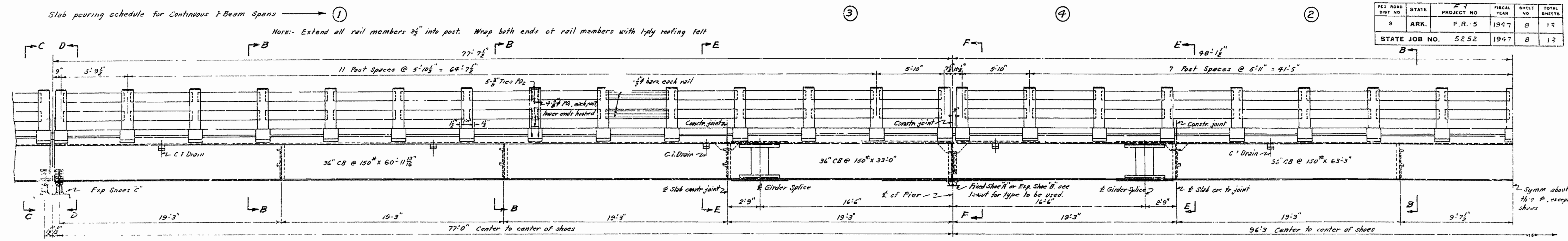
DETAILS OF 63'-1/2" END I-BEAM SPANS  
 AND  
 77'-7 1/2" - 96'-3" - 77'-7 1/2" CONT. I-BEAM SPANS  
 11'-0" CLEAR ROADWAY  
 2 GIRDER TYPE  
 BRIDGE OVER LITTLE RED RIVER  
 HIGDEN - STARK ROAD  
 CLEBURNE COUNTY  
 ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.

Drawn By: W.C.H. Date: 7-12-47  
 Traced By: W.C.H. Date: 7-17-49  
 Checked By: \_\_\_\_\_ Date: \_\_\_\_\_  
 BRIDGE NO. 238 DRAWING NO. 6523

Scale: 1/4" = 1 ft. EXCEPT AS NOTED

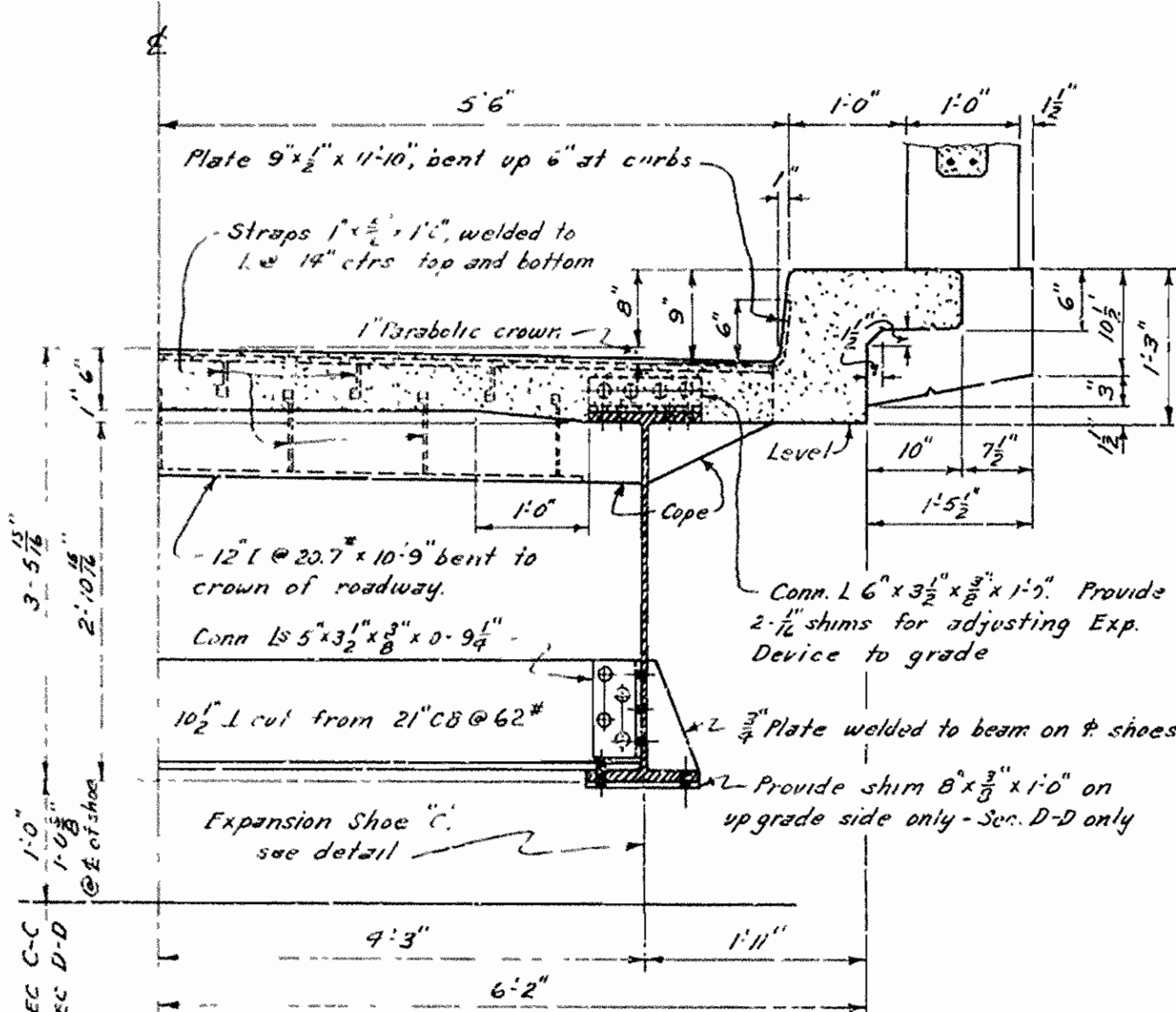
FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	ARK.	F.R.-5	1947	8	15
STATE JOB NO. 5252		1947	8	12	



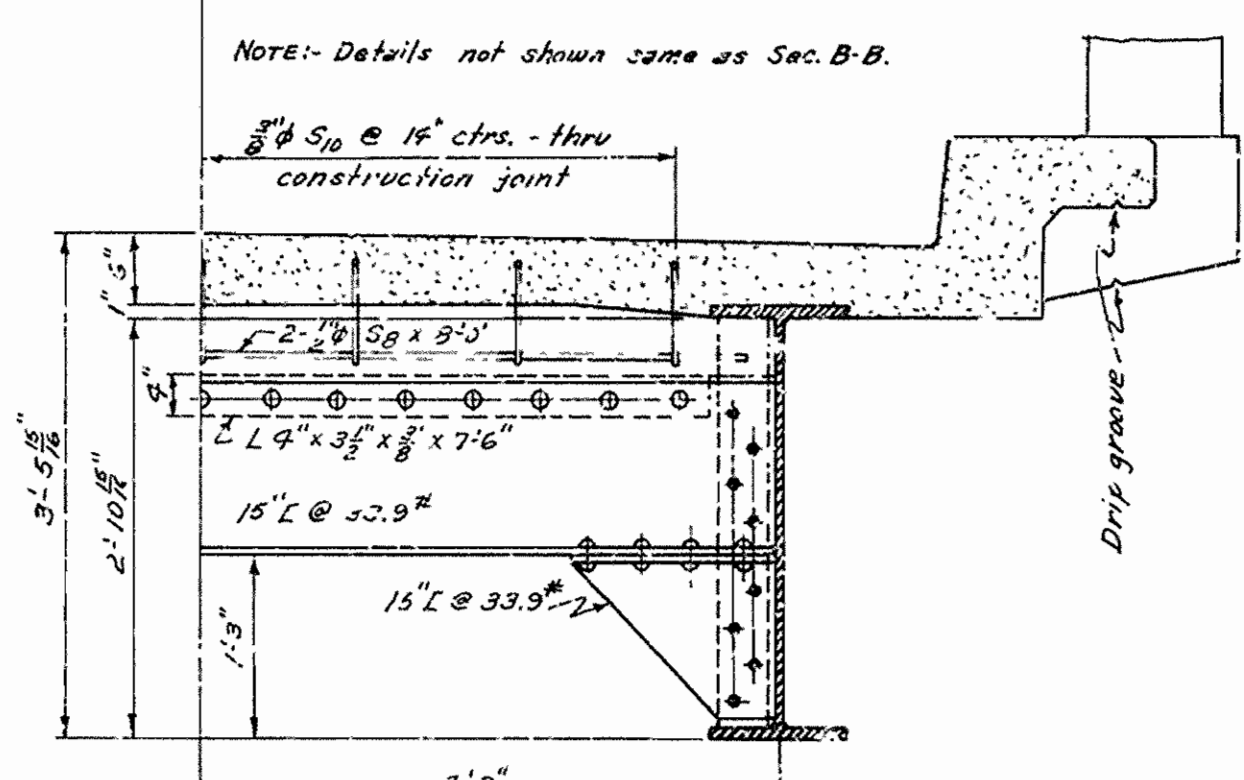
**PART SIDE ELEVATION OF CONTINUOUS I-BEAM SPANS**

Note: Handrail posts and rails on continuous spans are not to be poured until after all parts of slab have been completed.

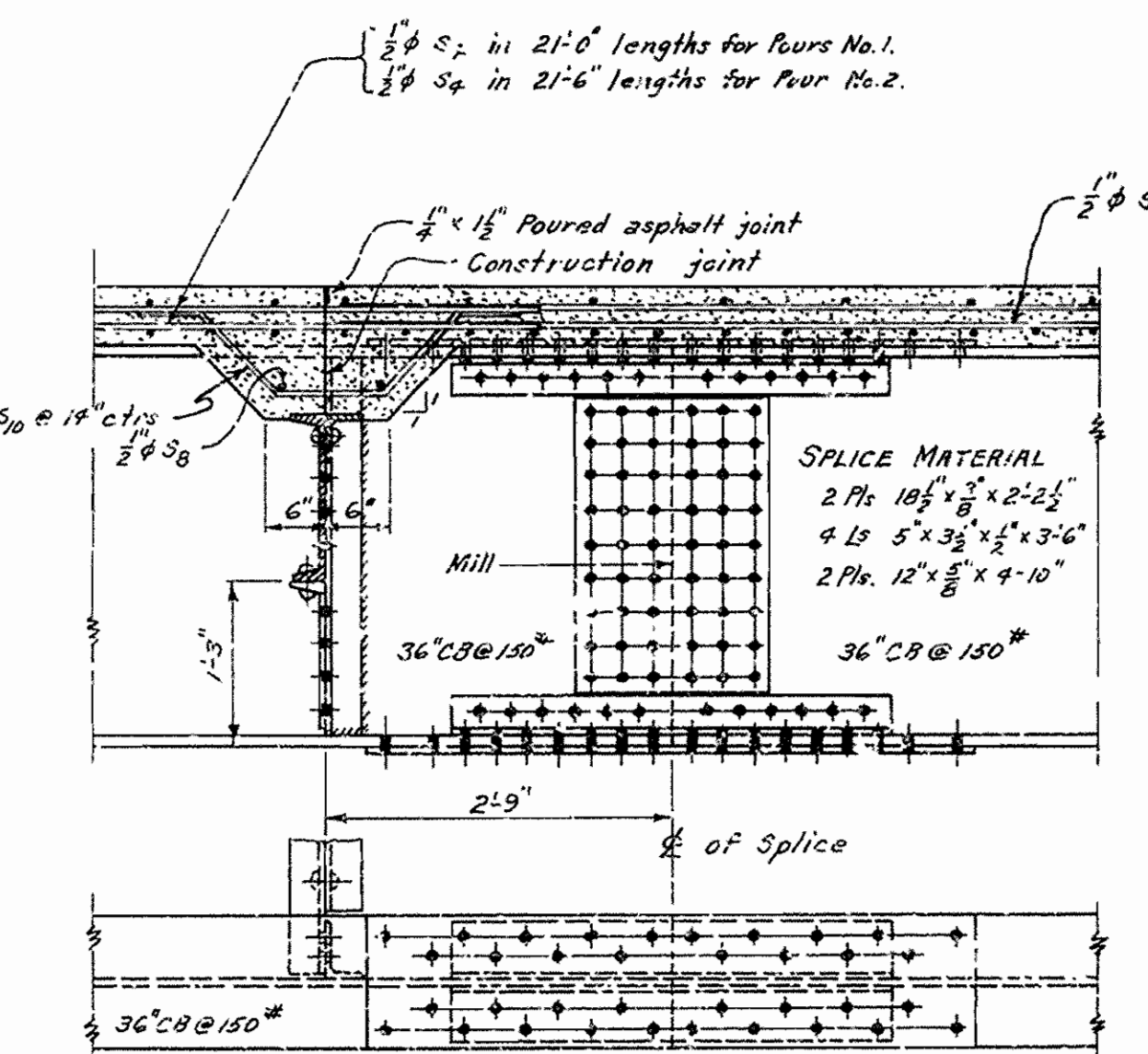
Note: Payment for poured asphalt joints to be included in price bid for Class 5 Concrete.



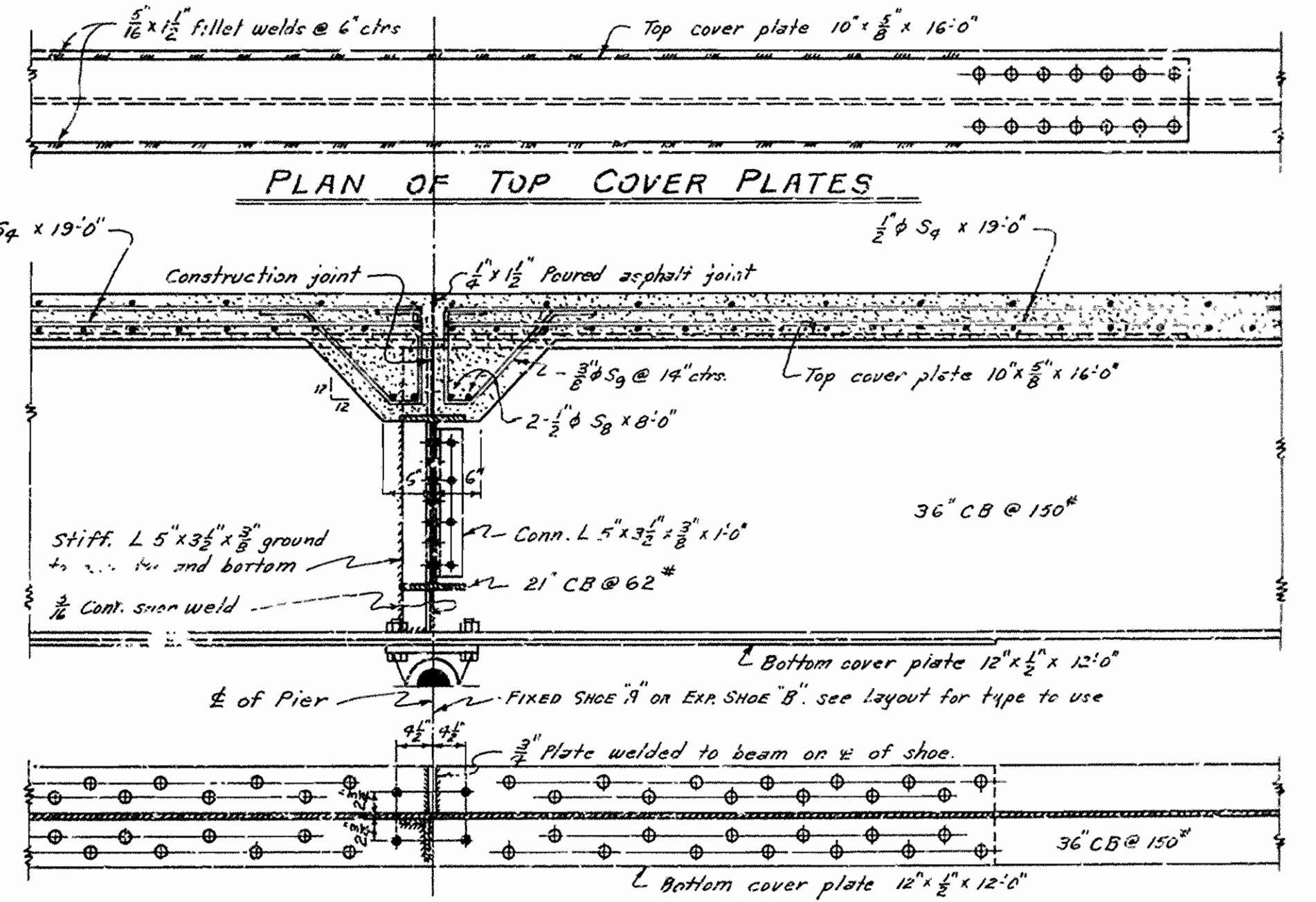
**HALF SECTIONS C-C & D-D**



**HALF SEC. E-E AT SLAB CONSTR. JOINT**

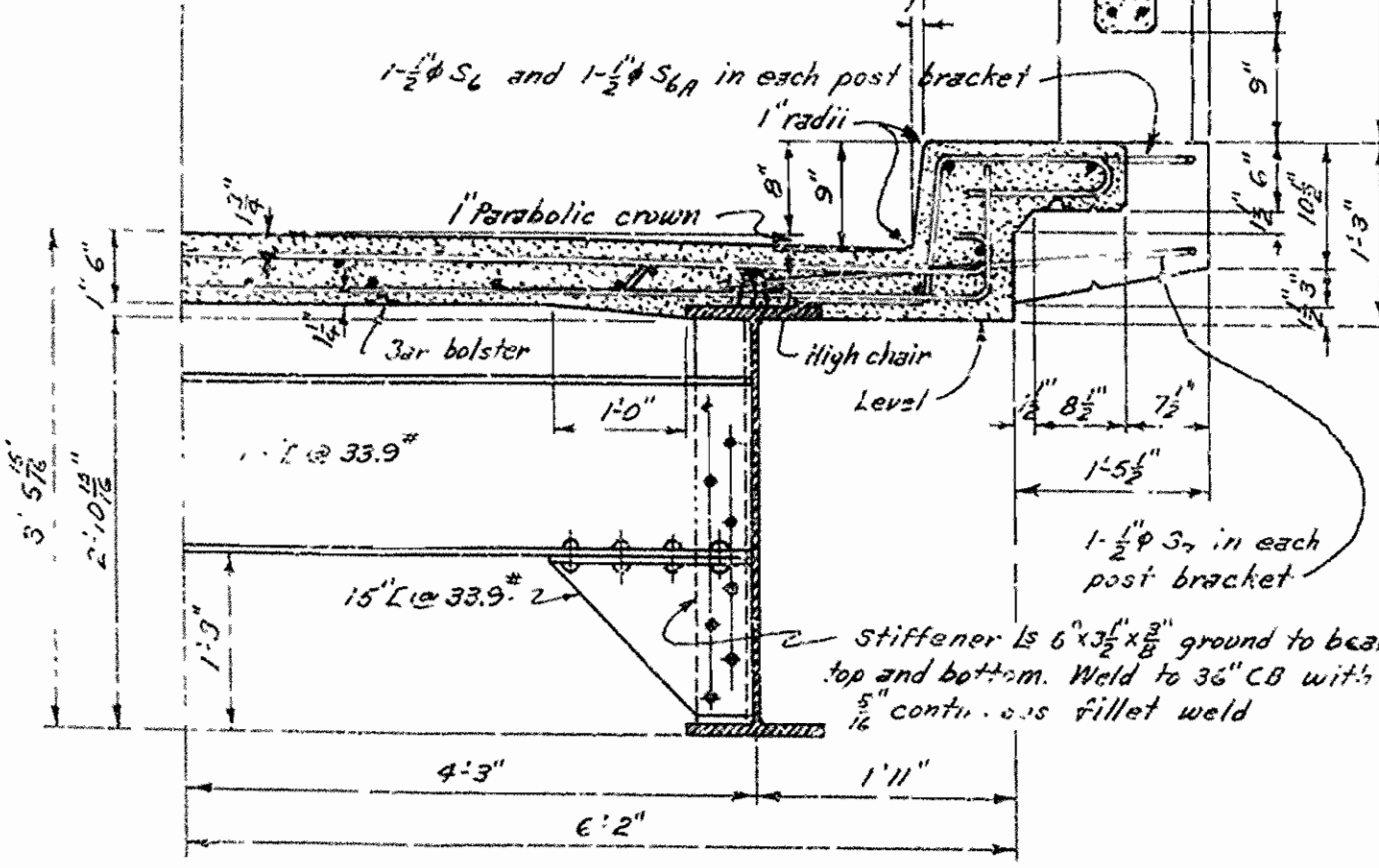


**DETAIL AT SLAB CONSTR. JOINT AND BEAM SPLICE**

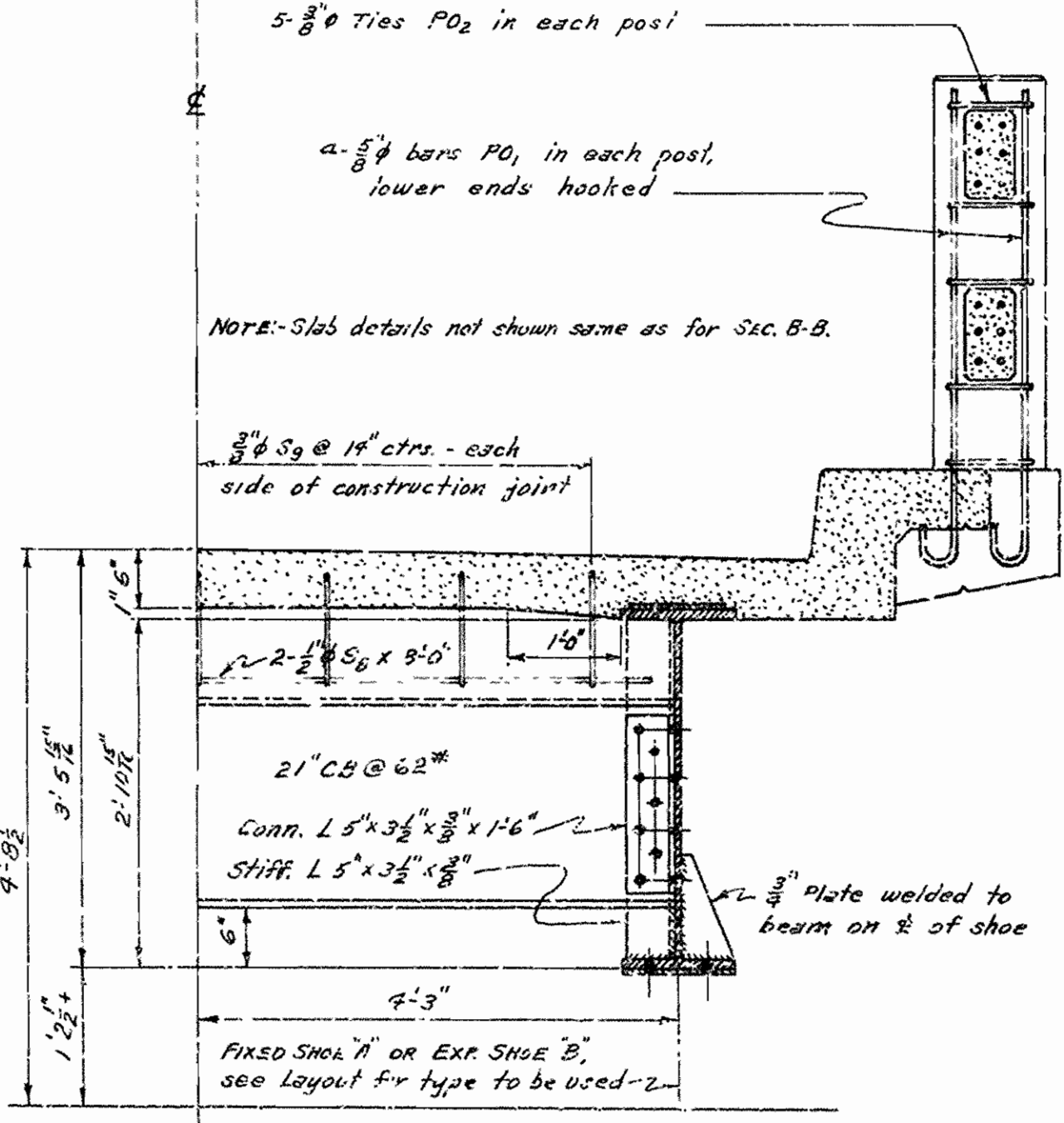


**SECTION AT PIERS AND DETAIL OF BOTTOM COVER PLATE**

TRANSVERSE ROADWAY SLAB REINFORCING  
 12# S1 @ 12" ctrs. in top, ends hooked.  
 12# S2 @ 12" ctrs. in bottom, bent up into curbs  
 12# S3 @ 12" ctrs. in bottom bent up over beams  
 TRANSVERSE CURB REINFORCING  
 12# S3 @ 12" ctrs. in top, bent down into rdwy slab  
 LONGITUDINAL ROADWAY & CURB REINFORCING  
 5/8" S4 spaced as shown (See bar list for lengths and location)



**HALF SECTION B-B**

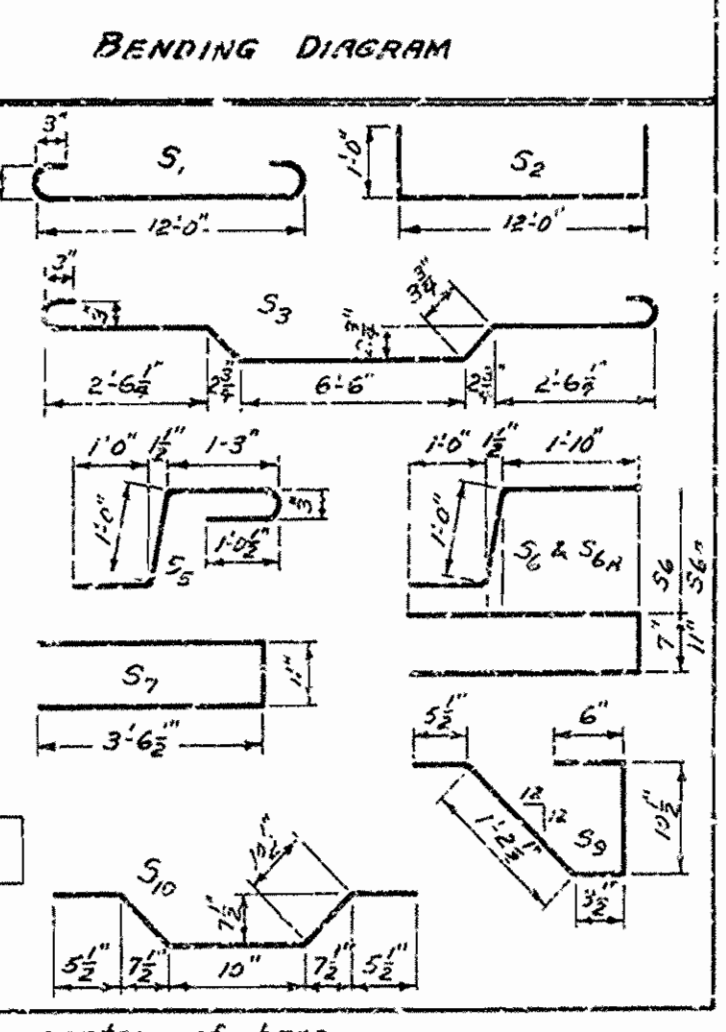


**HALF SECTION F-F AT PIERS**

**BAR LIST FOR ALL SPANS**

MARK	SIZE	NO. REQ'D PER SPAN OR POUR					LENGTH	BENDING DIAGRAM
		SPAN No. 1	SPAN No. 2	SPAN No. 3	SPAN No. 4	SPAN No. 5		
S1	1/2"	62	59	20	20	59	62	12'-9"
S2	1/2"	62	59	20	20	59	62	14'-0"
S3	1/2"	62	58	19	19	57	62	12'-11"
S4	1/2"	66					66	23'-0"
S5	1/2"						66	21'-0"
S6	1/2"						66	21'-6"
S7	1/2"		22	22				19'-0"
S8	1/2"	126	118	40	40	116	126	4'-5"
S9	1/2"	24	24	8	8	18	24	8'-5"
S10	1/2"	24	20	8	8	18	24	8'-0"
S11	1/2"							8'-0"
S12	1/2"							3'-5"
S13	1/2"							3'-6"

Note: Dimensions relating to reinforcing steel are to center of bars



Note: For remainder of details and General Notes see Drawing No. 6523.

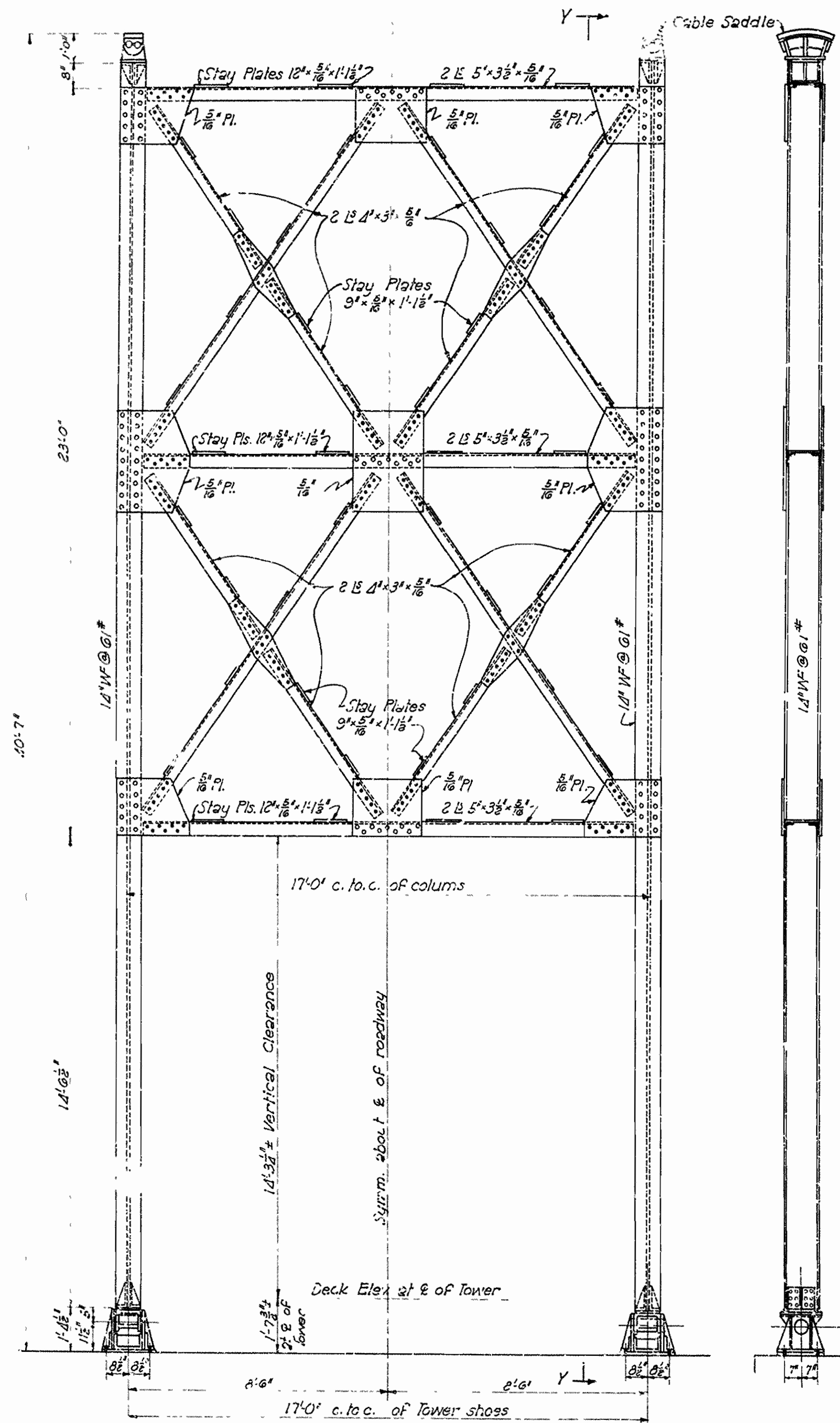
DETAILS OF  
 77'-7 1/2" - 96'-3" - 77'-7 1/2" CONT. I-BEAM SPANS  
 11'-0" CLEAR ROADWAY  
 2 GIRDER TYPE  
 BRIDGE OVER LITTLE RED RIVER  
 HIGDEN - STARK ROAD  
 CLEBURNE COUNTY  
 ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.  
 Drawn By: W.C.H. Date: 7-10-44  
 Traced By: W.C.H. Date: 2-10-45  
 Checked By: \_\_\_\_\_ Date: \_\_\_\_\_  
 BRIDGE NO. 2387 DRAWING NO. 6523-A

Revisions: Revised 93 bars 9-15-44 W.C.H.  
 101 of 21 C.B.s 10-23-47 W.C.H.

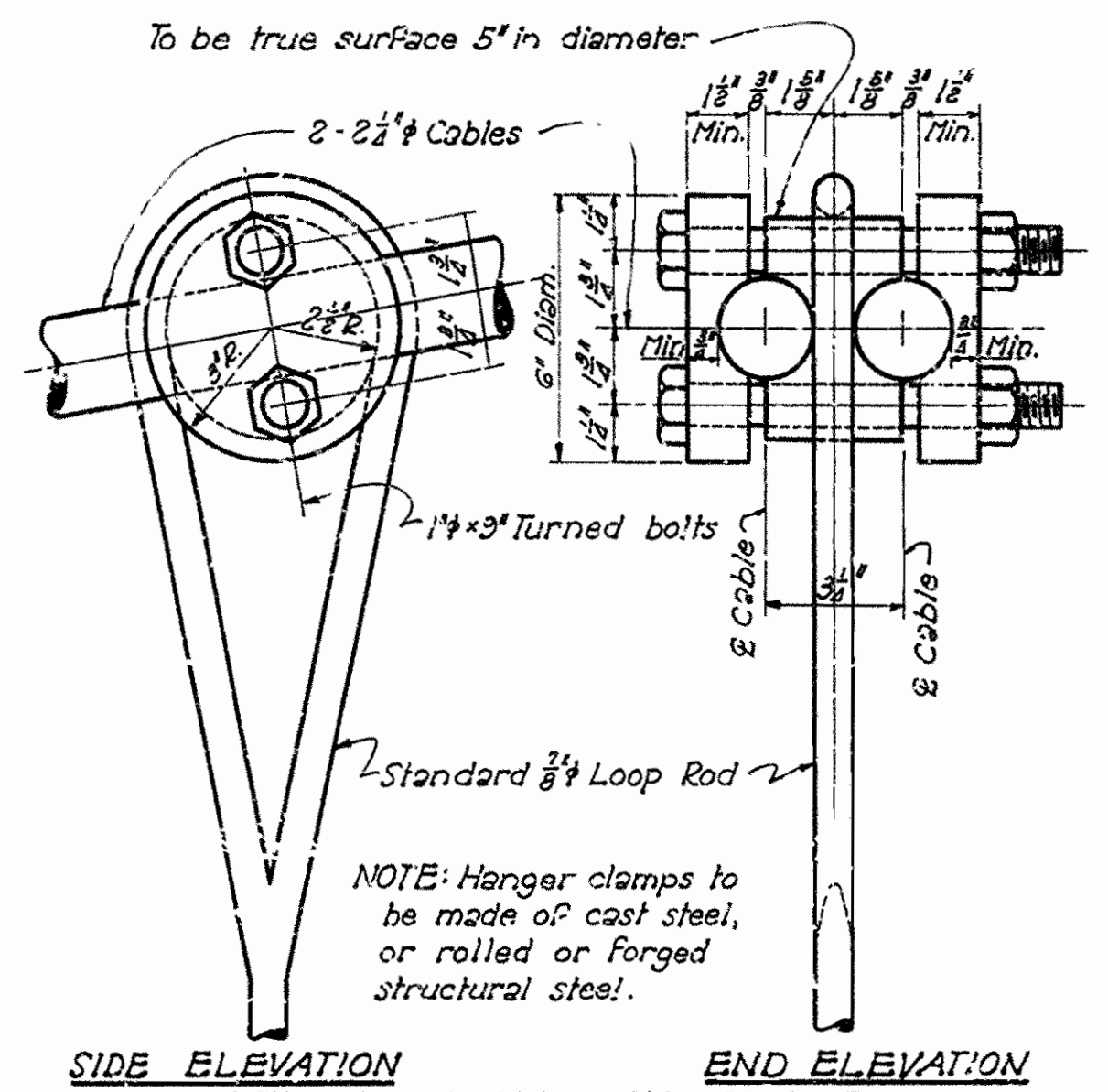
*W.C. Harter*  
 PRINCIPAL HIGHWAY ENGINEER (BRIDGE)

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	E. R. - 5		8	17
STATE JOB NO. 5252					

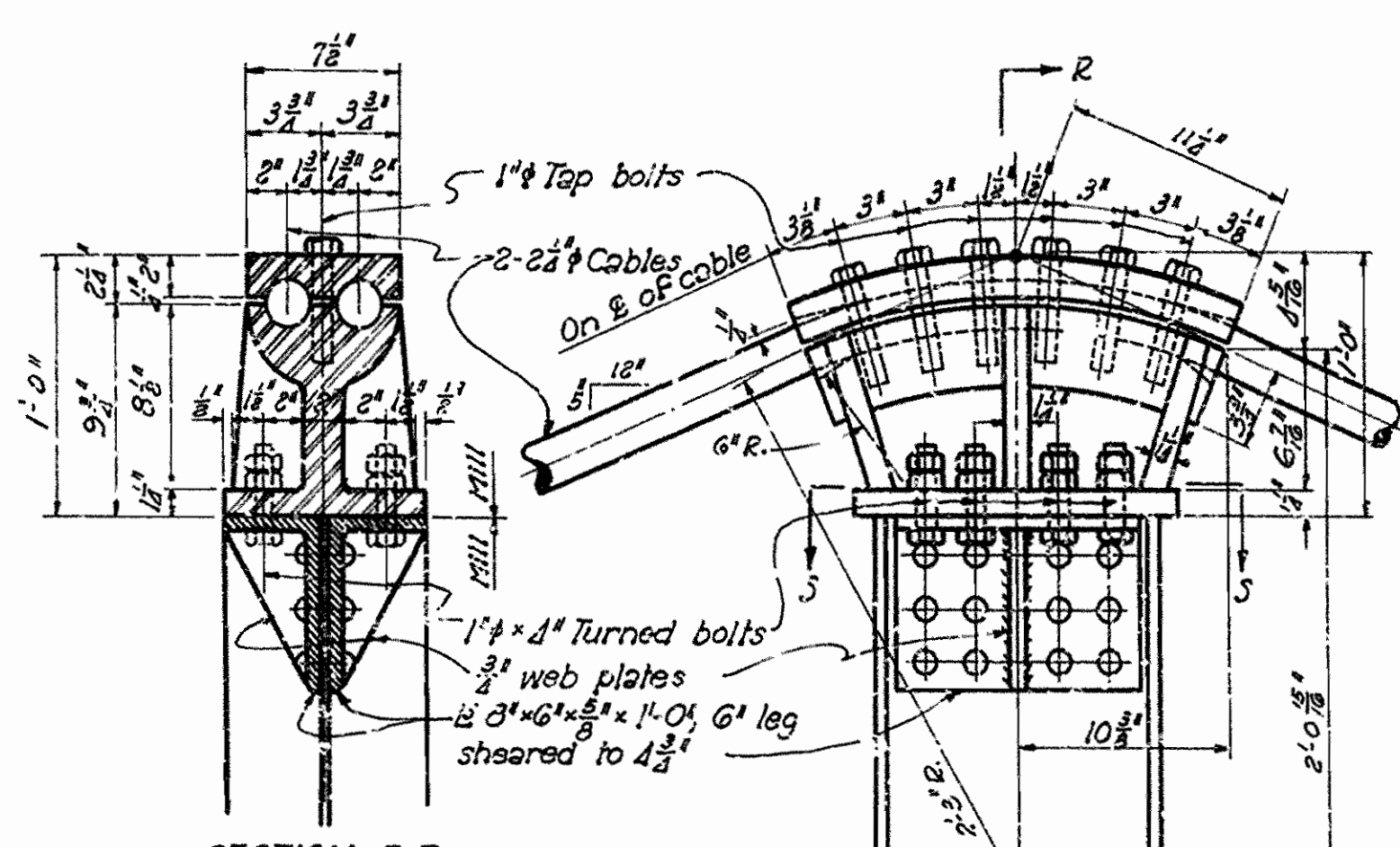


**ELEVATION OF TOWER**  
Scale: 3/4" = 1'-0"

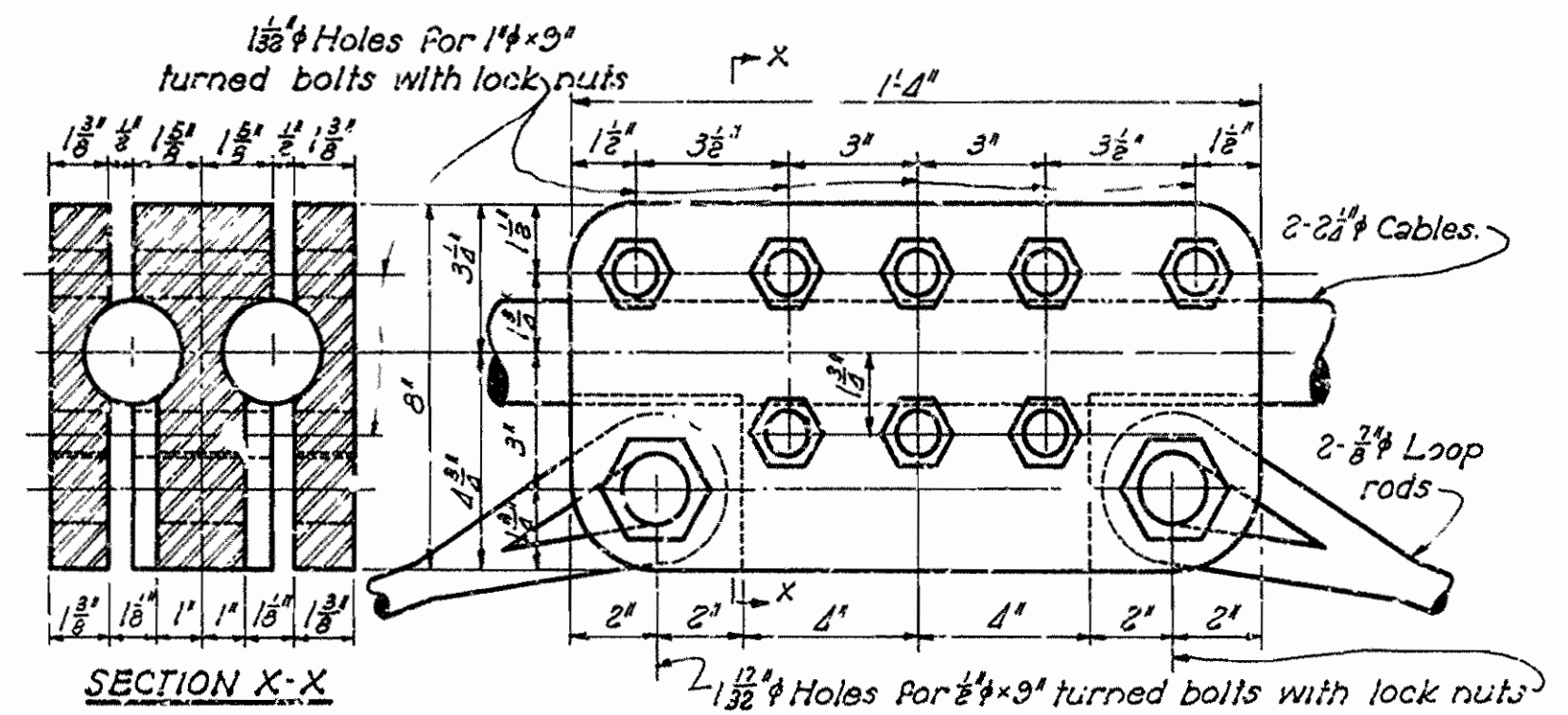
**SECTION Y-Y**  
Scale: 3/4" = 1'-0"



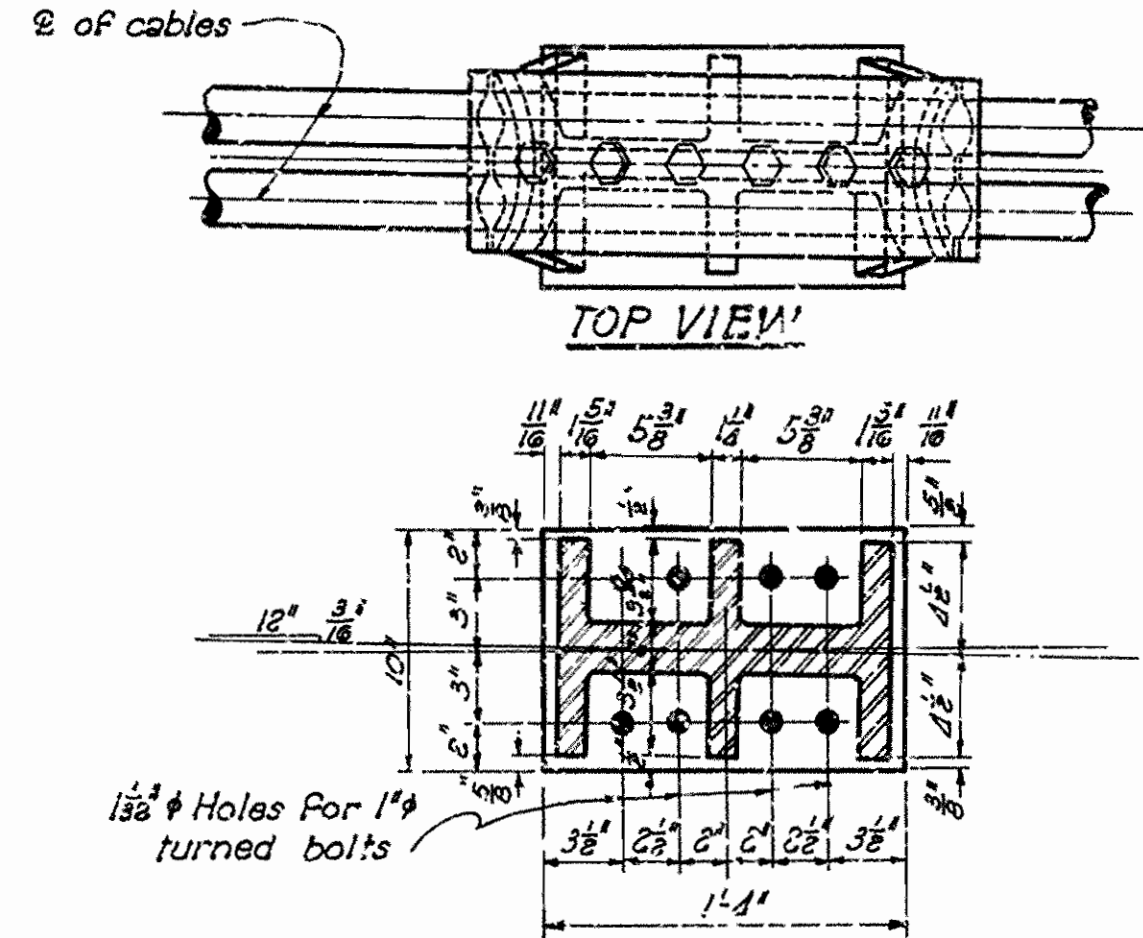
**DETAIL OF HANGER CLAMP**  
Scale: 3/4" = 1'-0"



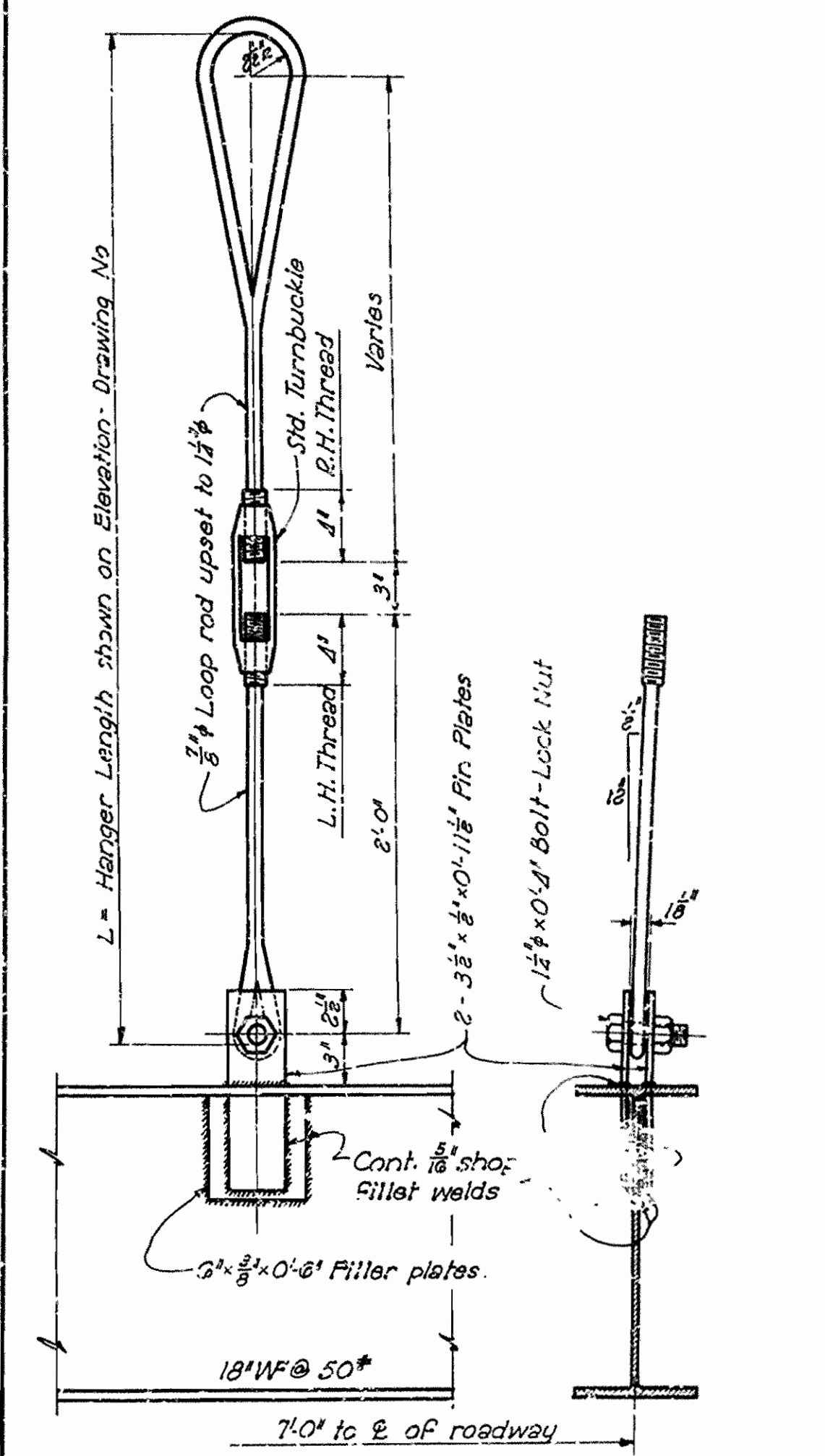
**SECTION R-R**  
Dimensions on  $\phi$  of column.  
**SECTION S-S**  
Scale: 1 1/8" = 1'-0"



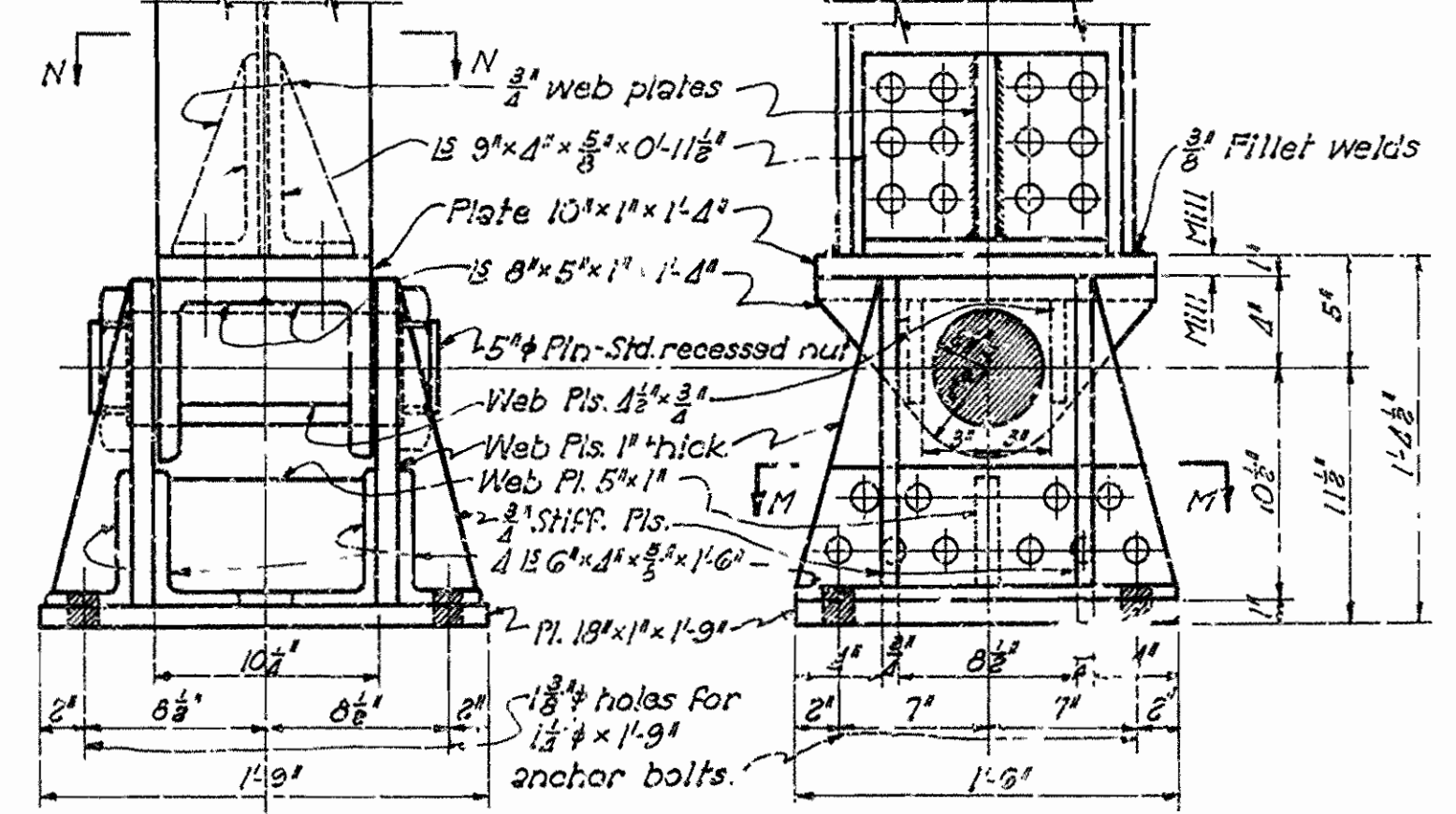
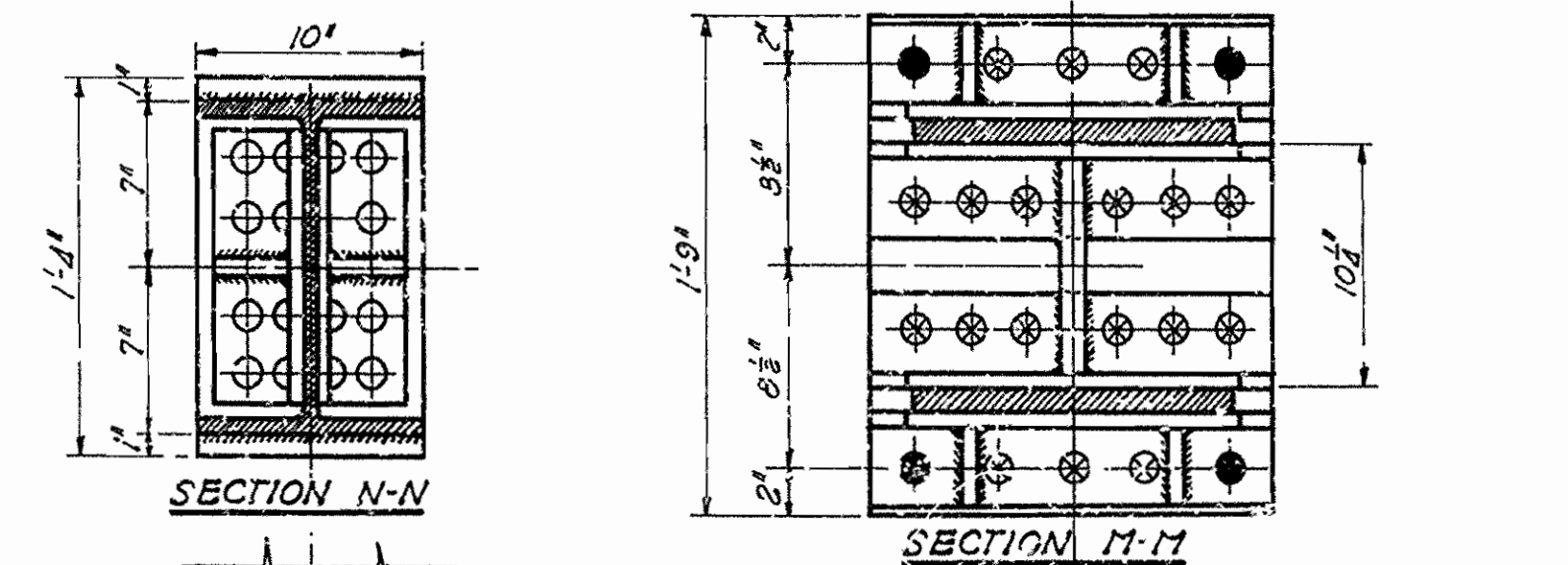
**SECTION X-X**  
**DETAIL OF CAST STEEL DIAGONAL HANGER CLAMP**  
Scale: 3/4" = 1'-0"



**SECTION S-S**  
**DETAIL OF CABLE SADDLE**  
Scale: 1 1/8" = 1'-0"

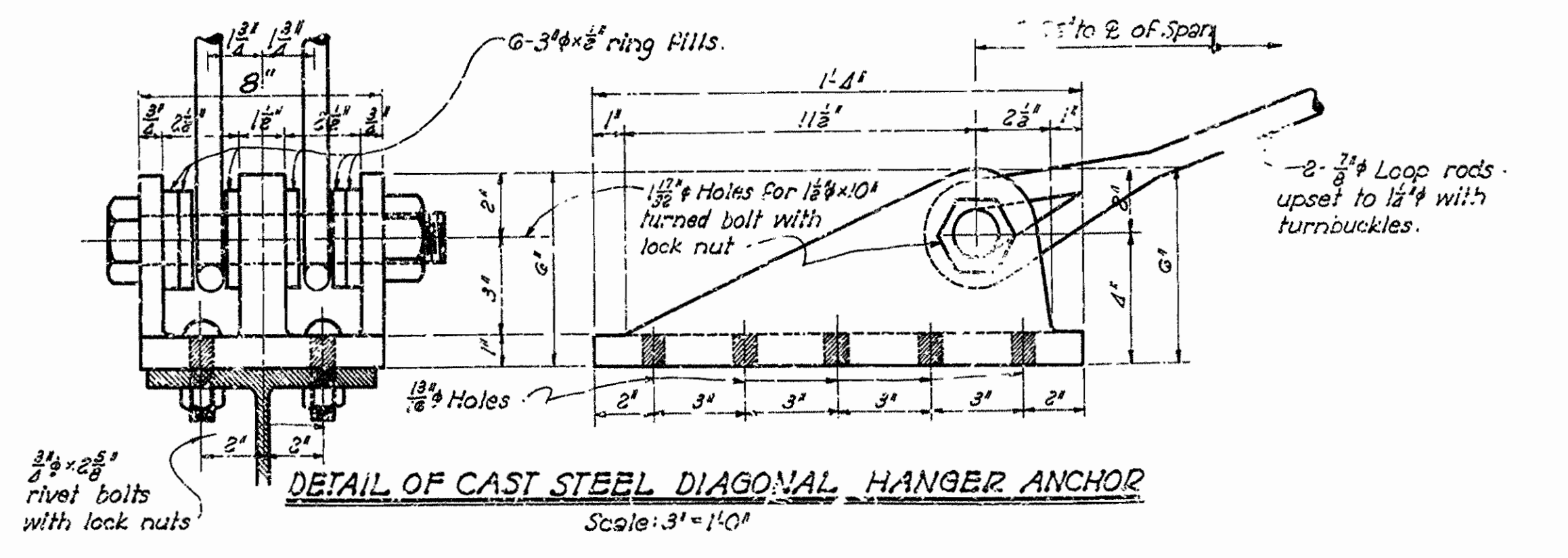


**DETAIL OF LOWER HANGER CONNECTION**  
Scale: 1 1/8" = 1'-0"



**DETAIL OF TOWER SHOES**  
Scale: 1 1/8" = 1'-0"

NOTE: Tower shoes to be built up of structural steel shapes and plates by riveting and welding.  
All welded connections to be 3/4" cont. fillet welds.  
Four 1 1/2" x 9" anchor bolts are required for each shoe.



**DETAIL OF CAST STEEL DIAGONAL HANGER ANCHOR**  
Scale: 3/4" = 1'-0"

NOTE: For General Notes see Drawing No. 62-3-C.

**DETAILS OF TOWERS AND HANGER CLAMPS, ANCHORS & CONNECTIONS FOR 312'-0" SUSPENSION SPAN 11'-0" CLEAR ROADWAY**

ROUTE SEC.  
**ARKANSAS STATE HIGHWAY COMMISSION**  
LITTLE ROCK, ARK.  
Drawn By: W.C.H. Date: 10-6-17  
Traced By: E.S.S. Date: 10-10-17  
Checked By: \_\_\_\_\_ Date: \_\_\_\_\_  
Scale: 1" = 10'  
**BRIDGE NO. 2387** DRAWING NO. 6523-B

*W.C.H.*  
PRINCIPAL HIGHWAY ENGINEER (RETIRED)

FED. ROAD DIST. NO.	STATE	F. & A. PROJECT NO.	FISCAL YEAR	HEET NO.	TOTAL SHEETS
6	ARK.	E.R. 5	1947	9	17
STATE JOB NO. 5252				9	17

CABLE NOTES

The cable to be used shall be 2 1/4" (two and one quarter inch) diameter galvanized steel bridge cable, composed of 7 strands of plow steel or of strand arrangement approved by the Engineer.

Each cable shall have a breaking strength of at least 416,000 pounds.

Each cable shall be prestressed to 92,500 pounds and cut to such length at the factory that when full dead load is applied to it in place, it will hang in a curve as shown by the plans. While the cable is so stressed the center point of the tower bearings and the hanger points shall be marked with suitable paint.

The end cable sockets which transmit the cable tension to the anchors shall be completely fastened to the cables at the factory. The connection and the end cable sockets and U-bolts shall be designed to transmit the ultimate cable strength of 416,000 pounds.

The cable shall be paid for at the unit price bid per linear foot of Galvanized Steel Bridge Cable. Pay length shall be out to out of cable socket castings. Payment for cable socket castings, U-bolts and nuts shall be included in price bid for the cable.

Shop drawings showing distances measured along the cable, between towers and between hangers shall be furnished by the Contractor and be approved before the cables are prestressed, cut, and socketed.

Shop Paint: The cable socket castings, U-bolts and nuts shall be given one coat of red lead and raw linseed oil before shipment.

Field Paint: 1st Coat, white lead tinted with lamp black; 2nd Coat, aluminum paint.

For information regarding steel bridge cable other than shown here: see special provisions for "Galvanized Steel Bridge Cable," and Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1st 1940.

STRUCTURAL STEEL NOTES

Rivets 3/4"; Open holes 1 1/4". All field connections shall be bolted, using rivet 3/4" with lock nuts, unless otherwise noted. All welded connections to be 3/8" fillet welds except as noted. Welding to be by the electric arc process; Arc Welding, Soc. Specifications. All holes in tower connections are to be sub-punched 1/8" and reamed 1/8" while towers are assembled. This applies to shop as well as field holes.

Splice connections of main longitudinal stringers are to be sub-punched 3/8" and reamed to 1/2" thru a metal template. Floor beam and post bracket connections are to be sub-punched 3/8" and reamed to size thru a metal template.

Shop Paint: All structural steel and steel castings shall be given one coat of red lead and raw linseed oil before shipment.

Field Paint: 1st Coat, white lead tinted with lamp black; 2nd Coat, aluminum paint.

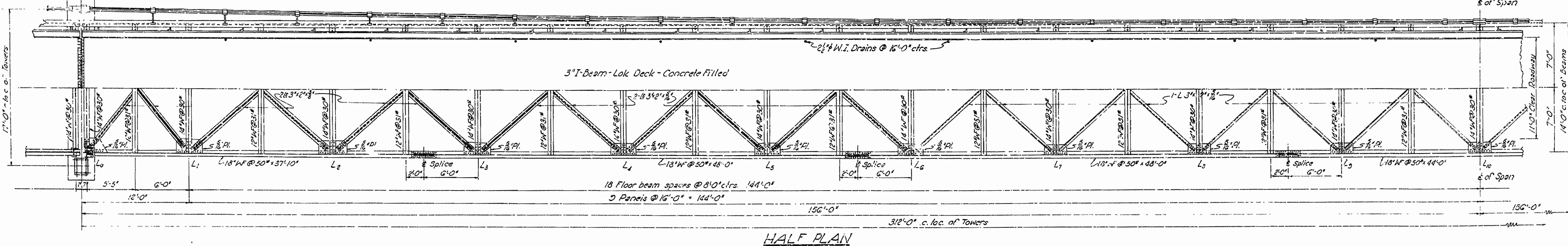
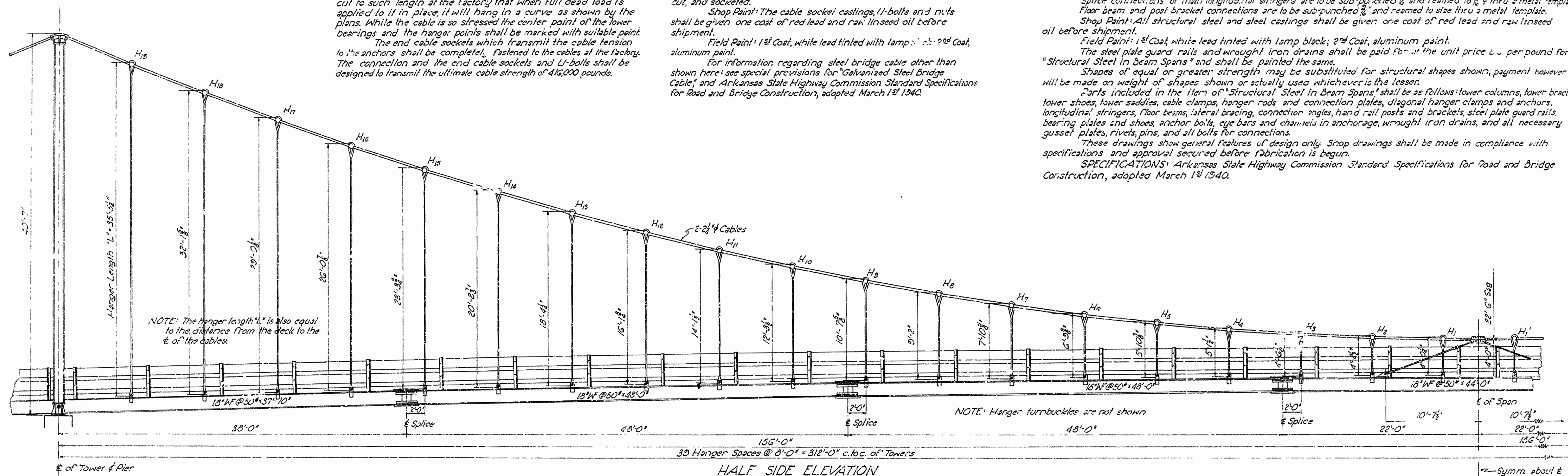
The steel plate guard rails and wrought iron drains shall be paid for at the unit price per pound for "Structural Steel in Beam Spans" and shall be painted the same.

Shapes of equal or greater strength may be substituted for structural shapes shown, payment however will be made on weight of shapes shown or actually used whichever is the lesser.

Parts included in the item of "Structural Steel in Beam Spans" shall be as follows: tower columns, tower bracing, tower shoes, tower saddles, cable clamps, hanger rods and connection plates, diagonal hanger clamps and anchors, longitudinal stringers, floor beams, lateral bracing, connection angles, hand rail posts and brackets, steel plate guard rails, bearing plates and shoes, anchor bolts, eye bars and channels in anchorage, wrought iron drains, and all necessary gusset plates, rivets, pins, and all bolts for connections.

These drawings show general features of design only. Shop drawings shall be made in compliance with specifications and approval secured before fabrication is begun.

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



GENERAL NOTES

For Cable and Structural Steel notes, see those above.

The bridge deck shall consist of a concrete filled grid floor of a design known by the trade name of "I-Beam-Lok," "Unigrad" or an equivalent. A grid of 3" thickness shall be used.

All steel for the component parts of the grid floor proper shall be furnished in structural grade meeting the requirements given in Section 807 of General Specifications, and shall have a minimum copper content of 0.20 per cent. Sheets for form strips shall be regular copper bearing, hot rolled, soft sheet grade.

Accessory structural steel included in the item of grid floor shall be as follows: curb edge channels, curb stiffener plates, end dams, splice bars, expansion dam material, and all necessary weld material.

Surfaces of grid steel not in contact with concrete, except roadway surface, to be painted same as structural steel.

The steel for grid floors shall be paid for at the contract unit price per square foot bid for "Steel Grid Bridge Floor." Width for measurement shall be out to out of curb edge channels, except at expansion joints at piers where it shall be curb to curb.

The Class "S" Concrete for filling shall be paid for at the contract unit price bid per cubic yard for "Class 'S' Concrete for Bridges," based upon absolute volume.

The reinforcing steel in curbs shall be deformed bars of structural or intermediate grade.

Shop detail drawings shall be furnished for approval before fabrication is begun. Erection drawings shall be furnished the Engineer for use in the field for assembling and erecting the slab units.

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1st 1940, and special provisions.

DESIGN LIVE LOAD - H-10 LOADING A.A.S.H.O. 1944

Load Distribution to 2 1/4" Cables: Dead Load 455#/lin.ft.  
Live Load 107#/axis or 0.335 Lanes  
Live Load Impact 11.5%

UNIT STRESSES: Class "S" Concrete (n=10) 1000#/sq  
Structural Steel 18,000#/sq  
Cast Steel 13,500#/sq  
One 2 1/4" Cable (Breaking Strength) 208.0 Tons  
One 2 1/4" Cable (Max. Design Stress) 69.0 Tons

GENERAL DETAILS  
OF MAIN SUSPENSION SPAN  
CONCRETE FILLED 3" I-BEAM-LOK DECK  
11'-0" CLEAR ROADWAY

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

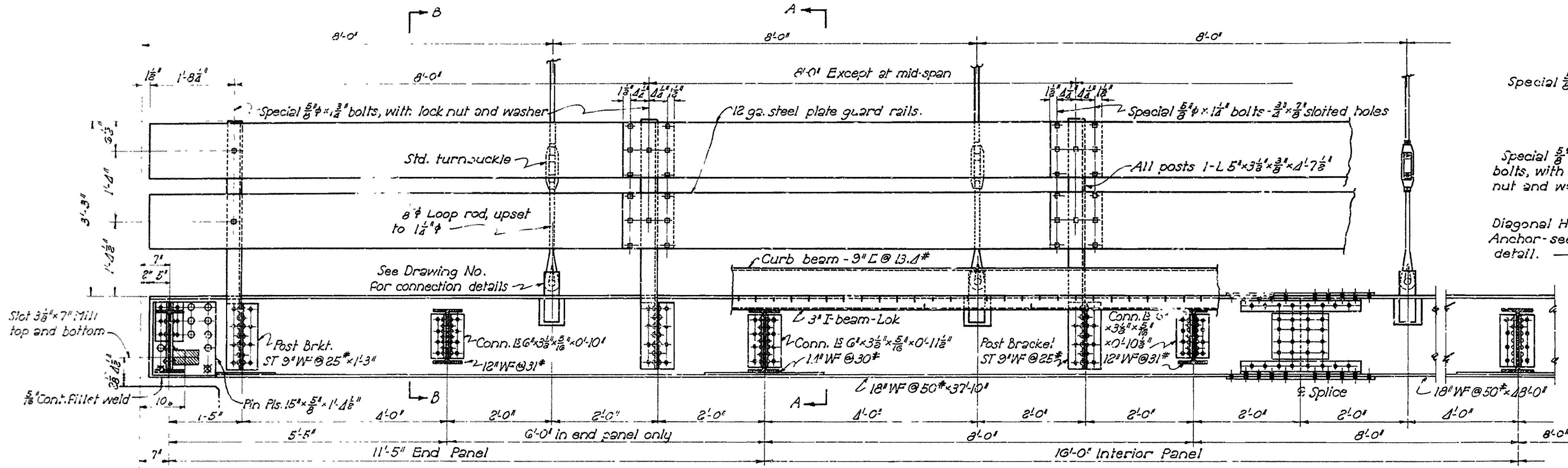
Drawn By: M.C.H. Date: 10-18-47  
Traced By: E.L.S. Date: 10-24-47  
Checked By: \_\_\_\_\_ Date: \_\_\_\_\_

Scale: 1/8" = 1 ft.

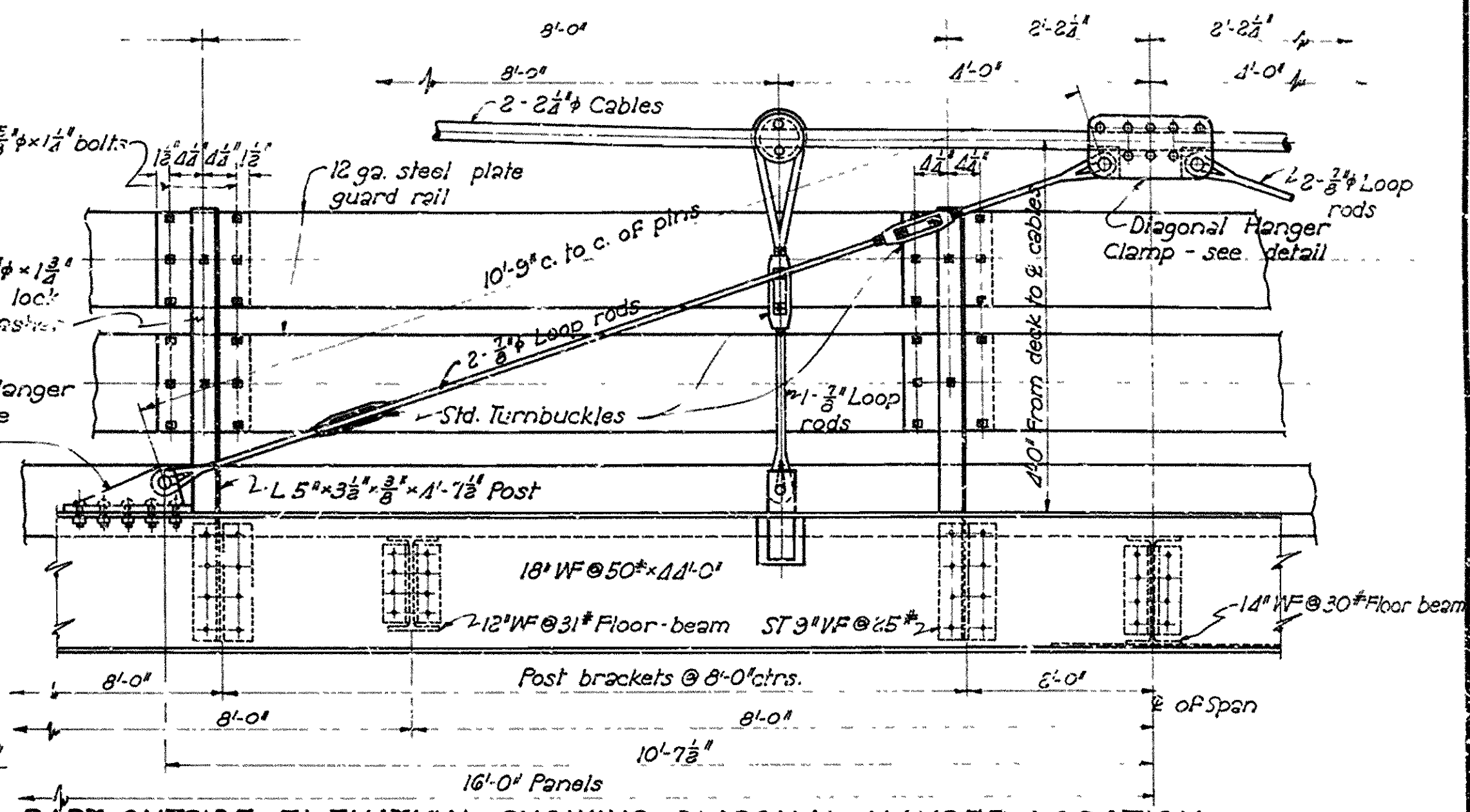
BRIDGE NO. 2387 DRAWING NO. 6523C

H.B. Garner  
PRINCIPAL HIGHWAY ENGINEER (BRIDGE)

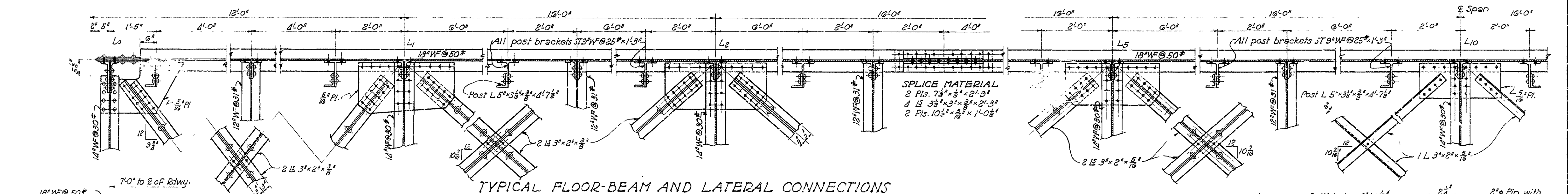
FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.				
STATE JOB NO.					



TYPICAL LONGITUDINAL SECTION SHOWING CONNECTION DETAILS



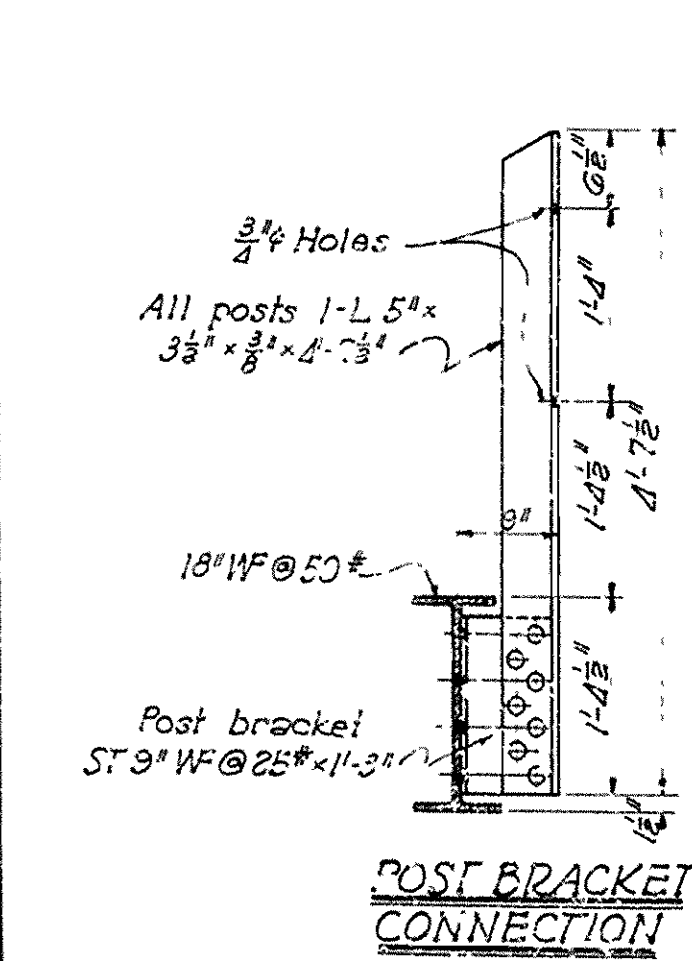
PART OUTSIDE ELEVATION - SHOWING DIAGONAL HANGER LOCATION



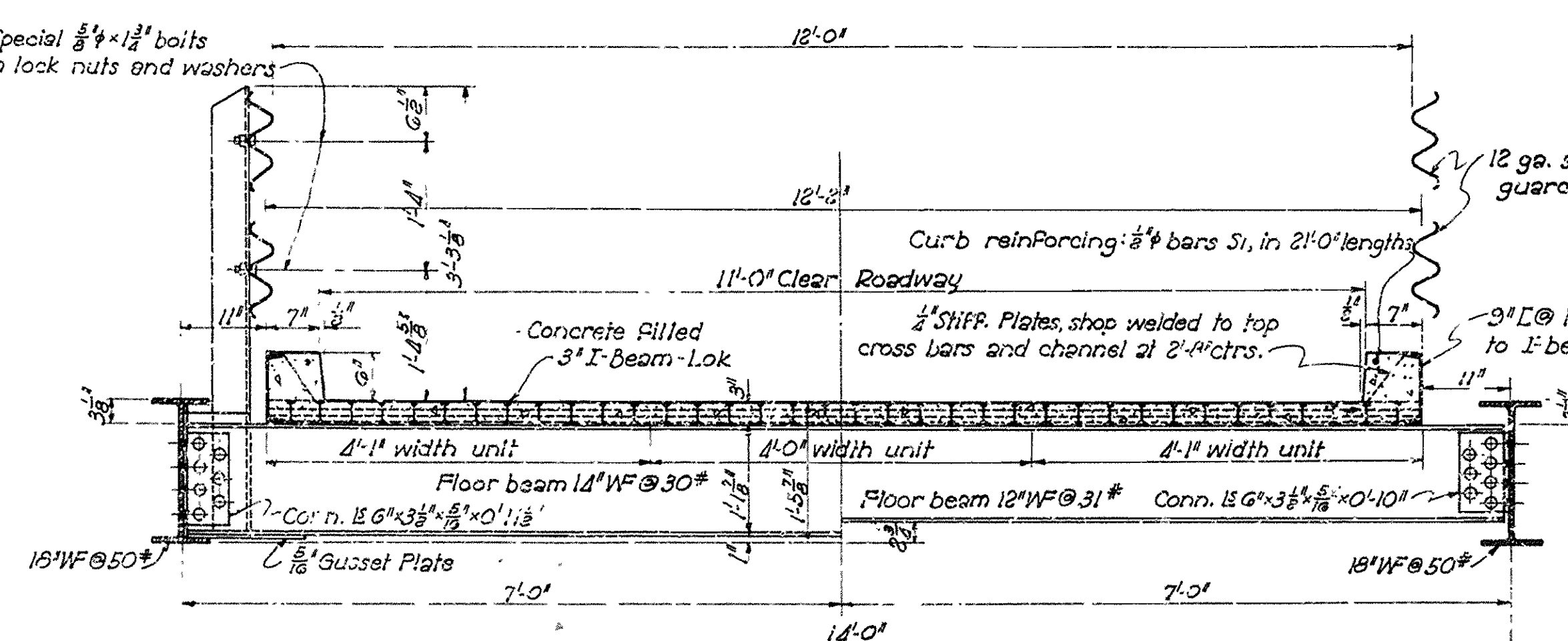
TYPICAL FLOOR-BEAM AND LATERAL CONNECTIONS

**VERTICAL CURVE CAMBER OF 18\"/>**

END FLOOR-BEAM CONNECTION

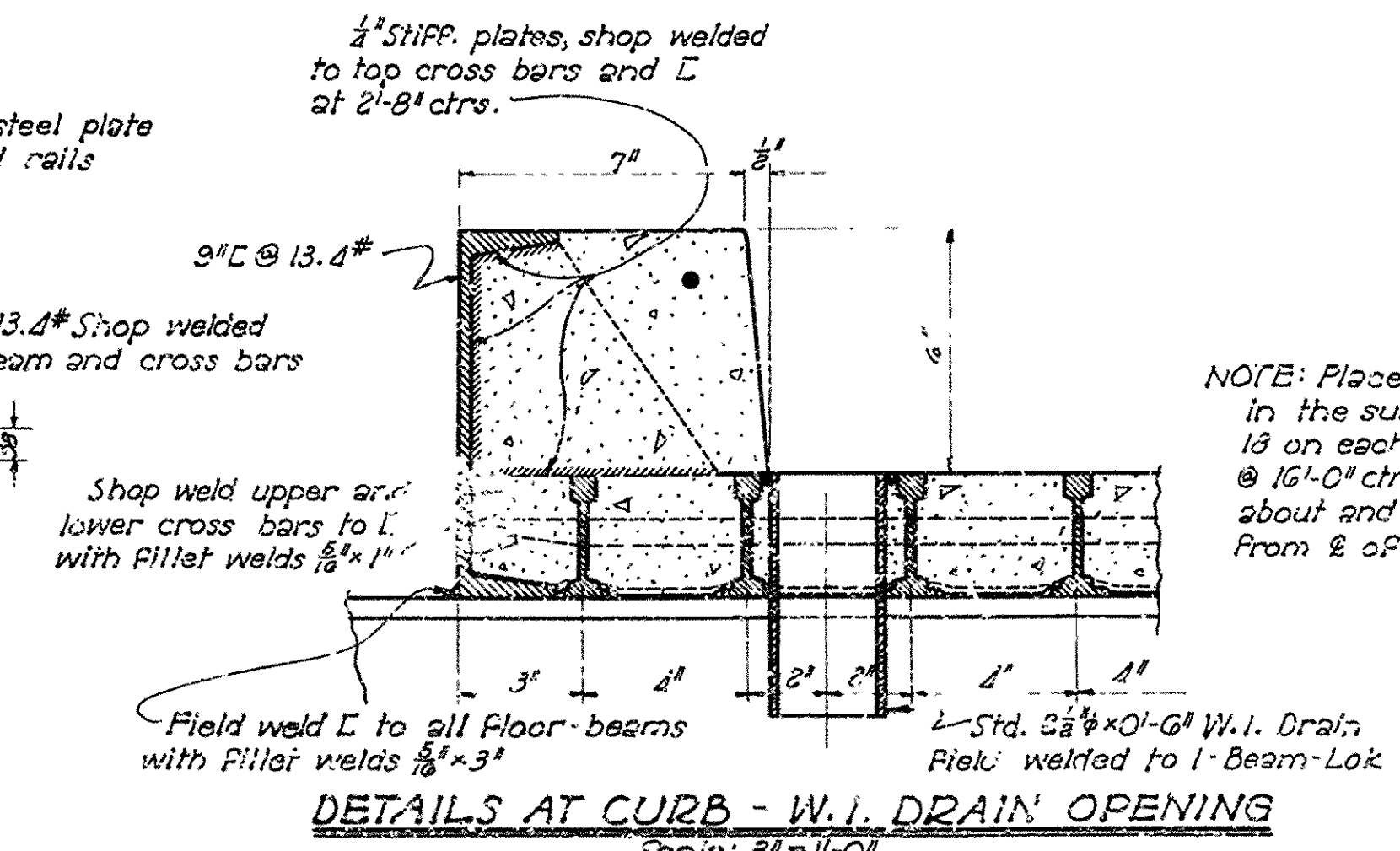


POST BRACKET CONNECTION



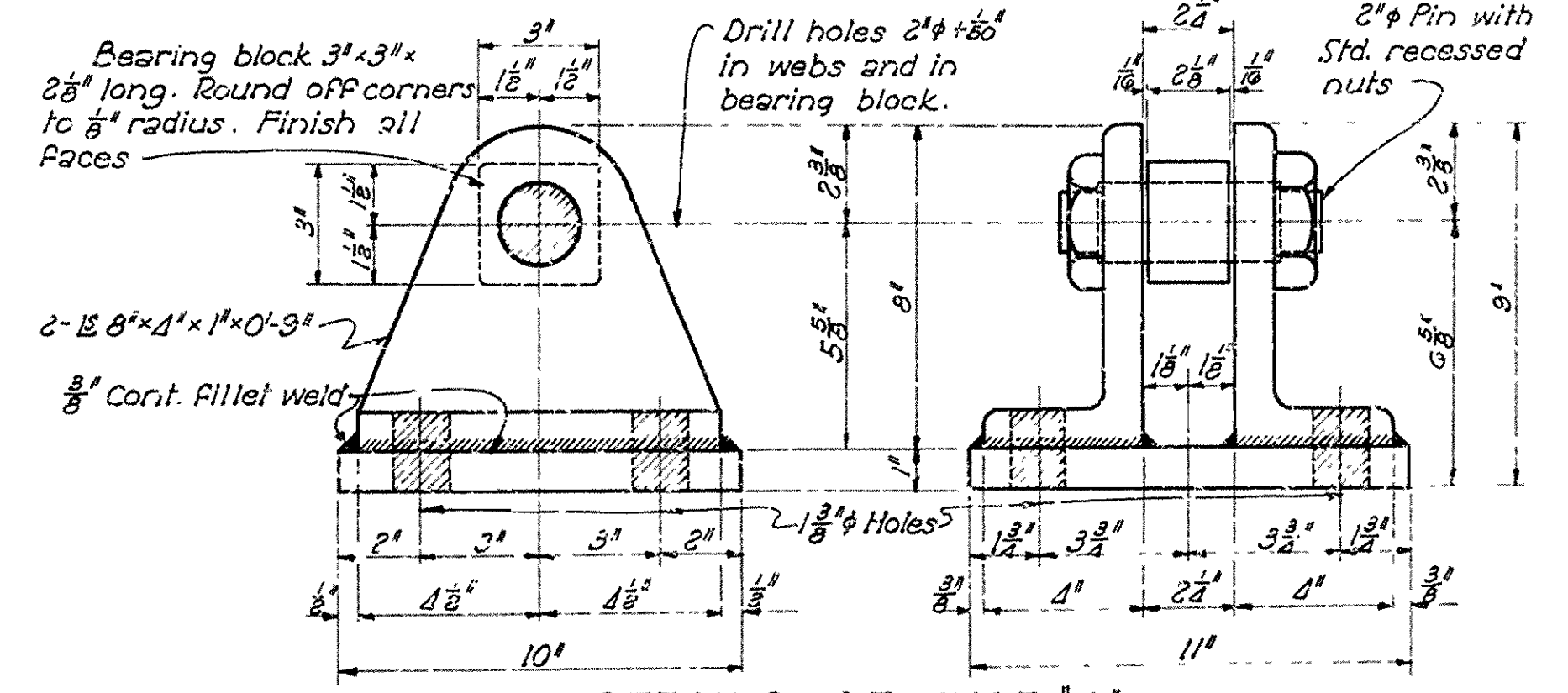
HALF SECTION A-A

HALF SECTION B-B



DETAILS AT CURB - W.I. DRAIN OPENING

NOTE: Place 36 W.I. Drains in the suspension span, 13 on each side of roadway @ 16'-0\"/>



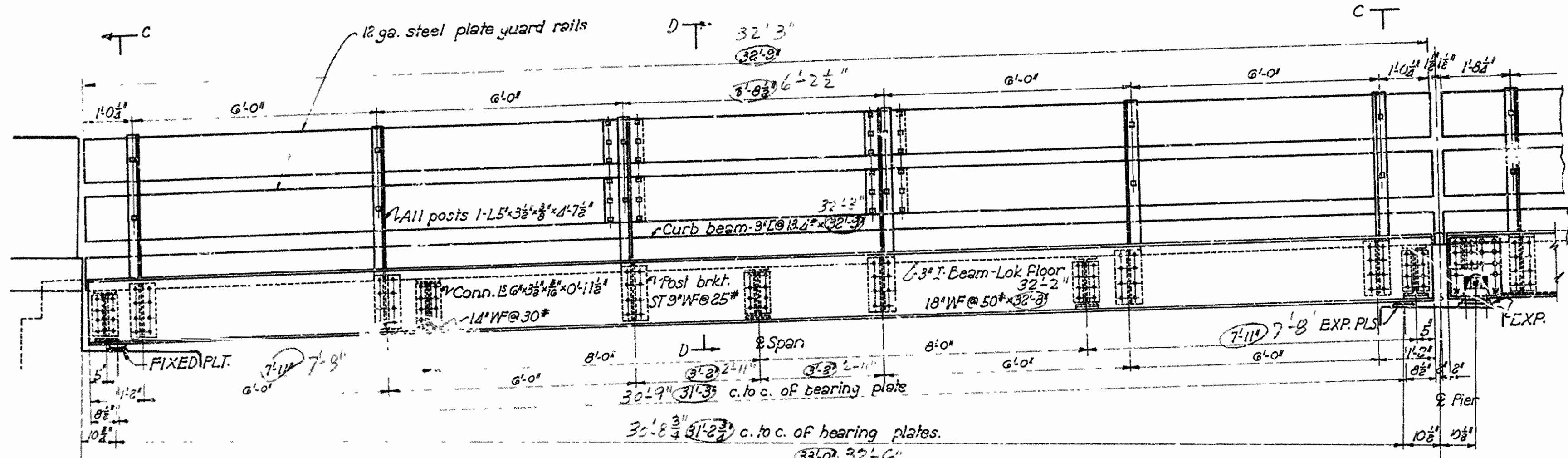
DETAILS OF SHOE 'A'

**DETAILS OF FLOOR SYSTEM AND DECK FOR MAIN SUSPENSION SPAN CONCRETE FILLED 3\"/>**

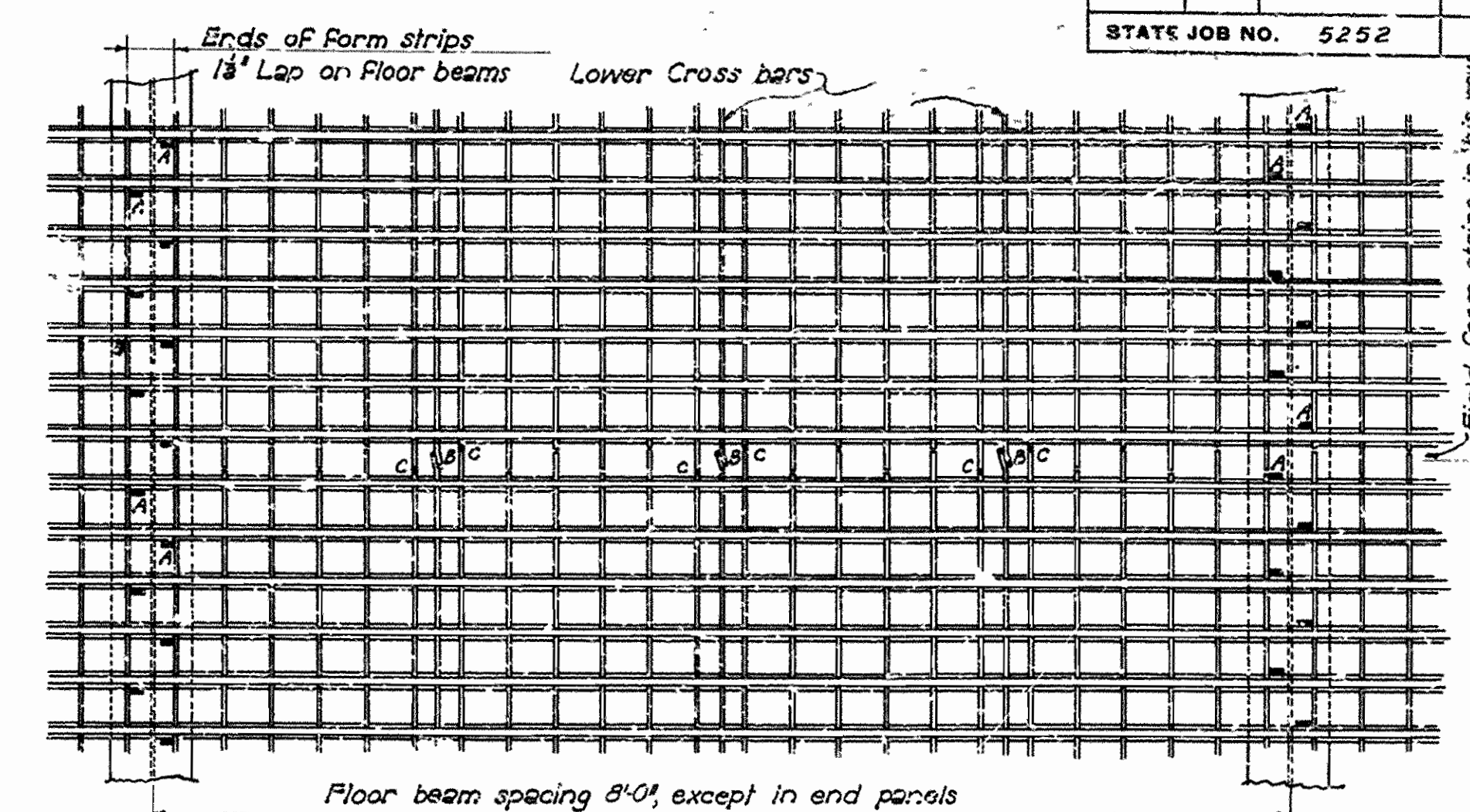
ROUTE SEC.  
**ARKANSAS STATE HIGHWAY COMMISSION**  
 LITTLE ROCK, ARK.  
 Drawn By: W.S.H. Date: 10-10-47  
 Traced By: G.E. Date: 10-22-47  
 Checked By: Date:  
 BRIDGE NO. 2387 DRAWING NO. 6523-D

*N.B. Jones*  
 PRINCIPAL HIGHWAY ENGINEER (BRIDGE)

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	E. R. - 5		11	17
STATE JOB NO. 5252					

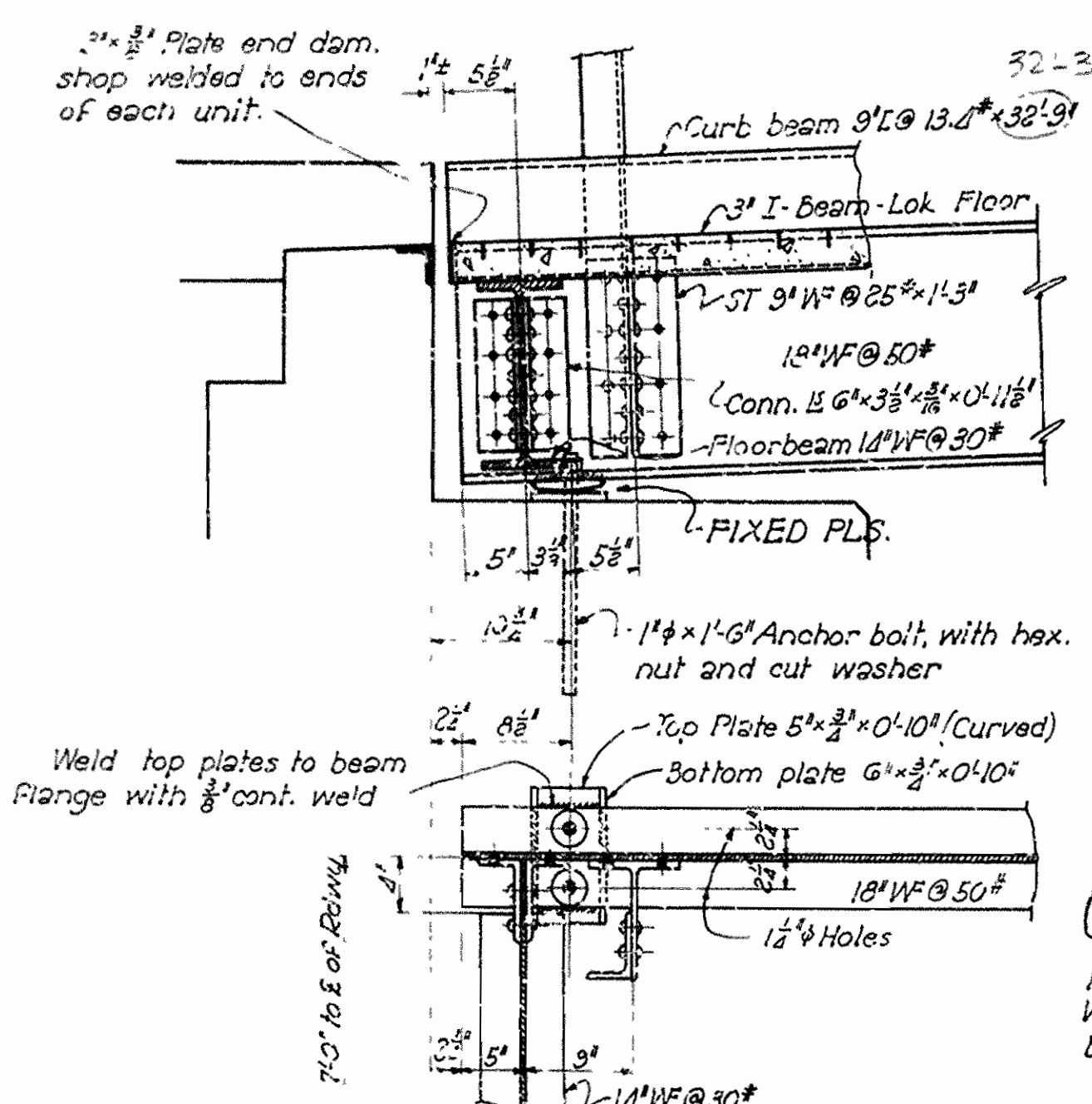


**SIDE ELEVATION OF I-BEAM SPAN**  
Scale: 1/8" = 1'-0"

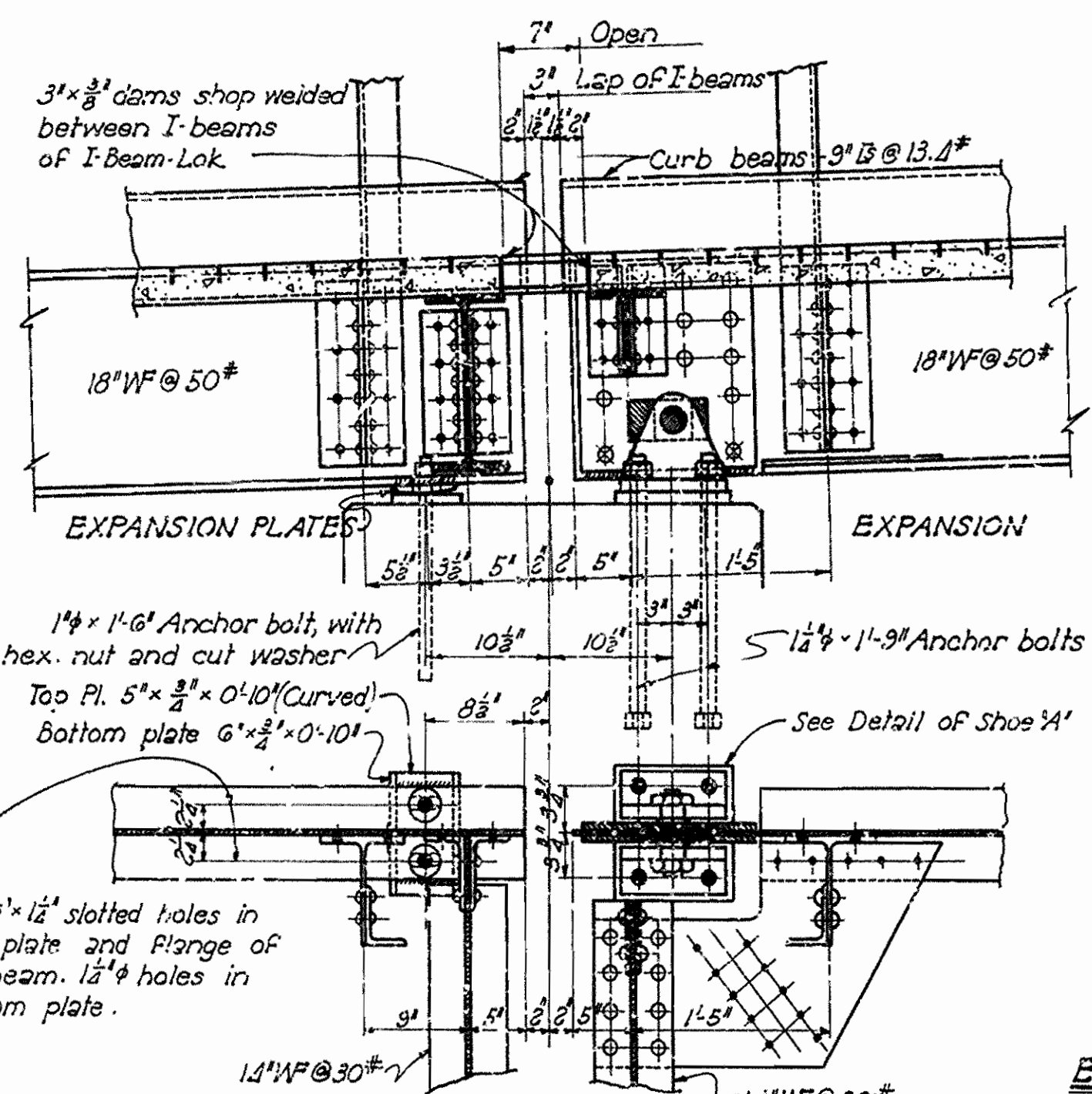


**ENLARGED DETAILS SHOWING TYPICAL FIELD WELDING**  
Scale: 1/4" = 1'-0"

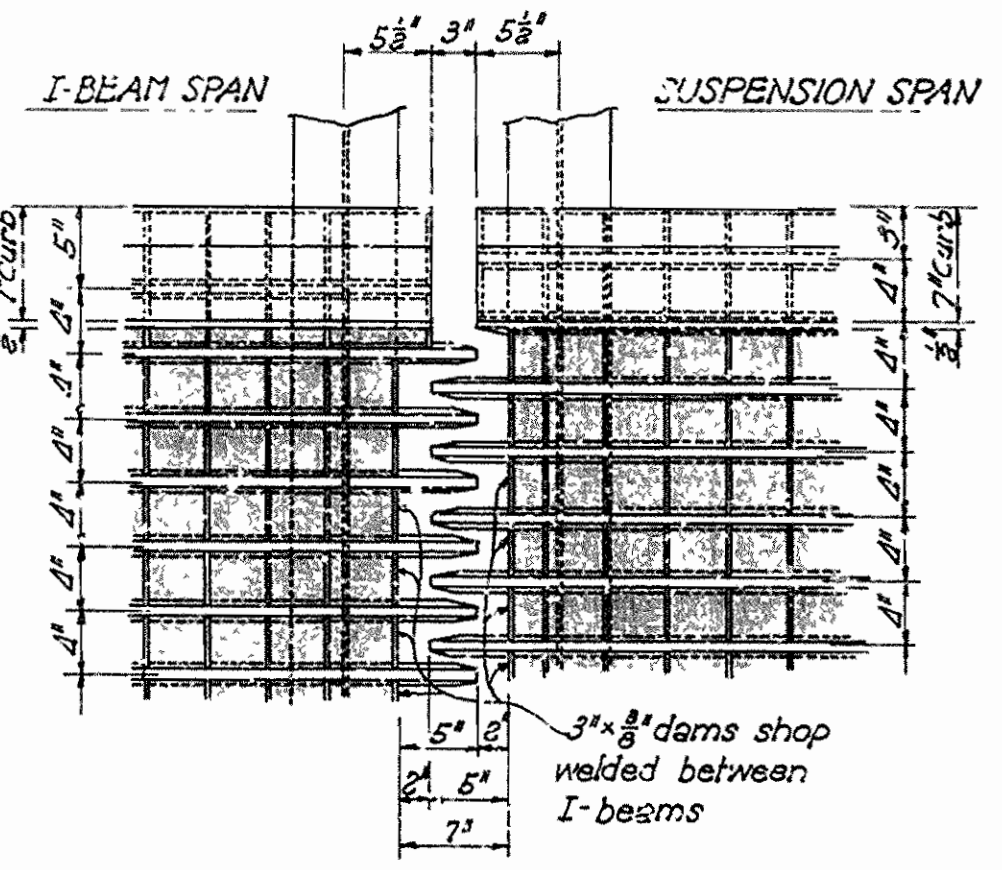
- (A) Weld each I-beam to all floor-beams at alternate edges of beams with 1/8" x 1 1/2" fillet welds, as indicated. Weld each side of all I-beams at alternate edges of end floor-beams with 3/8" x 1 1/2" fillet welds.
- (B) Lap lower cross bars and weld with 2 fillet welds 3/8" x 3/4".
- (C) Weld the 2 upper cross bars straddling each lower bar with 3/8" x 3/4" butt weld.



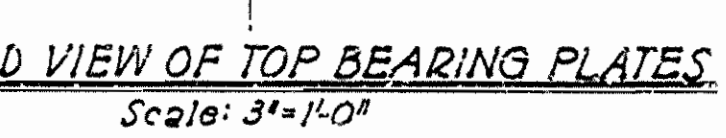
**EXPANSION AND BEARING DETAILS AT ABUTMENTS**  
Scale: 1" = 1'-0"



**EXPANSION AND BEARING DETAILS AT PIERS**  
Scale: 1" = 1'-0"

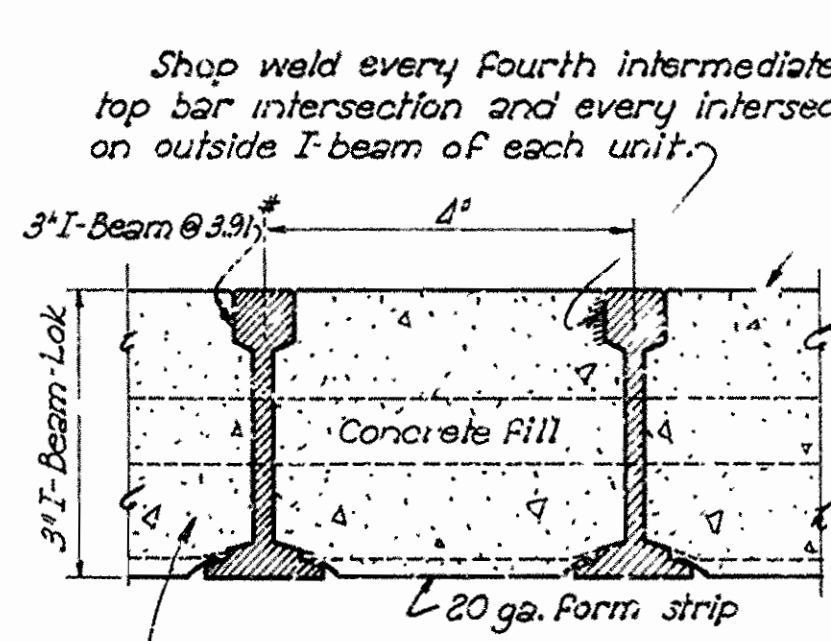


**PART PLAN - SHOWING EXPANSION JOINT DETAILS OF DECK AT PIERS**  
Scale: 1" = 1'-0"

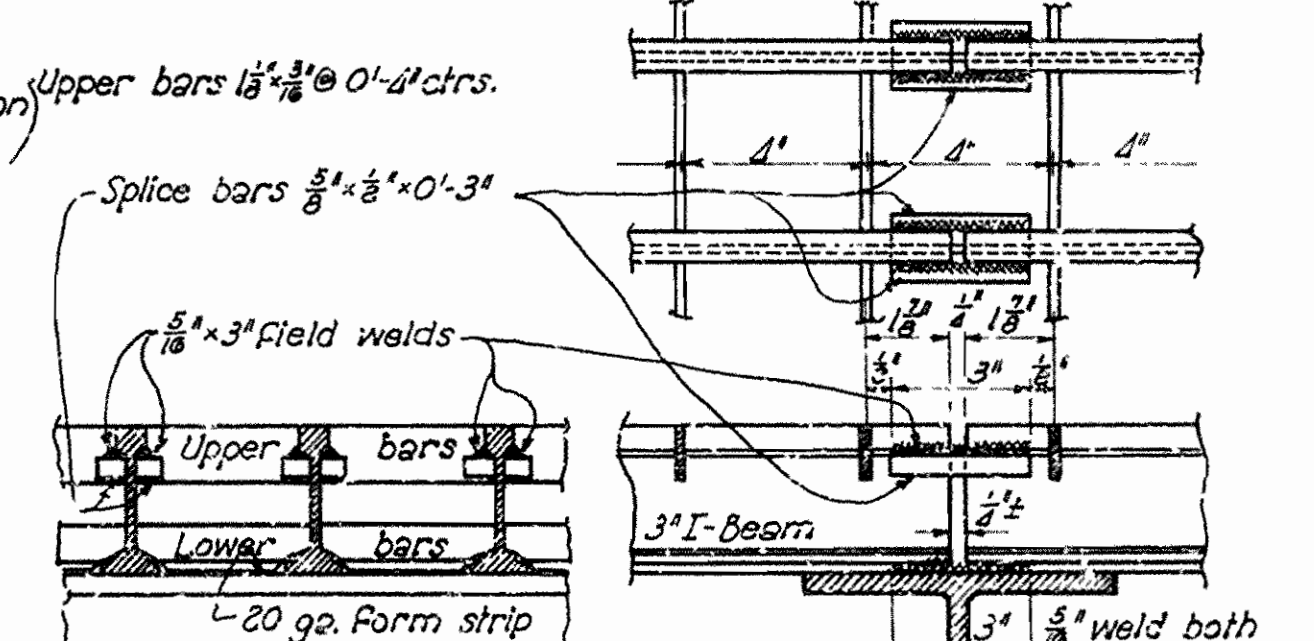


**END VIEW OF TOP BEARING PLATES**  
Scale: 3/4" = 1'-0"

**DEAD LOAD AND VERTICAL CURVE CAMBER OF 18" WF BEAMS**  
To provide for dead load and vertical curve camber. All 18" WF longitudinal beams are to be selected with a natural camber bow-up, not to exceed 1/2".

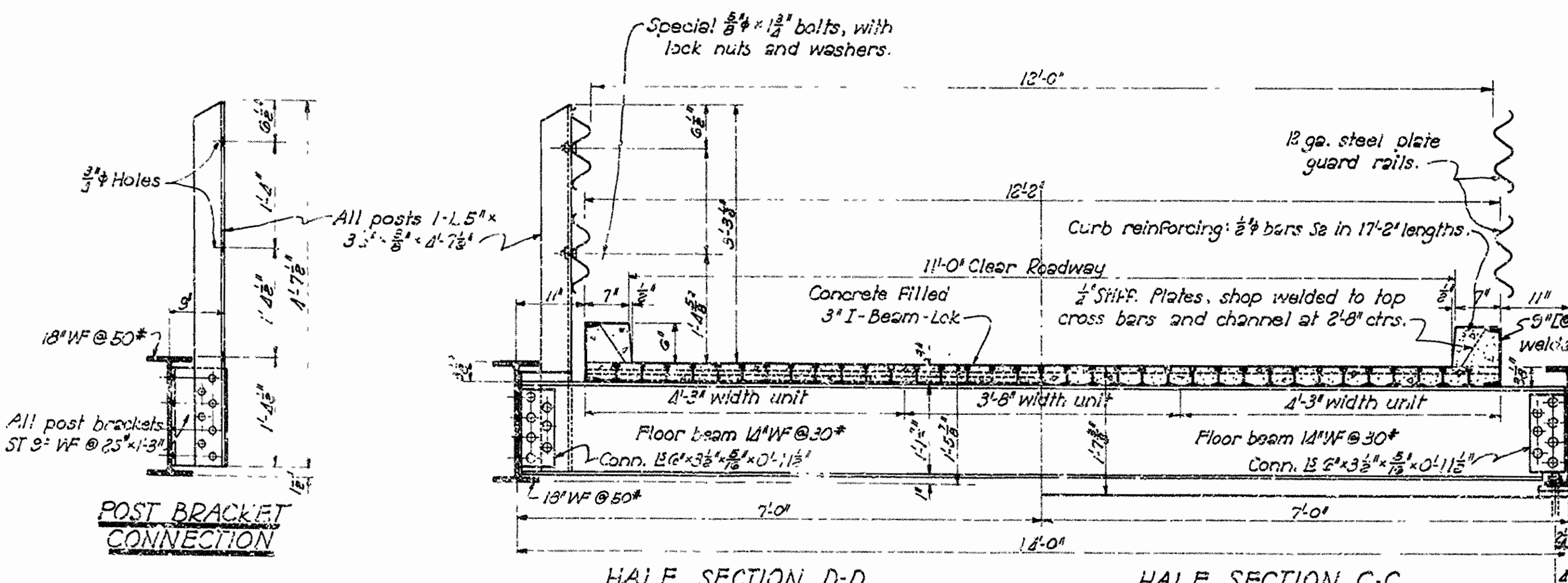


**PARTIAL CROSS SECTION**  
Scale: 3/4" = 1'-0"



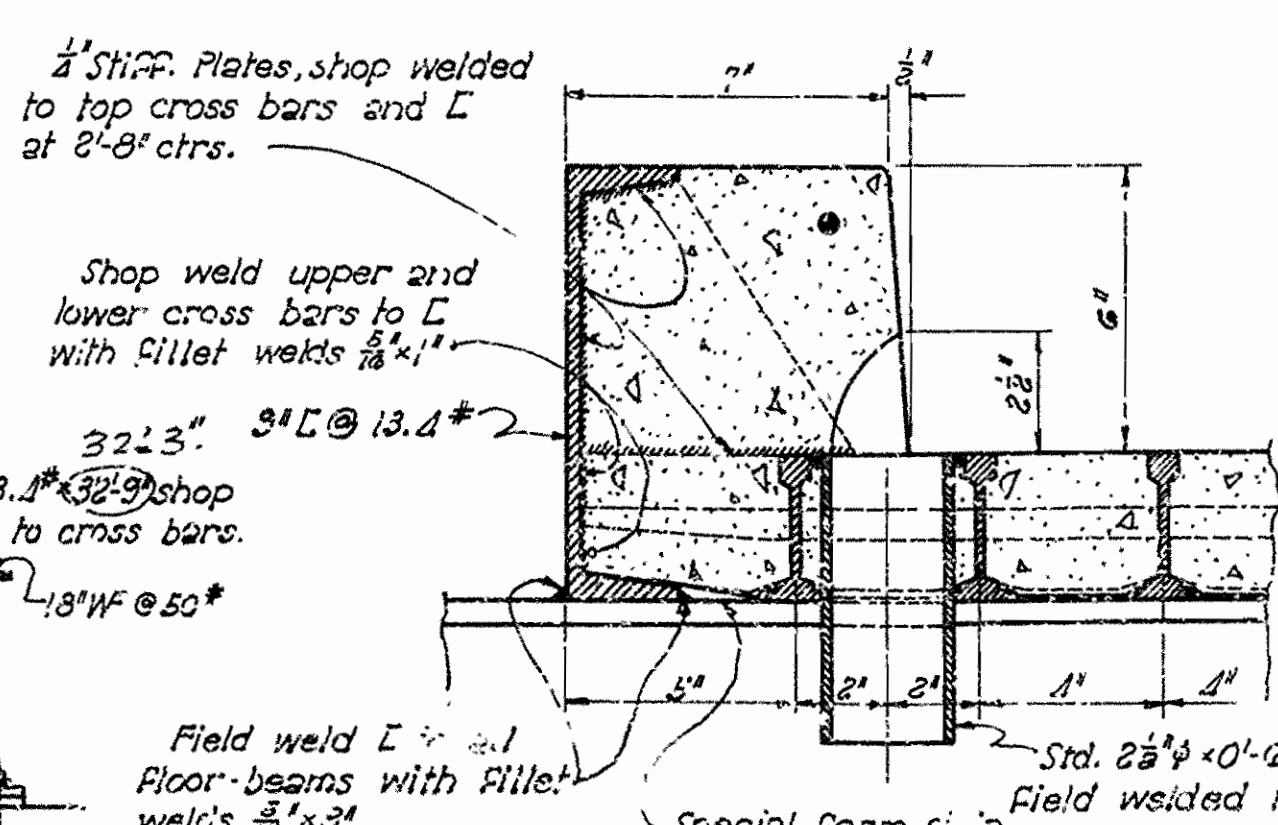
**FIELD WELDING ENDS OF I-BEAM UNITS**  
Scale: 3/4" = 1'-0"

**TYPICAL DETAILS OF 3" I-BEAM-LOK DECK**



**HALF SECTION D-D**  
Scale: 3/4" = 1'-0"

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



**DETAILS AT CURB - W.I. DRAIN OPENING**  
Scale: 3/4" = 1'-0"

NOTE: Place 4 W.I. Drains in each (33'-0") I-beam span, 2 on each side of roadway @ 16'-0" ctrs., beginning 10'-0" from E of Piers.

**TYPICAL DETAILS OF 3" I-BEAM-LOK DECK AND DETAILS OF 33'-0" I-BEAM SPANS CONCRETE FILLED 3" I-BEAM-LOK DECK 11'-0" CLEAR ROADWAY**

ROUTE SEC.  
**ARKANSAS STATE HIGHWAY COMMISSION**  
LITTLE ROCK, ARK.  
Drawn By: W.C.H. Date: 10-25-47  
Traced By: B.E. Date: 10-21-47  
Checked By: Date: \_\_\_\_\_  
BRIDGE NO. 2337 DRAWING NO. 6523-E

W.B. Garver  
PRINCIPAL HIGHWAY ENGINEER (REG'D.)