

SOIL LEGEND

a. Comp Clay Gravel & Boulders

b. Solid Rock or Slate.

GENERAL NOTES

Bench Mark - S. W. Corner wheelguard 3' Lt. Sta. 86+00. Elevation 897.08.  
All concrete to be poured in the dry. Exposed corners to be chamfered  $3/4"$  unless otherwise noted.  
Rock excavations shall be made to neat lines of concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting.  
Concrete in footings to be poured directly against excavated surfaces of rock.  
Footings to be 2'6" minimum into rock.  
For Details of End Bents see Dwg. No. 5466J.  
For Details of Intermediate Bents see Dwg. No. 5466J.  
For Details of R. C. Slab Spans see Dwg. No. 5463E.

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1959, and designated Special Provisions.

DESIGN SPECIFICATIONS:		AASHTO 1961
Live Loading:	E-15	
Unit Stresses:	Class A Concrete ( $n=15$ )	840 psi
	Class S Concrete ( $n=10$ )	1,200 psi
	Reinforcing Steel	20,000 psi

Foundation Pressure - 3700<sup>#</sup>/ft.

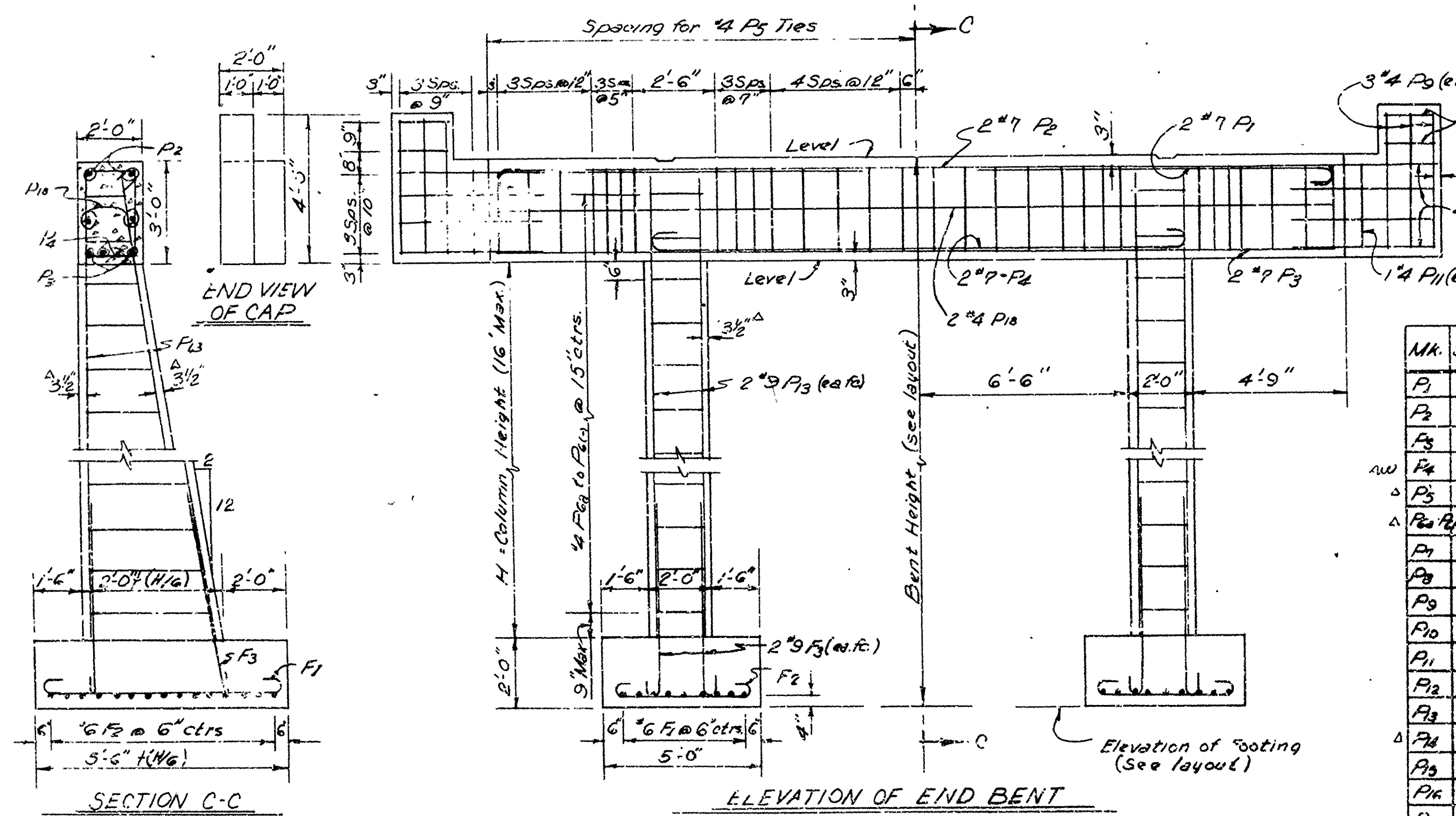
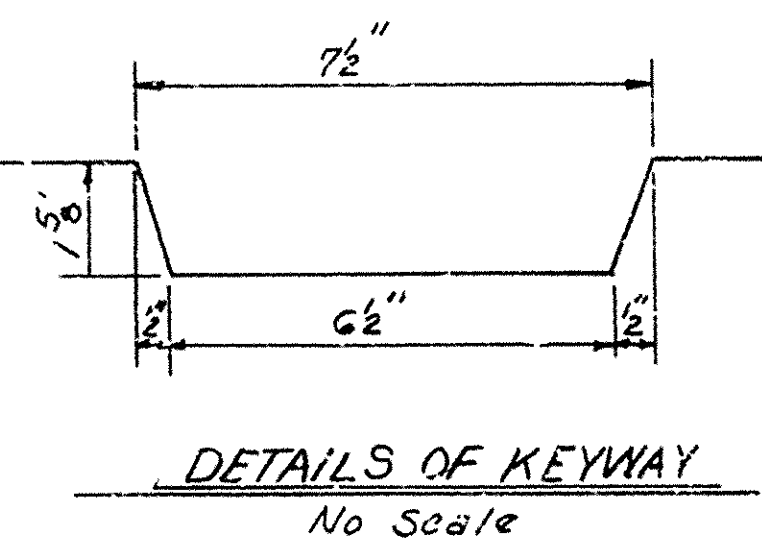
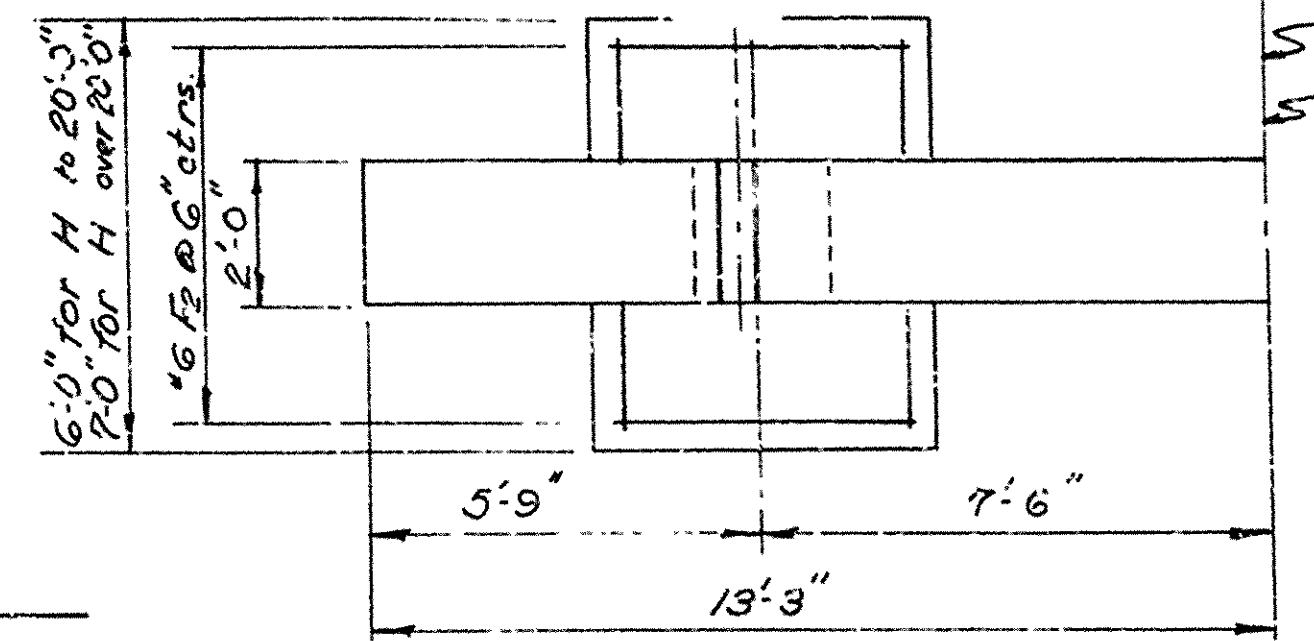
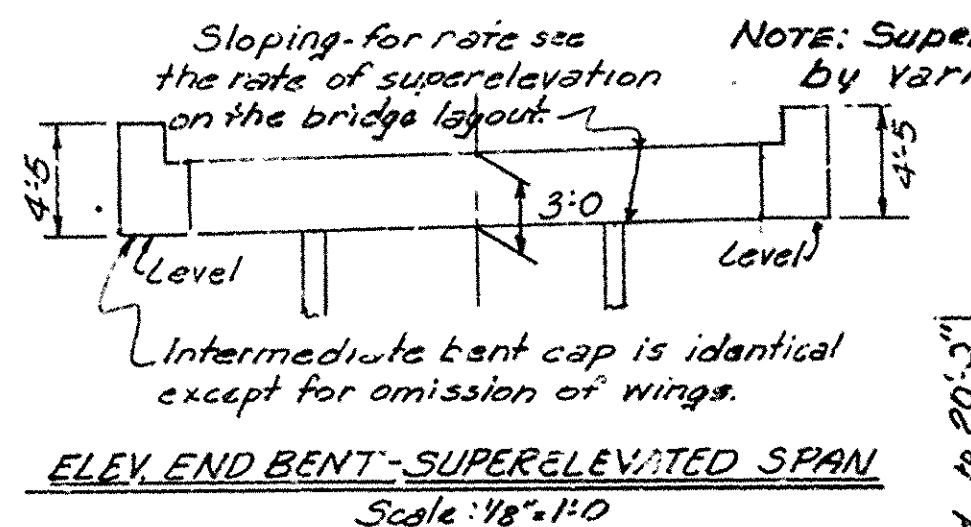
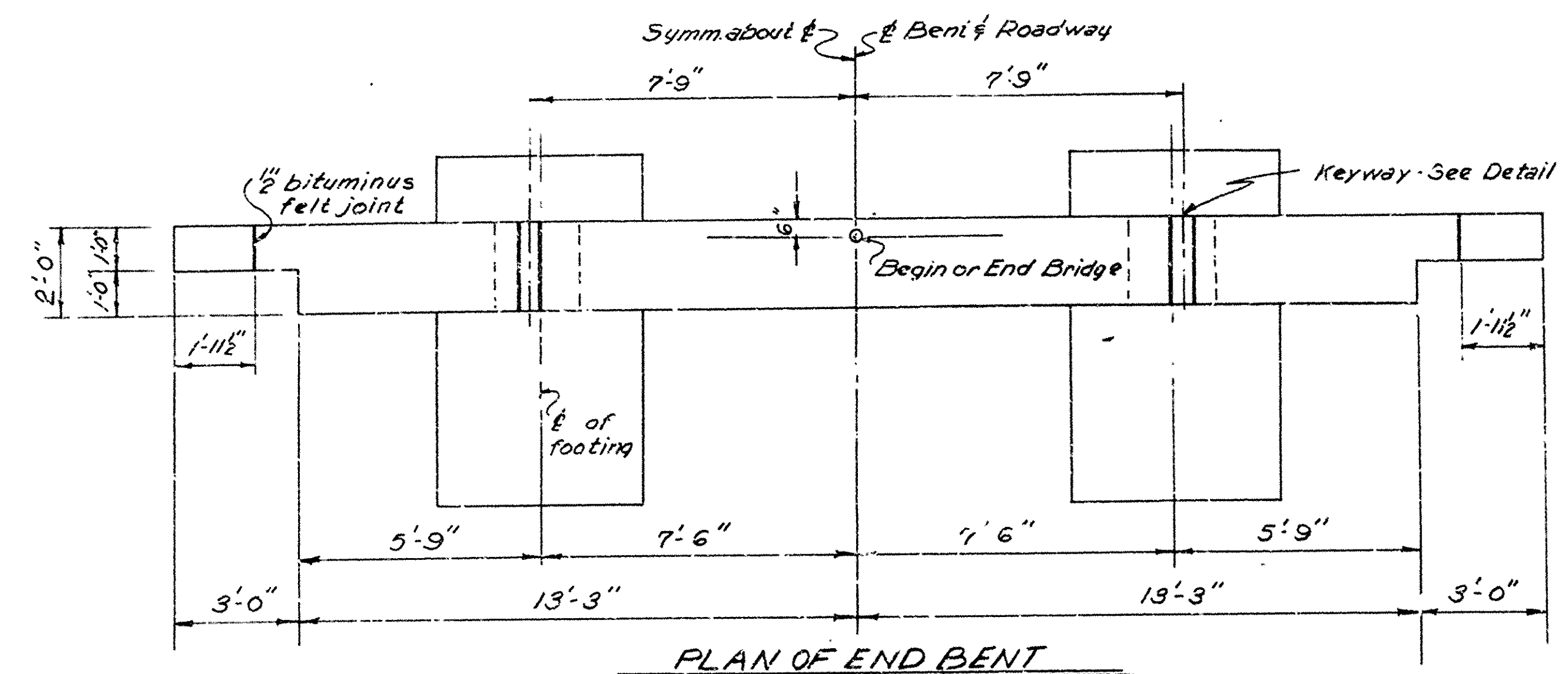
LAYOUT OF BRIDGE  
OVER NORTH FORK TOMAHAWK CREEK  
TOMAHAWK CREEK - MOUNTAIN VIEW  
STONE COUNTY  
ROUTE 9 SEC. 11  
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.  
DRAWN BY: A.N. DATE: 10-16-63  
TRACED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ SCALE: 1"=10'-0"  
CHECKED BY: Q.S. DATE: 10-27-63  
BRIDGE NO. 3858 DRAWING NO. 2631



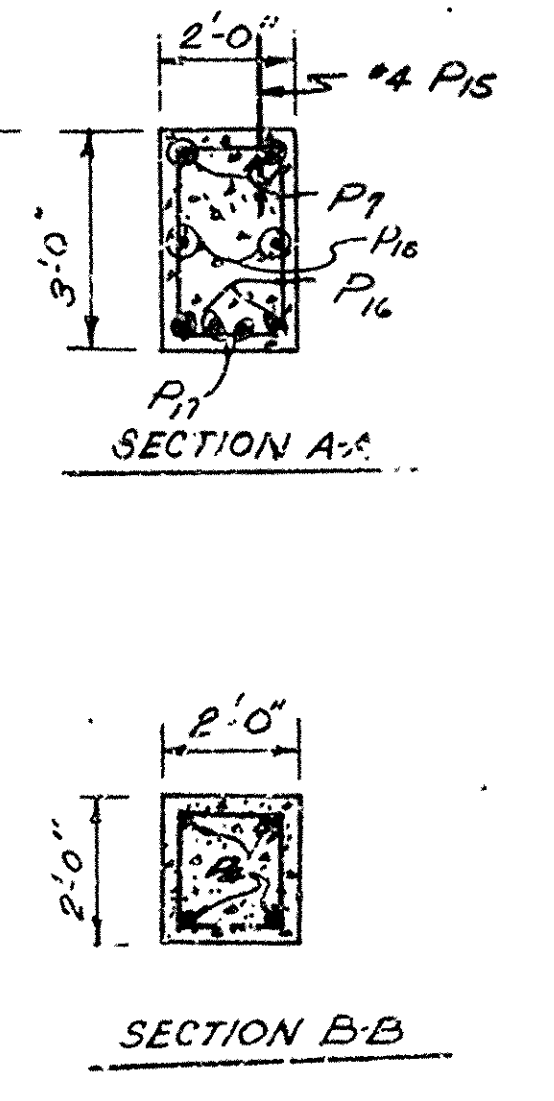
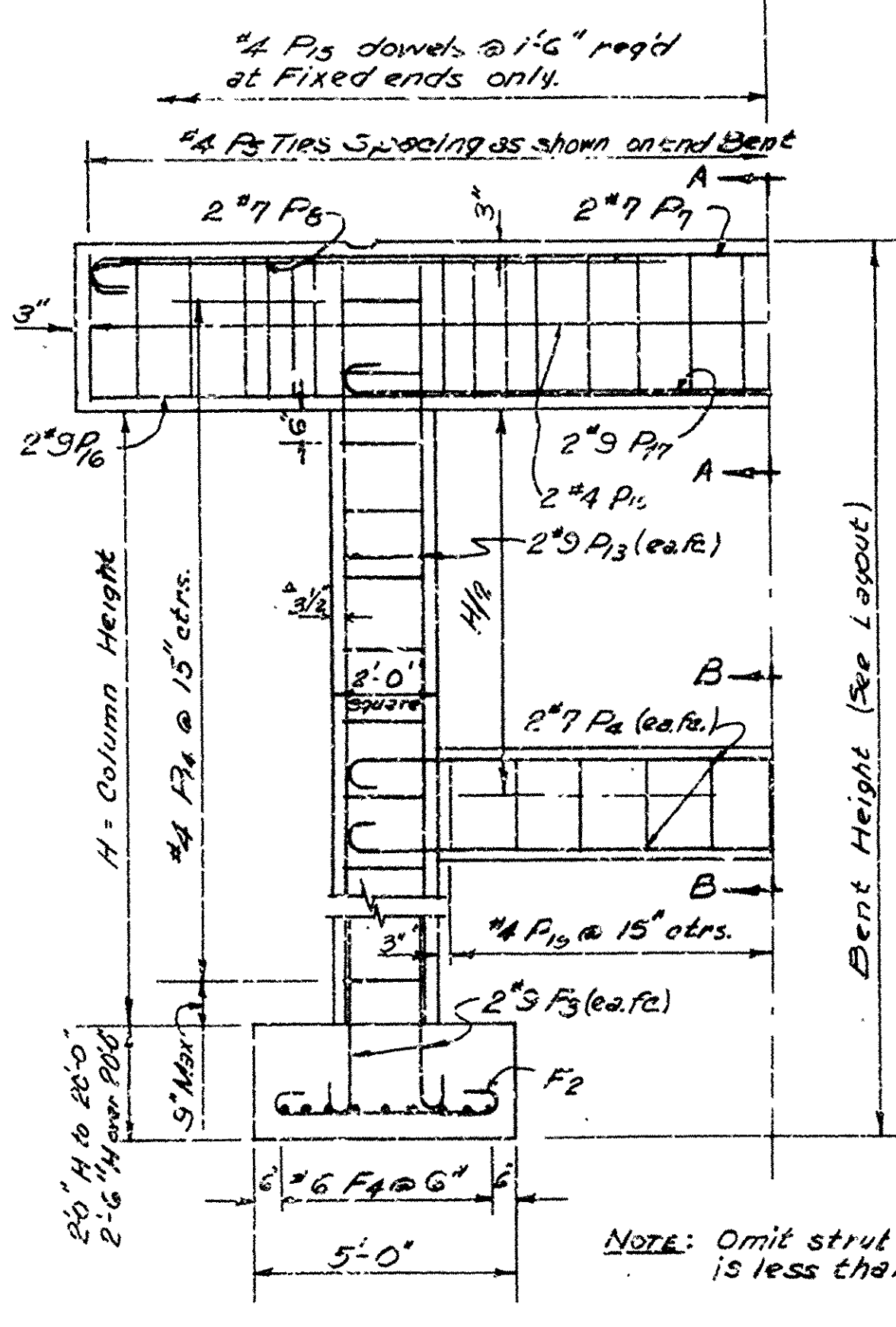


FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					



NOTE: Caps shall be Class S concrete, and columns and footings shall be Class A concrete.

Mk.	Size	No. Reqd	Length	A	B	Bar Dia.	Bending Diagram
P1	#7	4	9'-10"	9'-0"	7'-3 1/2"	3/4"	P1, P2, P3, P4
P2	#7	2	27'-8"	26'-6"	7'-3 1/2"	3/4"	P2, P3, P4, P5
P3	#7	2	26'-0"	26'-0"	7'-3 1/2"	3/4"	P3, P4, P5
P4	#7	2	18'-2"	16'-6"	7'-3 1/2"	3/4"	P4, P5, P6
P5	#4	30	3'-1"	1'-7 1/2"	2'-7 1/2"	1/2"	P5, P6, P7
P6	#4	2	27'-8"	26'-6"	7'-3 1/2"	3/4"	P6, P7, P8
P7	#7	2	27'-8"	26'-6"	7'-3 1/2"	3/4"	P7, P8, P9
P8	#7	2	10'-2"	9'-0"	7'-3 1/2"	3/4"	P8, P9, P10
P9	#4	12	9'-11"	9'-11"	7'-3 1/2"	3/4"	P9, P10, P11
P10	#4	8	1'-6"	1'-6"	7'-3 1/2"	3/4"	P10, P11, P12
P11	#4	4	2'-8"	2'-8"	7'-3 1/2"	3/4"	P11, P12, P13
P12	#4	16	4'-5"	4'-5"	7'-3 1/2"	3/4"	P12, P13, P14
P13	#9	8	8'-11 1/2"	8'-11 1/2"	7'-3 1/2"	3/4"	P13, P14, P15
P14	#4	Varies	6'-11"	1'-7 1/2"	1'-7 1/2"	1/2"	P14, P15, P16
P15	#2	#2	2'-6"	2'-6"	7'-3 1/2"	3/4"	P15, P16, P17
P16	#9	2	26'-0"	26'-0"	7'-3 1/2"	3/4"	P16, P17, P18
P17	#9	2	15'-0"	16'-6"	10'-9"	9"	P17, P18, P19
P18	#4	2	26'-0"	26'-0"	7'-3 1/2"	3/4"	P18, P19, P20
P19	#6	18	Varies	5'-11"	4'-6"	4 1/2"	P19, P20, P21
P20	#6	18	Varies	5'-11"	4'-6"	4 1/2"	P20, P21, P22
P21	#9	8	7'-2"	5'-11"	10'-9"	9"	P21, P22, P23
P22	#6	18	Varies	5'-11"	4'-6"	4 1/2"	P22, P23, P24
P23	#4	11	6'-8"	1'-5"	1'-7 1/2"	1/2"	P23, P24, P25



**GENERAL NOTES**

All concrete shall be Class A or Class S as noted. All exposed corners shall be chamfered 3/4" unless otherwise noted. Reinforcing steel shall be deformed bars of intermediate or hard grade.

Reinforcing steel shall be held in place by means of steel wire supports. These will not be paid for directly but will be considered subsidiary to the item "Reinforcing Steel".

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

Bituminous felt joints and roofing felt will not be paid for directly but will be considered subsidiary to the item "Class S Concrete".

For details of Standard 30' R.C. Slab Spans see Div. No. 5466C. For details of Standard 28' R.C. Slab Spans see Div. No. 5466D. For details of Standard 25' R.C. Slab Spans see Div. No. 5466E.

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

Loading:	H-15	AA350 (1951)
Stresses:	Class A Concrete (n=15)	840 psi
	Class S Concrete (n=10)	1,200 psi
	Reinforcing Steel	20,000 psi
	Max. Foundation Pressure	5,000 lb/sq. ft.

\* 0 Reqd. for H to 20'-0"; 4 Reqd. for H over 20'-0" (4 in. Strut)

\* 17 Reqd. at Fix. End; 3 Reqd. at Fix. Bent

\* 22 Reqd. for H to 20'-0"; 26 Reqd. for H over 20'-0"

\* For H to 20'-0": A=5'-6", Length=6'-11"

\* For H over 20'-0": A=6'-6", Length=7'-11"

Δ Revised: Add Bar P10, 3-27-62, RUM

Δ Revised: Date of Specs

Clearance of Reinf. Steel

Added Bar No. P15

E.R.B. 3-31-62

CEB 4-2-62

# DETAILS OF STANDARD R.C. BENTS 25' TO 30' SLAB SPAN (WITH VOIDS) 24'-0" ROADWAY - 1'-0" CURB

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

BRIDGE NO. DRAWING NO. 5466 J

DATE: 5-23-61

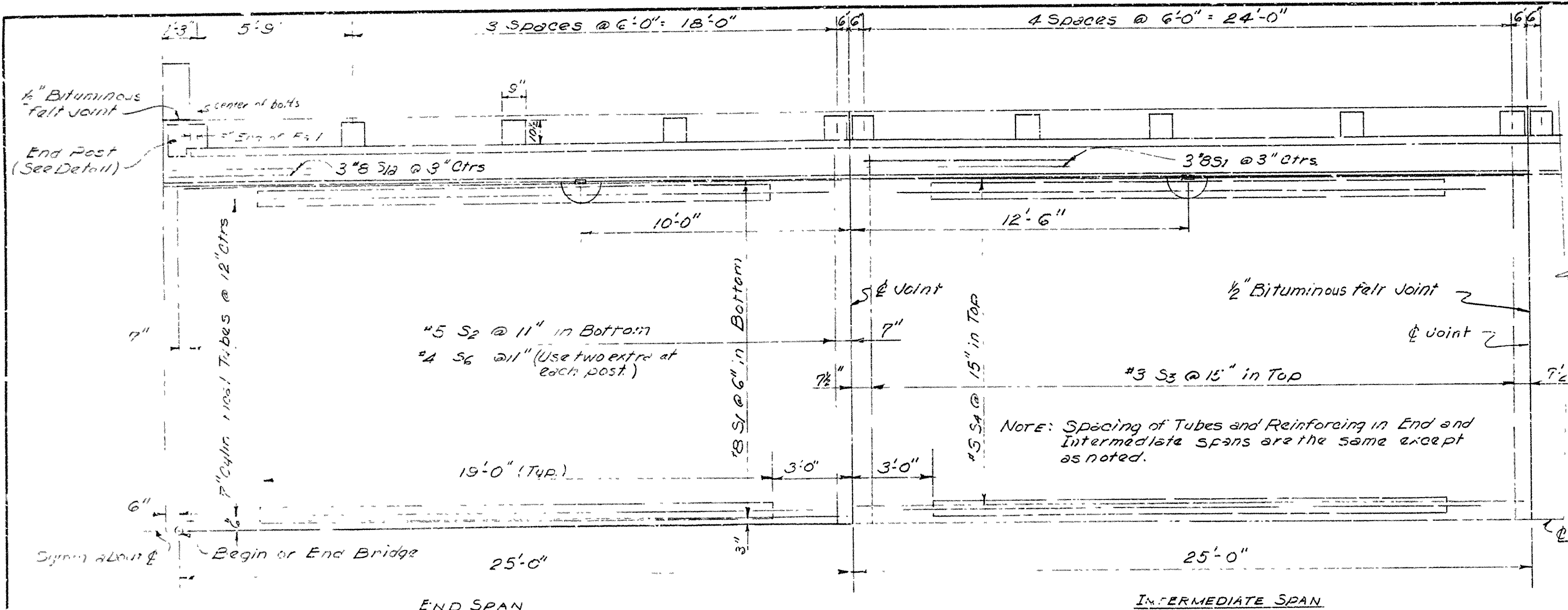
SCALE: 3/8" = 1'-0"

CHECKED BY: J. K. K.

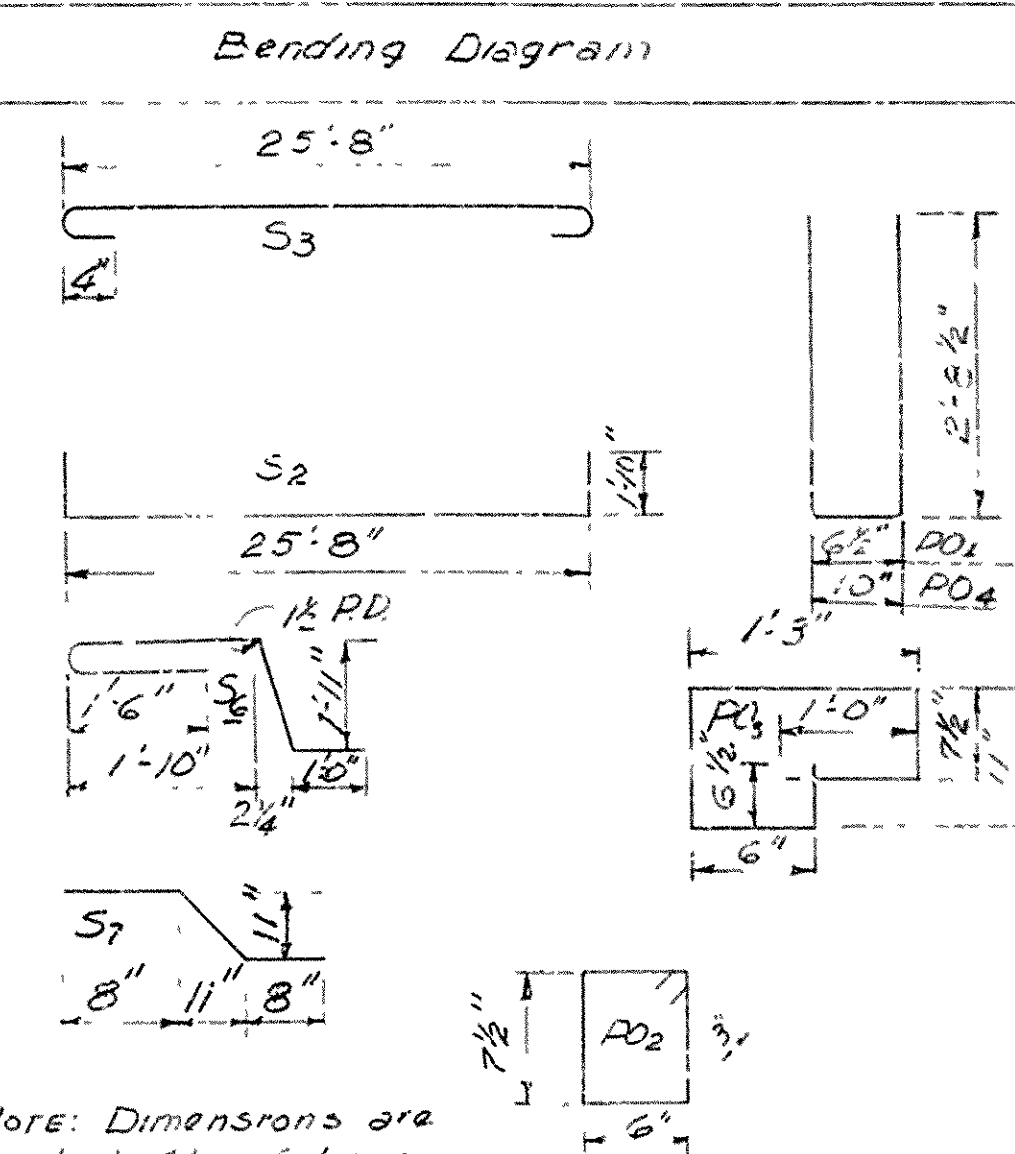
DATE: 5-25-61



FED. ROAD No.	STATE	FED AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEET
6	ARK.				
JOB No.					



Mark	Size	No. Required		Length		Pin Dia.
		End	Inter.	End	Inter.	
S <sub>1</sub>	" 8	48	54	24'-8"	24'-8"	Str
S <sub>10</sub>	8	6	-	25'-2"	-	Str
S <sub>2</sub>	5	27	27	29'-3"	29'-3"	1 1/2"
S <sub>3</sub>	3	20	20	26'-7"	26'-7"	2 1/4"
S <sub>4</sub>	3	20	20	24'-8"	24'-8"	Str
S <sub>5</sub>	2	8	-	25'-2"	-	Str
S <sub>5a</sub>	4	-	8	-	24'-8"	Str
S <sub>6</sub>	4	74	74	6'-5"	6'-5"	3"
S <sub>7</sub>	4	184	184	2'-7"	2'-7"	1 1/2"
S <sub>8</sub>	4	12	-	2'-0"	-	Str
S <sub>9</sub>	4	12	-	1'-10"	-	Str
*P <sub>01</sub>	5	18	20	5'-10"	5'-10"	1 1/2"
*P <sub>02</sub>	3	24	30	2'-8"	2'-8"	1 1/4"
*P <sub>03</sub>	3	6	-	4'-7"	-	1 1/2"
*P <sub>04</sub>	5	4	-	6'-1"	-	1 1/4"



\* Non-Pay Item

GENERAL NOTES

All concrete to be Class S. All exposed corners to be chamfered 3/4" unless otherwise noted. Reinforcing steel to be deformed bars of intermediate or hard grade. Shop lists and bending diagrams must be submitted and approval secured before fabrication is begun.

✓ All cylindrical tubes used to form voids shall be of moisture protected, laminated type construction, minimum thickness 0.200, and shall be furnished complete with end closures.

All reinforcing steel and fiber tubes shall be accurately located in the forms and firmly held in place by means of steel wire supports and spacers for tubes of a sufficient size and number to prevent displacement during the course of construction, but in no case of lesser design than that shown.

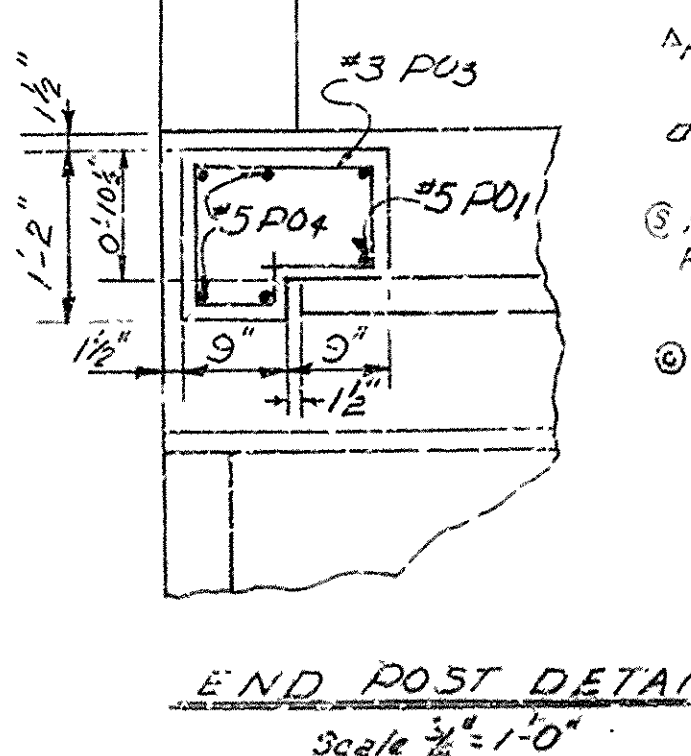
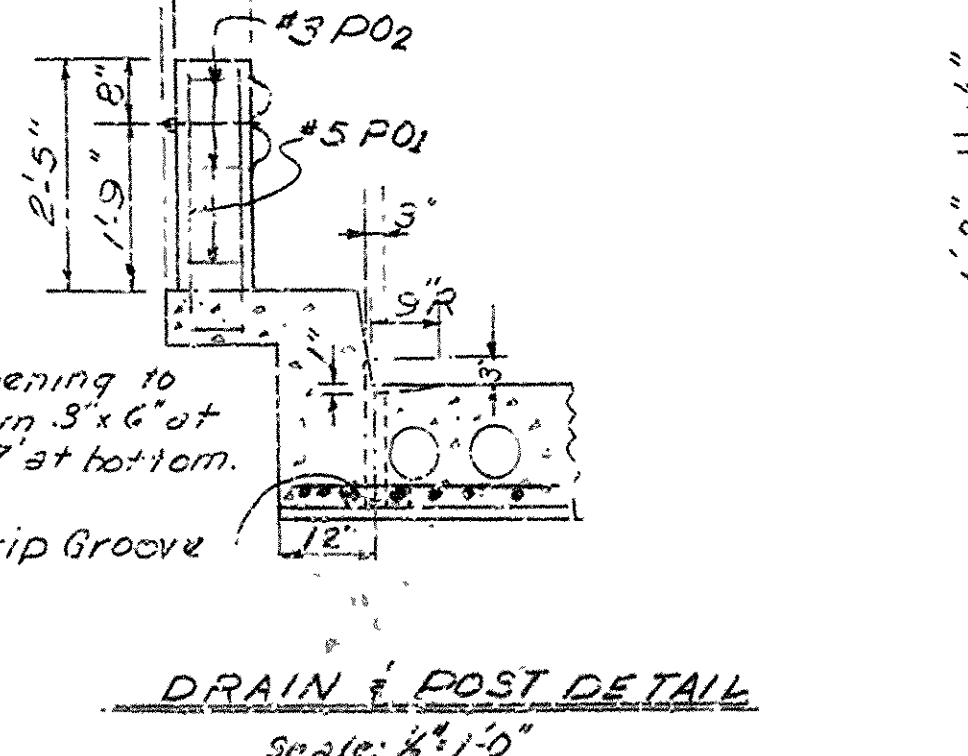
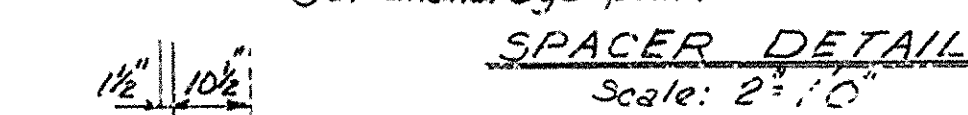
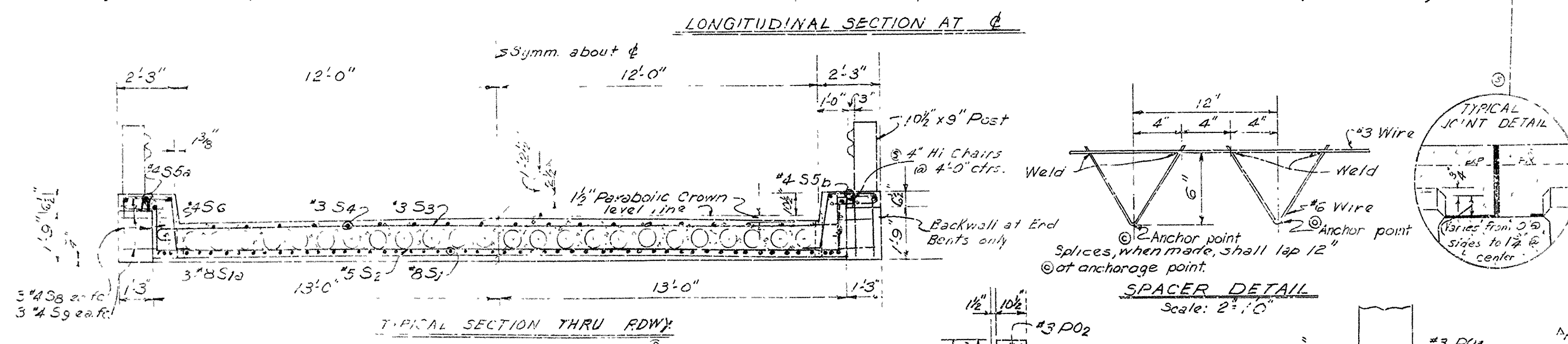
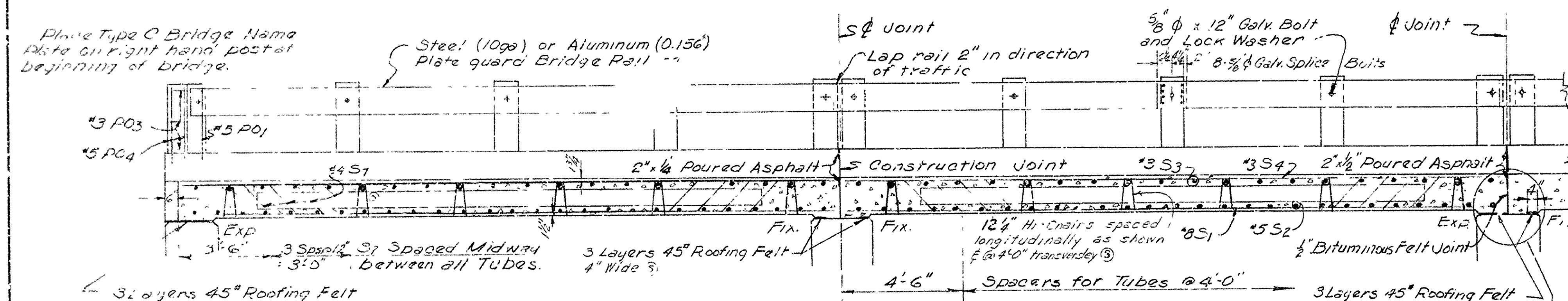
Wire supports for reinforcing bars will not be paid for directly, but will be considered subsidiary to the item "Reinforcing Steel".

Tubes for forming voids and wire supports and spacers for tubes will not be paid for directly, but will be considered subsidiary to the item "Class S Concrete".

Shop lists and diagrams of wire supports and spacers for tubes shall be submitted for approval before fabrication is begun.

Roofing felt, bituminous felt, and poured asphalt joints shall be measured and paid for as Class S Concrete.

Steel or Aluminum Plate Guard shall be of the type shown or an equivalent rigid type as approved by the Engineer. The rail, including all concrete post... fastenings shall be paid for at the unit price bid per linear foot for "Steel or Aluminum Plate Guard Bridge Railings".



*SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1959, and designated Special Provisions.*

DESIGN SPECIFICATIONS: AASRO 1961<sup>A</sup>  
 Design Live Loading: R-15  
 Load Distribution to Slab: Dead Load; 160 #/ft<sup>2</sup>  
 Live Load; 0.184<sup>A</sup> Wheels per foot of width plus 30% impact  
 Unit Stresses: Class S Concrete (n=10) 1,200 psi  
 Reinforcing Steel 20,000 psi

Revised: 3-30-62 ERB Cld RCV 4-2-62  
" Tube Spacer anchor location 1/8 4-2-62  
2x Tube Nuts. 9-10-62 DFL  
Revised: 5-6-63 JAS Remove 8" x 10" x 8"  
4 Bar Accessible. 2 KT 5-6-63  
Revised 7-25-63 JWG 7-31-63 JAS  
Included anchorage points, changed  
1/2 beam bolsters to 4-0" cirs.  
DETAILS OF STANDARD  
25'-0" R.C. SLAB SPANS (WITH VOIDS)  
24'-0" CLEAR ROADWAY 1'-0" CURB  
ROUTE SEC.

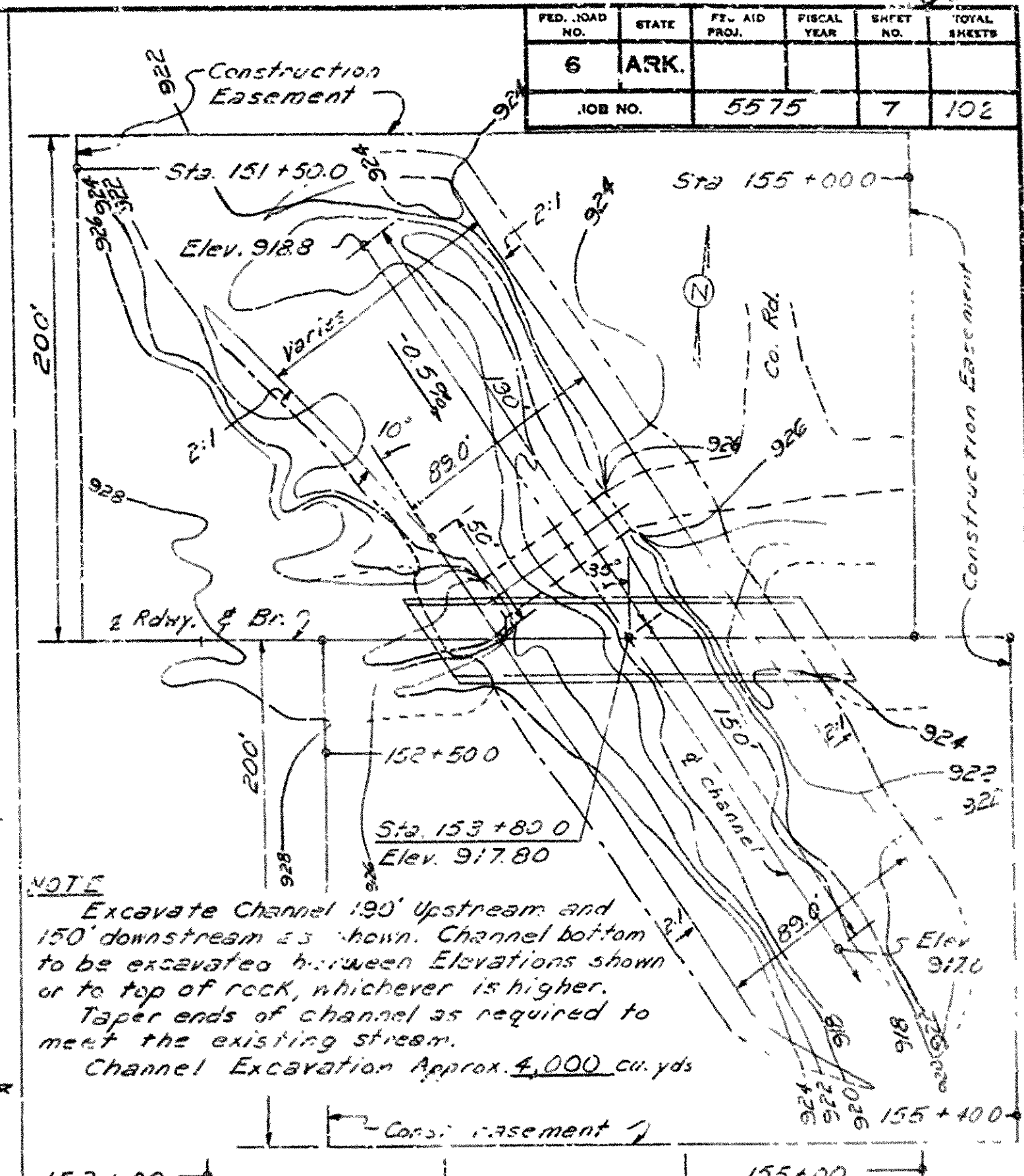
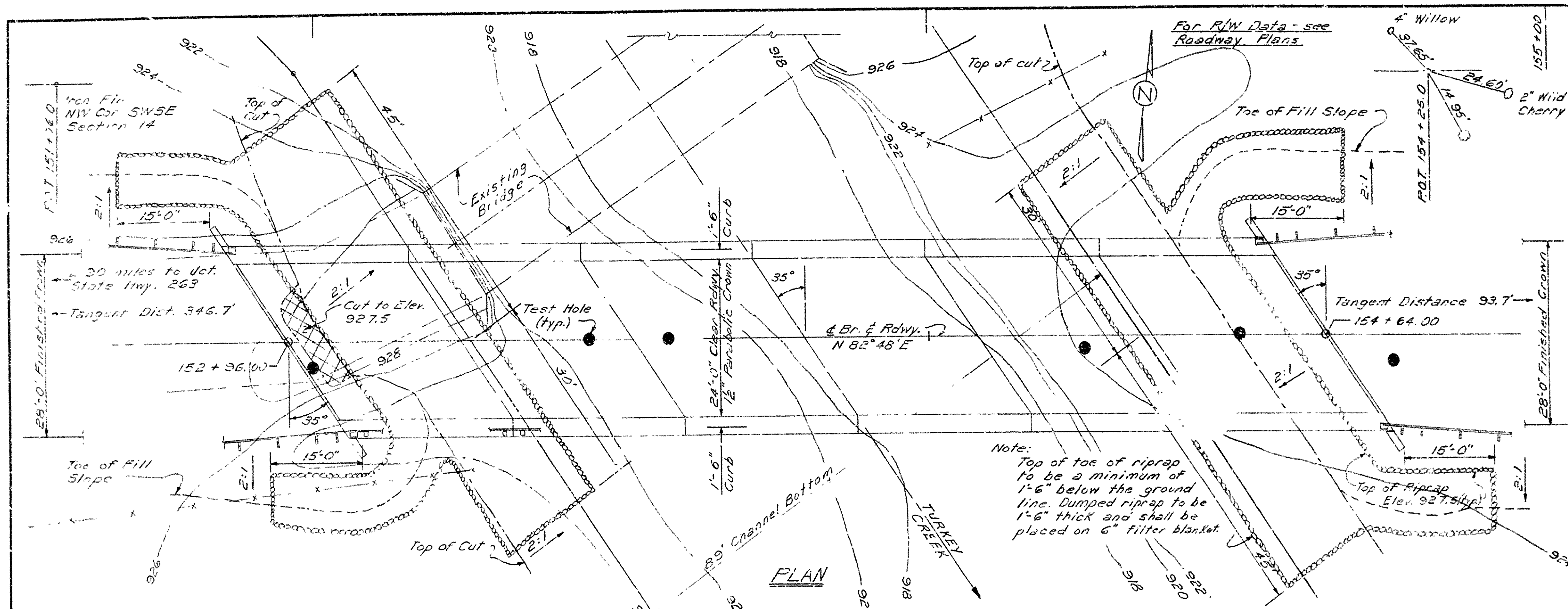
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: H.C. DATE: 9-7-61  
TRACED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ SCALE: 3/8" = 1'-0" 2500 100'  
CHECKED BY: J.M. DATE: 2-12-61

BRIDGE NO. \_\_\_\_\_ DRAWING NO. 5463



FED. ROAD NO.	STATE	FT. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.			7	102
JOB NO. 5575					



SUMMARY OF BRIDGE QUANTITIES - JOB 5575

ITEM NO.	801	802	802	SP-802-9	803	SP-804	SP-805(AH)	812	817A	8.7A	1006
UNIT	Unclassified Excavation for Structures	Class A Concrete	Class S Concrete	Bottled Linseed Oil	Reinforcing Steel	Steel Bearing Piling (12BP53)	(Alt. 1) Metal (Aluminum) Bridge Railing (Type B)	Bridge Name Plate (Type C)	Dumped Riprap	Filter Blanket	Removal of Existing Bridge Structures
UNIT OF BRIDGE	Cu. Yd.	Cu. Yd.	Cu. Yd.	Gal.	Lb.	Lin. Ft.	Lin. Ft.	Plate	Cu. Yd.	Cu. Yd.	Comp. Item
Spans Nos. 1 & 6			69.56	4.5	13,170		113	1			
Spans Nos. 2 & 5			137.08	8.5	26,135		224				
Bent No. 1	84.5	6.95	9.11		2,110				123	41	
Bents Nos. 2 & 3	25.5	14.22	15.04		4,510						
Bents Nos. 4 & 5	25.5	14.52	15.04		4,335						
Bent No. 6	18.5	7.11	7.52		2,230						
Bent No. 7	29.0		7.65		1,010	52			132	43	
Total for Bridge 518G	183.0	42.80	261.00	13.0	53,300	52	337	1	255	84	0.65

**NOTE**  
Remove the existing 65' bridge after the new bridge is completed and open for traffic. See Section 1006 of the Standard Specifications. The 12"x12"x20' treated timbers caps and the 4"x12"x16' stringers are to be salvaged. All remaining material to become the property of the Contractor.

The existing bridge shall be used as a detour bridge by removing part of the southeast corner and constructing an earth ramp at the southwest corner so as to provide a minimum usable roadway width of twelve feet and a construction clearance of five feet from the new bridge. A protective railing shall be provided along each side of the detour. This work shall be subsidiary to the item SP 1008-2.

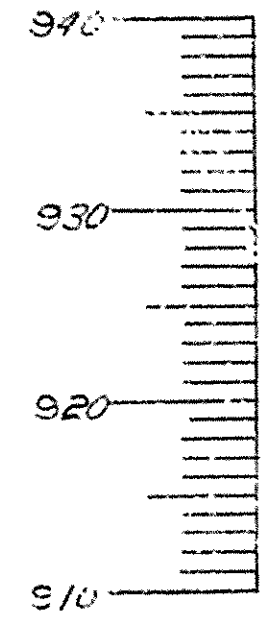
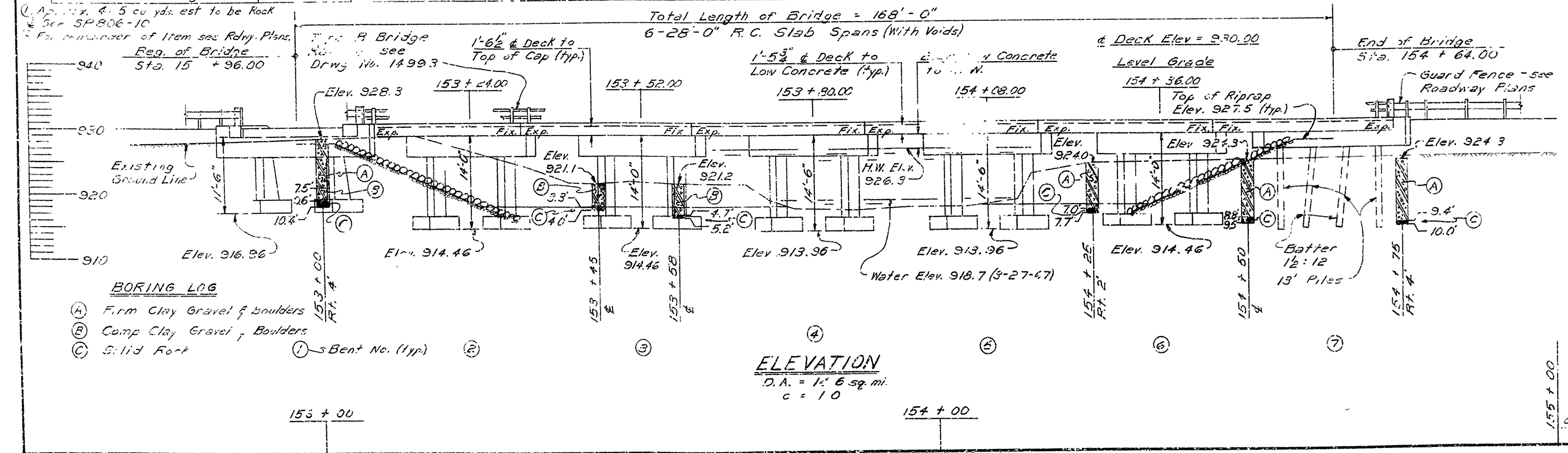
LOCATION SKETCH  
Scale: 1" = 50'

**GENERAL NOTES**  
Bench Mark - Nail in 24" W. Oak, 55' N. of Sta. 150+55. Elevation 928.18.  
Rock excavations shall be made to neat lines of concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock. The bottoms of the footings shall be set a minimum of 1'-8" into rock. Bents 2 thru 6 shall have a minimum clearance of 1'-0" between bottom of channel and top of footing.  
All concrete to be poured in the dry. Exposed corners to be chamfered 3/4" unless otherwise noted.  
All piling shall be 12BP53 and shall be driven to a minimum bearing capacity of 44 tons per pile and into the material designated as rock on the boring logs. Lengths of pile shown are for estimating quantities only. Order lengths shown; cut-off, or build-up, if necessary, to be paid for in accordance with the Standard Specifications.  
Piles in end bents to be driven after embankment to subgrade is in place.  
For Details of End Bents see Dwg. Nos. 15093C and 15093I.  
For Details of Intermediate Bents see Dwg. No. 15093C.  
For Details of 28'-0" R.C. Slab Spans (with voids) see Dwg. No. 15091B.

**SPECIFICATIONS:** Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1959, the 1966 Supplemental Specifications, and applicable Special Provisions.  
**DESIGN SPECIFICATIONS:** AASHTO 1961  
Live Loading: H15  
Unit Stresses: Class A Concrete (n=15) 840 psi  
Class S Concrete (n=10) 1,200 psi  
Reinforcing Steel 20,000 psi  
Foundation Pressure: 4500 lb/ft<sup>2</sup> (Group II)

**SUMMARY OF BRIDGE QUANTITIES AND LAYOUT OF BRIDGE OVER TURKEY CREEK**  
JUNCTION HIGHWAY 263 - NORTHEAST  
STONE COUNTY  
ROUTE 9 SEC. II  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: UAS DATE: 5-10-67  
CHECKED BY: FMH DATE: 5-17-67  
BRIDGE NO. 518G DRAWING NO. 15553  
SCALE: 1" = 10'





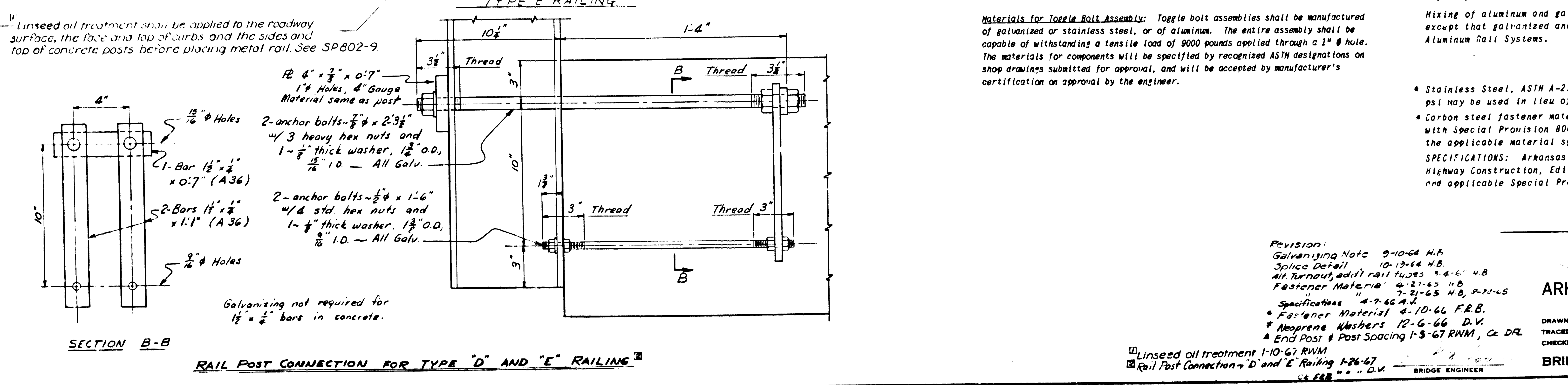
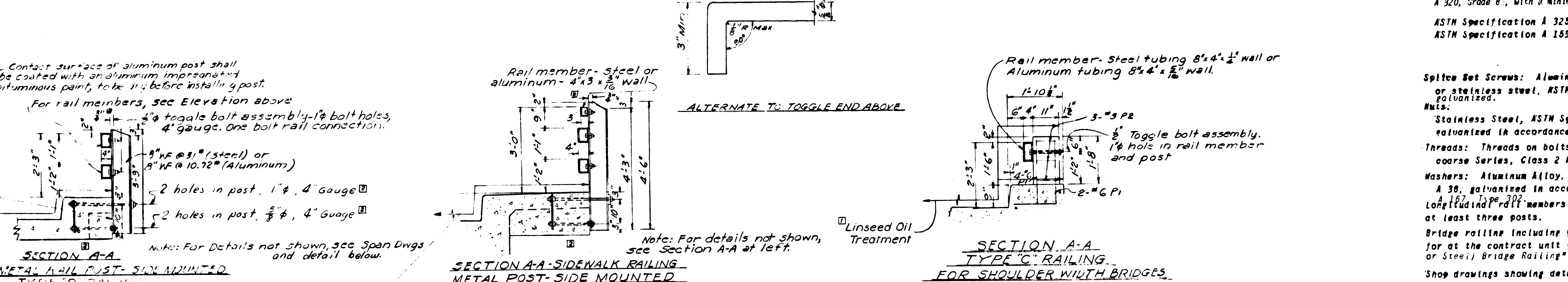
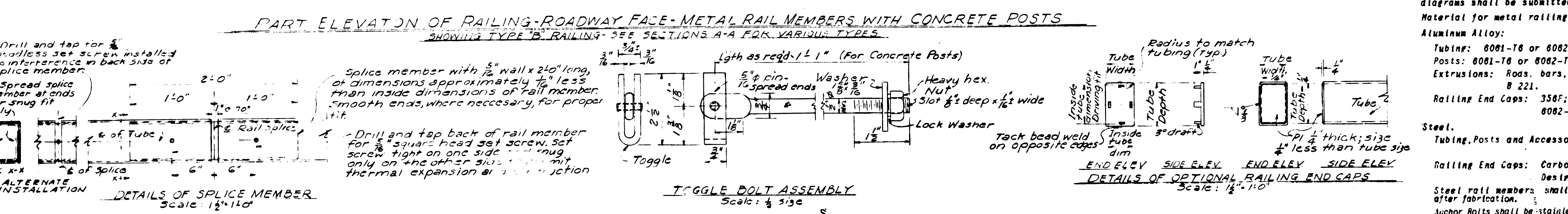
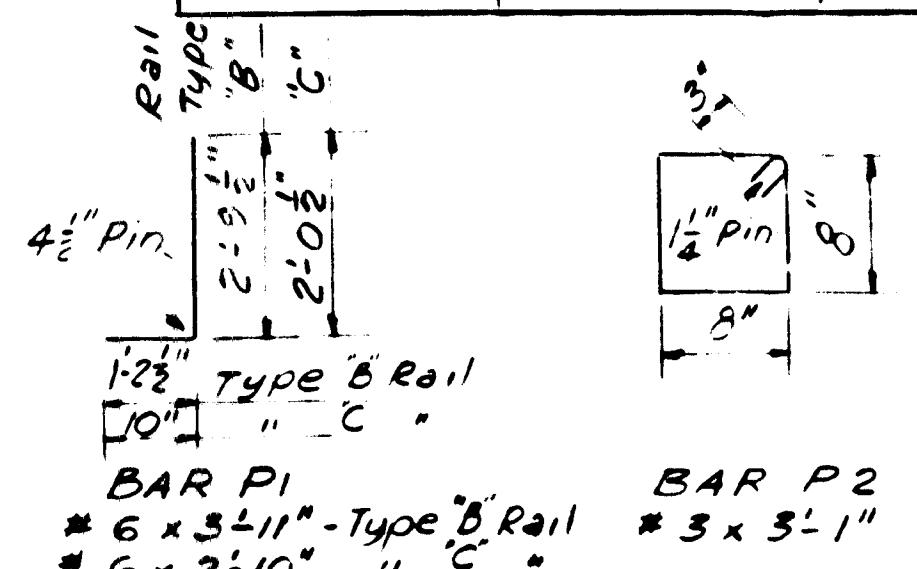
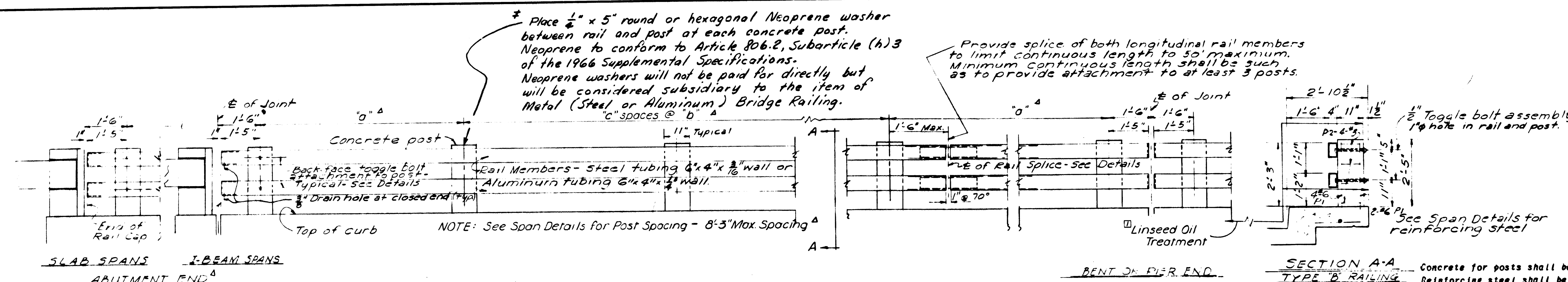








FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					



**GENERAL NOTES**

Concrete for posts shall be Class 5. Exposed corners shall be chamfered 1/2". Reinforcing steel shall be intermediate or hard grade. Shop lists and bending diagrams shall be submitted and approved before fabrication is begun. Material for metal railing shall be galvanized steel or aluminum alloy as follows:

**Aluminum Alloy:**

Tubing: 6061-T6 or 6062-T6; ASTM Specification B 221.

Posts: 6061-T6 or 6062-T6; ASTM Specification B 308 or B 221.

Extrusions: Rods, bars, and shapes - 6061-T6 or 6062-T6; ASTM Specification B 221.

Railing End Caps: 356F; ASTM Specification B 26, Alloy 5070 A or 6061-T6, 6062-T6, or 6063-T6; ASTM Specification B 221. OR A344F

**Steel:**

Tubing, Posts and Accessories: ASTM Specification A 36 or ASTM Specification A 53, Grade B, or ASTM 500, Grade A or B, or ASTM 501.

Railing End Caps: Carbon Steel castings conforming to ASTM Specification, Designation A 27, Grade 35, or ASTM Specification A 36, after fabrication.

Steel rail members shall be galvanized in accordance with ASTM Specification A 123, after fabrication.

Anchor Bolts shall be stainless steel conforming to ASTM Specification, Designation A 193, or A 320, Grade 8, with a minimum yield strength of 20,000 per square inch, or High Strength Steel.

ASTM Specification A 325 or A 354, Grade BC, galvanized in accordance with ASTM Specification A 155.

**Splice Bolt Screws:** Aluminum Alloy 6061-T6 or 2024-T4, ASTM Specification B 211, or stainless steel, ASTM Specification A 193 or A 320, Grade 8, or ASTM A 36 galvanized.

**Nuts:**

Stainless Steel, ASTM Specification A 194, Grade 8, or ASTM Specification A 325, galvanized in accordance with ASTM Specification A 155.

**Threads:** Threads on bolts, screws and nuts shall conform to American Standard coarse Series, Class 2 Fit, ASA Specification B1.1.

**Washers:** Aluminum Alloy, Alclad 2024; ASTM Specification B 209, or ASTM A 9 or A 36, galvanized in accordance with ASTM Specification A 153, or ASTM A 276 or Longitudinal Rail members shall be of sufficient length to provide attachment to at least three posts.

Bridge railing including posts, reinforcing steel, and fastenings shall be paid for at the contract unit price per linear foot bid for "Metal (Aluminum or Steel) Bridge Railing". For type of railing to be used, see Bridge Layout.

Shop drawings showing details of railing shall be submitted and approved before fabrication is begun.

Mixing of aluminum and galvanized steel parts in railing assembly is not permitted except that galvanized anchor and toggle bolts as specified above may be used with Aluminum Rail Systems.

\* Stainless Steel, ASTM A-276, Type 316 with a minimum ultimate strength of 100,000 psi may be used in lieu of the rail fastener material shown in notes above.

\* Carbon steel fastener material as specified above, aluminum coated in accordance with Special Provision 806-10, may be used with aluminum rail members in lieu of the applicable material specified.

**SPECIFICATIONS:** Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1959, the 1966 Supplemental Specifications thereto and applicable Special Provisions.

**DETAILS OF METAL BRIDGE RAILING**

TYPE "B", "C", "D", "E"

ROUTE SEC.

**ARKANSAS STATE HIGHWAY COMMISSION**

LITTLE ROCK, ARK.

DRAWN BY: H.B. DATE: 8-2-64

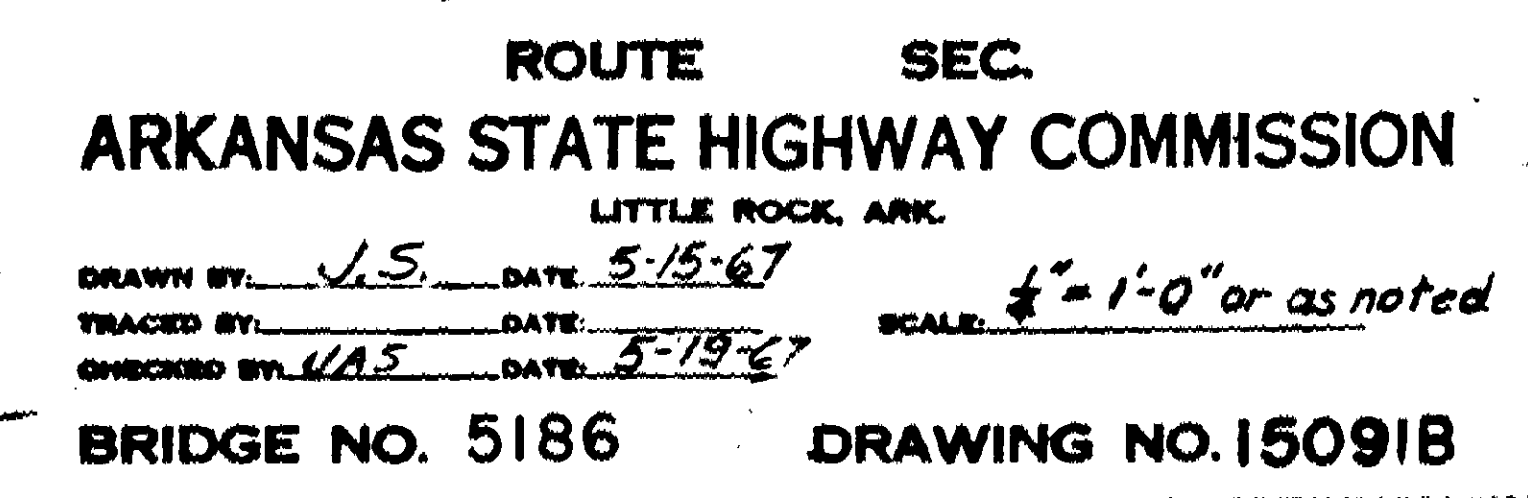
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CHECKED BY: DATE: 8-2-64

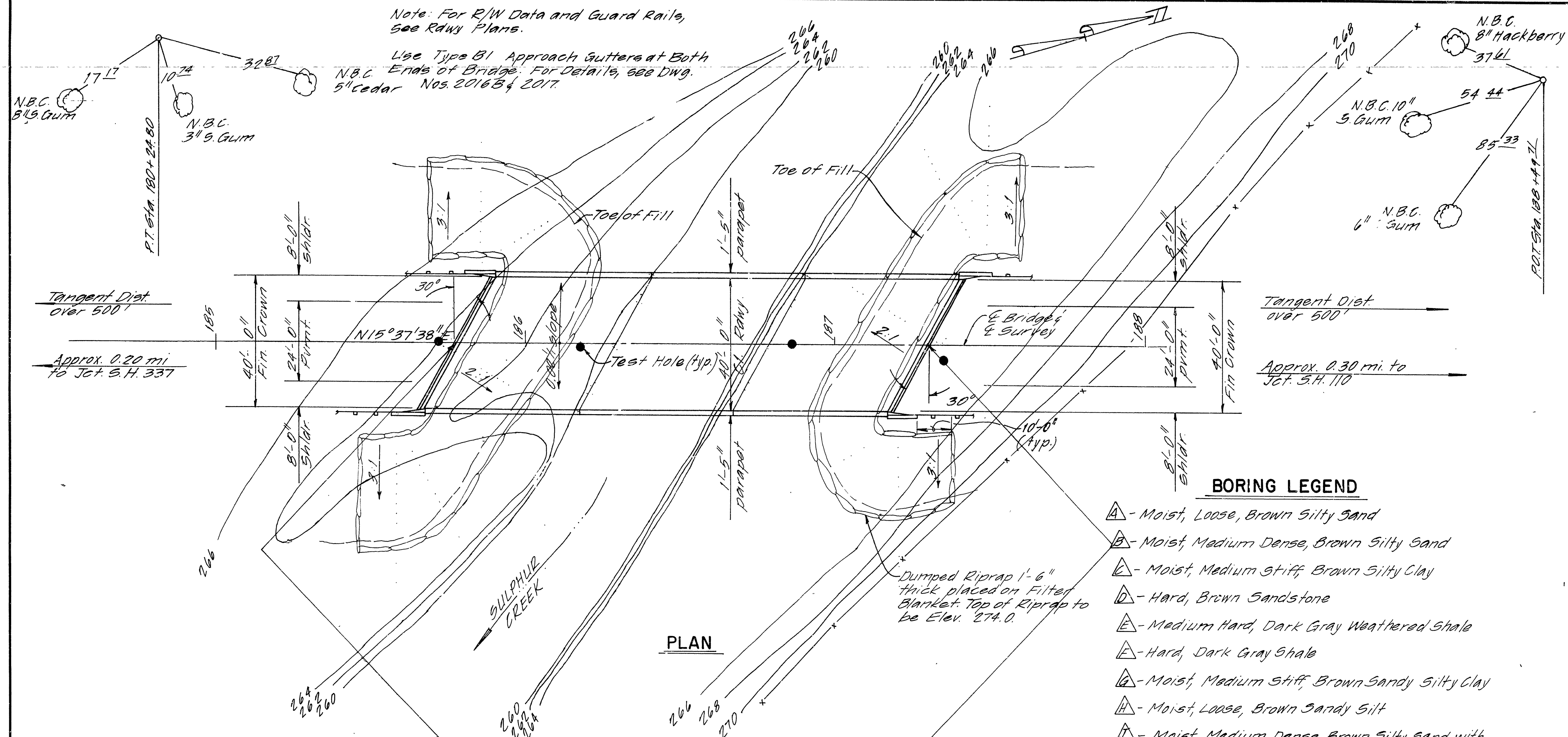
BRIDGE NO. DRAWING NO. 14033

Do Not Use 10-37-67









PLAN

### BORING LEGEND

- △ - Moist, Loose, Brown Silty Sand
- △ - Moist, Medium Dense, Brown Silty Sand
- △ - Moist, Medium Stiff, Brown Silty Clay
- △ - Hard, Brown Sandstone
- △ - Medium Hard, Dark Gray Weathered Shale
- △ - Hard, Dark Gray Shale
- △ - Moist, Medium Stiff, Brown Sandy Silty Clay
- △ - Moist, Loose, Brown Sandy Silt
- △ - Moist, Medium Dense, Brown Silty Sand with Sandstone Fragments
- △ - Soft to Medium Hard, Dark Gray Weathered Shale

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		R50021	71	159
						6297 LAYOUT	29747	

### GENERAL NOTES

BENCH MARK: N.I.R. 10" S. GUM 69" RT. STA. 187+81, ELEV. 265.76.

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1983 EDITION WITH CURRENT INTERIMS.

CONSTRUCTION SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1988 AND APPLICABLE SPECIAL PROVISIONS.

DESIGN LIVE LOAD: HS20

DESIGN METHOD: LOAD FACTOR

CONCRETE: CONCRETE IN THE SUBSTRUCTURE SHALL BE CLASS "S"; CONCRETE IN THE SUPERSTRUCTURE SHALL BE CLASS "S(AE)". ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH,  $f'_c = 3500$  PSI, AND SHALL BE POURED IN THE DRY. EXPOSED CORNERS TO BE CHAMFERED  $3/4"$  UNLESS OTHERWISE NOTED.

REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A617, GRADE 60 ( $F_y = 60,000$  PSI).

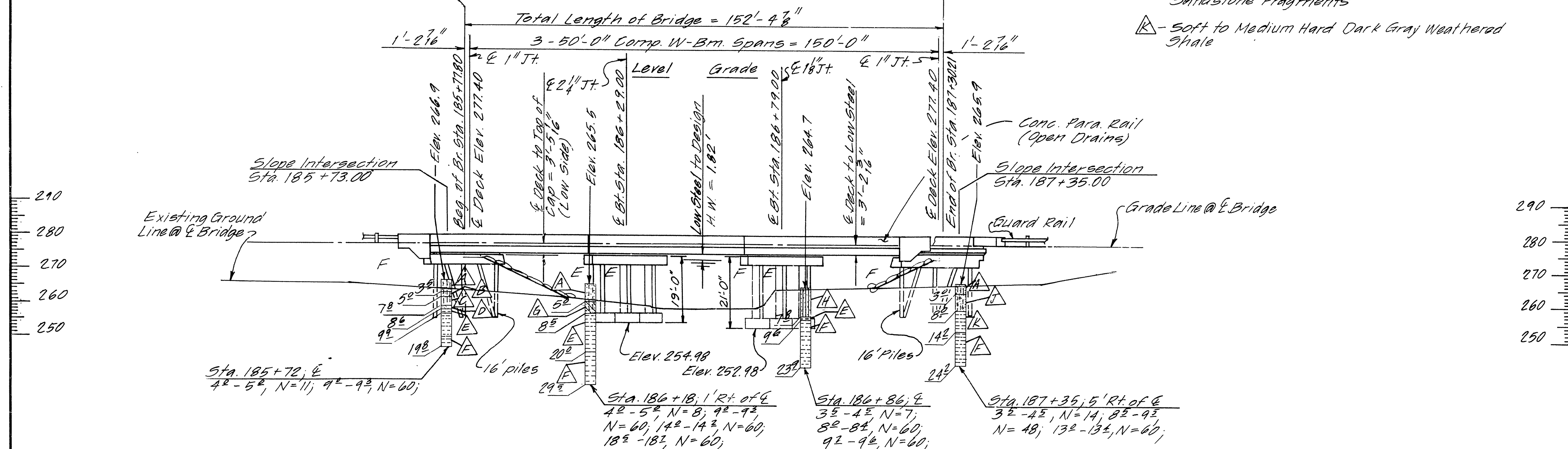
STRUCTURAL STEEL: STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 OR ASTM A588 AS NOTED ON THE DETAIL DRAWINGS.

PILING: PILING IN BENTS 1 AND 4 SHALL BE HP10x42 AND SHALL BE DRIVEN WITH AN APPROVED AIR STEAM OR DIESEL HAMMER TO A MINIMUM BEARING CAPACITY OF 55 TONS PER PILE AND INTO THE MATERIAL DESIGNATED AS DARK GRAY SHALE ON THE BORING LOGS. LENGTHS SHOWN ARE FOR ESTIMATING QUANTITIES AND FOR USE IN DETERMINING PAYMENT FOR CUT-OFF AND BUILD-UP IN ACCORDANCE WITH THE SPECIFICATIONS. PILING SHALL BE DRIVEN AFTER EMBANKMENT TO BOTTOM OF CAP IS IN PLACE.

FOOTINGS: FOOTINGS FOR BENTS 2 AND 3 SHALL BE SET A MINIMUM OF  $1'-6"$  INTO MATERIAL DESIGNATED ON THE BORING LOGS AS DARK GRAY SHALE. THE TOPS OF THE FOOTINGS SHALL HAVE A MINIMUM COVER OF  $1'-0"$ . FOUNDATIONS SHALL BE PREPARED IN ACCORDANCE WITH SUBSECTION 801.04 OF THE STANDARD SPECIFICATIONS.

FOR DETAILS OF END BENT NOS. 1 & 4, SEE DWG. NO. 29748, 29749 & 29750  
FOR DETAILS OF INT. BENT NOS. 2 & 3, SEE DWG. NO. 29751  
FOR DETAILS OF  $50'-0"$  COMPOSITE W-BEAM SPANS, SEE DWG. NO. 29752 & 29753  
FOR DETAILS OF TYPE B-3 SHOES, SEE DWG. NO. 14990H  
FOR DETAILS OF APPROACH GUTTERS, SEE DWG. NOS. 2016B & 2017  
FOR DETAILS OF STEEL PILING, SEE DWG. NO. 14995A

DECK FINISH: THE ROADWAY SURFACE OF THE CONCRETE BRIDGE DECK SHALL BE GIVEN A TINE FINISH AS SPECIFIED FOR FINAL FINISHING IN SUBSECTION 802.20 FOR CLASS 5, ROADWAY SURFACE FINISH.



### DESIGN FLOOD

$Q_{10} = 8110$  c.f.s.  
Normal W.S. Elev. 272.4  
W.S. with Backwater = 274.5

### ELEVATION

D.A. =  $9.7 \text{ mi}^2$

### BASIC FLOOD

$Q_{10} = 9,000$  c.f.s.  
Normal W.S. elev. = 272.9  
W.S. with Backwater = 275.1

FOR INFORMATION ONLY

### LAYOUT OF BRIDGE OVER SULPHUR CREEK

HWY. 25 RELOCATION (HEBER SPRINGS)  
(GR. & STRS.)  
CLEBURNE COUNTY  
ROUTE 25 SEC. 3

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: *EAP* DATE: 3-25-87  
CHECKED BY: *WGP* DATE: 10-23-87  
DESIGNED BY: *GMC* DATE: Feb 87

*Vera Pinkerton*  
BRIDGE ENGINEER

BRIDGE NO. 6297 DRAWING NO. 29747



FOR R/W DATA, SEE RDWY. PLANS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		050009	23	75
				06849	LAYOUT			42337

#### GENERAL NOTES

BENCH MARK: Railroad Spike in Combination Pole, 33.95 feet left of centerline construction Sta. 38+96.13. Elevation 613.143.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (1996 edition) with applicable supplemental specifications and special provisions. Unless otherwise noted on the plans, Section and subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges (1996 edition), with current interim specifications.

LIVE LOADING: HS20 -44 METHOD OF DESIGN: Load Factor  
SEISMIC PERFORMANCE CATEGORY: A

MATERIALS AND STRENGTHS:  
Class 5 Concrete (superstructure)  $f'_c = 3,500$  psi  
Class S(AE) Concrete (superstructure)  $f'_c = 4,000$  psi  
Reinforcing Steel (AASHTO M31 or M53, Gr. 60)  $f_y = 60,000$  psi  
Structural Steel (AASHTO M270, Gr. 36)  $F_y = 36,000$  psi  
Structural Steel (AASHTO M270, Gr. 50W)  $F_y = 50,000$  psi

BORING LOGS: Boring logs may be obtained from the Programs and Contracts Division.

STEEL PILING: Piling in End Bents 1 and 4 shall be HP 10x42 and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 55 tons per pile. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with the standard specifications. Piles in end bents to be driven after embankment to bottom of cap is in place. Approved steel H-Pile Driving Points shall be used on all piles.

FOOTINGS: Footings for bents 2 & 3 shall be set a minimum of 2'-0" into material designated as hard limestone or hard dolomite on the boring legend. Foundations for footings shall be prepared in accordance with Section 801.04. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock.

BRIDGE DECK: The concrete bridge deck shall be given a fine finish as specified for final finishing in subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

PROTECTIVE SURFACE TREATMENT: Class I Protective Surface Treatment shall be applied to the roadway surface and to the face and top of the concrete parapet rail.

DETAIL DRAWINGS:  
End Bents: 42338, 42239  
Int. Bents: 42340  
90'-0" Cont. Comp. W-Beam Unit: 42341 thru 42344  
Type C Bridge Name Plate: 2389A  
Type B Approach Gutters: 2016B

EXISTING BRIDGE: Existing bridge no. M2463 (log mile 0.71) is 26.6' wide by 48' long and consists of steel multi-beam spans with concrete deck supported by concrete abutments and intermediate bents.

REMOVAL AND SALVAGE: The existing bridge No. M2463 shall be removed in accordance with Section 205. All material from the existing bridge shall become the property of the contractor.

TEMPORARY BRIDGE: Construct a 75' long temporary bridge approximately 50' downstream. The temporary bridge shall have a minimum roadway width of 24', a minimum live load capacity of H15, a minimum deck elevation of 610.0, a low chord elevation of 608.5 or higher, and a minimum span length of 25'. See Section 603. See drawing numbers 2465 thru 2467 for standard temporary bridge details. A concrete bridge deck will be required for this detour site. See roadway plans for actual detour grade and alignment. Untreated timber piling and untreated pine timber may be used in the construction of the temporary bridge structure.

#### HYDRAULIC DATA

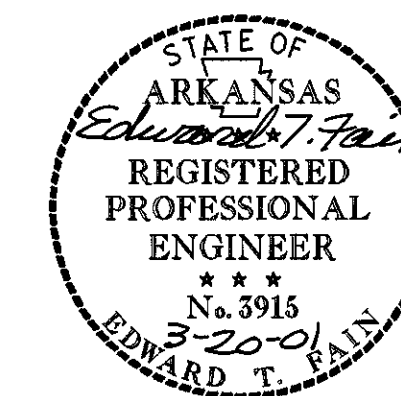
Drainage Area = 1.6 sq. mi.

FLOOD	FREQUENCY	DISCHARGE	NATURAL WATER SURFACE ELEV.*	WATER SURFACE ELEVATION WITH BACKWATER
DESCRIPTION	YEARS	CFS	FEET	FEET
DESIGN	50	2010	608.2	608.4
BASE	100	2312	608.6	609.1
EXTREME	500	3090	609.2	610.2
OVERTOPPING	> 500	N/A	N/A	N/A

#### Remarks

- Historical Highwater Elev. = 609.500
- Low Bridge Member Elev. = 609.269

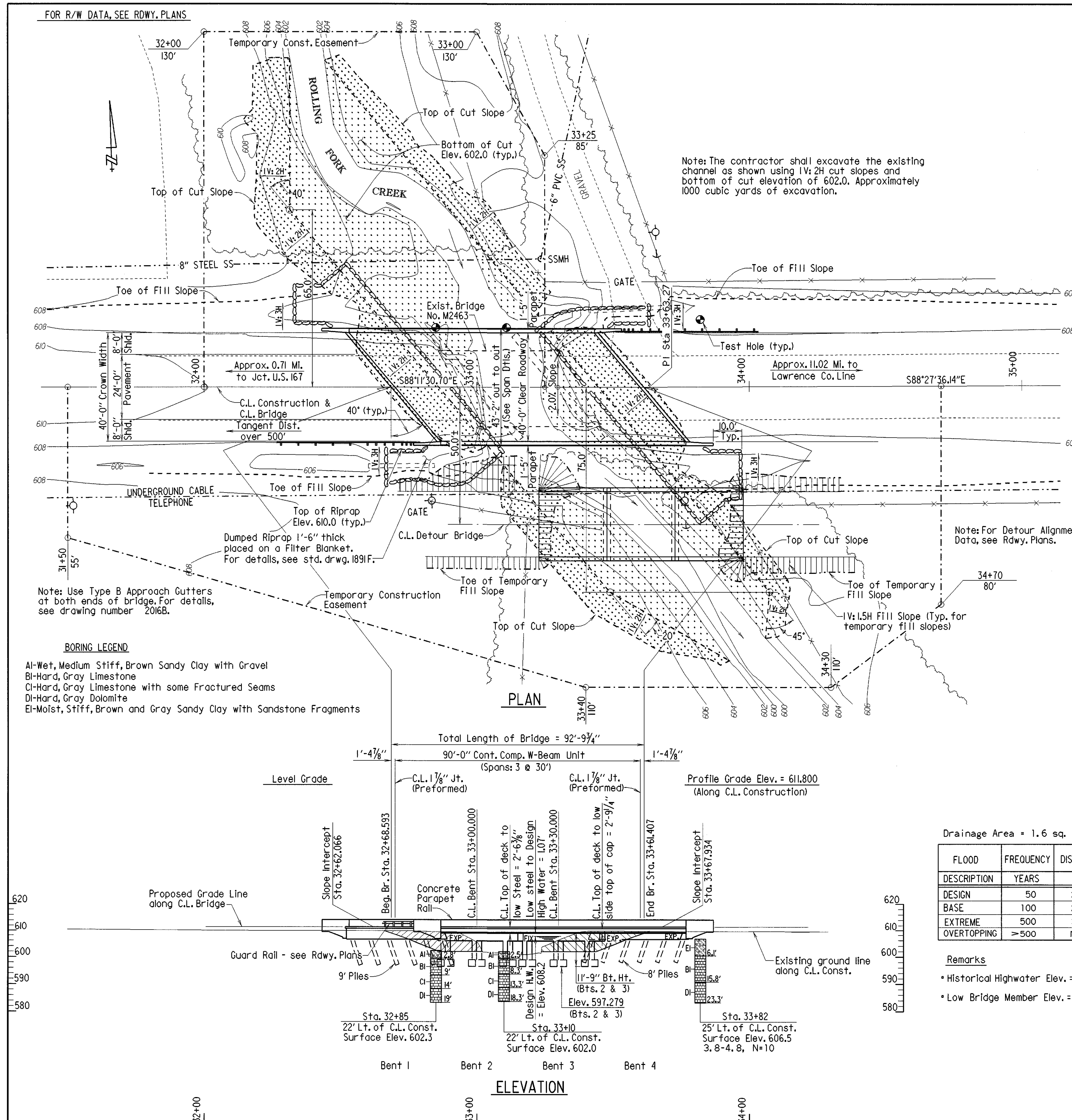
\* Unconstricted water surface elev. at proposed bridge location.



BRIDGE ENGINEER

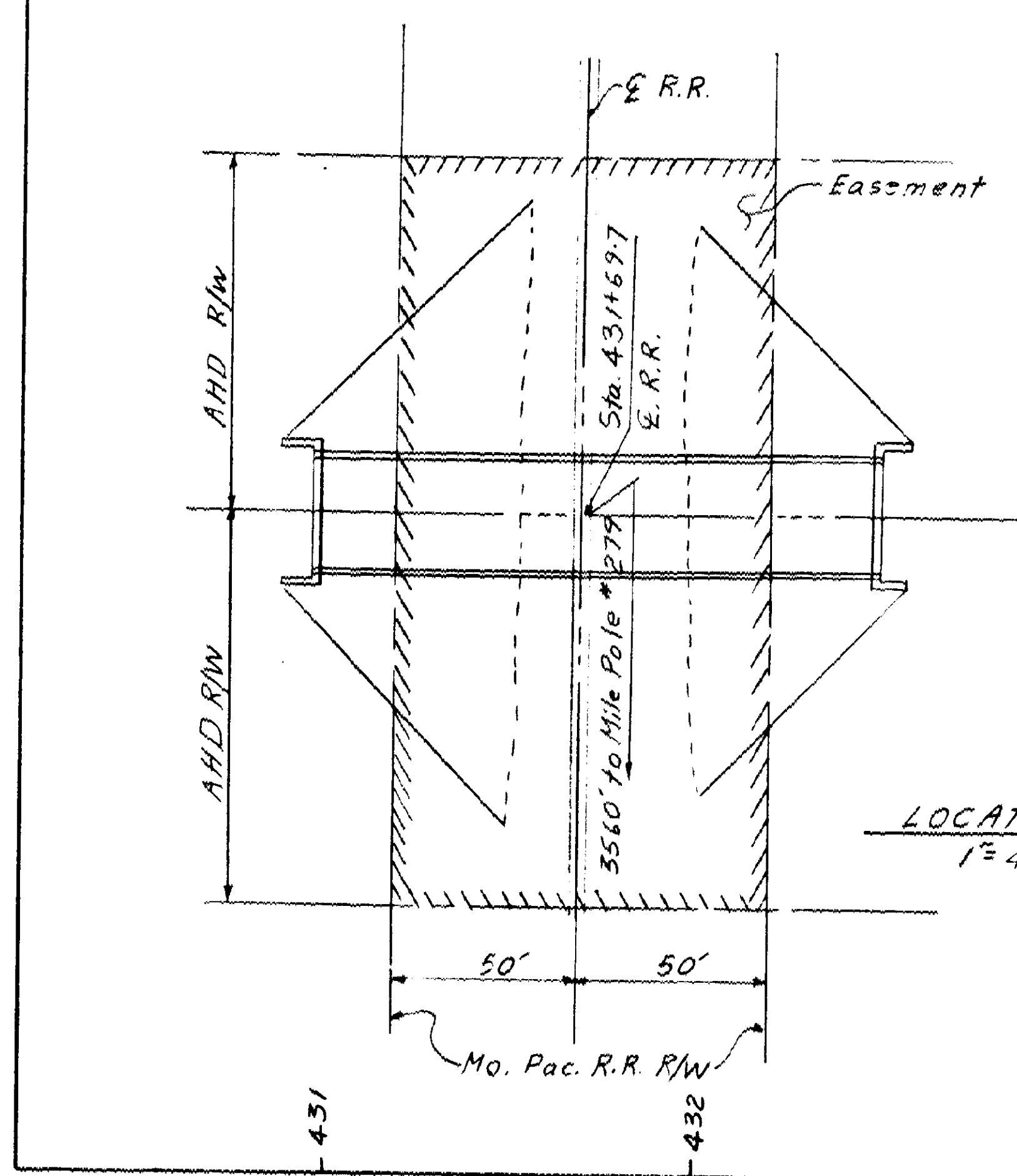
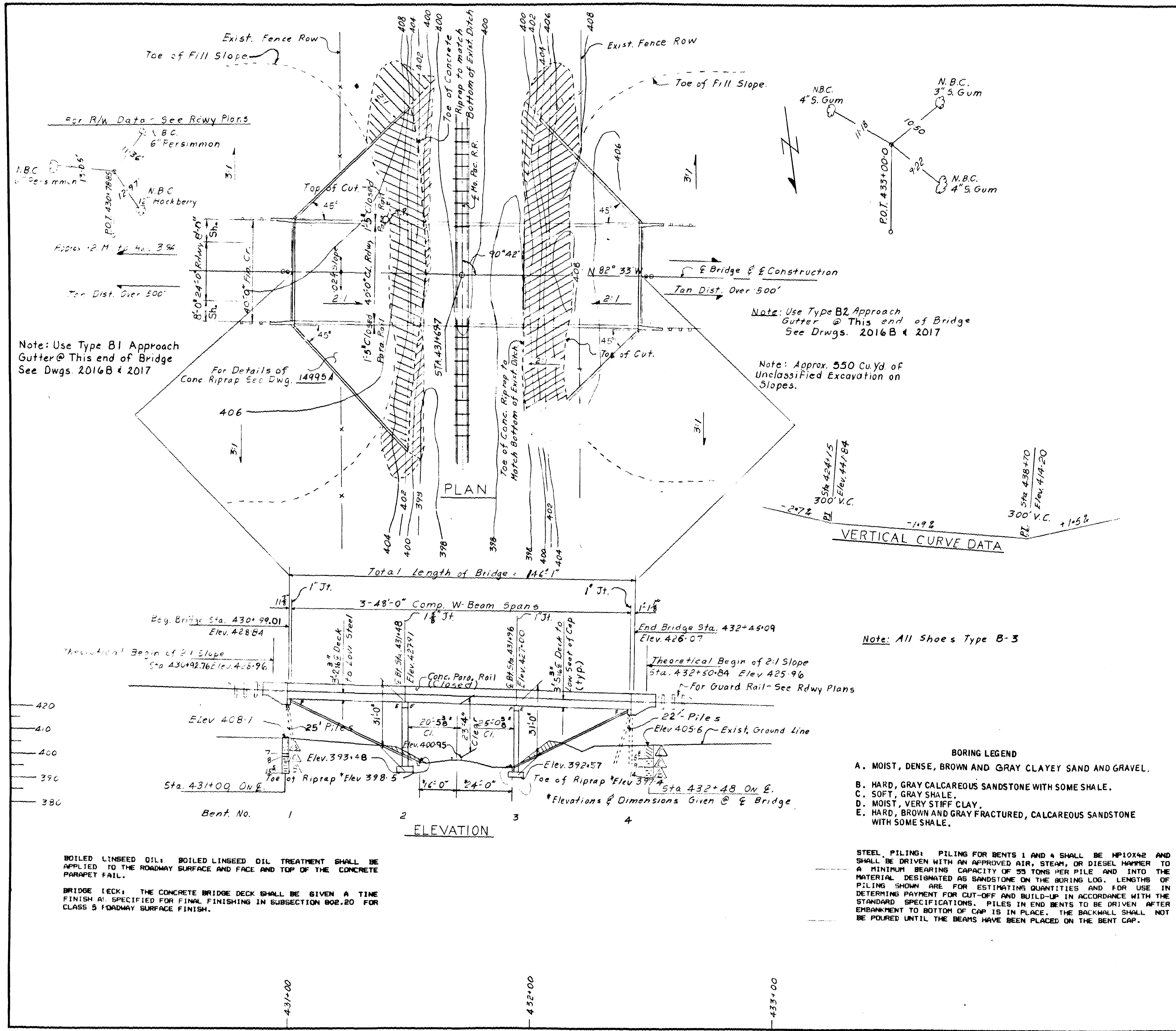
LAYOUT OF BRIDGE  
OVER ROLLING FORK CREEK  
HWY. 167 - EAST STRS. & APPRS. (S)  
SHARP COUNTY  
ROUTE 230 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: KMG DATE: 1 FEB 01 FILENAME: B050009.L1  
CHECKED BY: J. J. M. DATE: 03-14-01 SCALE: 1" = 20'  
DESIGNED BY: CSL DATE: Nov. 2000  
BRIDGE NO. 06849 DRAWING NO. 42337





DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
							18	75



**GENERAL NOTES**

BENCH MARK: "X" CUT IN S.W. CORNER HDWL. 15' LT. STA. 432+34, ELEV. 372.96.

ALL CONCRETE SHALL BE POURED IN THE DRY.

FOOTINGS SHALL BE SET A MINIMUM OF 1'-6" INTO SANDSTONE. FOUNDATIONS FOR FOOTINGS SHALL BE PREPARED IN ACCORDANCE WITH SECTION 801.04 OF THE STANDARD SPECIFICATIONS.

FOR DETAILS OF END BENTS, SEE DWG. NO. 23336

FOR DETAILS OF INTERMEDIATE BENTS, SEE DWG. NO. 23337

FOR DETAILS OF SPANS, SEE DWG. NO. 23338

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1988, AND APPLICABLE SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1983 WITH CURRENT INTERIM SPECIFICATIONS.

LIVE LOAD: HS20

METHOD OF DESIGN: LOAD FACTOR

BORING LOGS MAY BE OBTAINED FROM THE PROGRAMS AND CONTRACTS DIVISION UPON REQUEST.

DETAIL DRAWINGS:	DRAWING NO.
EXCAVATION FOR STRUCTURES	1841F
EMBANKMENT CONSTRUCTION	1888A
GUARD RAIL CONNECTION	GR-R, GR-B-A
TYPE C BRIDGE NAME PLATES	2389A
TYPE B-3 SHOES	14990H
STEEL DECK FORMS	14991
CONCRETE RIPRAP AND STEEL PILING	14975A
TYPE B APPROACH GUTTERS	2016B, 2017

**EXHIBIT A**

**LAYOUT OF OVERPASS**

**MISSOURI PACIFIC RAILROAD**

**MOPAC RR OVERPASS & APPRS.**

**INDEPENDENCE COUNTY**

**ROUTE 69 SEC. 3**

**ARKANSAS STATE HIGHWAY COMMISSION**

**LITTLE ROCK, ARK.**

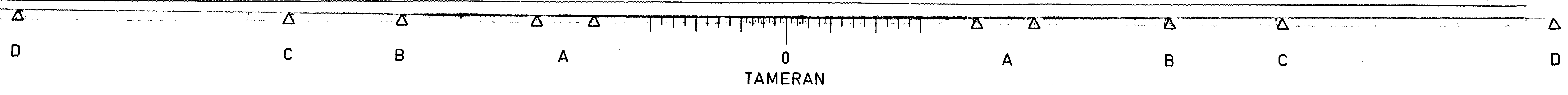
**DRAWN BY: D.H.P. DATE: 1-11-88**

**CHECKED BY: MCC DATE: 8-23-88**

**DESIGNED BY: D.H.P. DATE: 1-6-88**

**BRIDGE NO. 5858**

**DRAWING NO. 23335A**



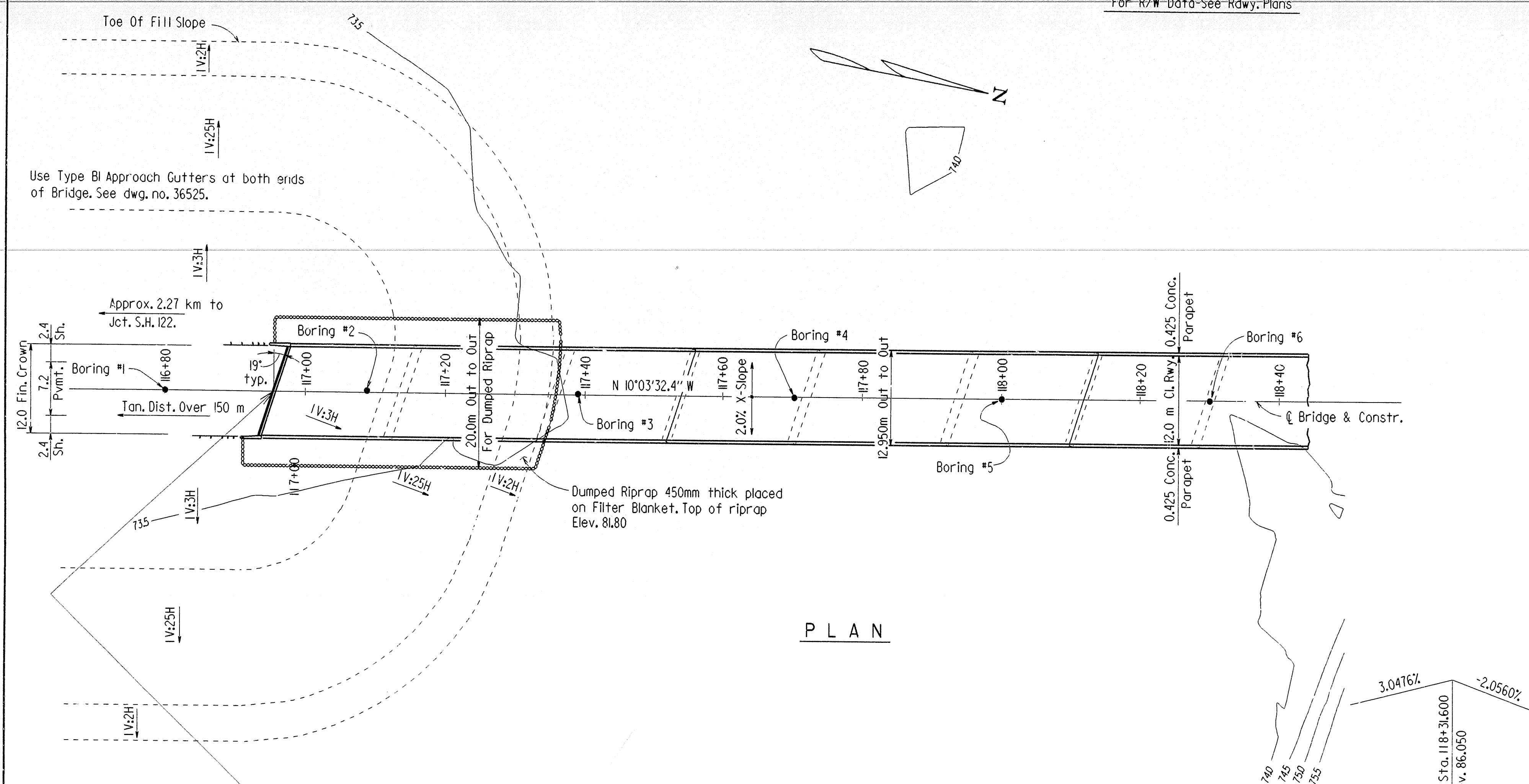






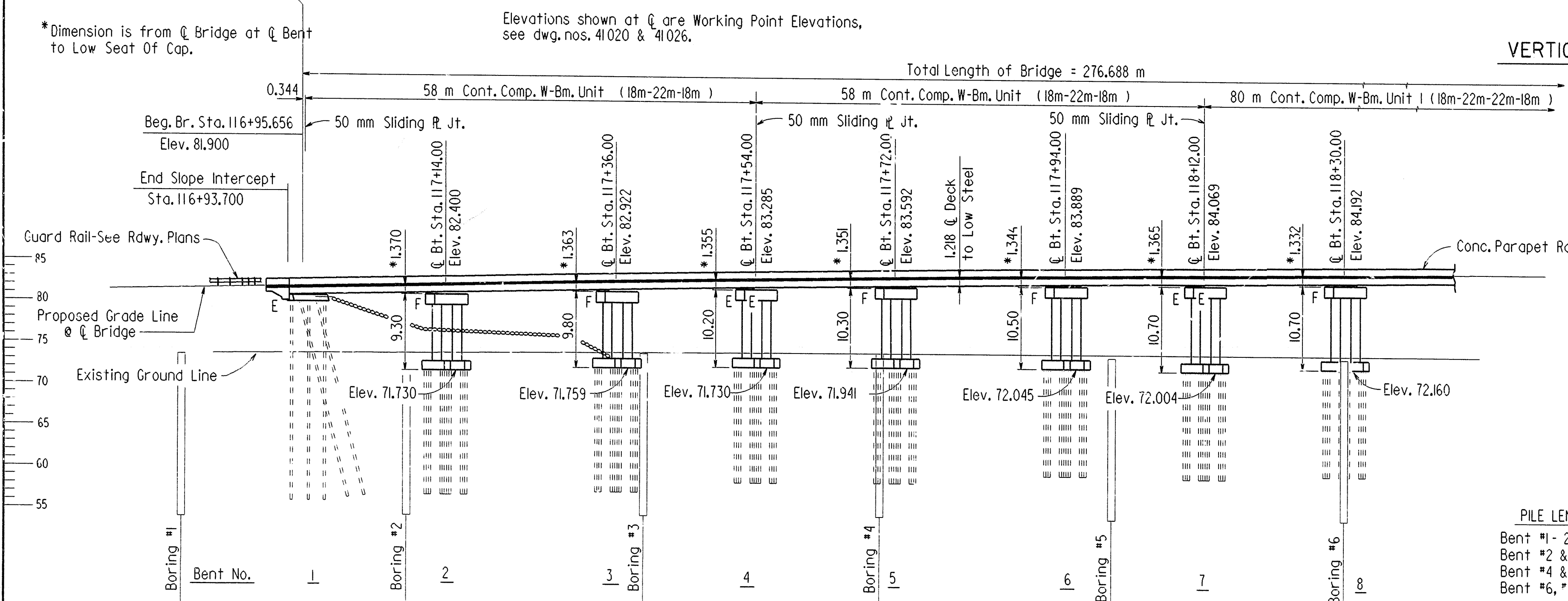
For R/W Data-See Rdwy. Plans

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		R5012	44	209
				06771		LAYOUT		41005



PLAN

VERTICAL CURVE DATA



ELEVATION

Note: See Sheet 3 of 3 for Soil Borings & Additional Data.

GENERAL NOTES  
Bench Mark : 8 RRS PG Sta. 129+23.19, 3.38 Lt. Elev. 89.896.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (1996 edition), with applicable supplemental specifications and special provisions. Section and subsection refer to the Standard Construction Specifications unless otherwise noted in the Plans.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges, (1996 edition) with current interim specifications.

LIVE LOADING: MS 18  
Seismic Performance Category : A

MATERIALS AND STRENGTHS:  
Class S(AE) Concrete (superstructure) f'c = 28 MPa  
Class S Concrete (substructure) f'c = 24 MPa  
Reinforcing Steel (ASTM A615/A615M-96a, Gr. 420) Fy = 420 MPa  
Structural Steel (M270, Gr. 345W) Fy = 345 MPa  
Structural Steel (M270, Gr. 250) Fy = 250 MPa

BORING LOGS: Boring logs may be obtained from the Programs and Contracts Division upon request.

DETAIL DRAWINGS:  
End Bents 41003, 41010 & 41018, 41019  
Intermediate Bents 41011-41017  
58m Cont. Comp. W-Beam Units 41020-41025, 41031 & 41032  
80m Cont. Comp. W-Beam Units 41024-41032

STEEL PILING: All piling shall be HP310 x 79 (AASHTO M270, Gr. 250) and shall be driven with an approved air, steam or dieselhammer to a minimum safe bearing capacity of 620 kN per pile and into material designated as hard, dark, gray shale on the boring legend. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with the Standard Specifications. Piles in end bents to be driven after embankment to bottom of cap is in place.

FOOTINGS: The top of the footings for Bents 2-14 shall be set a minimum of 0.6m below ground. Foundation for footings shall be set in accordance with Section 801.04 of the Standard Specifications.

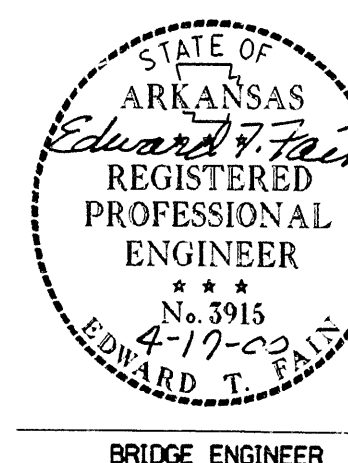
BRIDGE DECK: The concrete deck shall be given a fine finish as specified for final finishing in subsection 802.19 for Class 5 Bridge Roadway Surface Finish.

CLASS I PROTECTIVE SURFACE TREATMENT: Class I Protective Surface Treatment shall be applied to the roadway surface and to the face and top of the concrete parapet rail.

Note: All dimensions are in meters (m) unless otherwise noted.

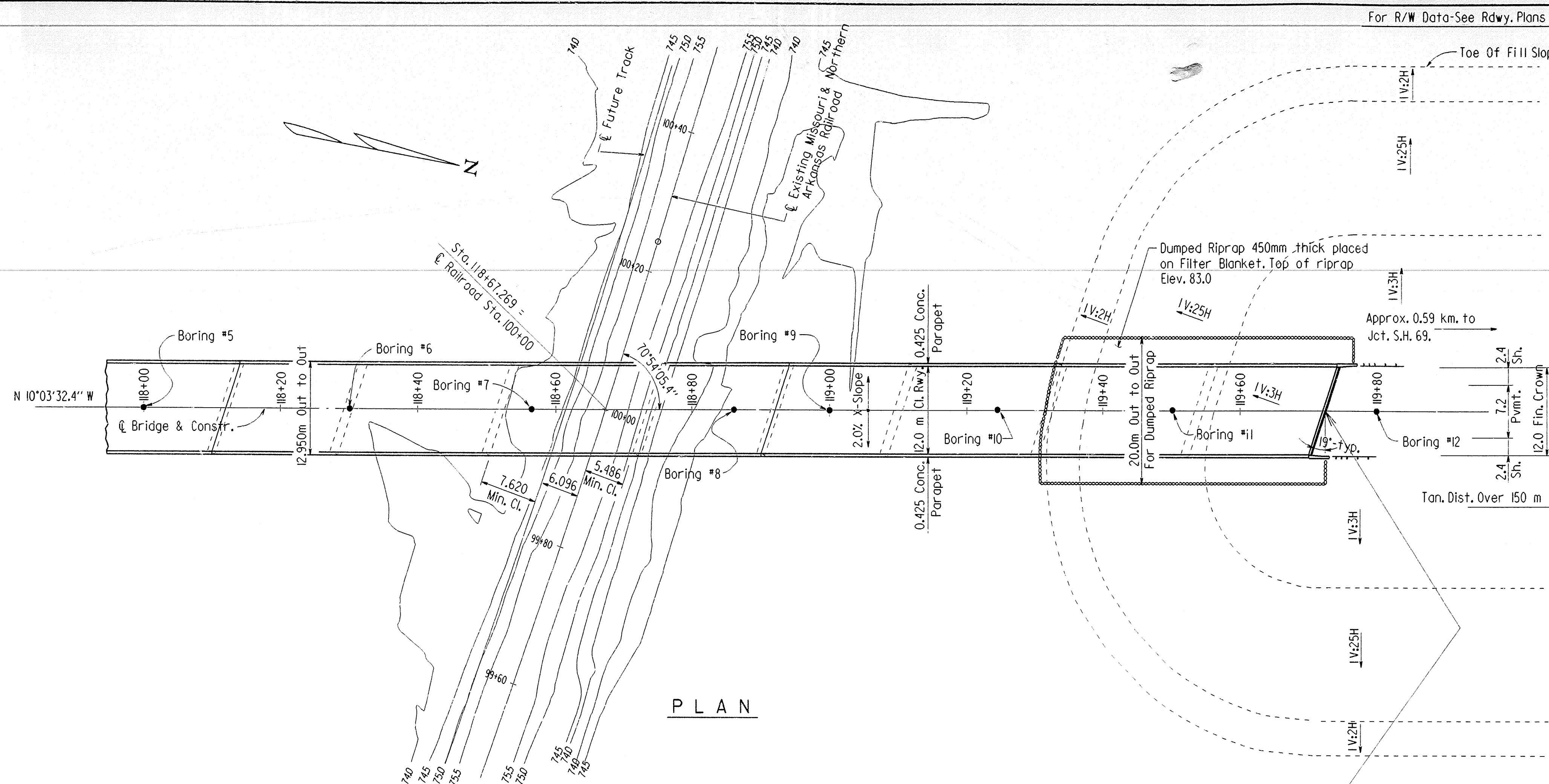
( SHEET 1 OF 3 )  
LAYOUT OF BRIDGE OVER  
MISSOURI & NORTHERN ARKANSAS RAILROAD  
NEWARK - NORTH ( S )  
INDEPENDENCE COUNTY  
ROUTE 69 SEC. 3  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: W.MAJ. DATE: 11-10-99 FILENAME: BR50112X1.L1A  
CHECKED BY: GVA DATE: 4-13-00  
DESIGNED BY: ALW DATE: 9-98 SCALE: 400 : 1  
BRIDGE NO. 06771 DRAWING NO. 41005



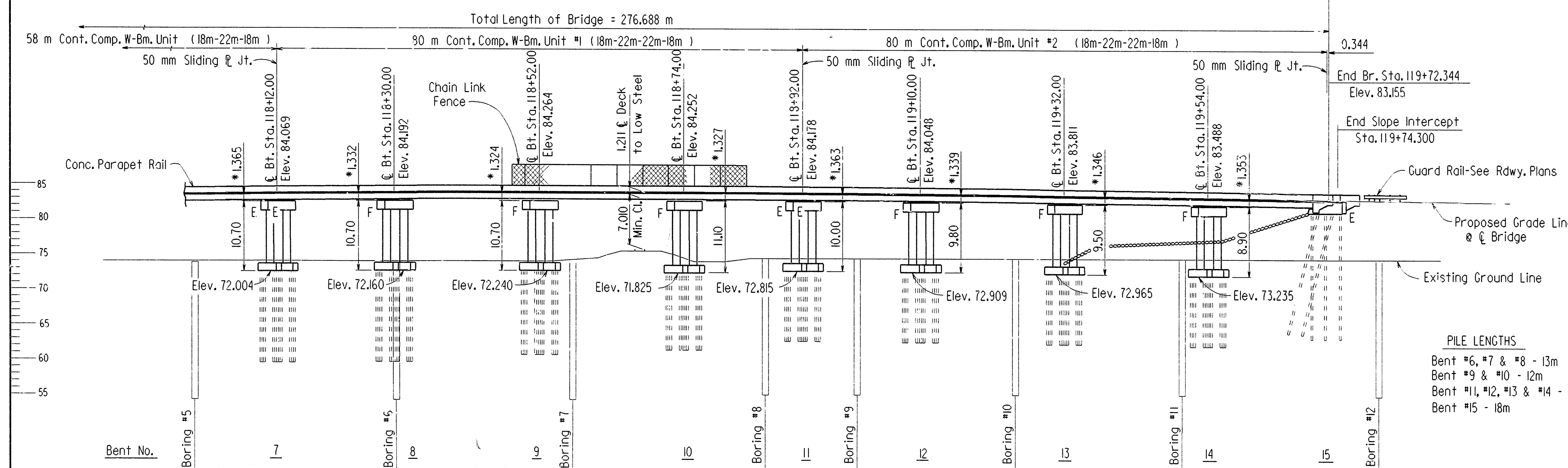
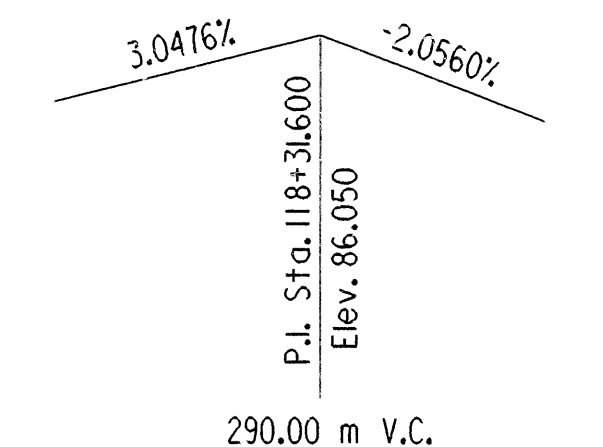


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		R5012	45	209
				06771		LAYOUT		41006



Elevations shown at @ are Working Point Elevations, see dwg. nos. 41020 & 41026.

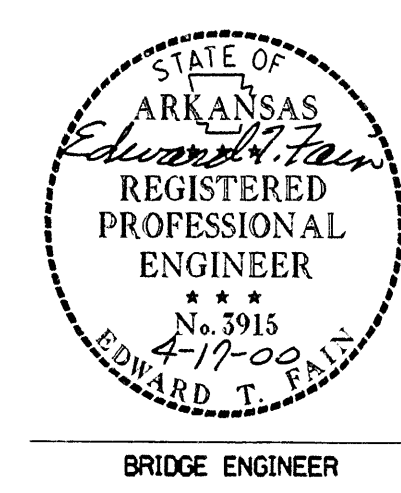
\*Dimension is from @ Bridge at @ Bent to Low Seat Of Cap.



VERTICAL CURVE DATA

Note: All dimensions are in meters (m) unless otherwise noted.

( SHEET 2 OF 3 )  
 LAYOUT OF BRIDGE OVER  
 MISSOURI & NORTHERN ARKANSAS RAILROAD  
 NEWARK - NORTH ( S )  
 INDEPENDENCE COUNTY  
 ROUTE 69 SEC. 3  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.



DRAWN BY: W.MAL. DATE: 11-10-99. FILENAME: BR50112X1.L1A  
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 DESIGNED BY: HNU. DATE: 9-99.  
 BRIDGE NO. 06771 DRAWING NO. 41006

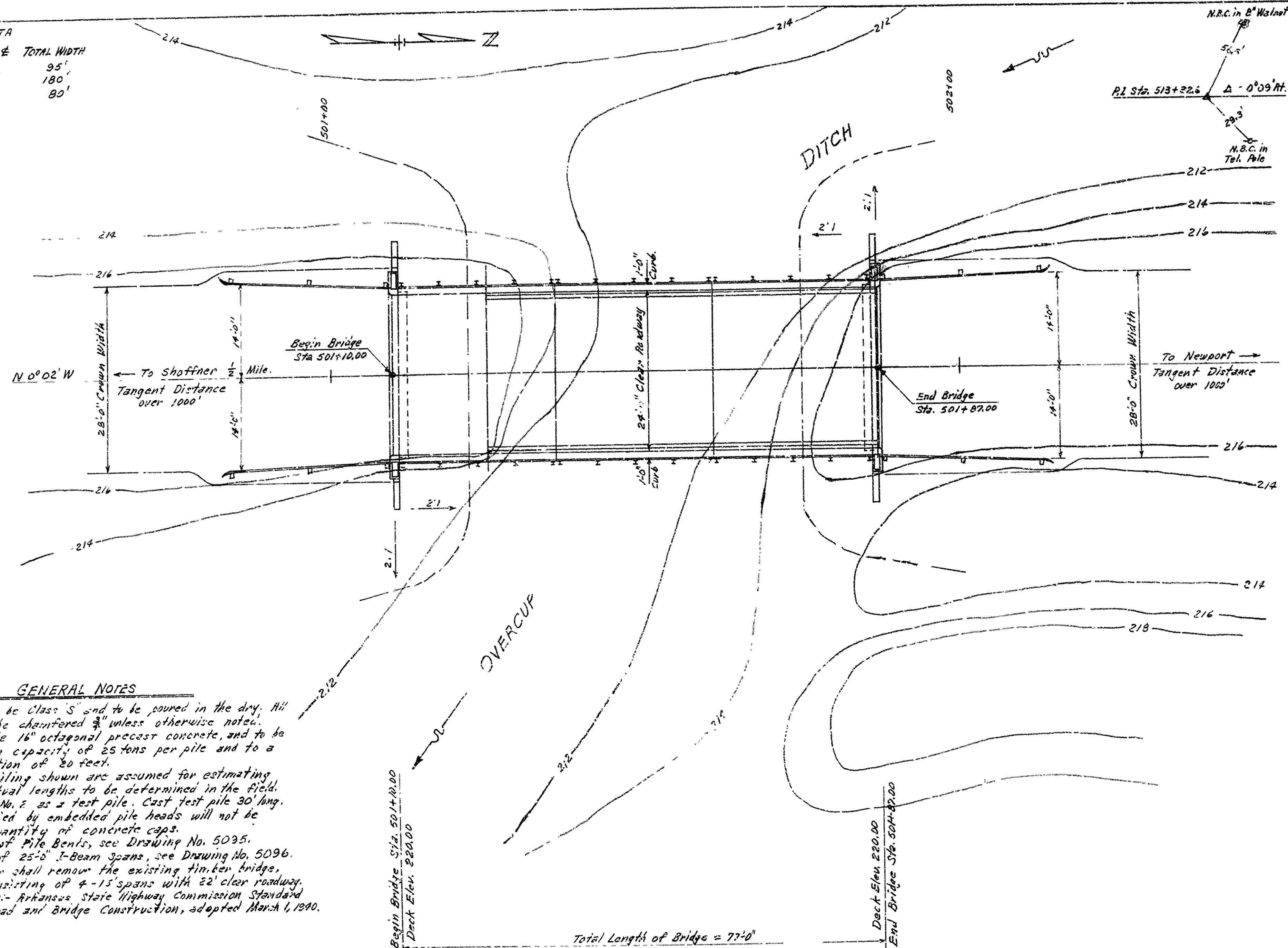
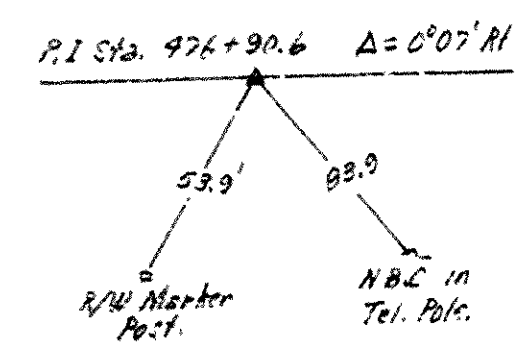
MICROFILMED  
 JUL 25 2000

Note: See Sheet 3 of 3 for Soil Borings & Additional Data.



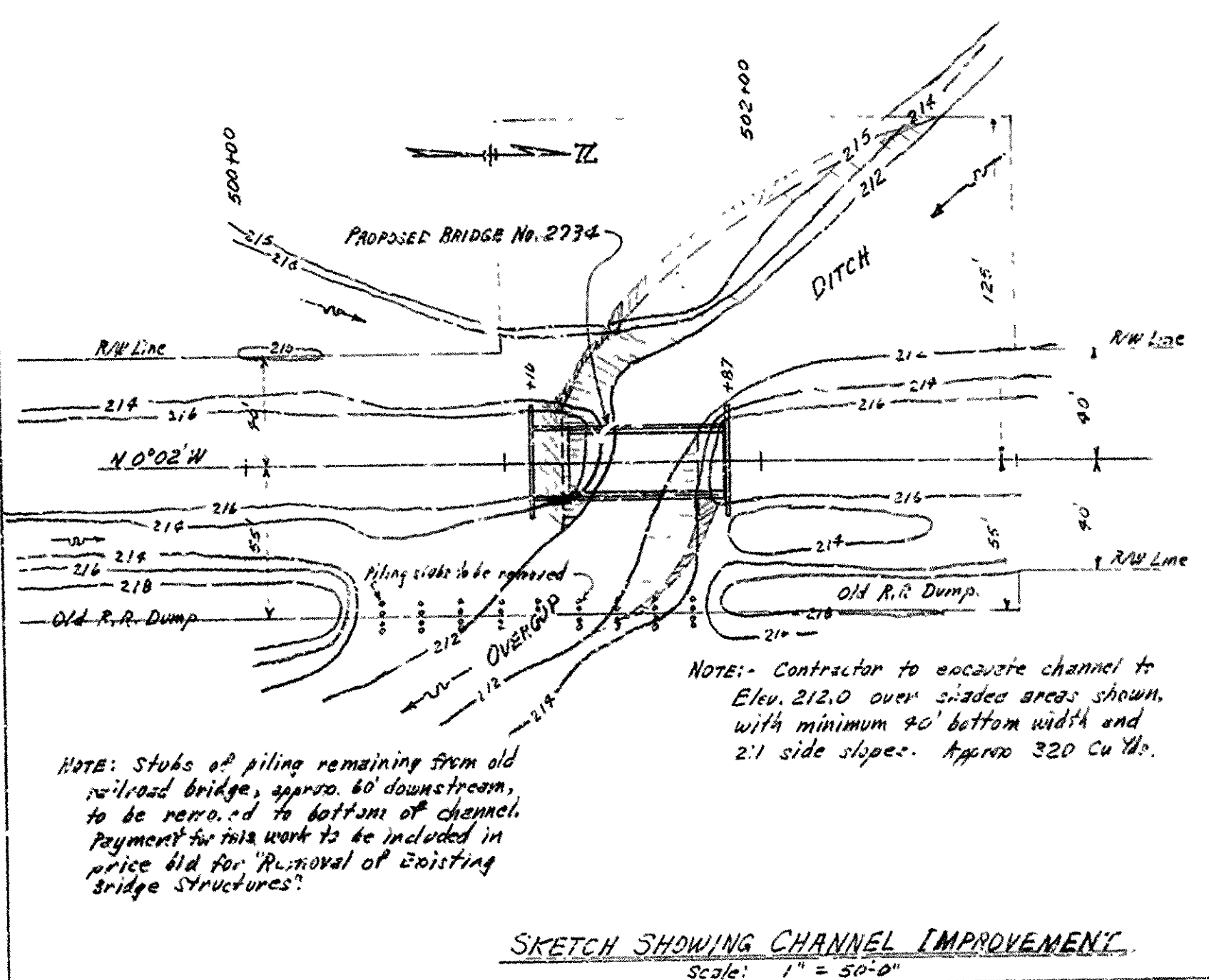
FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	S-75 (2)			
STATE JOB NO. 5348			1950		

RIGHT OF WAY DATA					
STA. TO	STA. FROM	RT. OF W.	LT. OF W.	TOTAL WIDTH	
497+00	501+00	55'	40'	95'	
501+00	503+00	55'	125'	180'	
503+00	510+00	40'	40'	80'	



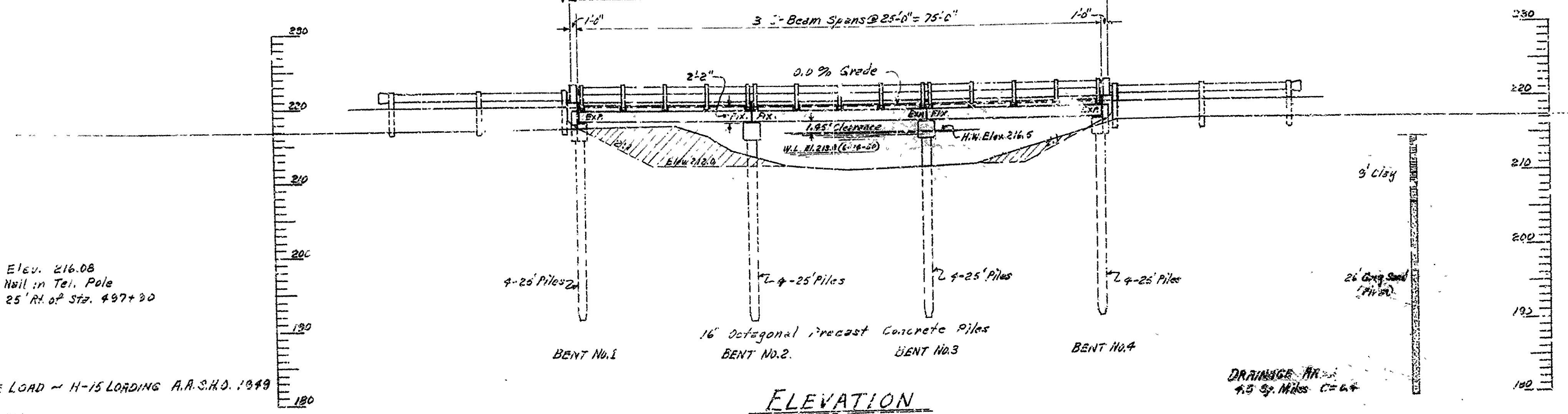
GENERAL NOTES

All concrete to be Class "S" and to be poured in the dry. All exposed corners to be chamfered 3" unless otherwise noted.  
All piling to be 16" octagonal precast concrete, and to be driven to a minimum capacity of 25 tons per pile and to a minimum penetration of 30 feet.  
Lengths of piling shown are assumed for estimating quantities only. Actual lengths to be determined in the field. Drive one in Bent No. 2 as a test pile. Cast test pile 30' long. Volume occupied by embedded pile heads will not be included in quantity of concrete caps.  
For Details of Pile Bents, see Drawing No. 5095.  
For Details of 25'-0" I-Beam Spans, see Drawing No. 5096.  
The Contractor shall remove the existing timber bridge, spans, 62' long, consisting of 4-15' spans with 22' clear roadway.  
SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1, 1939.



QUANTITIES FOR BRIDGE No. 2734

ITEM NO.	ITEM	QUANTITY	UNIT
103	Dry Excavation for Structures	34	Cu.Yd.
S.P.R. 802	Class "S" Concrete for Bridges	76.4	Cu.Yd.
803	Reinforcing Steel	12450	Lb.
S.P.R. 804	Concrete Piling - 16" Octagonal Precast	405	Lin.Ft.
S.P. 505	Steel Plate Guard Rail	164	Lin.Ft.
507	Structural Steel in Beam Spans	28590	Lb.
929	Bridge Name Plates - Type "B"	2	Each
S.P. 1052-6	Removal of Existing Bridge Structures	100%	Complete Item
S.P.	Constructing Detour Bridge	100%	Complete Item



S.M. Elev. 216.08  
Nail in Tel. Pole  
25' Rt. of Sta. 497+00

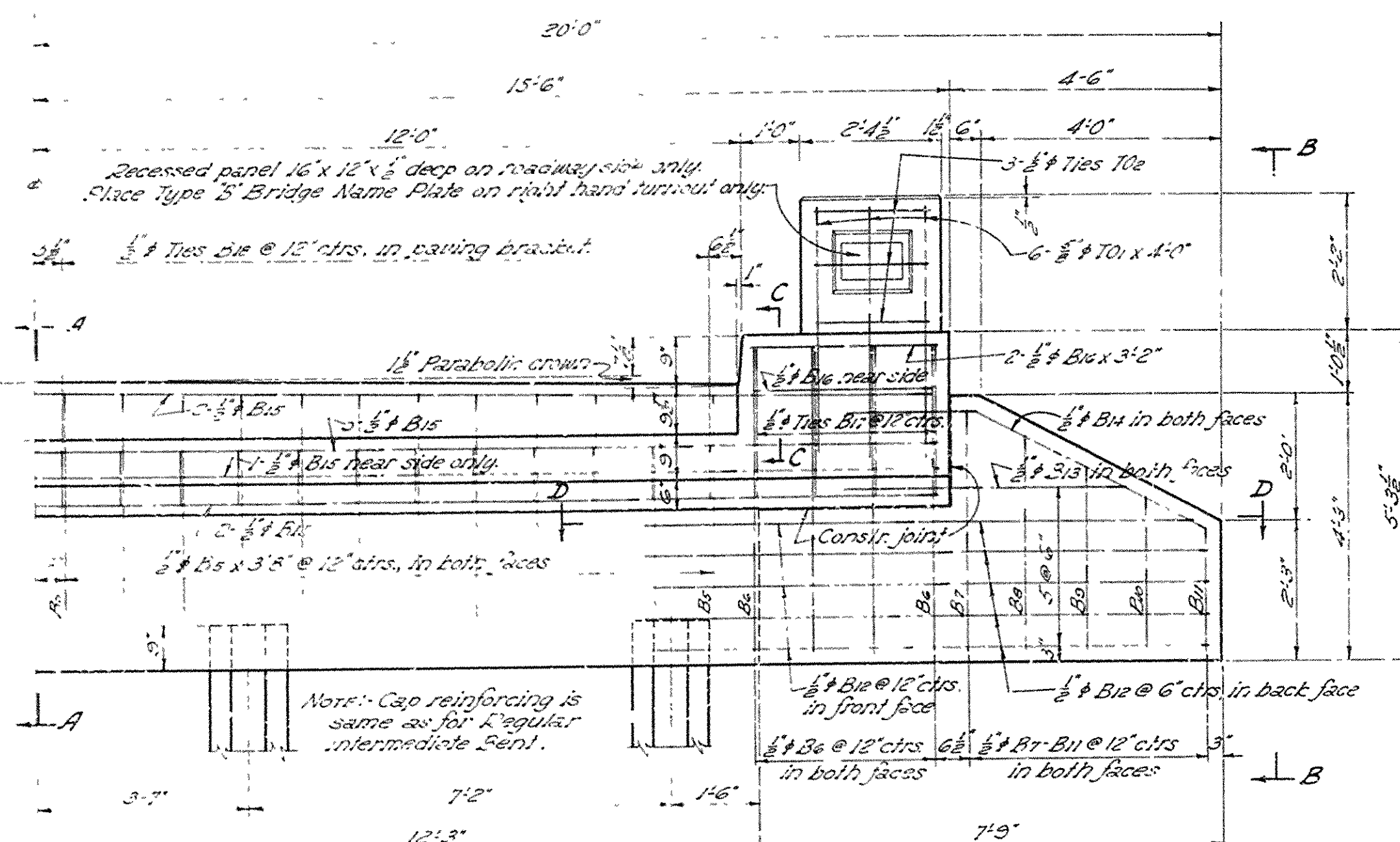
UNIT STRESSES		
Class "S" Concrete (n=10)	1000 #/sq. in.	
Reinforcing Steel	18000 #/sq. in.	
Structural Steel	18000 #/sq. in.	
Concrete Piling	21 Tons/Pile	

LAYOUT OF  
BRIDGE OVER OVERCUP DITCH  
JCT. HWY. 14-SHOFFNER ROAD  
JACKSON COUNTY  
ROUTE 17 SEC. 6  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
Drawn By: W.S.H. Date: 5-23-52  
Traced By: J.H. Date: 7-1-52  
Checked By: J.H. Date: 7-1-52  
Scale: 1" = 10'-0"  
BRIDGE No. 2734 DRAWING No. 7509

BRIDGE DESIGN ENGINEER

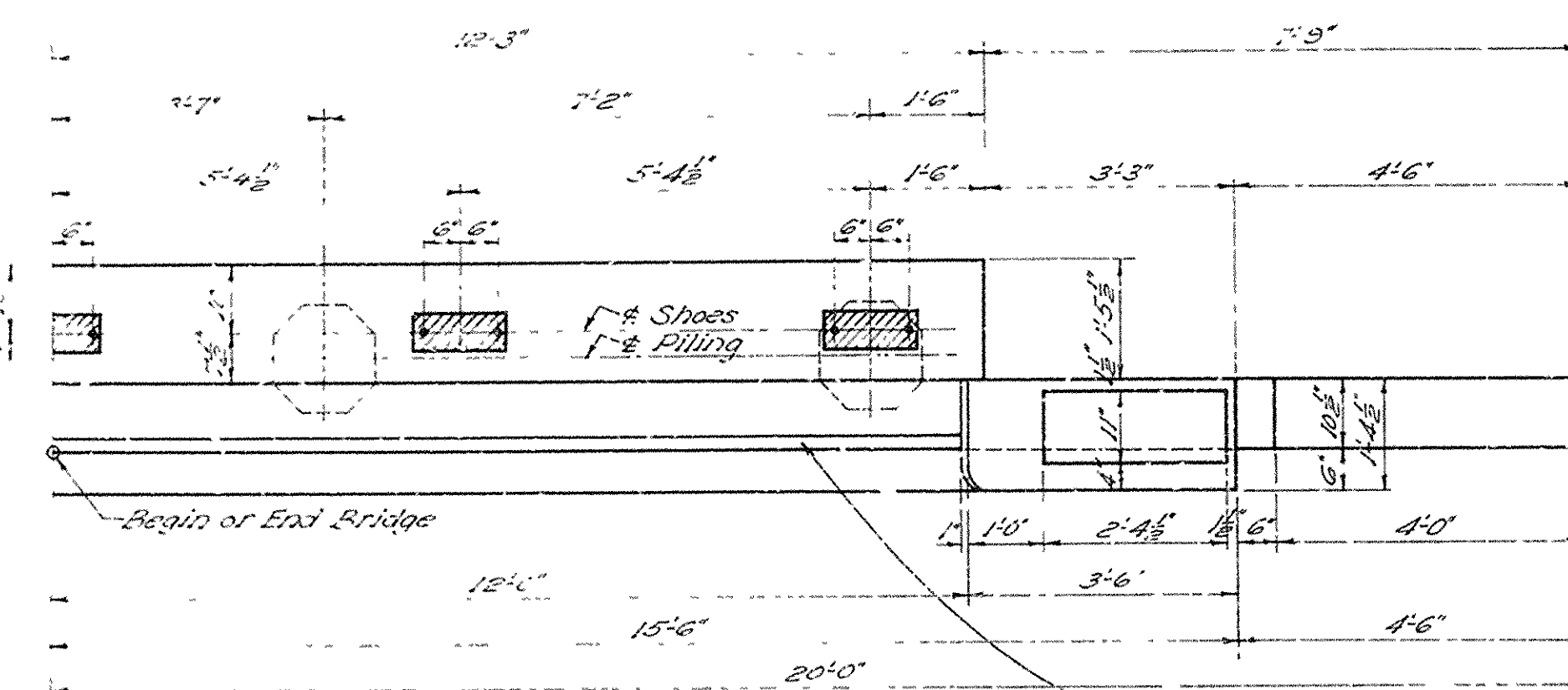


FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.				
STATE JOB NO.					

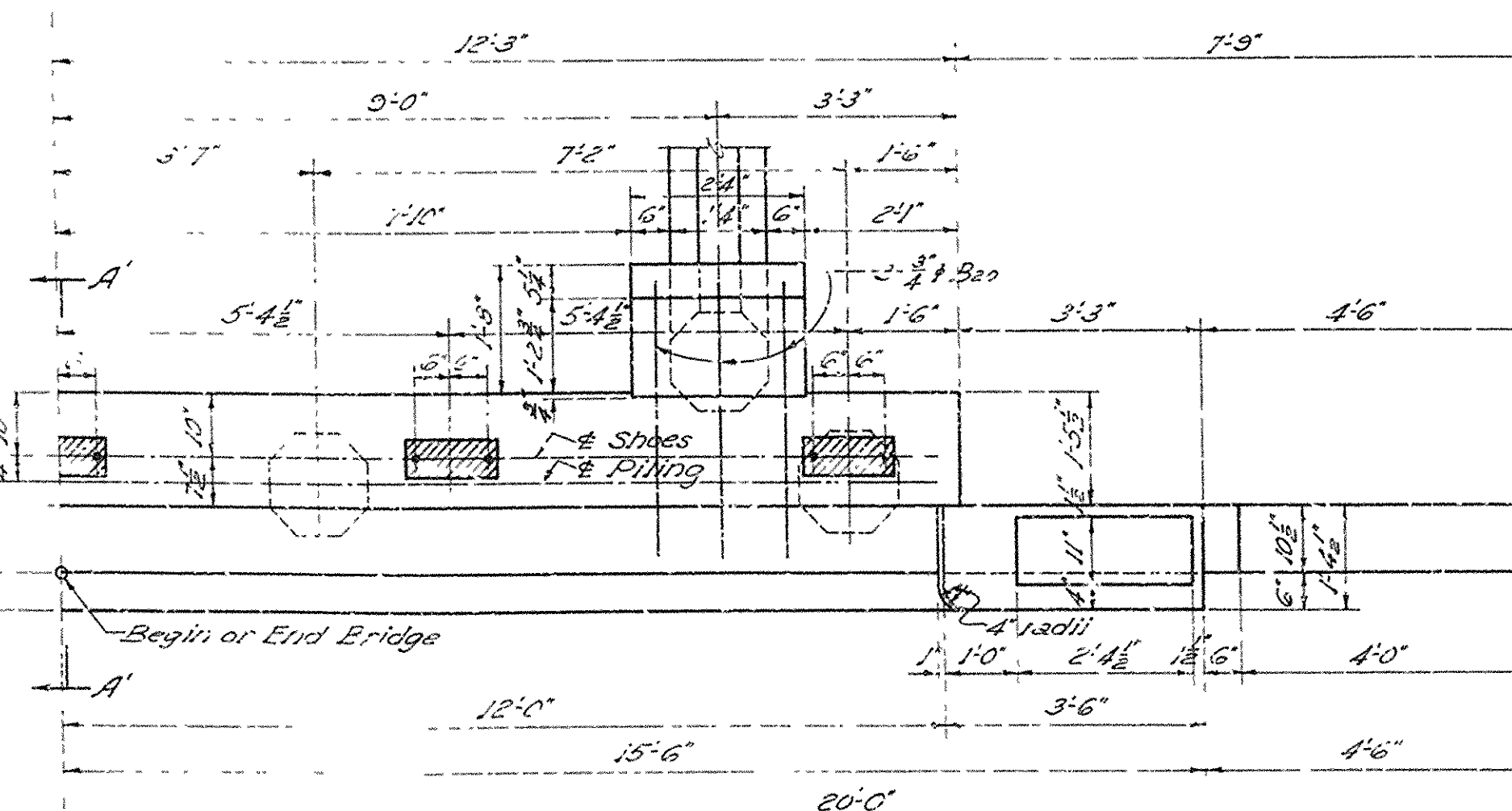


HALF REAR ELEVATION OF END BENT

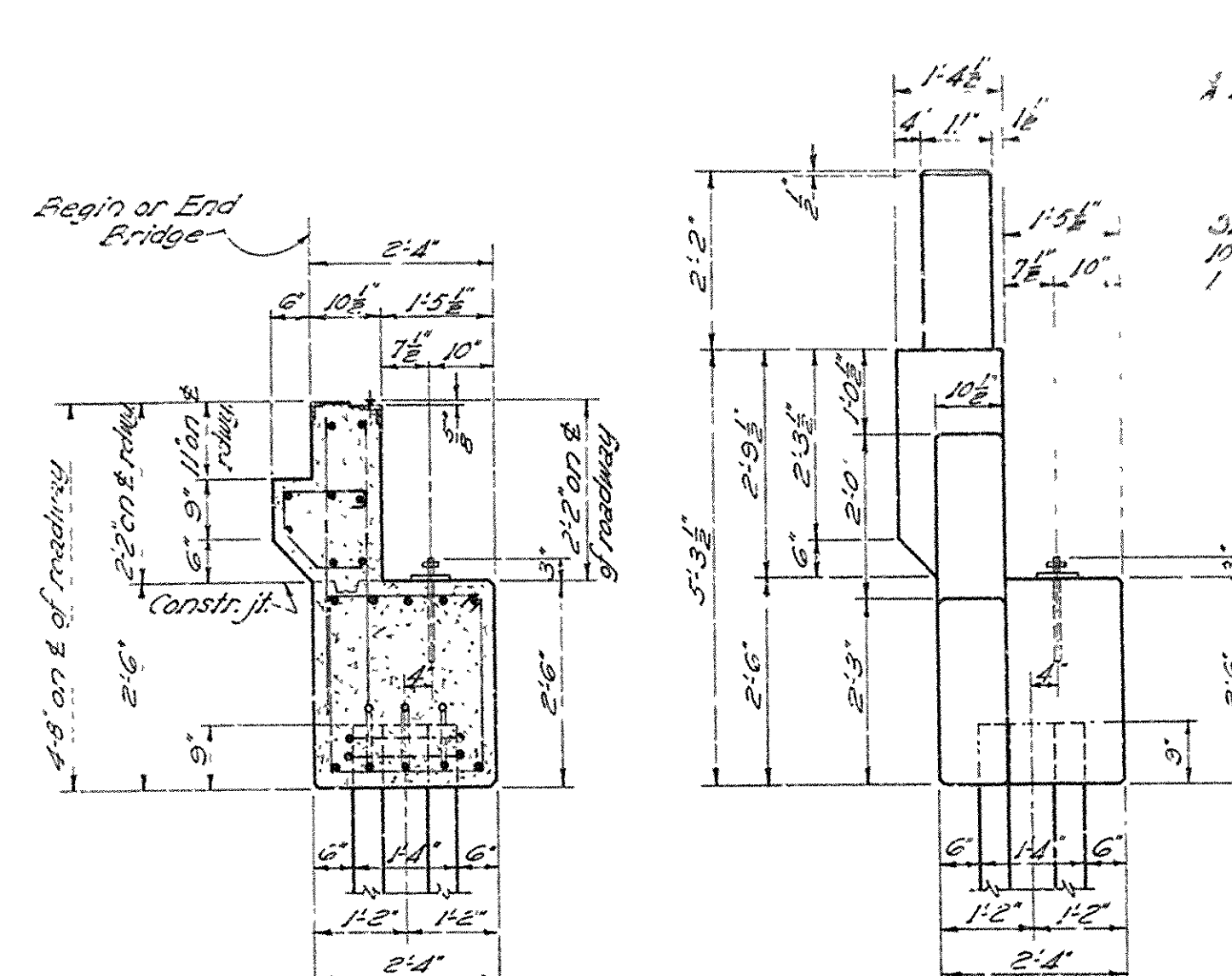
NOTE: For location of batter piles see details below.



### HALF PLAN OF REGULAR END BENT

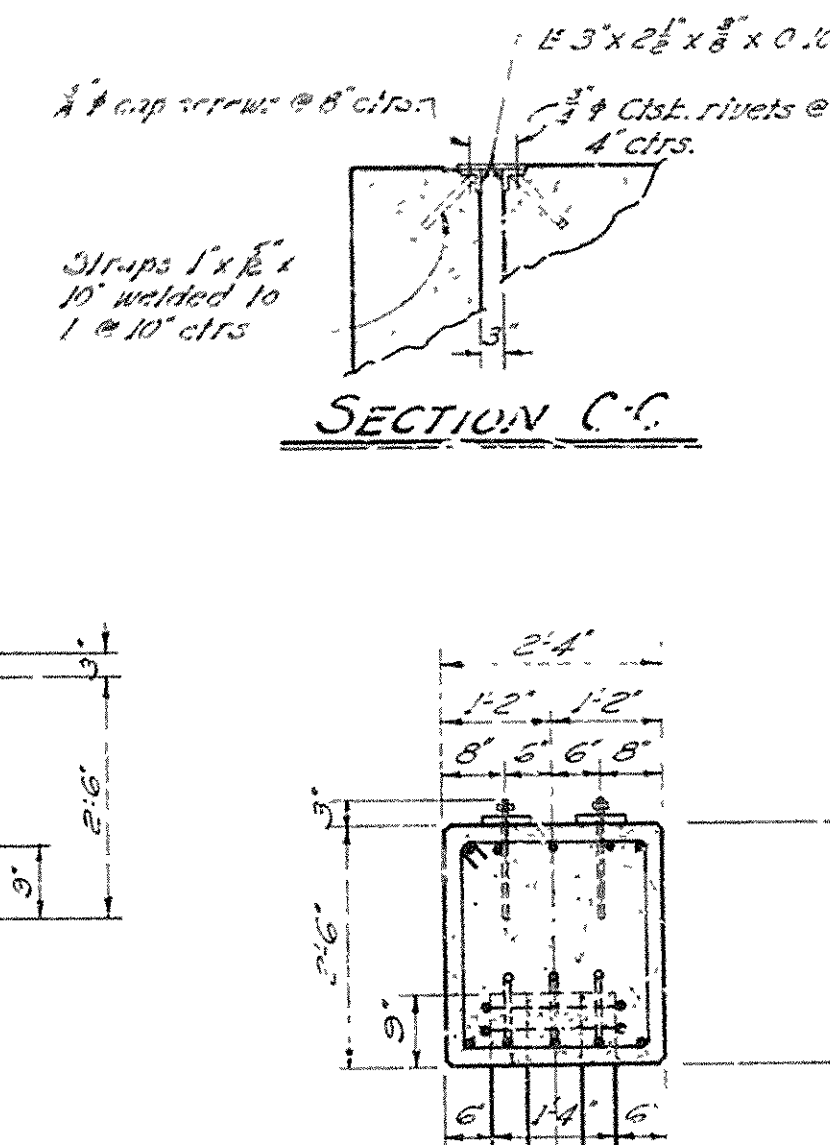


HALF PLAN OF END BENT WITH TWO BATTER PILES



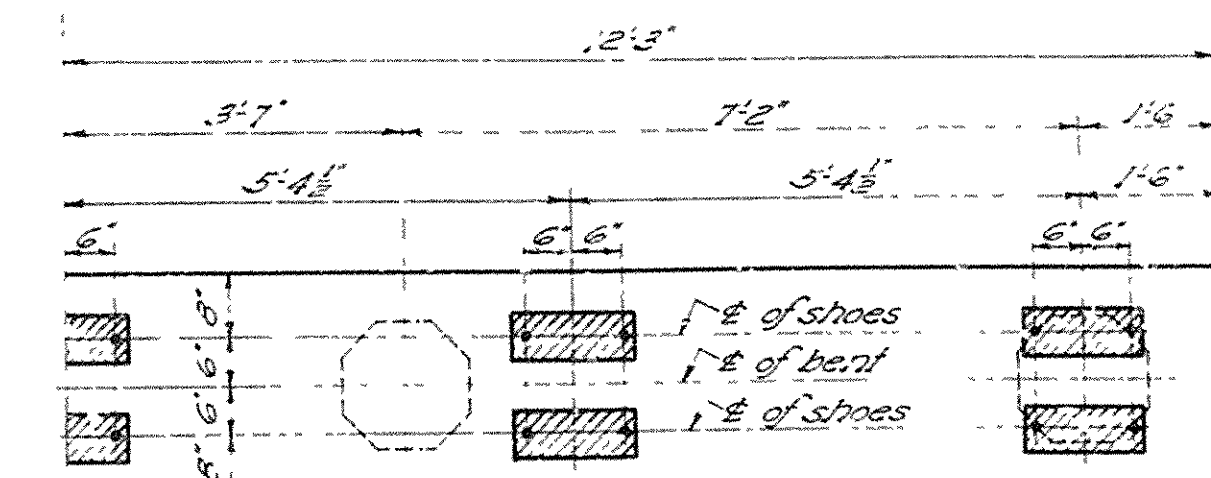
SECTION A-A

END VIEW B-B

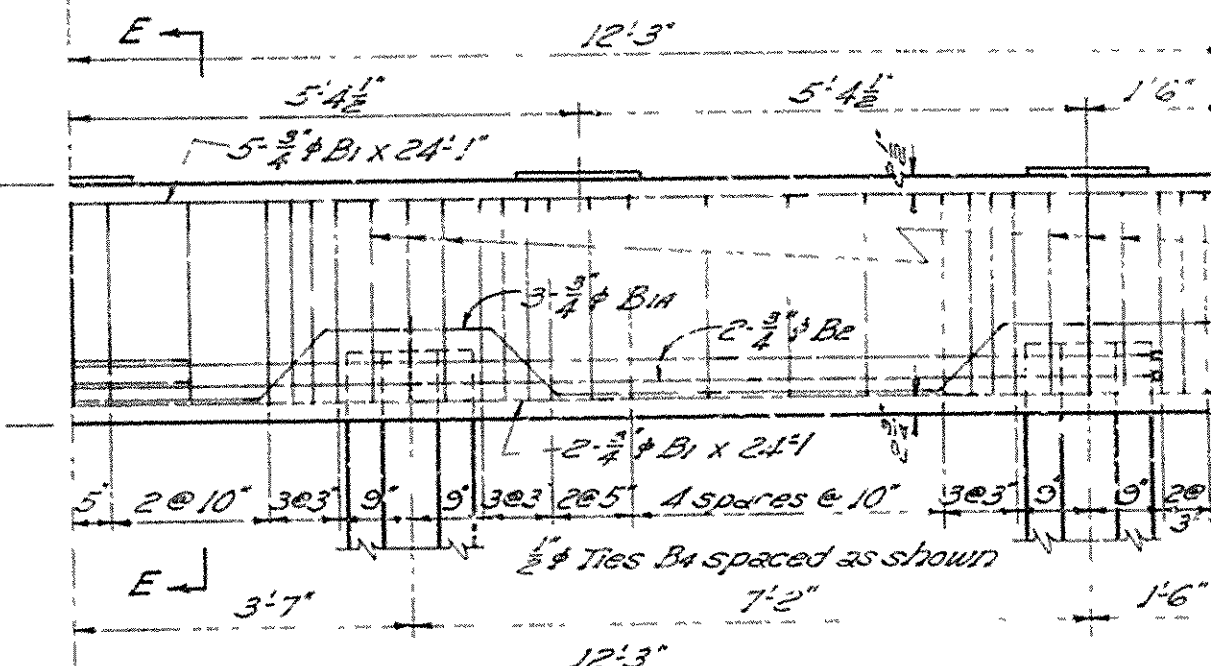


SECTION C-C

SECTION E-E



HALF PLAN OF REGULAR INTERMEDIATE BENT



HAIR SIDE ELEVATION OF REGULAR INTERMEDIATE BENT

### GENERAL NOTES

All concrete to be Class "S" and shall be poured in the dry. All exposed corners to be chamfered 3" unless otherwise noted.

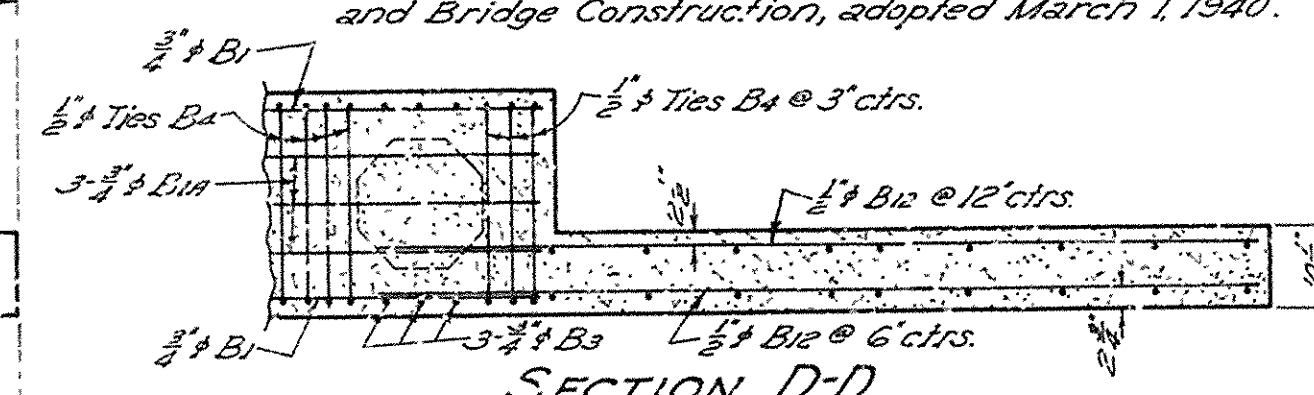
Reinforcing steel to be deformed bars of structural or intermediate grade. Shop lists and bending diagrams are to be submitted for approval.

Maximum design pile for regular intermediate bents varies from 17.0 to 21.0 tons per pile for 21'0" to 25'0" spans, respectively.

All piles to be driven to a minimum capacity of 25.0 Tons each.

For Details of Standard 21'0", 22'0", 23'0", 24'0" and 25'0" Beam Spans, see Drawing No. 507.

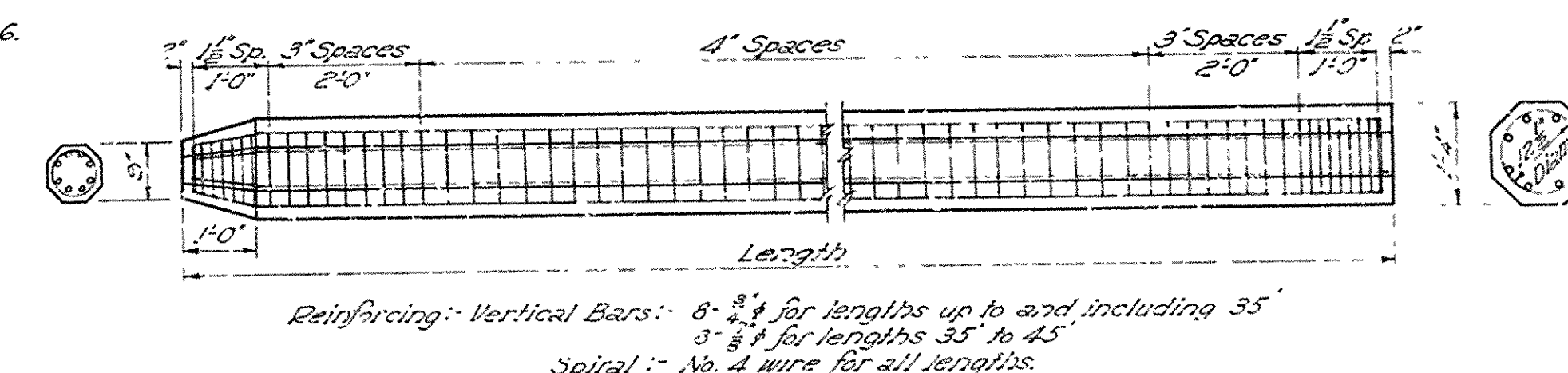
SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1, 1940.



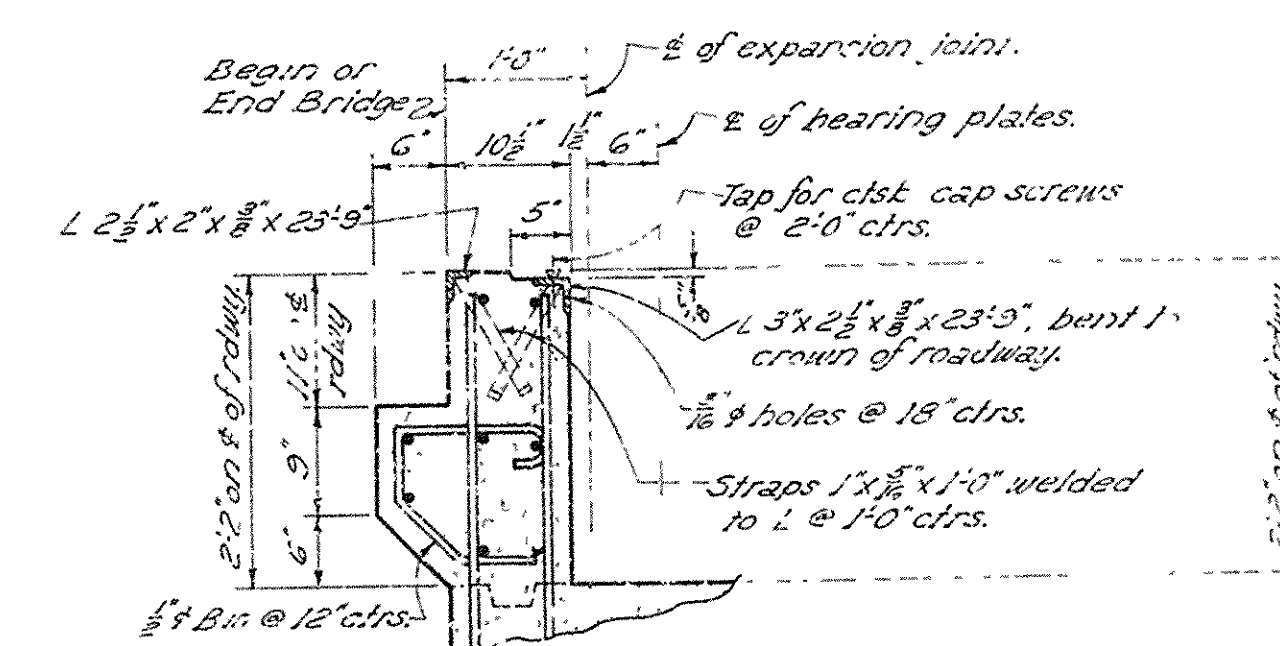
SECTION D-D

<u>DESIGN LIVE LOAD - H-15 LOADING A.A.S.H.O. 1949</u>	
<u>UNIT STRESSES:-</u>	Class 5 Concrete (n=10) 1000 psi
	Reinforcing Steel 18000 psi
	Structural Steel 18000 psi

BAR LIST PER BENT							BENDING DIAGRAM	
MARK	SIZE	No. REQ. PER BENT	END INT.	LENGTH	A	B		
B1	$\frac{3}{8}$ " #	7	7	24'-1"	Straight			
B1a	$\frac{3}{8}$ " #	3	3	25'-10"	—	—		
B2	$\frac{3}{8}$ " #	4	4	26'-11"	12'-8"	1'-5"		
B3	$\frac{3}{8}$ " #	12	12	6'-4"	2'-2"	2'-0"		
B1a	$\frac{3}{8}$ " #	4	—	11'-3"	—	—		
B2a	$\frac{3}{8}$ " #	6	—	6'-8"	—	—		
B4	$\frac{3}{8}$ " #	45	45	9'-1"	2'-2"	2'-0"		
B5	$\frac{3}{8}$ " #	48	—	3'-8"	Straight	—		
B6	$\frac{3}{8}$ " #	16	—	4'-11"	Straight	—		
B7	$\frac{3}{8}$ " #	4	—	3'-11"	Straight	—		
B8	$\frac{3}{8}$ " #	4	—	3'-6"	Straight	—		
B9	$\frac{3}{8}$ " #	4	—	3'-0"	Straight	—		
B1a	$\frac{3}{8}$ " #	4	—	2'-6"	Straight	—		
B11	$\frac{3}{8}$ " #	4	—	2'-0"	Straight	—		
B12	$\frac{3}{8}$ " #	16	—	4'-6"	Straight	—		
B15	$\frac{3}{8}$ " #	4	—	5'-0"	Straight	—		
B15	$\frac{3}{8}$ " #	8	—	30'-7"	Straight	—		
B16	$\frac{3}{8}$ " #	6	—	3'-2"	Straight	—		
B17	$\frac{3}{8}$ " #	4	—	6'-6"	—	—		
B17	$\frac{3}{8}$ " #	9	—	4'-11"	2'-0"	—		
B18	$\frac{3}{8}$ " #	24	—	3'-1"	3'-6"	—		
							<p>Note: Dimensions relating to ... in force on steel are to centers of bars.            * B1a &amp; B2a bars to be used in Two Bailey Pile End Bents only.</p>	
T01	"	12	—	4'-0"	Straight	—		
T02	$\frac{3}{8}$ " #	6	—	6'-2"	2'-0 $\frac{1}{2}$ "	0'-8"		



DETAILS OF 16" OCTAGONAL PRECAST CONCRETE PILE



### ROADWAY EXP. DETAILS AT END BENTS

Scale:-  $\frac{3}{4}'' = 1'-0''$

DETAILS OF BENTS FOR STANDARD  
21'-0", 22'-0", 23'-0", 24'-0" & 25'-0" I-BEAM SPANS  
2'-0" CLEAR ROADWAY 2 CURBS @ 1'-0"

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

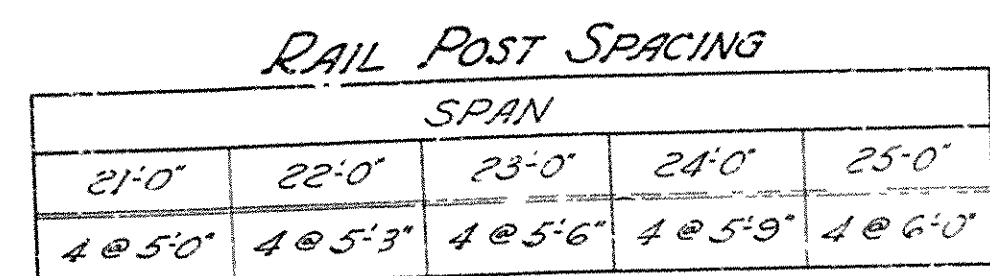
Drawn By: M.C.H. Date: 6-26-50  
Traced By: A.J.S. Date: 7-28-50  
Checked By: J.H.K. Date: 7-1-50

Scale:  $\left\{ \begin{array}{l} 2" = 100' \\ \text{EXCEPT AS NOTED} \end{array} \right.$

BRIDGE NO.            DRAWING NO. 5095

BRIDGE DESIGN ENGINEER





### BAR LIST

MATERIAL	SIZE	LENGTH	BENDING DIAGRAM
S1	5/8" φ	25'-11"	
S2	5/8" φ	27'-0"	
S3	5/8" φ	26'-10 1/2"	
S4	1/2" φ	Straight Varies	
S5	5/8" φ	3'-9"	
S6	1/2" φ	3'-4"	

NOTE: Dimensions relating to reinforcing steel are to centers of bars.

END SPAN

### GENERAL NOTES

All concrete to be Class 5'. All exposed corners to be chamfered  $\frac{1}{2}$ " unless otherwise noted.  
 Reverts  $\frac{3}{4}$ ". Open holes  $\frac{1}{2}$ ". Unless otherwise noted use machine bolts where bolts are indicated.  
 Structural shapes of equal or greater strength may be substituted for shapes shown, but payment will be made on shapes shown or actually used whichever is the lesser.  
 All welded connections are to be  $\frac{1}{2}$ " shop fillet welds except as noted. Welding to be by the electric arc process in accordance with current specifications for Welded Highway and Railway Bridges of the American Welding Society.  
 All bearing plates are to be structural steel. All top flanges to be shop welded to 18" beams with  $\frac{1}{2}$ " fillet welds extending entire length of all ends. Surfaces in contact with masonry plates are to be seated on 3 layers of burig sawdust with red lead.  
 No tolerance will be permitted in the angle between flange and web of beams at points of bearing.  
 All bearing and roadway expansion devices to be paid for at the unit price bid for "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 approved before fabrication is begun.  
 All reinforcing steel shall be of sufficient size and number to prevent displacement by means of steel wire supports or to keep the steel at a proper distance from the forms during the course of construction and to keep the steel at a subsidiary to the item of "Reinforcing Steel." Shop lists and diagrams must be submitted for approval.  
 Cast iron drains shall be paid for as "Reinforcing Steel and are to be painted the same as structural steel.  
 Shop Paint: All structural steel shall be given one coat of red lead and raw linseed oil before shipment, except surfaces in contact with concrete.  
 Field Paint: 1st Coat, white lead tinned with lamp black; 2nd Coat, aluminum paint.  
 The steel plate guard rail shall be of the type shown or an equivalent rigid type as approved by the Engineer. The steel plate guard rail, including all steel plate and fastenings shall be paid for at the unit price bid per linear foot for Steel Plate Guard Rail. It shall be painted the same as structural steel.  
 To provide for deflection of beams due to dead load, the slab shall be approximately  $\frac{1}{2}$ " thicker at midspan and  $\frac{1}{4}$ " thicker at the quarter points of span. Increase thickness of slab to provide for vertical curve camber.  
 This drawing shows general features of design only. Shop drawings shall be made in accordance with the specifications and shall be submitted and approved before fabrication is begun.  
 Specification No. 1, Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1, 1949.

DESIGN LIVE LOAD - H-15 LOADING A.H.S.H.O. 1949

Load distribution to Interior Beams:- Dead Load 570 & 575 / Lin.Ft.  
Live Load 1.075 Wheels 30% Impact

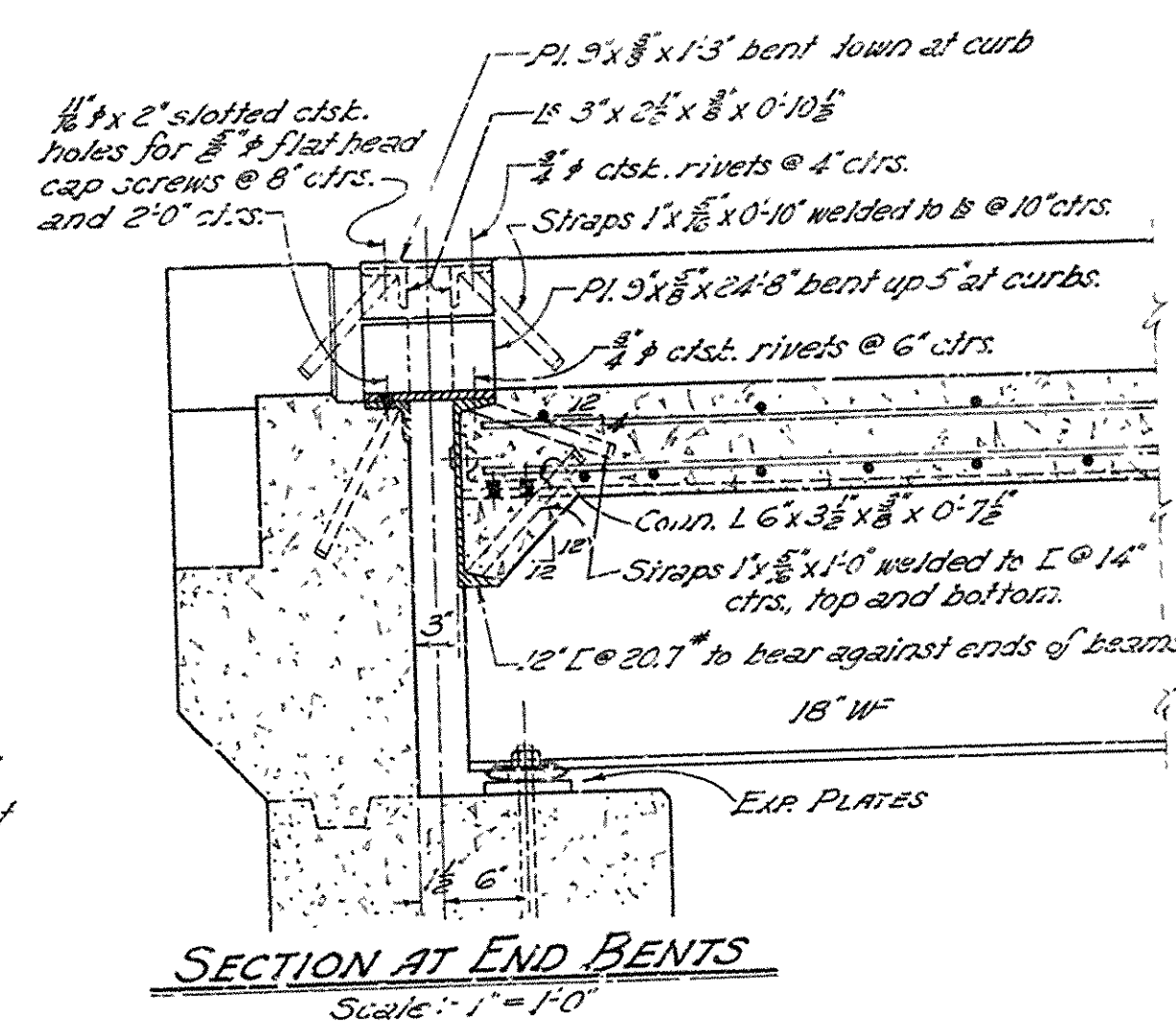
Load distribution to Outside Beams:- Dead Load 700\* & 705\* / Lin.Ft.  
Live Load 0.86 Wheels 30% Impact

### UNIT STRESSES

Class "S" Concrete ( $f_c = 10$ ) 1000  $\frac{lb}{ft^2}$   
Reinforcing Steel 18200  $\frac{lb}{ft^2}$   
Structural Steel 18200  $\frac{lb}{ft^2}$

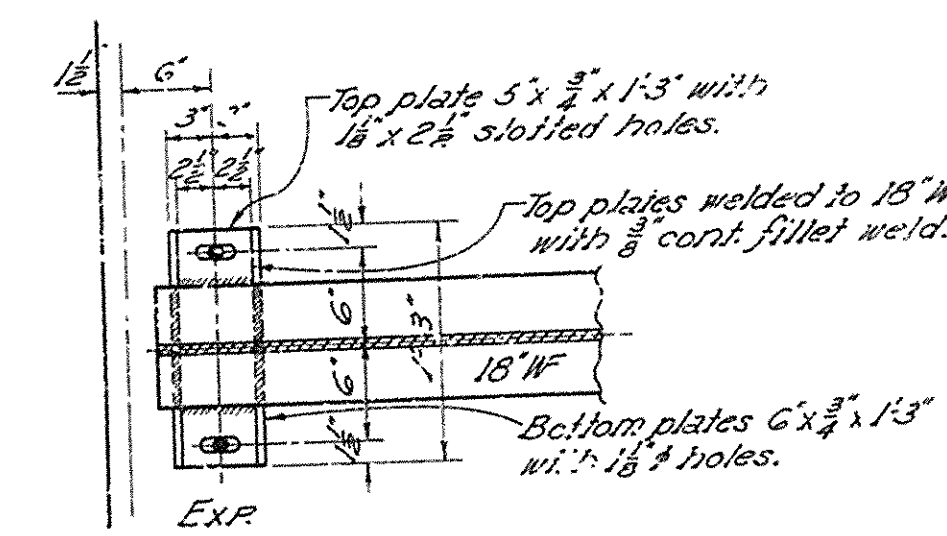


NOTE: Provide metal shims where necessary to adjust post to vertical and line.



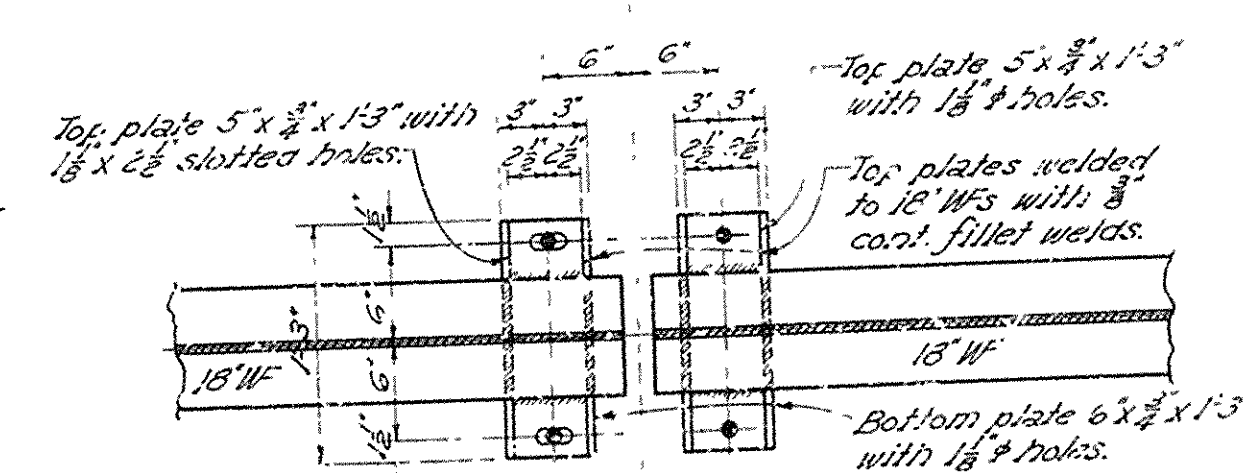
DETAIL OF BEARING PLATES  
AT END BENT

Scale:- 1"=1'-0"



SECTION AT INTERMEDIATE BENTS

Scale:- 1" = 1'-0"



DETAIL OF BEARING PLATES  
AT INTERMEDIATE BENTS

Scale:- 1" = 1'-0"

(NOTE - See Layout for Types of Bearing Plates to be used.)

### DETAILS OF STANDARD

21'-0", 22'-0", 23'-0", 24'-0" & 25'-0" I-BEAM SPANS  
24'-0" CLEAR ROADWAY 2 CURBS @ 1'-0"

5 GIRDER TYPE

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

Drawn By: W.C.H. Date: 6-24-50  
 Traced By: J.G.N. Date: 8-4-50  
 Checked By: J.H.K. Date: 7-3-50  
 Scale:  $\frac{1}{2}$  in. = 1 ft. 0 in.  
 EXCEPT AS NOTED  
 BRIDGE NO. DRAWING NO. 5096

DRAWING NO. 5096

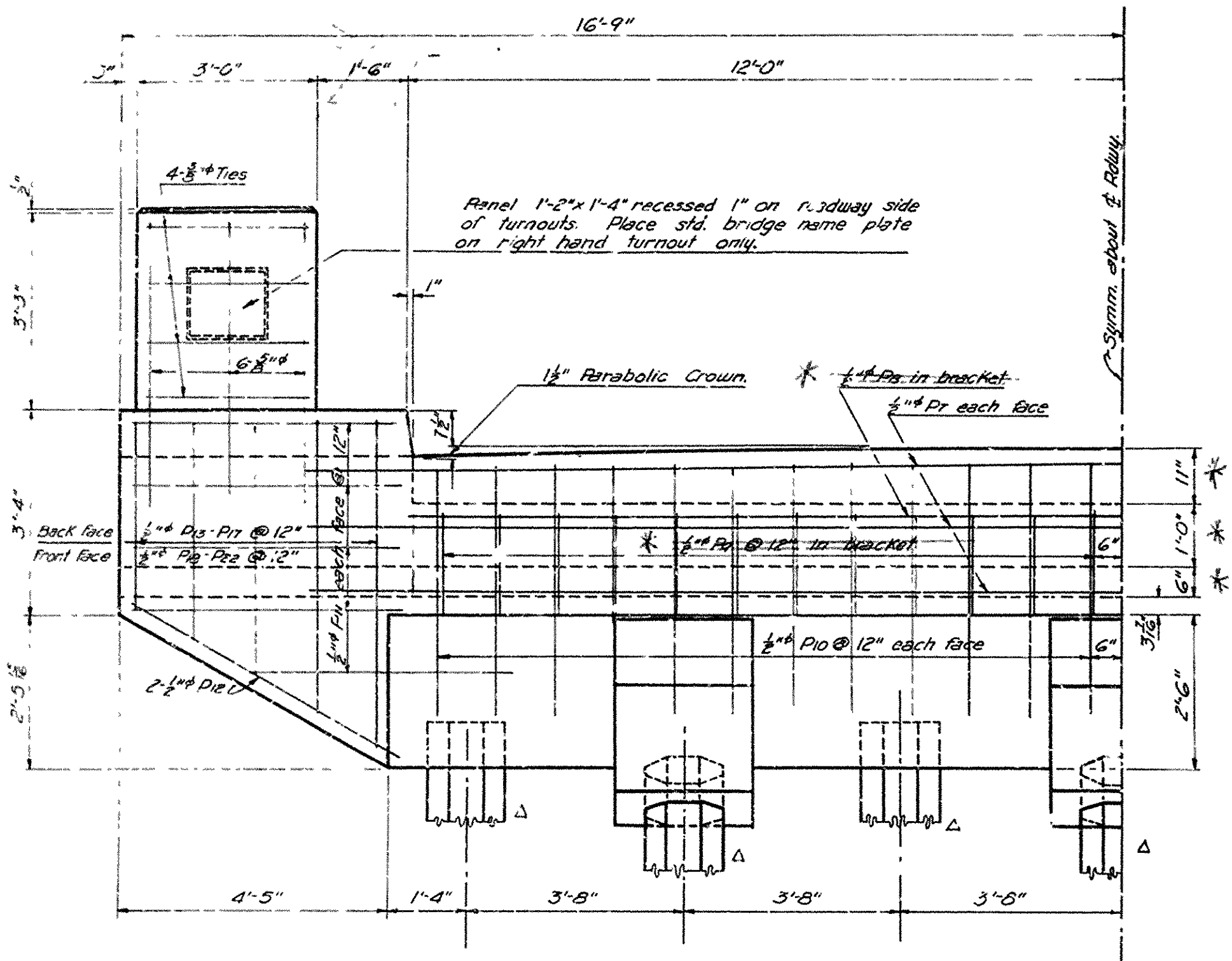
BRIDGE DESIGN ENGINEER



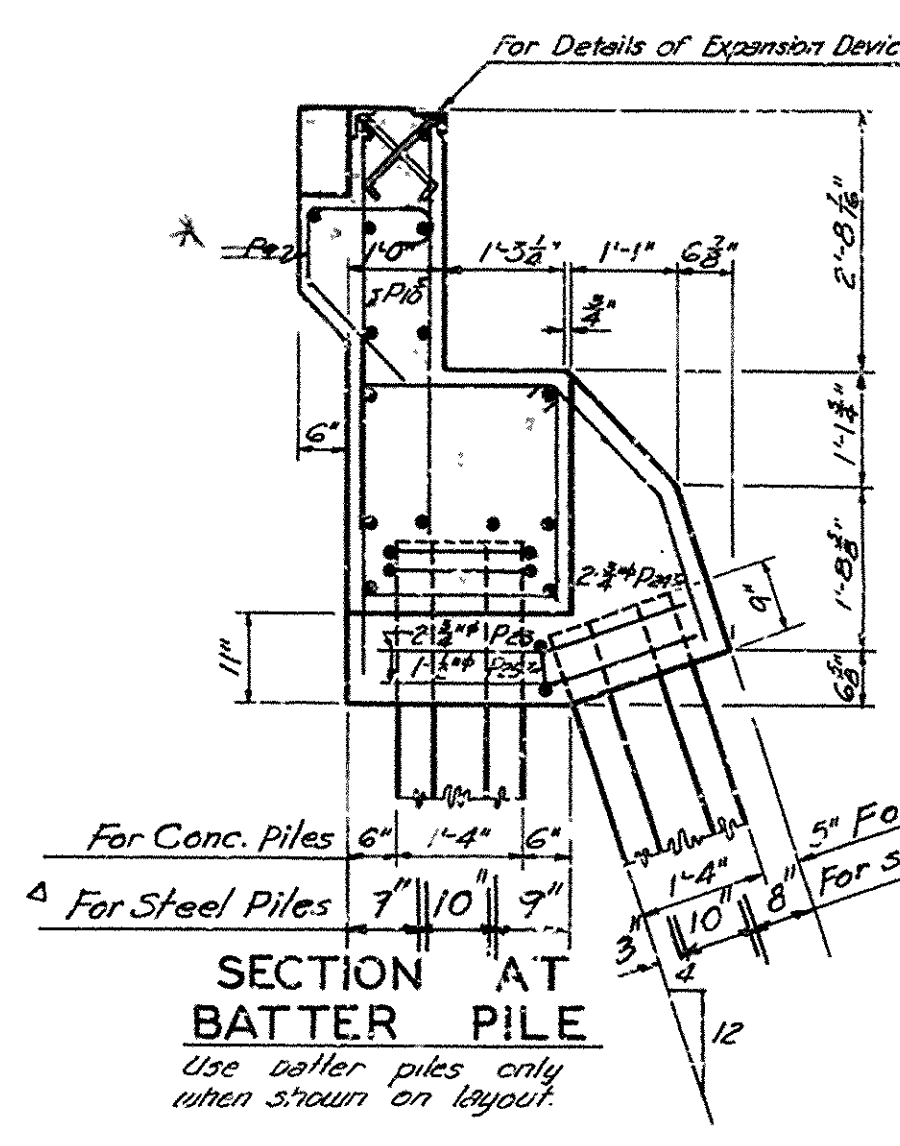




FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.				
STATE JOB NO.					

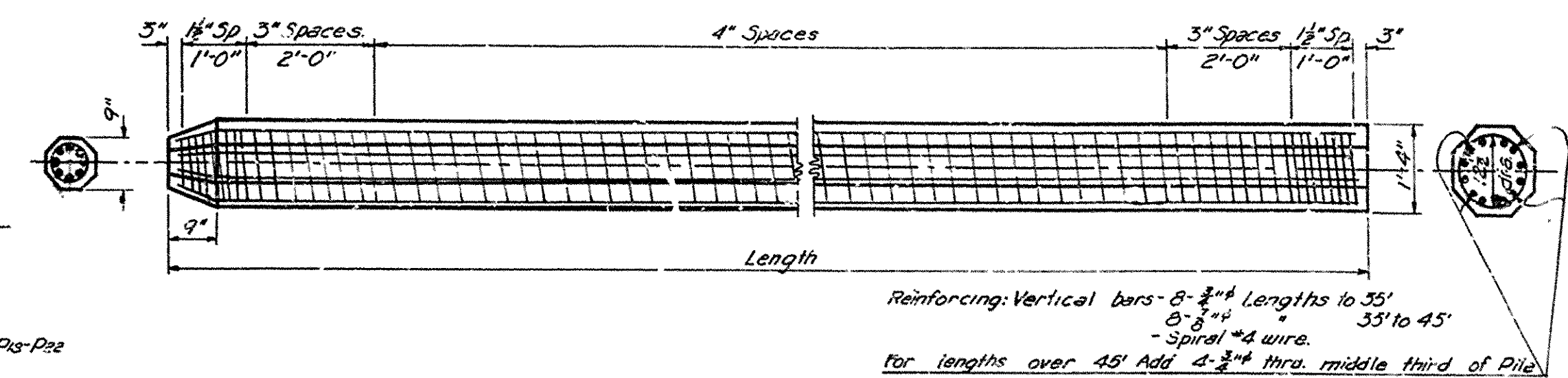


HALF FRONT ELEVATION END BENT.  
Cap reinforcing same as intermediate bent.

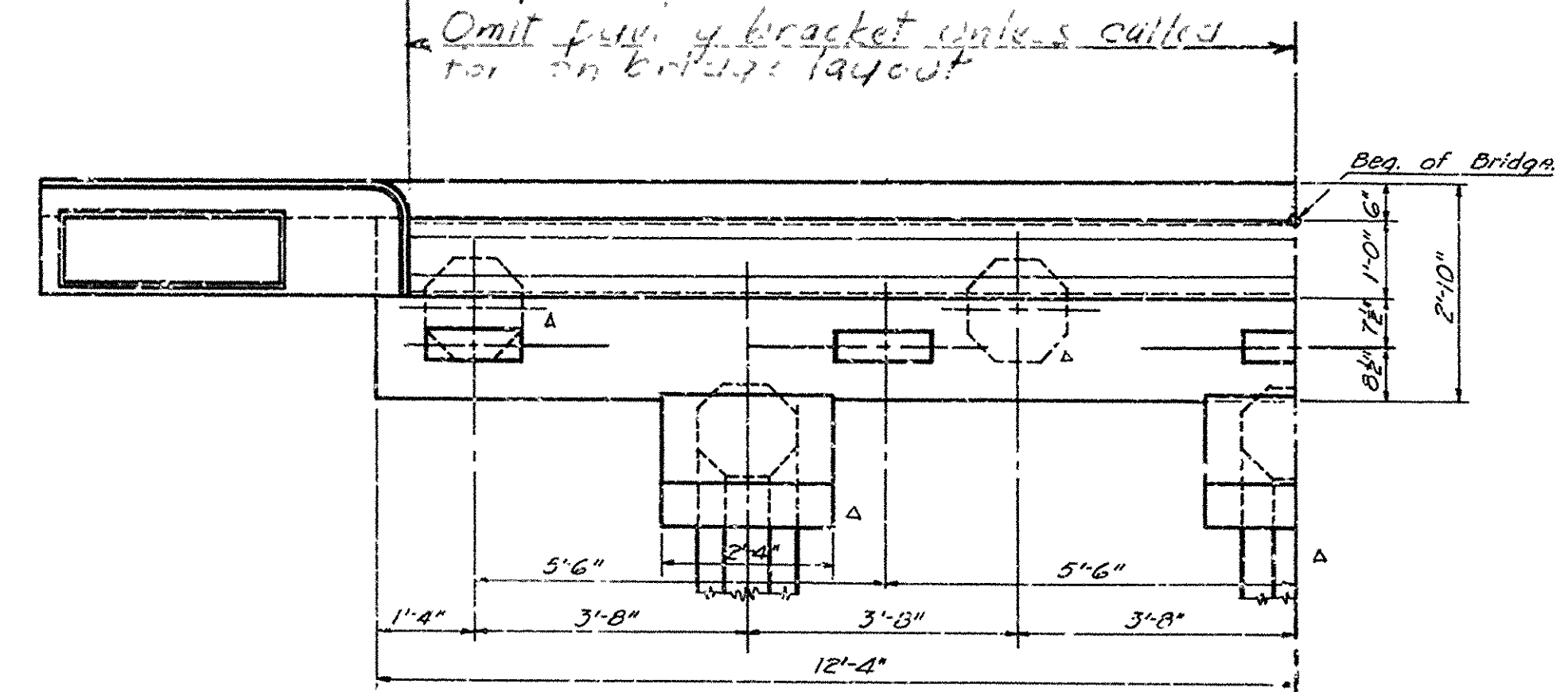


SECTION BETWEEN BATTER PILES

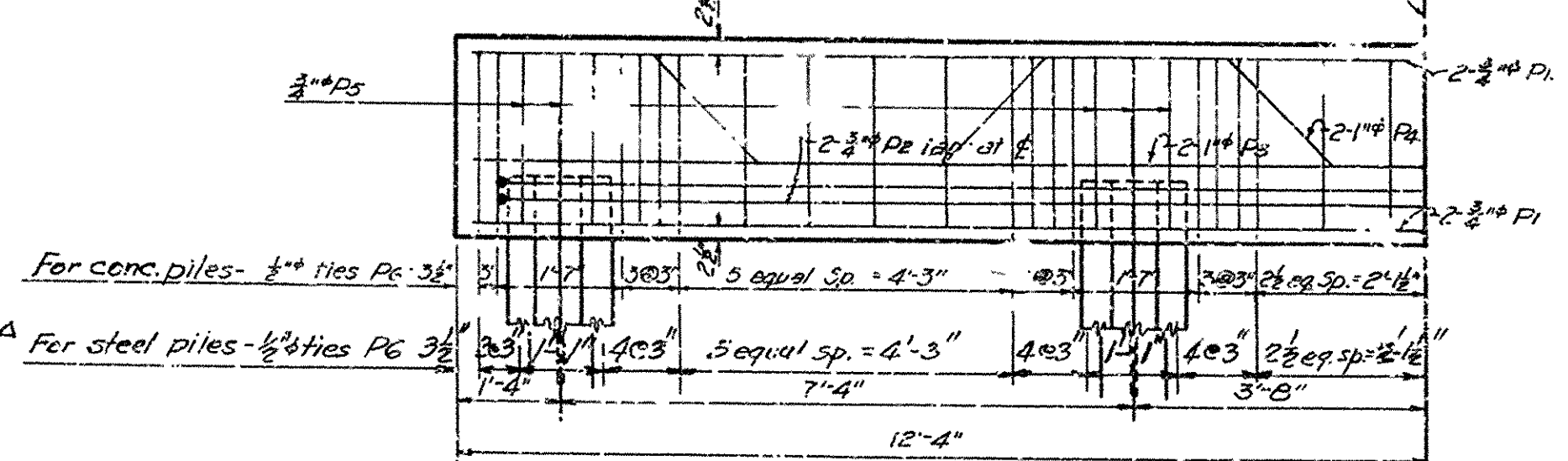
END VIEW



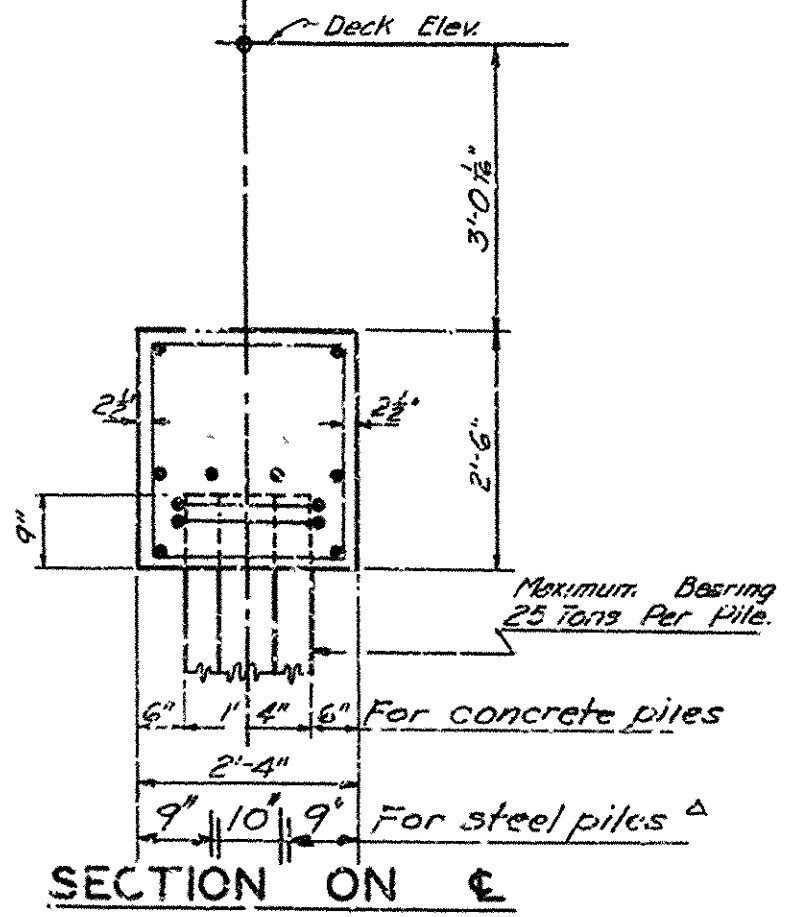
Note: When called for on Bridge Layout use steel bearing piles BP10 @ 42# instead of concrete piles. Note changes in dimensions at piles and number of bars PG in caps.



HALF PLAN OF END BENT



HALF ELEVATION INTERMEDIATE BENT



SECTION ON C

LIST OF BENT BARS

Mark	Size	Length	A	B	Bending Diagram
P2	3/4"	27'-5"	1'-5"	13'-0"	
P4	1"	27'-10"			
P5	3/4"	6'-11"	1'-11"	2'-11"	
P6	3/4"	8'-4"	1'-11"	2'-11"	
P9	1/2"	3'-6"			
P10	1/2"	3'-3"	5"		
P11	1/2"	3'-10"	10"		
P12	1/2"	4'-5"	1'-5"		
P13	1/2"	5'-0"	2'-0"		
P14	1/2"	5'-7"	2'-7"		
P15	3/4"	11'-3"			
P16	3/4"	8'-0"			
P17	1/2"	3'-5"	5"	1'-11"	
P18	1/2"	3'-5"	5"	1'-11"	

GENERAL NOTES:

Piles to be driven to minimum capacity of 28 Tons.  
For additional general notes see Drawg. No 329.  
\* Omit paving bracket unless called for on bridge layout

DETAILS OF RC PILE BENTS  
FOR 30'-32'-34' I-BEAM SPANS  
24'-0" CLEAR ROADWAY 1'-6" WALKWAY

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

Drawn By: L.P.C. Date: 3-1-44  
Traced By: G.W.B. Date: 5-2-46  
Checked By: Date: \_\_\_\_\_

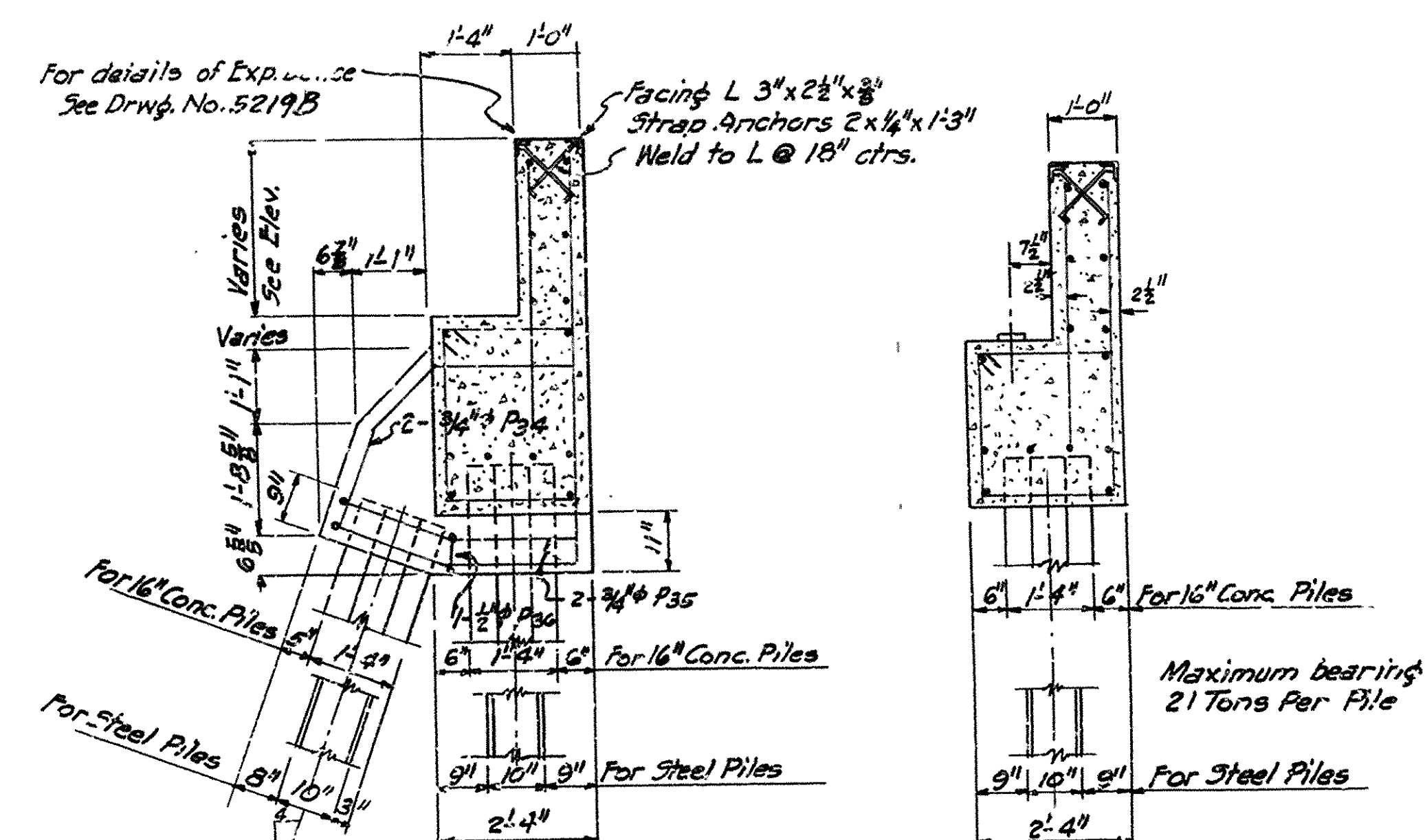
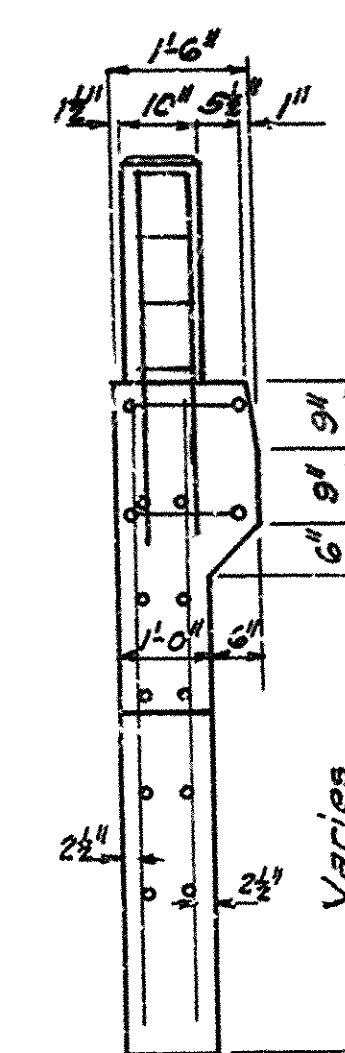
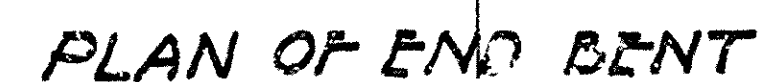
DRAWING NO. 5218

M.B. Sawyer  
PRINCIPAL HIGHWAY ENGINEER (BRIDGE)



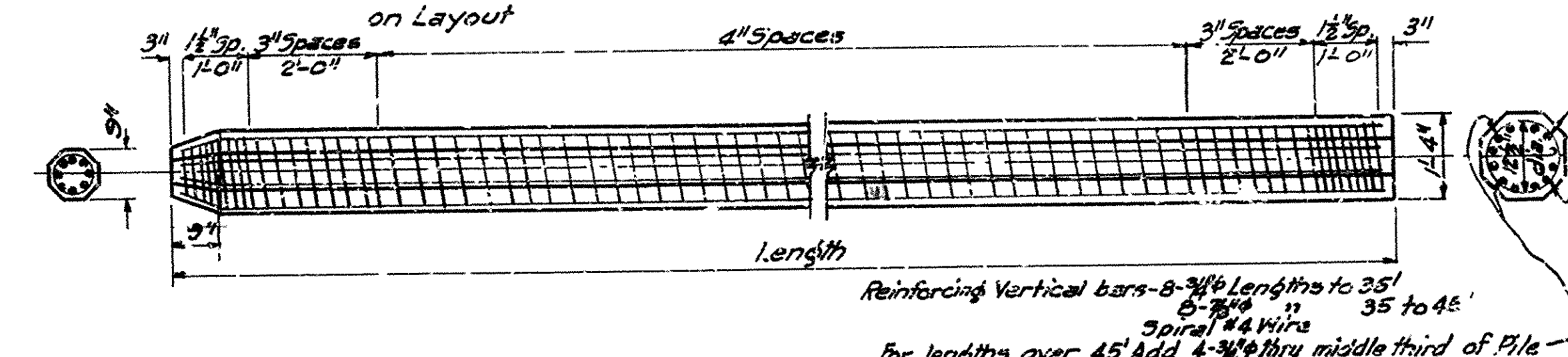


**FRONT ELEVATION END BENT**  
Cap Reinforcing Same as Intermediate Bent.



SECTION AT BATTER PILES      SECTION BETWEEN BATTER PILES

Use batter piles only when shown  
on Layout



### DETAILS OF 16" PRECAST CONCRETE PILE

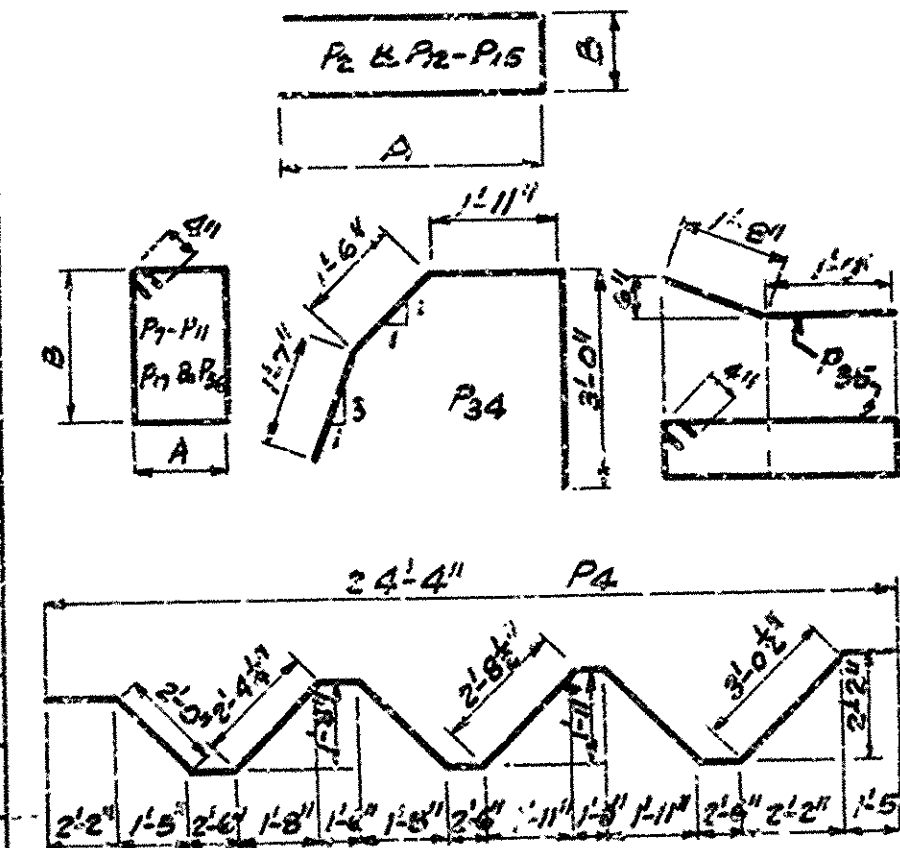
Note: When called for on Bridge Layout use steel bearing piles BF10" @ 42" instead of concrete piles. Note changes in dimensions at piles and number of bars in Caps

### LIST OF BENT BARS

Mark	Size	Length	A	B
P <sub>2</sub>	3/8"φ	27'-5"	13'-0"	1'-5"
P <sub>4</sub>	1"φ	28'-9"		
P <sub>7</sub>	1/2"φ	8'-9"	1'-11"	2'-11"
P <sub>8</sub>	1/2"φ	9'-3"	1'-11"	2'-4"
P <sub>9</sub>	1/2"φ	9'-9"	1'-11"	2'-7 1/2"
P <sub>10</sub>	1/2"φ	10'-3"	1'-11"	2'-10 1/2"
P <sub>11</sub>	1/2"φ	10'-9"	1'-11"	3'-1 1/4"
P <sub>12</sub>	3/4"φ	6'-1 1/4"	1'-11"	2'-1 1/4"
P <sub>13</sub>	3/4"φ	6'-7"	1'-11"	2'-4 1/4"
P <sub>14</sub>	3/4"φ	7'-1 1/4"	1'-11"	2'-7 1/4"
P <sub>15</sub>	3/4"φ	8'-1 1/4"	1'-11"	3'-7 1/4"
P <sub>17</sub>	1/2"φ	11'-9"	1'-11"	4'-5 1/4"
P <sub>34</sub>	3/4"φ	8'-0"		
P <sub>35</sub>	3/4"φ	11'-3"		
P <sub>36</sub>	1/2"φ	5'-5"	5"	1'-11"

Diagram

Diagram



General Notes:

All concrete to be Class "5"  
Pile to be driven to a minimum capacity of 28 Tons.  
Facing angle at end bent and strap anchors to be  
included in the quantity for "Structural Steel In Beam Spans"  
See Drawg. No. 52193 for additional general notes.

STANDARD  
DETAILS OF PILE BENTS  
FOR 34' I-BEAM SPAN ON 3° CURVE  
26' CLEAR ROADWAY 14" CURBS

ROUTE	SEC.
-------	------

ARKANSAS STATE HIGHWAY COMMISSION

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

Drawn By: E.A.W. Date: 8-9-49  
Traced By: J.A.M.F. Date: 8-11-49

Traced By: LAME Date: 5-11-49

Checked By: \_\_\_\_\_ Date: \_\_\_\_\_  
BRIDGE NO. \_\_\_\_\_ DRAWING NO. 52/B-A

*H. B. Barnes*  
PRINCIPAL HIGHWAY ENGINEER (BRIDGE)

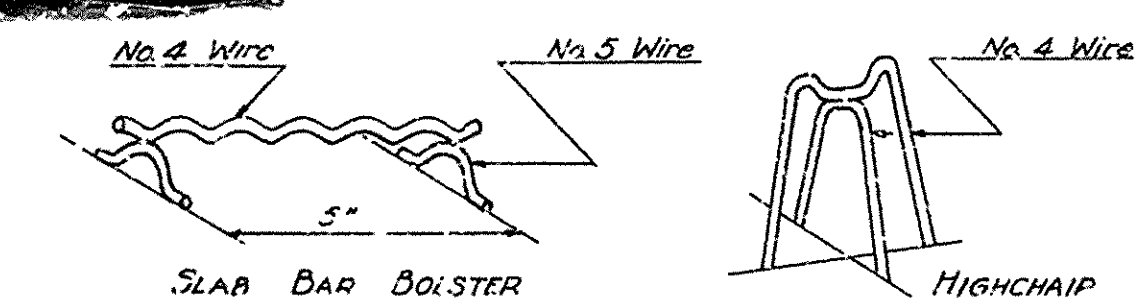


FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.				
STATE JOB NO.					

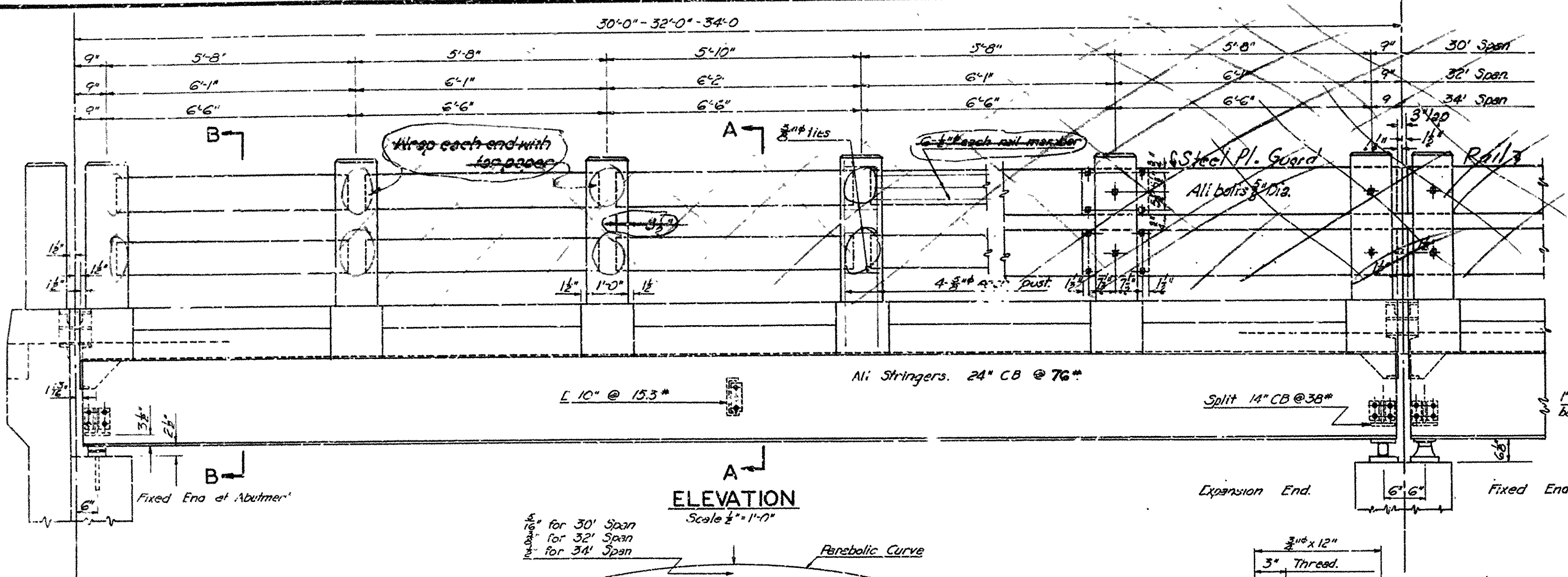
**LOADING H-15**  
Load Distribution Outside Beams  
Dead Load Per Foot = 975 #  
Live Load Per Foot = 184 #  
Conc. Live Load = 3200 # Mom.  
7500 # Shear  
Truck Live Load = 0.82 Wheel  
Load Distribution Inside Beams  
Dead Load Per Foot = 650 #  
Live Load Per Foot = 264 #  
Conc. Live Load = 1425 # Mom.  
10,725 # Shear  
Truck Live Load = 1.1 Wheel

**STRESSES**  
Structural Steel = 18,000 #/sq.  
Reinforcing Steel = 18,000 #/sq.  
Concrete (f'c) = 1000 #/sq.  
**GENERAL NOTES**

All concrete to be Class "S". All exposed corners to have 3" chamfer unless otherwise noted.  
Reinforcing bars shall be lap welded or welded in the shop. Where bolts are indicated use machine bolts.  
Structural shapes of equal or greater strength may be substituted for shapes shown but payment will be made on basis of shapes shown or those actually used whichever is the lesser.  
All welded connections to be full fillet shop welds except as noted.  
Shop Paint: All structural steel except surfaces in contact with concrete shall be given one coat of red lead and two coats of zinc primer before shipment.  
Field Paint: First, White Lead tinted with Lamp black, Second coat, Aluminum.  
All bearing and roadway expansion devices to be paid for as "Structural Steel in Beam Spans".  
Weight of C.I. Drains to be included in weight of Reinforcing Steel.  
Care shall be exercised to obtain 90° in the angle between flange and web of beams at bearing points.  
This drawing shows general features of design only. Shop drawings shall be made in accordance with the Specifications, submitted and approved before fabrication is begun.  
In order to secure a good riding surface it will be required that the floor slab be struck off from curb to curb with a half span length longitudinal strike-off. The strike-off shall be sufficiently stiff so as to have no appreciable vertical deflection.  
SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, Adopted March 1st 1940.



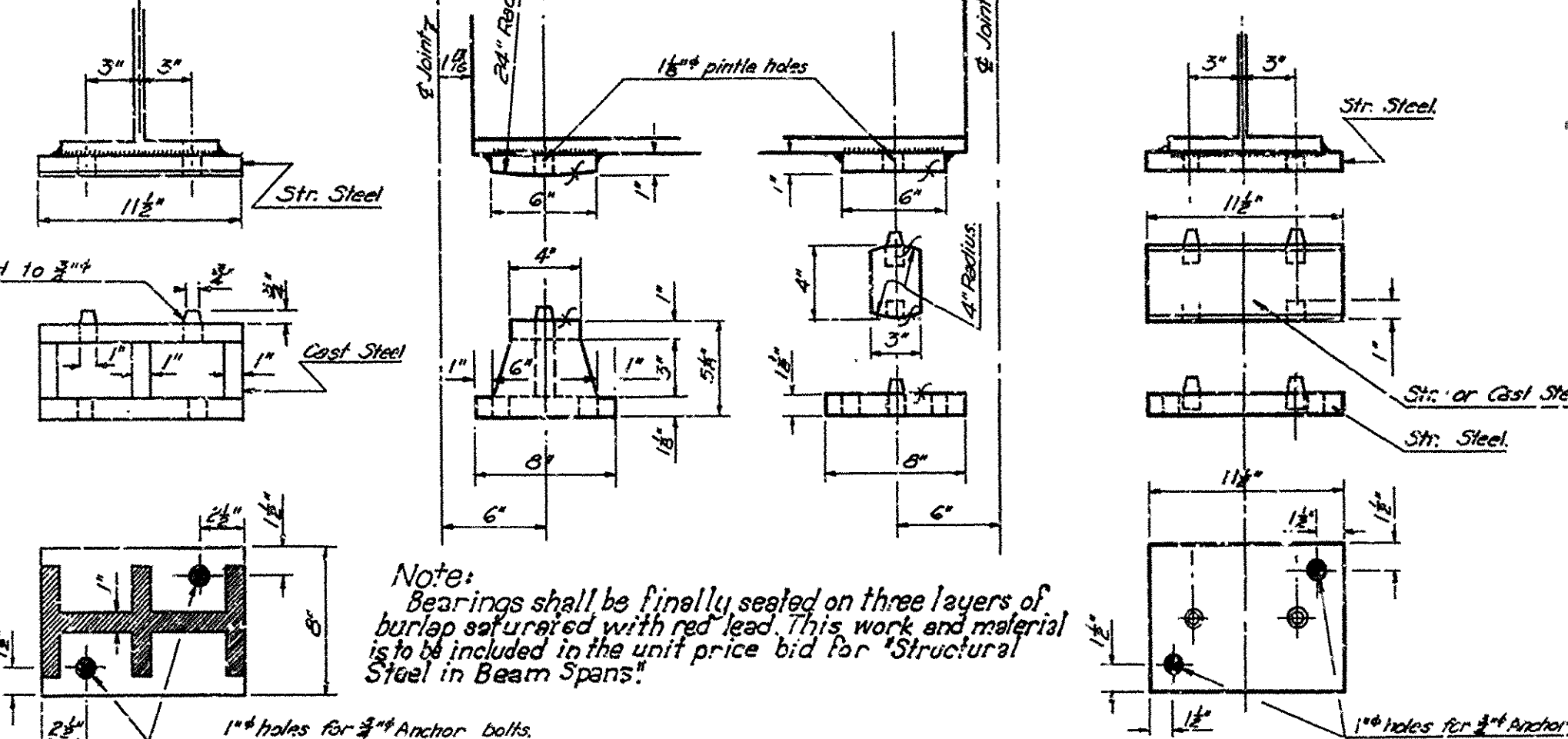
All reinforcing steel shall be accurately located in the forms and firmly held in place by means of steel wire chair supports adequate to prevent displacement during the course of construction and to keep the steel a proper distance from the forms.  
Bar supports are to be sufficient in number and sufficiently heavy to properly carry the steel they support. Wire sizes shall not be less than shown.  
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.



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

**PLATES AT ABUTMENT**  
Scale 1/8" = 1'-0"

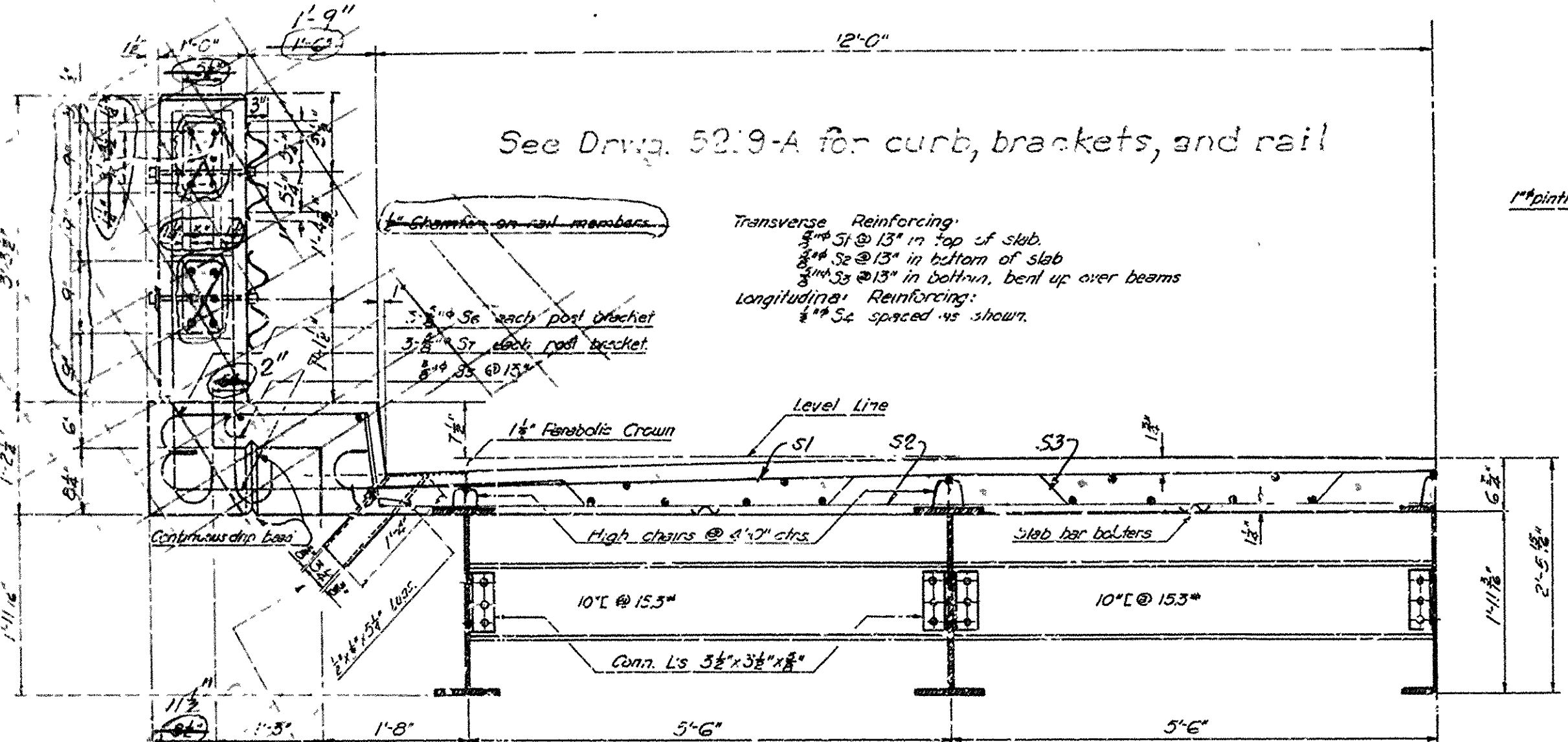
**SWEDGED ANCHOR BOLT**



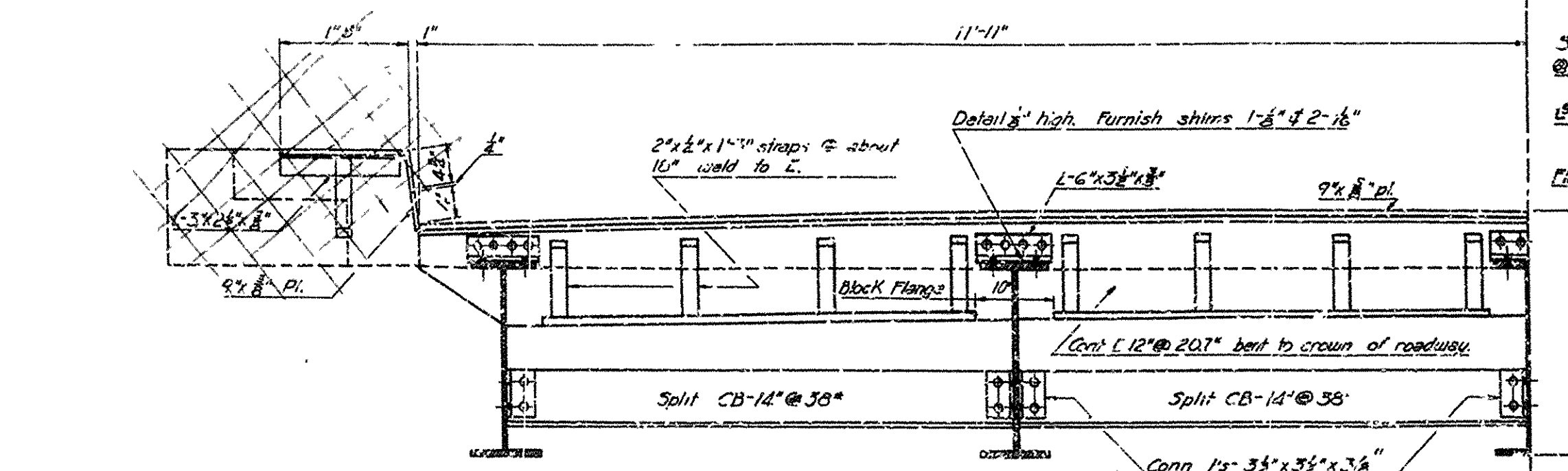
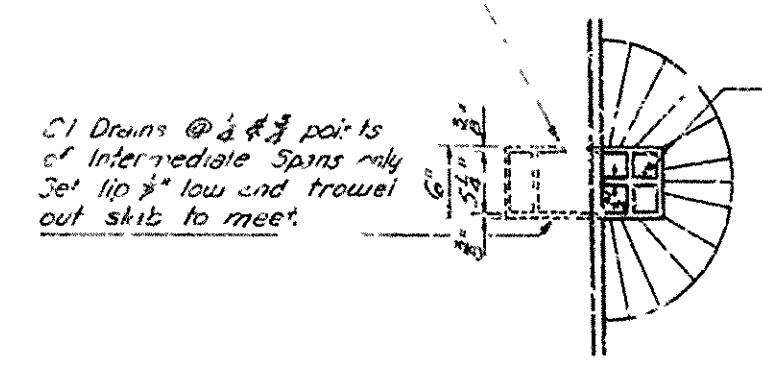
**FIXED SHOE EXPANSION SHOE  
DETAILS OF BEARINGS**  
Scale 1/8" = 1'-0"

**LIST OF BENT BARS**

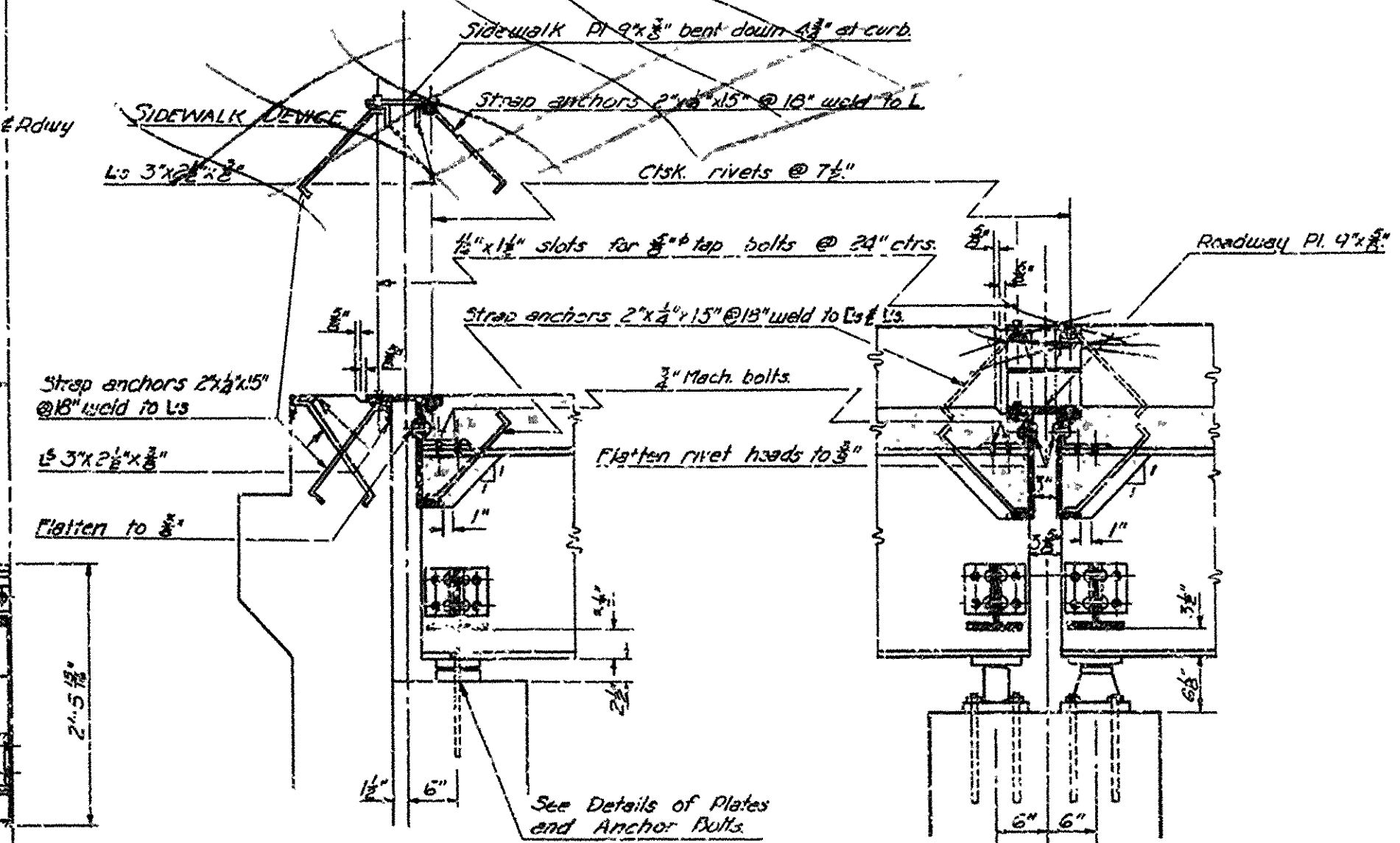
Mark	Size	Length	Bending Diagram
S1	5/8"	25'-9"	
S2	5/8"	26'-0"	
S3	5/8"	26'-0"	
S4	5/8"	3'-4"	
S5	5/8"	5'-6"	
S6	5/8"	5'-3"	
S7	5/8"	5'-3"	



**SECTION A-A**



**SECTION B-B**



**JOINT AT ABUTMENT**

**JOINT AT INTERMEDIATE BENT**

Revised 8-14-48 Handrail Curb & brackets  
Revised 12-9-46 Bars S1 & S3  
" 2-28-47 Wl. of 24" CB  
" 4-5-47 Ribbed Bolts  
" 7-29-48 Handrail (Note: Details shown thus do not apply after this revision date)  
See also DWG. No. 5219-A

**DETAILS OF  
STANDARD 30'-32'-34' I-BEAM SPANS  
24'-0" CLEAR ROADWAY 1'-6" WALKWAY  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.**

Drawn By: L.P.C. Date: 8-30-44  
Traced By: S.W.B. Date: 4-30-46  
Checked By: \_\_\_\_\_ Date: \_\_\_\_\_

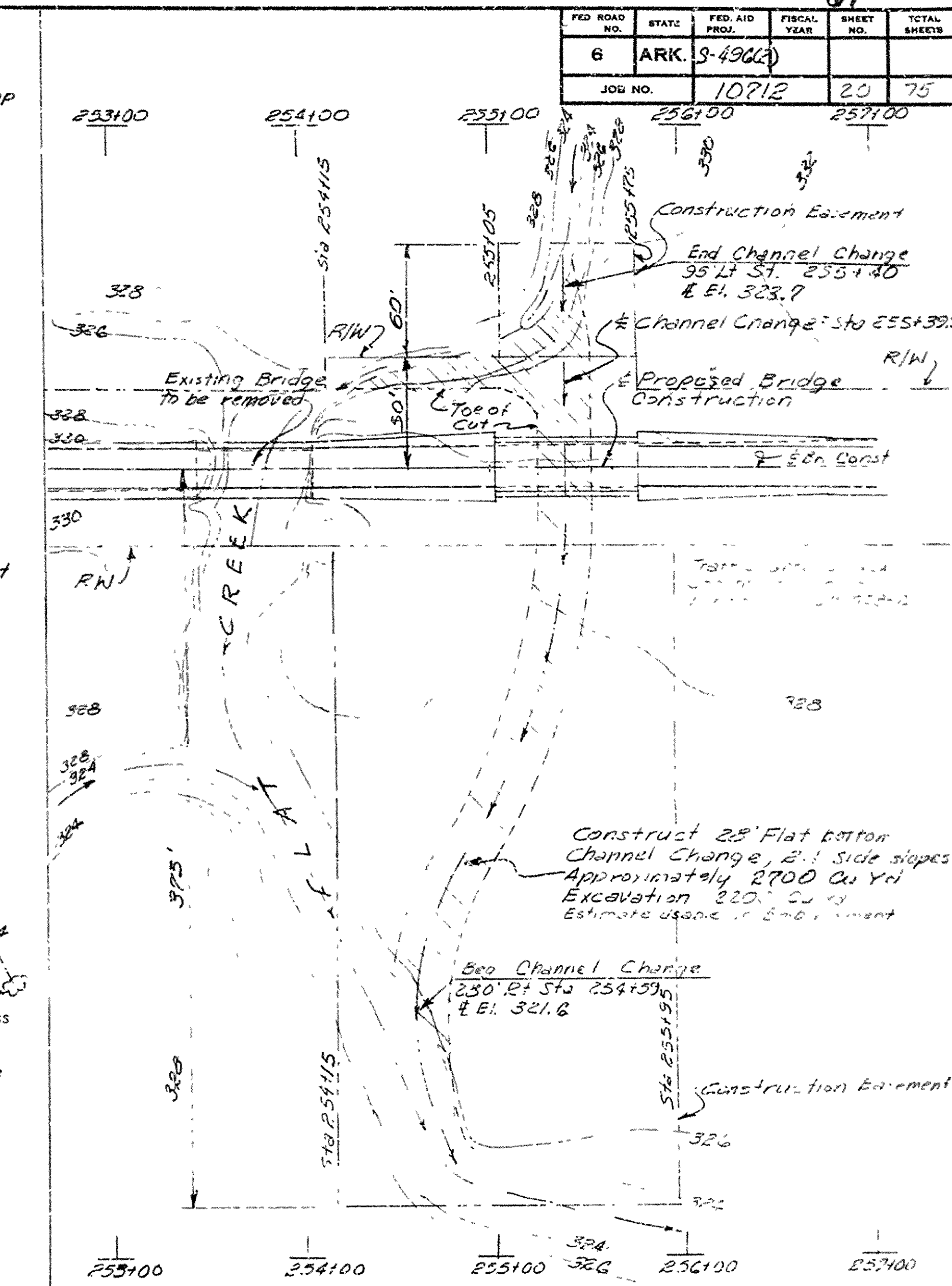
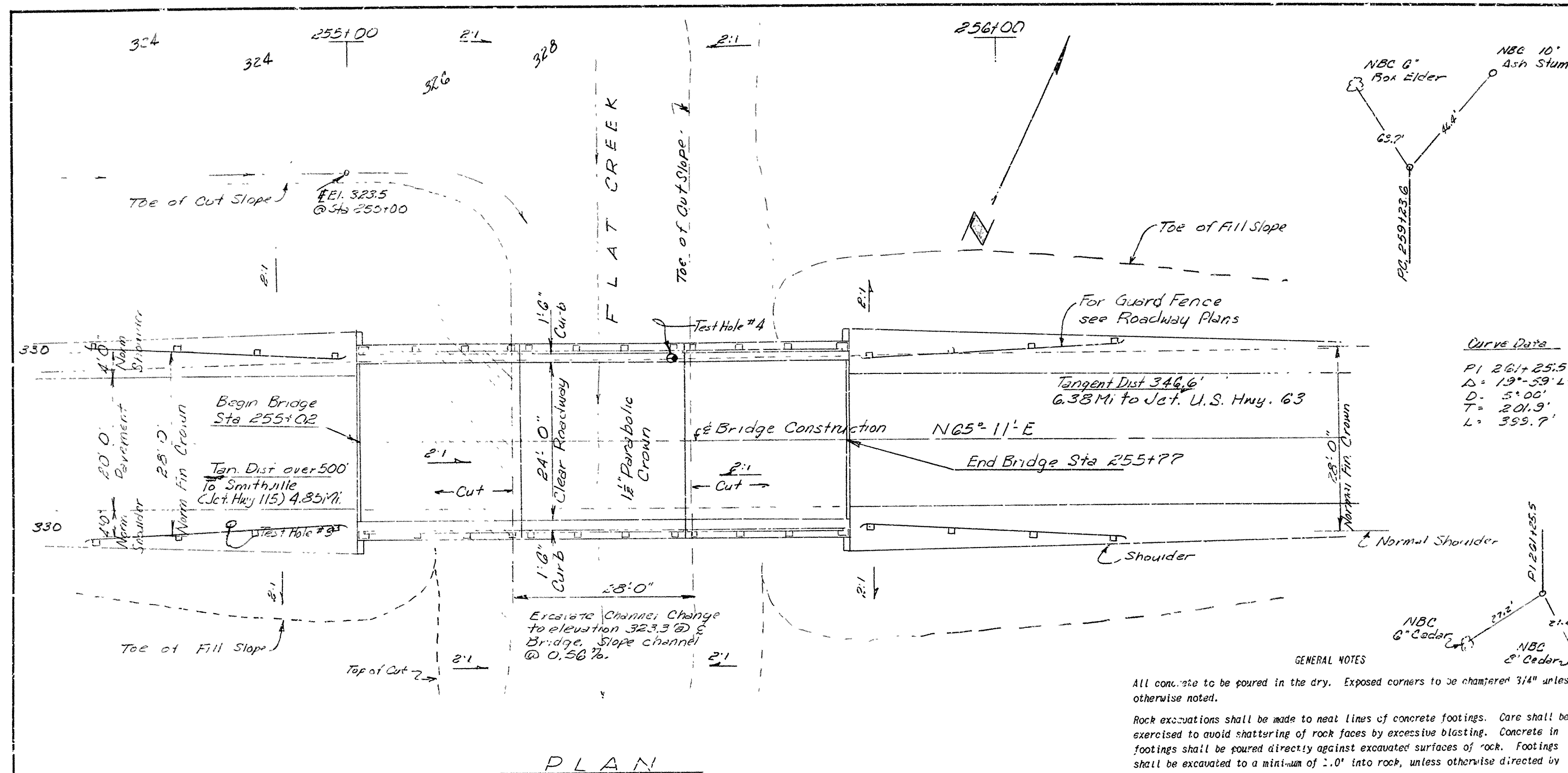
Scale: 3/4" = 1'-0"  
AS SHOWN

**DRAWING NO. 5219.**

M.B. Garver  
PRINCIPAL HIGHWAY ENGINEER (BRIDGE)



FED. ROAD NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	9-4966A	10712	20	75



**GENERAL NOTES**

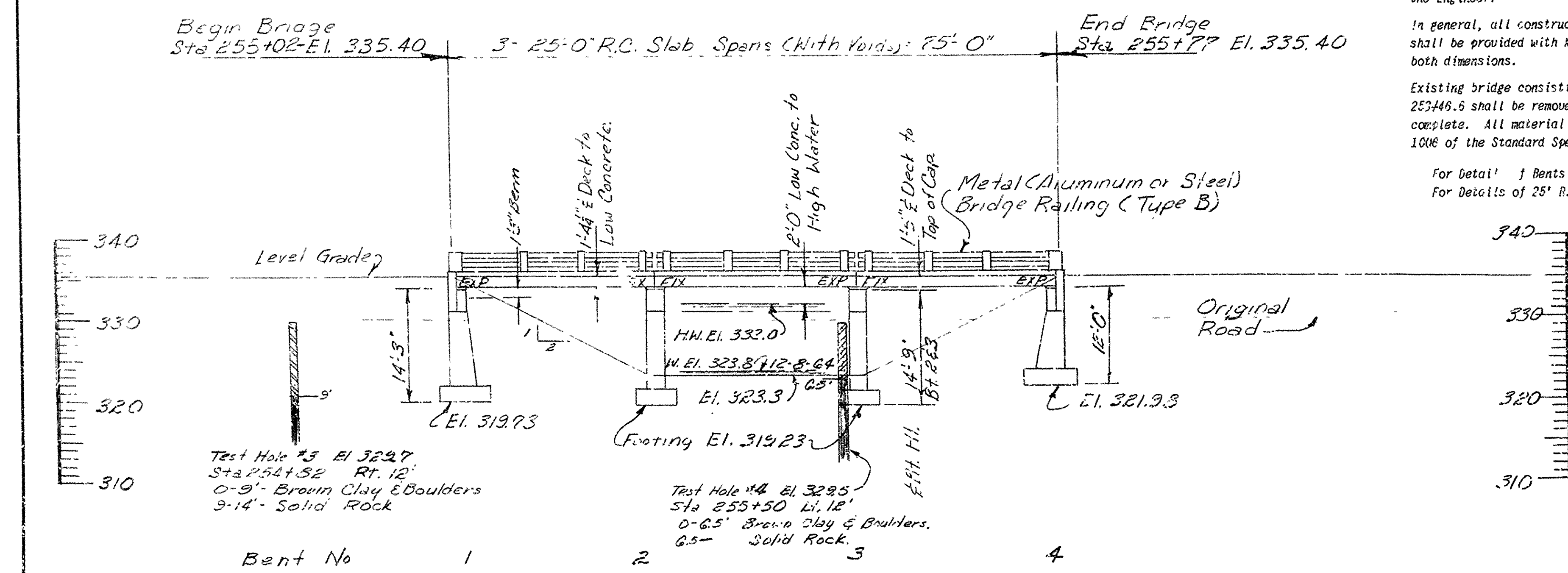
All concrete to be poured in the dry. Exposed corners to be chamfered 3/4\" unless otherwise noted.

Rock excavations shall be made to neat lines of concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock. Footings shall be excavated to a minimum of 2.0' into rock, unless otherwise directed by the Engineer.

In general, all construction joints in bents or piers shall be horizontal and shall be provided with keys not less than 1\" high, covering the middle third of both dimensions.

Existing bridge consisting of 4 timber spans roadway width 18', at station 253+46.5 shall be removed by the Contractor after the new bridge construction is complete. All material shall become the property of the Contractor. See Section 1006 of the Standard Specifications.

For Detail of Bents see Dwg. No. 15083F  
For Details of 25' R. C. Slab Spans see Dwg. No. 15080



**SPECIFICATIONS:** Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1969, and designated Special Provisions.

**DESIGN SPECIFICATIONS:** AASHTO 1961

**Live loading:** H15

**Unit Stresses:** Class A Concrete (n=15) 840 psi  
Class B Concrete (n=10) 1,200 psi  
Reinforcing Steel 20,000 psi

**Foundation Pressure** 5500 psf

# LAYOUT OF BRIDGE OVER FLAT CREEK SMITHVILLE ~ DENTON LAWRENCE COUNTY

STATE ROUTE 117 SEC. 2  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

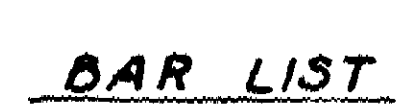
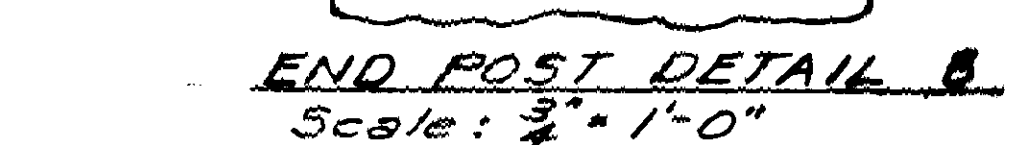
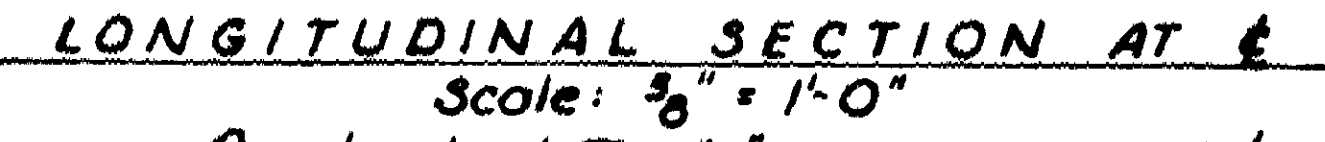
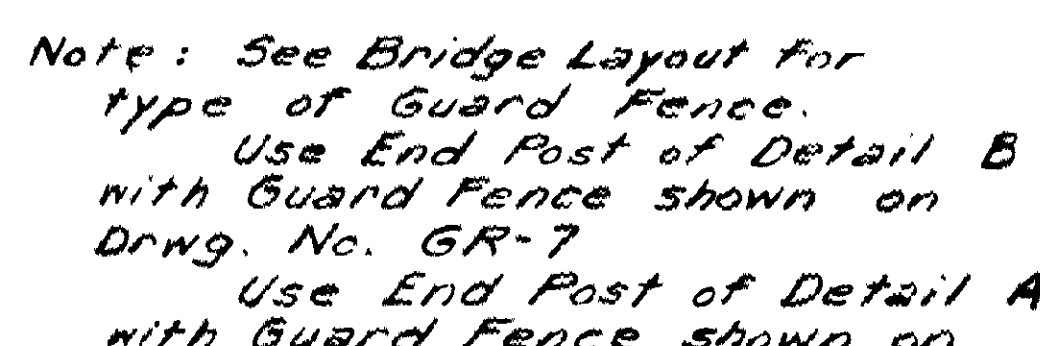
DRAWN BY: J.L. DATE: 8-27-65  
TRACED BY: DATE: 8-27-65  
CHECKED BY: DATE: 8-27-65  
BRIDGE NO. 5006 DRAWING NO. 13370

**ELEVATION**  
Approx. D.A. 3.8 Sta. Mi.  
C = 0.9  
B.M. - N.I.S. R.P. 65' Rt Sta 257+85  
Elev. 331.9







[illegible]

### GENERAL NOTES

- 1 All concrete to be Class 3. All exposed corners to be chamfered 3/4" unless otherwise noted.
- 2 Reinforcing steel to be deformed bars of intermediate or hard grade. Shop lists and bending diagrams must be submitted and approved before fabrication is begun.
- 3 All cylindrical tubes used to form voids shall be of moisture protected, laminated type construction, minimum thickness 0.200, and shall be furnished complete with end closures.
- 4 All reinforcing steel and fiber tubes shall be accurately located in the forms and firmly held in place by means of steel wire supports and spacers for tubes of a sufficient number and size to prevent displacement during the course of construction, but in no case of lesser design than that shown.
- 5 Wire supports for reinforcing bars will not be paid for directly, but will be considered subsidiary to the "Reinforcing Steel".
- 6 Tubes for forming voids and wire supports and spacers for tubes will not be paid for directly, but will be considered subsidiary to the item "Class 3 Concrete".
- 7 Shop lists and diagrams of wire supports and spacers for tubes shall be submitted for approval before fabrication is begun.
- 8 Roofing felt, bituminous felt, and poured asphalt joints shall be measured and paid for as Class 3 Concrete.

For details of Metal Bridge Railing see Spec. No. 14992. Bridge Railing including posts: Reinforcing steel and fastenings shall be paid for at the unit price per linear foot bid for Metal (Aluminum or Steel) Bridge Railing. End posts are not to be paid for as concrete and reinforcing steel but are to be included in length of rail for payment.

Committee on Standard Specifications

**DETAILS OF STANDARD  
25'-0" R.C. SLAB SPANS (WITH VOIDS)**

DETAILS OF STANDARD  
25'-0" R.C. SLAB SPANS (WITH VOIDS)  
24'-0" CLEAR RDWY. 1'-6" CURB

ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: RWM DATE: 1-29-65

TRACED BY:                      DATE:                      SCALE: AS SHOWN  
 CHECKED BY: HEJ DATE: 2-3-65  
 DRAWING NO.                      DRAWING NO. 15000

BRIDGE NO. DRAWING NO. 15090

Varies from 0" at edge of slab to  $\frac{1}{2}$ " at c of bridge. (Typical)

DETAIL A  
Scale:  $1\frac{1}{8}" = 1'-0"$

A REVISED VOICE-SPACER & HI CAME HT. 12-13-65 FRB

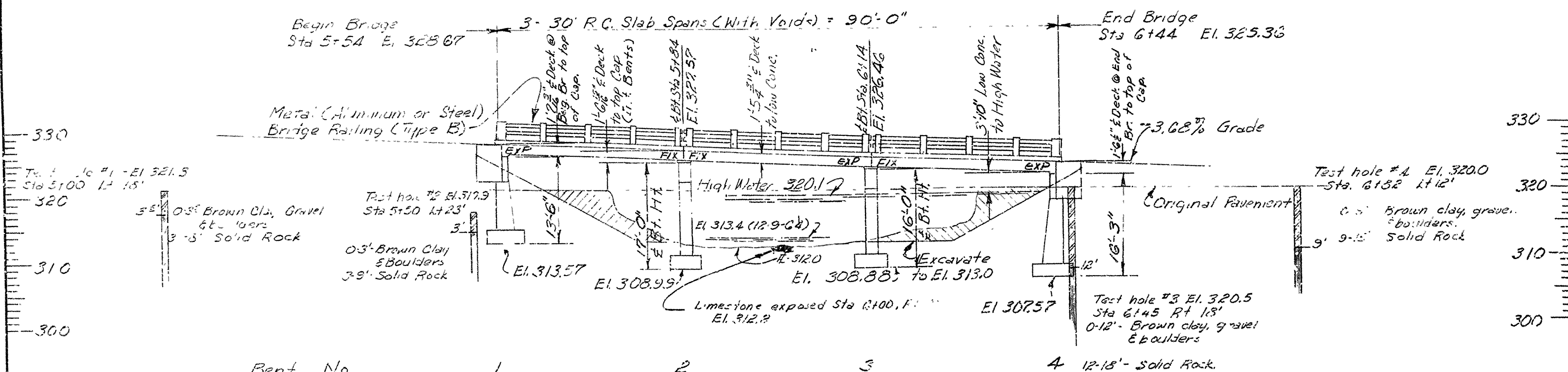
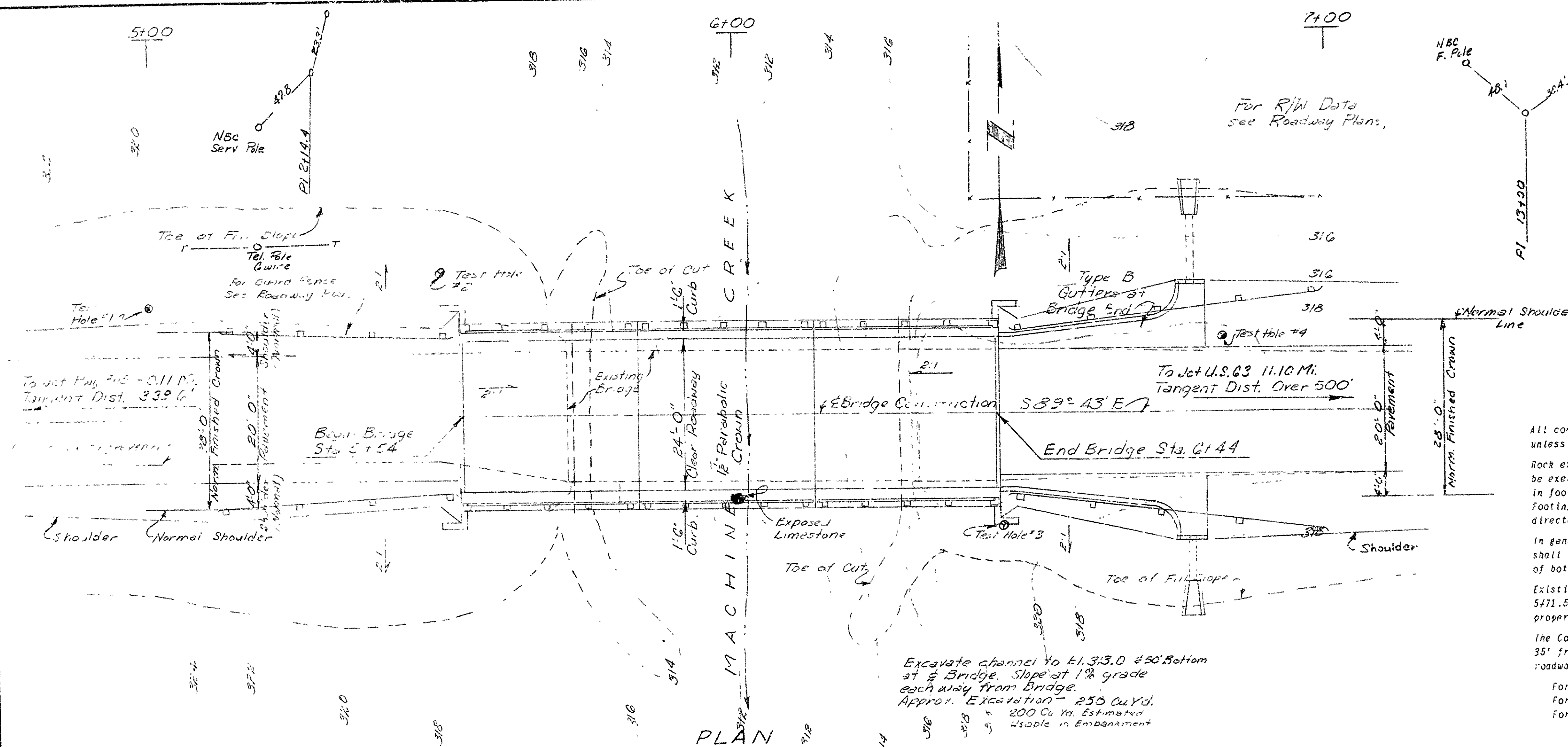
Revised End Post 10-27-66 JAS : Ch. Del.  
 Δ showed Bridge Name Plate on End Post Detail B Aug 2-66-Jno D  
 (See 444)

BRIDGE ENGINEER

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FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	S-496(B)		17	75
JOB NO.	13712				



**ELEVATION**  
Approx. D.A. - G.4 Sq. Mi.  
C=0.9

B.M. - N.W. Cor. Conc. Walk front of  
Bank Bldg. El. 343.21

All concrete to be poured in t... Exposed corners to be chamfered 3/4" unless otherwise noted.

Rock excavations shall be made to neat lines of concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock. Footings shall be excavated a minimum of 1.0' into rock, unless otherwise directed by the Engineer.

In general, all construction joints in bents or piers shall be horizontal and shall be provided with keys not less than 1 1/2" high covering the middle third of both dimensions.

Existing bridge consisting of 6 timber spans, roadway width, 20', at station 5+71.5, shall be removed by the Contractor. All material shall become the property of the Contractor. See Sec. 1006 of the Standard Specifications.

The Contractor shall construct a detour bridge, with approaches, approximately 35' from the centerline of the roadway, approximately 70' long, 19'-0" clear roadway width, deck elevation 321.0, H-12 1/2 design loading. See SP 1008-1.

For Details of Bents see Dwg. No. 15097  
For Details of 30' L.C. Spans see Dwg. No. 15092  
For Details of Bridge Railing see Dwg. No. 14983

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1959, and designated Special Provisions.

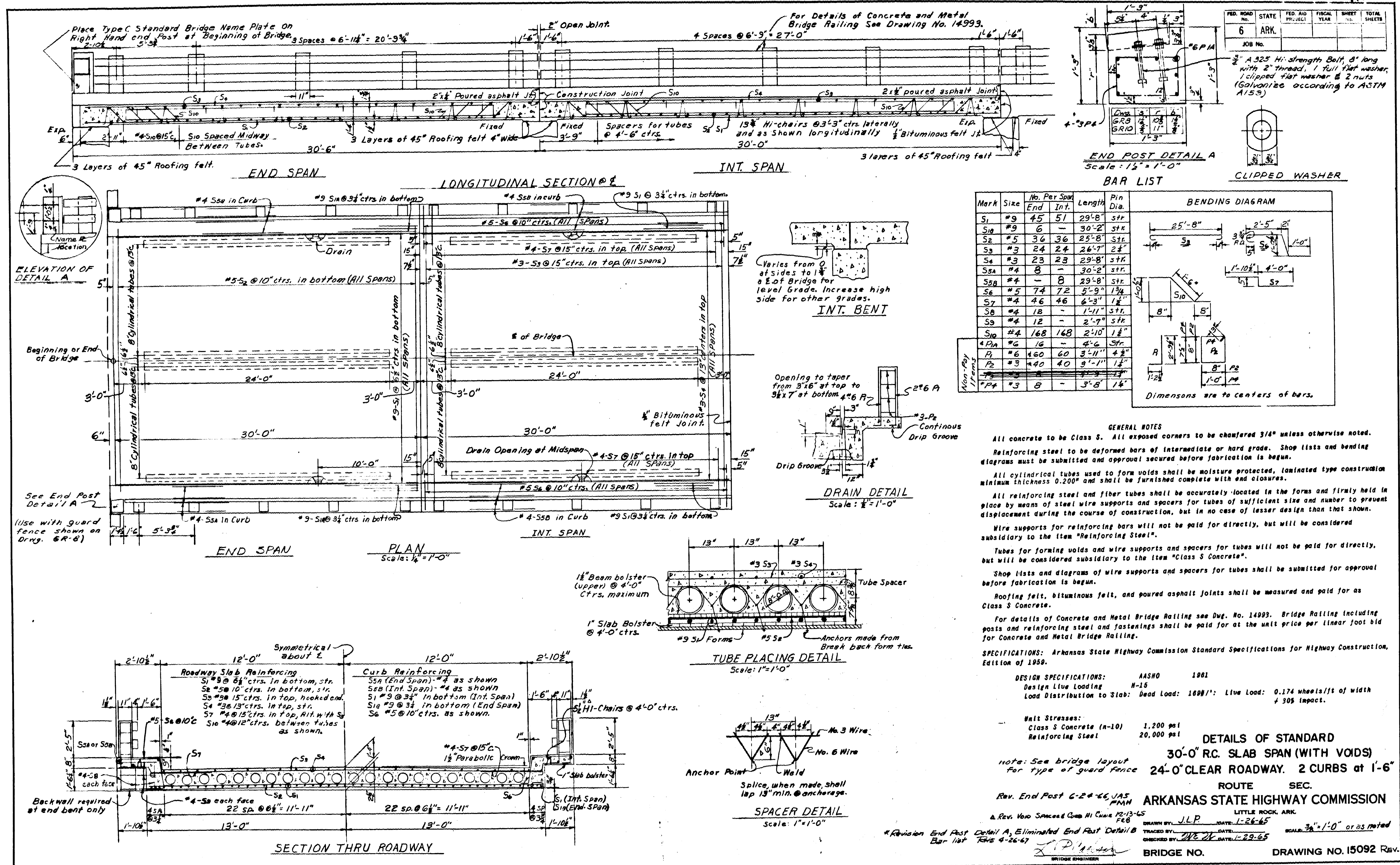
DESIGN SPECIFICATIONS 4ASHO 1961  
Live Loading: H-19  
Unit Stresses: Class A Concrete (n-15) 840 psi  
Class S Concrete (n-10) 1,200 psi  
Reinforcing Steel 29,000 psi  
Foundation Pressure 8,000 psi

LAYOUT of BRIDGE OVER  
MACHINE CREEK  
SMITHVILLE ~ DENTON  
LAWRENCE COUNTY

STATE ROUTE 117 SEC. 2  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: J.L. DATE: 8-25-65  
TRACED BY: DATE: 9-14-65  
CHECKED BY: DATE: 9-14-65  
BRIDGE NO. 5005 DRAWING NO. 13369



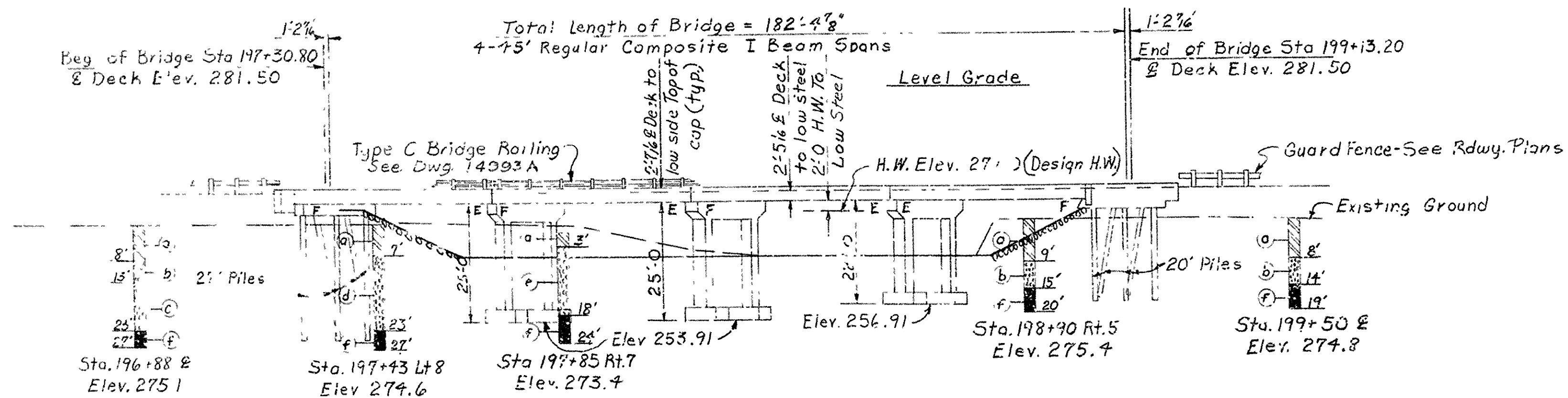
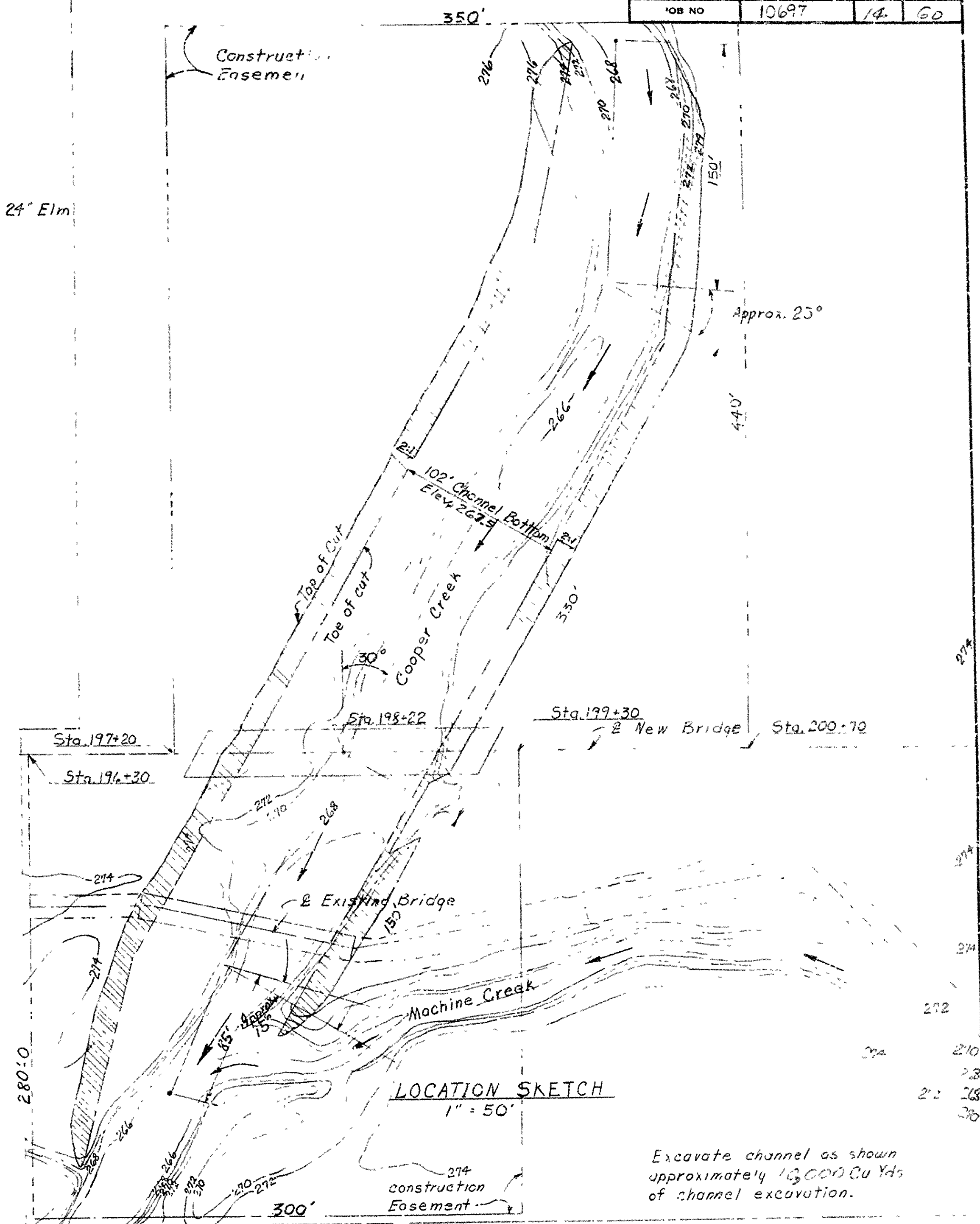
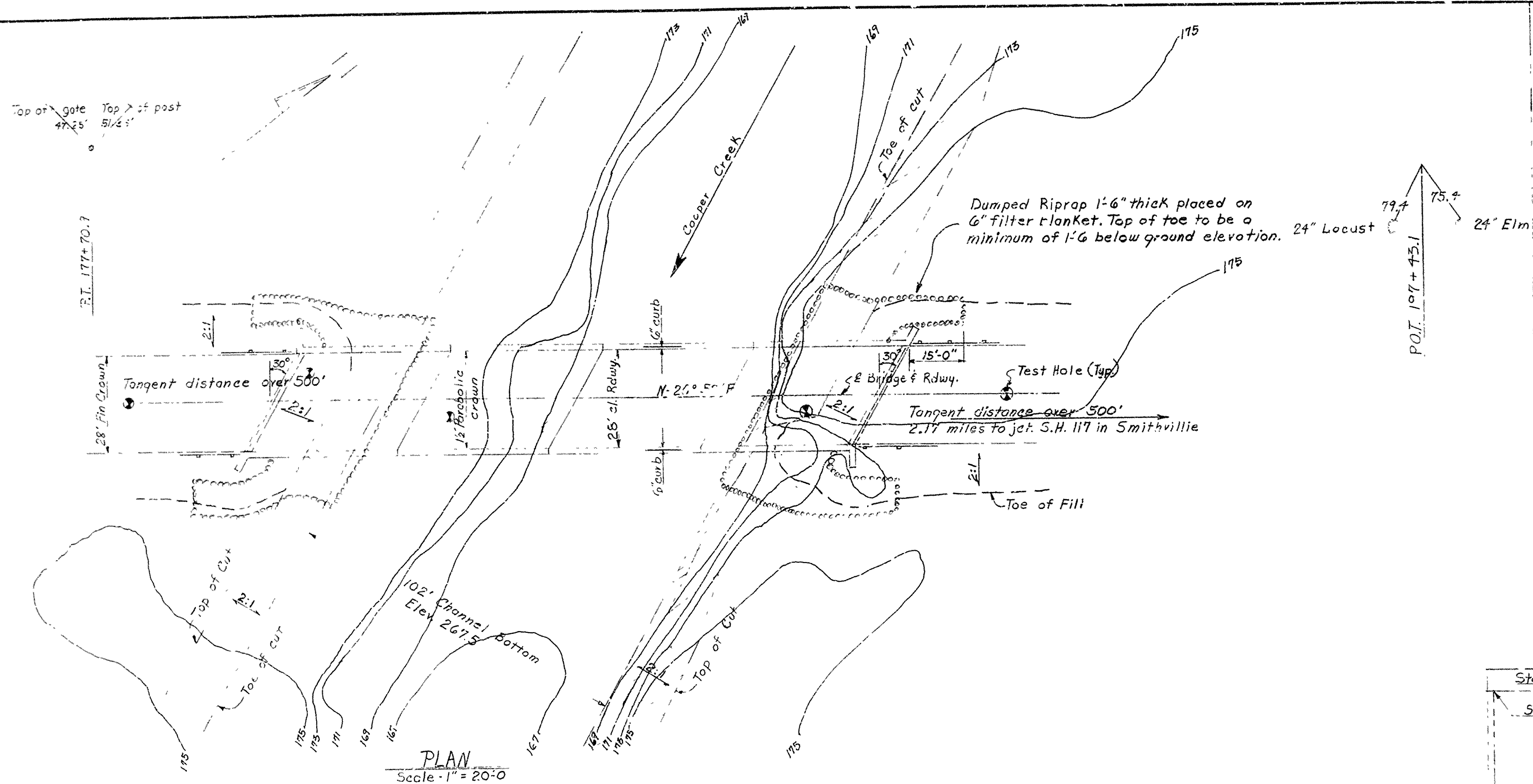








FED. TOAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.				
JOB NO		10697	14	60	



POILING LOG

- a. Brown clay
- b. Gravel
- c. Gravel & boulders & thin layers of rock.
- d. Very comp. gravel & thin layers of rock
- e. Gravel! very comp.
- f. Solid Rock

GENERAL NOTES

Bench Mark - Nail in side 30" Hackberry, 110' Left, Station 198 + 15, Elevation 274.48.

Rock excavations shall be made to neat lines of concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock. Footings shall be set a minimum of 1'-0" into rock. All concrete to be poured in the dry.

All piling shall be 12AP63 and shall be driven with an approved air, steam, or diesel hammer to a minimum capacity of 40 tons per pile and into the material designated as rock on the boring logs. Lengths of piles shown are for estimating quantities only. Order lengths shown; cut-off or build-up, if necessary, to be paid for in accordance with the Standard Specifications.

Piles in end bents to be driven after embankment to subgrade is in place.

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1959, the 1966 Supplemental Specifications, and applicable Special Provisions.

DESIGN SPECIFICATIONS: AASHTO 1985

Live Loading: H20

Unit Stresses: Class 5 Concrete (n=10) 1,200 psi  
Reinforcing Steel 20,000 psi  
Structural Steel (A 36) 20,000 psi

Foundation Pressure 8.2 Ksf Gp.III

LAYOUT OF BRIDGE OVER  
COOPER CREEK  
STRAWBERRY RIVER-SMITHVILLE  
LAWRENCE COUNTY

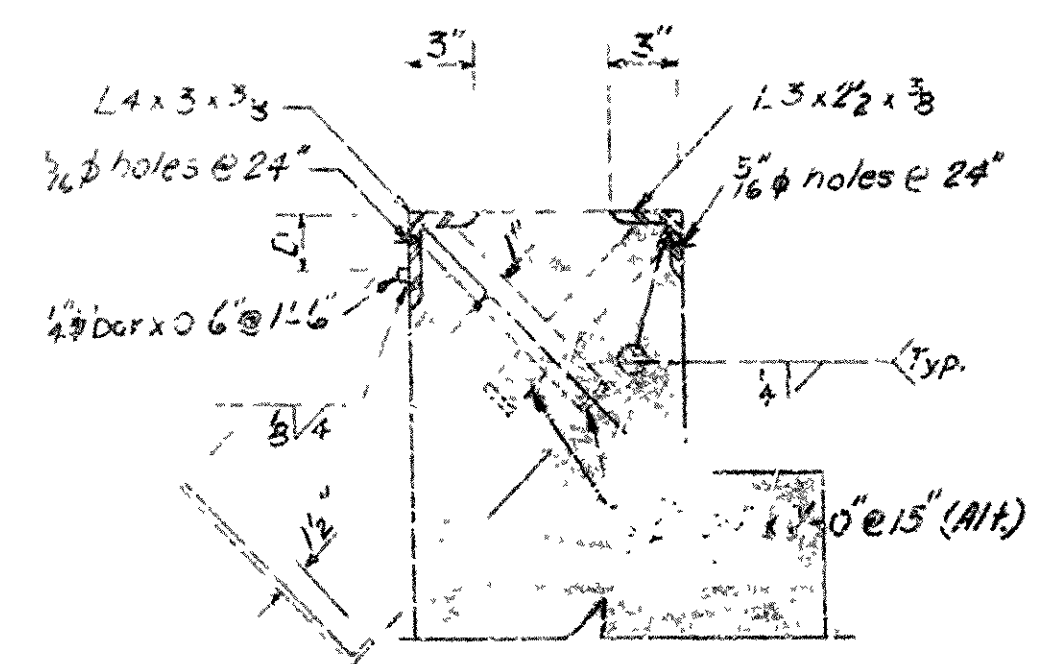
ROUTE 115 SEC. 2  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: W.W.W. DATE: 3-13-68  
 TRACED BY:          DATE:          SCALE: AS NOTED  
 CHECKED BY: F.H.H. DATE: 3-19-68

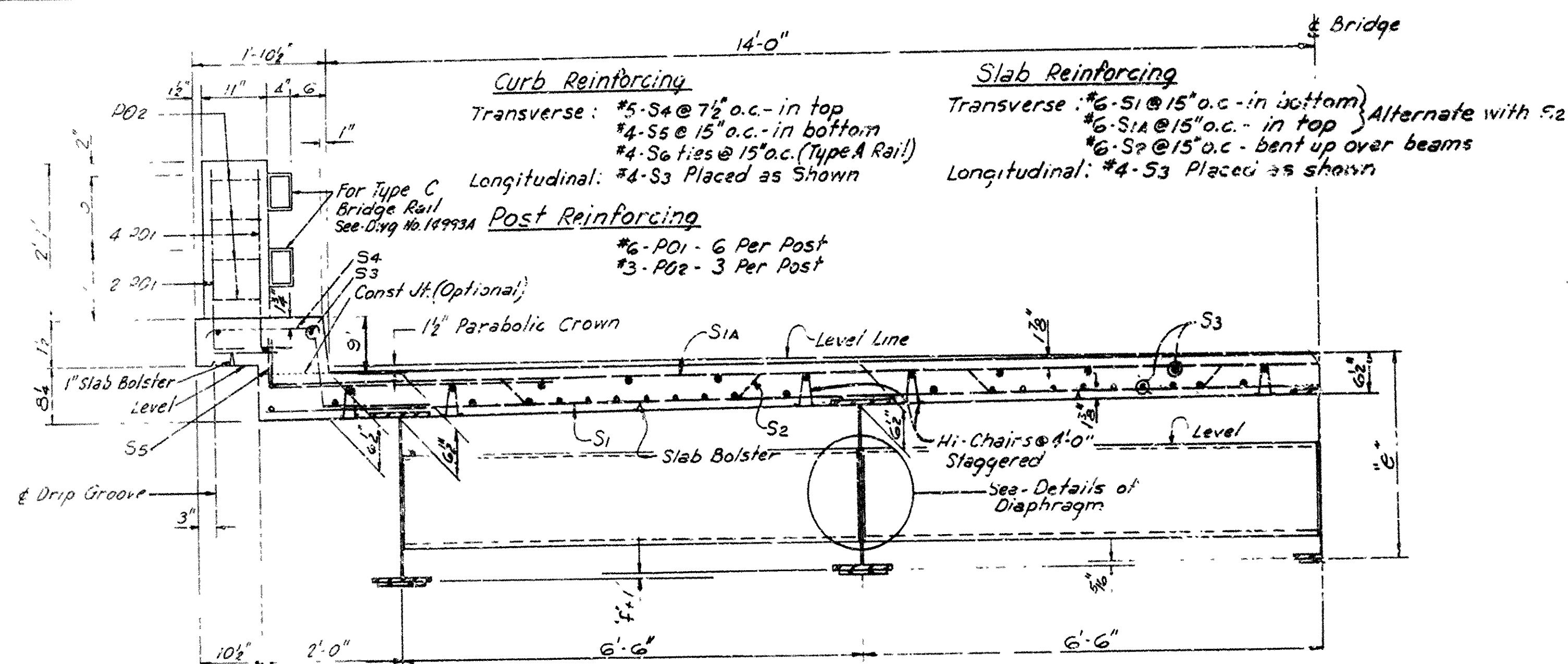
BRIDGE NO. 5217      DRAWING NO. 15797

E. P. Carlson  
BRIDGE ENGINEER

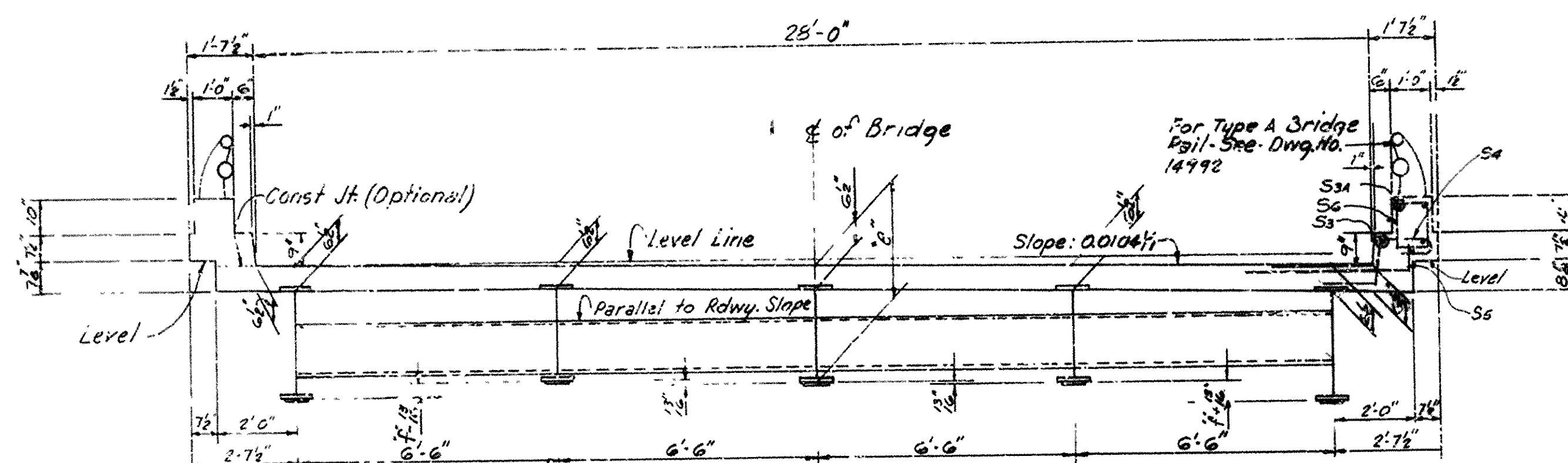








**HALF SECTION A-A OF REGULAR SPAN-PARABOLIC CROWN**  
 Regular spans have all beams of equal depth  
 $\frac{3}{4}" = 1'-0"$



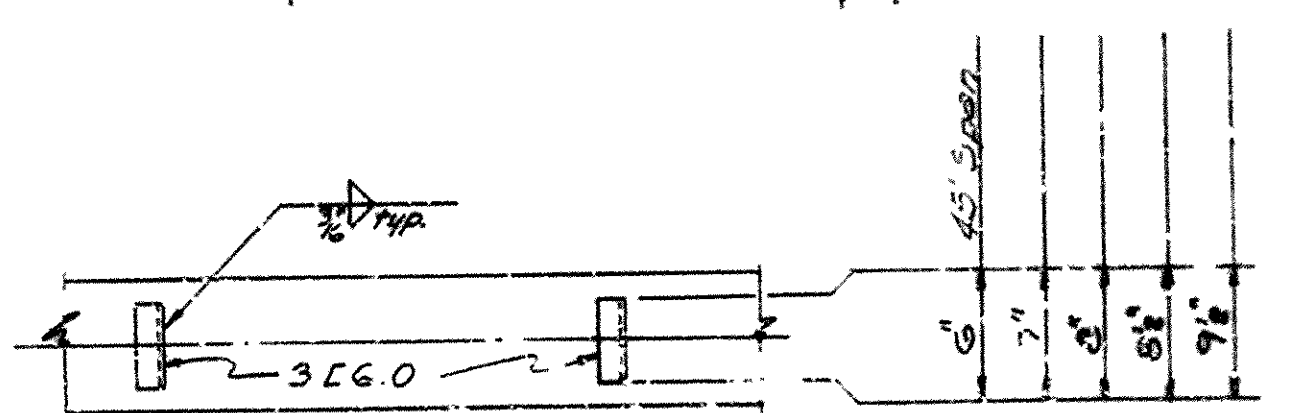
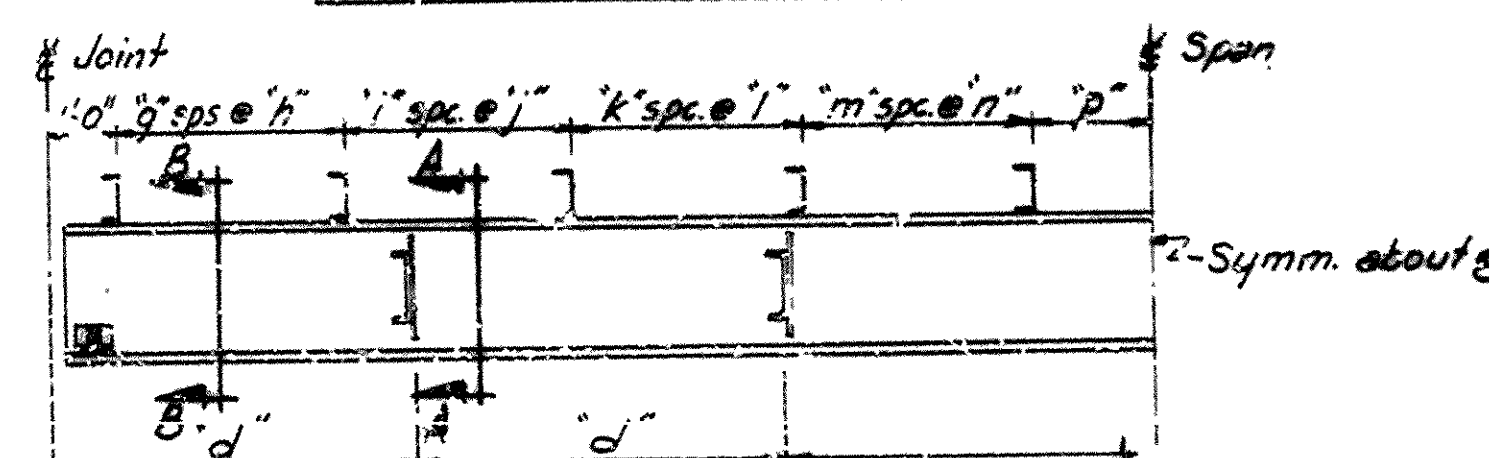
**SECTION A-A OF MODIFIED SPAN-SLOPED RDWY.**  
 Interior beams are same as in regular spans. Exterior beams are the lightest section of the same nominal depth as beams for longest span shown on Bridge Layout.  
 $\frac{3}{4}" = 1'-0"$

Note: "f" = difference in "e" for Interior and Exterior Beams

Span	SCar		Interior Beam				Exterior Beam				Diaphragm Spacing	Post Spacing		f	Variables of Shear Connector Spacing													
	Length	Type	Beam Size	Cover #	p	Dead Load Deflection with const. stiff.	Beam Size	Cover #	e	Dead Load Deflection		a	b		c	g	h	i	j	k	l	m	n	p				
										With Const. St.															Without Const. St.			
5-17' 0"	4'-5" 0"	Reg.	21WF62	62 1/2	32' 0"	3' 2 3/8"	1"	15 1/8"	31WF62	62 1/2	31' 0"	3' 2 3/8"	2"	1 1/2"	=	7'-0"	7'-0"	4	0	7	7"	7	9"	6	11"	5	15"	5

MK	SIZE	LENGTH	PIN DIA.	LENGTH OF SPAN		BENDING DIAGRAM	
				NUMBER REQUIRED EACH SPAN		Symm about	
S1	6	29'-8"	3"				
S1A	6	30'-6"	3"				
S2	6	31'-1"	2 1/2"				
S3	4	5'-3"	2 1/2"				
S3	4	5'-7"	2 1/2"				
S3	4	5'-10"	2 1/2"				
S4	5	4'-7"	1 1/2"				
S5	4	4'-5"	1 1/2"				
S5	4	4'-5"	1 1/2"				
S3A	4	5'-7"	2 1/2"				
PO1	6	3'-3"	2 1/2"				
PO2	3	3'-1"	1 1/2"				

For Type C Bridge Rail only.  
 For Type A Bridge Rail only.

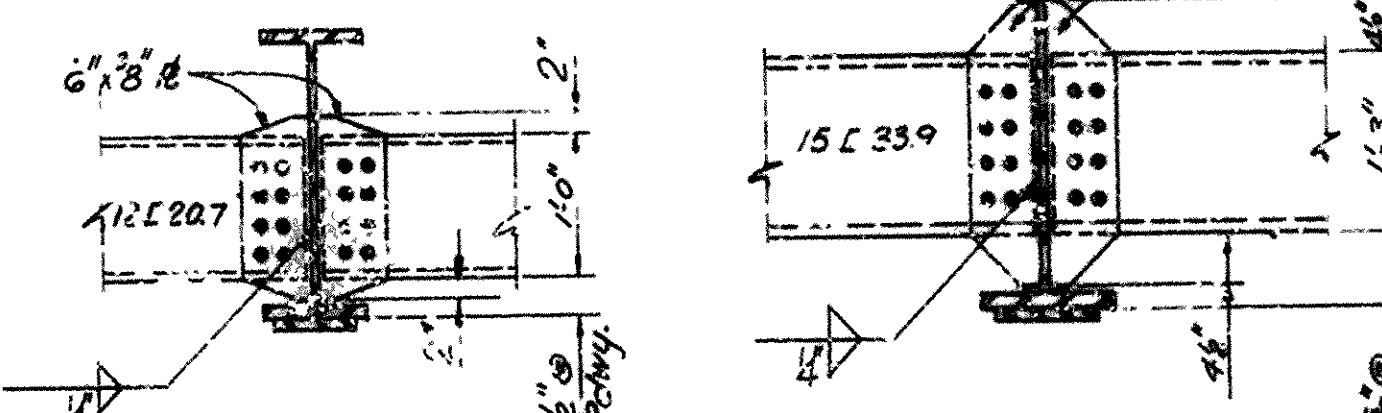


NOTE: Stud shear connectors, granular flux filled, solid fluxed, or equal may be used in place of the channels shown at the following ratios: 3/4" diameter stud in place of 1.82 inches of channel, 7/8" diameter stud in place of 2.52 inches of channel. The studs shall be 4" long and automatically end welded to the beam flanges in accordance with recommendations of the manufacturer.

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

This drawing to be used with Drawing 14990D.

LOADING: H20



**DIAPHRAGM DETAIL FOR 30WF thru 36WF**  
 $\frac{3}{4}" = 1'-0"$

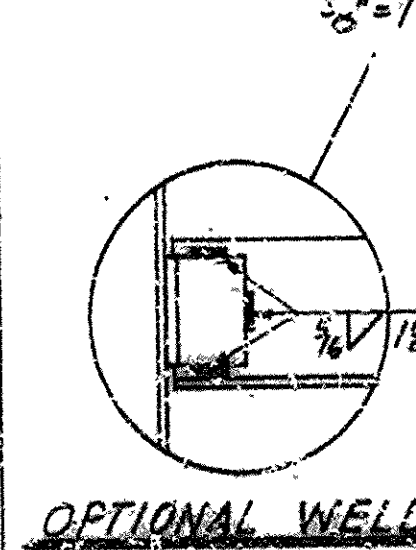
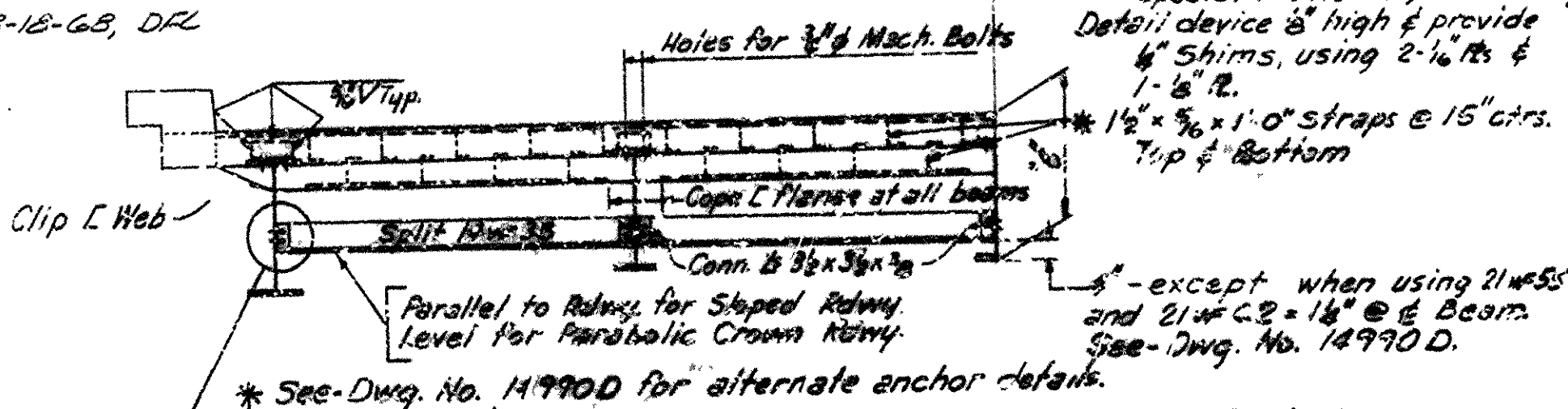
1. Dead Load: (Type A Rail)	Interior Beam		Exterior Beam	
	a. To WF Beam (Without Const. Jt.)	52#/' + 1.15(wt/ft of WF)	60#/' + 1.15(wt/ft of WF)	60#/' + 1.15(wt/ft of WF)
	(With Const. Jt.)	52#/' + 1.15(wt/ft of WF)	45#/' + 1.15(wt/ft of WF)	45#/' + 1.15(wt/ft of WF)
b. To Composite Beam (Without Const. Jt.)	105#/'	158#/'	158#/'	158#/'
(With Const. Jt.)	161#/'	241#/'	241#/'	241#/'
2. Live Load: (Type C Rail)				
a. To WF Beam (Without Const. Jt.)	52#/' + 1.15(wt/ft of WF)	700#/' + 1.15(wt/ft of WF)	45#/' + 1.15(wt/ft of WF)	45#/' + 1.15(wt/ft of WF)
(With Const. Jt.)	52#/' + 1.15(wt/ft of WF)	45#/' + 1.15(wt/ft of WF)	45#/' + 1.15(wt/ft of WF)	45#/' + 1.15(wt/ft of WF)
b. To Composite Beam (Without Const. Jt.)	79#/'	114#/'	114#/'	114#/'
(With Const. Jt.)	162#/'	213#/'	213#/'	213#/'
2. Live Load: (Type C Rail)				
a. To Each Composite Beam	1.156 Wheels	1.156 Wheels	1.156 Wheels	1.156 Wheels
	Impact	Impact	Impact	Impact

**DETAILS OF STANDARD 35'-90' COMPOSITE I-BEAM SPANS**  
 28'-0" CLEAR RDWY. 0'-6" CURBS  
 1/2" PARABOLIC CROWN  
 OR  
 0.0104 % SLOPED RDWY.

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

BRIDGE NO. 5217  
 DRAWING NO. 15798

Added 3-18-68, DFL  
 C.F.M.M.



Cover Plate Welding Note  
 Max. thickness of part under 3/4" = 1/2"  
 Max. thickness of part 3/4" to 1 1/2" = 3/4"

L.P. Carlson  
 DESIGN ENGINEER

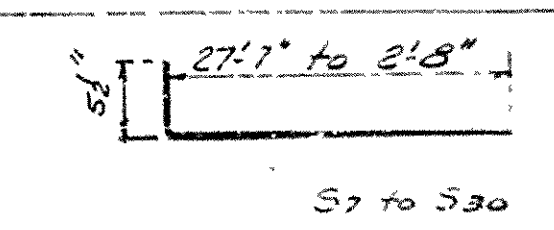


FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.				
JOB NO.		10697	16	60	

BAR LIST

BAR	SIZE	NO.	LENGTH	PIN DIA.
S1	6	23	29'-8"	5th
S1A	6	23	30'-6"	24
S2	6	24	31'-1"	26
S3	4	144	23'-1"	5th
S4	5	142	4'-7"	13
S5	4	72	4'-5"	16
S6	4	4	33'-10"	5th
S7	6	200	4'-0"	24
S30	6	200	3'-1"	24
S7A	6	200	27'-7"	5th
S30A	6	200	2'-8"	5th
R1	6	84	3'-3"	24
R2	3	56	3'-1"	16
S30B	6	4	2'-8"	5th

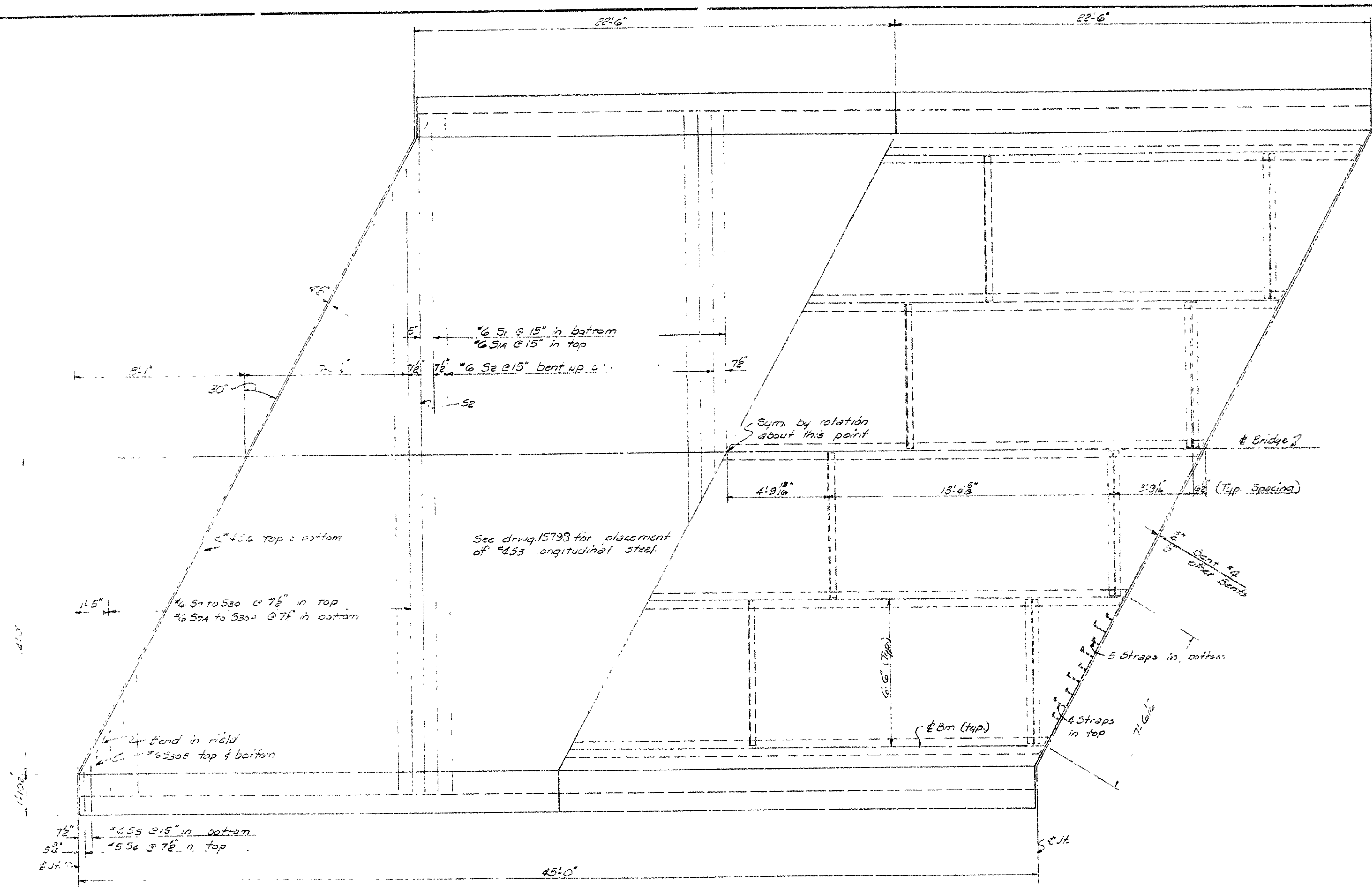
BENDING DIAGRAM



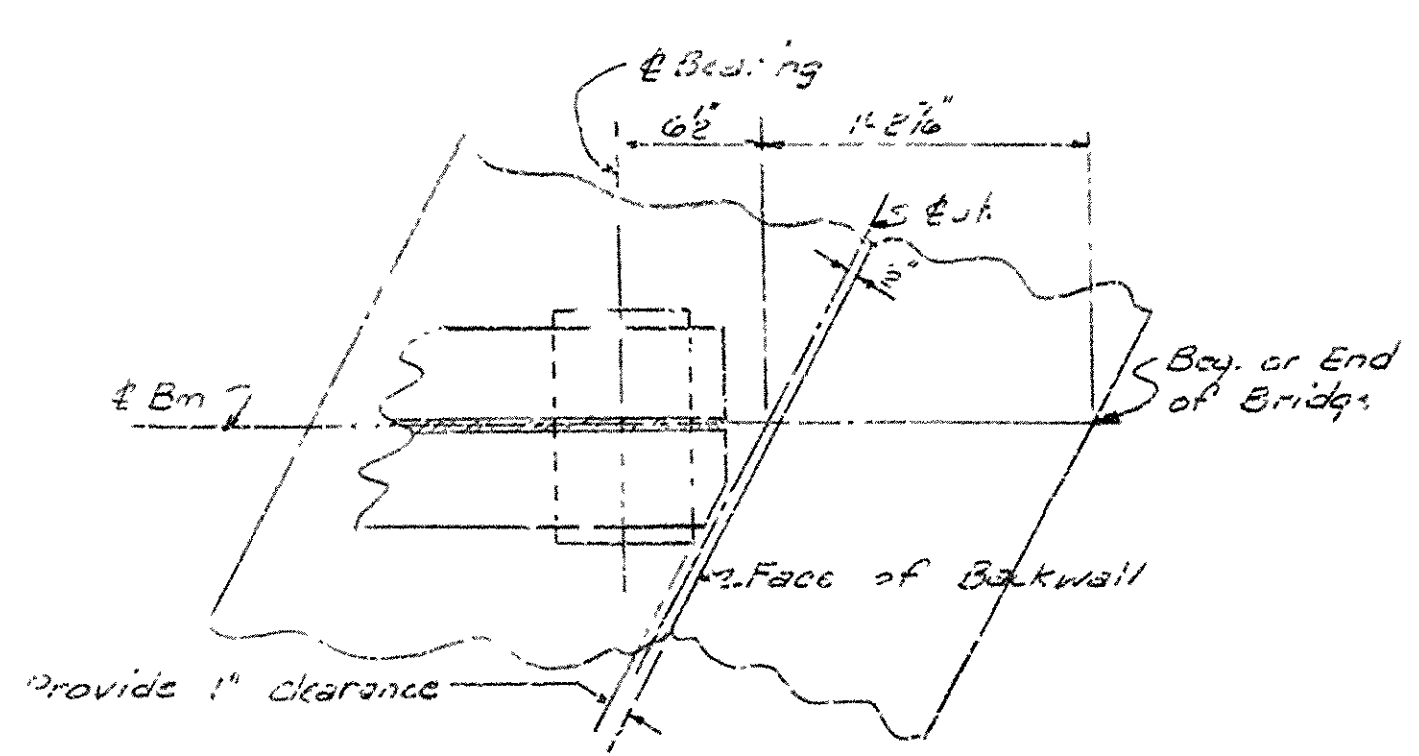
For additional bending diagrams see drwg. no. 15798.

\* Non-Reg

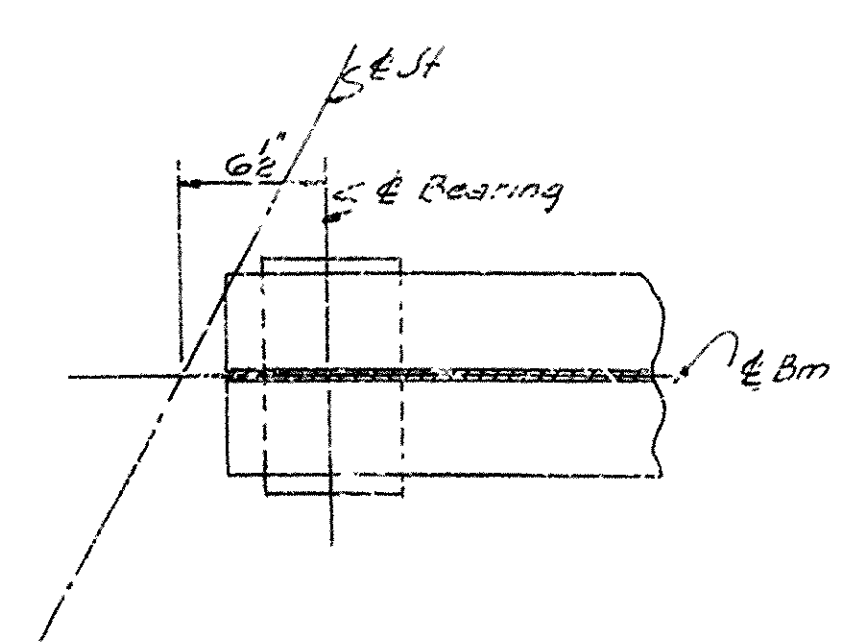
For details not shown and general notes see drwgs. 14590D and 15798.



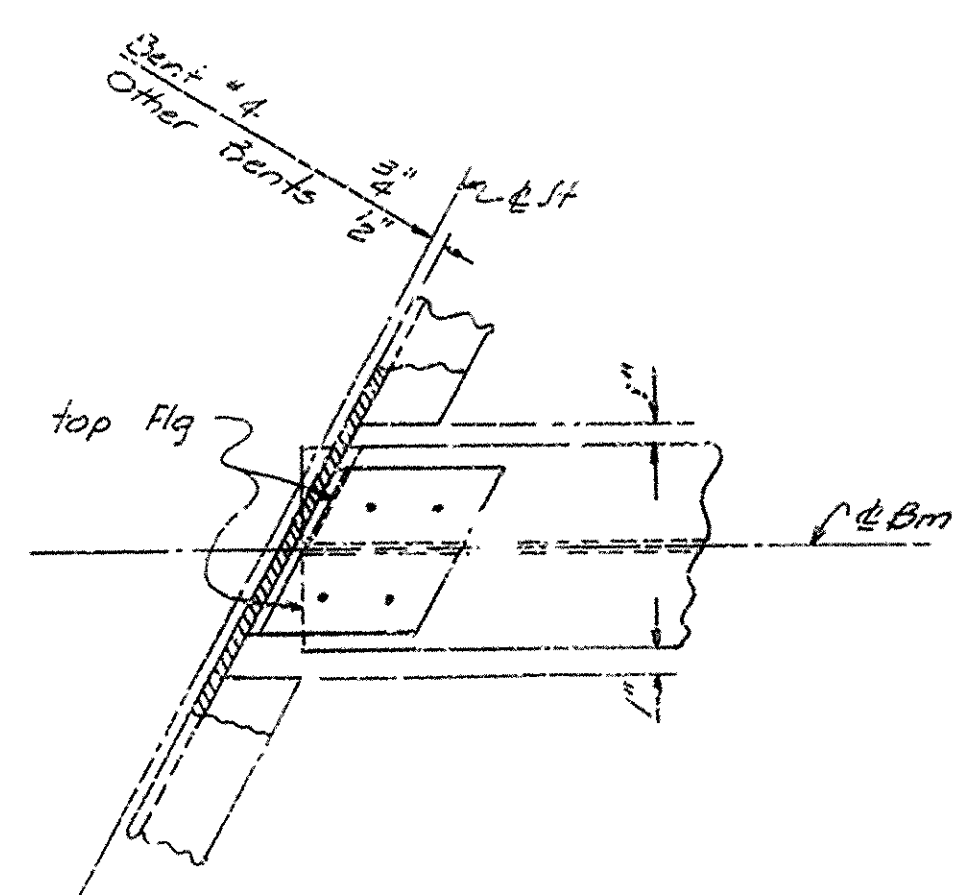
PLAN



PLAN OF BEARING FOR END BENTS  
Scale: 1/2" = 1'-0"



PLAN OF BEARING FOR INT. BENTS  
Scale: 1/2" = 1'-0"



DETAILS OF CHANNEL CONNECTION  
Scale: 1/2" = 1'-0"

DETAILS OF SPANS  
COOPER CREEK  
STRAWBERRY RIVER - SMITHVILLE  
LAWRENCE COUNTY  
ROUTE 115 SEC. 2  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: DFL DATE: 3-15-68  
TRACED BY: DATE: 3-19-68  
CHECKED BY: DV DATE: 3-19-68  
SCALE: 3/8" = 1'-0"  
BRIDGE NO. 5217 DRAWING NO. 15799  
L. P. Carlson  
BRIDGE ENGINEER

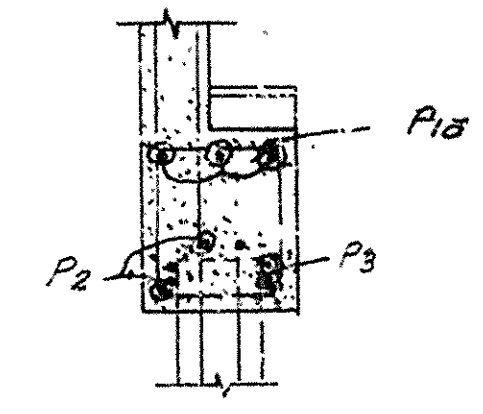
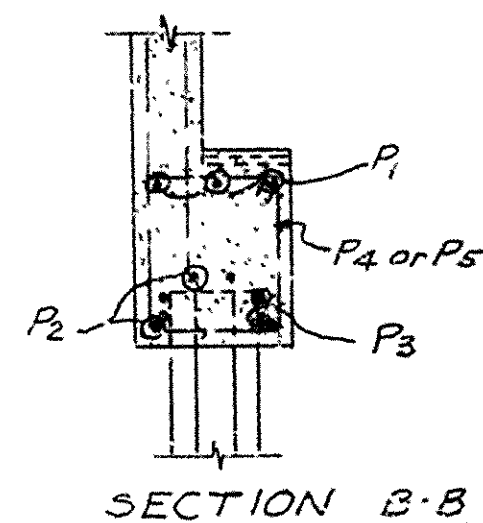
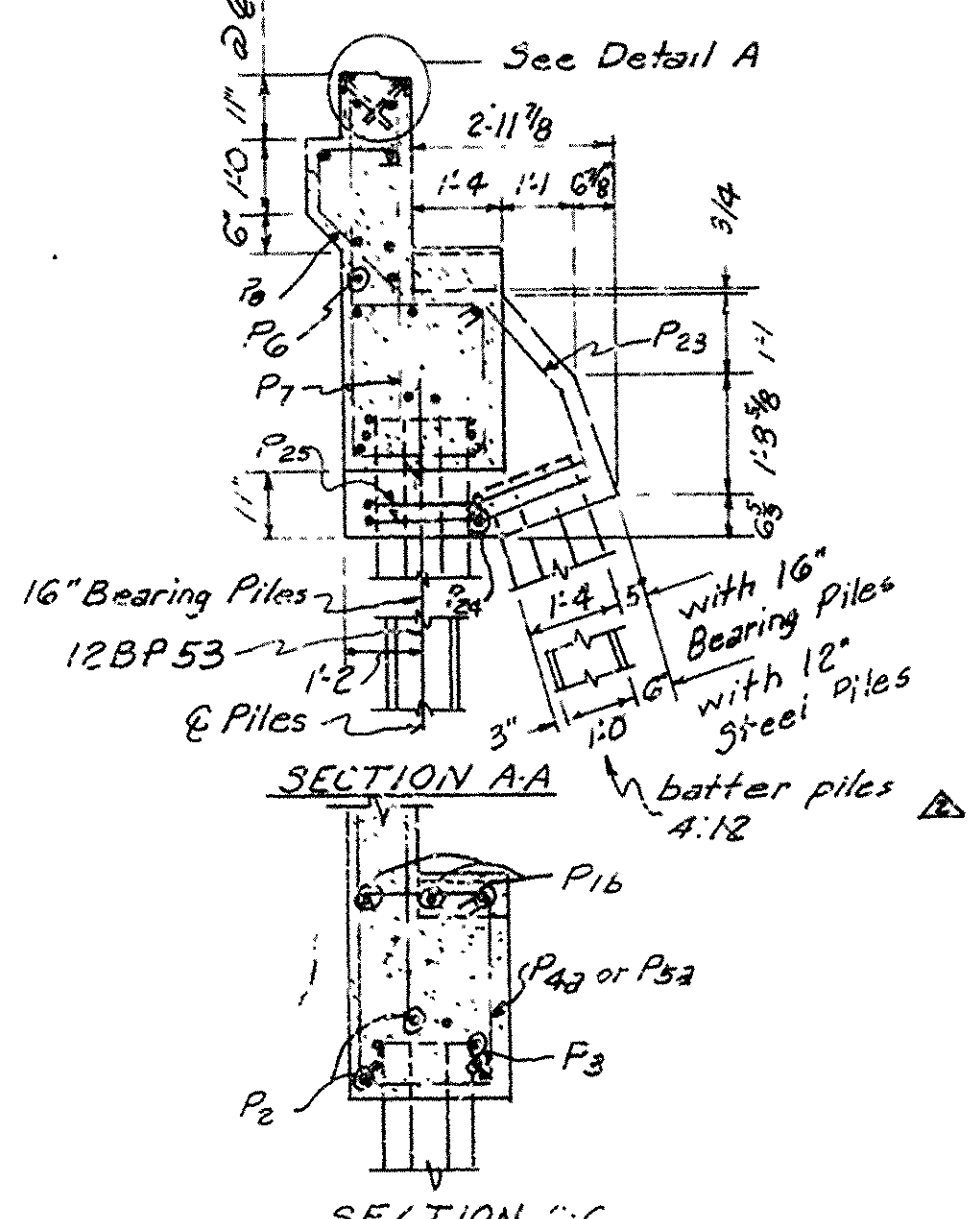
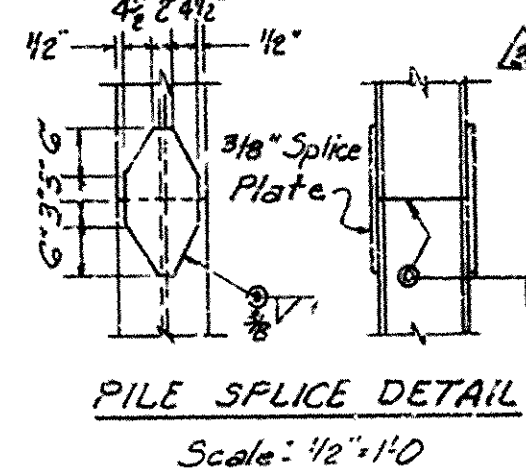
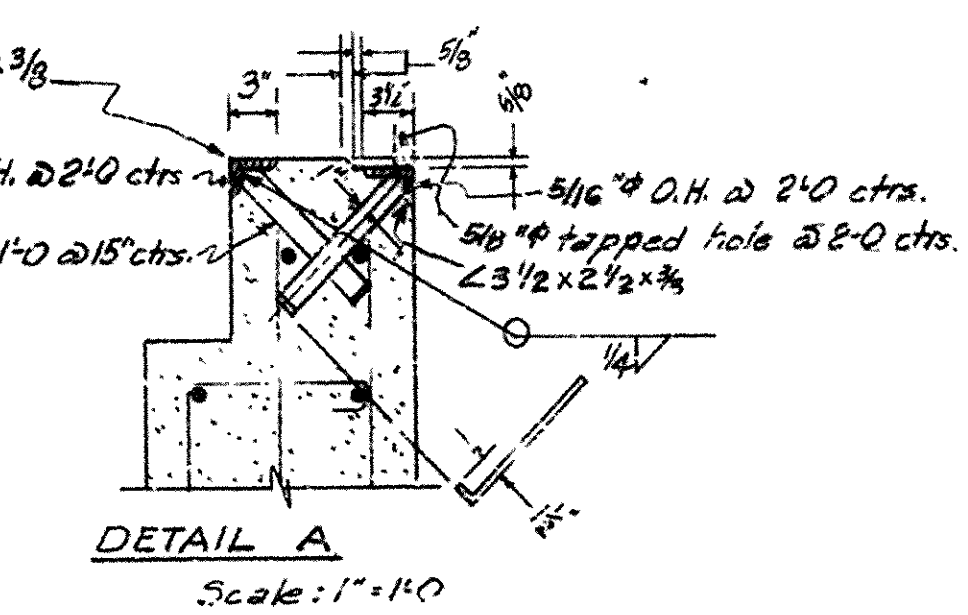
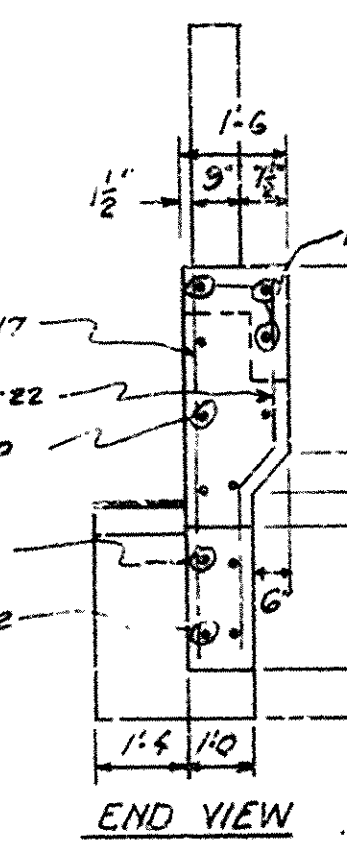
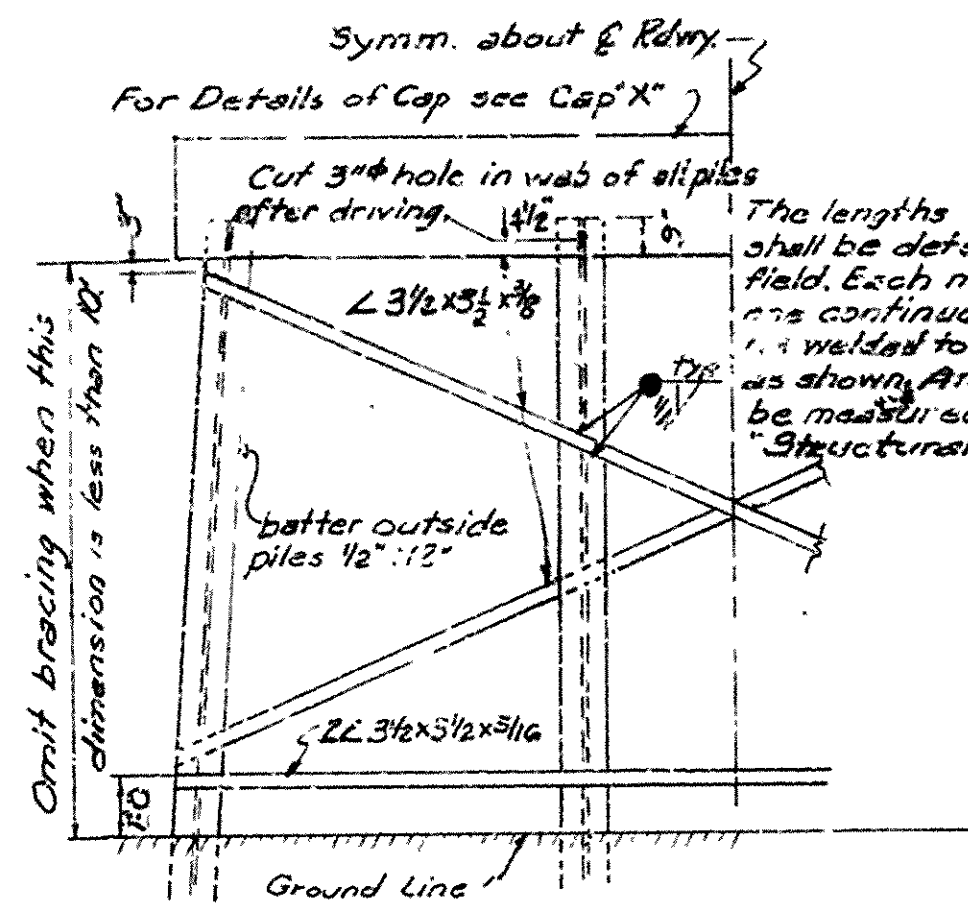
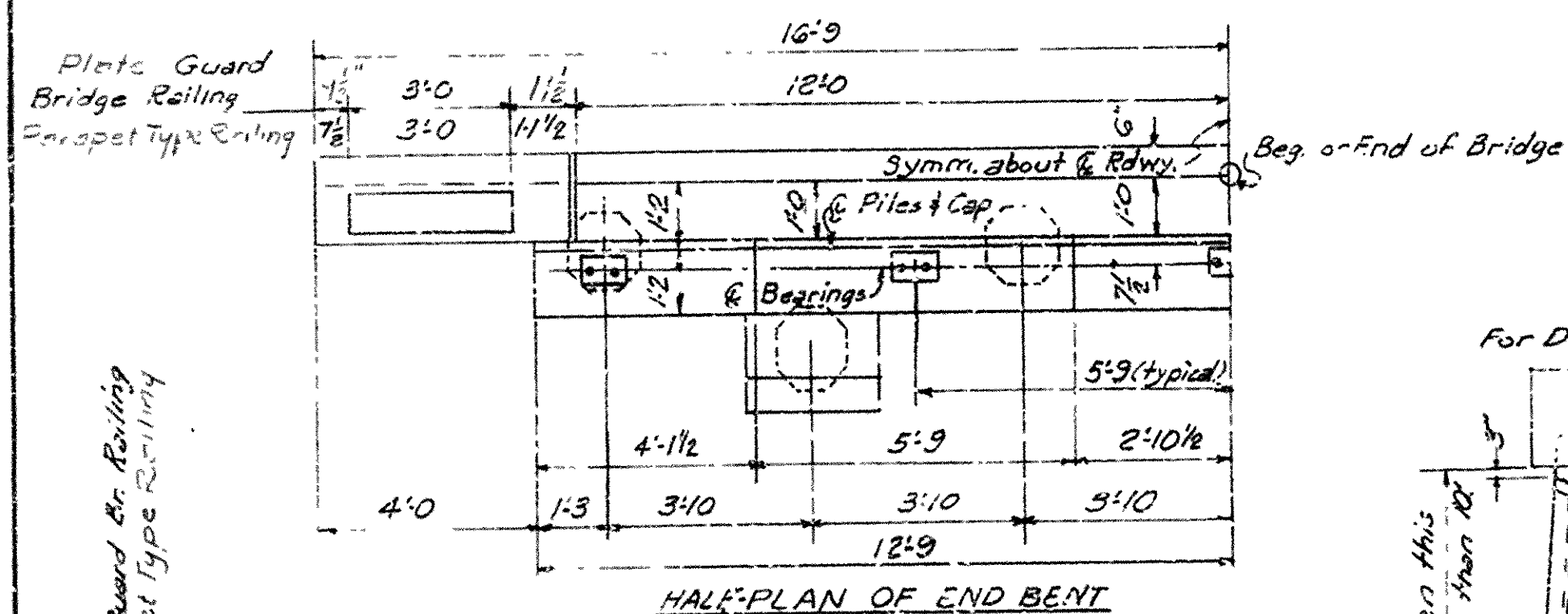












SPAN		END SPAN BEAMS		VARIABLES			
LENGTH	INTERIOR	EXTERIOR	a	b	c	d	
35'-45'	21W62	21W62	1"	2 1/4"	2'-5 1/8"	—	
		24W76	3 1/8"	5 1/8"		4"	
		27W94	6 3/4"	8"		7"	
		30W108	9 3/4"	11"		10"	
		33W130	12 1/2"	14 1/8"		13"	
35'-45'	21W62	36W150	15 1/2"	16 1/2"	2'-5 1/8"	16"	
46'-53'	24W76	24W76	1"	5 1/2"	2'-7 1/8"	—	
		27W94	3 1/8"	8"		4"	
		30W108	6 1/2"	11"		7"	
		33W130	10 1/2"	14 1/8"		10"	
46'-53'	24W76	36W150	12 1/2"	16 1/2"	2'-7 1/8"	13"	
54'-60'	27W94	27W94	1"	8"	2'-10 1/8"	—	
		30W108	4"	11"		4"	
		33W130	7 1/8"	14 1/8"		7"	
54'-60'	27W94	36W150	5 1/2"	16 1/2"	2'-10 1/8"	10"	
65'	30W108	30W108	1"	11"	2'-1 1/8"	—	
		33W130	4 1/8"	14 1/8"	3'-1 1/8"	7"	
65'	30W108	36W150	6 1/2"	16 1/2"	3'-1 1/8"	7"	
75'	33W130	33W130	1"	14 1/8"	3'-5"	—	
75'	33W130	36W150	3 1/2"	16 1/2"	3'-5"	4"	

NOTE

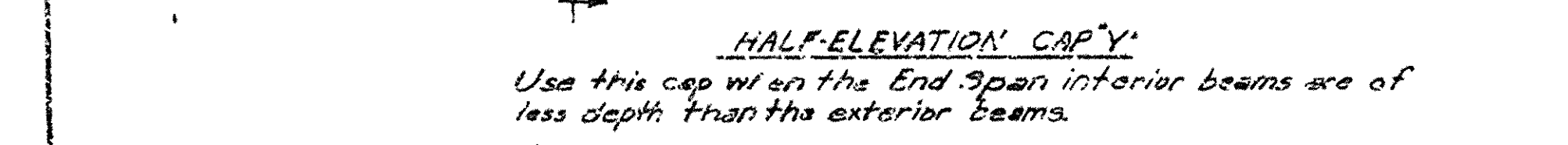
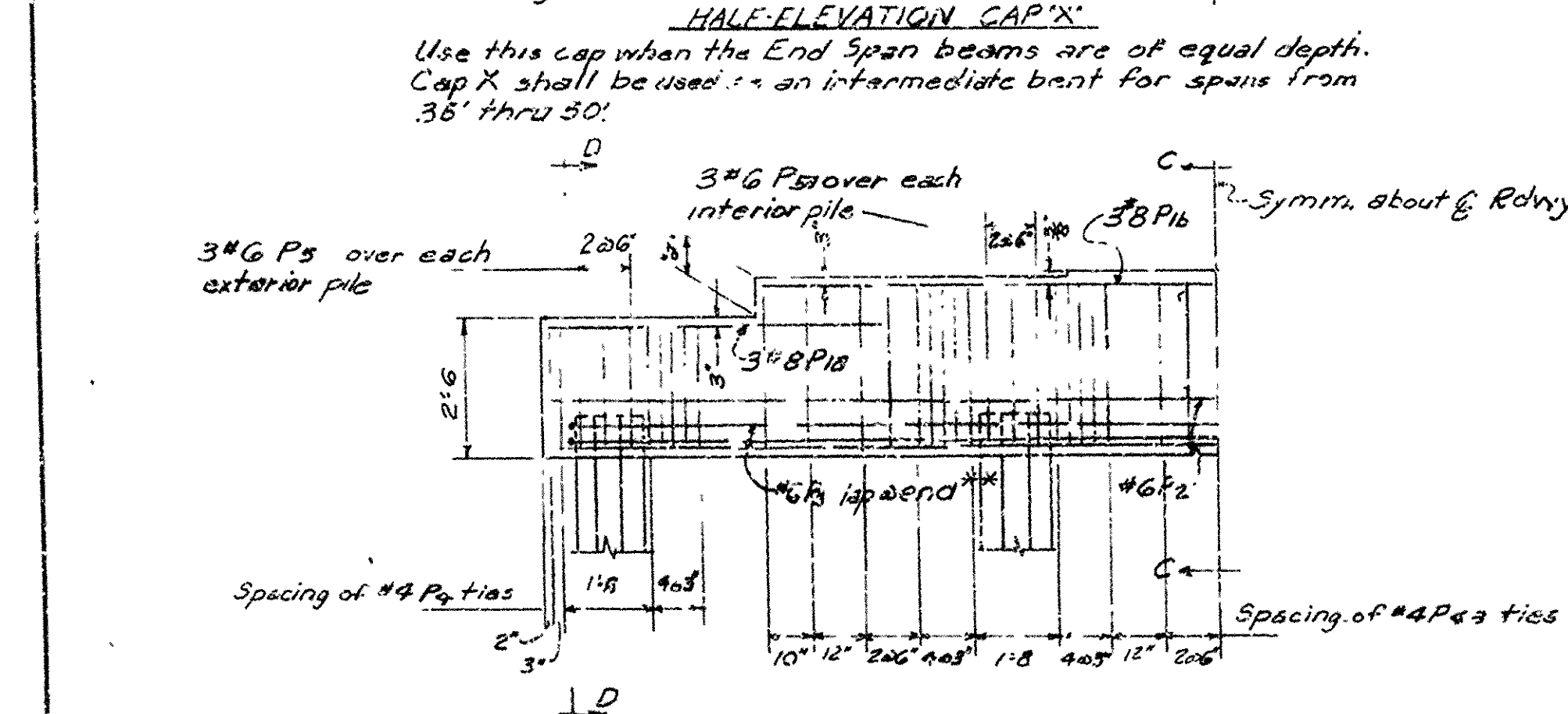
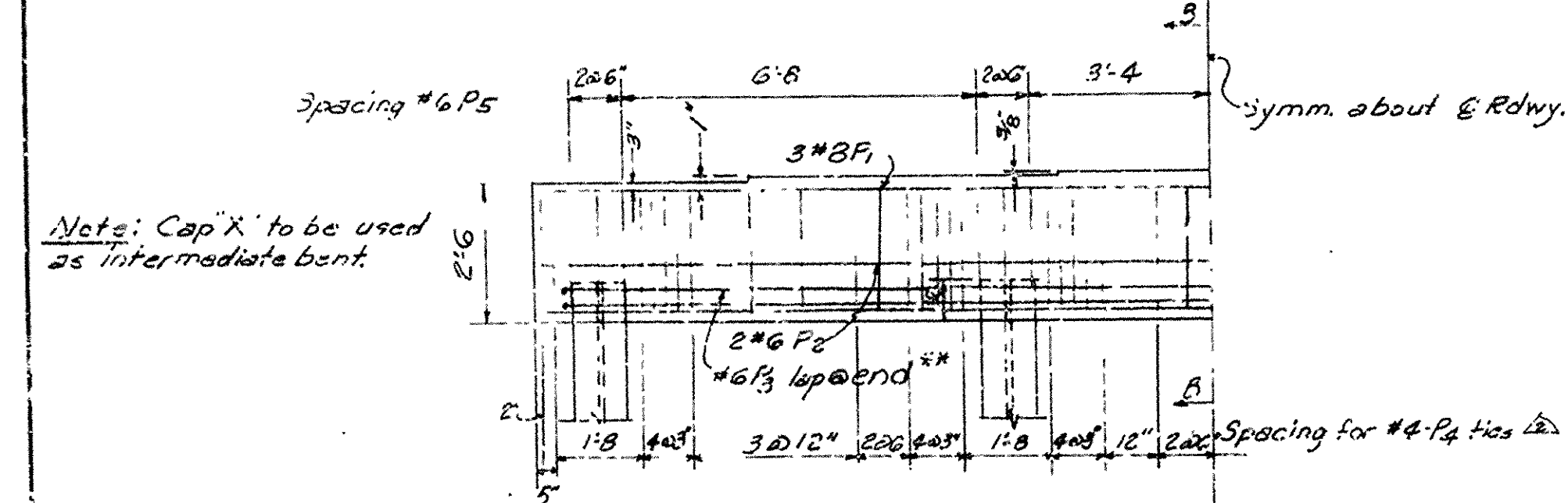
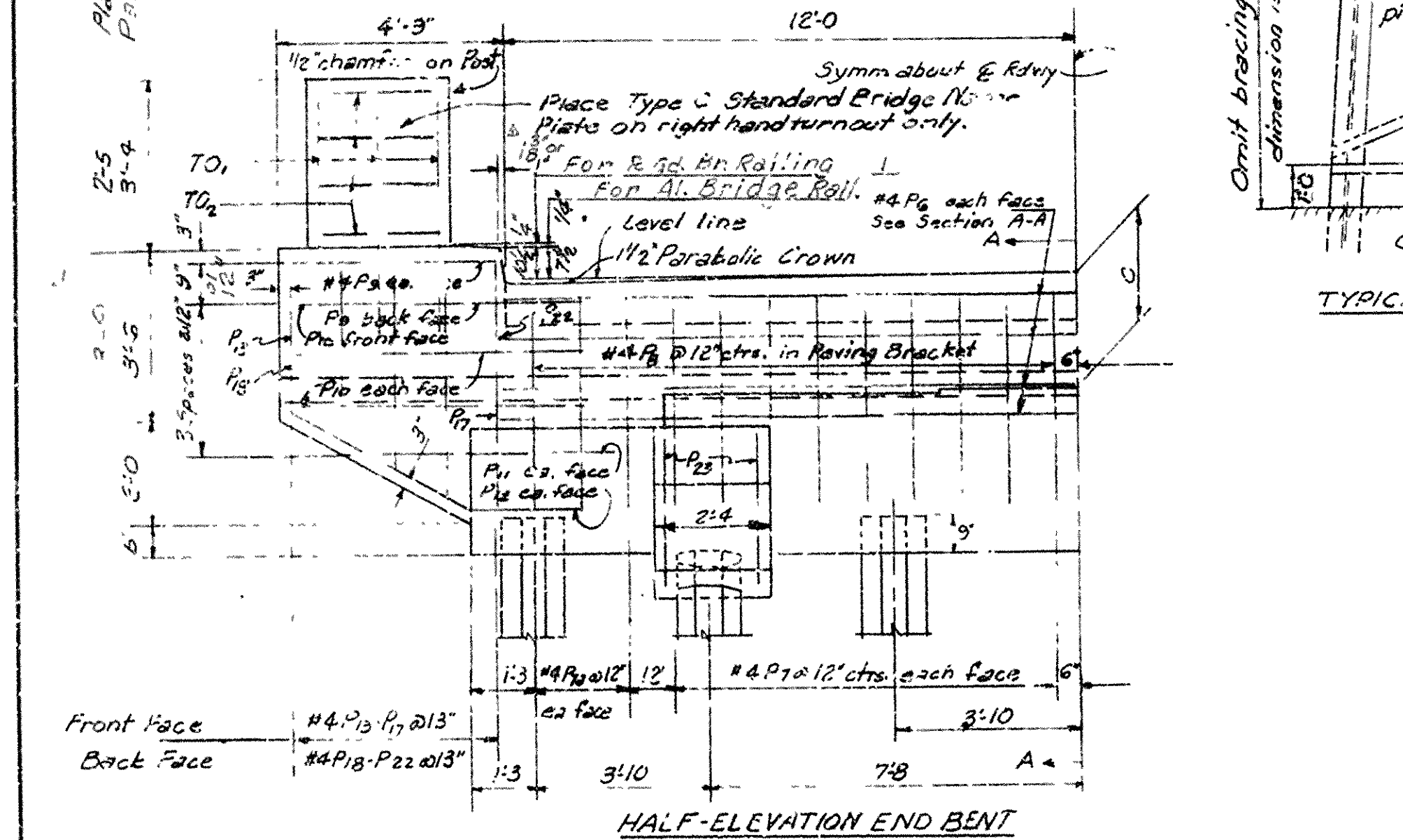
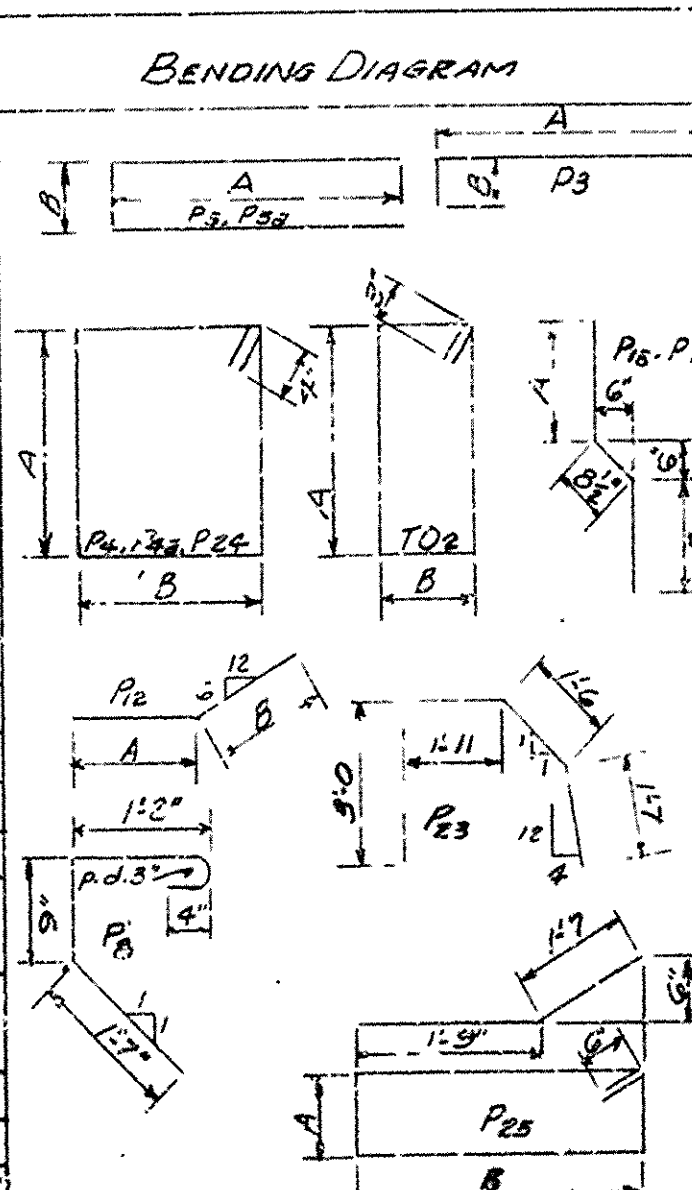
All Concrete to be Class 3. All exposed corners to have 34" chamfer unless otherwise noted.

All piling shall be driven to a minimum capacity of 36 tons per pile. Piling shall be either 12 DP53, 16" Octagonal Precast Concrete Piles, or Concrete Filled Metal Shell Piles as shown on Layout.

Intermediate Bents not to be used for spans over 50'

- △ Revis. on. Raised curb height to 12 for State and Bridge Rwyng. OK'd. CEV 3-29-61
- △ Changed spacing and added Pile Pz. added rate of pile batter. ERB 11-6-61
- △ Added pile splice note. JDB 2-22-62

*\*\* Revised Bar P3 : PNM 1-20-65*

[illegible]

DETAILS OF STANDARD PILE BENTS  
FOR 35' TO 75' COMPOSITE I-BEAM SPANS  
24' CLEAR ROADWAY 1'-0" OR 1'-1 1/2" CURBS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: E.R.B. DATE: 9/23/59 3/8" = 1'-0" E.S. 17-01-100

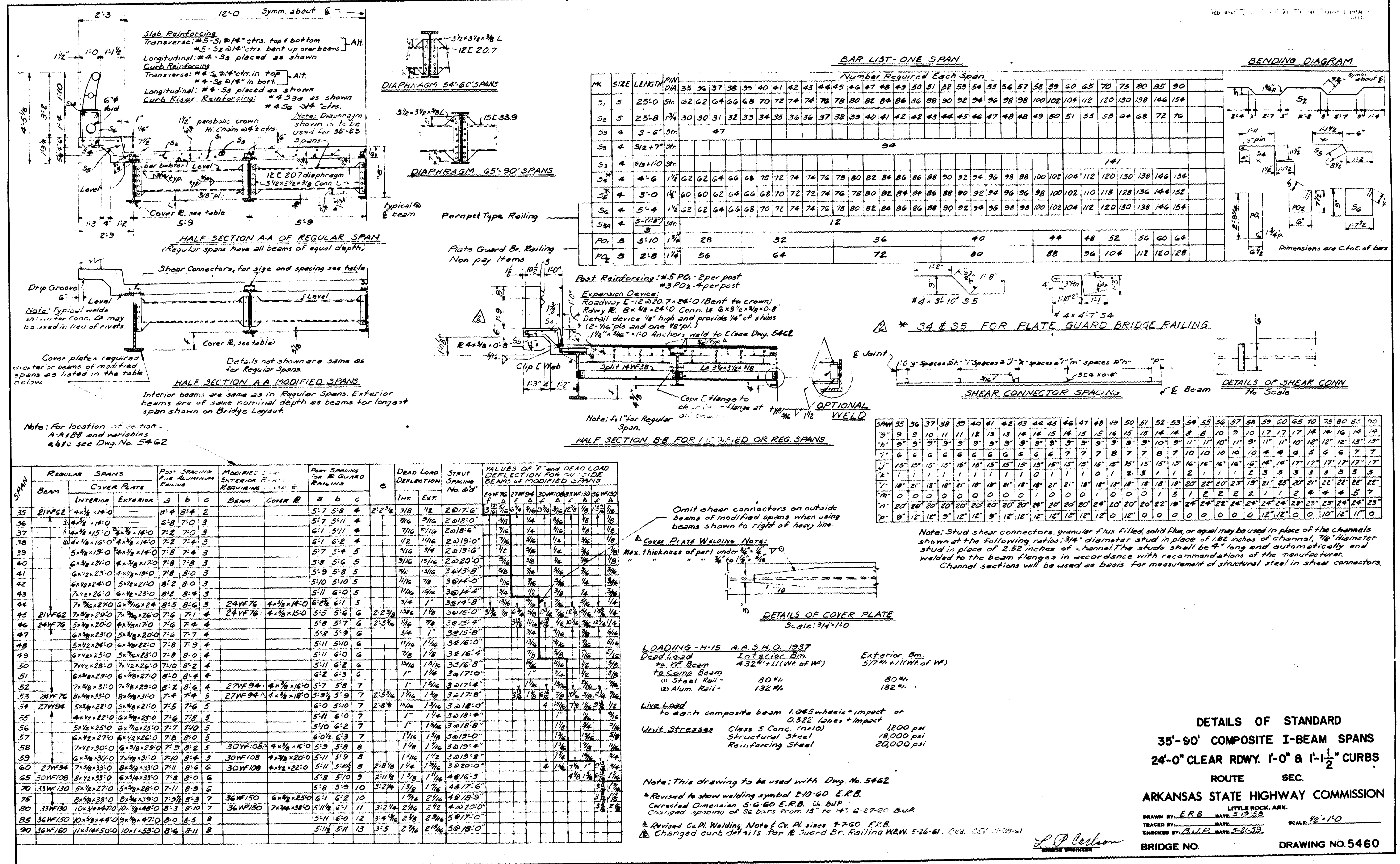
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CHECKED BY: L.F.I. DATE: 9/23/59

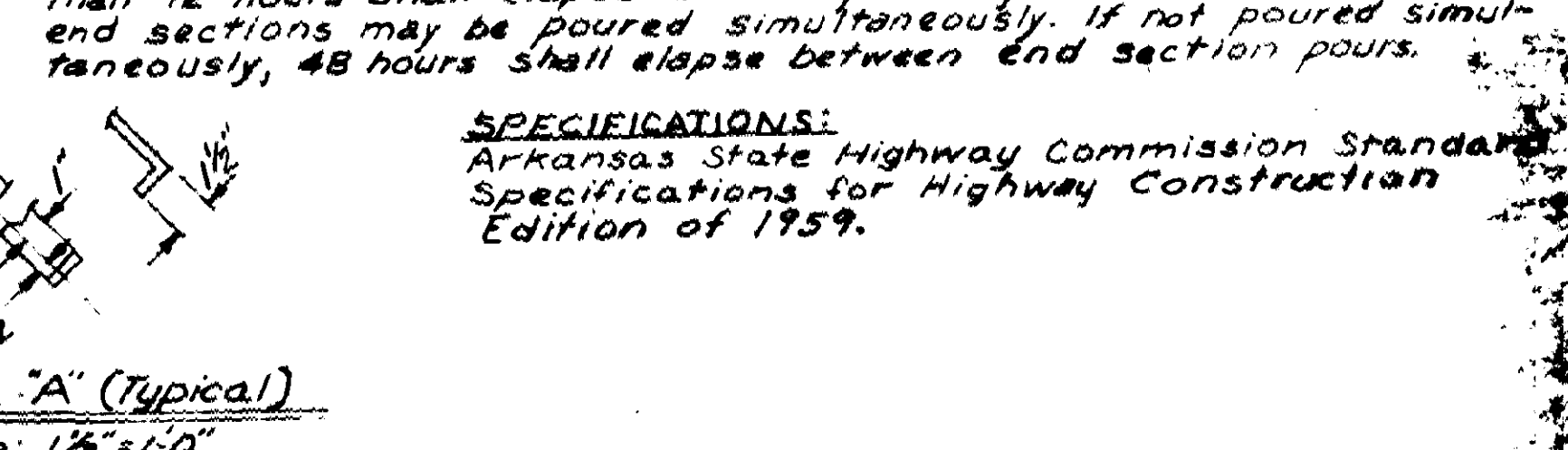
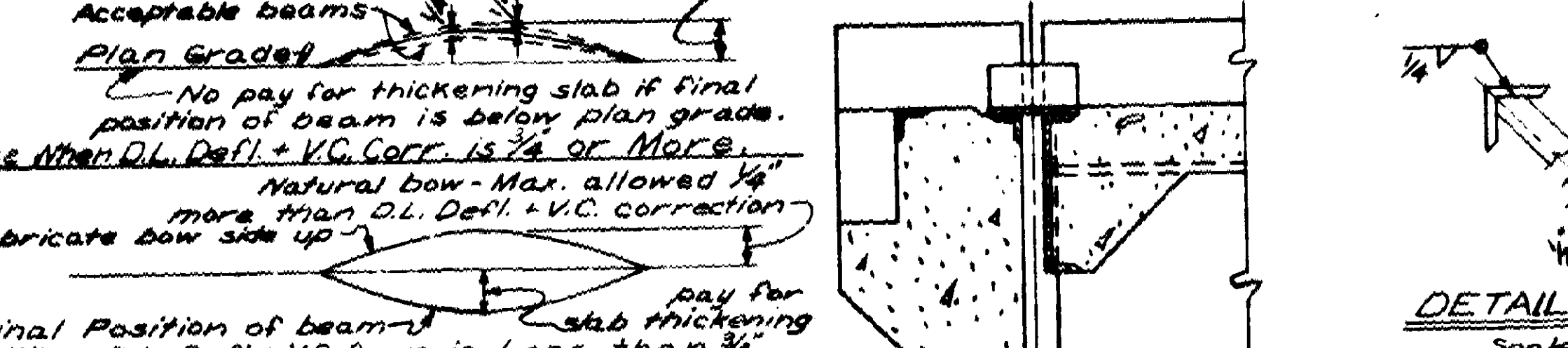
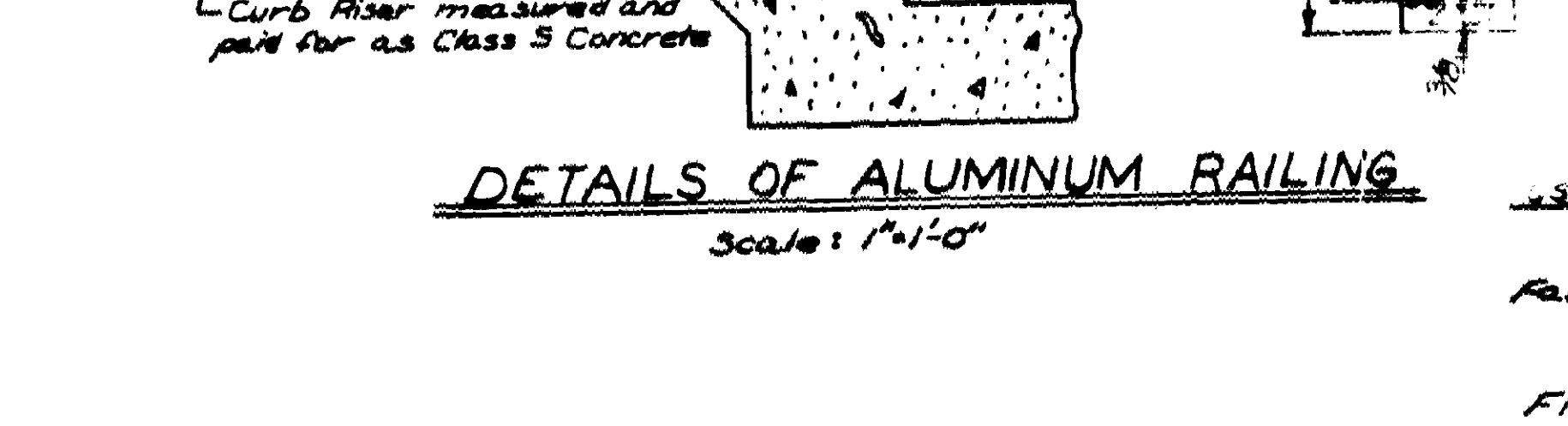
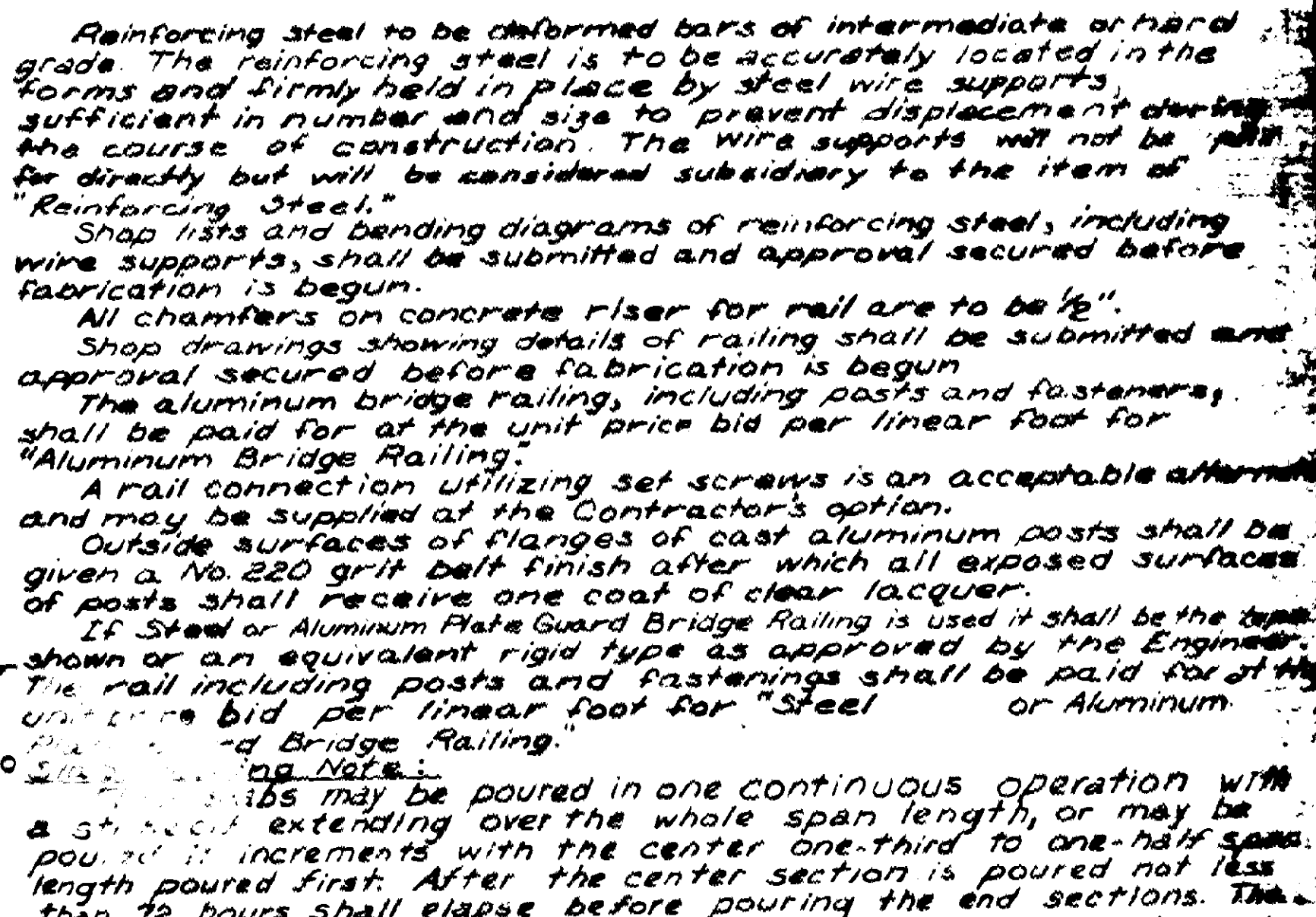
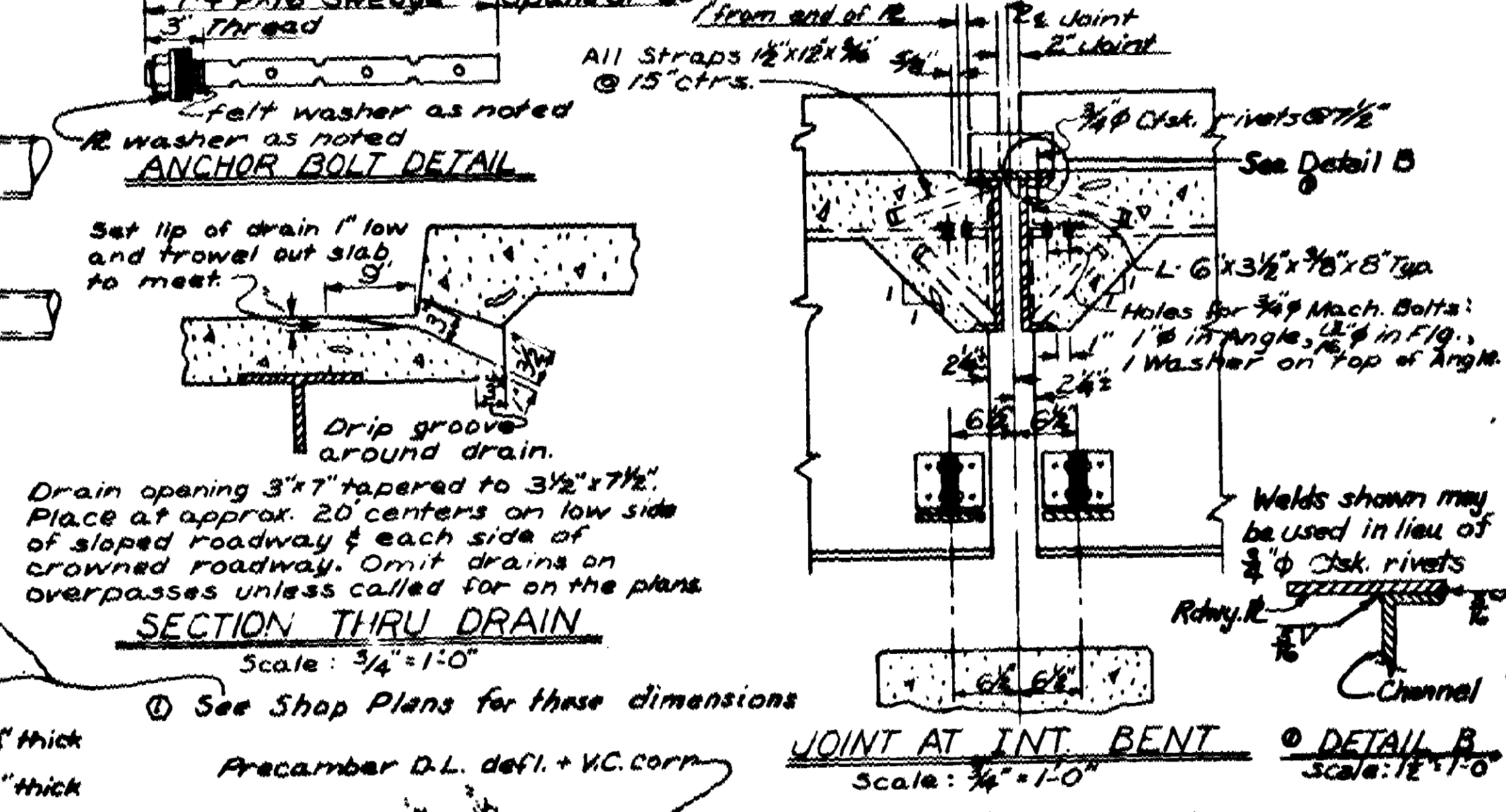
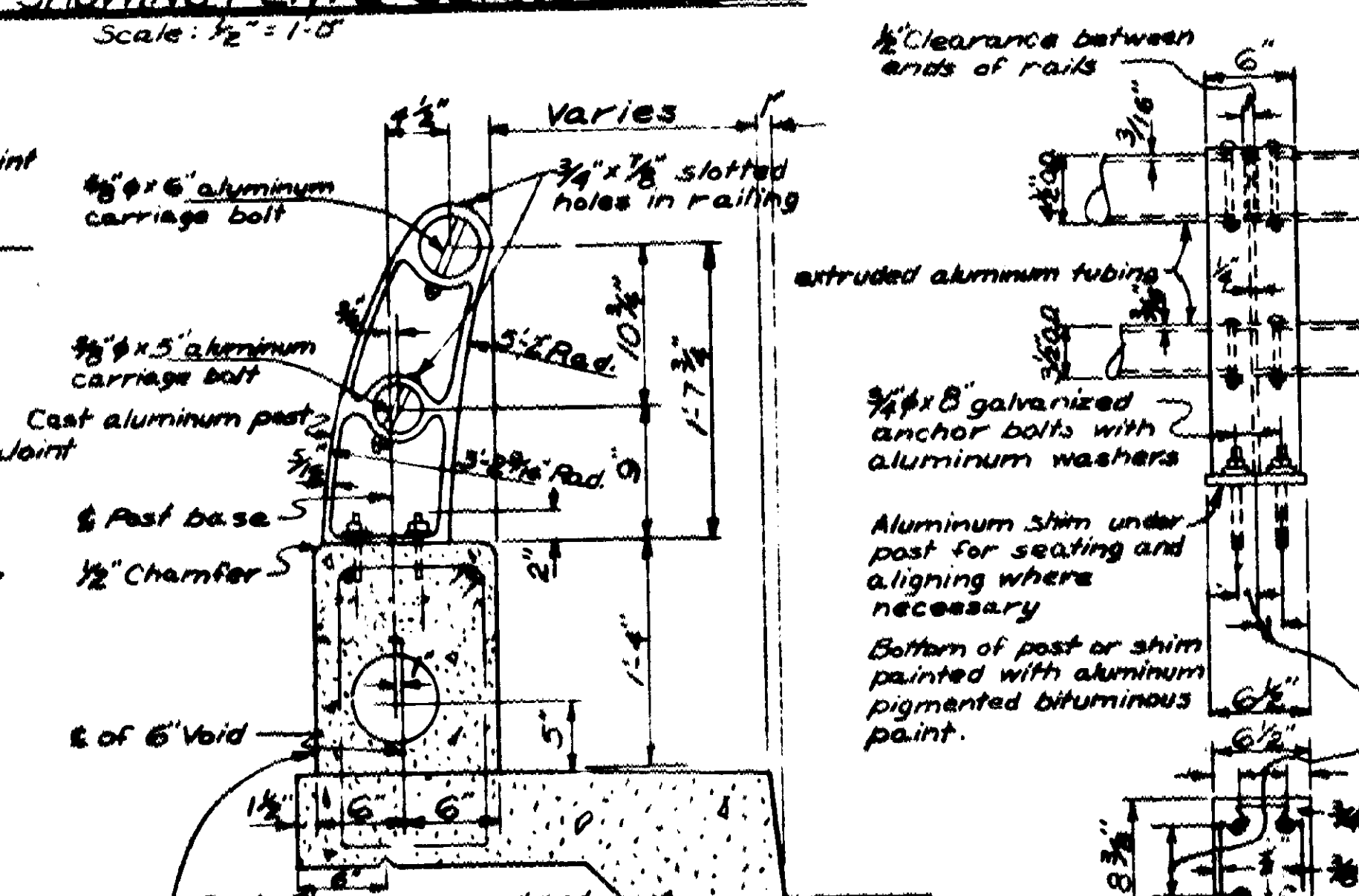
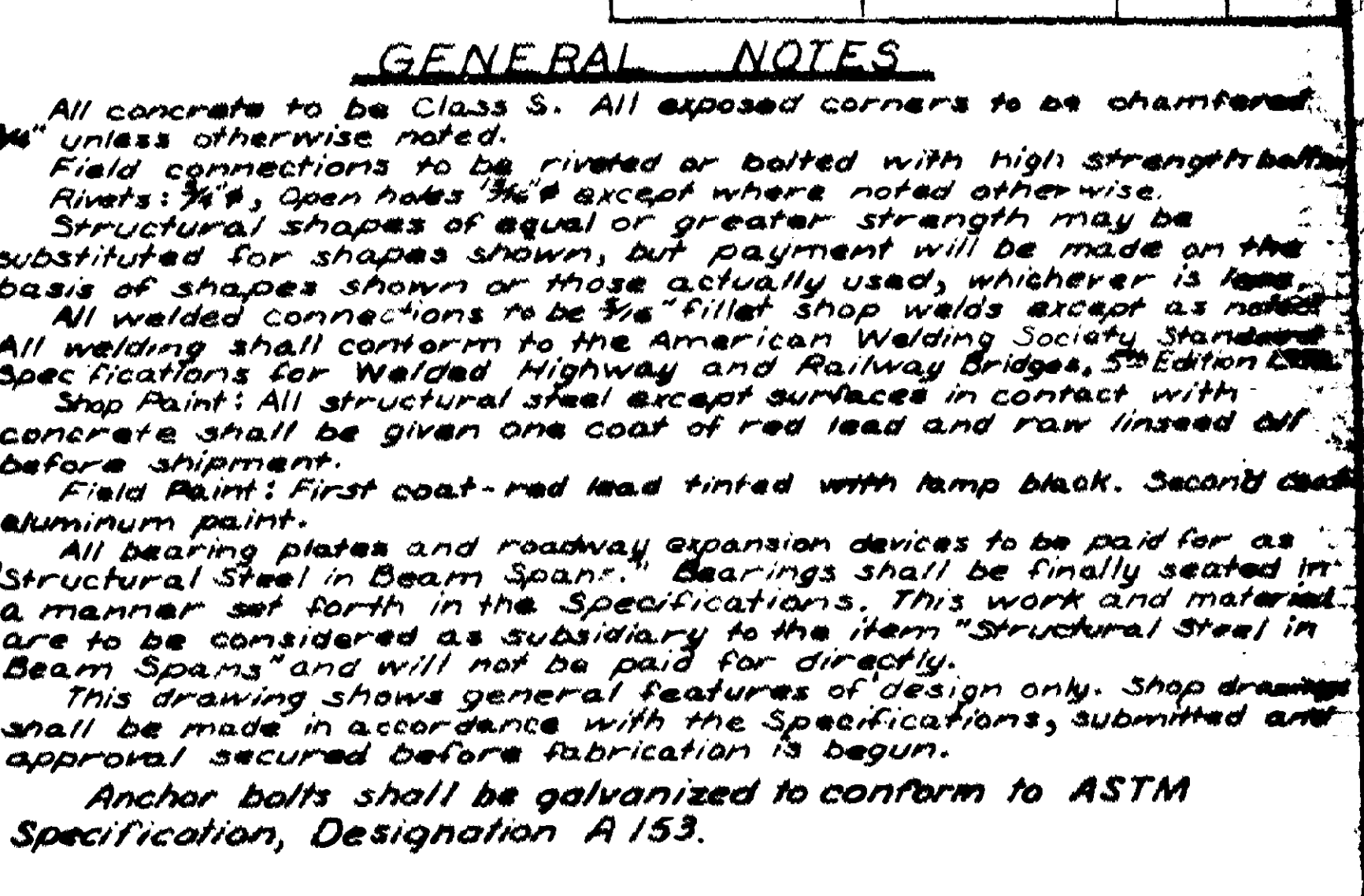
BRIDGE NO. DRAWING NO. 3480A

L. Q. Carlson

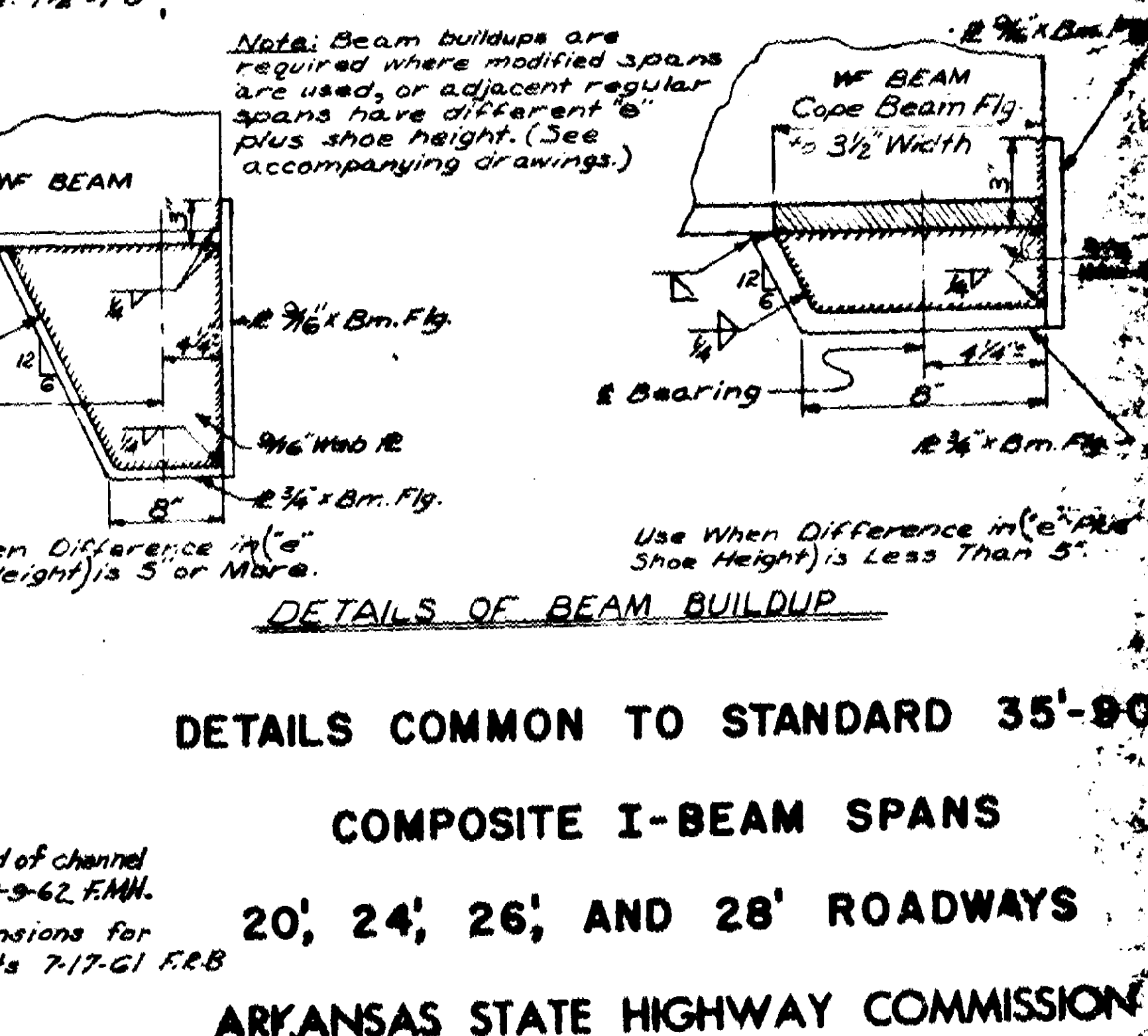
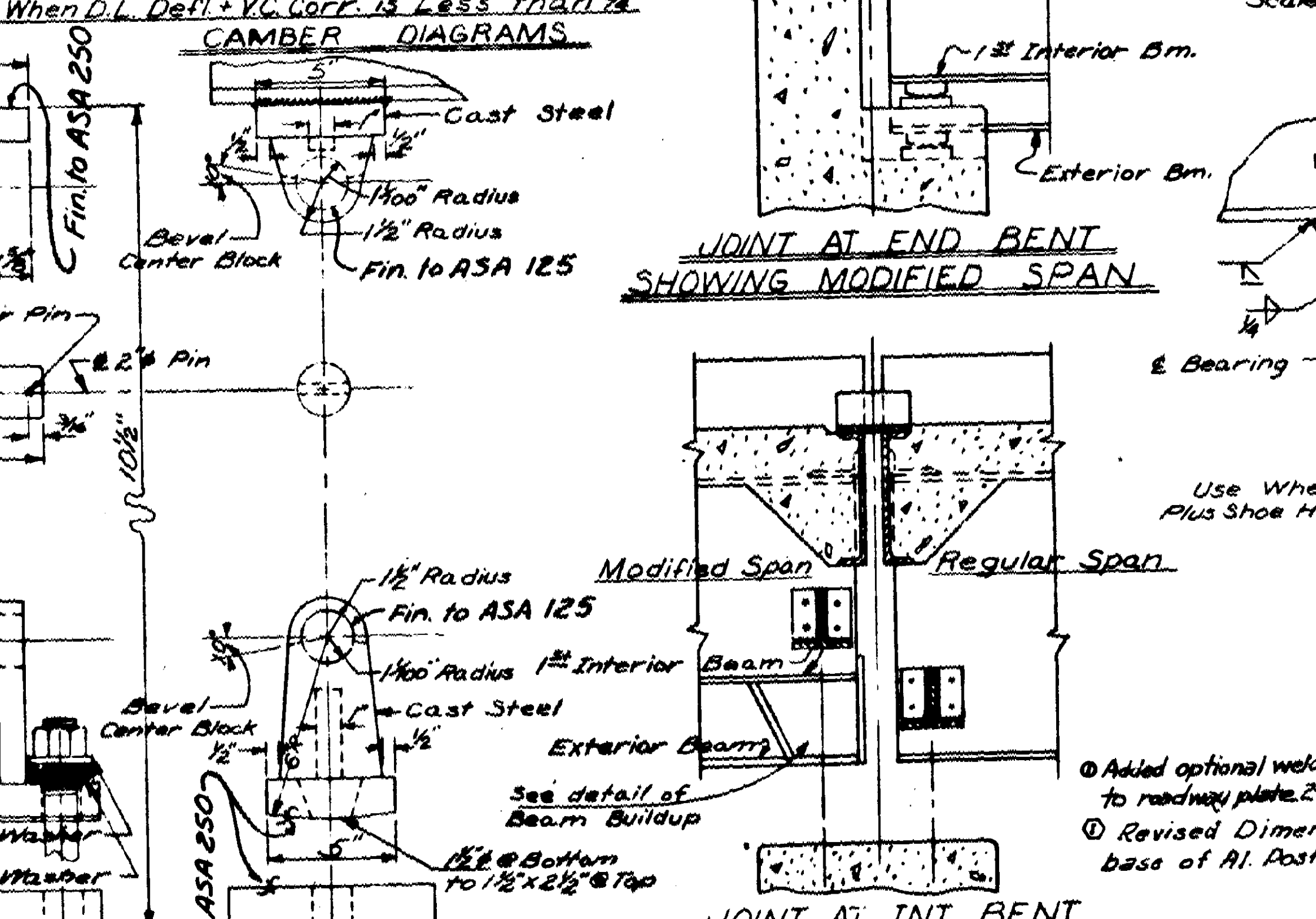








**Note:** If fixed shoe is made from welded plates all intersecting surfaces of 90° shall be joined by 1/4 inch fillet welds, all others shall be joined by 1/4 inch bead welds.




which ever is not the larger of the two, use the Intermediate Bent. See table of Plate Thickness on Layout or Intermediate Bent Drawing.

FIXED SHOE

TYPE 14 E

• PLAN VIEW



SHOWING MODIFIED AND REGULAR SPAN  
 Revised A-1 E&D Br. Rail Thickness 6'-6" TD  
 Revised B-am Building 2'-1-6" B.U.P.  
 Revised Yards 12-16.55 E.R.B.  
 Revised Shoe Dimensions 1-12-60 B.U.P.  
 Revised Slab Pouring Note 6-2-60 C.E.H.  
 Revised General Notes

EXPANSION SHOE  
 Note Added: 6-23-60 C.E.H.

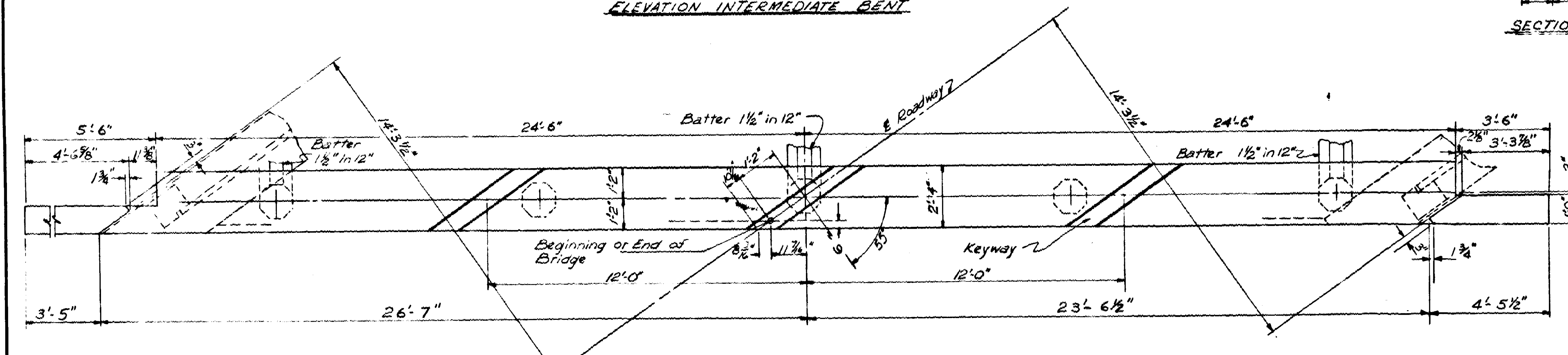
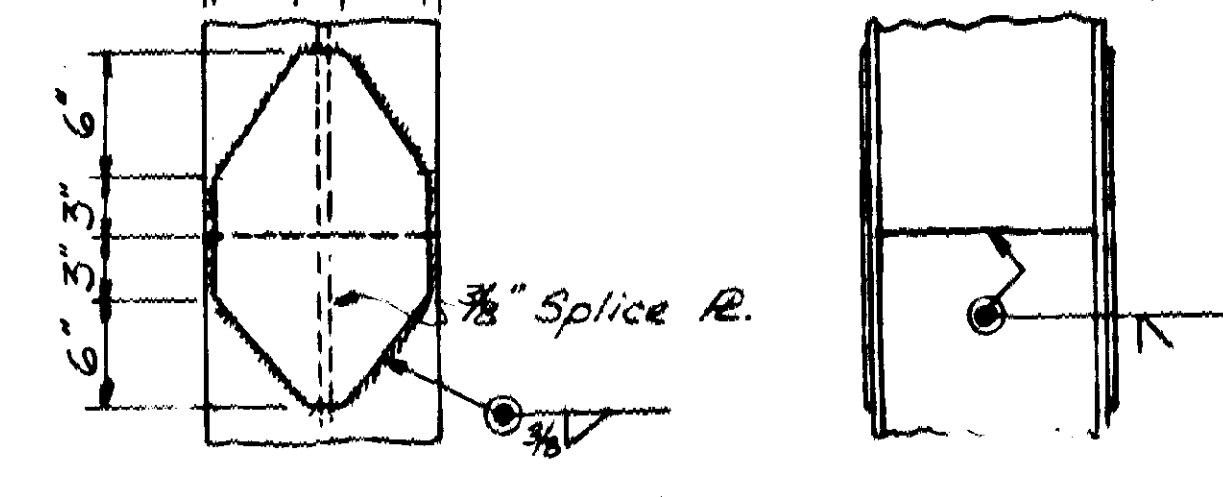
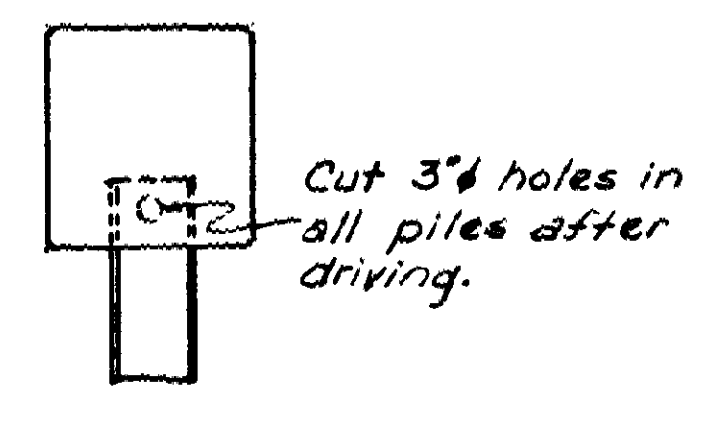
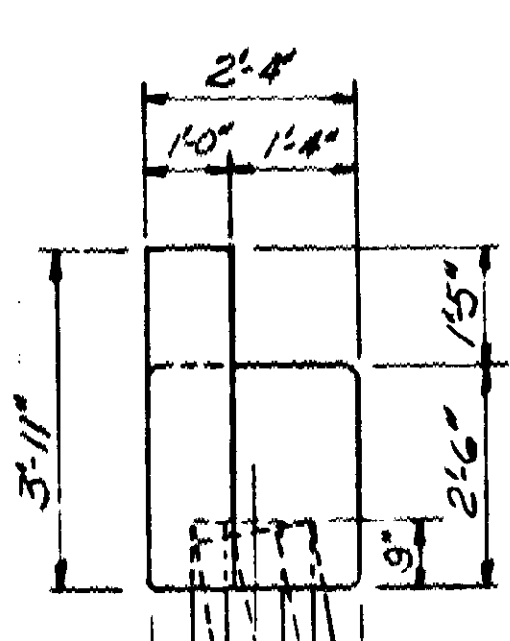
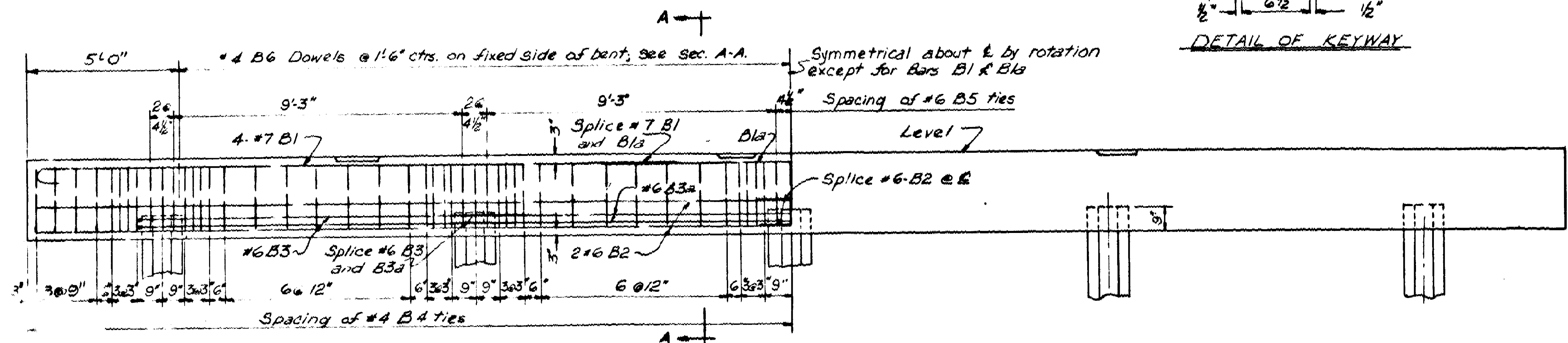
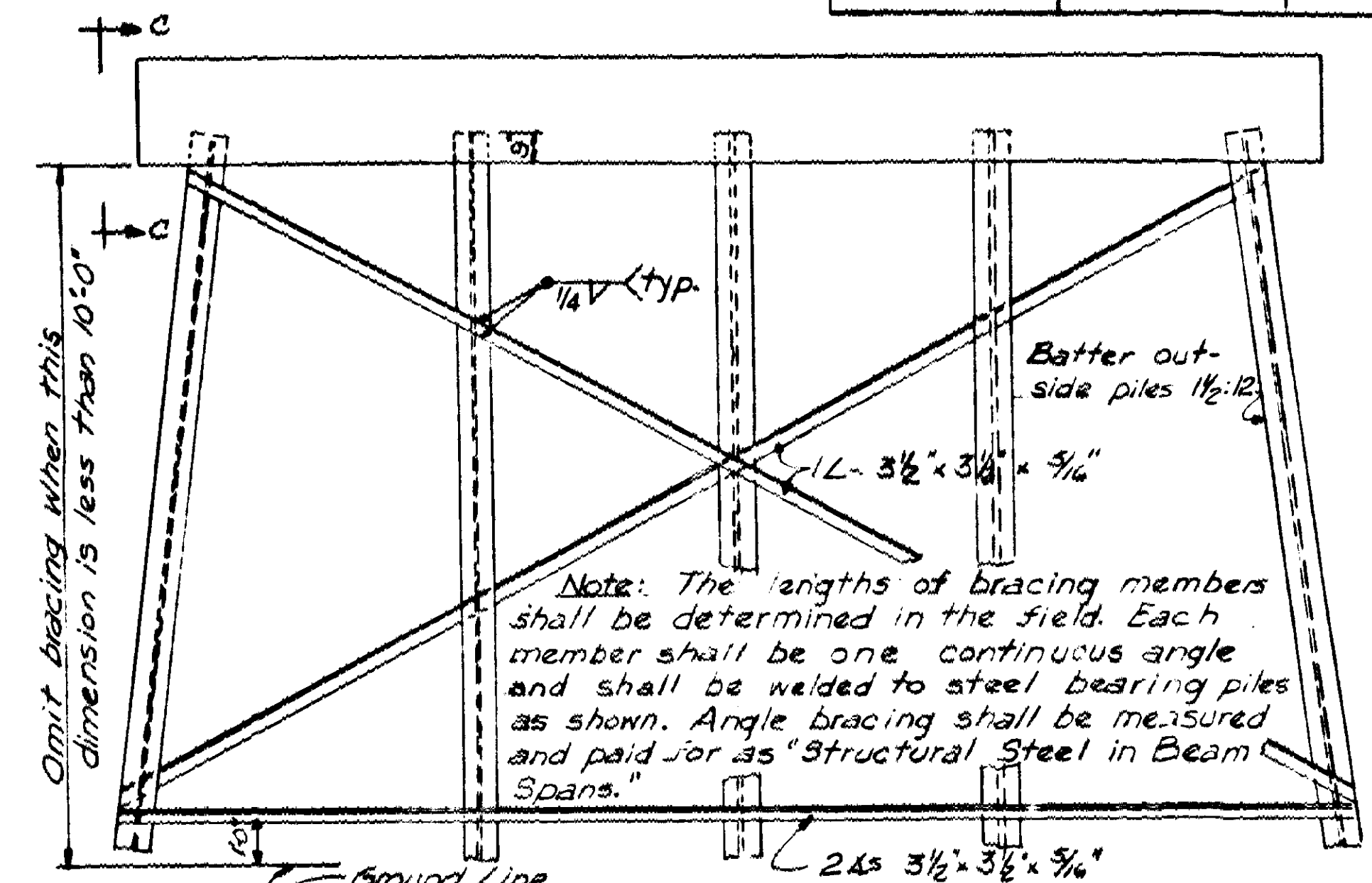
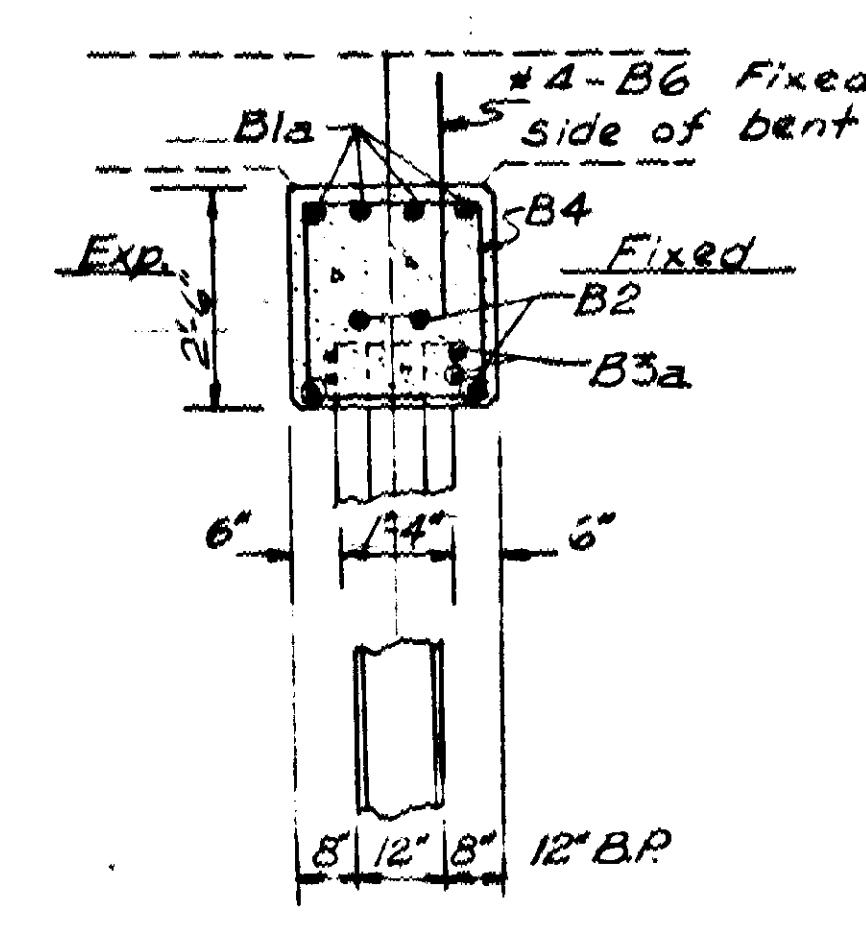
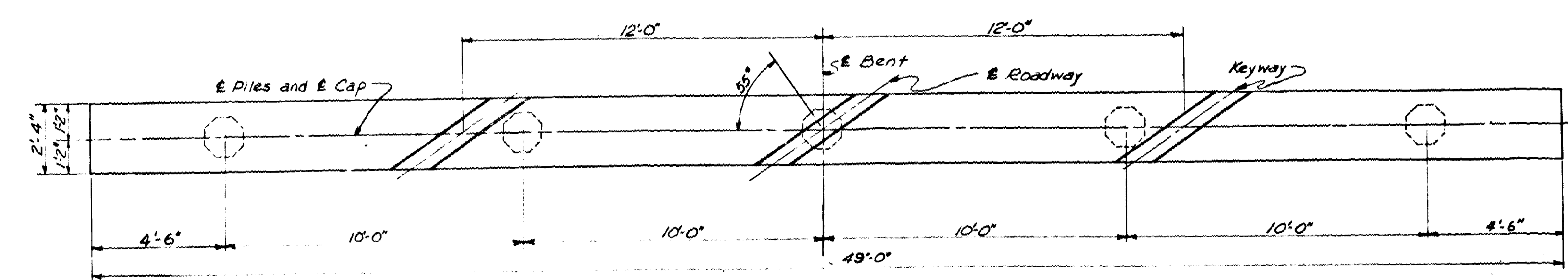
LITTLE ROCK, ARK.  
DRAWN BY BUP DATE 5-15-39  
TRACED BY \_\_\_\_\_ DATE \_\_\_\_\_ SCALE As shown  
CHECKED BY EBB DATE 5-18-39  
BRIDGE NO.                      DRAWING NO. 5462







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



**GENERAL NOTES**

All concrete to be Class 3 and shall be poured in the dry. All exposed corners to be chamfered  $\frac{3}{8}$ " unless otherwise noted.

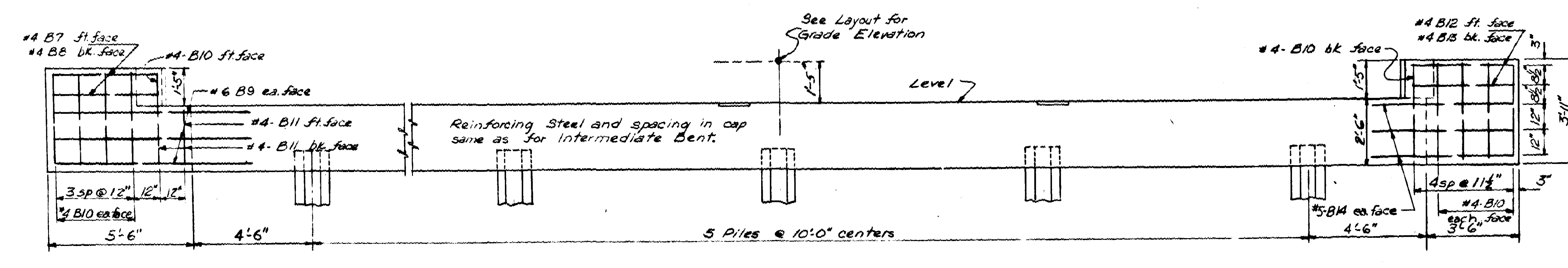
Reinforcing steel to be deformed bars of intermediate or hard grade. Shop lists and bending diagrams are to be submitted for approval.

All piling shall be driven to minimum capacity of 36 tons per pile. Piling shall be either 12 B.P.53 steel bearing piles, or 16" octagonal precast concrete piles as shown on the layout.

For details of Standard 30" R.C. Slab Span see dwg. no. 5466B.

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

BAR LIST									
NK.	Bar	Size	No. per Bent	Length	A	B	Pin	Di	Bending Diagram
B1	#7	4	4	21'7"	20'9"	7'	5"		
B1a	#7	4	4	31'7"	30'3"	7'	5"		
B2	#6	8	8	25'6"	24'6"	15'	2"		
B3	#6	4	4	27'10"	26'10"	15'	2"		
B3a	#6	4	4	20'0"	19'0"	15'	2"		
B4	#4	70	70	8'9"	8'9"	14'6"	2 1/2"		
B5	#6	15	15	6'2"	6'2"	14'6"	2 1/2"		
B6	#4	-	-	2'6"	2'6"	14'6"	2 1/2"		
B7	#4	-	-	4'0"	4'0"	14'6"	2 1/2"		
B8	#4	-	-	3'0"	3'0"	14'6"	2 1/2"		
B9	#6	-	-	7'9"	7'9"	14'6"	2 1/2"		
B10	#4	-	-	3'5"	3'5"	14'6"	2 1/2"		
B11	#4	-	-	2'0"	2'0"	14'6"	2 1/2"		
B12	#4	-	-	2'10"	2'10"	14'6"	2 1/2"		
B13	#4	-	-	3'10"	3'10"	14'6"	2 1/2"		
B14	#5	-	-	5'9"	5'9"	14'6"	2 1/2"		



**DETAILS OF STANDARD PILE BENTS FOR STD. 25'-0"-30'-0" R.C. SLAB SPANS (WITH) 55° SKEW (RT. FWD.)**

24'-0" CLEAR ROADWAY CURBS 1'-0" ROUTE SEC. ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.

Revised 1-20-61. Added 3/4" length of cap. F.M.H. Revision checked 1-20-61 DV

Revised 5-16-61. F.M.H. Changed End Bent to agree with 1'-0" curb on spans. C.E. CEV 5-3-61

Revised pile splice note 5-23-68 JAB

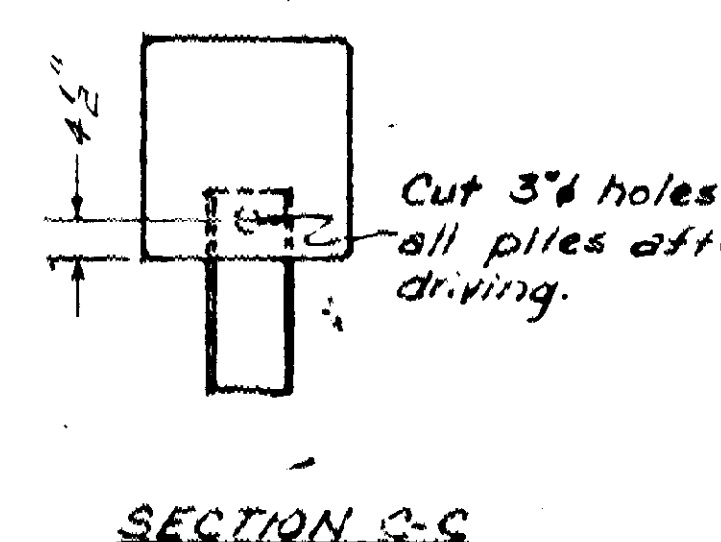
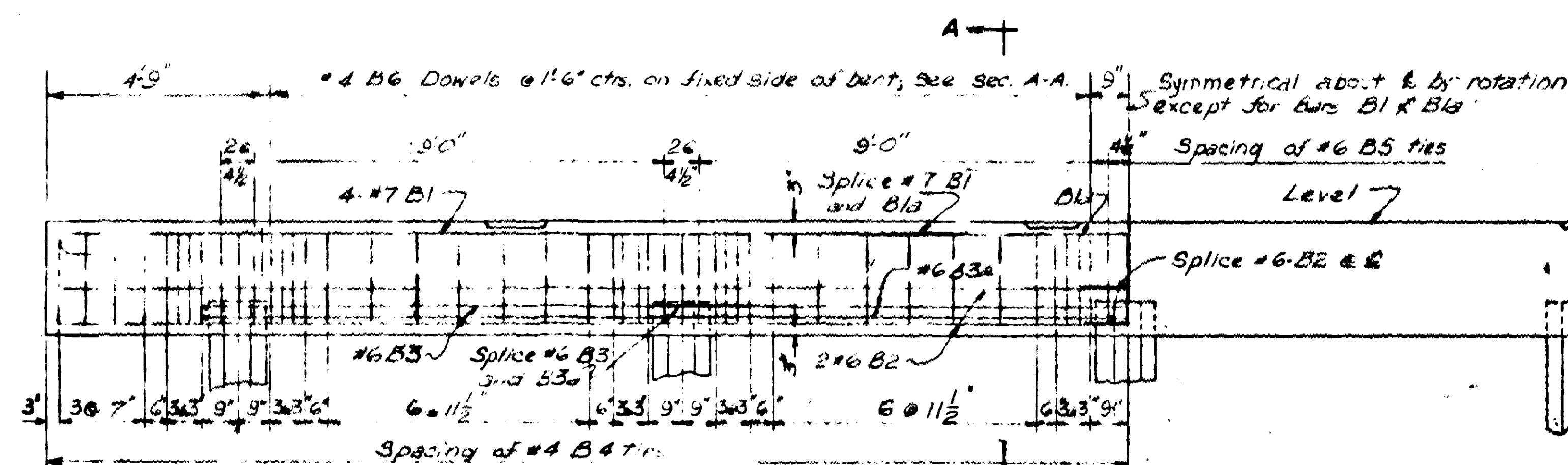
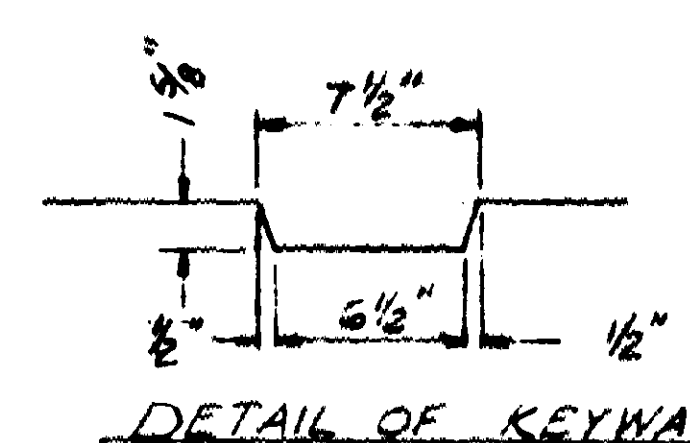
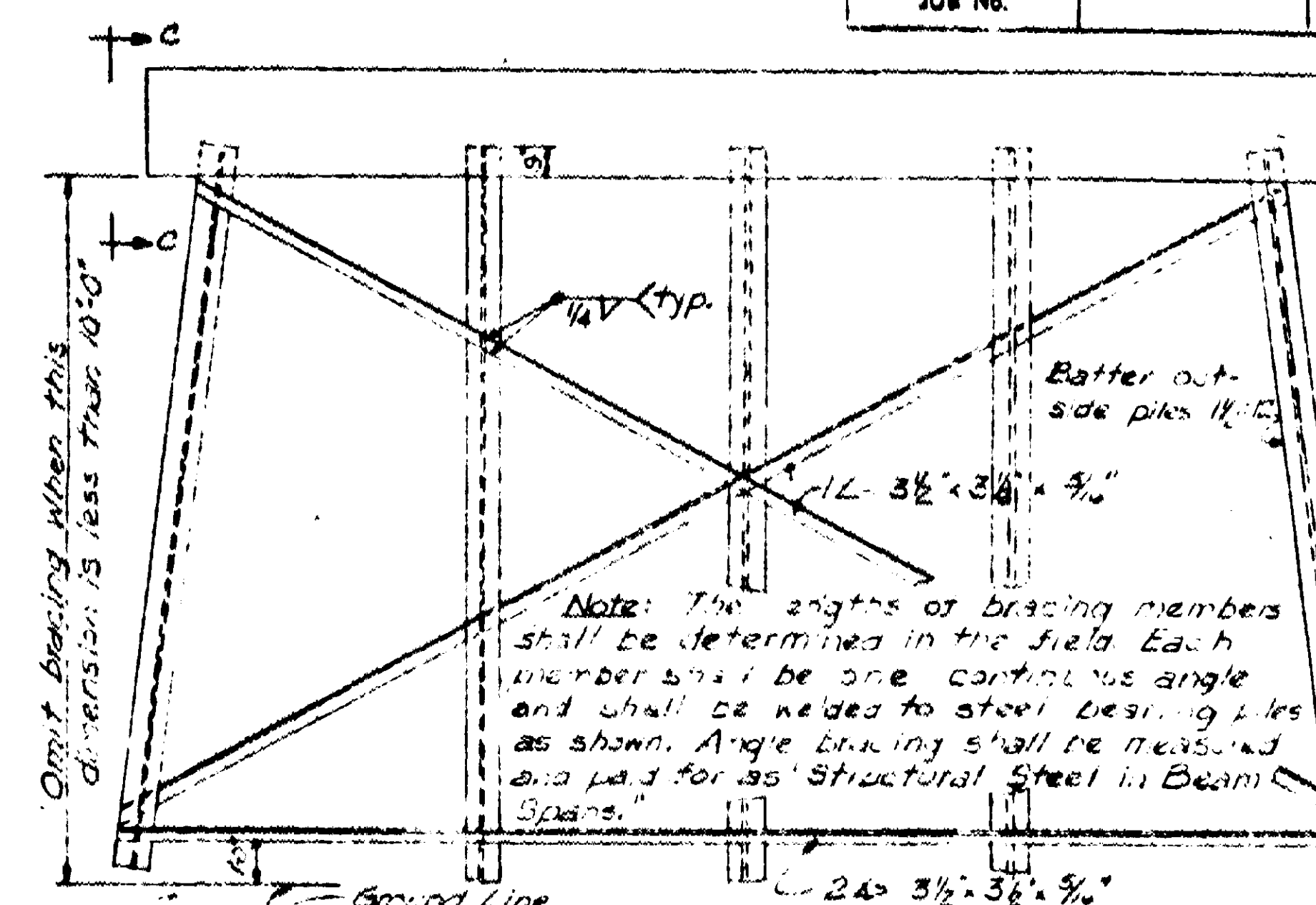
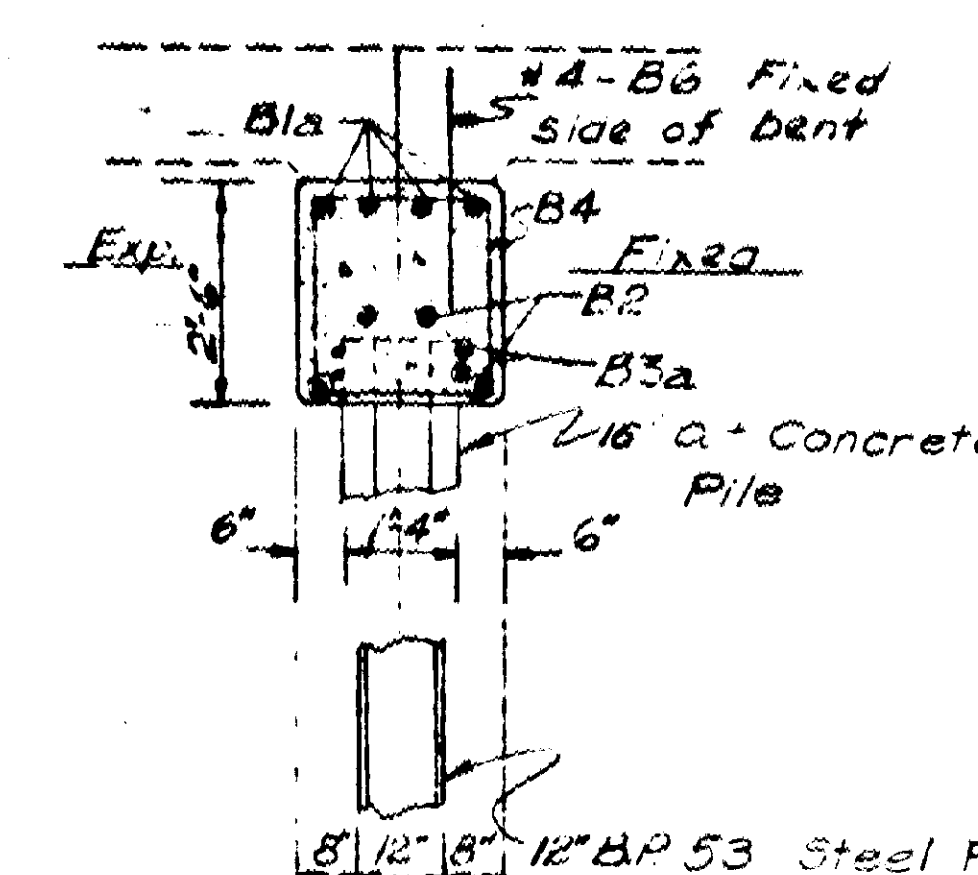
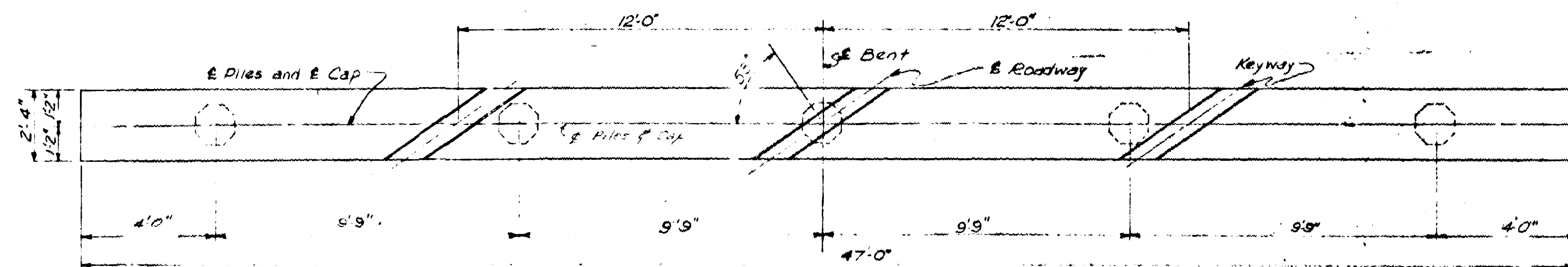
Added 25'-0" spans to title 6-23-64 J.M.

DRAWN BY: C.E.V. DATE: 9-27-60  
TRACED BY: DATE: 9-27-60  
CHECKED BY: DV DATE: 9-27-60

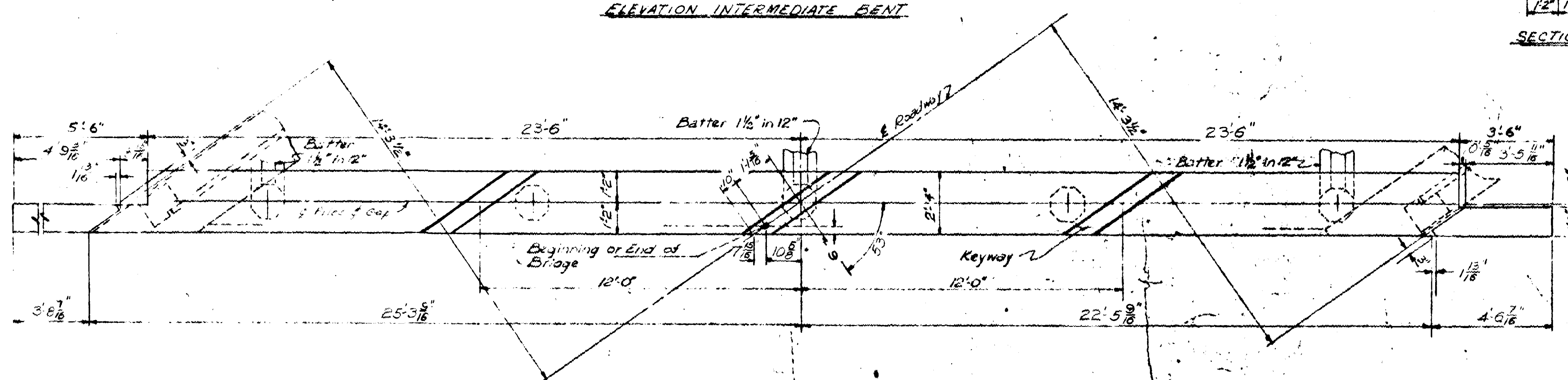
BRIDGE NO. DRAWING NO. 5466-A



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



Note: The contractor may for his convenience and at his own expense provide as many as three splices per pile for steel bearing piles. Minimum spacing between splices shall be 3 feet.



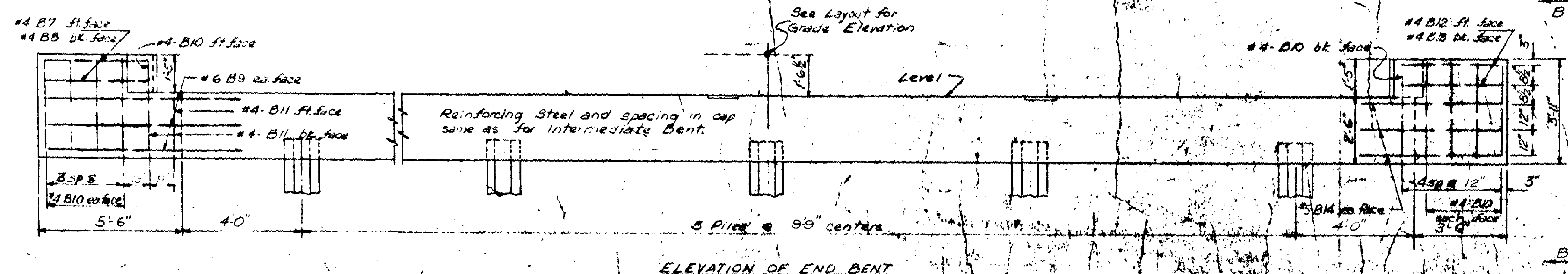
#### GENERAL NOTES

All concrete to be Class 9 and shall be poured in the dry. All exposed corners to be chamfered  $\frac{3}{8}$ " unless otherwise noted.  
Reinforcing steel to be deformed bars of intermediate or kind grade. Shop lists and bending diagrams are to be submitted for approval.  
All piling shall be driven to minimum capacity of 36 tons per pile. Piling shall be either 12 RP 53 Steel bearing piles, or 16" octagonal precast concrete piles as shown on the layout.  
For details of Standard 30" R.C. Slab Span see drawing 5466.

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

PILE LIST									
NK.	Bar Size	Y.	X.	Length	A	B	Reinforcing Diagram	Remarks	Notes
B1	#7	4	4	20'-0"	14"	7"	54		
B1a	#7	4	4	20'-0"	14"	7"	54		
B2	#6	8	8	24'-6"	14"	7"	54		
B3	#6	4	4	27'-4"	14"	7"	54		
B3a	#6	4	4	19'-6"	14"	7"	54		
B4	#4	76	76	8'-3"	14"	7"	54		
B5	#6	15	15	6'-2"	14"	7"	54		
B6	#4	-	-	2'-6"	14"	7"	54		
B7	#4	-	-	4'-3"	14"	7"	54		
B8	#4	-	-	3'-2"	14"	7"	54		
B9	#4	-	-	7'-5"	14"	7"	54		
B10	#4	-	-	15'-3"	14"	7"	54		
B11	#4	-	-	3'-0"	14"	7"	54		
B12	#4	-	-	3'-1"	14"	7"	54		
B13	#4	-	-	2'-1"	14"	7"	54		
B14	#5	-	-	5'-0"	14"	7"	54		

A 25 Reqd for exp. fix, 50 Reqd for fix-fix



#### DETAILS OF STANDARD PILE BENTS FOR STD. 25'-0" 30'-0" R.C. SLAB SPANS (WITH 53° SKEW (RT. FWD.)

24'-0" CLEAR ROADWAY CURBS 1'-0"

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JWG DATE: 7-1-63

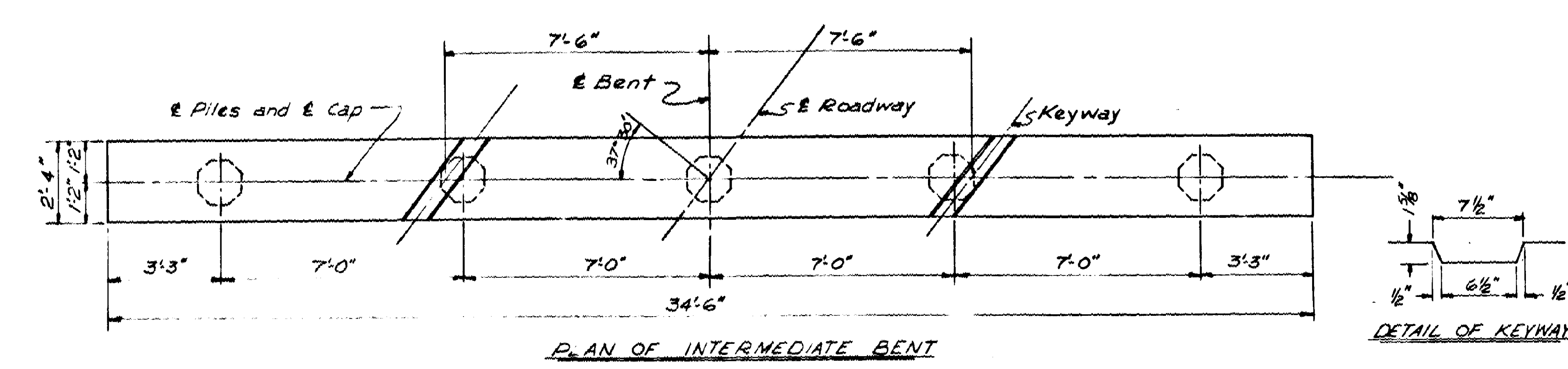
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CHECKED BY: DATE: BRIDGE NO. DRAWING NO. 5466A1

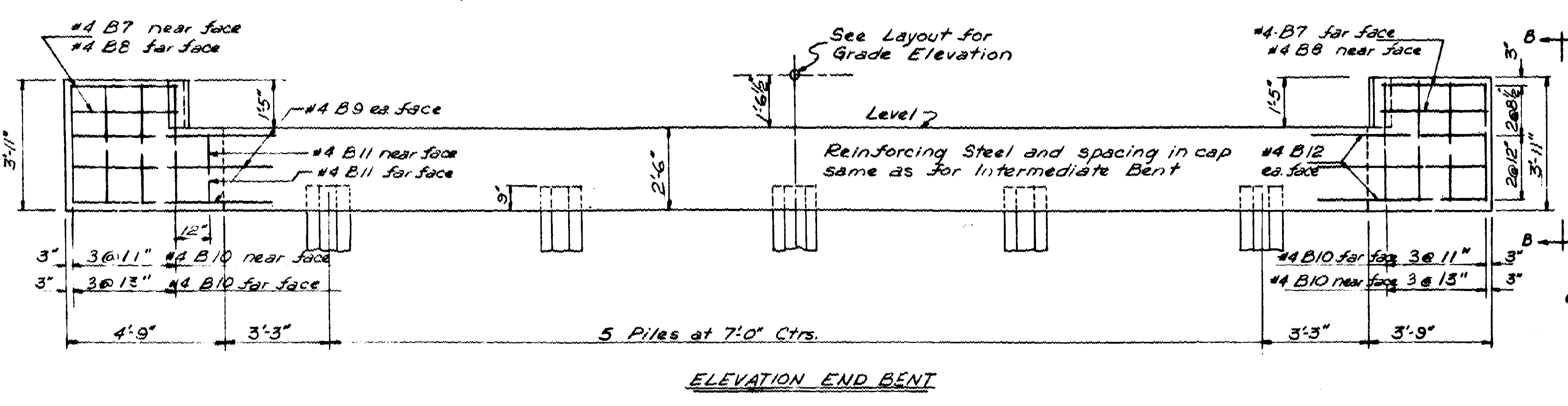
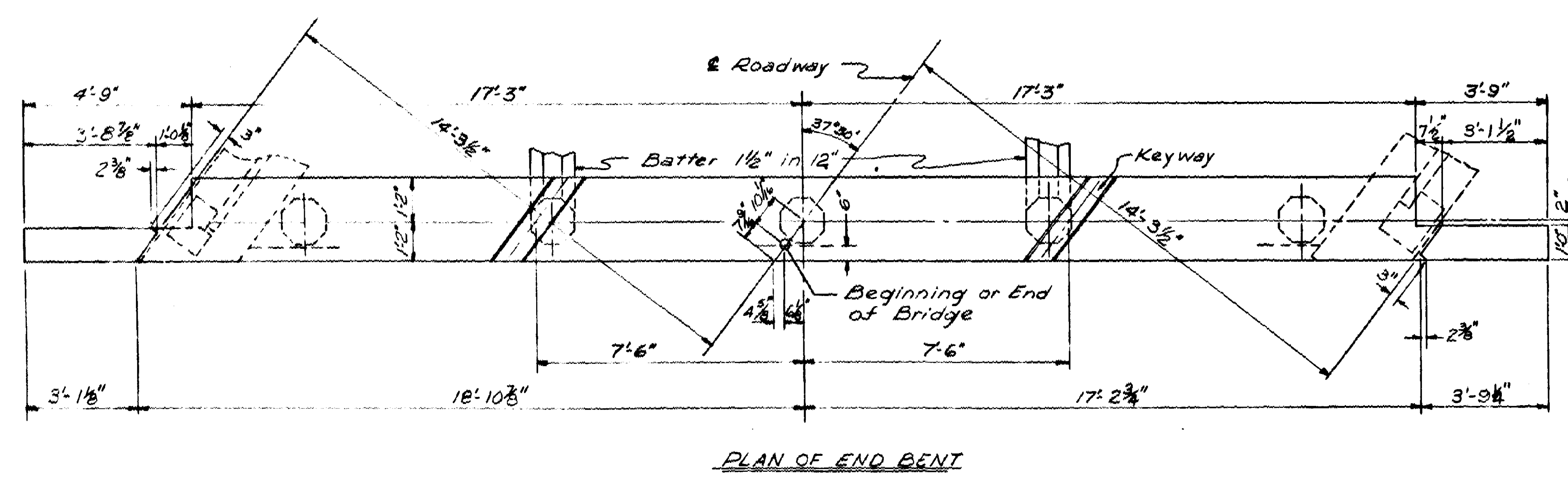
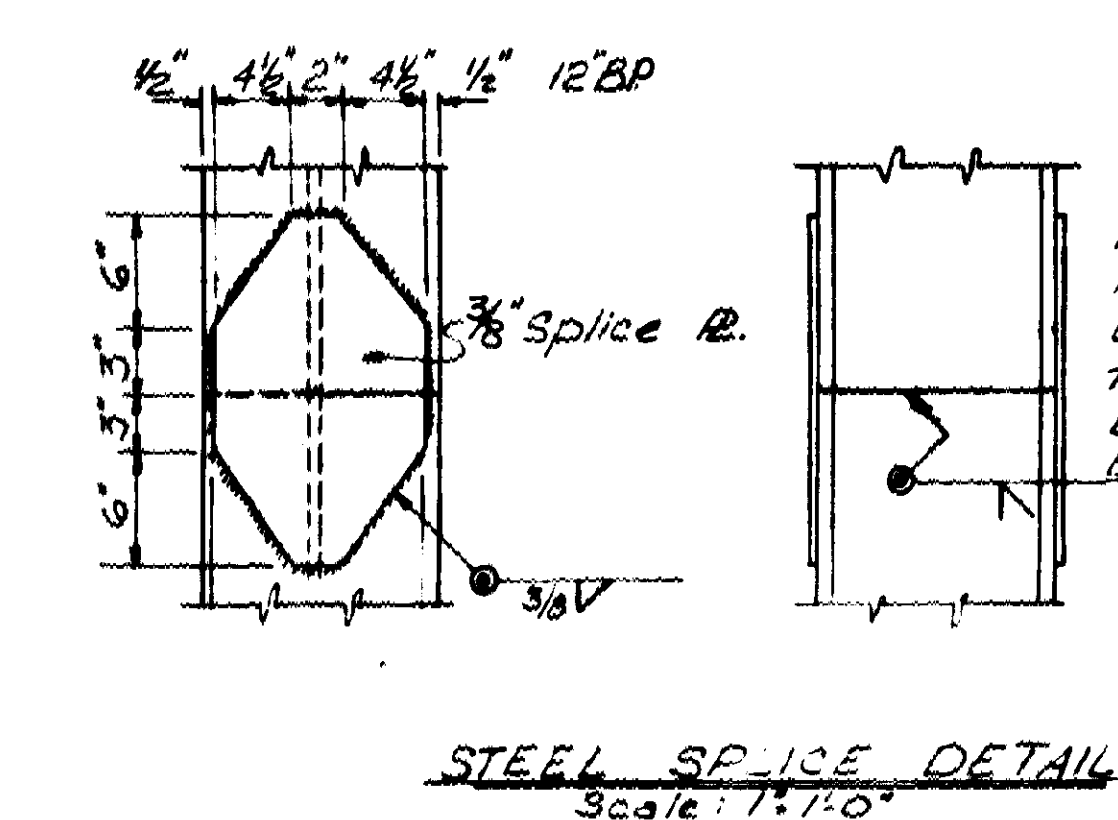
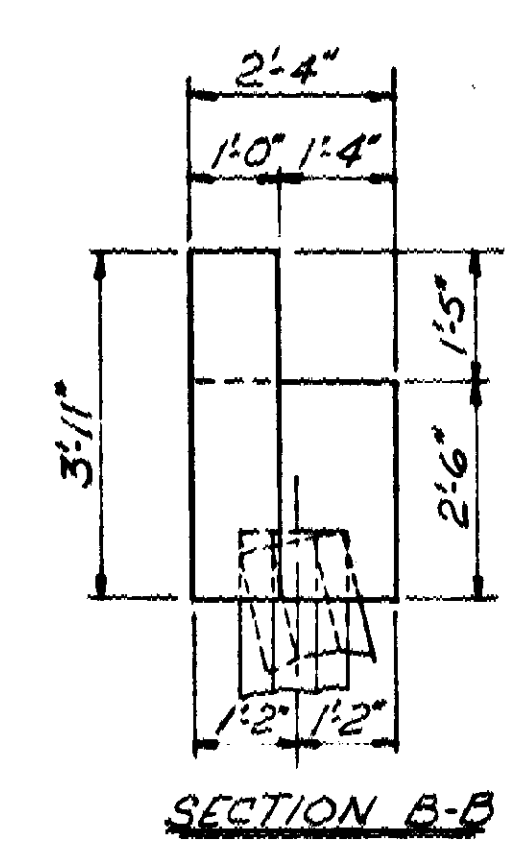
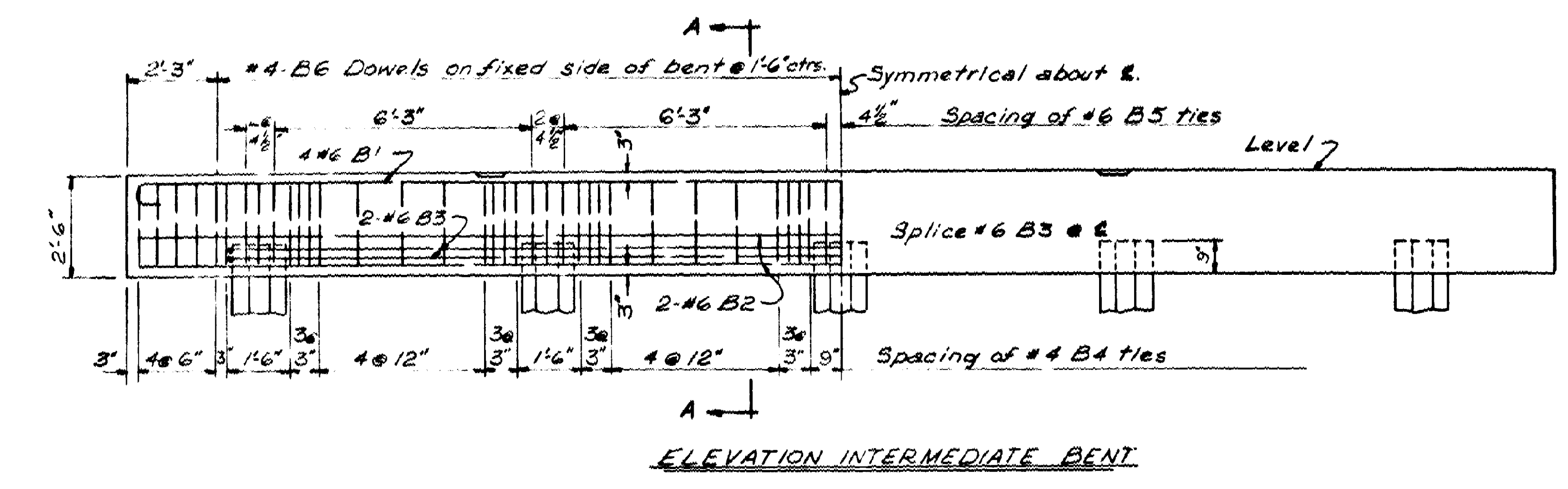
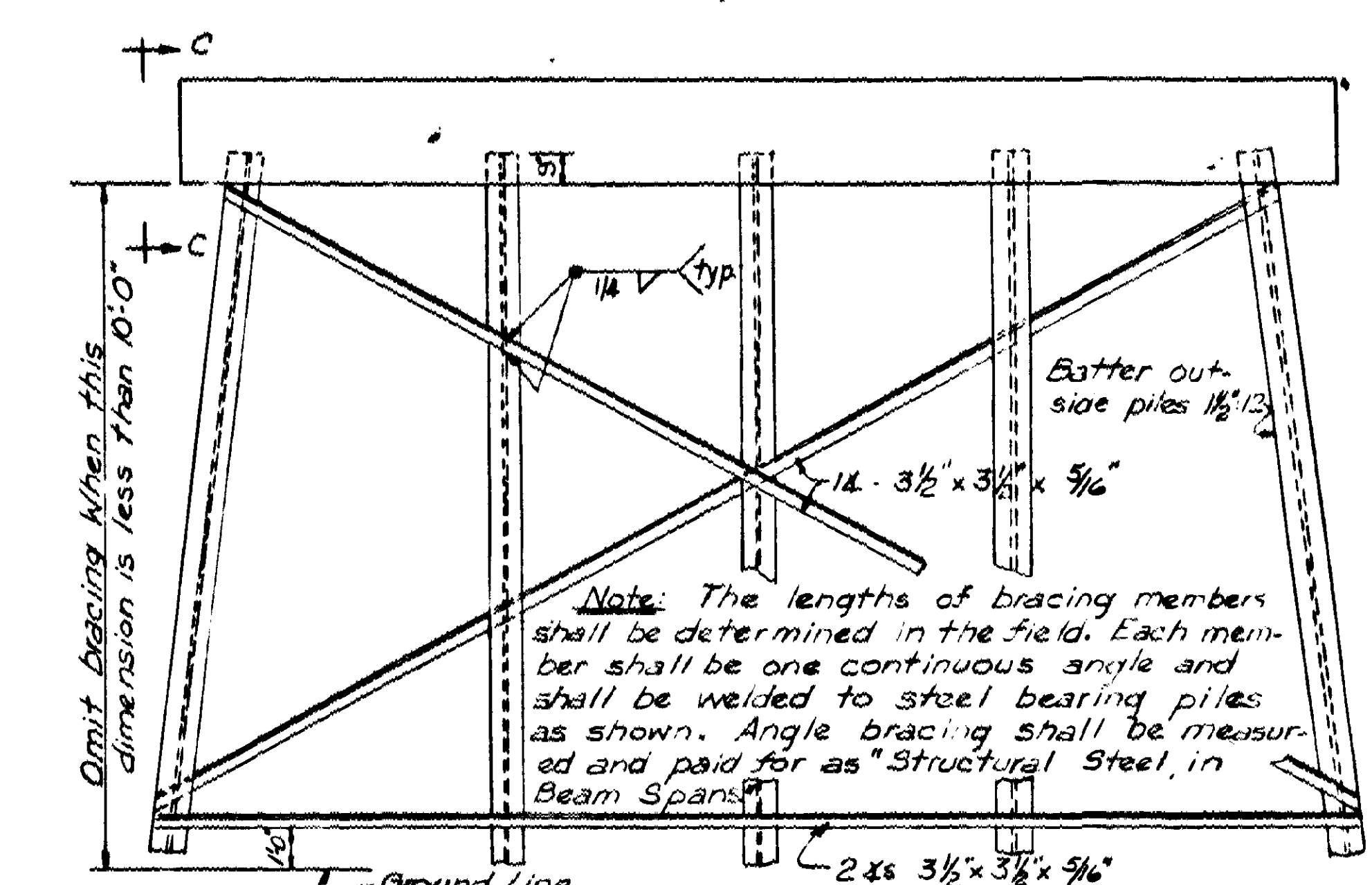
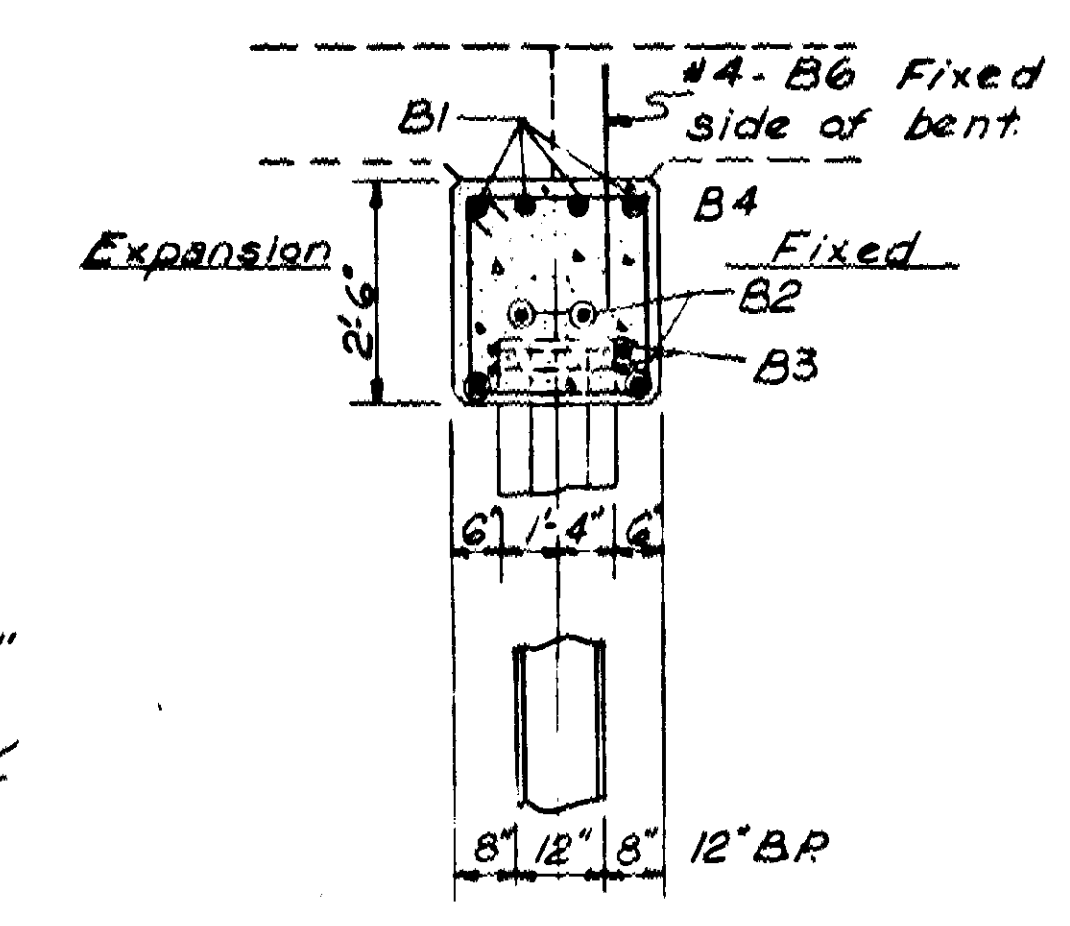
Note: Drawing NO. 5458A1 adopted from drawing NO. 5422-A



FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.				
JOB No.					



DETAIL OF KEYWAY



**GENERAL NOTES**

All concrete to be Class S and shall be poured in the dir. All exposed corners to be chamfered 3/4" unless otherwise noted.

Reinforcing steel to be deformed bars of intermediate or hard grade. Shop lists and bending diagrams are to be submitted for approval.

All piling shall be driven to minimum capacity of 36 tons per pile. Piling shall be either 12 B.P. 53 steel bearing piles, or 16" octagonal precast concrete piles as shown on the layout.

For details of Standard 30' R.C. Slab Span see drwg. no. 5466.

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

**BAR LIST**

MK.	Bar Size	No. per Bent	Length	A	B	Pin Dia.	Bending Diagram
B1	#6	4	35'-5"	34'-0"	6"	4 1/2"	A
B2	#6	4	34'-0"	34'-0"	Straight	4 1/2"	B1
B3	#6	4	33'-4"	16'-0"	1'-5"	2 1/4"	A
B4	#4	54	8'-9"	1'-11 1/2"	2'-1 1/2"	1 1/2"	A
B5	#6	15	6'-2"	2'-2"	1'-11 1/2"	2 1/4"	B3, B5
B6	#4	-	3'-6"	Straight	-	-	B
B7	#4	-	2'-7"	-	-	-	B
B8	#4	-	3'-3"	-	-	-	B
B9	#4	-	6'-2"	-	-	-	B
B10	#4	-	3'-5"	-	-	-	B
B11	#4	-	2'-0"	-	-	-	B
B12	#4	-	5'-2"	Straight	-	-	B4

\* 21 Req'd for exp.-fix; 42 Req'd for fix.-fix

**DETAILS OF STANDARD PILE BENTS**  
**25'-0" TO 30'-0" R.C. SLAB SPANS (WITH)**

37'-30" SKEW (RT. FWD.)  
 24'-0" CLEAR ROADWAY CURBS 1'-0"  
 ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DESIGNED BY: C.E.K. DATE: 10-17-60  
 TRACED BY: DATE: 10-18-60  
 CHECKED BY: E.R.B. DATE: 10-18-60

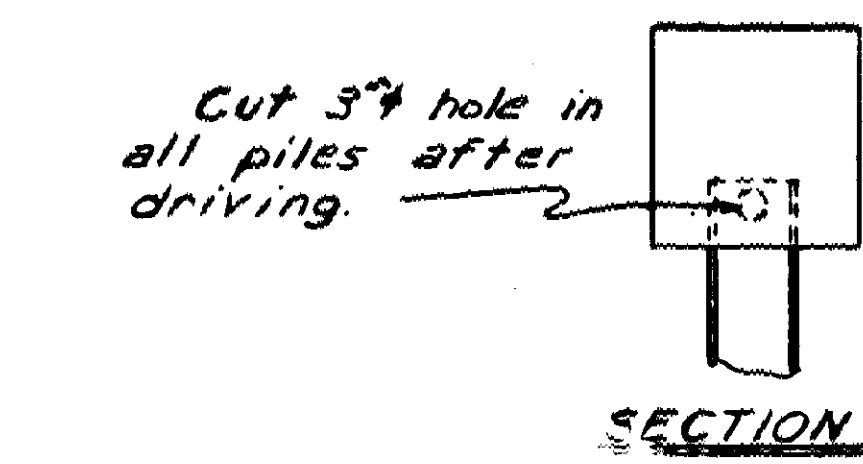
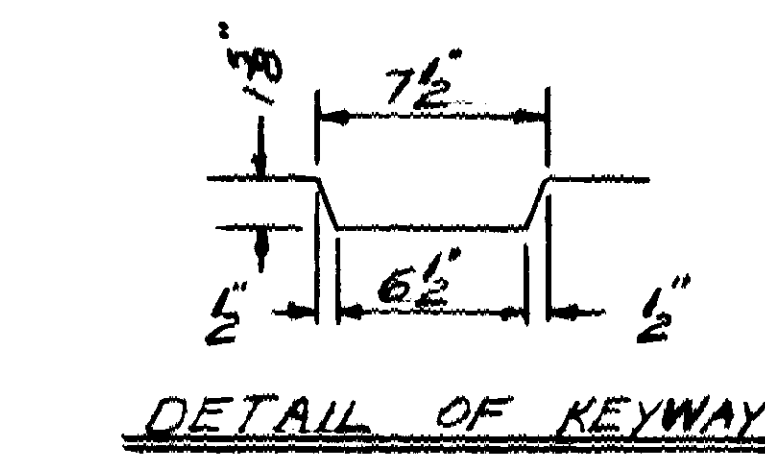
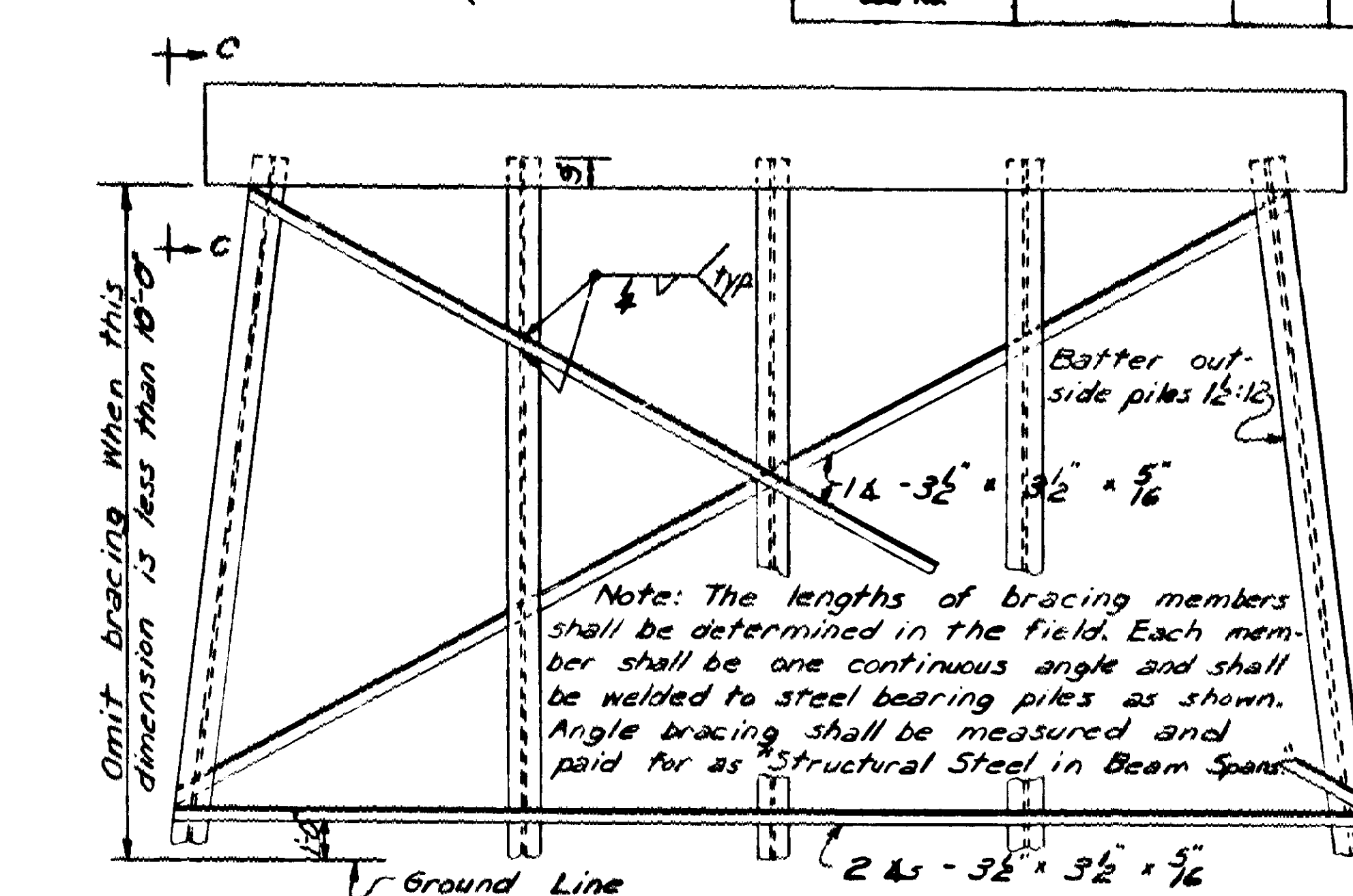
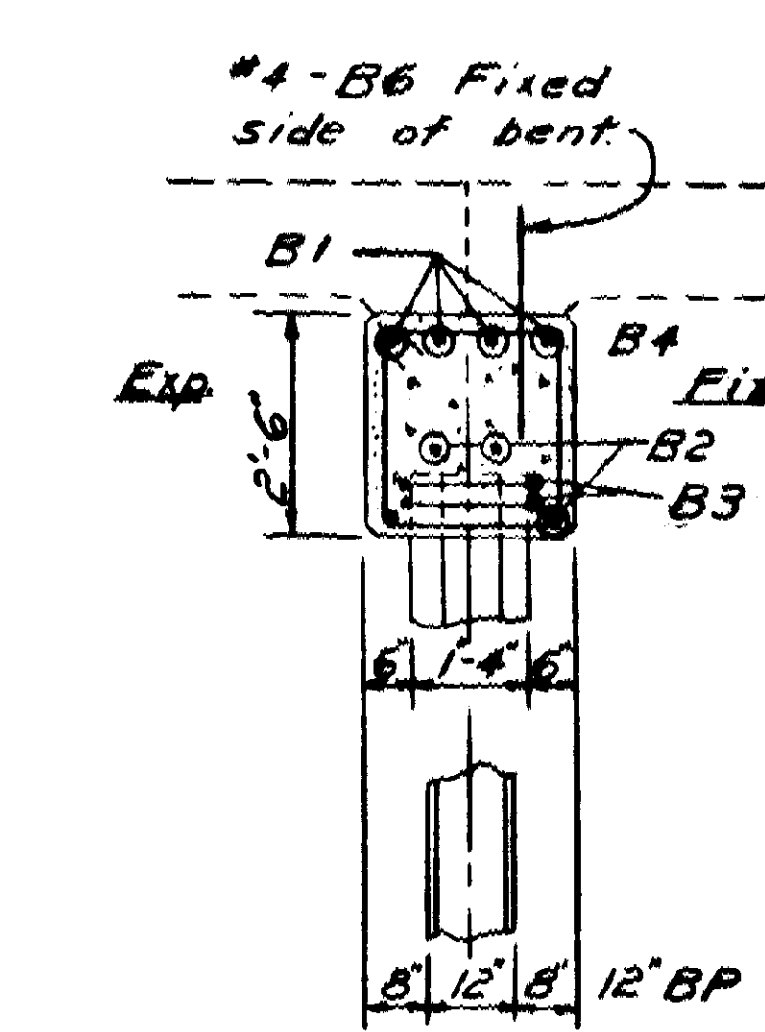
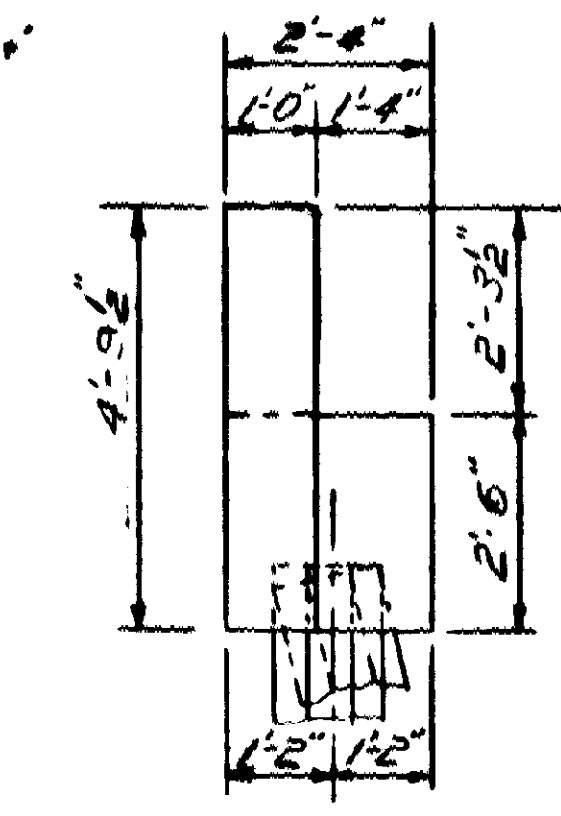
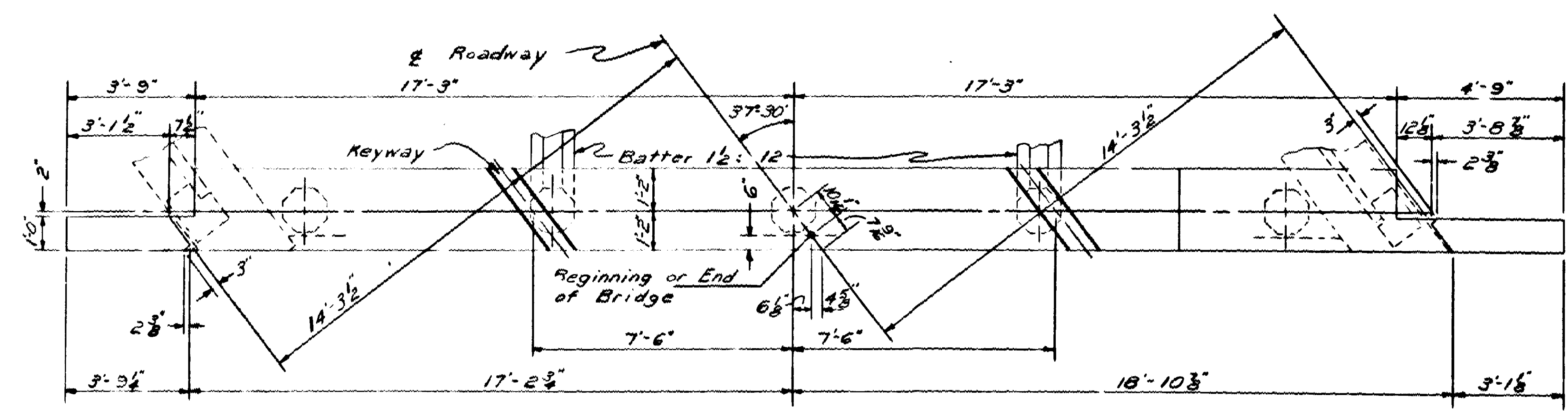
BRIDGE NO. DRAWING NO. 5466-B

L.P. Carlson  
 BRIDGE DESIGN ENGINEER

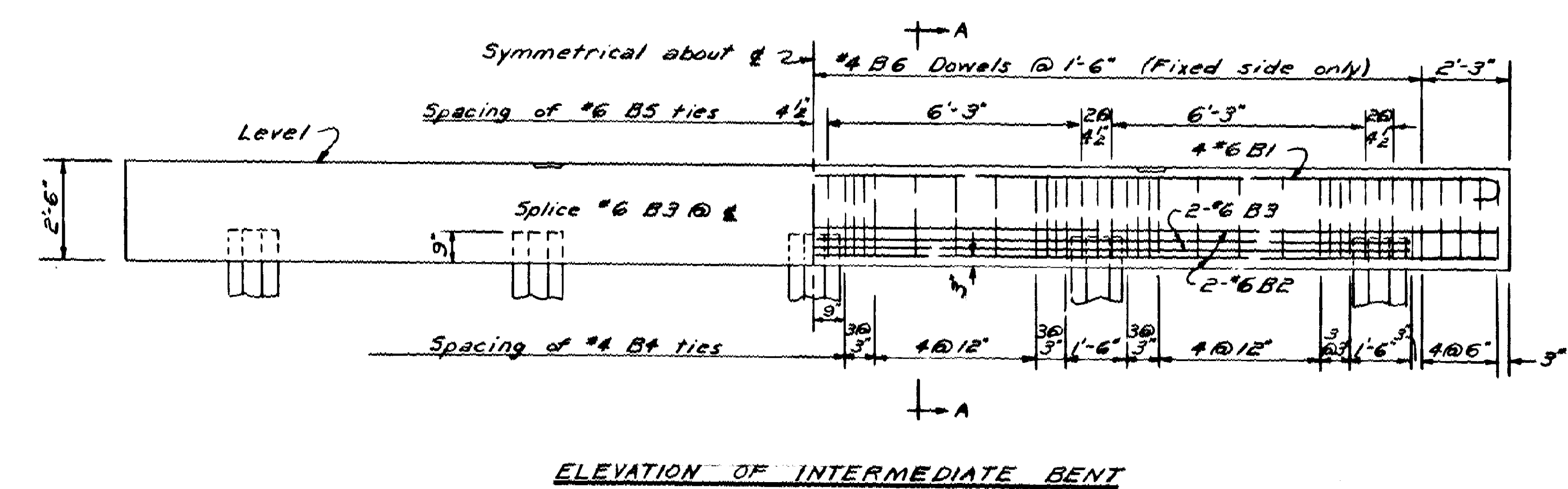
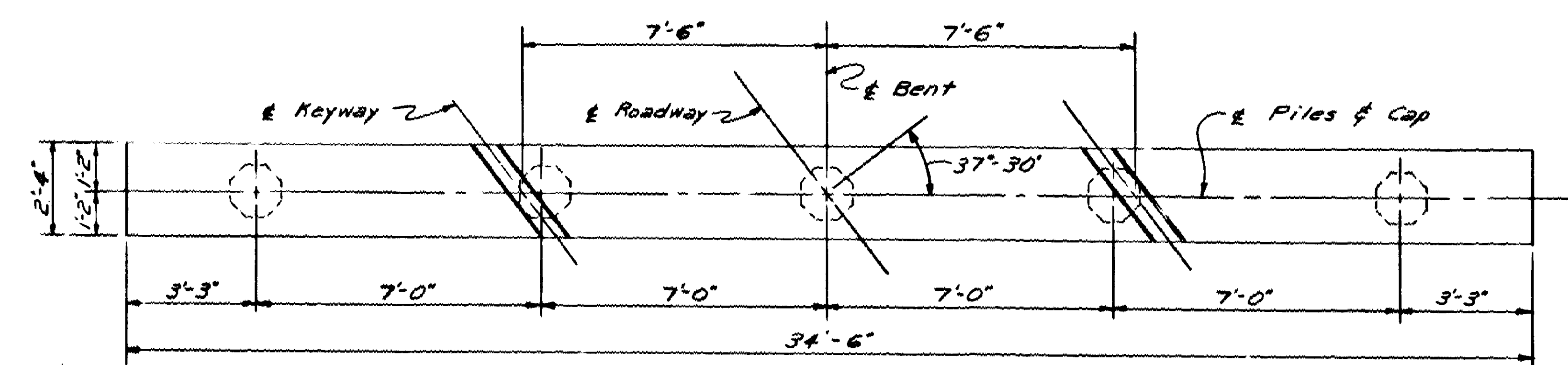
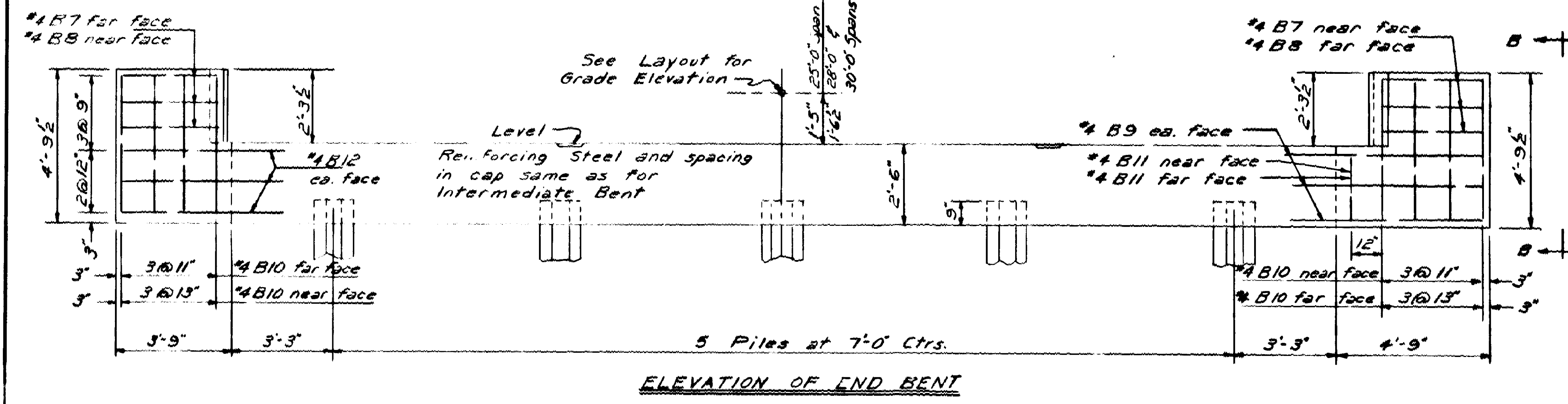
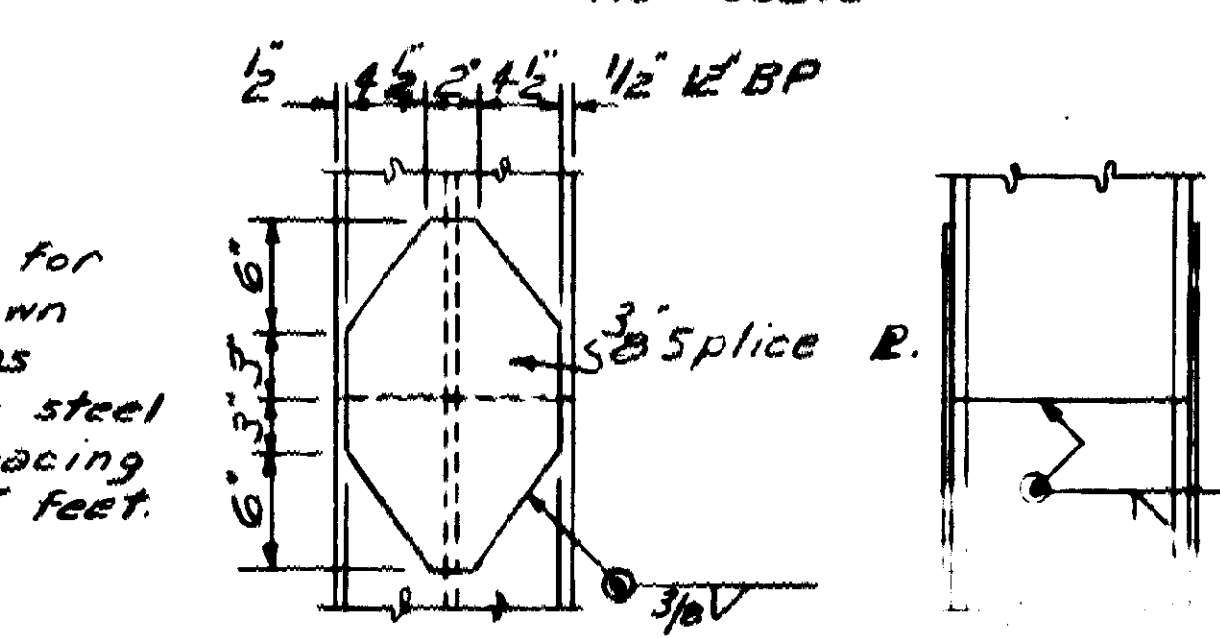


300

FILE NO.	STATE	PROJECT	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.				
JOB NO.					



Note: The contractor may for his convenience and at his own expense provide as many as three splices per pile for steel bearing piling. Minimum spacing between splices shall be 5 feet.



GENERAL NOTES  
All concrete to be Class S and shall be poured in the dry. All exposed corners to be chamfered 3/4" unless otherwise noted. Reinforcing steel to be deformed bars of intermediate or hard grade. Shop lists and bending diagrams are to be submitted and approved before fabrication is begun. All piling shall be driven to minimum capacity of 38 tons per pile. Piling shall be either 12-HP-53 Steel Bearing Piles, or 18" octagonal precast concrete piles as shown on the layout.

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1958.

BAR LIST

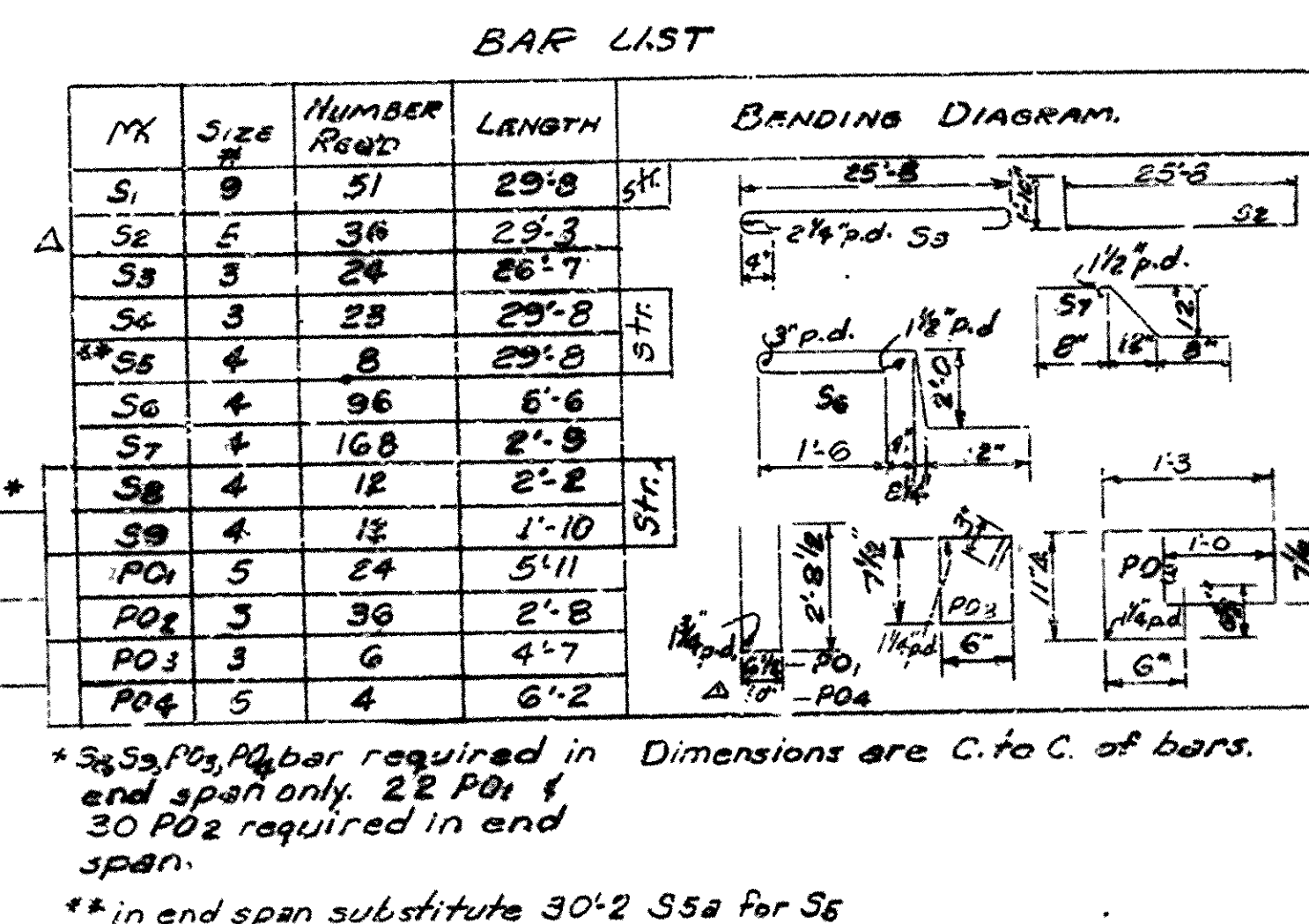
NO.	Bar Size	No. per Bent	Length	A	B	Pin Dia.	Bending Diagram
B1	#6	4	35'-5"	34'-0"	6"	4 1/2"	
B2	#6	4	34'-2"			5 1/2"	
B3	#6	4	33'-4"	16'-0"	1'-5"	2 1/2"	
B4	#6	56	8'-9"	1'-11 1/2"	2'-12"	1 1/2"	
B5	#6	15	6'-2"	2'-2"	1'-11 1/2"	2 1/2"	
B6	#4	*	2'-6"			5 1/2"	
B7	#4	-	6'-10"				
B8	#4	-	6'-3"				
B9	#4	-	6'-2"				
B10	#4	-	4'-5"				
B11	#4	-	2'-2"				
B12	#4	-	5'-2"			5 1/2"	

\* B1 Req'd for exp.-fix.; #2 Req'd for fix.-fix

DETAILS OF  
STANDARD PILE BENTS  
25'-0" TO 30'-0" R.C. SLAB SPANS (WITH  
37°30' SKEW (LT. FWD.)  
24'-0" CLEAR ROADWAY 1'-0" CURBS  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: JAS DATE: 5-26-64  
CHECKED BY: AN DATE: 5-27-64  
BRIDGE NO. DRAWING NO. 5466-B1





GENERAL NOTE

All concrete to be Class S. All exposed corners to be chamfered 3/4  
unless otherwise noted

Reinforcing steel to be deformed bars of intermediate or hard grade. Shop lists and bending diagram must be submitted and approval secured before fabrication is begun.

7 All cylindrical tubes used to form voids shall be of moisture protected, laminated type construction, minimum thickness 0.200, and shall be furnished complete with end closures.

All reinforcing steel and fiber tubes shall be accurately located in the forms and firmly held in place by means of steel wire supports and spacers for tubes of a sufficient size and number to prevent displacement during the course of construction, but in no case of lesser design than that shown.

Wire supports for reinforcing bars will not be paid for directly, but will be considered subsidiary to the item "Reinforcing Steel".

Tubes for forming voids and wire supports and spacers for tubes will not be paid for directly, but will be considered subsidiary to the item, "Class 3 Concrete".

Shop details and diagrams of wire supports and spacers for tubes shall be submitted for approval before fabrication is begun.

Roofing felt, bituminous felt, and poured asphalt joints shall be measured and paid for as Glass S Concrete.

measured and paid for as Class S Concrete.

Steel or Aluminum Plate Guard shall be of the type shown or an equivalent rigid type as approved by the Engineer. The rail, including all concrete posts and fastenings shall be paid for at the unit price bid per linear foot for "Steel or Aluminum Plate Guard Bridge Railings".

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

DESIGN SPECIFICATIONS: AASHTO 196

DESIGN SPECIFICATIONS:	AASHTO 1961
Design Live Loading:	H-15
Load Distribution to Slew:	Dead Load: 158 #/ft <sup>2</sup> Live Load: 0.74 wheels per foot of width plus 50% impact.
Unit Stresses:	Class 8 Concrete (n=10) 1,200 psi Reinforcing Steel 20,000 psi

Unit Stresses: Class 8 Concrete ( $n=10$ ) 1,200 ps  
Reinforcing Steel 20,000 ps

⑦ Revised bar accessories, removed level section under deck and added joint detail. K.P. 4-24-65 i FRB

DETAILS OF STANDARD  
30'-0" RC. SLAB SPANS (WITH)  
24'-0" CLEAR ROADWAY 1'-0" CURBS (VOIDS)

ROUTE SEC

23-61 ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DATE: **1-30-61**

DRAWN BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
TRACED BY: OK DATE: 7-1-61

BRIDGE NO

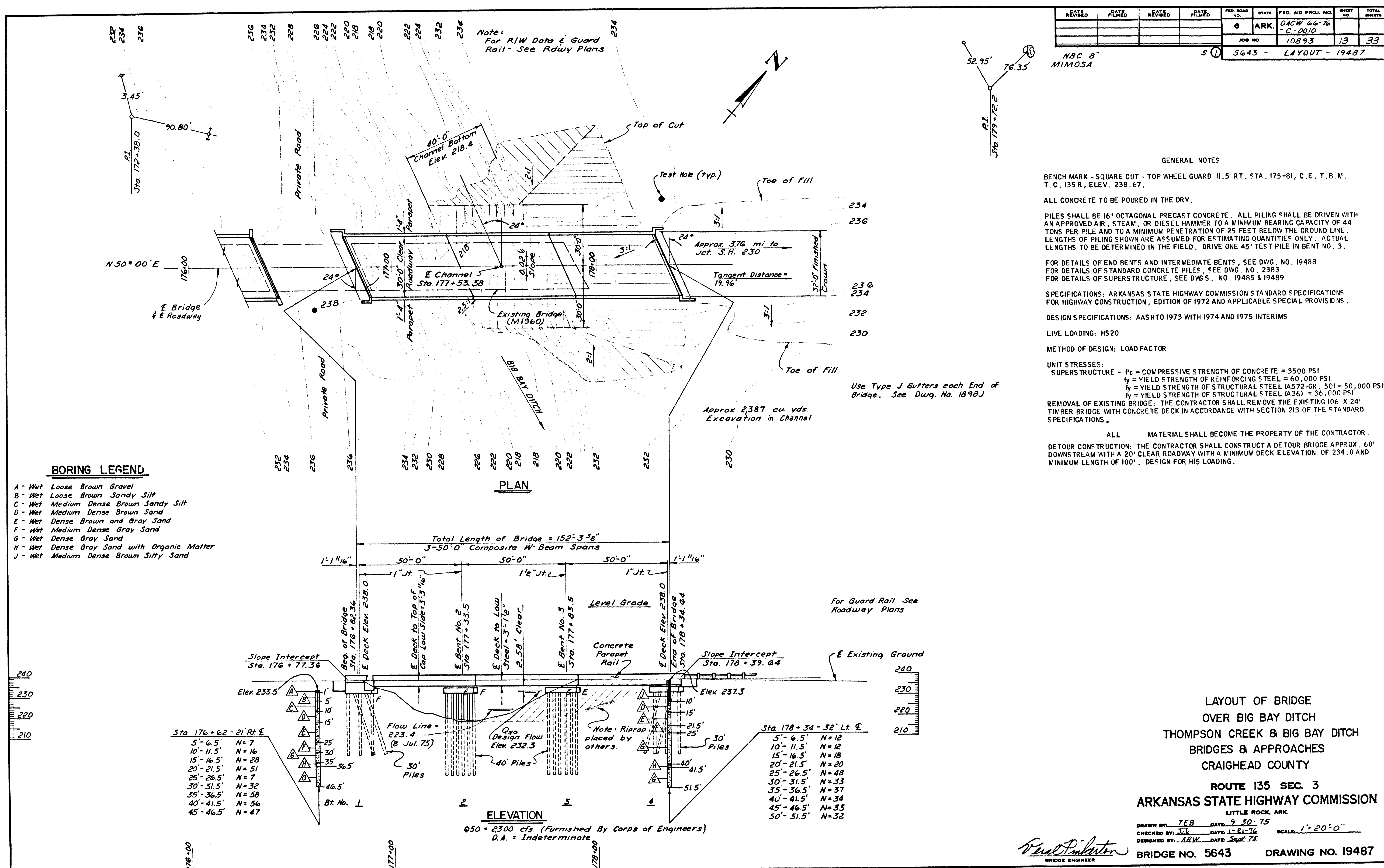
DRAWING NO. 54660

Revised to show superclerated Rdwy. 6-23-61 E.R.B. Checked DV 6-23-61  
 Δ Revised: Date of specifications, 3-30-62 JAS  
 S<sub>2</sub> Live load Ch. E.R.B. 4-2-62

© Revised 7-29-63 JWG  
Included anchor points, changed  
1/2" beam bolster to 4'-6" ctrs. 5' 1"  
span bolster to 4'-0" ctrs. 7-31-63 JWG

L. P. Carlson  
BRIDGE ENGINEER







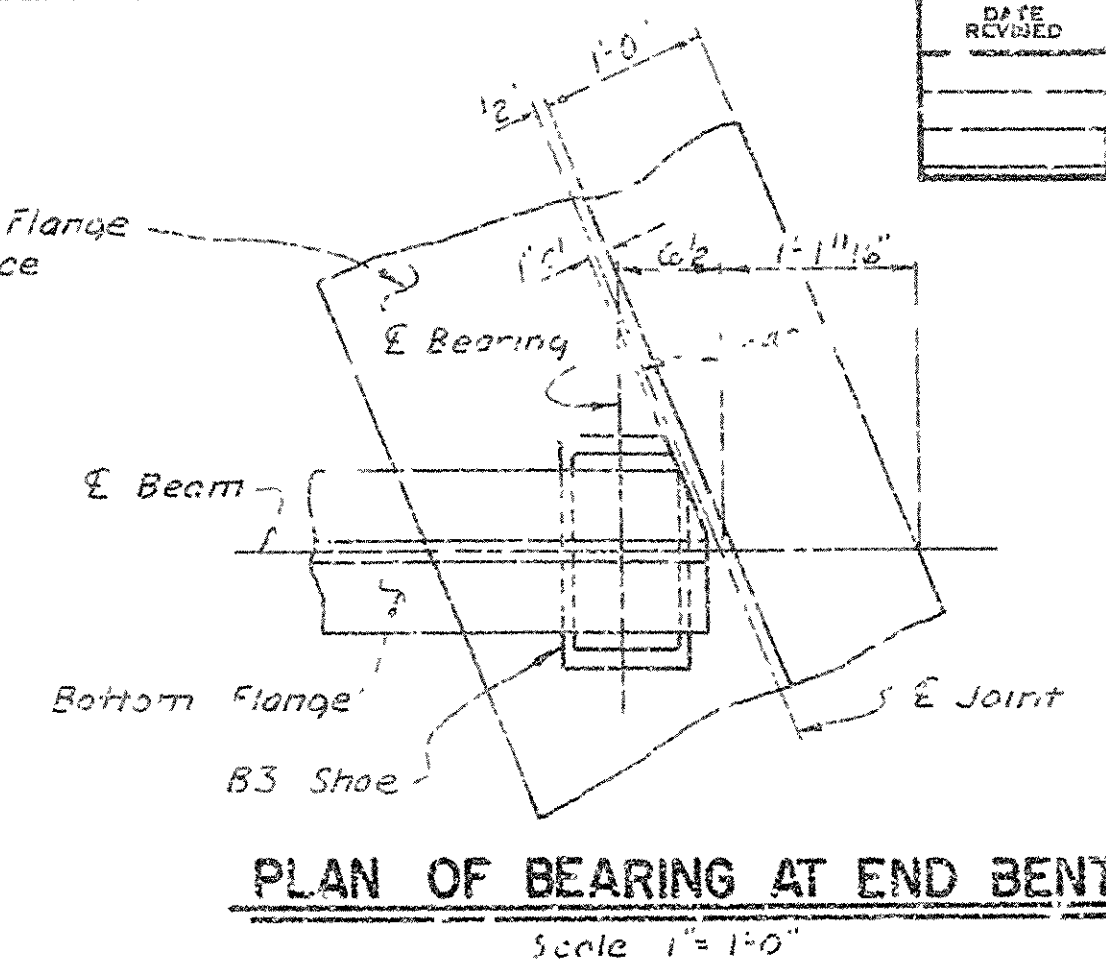
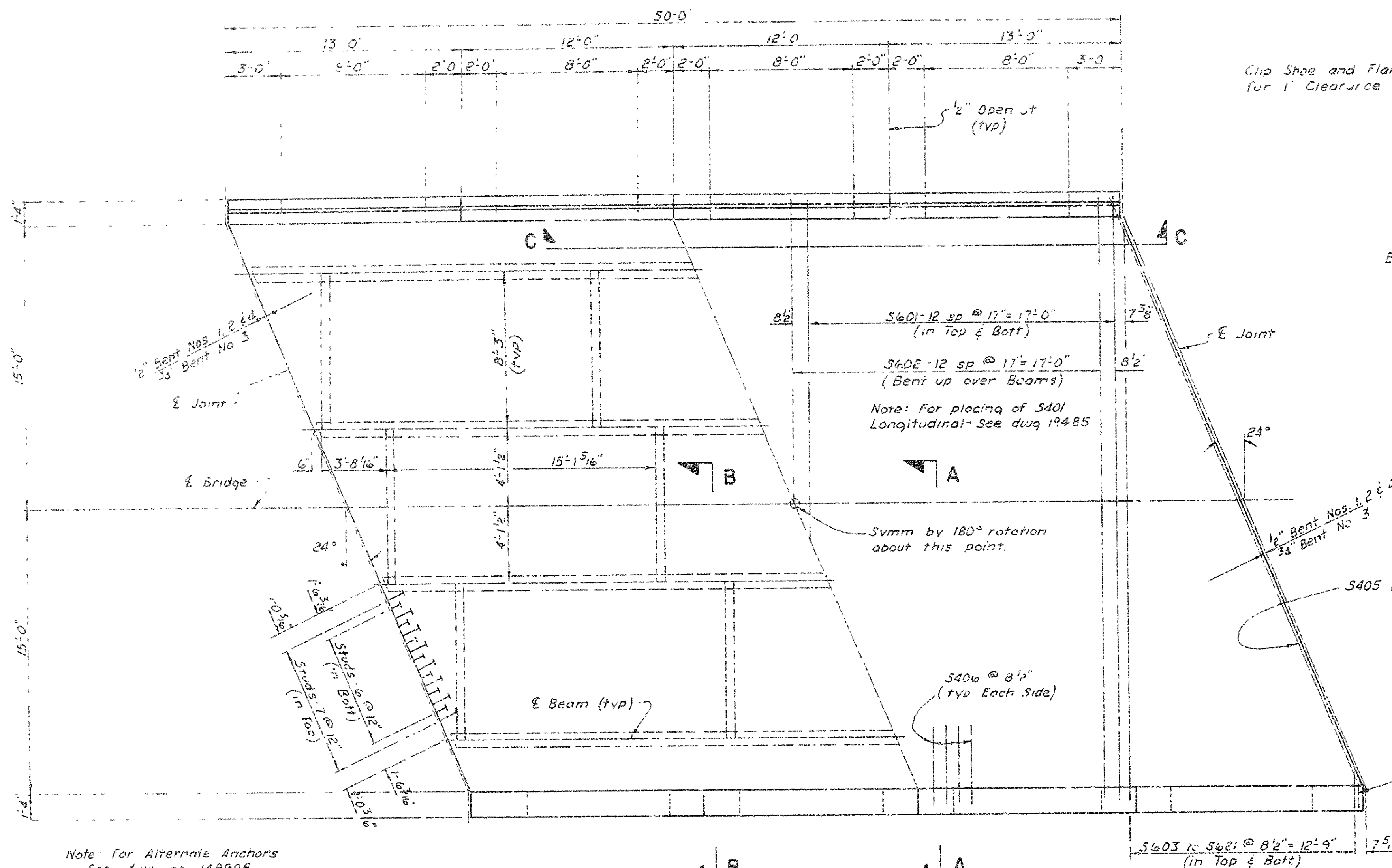








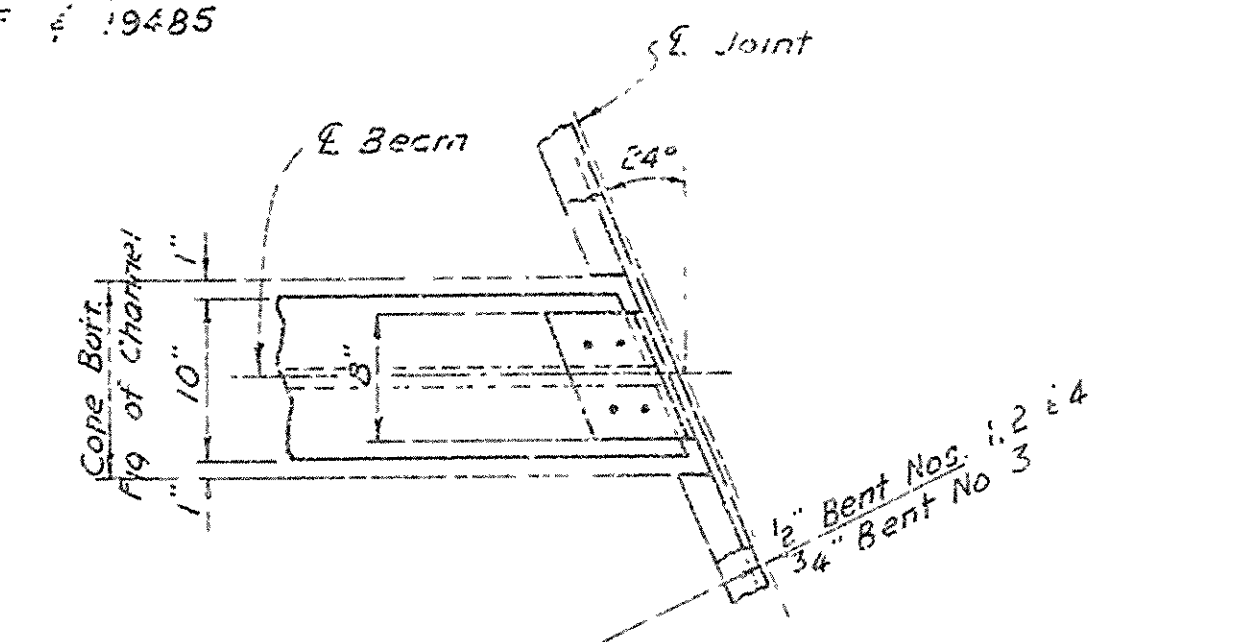
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				6	ARK.	DACH 66-70 C-3010	15	33
						JOB NO. 10893		
						S 5643 - SPAN DETAILS - 19489		



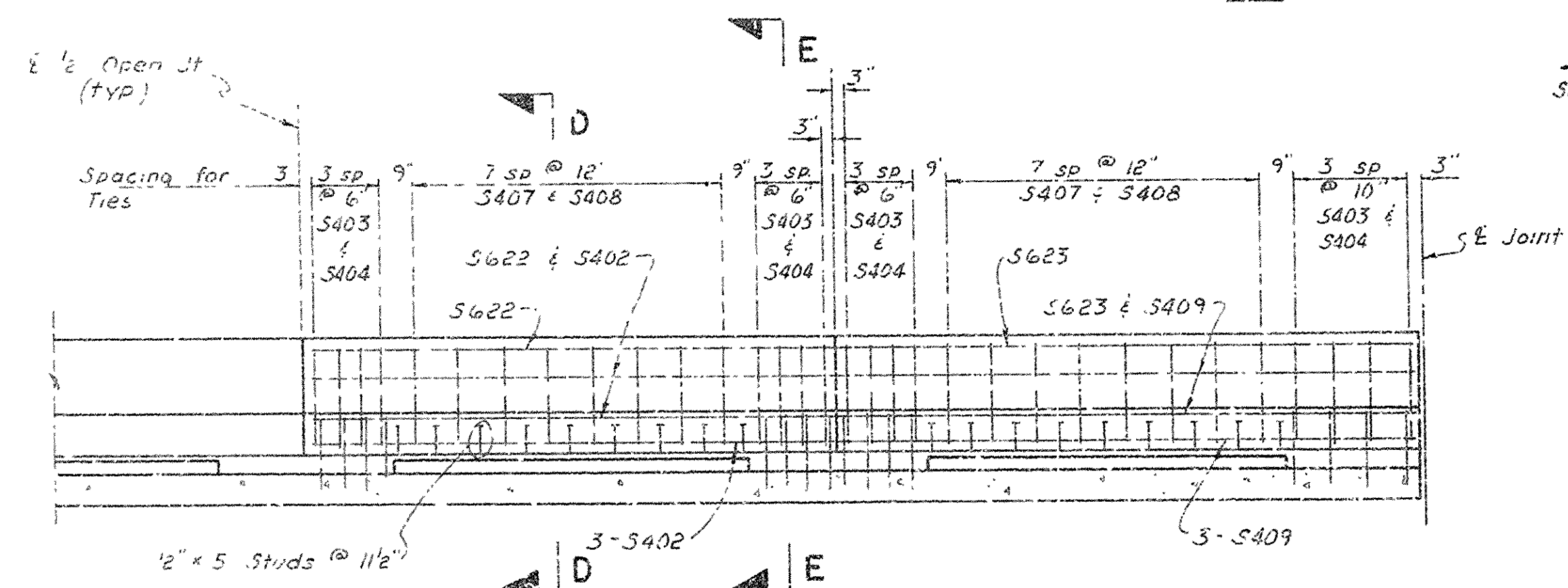
BAR LIST (FOR ONE SPAN)

MARK	NO.	REIN.	LENGTH	PIN. DIA.	BENDING DIAGRAMS
S401	142	25-7"	Str.		For Bending Diagrams - See Dwg No 19485
S402	20	11-7"	Str.		
S403	64	5-9"	2"		
S404	64	6-9"	2"		
S405	4	35-4"	Str.		
S406	64	5-0"	Str.		
S407	64	6-4"	Str.		
S408	64	3-3"	2"		
S409	20	12-7"	Str.		
S401	52	32-4"	Str.		
S402	25	33-1"	3-3/4"		
S403	4	31-1" to Each	2-6"	Str.	
S402	12	11-7"	Str.		
S403	12	12-7"	Str.		
S404	12	12-7"	Str.		

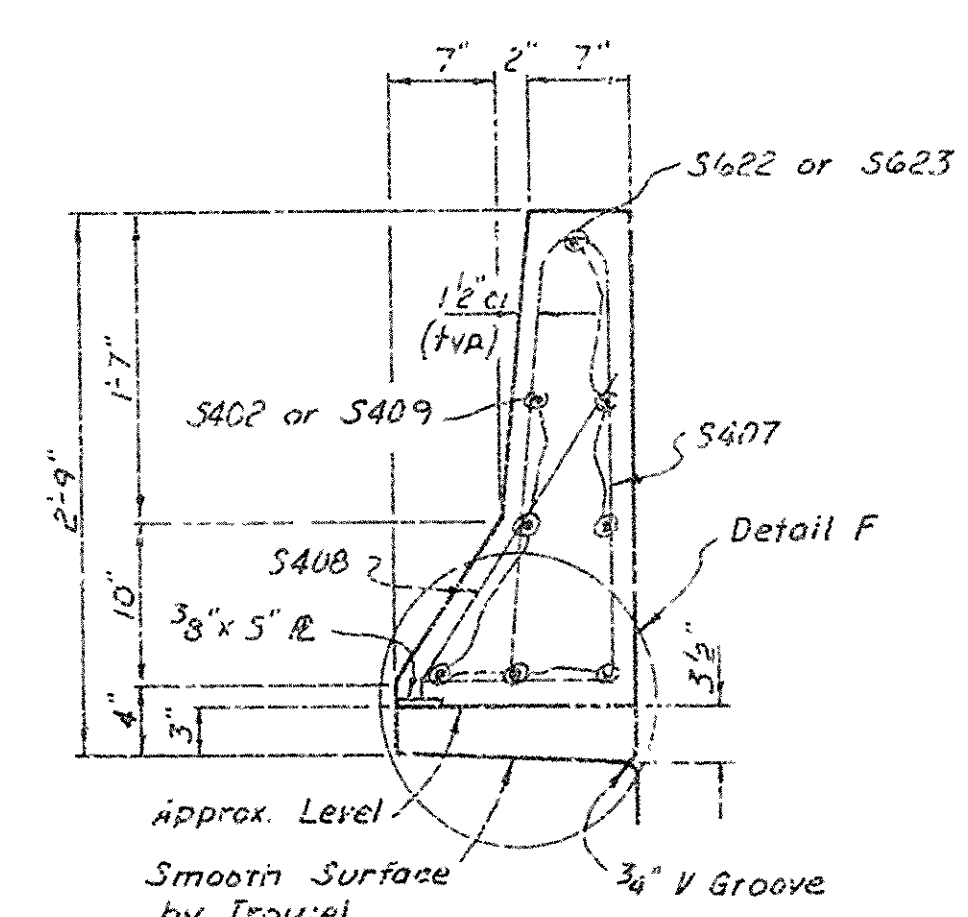
Note: For Additional Details & General Note -  
See Dwg No 14990F & 19485



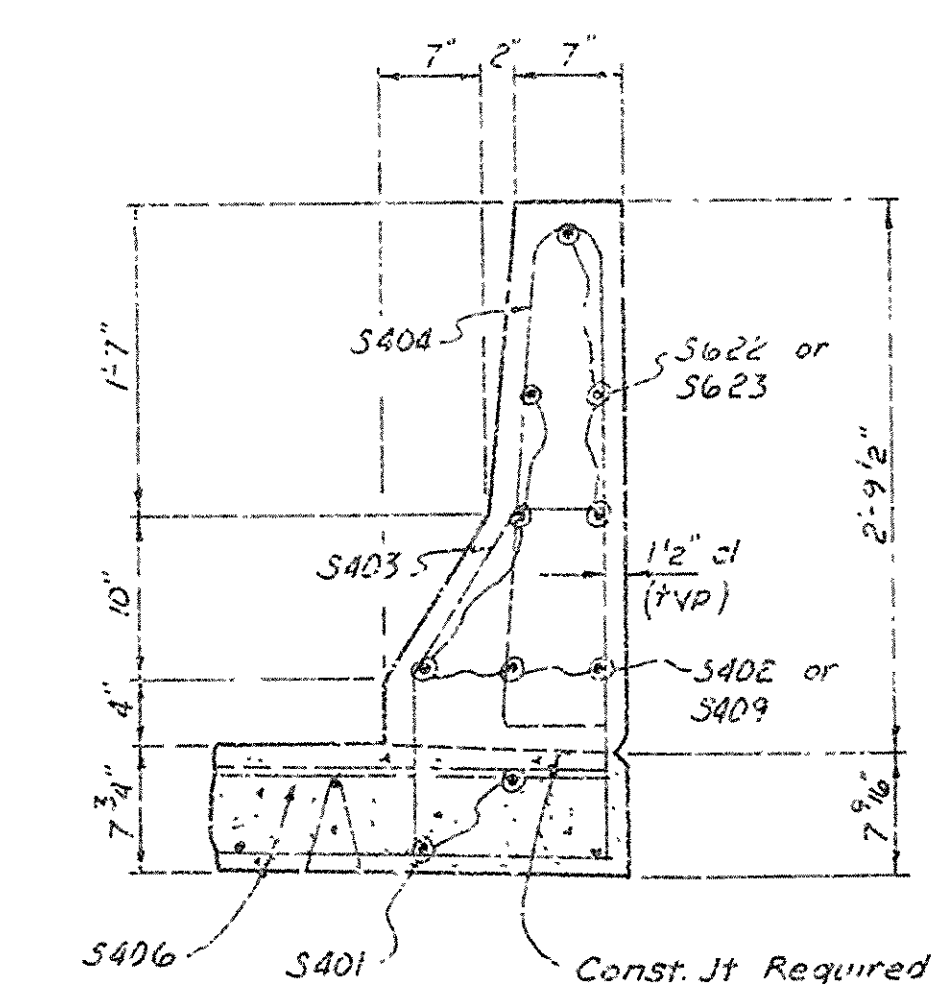
CHANNEL CONNECTION  
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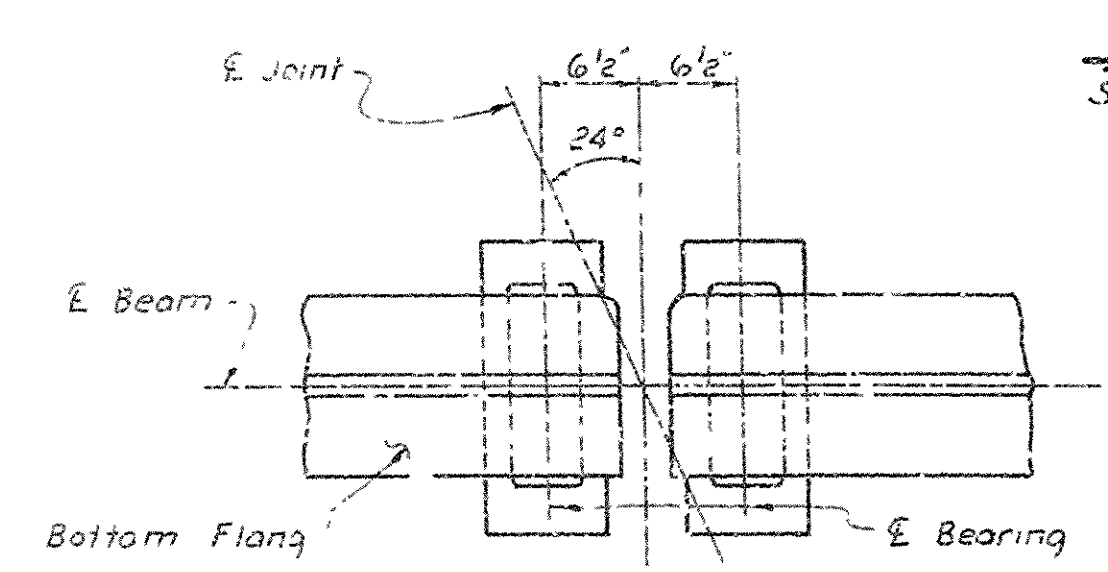
VIEW C-C  
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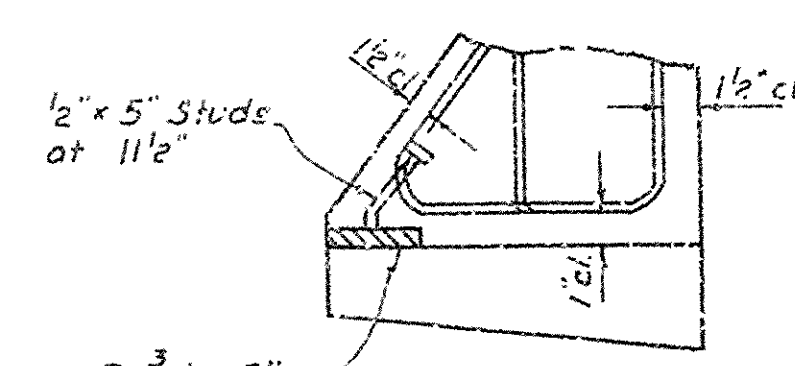
SECTION D-D  
Scale: 1" = 1'-0"



SECTION E-E  
Scale: 1" = 1'-0"



PLAN OF BEARING AT INT. BENTS  
Scale: 1" = 1'-0"



DETAIL F  
Scale: 1" = 1'-0"

SUPPLEMENTAL DETAILS  
50'-0" ONE-SITE W-BEAM SPAN  
BIG BAY DITCH  
THOMPSON CREEK & BIG BAY DITCH  
BRIDGES & APPROACHES  
CRAIGHEAD COUNTY  
ROUTE 135 SEC. 3  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY JEB DATE 12-19-75  
CHECKED BY JEB DATE 1-6-76 SCALE AS NOTED  
DESIGNED BY JEB DATE 5-24-75  
BRIDGE NO. 5643 DRAWING NO. 19489

*Paul P. Pankratz*  
BRIDGE ENGINEER







DATE	DATE	DATE	DATE	P.C. ROAD	STATE	FED. AID	FISCAL	SHEET	TOTAL
REVISED	REVISED	REVISED	REVISED	NO.	NO.	PROG.	YEAR	NO.	SHEETS
6-9-76	2-8-79	5-17-80	2-20-80	6	ARK.				
9-24-76	2-15-80	5-20-80	2-12-80						
4-15-77	2-9-80	2-12-80							
4-1-81	4-16-81								

SPAN STD. DETAILS

### GENERAL NOTES

ALL CONCRETE TO BE CLASS S OR (S/AE) AS SHOWN ON THE LAYOUT. ALL EXPOSED CORNERS TO BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED. FIELD CONNECTIONS TO BE BOLTED WITH HIGH STRENGTH BOLTS. BOLTS 3/4" Ø, OPEN HOLES 13/16" Ø EXCEPT WHERE NOTED OTHERWISE. STRUCTURAL SHAPES OF EQUAL OR GREATER STRENGTH MAY BE SUBSTITUTED FOR SHAPES SHOWN, BUT PAYMENT WILL BE MADE ON THE BASIS OF SHAPES SHOWN.

ALL WELDED CONNECTIONS TO BE 5/16" FILLET SHOP WELDS EXCEPT AS NOTED. ALL WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY STANDARD SPECIFICATIONS FOR WELDED HIGHWAY AND RAILWAY BRIDGES, CURRENT EDITION. UNLESS OTHERWISE NOTED ON SPAN DETAIL DRAWINGS, ALL STRUCTURAL STEEL EXCEPT SURFACES IN CONTACT WITH CONCRETE SHALL BE GIVEN ONE SHOP COAT AND TWO FIELD COATS IN ACCORDANCE WITH SECTION 807.59 OF THE SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

ALL METAL BEARING AND ROADWAY EXPANSION DEVICES TO BE PAID FOR AS "STRUCTURAL STEEL IN BEAM SPANS." BEARINGS SHALL BE FINALLY SEATED IN ACCORDANCE WITH SECTION 807.51 OF THE STAN. A.13 SPECIFICATIONS. THIS WORK AND MATERIAL ARE TO BE CONSIDERED AS SUBSIDIARY TO THE ITEM "STRUCTURAL STEEL IN BEAM SPANS" AND WILL NOT BE PAID FOR DIRECTLY.

THIS DRAWING SHOWS GENERAL FEATURES OF DESIGN ONLY. SHOP DRAWINGS SHALL BE MADE IN ACCORDANCE WITH THE SPECIFICATIONS, SUBMITTED AND APPROVAL SECURED BEFORE FABRICATION IS BEGUN.

ALL STEEL SHALL BE ASTM A-36 UNLESS OTHERWISE NOTED. ANCHOR BOLTS SHALL BE GALVANIZED TO CONFORM TO ASTM SPECIFICATION, DESIGNATION A153.

REINFORCING STEEL TO BE ASTM A615 OR A617, GR. 60. THE REINFORCING STEEL IS TO BE ACCURATELY LOCATED IN THE FORMS AND FIRMLY HELD IN PLACE BY STEEL WIRE SUPPORTS, SUFFICIENT IN NUMBER AND SIZE TO PREVENT DISPLACEMENT DURING THE COURSE OF CONSTRUCTION. THE WIRE SUPPORTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO THE ITEM OF "REINFORCING STEEL."

SHOP LISTS AND BENDING DIAGRAMS OF REINFORCING STEEL, INCLUDING WIRE SUPPORTS, MAY BE SUBMITTED FOR APPROVAL BEFORE FABRICATION IS BEGUN.

CONCRETE SLABS FOR SPANS THROUGH 50 FEET IN LENGTH SHALL BE POURED IN ONE CONTINUOUS OPERATION WITH A STRIKEOFF EXTENDING OVER THE WHOLE SPAN LENGTH. SPANS OVER 50 FEET IN LENGTH MAY BE POURED IN INCREMENTS WITH THE CENTER ONE-THIRD TO ONE-HALF SPAN LENGTH POURED FIRST. AFTER THE CENTER SECTION IS POURED, NOT LESS THAN 72 HOURS SHALL ELAPSE BEFORE POURING THE END SECTIONS. END SECTIONS MAY BE POURED SIMULTANEOUSLY. IF NOT POURED SIMULTANEOUSLY, 48 HOURS SHALL ELAPSE BETWEEN END SECTION POURS. A MINIMUM OF 72 HOURS SHALL ELAPSE BETWEEN COMPLETION OF THE SLAB AND THE POURING OF THE CURB SECTION OR PARAPET.

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION EDITION OF 1978 AND APPLICABLE SPECIAL PROVISIONS.

ALL CASTINGS FOR SHOES SHALL BE ASTM A27 GRADE 70-40 OR 70-36

WELDED SHOES MAY BE USED IN PLACE OF THE TYPE "D" SHOES SHOWN. APPROVED DETAILS WILL BE FURNISHED ON REQUEST.

HOLES FOR 3/4" BOLTS FOR CONNECTION OF EXPANSION DEVICES, DIAPHRAGMS AND END STRUTS MAY BE 15/16" IF A WASHER IS SUPPLIED FOR USE UNDER BOTH THE NUT AND THE HEAD OF THE BOLT.

### EXPANSION JOINT DATA

"A" (Joint Width Perpendicular to JT @ 60°F)	"B" (Seal Width)	"C" (JT Seal)
1"	1 1/2"	1 1/4" ±
1 1/8"	1 3/4"	1 1/8" ±
1 1/4"	2"	2 1/8" ±
1 3/8"	2 1/4"	2 1/4" ±
1 1/2"	2 1/2"	2 1/2" ±
1 5/8"	2 3/4"	2 3/4" ±
1 3/4"	3"	2 3/8" ±
1 7/8"	3 1/4"	2 3/8" ±
2"	3 1/2"	2 3/8" ±
2 1/8"	3 3/4"	2 3/8" ±
2 1/4"	4"	2 3/8" ±
2 3/8"	4 1/4"	2 3/8" ±

1 1/2" May be used; to 40" min. & 80" max.

INSTALLATION LIMITED

THE DIMENSION "D" SHALL CONFORM TO THE RECOMMENDATIONS OF THE SEAL MANUFACTURER AS APPROVED BY THE BRIDGE ENGINEER. THE DEPTH OF THE SEAL SHALL BE APPROXIMATELY EQUAL TO THE UNCOMPRESSED WIDTH OF THE SEAL. SEAL DOES NOT TOUCH 1/4" BAR AT NORMAL TEMPERATURE. FOR SIZE OF JOINT TO BE USED, SEE BRIDGE LAYOUT.

### DETAILS COMMON TO STANDARD 35'-90'

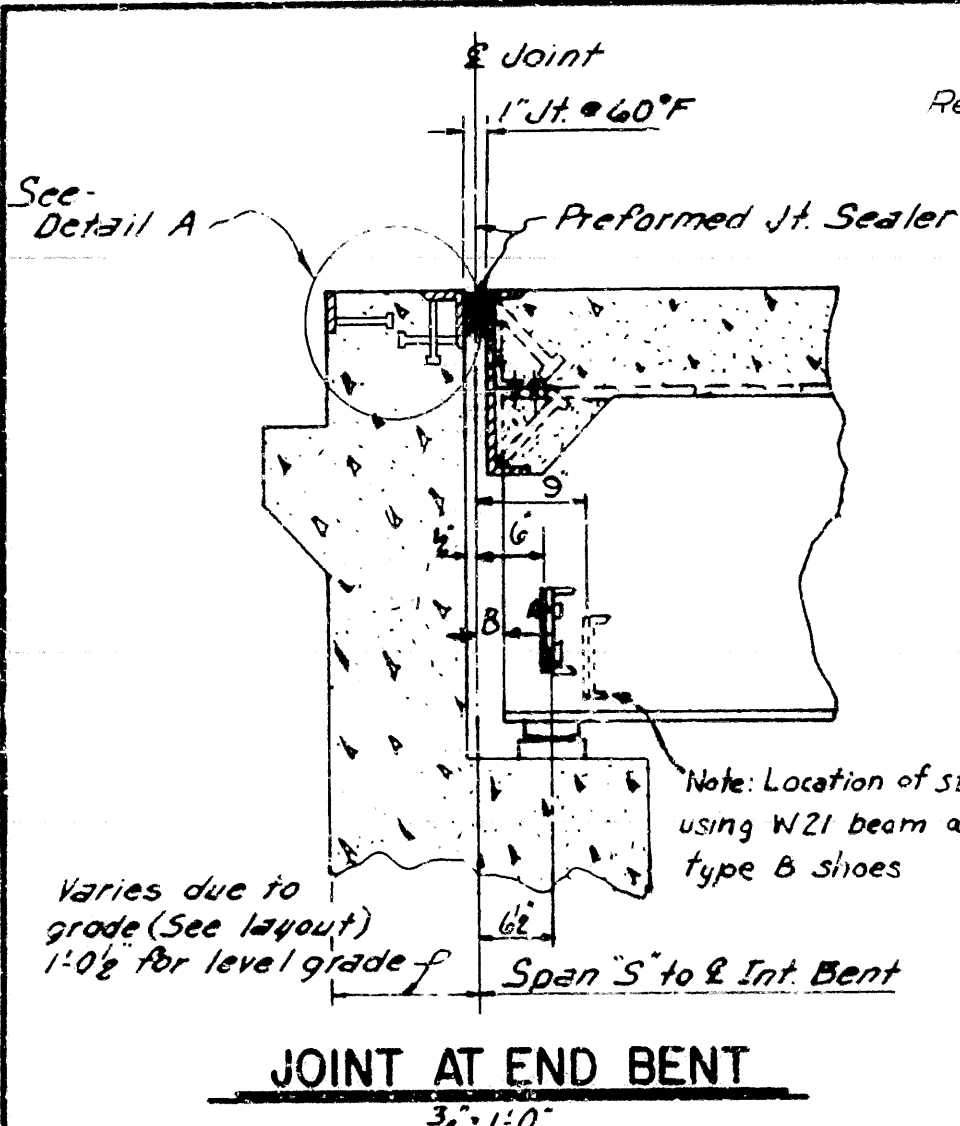
### COMPOSITE W-BEAM SPANS

### ALL ROADWAYS ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

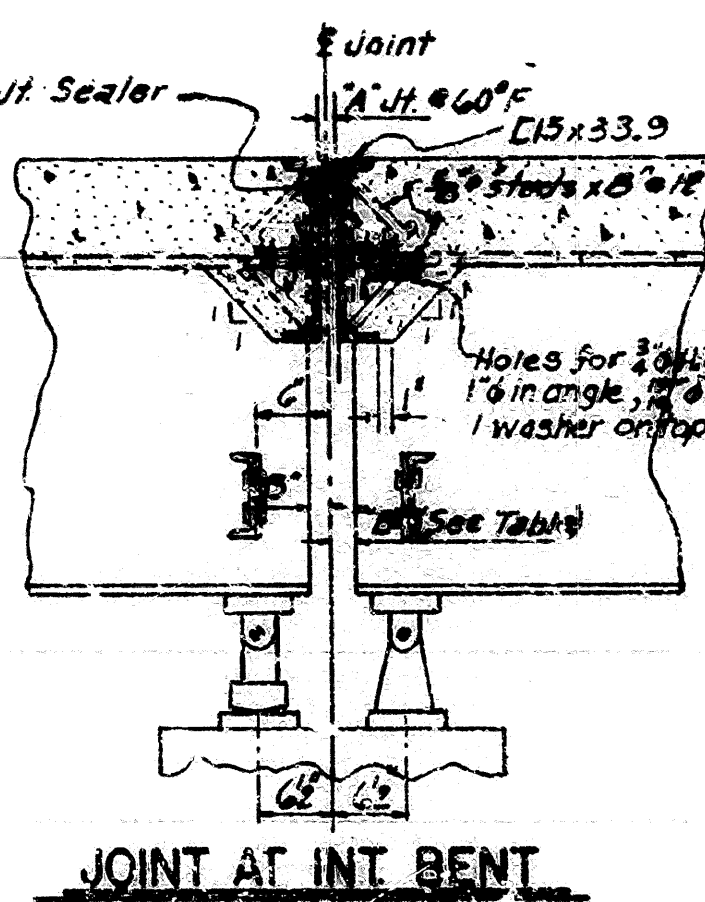
DRAWN BY: J.M.H. DATE: 12-2-70  
 REVISION BY: J.M.H. DATE: 5-9-74  
 CHECKED BY: J.M.H. DATE: 12-4-70

BRIDGE NO. DRAWING NO. 14990F



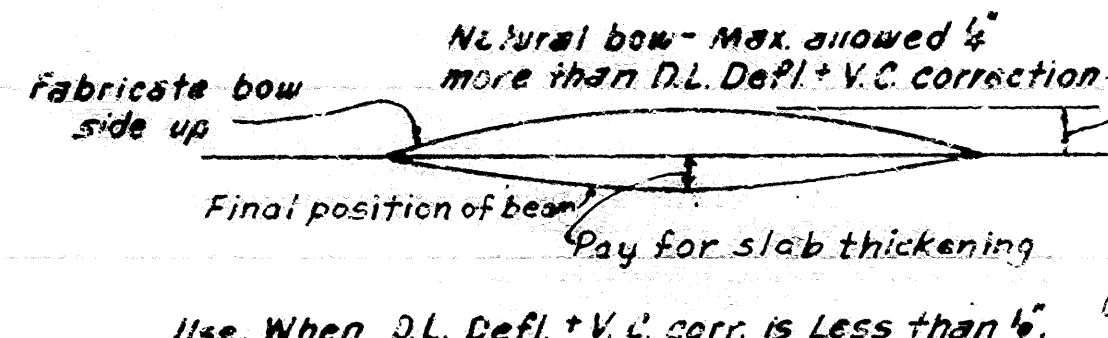
DETAIL "A" (TYPICAL)

DETAIL OF JOINT SEAL SUPPORT



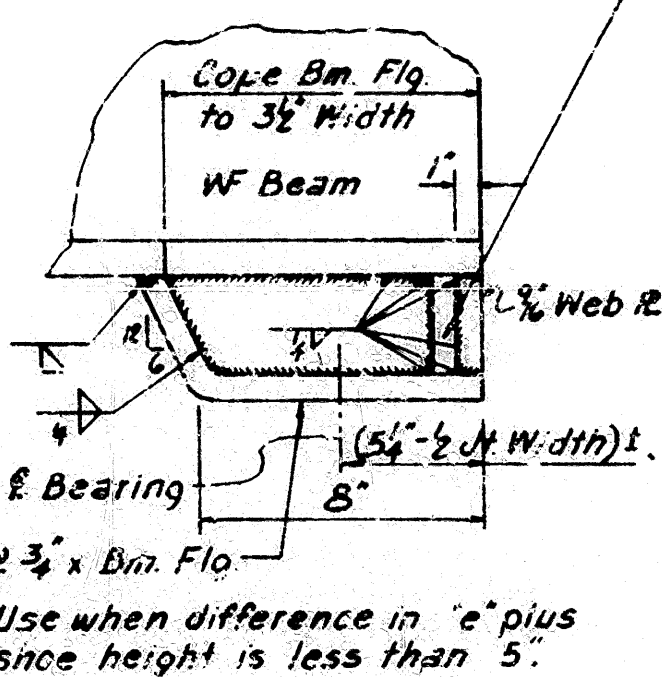
JOINT AT INT BENT

Pre-camber D.L. defl. + V.C. Corr.  
 Acceptable beams  
 Plan Grade -  
 No pay for thickening slab if final position of beam is below plan grade.  
 Use, When D.L. Defl. + V.C. Corr. is 1/2" or more.

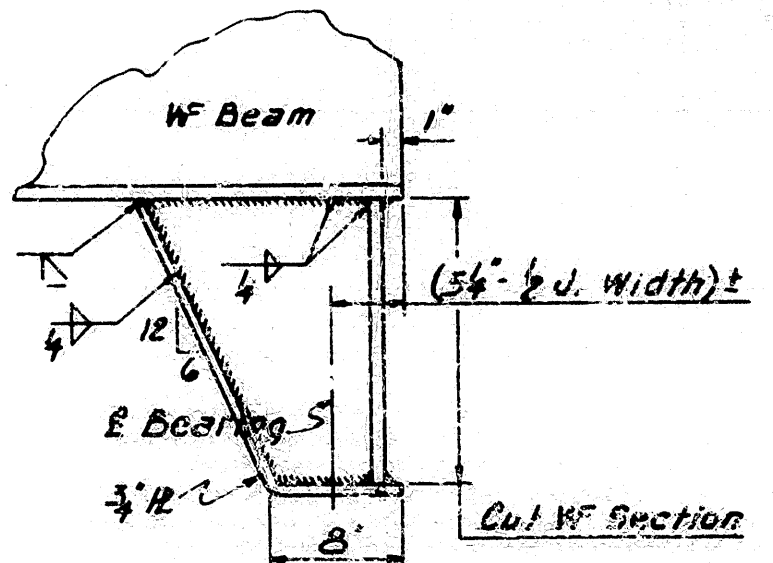


CAMBER DIAGRAMS  
no scale

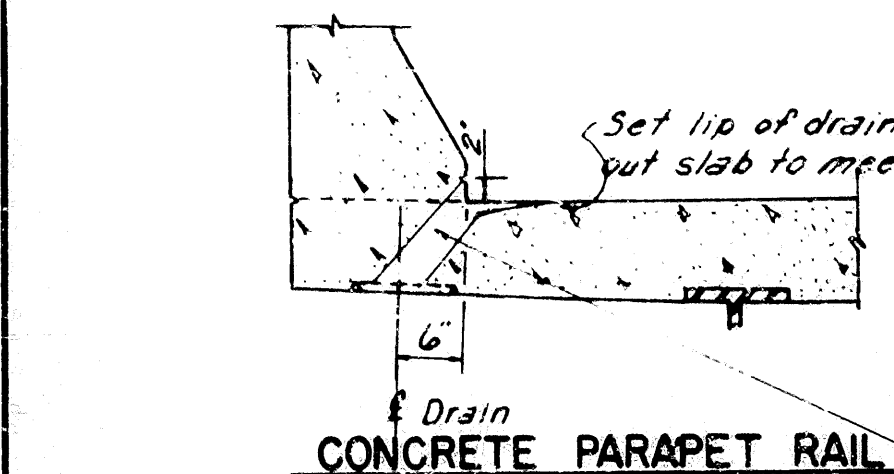
5/8" THICK STIFFENER EACH SIDE OF WEB TAPERED FROM EDGE OF COPED FLG. TO EDGE OF BOTTOM PLATE.



DETAILS OF BEAM BUILD-UP  
no scale



OPTIONAL BEAM BUILD-UP  
no scale



CONCRETE PARAPET RAIL

CONCRETE PARAPET RAIL SEAL PLACEMENT

DRAIN OPENING 3" X 7" TAPERED TO 3 1/2" X 7 1/2". PLACE AT APPROXIMATE 10' CENTERS ON LOW SIDE OF SLOPED ROADWAY, & EACH SIDE OF CROWNED ROADWAY. OMIT DRAINS ON GRADE SEPARATION STRUCTURES UNLESS CALLED FOR ON THE PLANS AND ON END SPANS OF STREAM CROSSINGS.

Note: Drain opening does not apply when using open slots for concrete parapet rail.

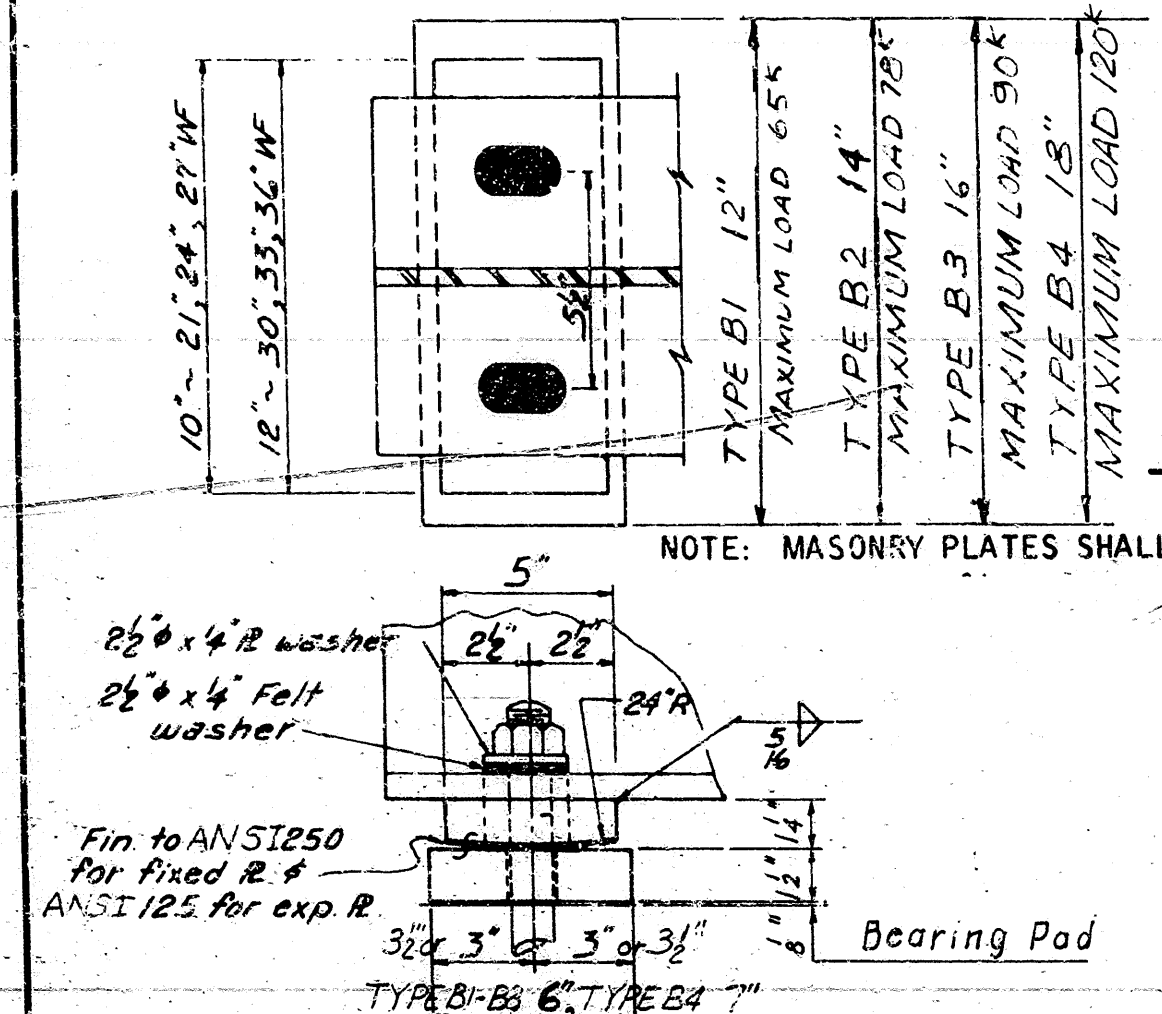
AS AN ALTERNATE FOR 5/8" X 8" STUDS, 1/2" X 8" AUTOMATICALLY WELDED STUD ANCHORS, GRANULAR FLUX FILLED, SOLID FLUXED, OR EQUAL SPACED AS SHOWN, MAY BE USED OR 1 1/2" X 12" X 5/16" STRAPS AT 15" CENTERS MAY BE USED. USE WEIGHT OF 5/8" STUDS AS BASIS OF MEASUREMENT OF STRUCTURAL STEEL IN ANCHORS.

DETAILS OF ALTERNATE ANCHORS  
4'-1'-0"

FIXED SHOE:  
 1 1/4" Ø HOLES IN MASONRY PLATE, SOLE PLATE, & BEAM FLANGE FOR SPANS THRU 50'  
 1 1/2" Ø HOLES FOR SPANS OVER 50'

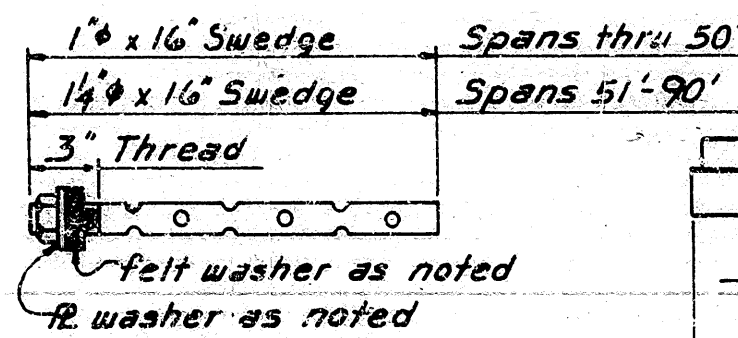
EXPANSION SHOE: (ALL SPANS THRU 50')  
 2 1/2" X 1 1/4" SLOTS IN SOLE PLATE & BEAM FLANGE WITH 1 1/4" Ø HOLES IN MASONRY PLATE.

EXPANSION SHOE: (ALL SPANS OVER 50')  
 3" X 1 1/2" SLOTS IN SOLE PLATE AND IN BEAM FLANGE WITH 1 1/2" Ø HOLES IN MASONRY PLATE.

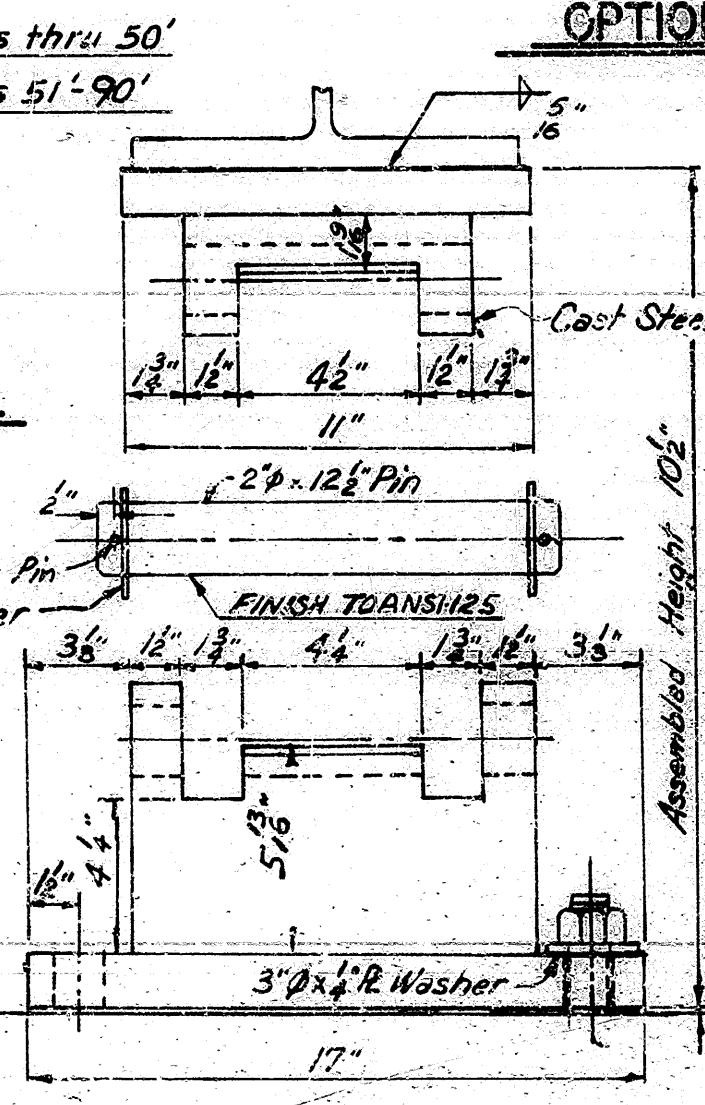


TYPE "B" FIXED OR EXPANSION SHOE

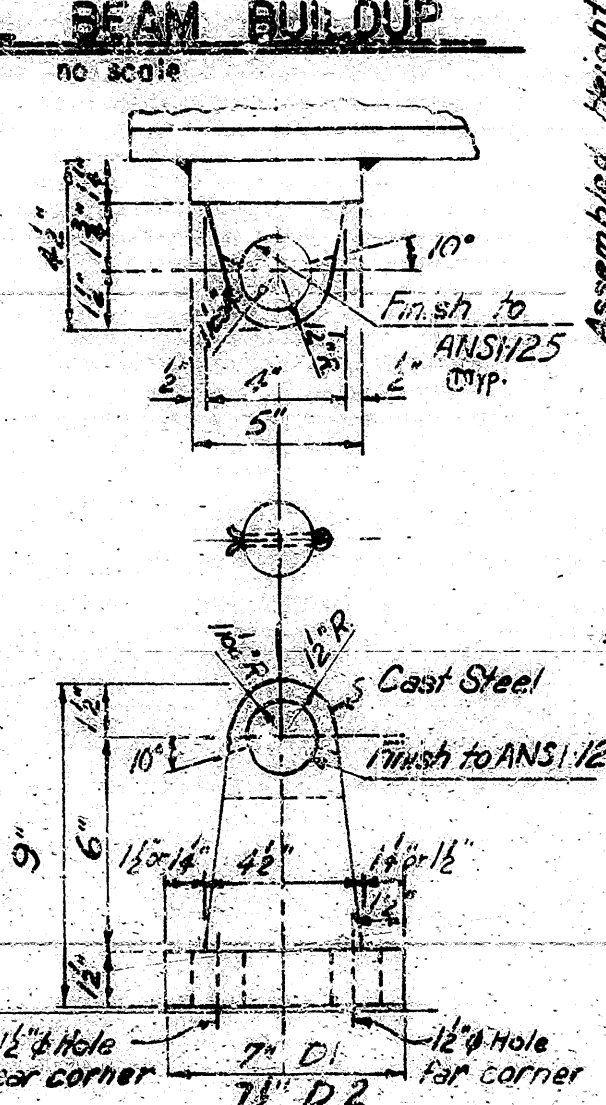
USE FOR END BENTS - ALL SPANS UNLESS OTHERWISE NOTED.  
 USE FOR INT. BENTS 35'-60' SPANS UNLESS OTHERWISE NOTED.



ANCHOR BOLT DETAIL  
no scale



TYPE "D" FIXED SHOE



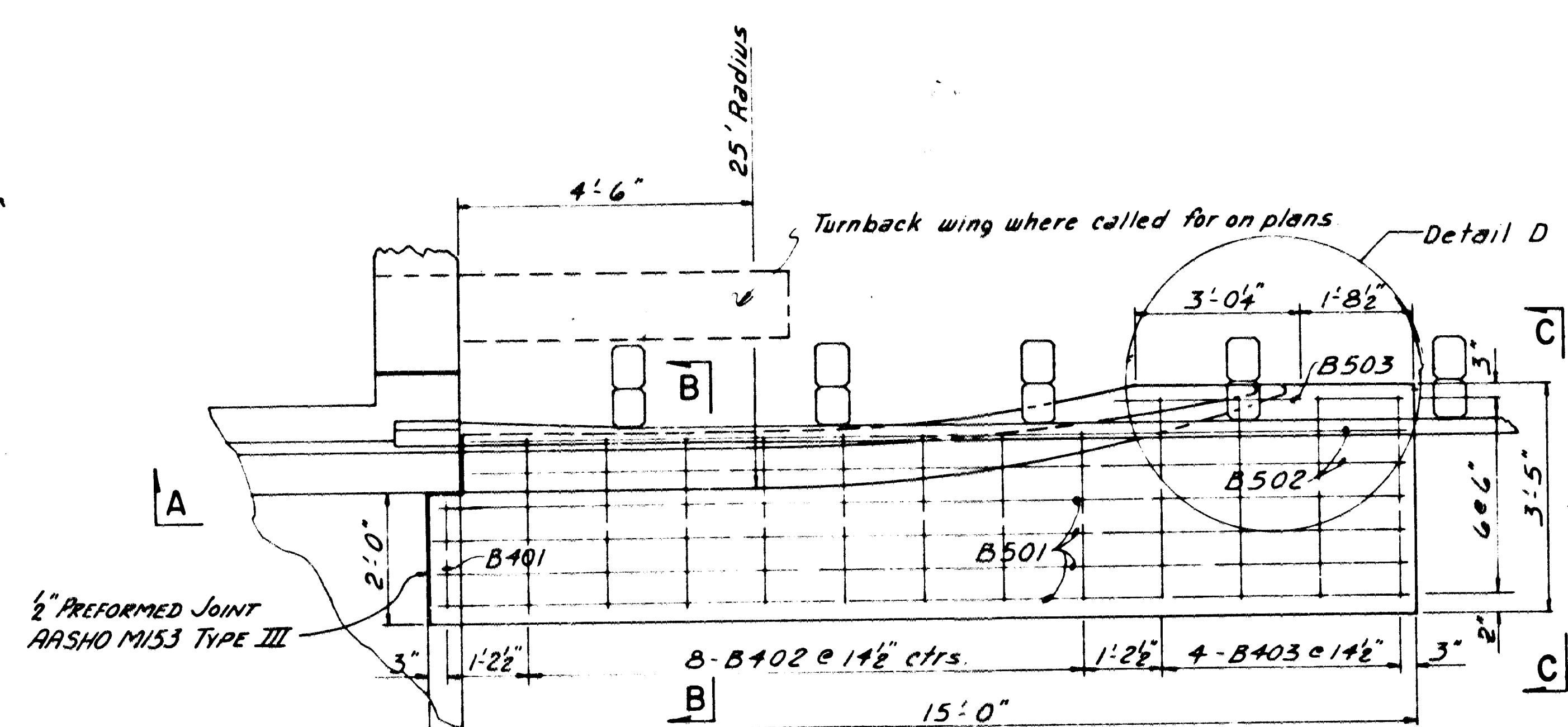
TYPE "D" EXPANSION SHOE

Revised painting note 2-15-80 M&C  
 Revised Detail A of General Notes, and Type A of B  
 Revising Deleted 12-9-80 J.M.H.  
 TYPE D1 EXPANSION OR  
 FIXED SHOE MAXIMUM LOAD 100K  
 TYPE D2 EXPANSION OR  
 FIXED SHOE MAXIMUM LOAD 120K  
 Revised Anchors & Joint Data J.P.S. 4-1-81

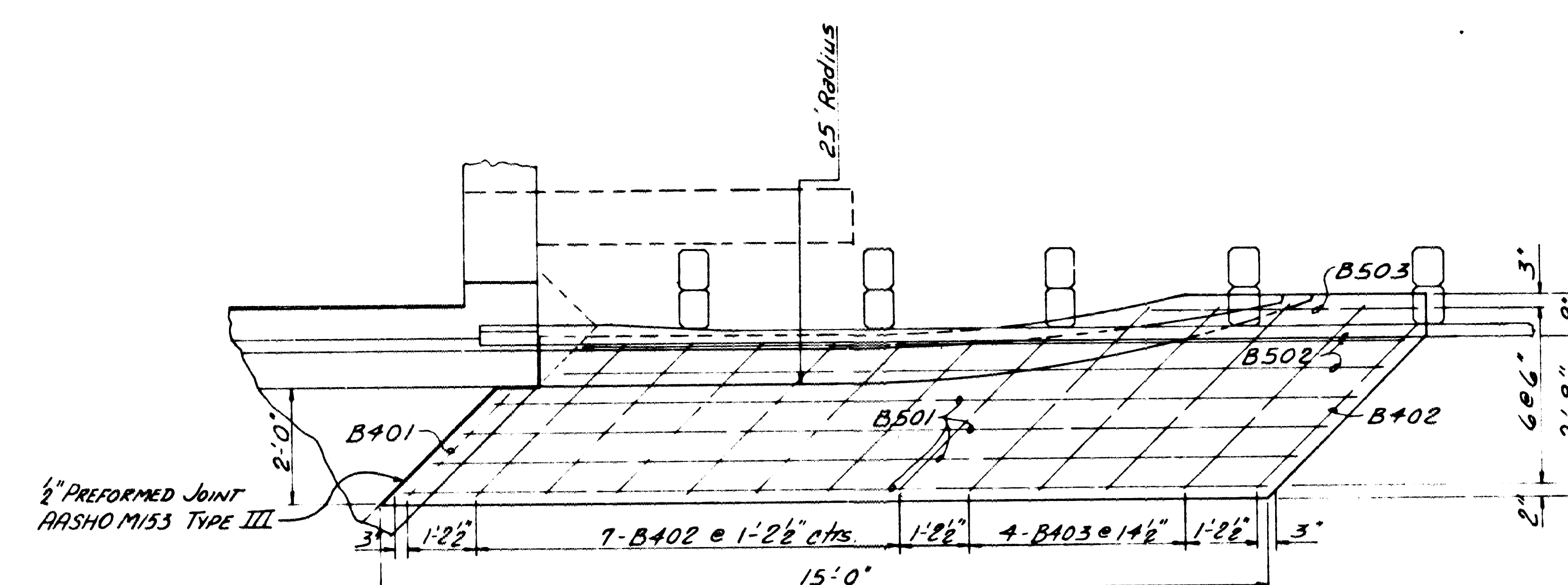
6-9-76 Revised general notes, shoe finish callout, added shoe note, and misc.  
 Revised Exp. Jt. Data Table by J.P.S. 9-24-76  
 Revised Exp. Jt. Data Table by L.M. 4-15-77  
 Revised for 1978 Specs. 9-15-78 K.D.H.  
 Added 1/4" bar note 2-8-79 K.D.H.



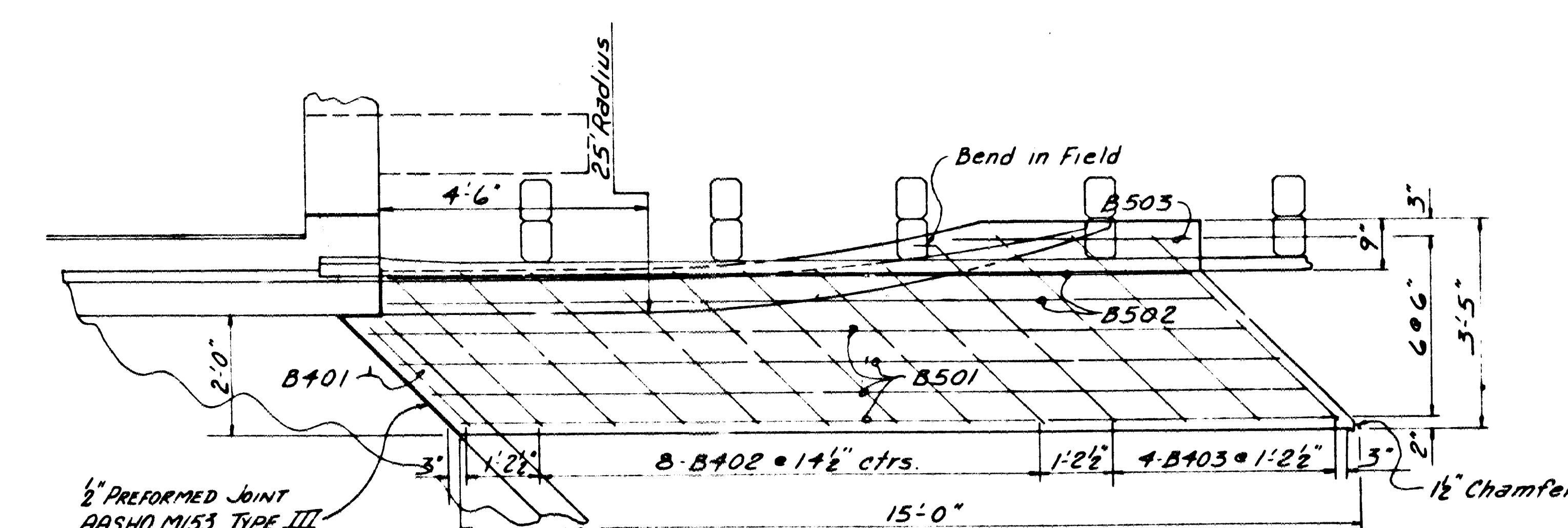
DATE	REVISED	DATE	REVISED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
10-19-72	11-1-73	7-16-73	8-28-73	6	ARK	DACH 44-16-C-0010		16	33
				JOB NO.		10893			
				S 15642.3 - Type J Gutters 19490					



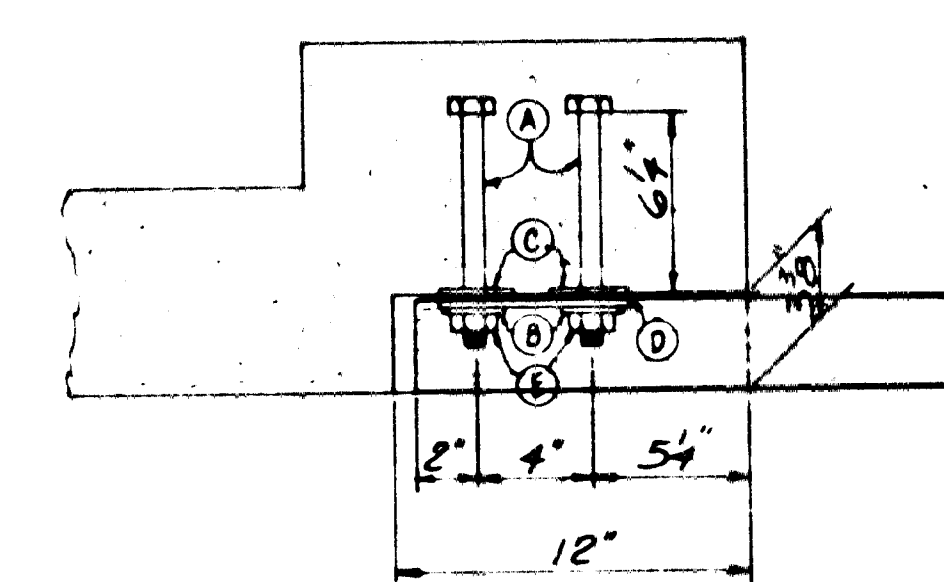
HALF PLAN OF APPROACH GUTTER FOR SQUARE BRIDGE



HALF PLAN OF APPROACH GUTTER FOR LEFT FORWARD SKEW BRIDGE

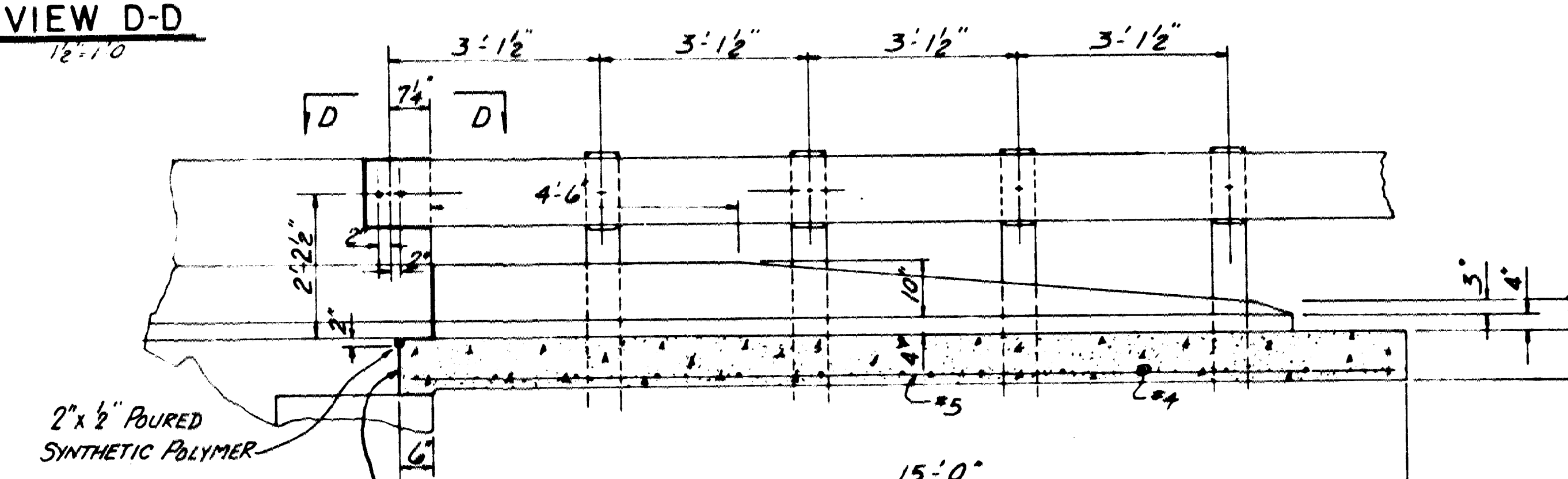


HALF PLAN OF APPROACH GUTTER FOR RIGHT FORWARD SKEW BRIDGE

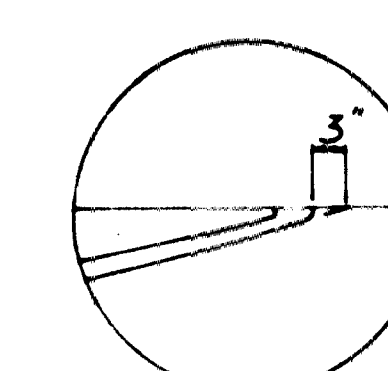


VIEW D-D  
12'-0"

- ① (2) 8" A-325 High Strength Bolts with 1 1/2" Threads  
 ② (2) Clipped Hardened Washers  
 ③ (2) Full Hardened Washers  
 ④ (1) 2 1/2" x 1/4" x 1" Double Washer  
 ⑤ (2) Nuts

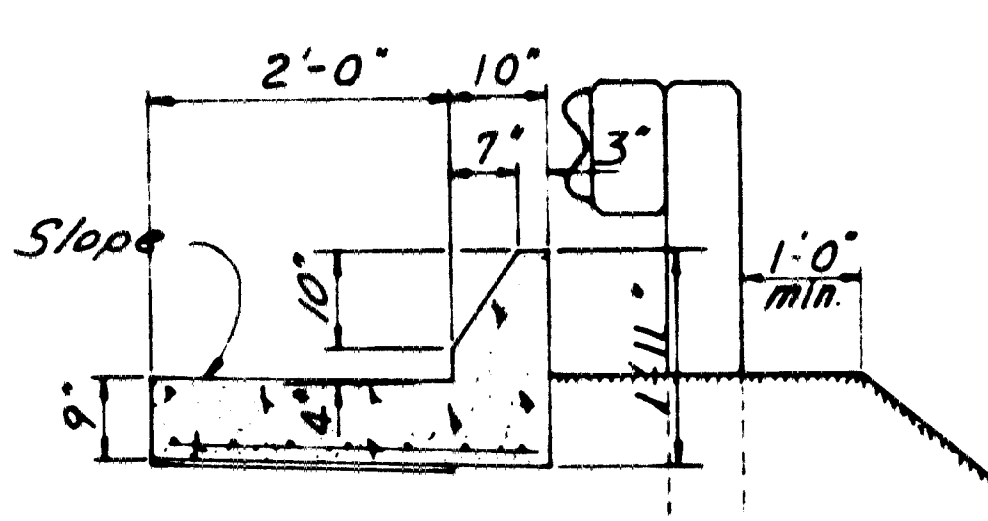


SECTION A-A

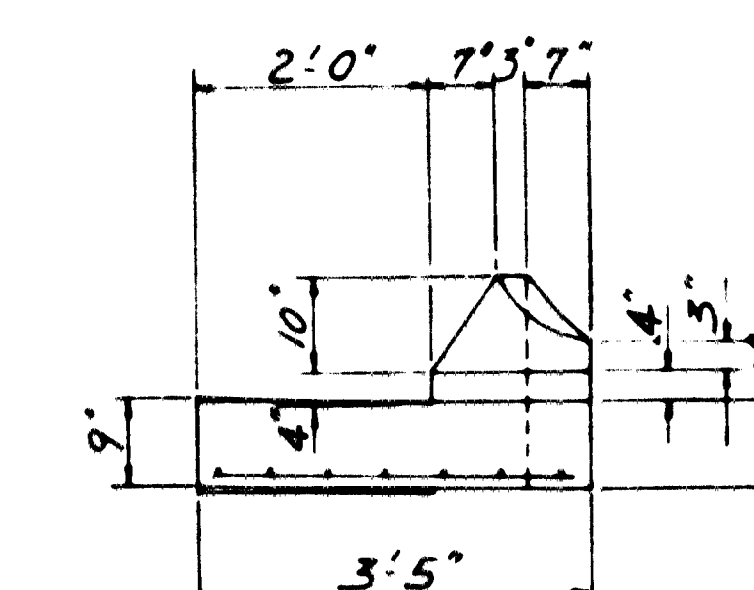


DETAIL D

Match Bridge Deck Slope



SECTION B-B  
No Scale



VIEW C-C

Added Quantities 7-16-73 K.M.G.  
 Revised curb height, JCK 1-15-76

BAR LIST FOR ONE APPROACH  
 (TWO GUTTERS)

MARK	NO.	REQD.	LENGTH
B401	2	1'-6"	
B402	16	2'-4"	
B403	8	3'-0"	
B501	8	1'-6"	
B502	4	1'-0"	
B503	2	4'-3"	

\*As shown for Square Bridge, x Sec. of angle for Skewed Bridge.

FOR INFORMATION ONLY  
 APPROX. QUANTITIES, SQUARE BRIDGE  
 TWO GUTTERS

CONCRETE 3.14 Cu Yds.  
 REINFORCING STEEL 231 Lbs.

APPROACH SLAB NOTES

CONCRETE IN APPROACH SLABS TO BE CLASS A OR S OR PAVEMENT MIXTURE.

REINFORCING STEEL TO BE ASTM A615, GRADE 40.

APPROACH GUTTERS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR "APPROACH GUTTERS, TYPE J.". THE PRICE BID SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS, INCLUDING REINFORCING STEEL, CONCRETE, EXCAVATION AND FORMS AND LABOR TO COMPLETE GUTTERS.

FOR DETAILS OF POSTS, GUARD RAIL AND ATTACHMENT OF GUARD RAIL TO POSTS SEE JOB DETAILS PERTAINING TO THESE ITEMS.

TYPE J APPROACH GUTTERS USED IN CONJUNCTION WITH TYPE L APPROACH SLABS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH BID FOR "APPROACH SLABS AND GUTTERS, TYPE L J." WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS, INCLUDING REINFORCING STEEL, CONCRETE, EXCAVATION AND FORMS AND LABOR TO COMPLETE THE SLABS AND GUTTERS.

DETAILS OF STANDARD  
 TYPE J

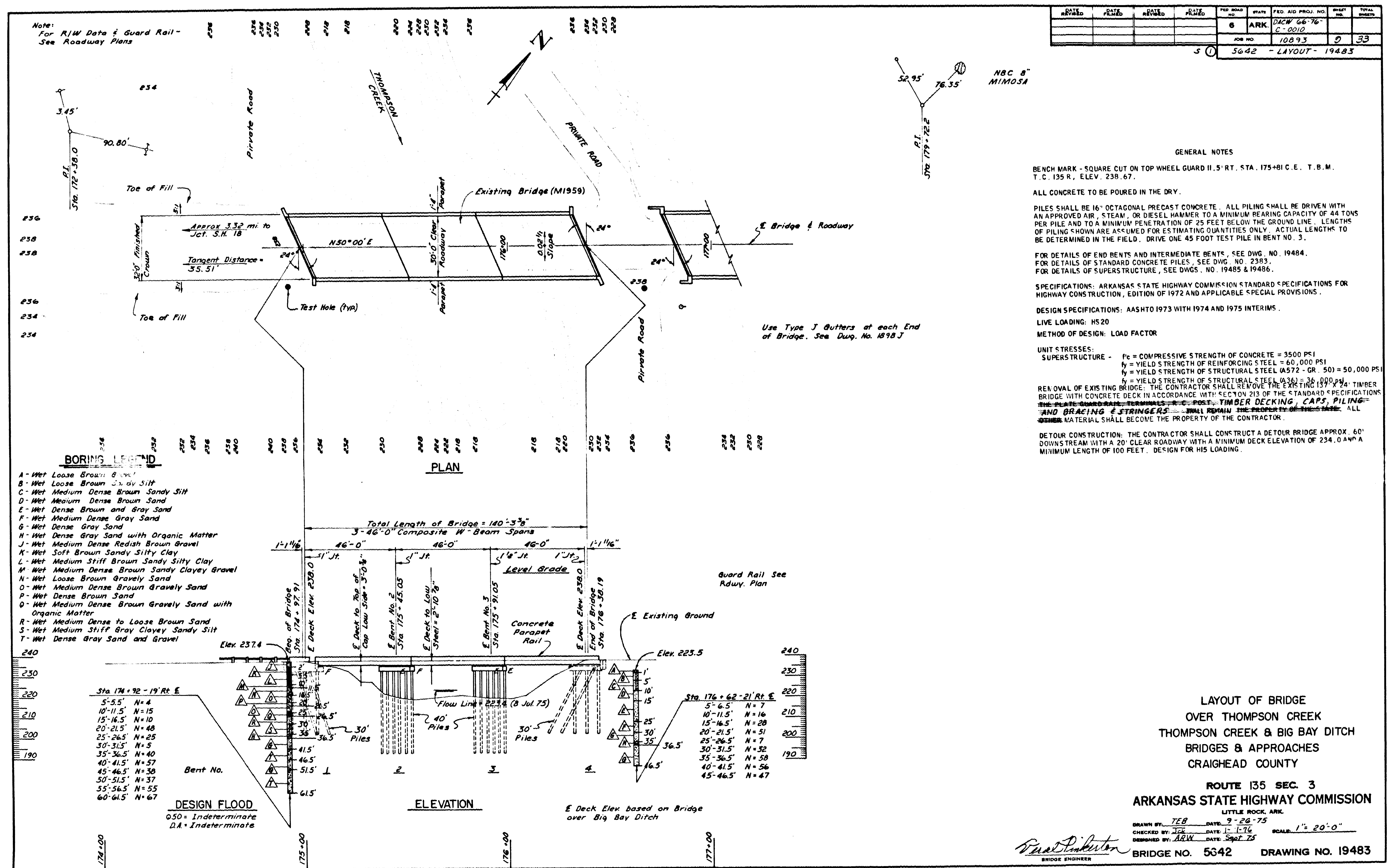
APPROACH GUTTERS

ROUTE 135 SEC. 3  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.

DRAWN BY: M.W.M. DATE: 2-18-71  
 TRACED BY: DATE: 2-23-71  
 CHECKED BY: E.M.H. DATE: 2-23-71  
 BRIDGE NO. 5642, 5643  
 DRAWING NO. 1898J

File as Drawing No. 19490



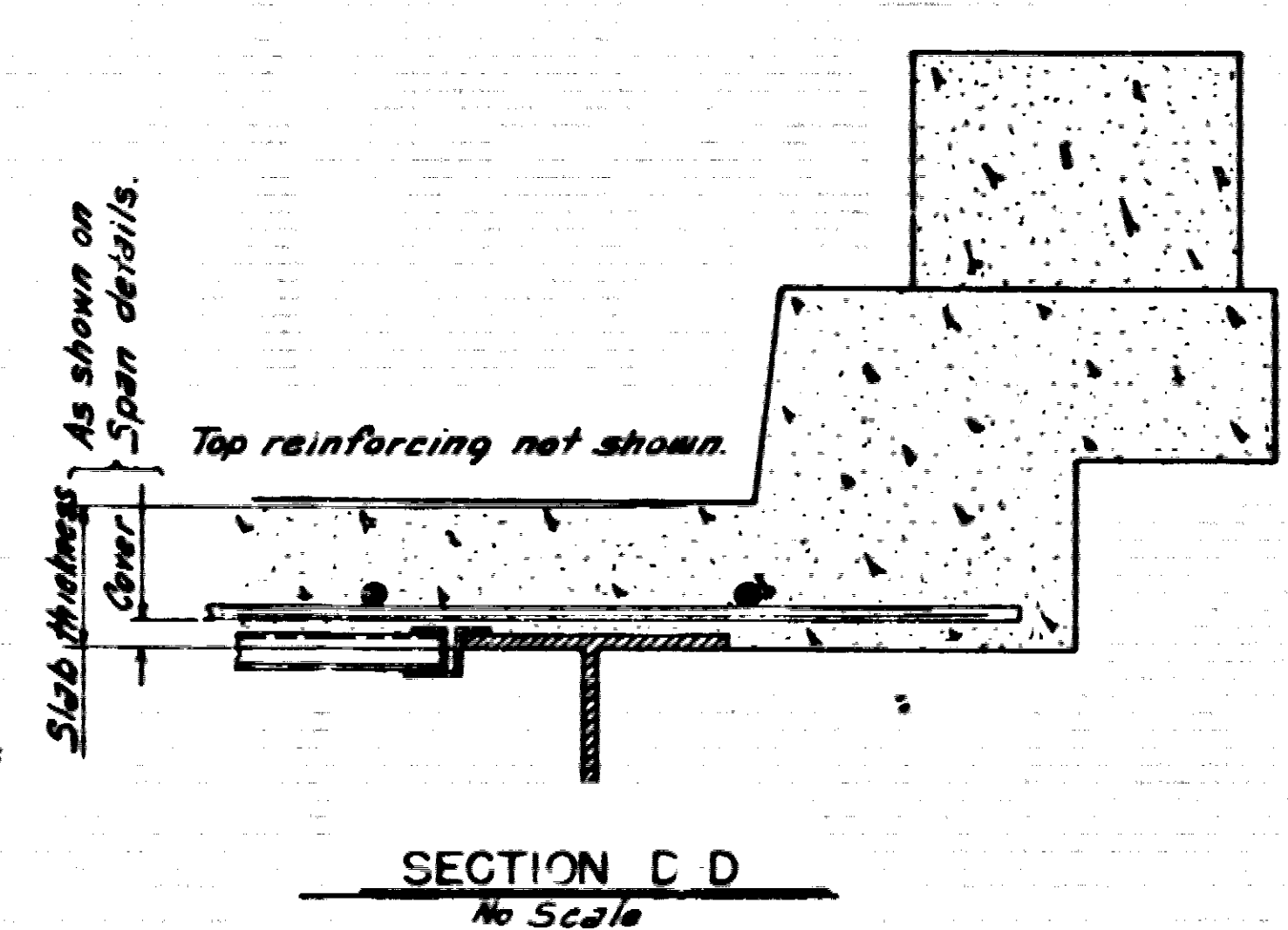
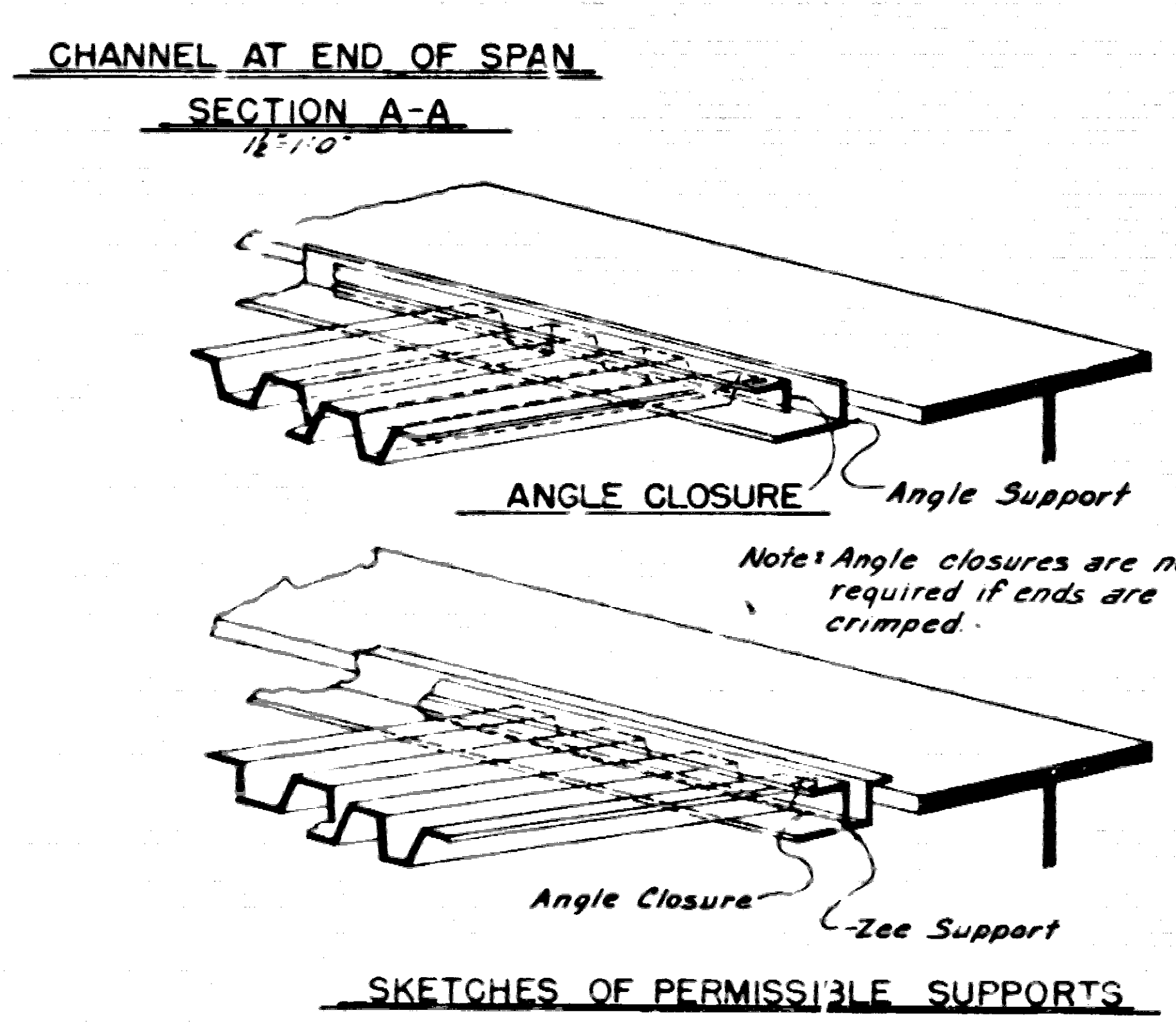
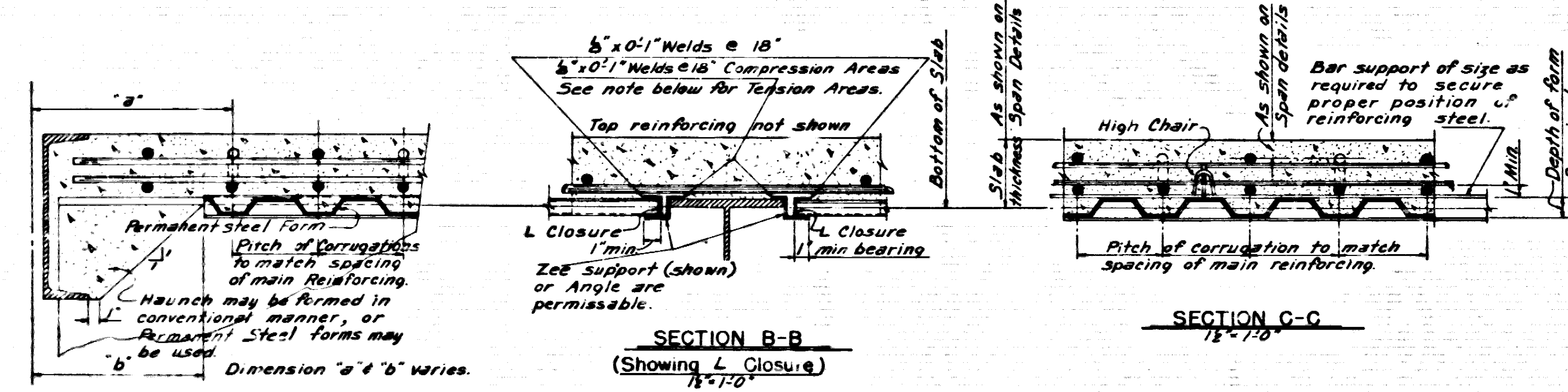
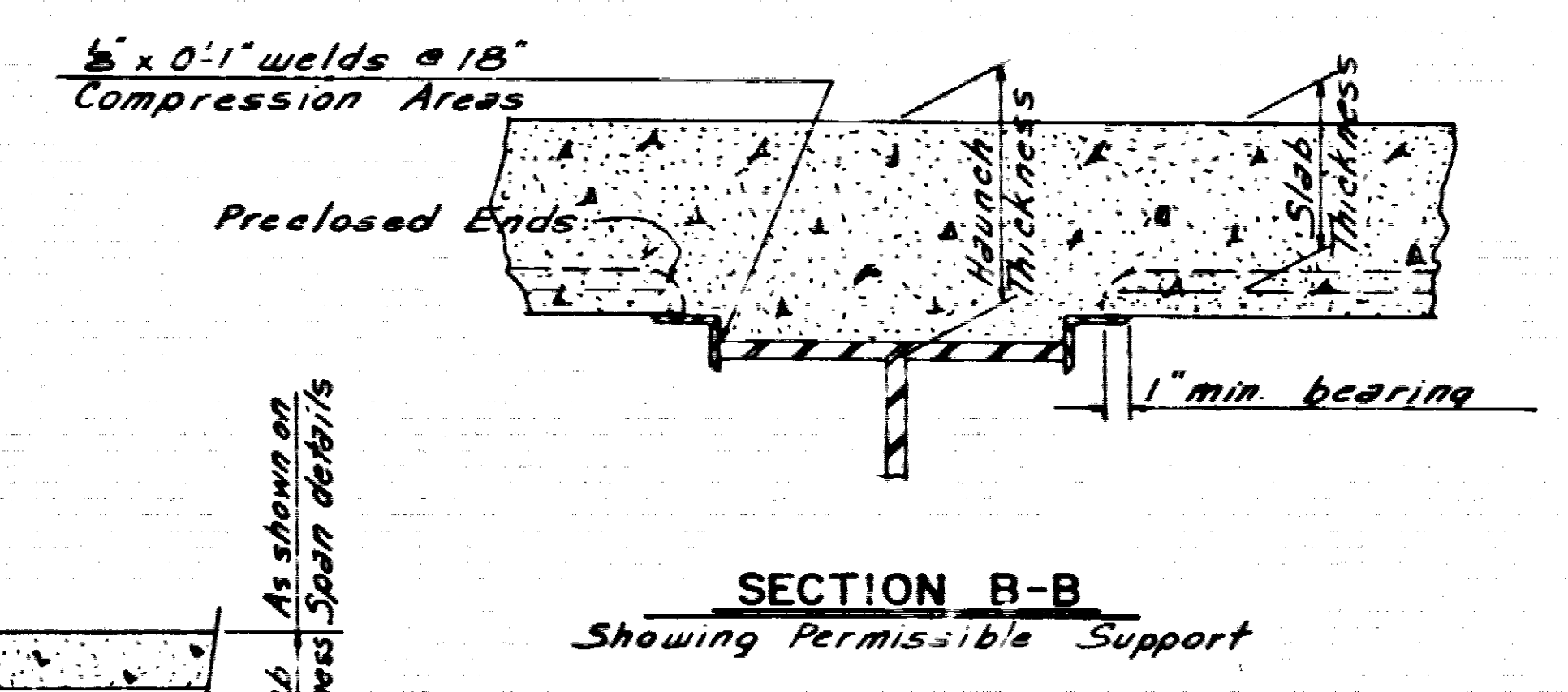
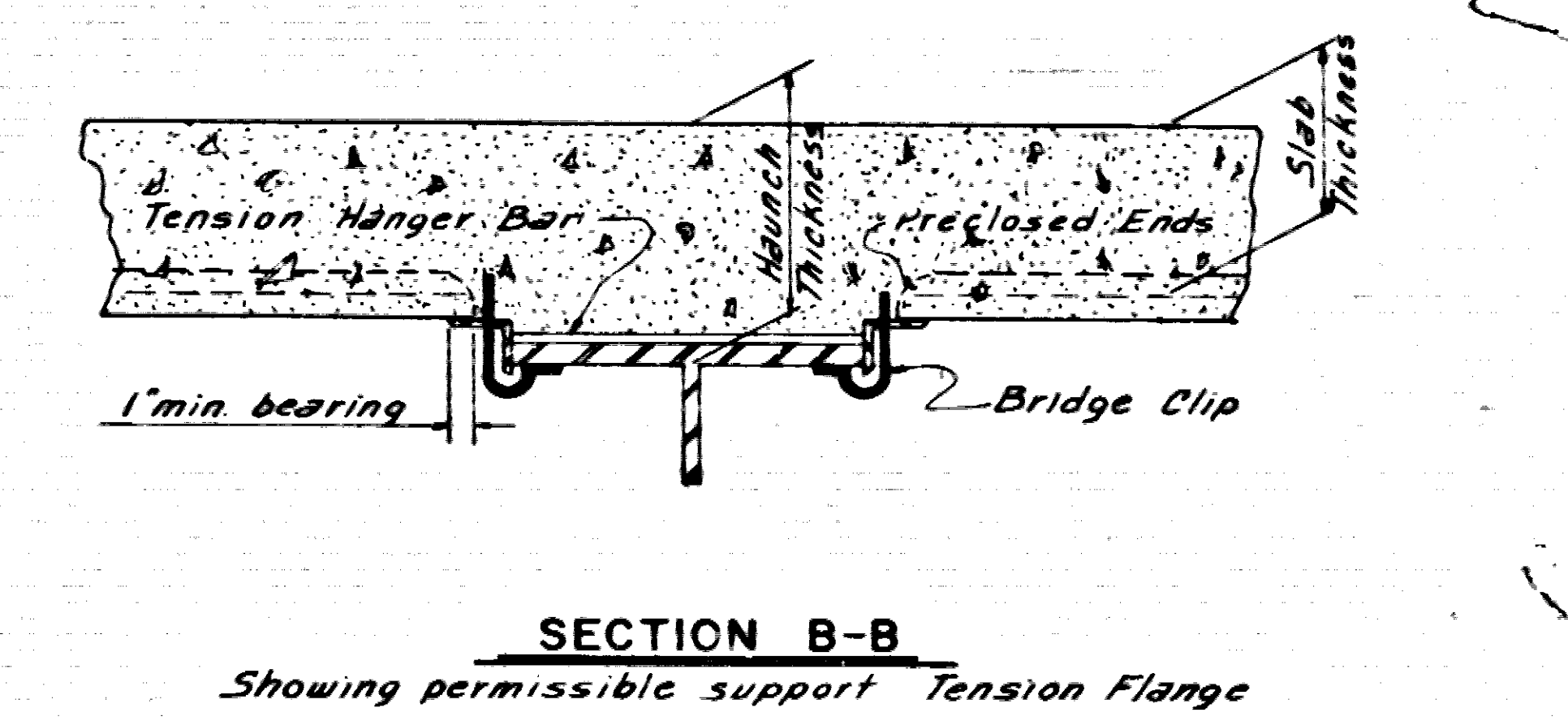
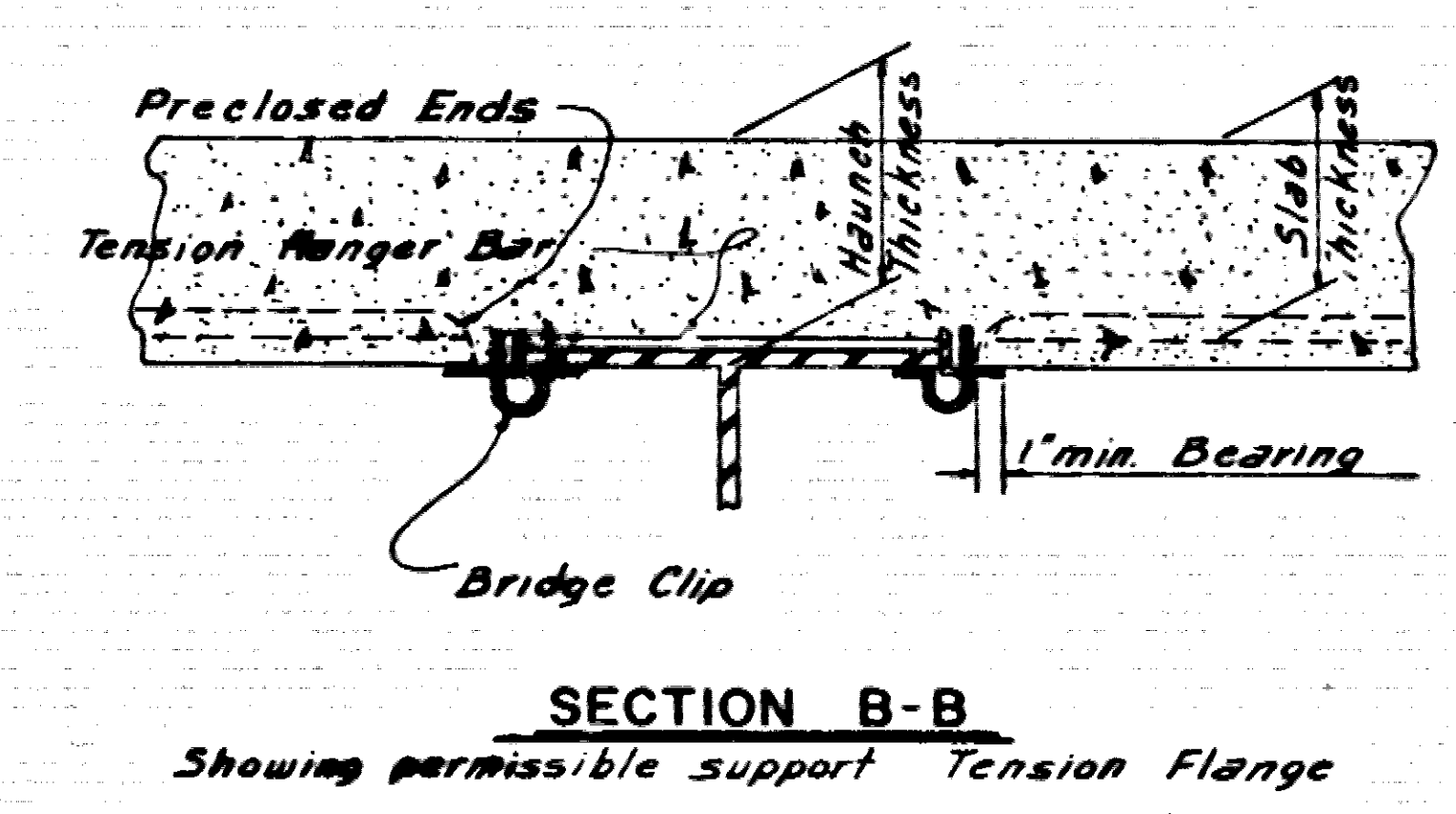
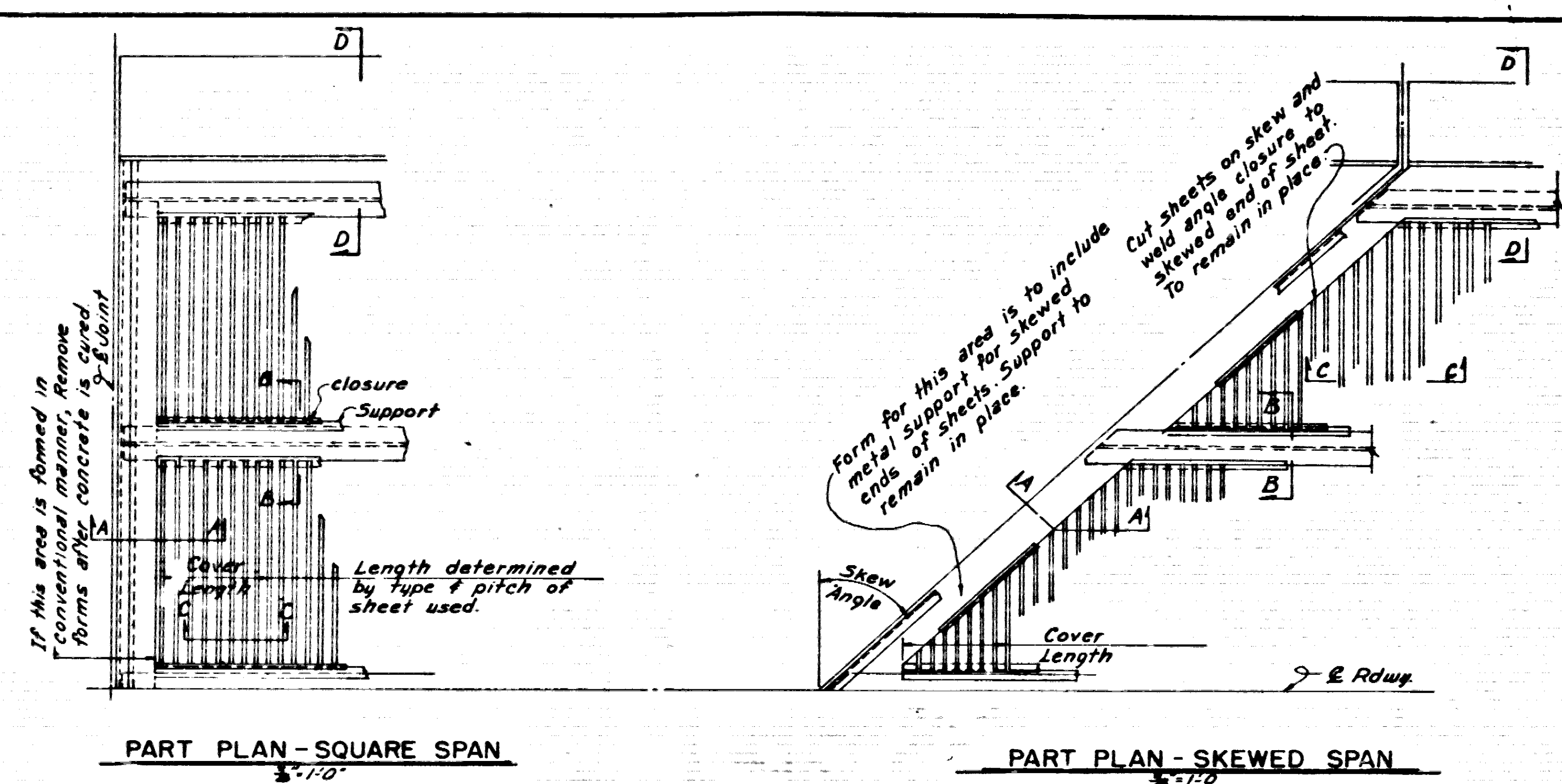








DATE	DATE	DATE	DATE	FED. ROAD	STATE	FED. AID	FISCAL	SHEET	TOTAL
8-8-72	5-28-72	8-10-72		6	ARK.			17	



**GENERAL NOTES**

PERMANENT STEEL FORM SHEETS SHALL BE WELDED TO THE SUPPORTING MEMBER AT EACH END WITH A 1/2" MINIMUM DIAMETER PLLG WELD AT EACH SIDE LAP AND AT CENTER OF SHEET, PRIOR TO CONSTRUCTION TRAFFIC. END SUPPORTS SHALL BE WELDED AS SHOWN ON THIS DRAWING PRIOR TO PLACING OF SHEETS.

ALIGN FORM SHEETS TRANSVERSELY ACROSS THE BRIDGE IN ORDER THAT CONTINUOUS REINFORCING BARS SHALL BE CORRECTLY ORIENTED WITH RESPECT TO THE CORRUGATIONS ACROSS THE VARIOUS FORM SPANS.

BAR SUPPORT RODS ARE TO BE OF SIZE REQUIRED TO SECURE PROPER POSITION OF REINFORCING STEEL AND SUFFICIENT IN NUMBER TO PROVIDE ADEQUATE SUPPORT.

HIGH CHAIRS OF HEIGHT REQUIRED TO SUPPORT TOP ROW OF REINFORCING IN POSITION SHOWN ARE TO BE PLACED AT LOCATIONS SHOWN ON STANDARD DRAWING.

DETAIL PLANS OF PROPOSED PERMANENT STEEL FORMS SHALL BE SUBMITTED AND APPROVED BEFORE WORK OF FORMING ROADWAY SLAB IS STARTED.

WELDING WILL NOT BE PERMITTED IN TENSION AREAS OF BEAM FLANGES. SOME OTHER METHOD, APPROVED BY THE ENGINEER, OF FASTENING Z OR L SUPPORTS TO FLANGE MUST BE USED.

PERMANENT STEEL FORMS MUST MEET THE REQUIREMENTS OF SP 802-2.

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1972, AND APPLICABLE SPECIAL PROVISIONS.

**DETAILS OF PERMISSIBLE TYPE**

**PERMANENT STEEL BRIDGE DECK FORMS FOR I-BEAM & PLATE GIRDER SPANS**

ROUTE SEC.

**ARKANSAS STATE HIGHWAY COMMISSION**

LITTLE ROCK, ARK.

DRAWN BY: W.M.M. DATE: 12-10-72

TRACED BY: EMH DATE: 12-10-72

CHECKED BY: EMH DATE: 12-10-72

BRIDGE NO. DRAWING NO. 14991

SCALE: AS NOTED

REVISED 8-8-72 FOR 1972 SPECS.  
Note: This drawing replaces drawing 14991 dated 2-21-63.

*Wesley Pinkerton*  
BRIDGE ENGINEER



DATE	REVISION	DATE	REVISION	P.O. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6-1-76		9-15-78	2-8-79	6	ARK.				
9-24-76		2-8-79	5-17-80						
4-15-77		2-15-80	5-17-80						
4-1-81		2-9-80	5-17-80						

SPAN STD. DETAILS

### GENERAL NOTES

ALL CONCRETE TO BE CLASS S OR (S/AE) AS SHOWN ON THE LAYOUT. ALL EXPOSED CORNERS TO BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED. FIELD CONNECTIONS TO BE BOLTED WITH HIGH STRENGTH BOLTS. BOLTS 3/4" Ø, OPEN HOLES 13/16" Ø EXCEPT WHERE NOTED OTHERWISE. STRUCTURAL SHAPES OF EQUAL OR GREATER STRENGTH MAY BE SUBSTITUTED FOR SHAPES SHOWN, BUT PAYMENT WILL BE MADE ON THE BASIS OF SHAPES SHOWN.

ALL WELDED CONNECTIONS TO BE 5/16" FILLET SHOP WELDS EXCEPT AS NOTED. ALL WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY STANDARD SPECIFICATIONS FOR WELDED HIGHWAY AND RAILWAY BRIDGES, CURRENT EDITION. UNLESS OTHERWISE NOTED ON SPAN DETAIL DRAWINGS, ALL STRUCTURAL STEEL EXCEPT SURFACES IN CONTACT WITH CONCRETE SHALL BE GIVEN ONE SHOP COAT AND TWO FIELD COATS IN ACCORDANCE WITH SECTION 807.59 OF THE SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

ALL METAL BEARING AND ROADWAY EXPANSION DEVICES TO BE PAID FOR AS "STRUCTURAL STEEL IN BEAM SPANS." BEARINGS SHALL BE FINALLY SEATED IN ACCORDANCE WITH SECTION 807.51 OF THE STANDARDS SPECIFICATIONS. THIS WORK AND MATERIAL ARE TO BE CONSIDERED AS SUBSIDIARY TO THE ITEM "STRUCTURAL STEEL IN BEAM SPANS" AND WILL NOT BE PAID FOR DIRECTLY.

THIS DRAWING SHOWS GENERAL FEATURES OF DESIGN ONLY. SHOP DRAWINGS SHALL BE MADE IN ACCORDANCE WITH THE SPECIFICATIONS, SUBMITTED AND APPROVAL SECURED BEFORE FABRICATION IS BEGUN.

ALL STEEL SHALL BE ASTM A-36 UNLESS OTHERWISE NOTED. ANCHOR BOLTS SHALL BE GALVANIZED TO CONFORM TO ASTM SPECIFICATION, DESIGNATION A153.

REINFORCING STEEL TO BE ASTM A615 OR A617, GR. 60. THE REINFORCING STEEL IS TO BE ACCURATELY LOCATED IN THE FORMS AND FIRMLY HELD IN PLACE BY STEEL WIRE SUPPORTS, SUFFICIENT IN NUMBER AND SIZE TO PREVENT DISPLACEMENT DURING THE COURSE OF CONSTRUCTION. THE WIRE SUPPORTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO THE ITEM OF "REINFORCING STEEL."

SHOP LISTS AND BENDING DIAGRAM OF REINFORCING STEEL, INCLUDING WIRE SUPPORTS, MAY BE SUBMITTED FOR APPROVAL BEFORE FABRICATION IS BEGUN.

CONCRETE SLABS FOR SPANS THROUGH 50 FEET IN LENGTH SHALL BE POURED IN ONE CONTINUOUS OPERATION WITH A STRIKEOFF EXTENDING OVER THE WHOLE SPAN LENGTH. SPANS OVER 50 FEET IN LENGTH MAY BE POURED IN INCREMENTS WITH THE CENTER ONE-THIRD TO ONE-HALF SPAN LENGTH POURED FIRST. AFTER THE CENTER SECTION IS POURED, NOT LESS THAN 72 HOURS SHALL ELAPSE BEFORE POURING THE END SECTIONS. END SECTIONS MAY BE POURED SIMULTANEOUSLY. IF NOT POURED SIMULTANEOUSLY, 48 HOURS SHALL ELAPSE BETWEEN END SECTION POURS. A MINIMUM OF 72 HOURS SHALL ELAPSE BETWEEN COMPLETION OF THE SLAB AND THE POURING OF THE CURB SECTION OR PARAPET.

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION EDITION OF 1978 AND APPLICABLE SPECIAL PROVISIONS.

ALL CASTINGS FOR SHOES SHALL BE ASTM A27 GRADE 70-40 OR 70-36

WELDED SHOES MAY BE USED IN PLACE OF THE TYPE "D" SHOES SHOWN. APPROVED DETAILS WILL BE FURNISHED ON REQUEST.

HOLES FOR 3/4" BOLTS FOR CONNECTION OF EXPANSION DEVICES, DIAPHRAGMS AND END STRUTS MAY BE 15/16" IF A WASHER IS SUPPLIED FOR USE UNDER BOTH THE NUT AND THE HEAD OF THE BOLT.

### EXPANSION JOINT DATA

"A" (Joint Width Perpendicular to Jt. @ 60°F)	Seal Width	"B"	Jt. Seal
1"	1 1/8"	1 3/4" ±	1" @ 60°F
1 1/8"	1 3/8"	1 7/8" ±	1 1/8" @ 60°F
1 3/8"	1 7/8"	2 1/8" ±	1 3/8" @ 60°F
1 7/8"	2 1/8"	2 3/8" ±	1 7/8" @ 60°F
2 1/8"	2 3/8"	2 7/8" ±	2 1/8" @ 60°F
2 3/8"	2 7/8"	3 1/8" ±	2 3/8" @ 60°F

1 1/2" May be used; to 40" min. & 80" max. Installation limited

THE DIMENSION "D" SHALL CONFORM TO THE RECOMMENDATIONS OF THE SEAL MANUFACTURER AS APPROVED BY THE BRIDGE ENGINEER. THE DEPTH OF THE SEAL SHALL BE APPROXIMATELY EQUAL TO THE UNCOMPRESSED WIDTH OF THE SEAL. SEAL DOES NOT TOUCH 1/4" BAR AT NORMAL TEMPERATURE. FOR SIZE OF JOINT TO BE USED, SEE BRIDGE LAYOUT.

### DETAILS COMMON TO STANDARD 35'-90'

#### COMPOSITE W-BEAM SPANS

#### ALL ROADWAYS

#### ARKANSAS STATE HIGHWAY COMMISSION

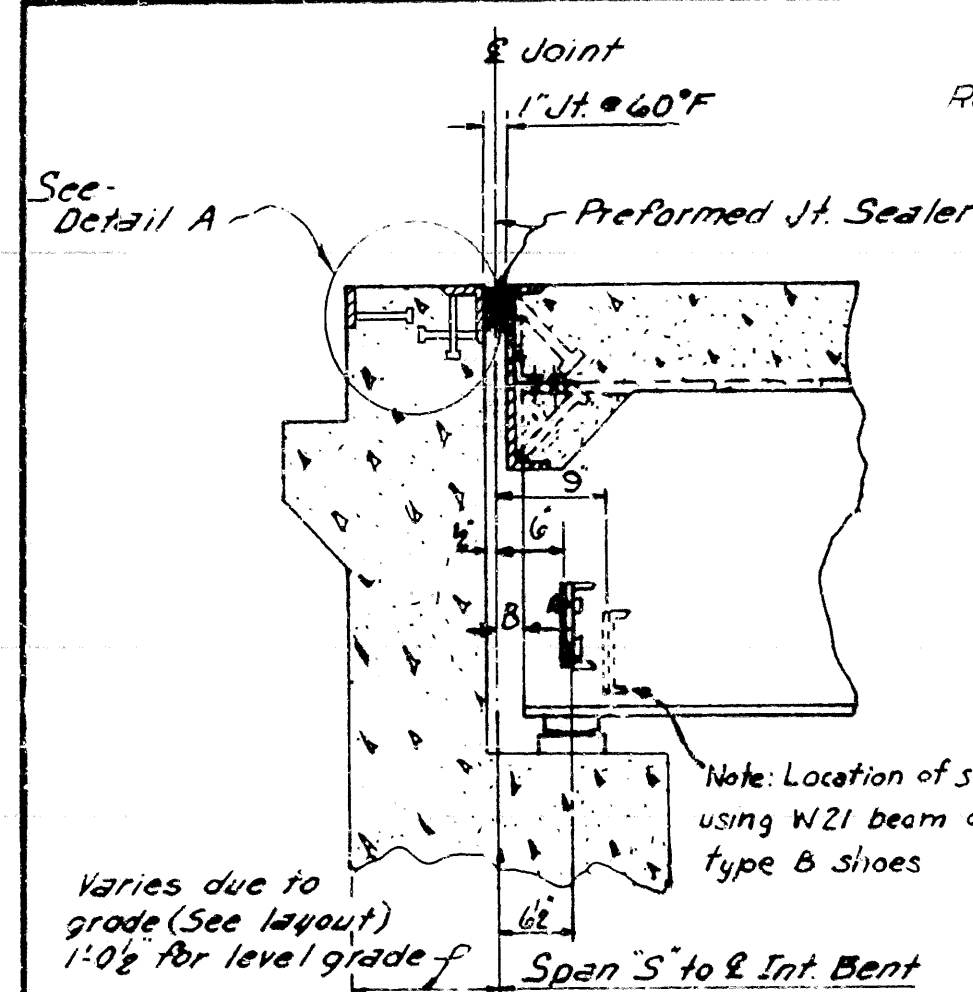
LITTLE ROCK, ARK.

DRAWN BY: J.M.H. DATE: 12-2-70  
 REVISION BY: J.M.H. DATE: 5-9-74  
 CHECKED BY: J.M.H. DATE: 12-4-70

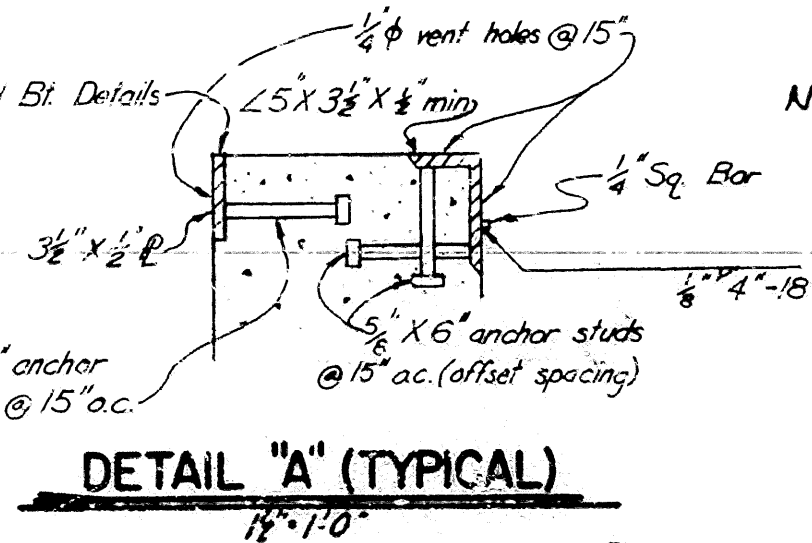
BRIDGE NO.

DRAWING NO. 14990F

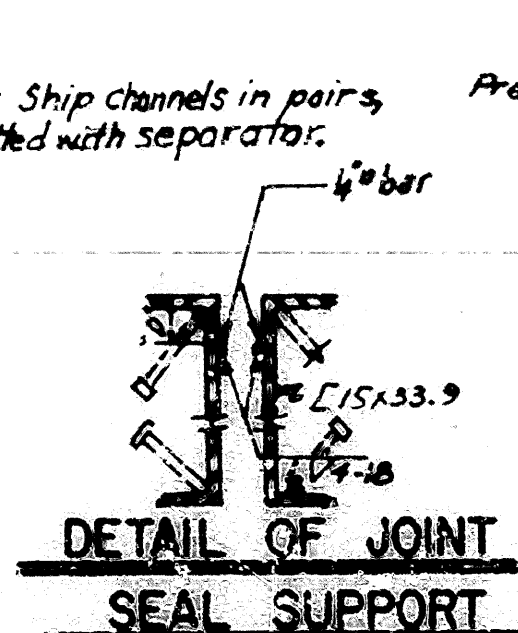
ORIGINAL DWG



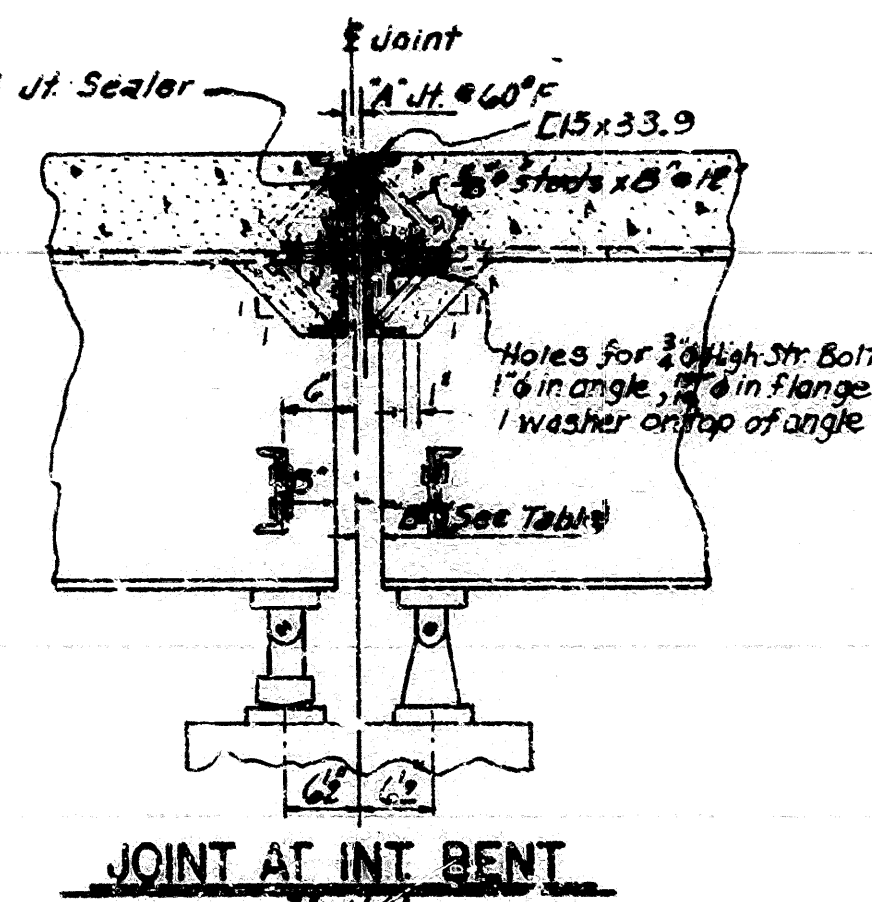
### JOINT AT END BENT



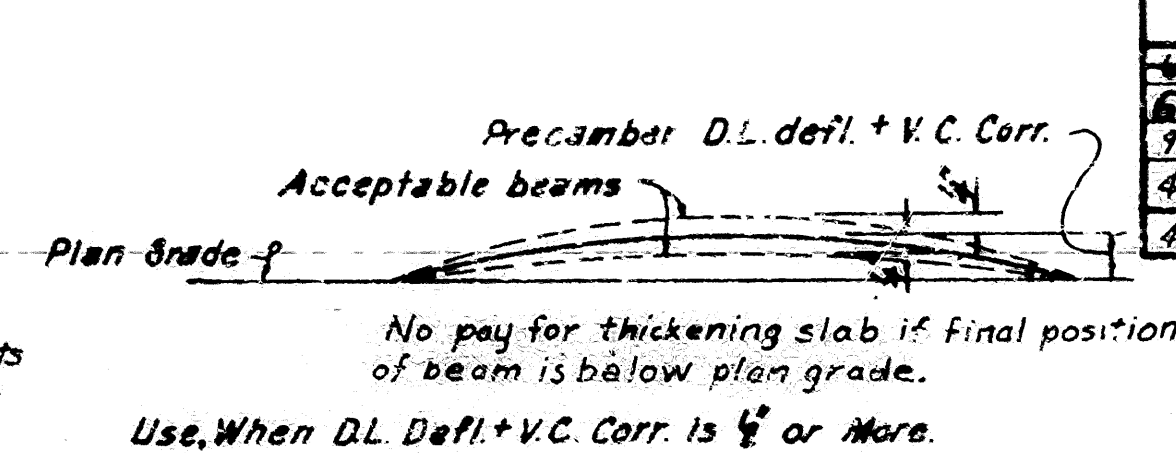
### DETAIL "A" (TYPICAL)



### DETAIL OF JOINT SEAL SUPPORT

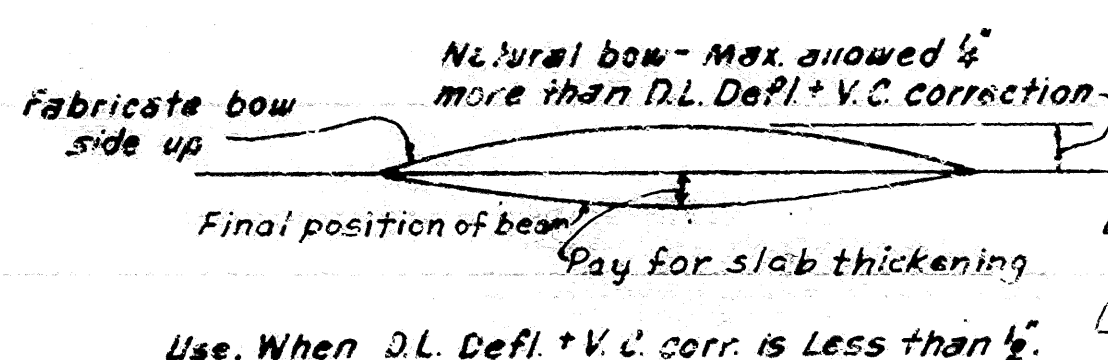


### JOINT AT INT BENT



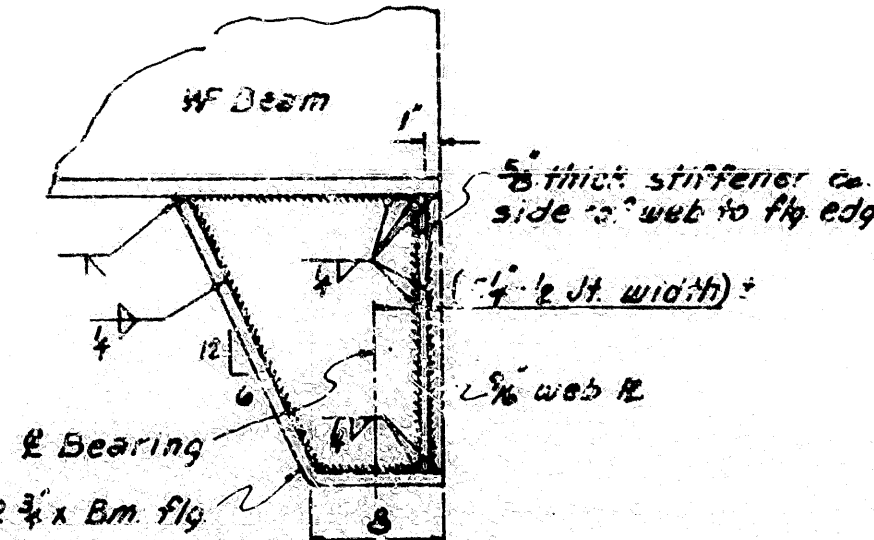
### CAMBER DIAGRAMS

no scale



5/8" THICK STIFFENER EACH SIDE OF WEB TAPERED FROM EDGE OF COPED FLG. TO EDGE OF BOTTOM PLATE.

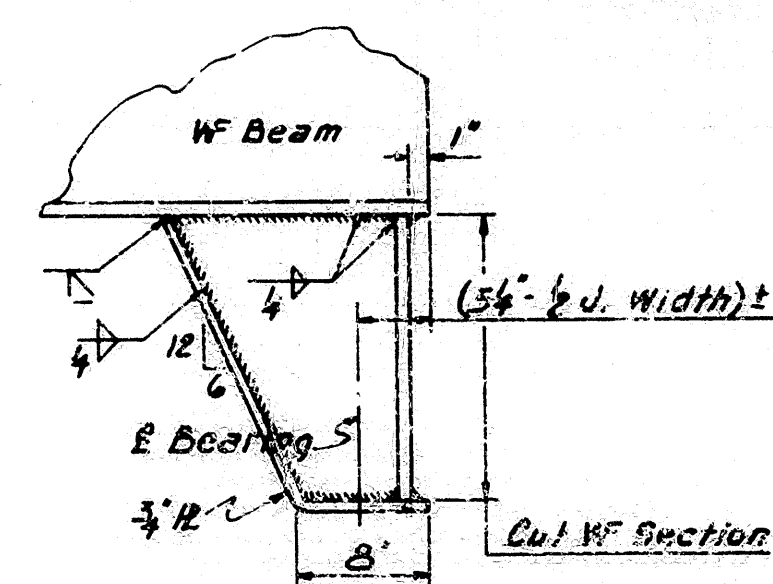
NOTE: BEAM BUILDUPS ARE REQUIRED WHERE MODIFIED SPANS ARE USED, OR ADJACENT REGULAR SPANS HAVE DIFFERENT "e" PLUS SHOE HEIGHT. (SEE ACCOMPANYING DRAWINGS.)



Use when difference in "e" plus shoe height is 5" or more.

### DETAILS OF BEAM BUILDUP

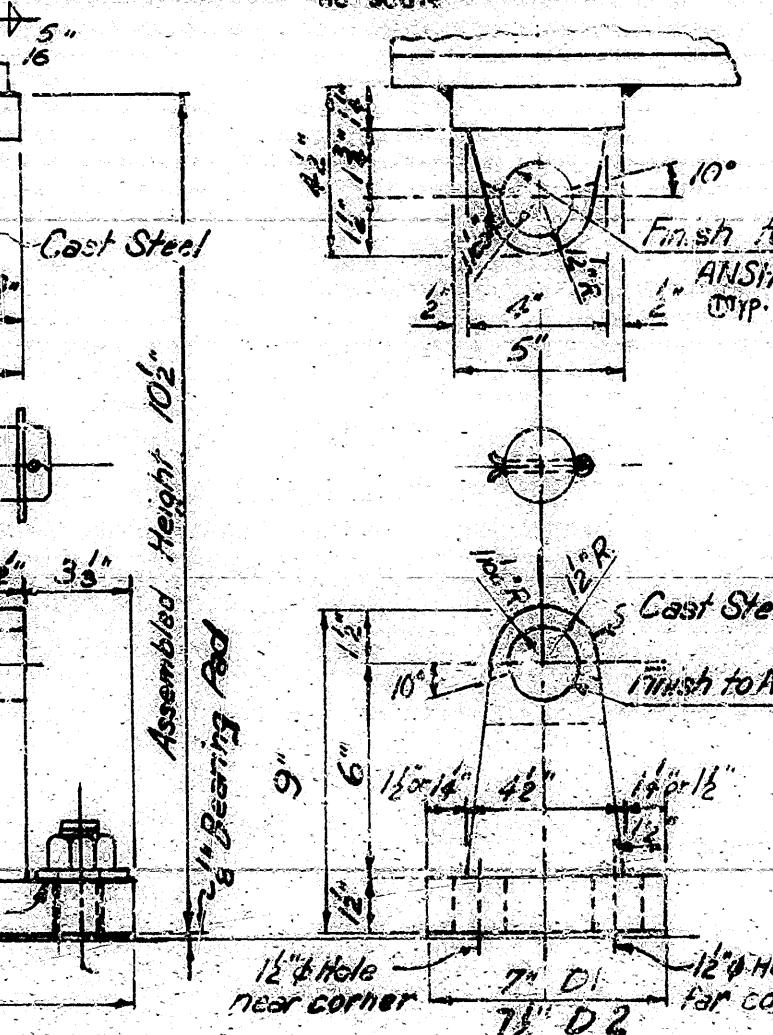
no scale



FLANGE WIDTH & THICKNESS & WEB THICKNESS TO BE EQUAL TO OR GREATER THAN W BEAM DIMENSION.

### OPTIONAL BEAM BUILDUP

no scale



### TYPE "D" FIXED SHOE

### TYPE "D" EXPANSION SHOE

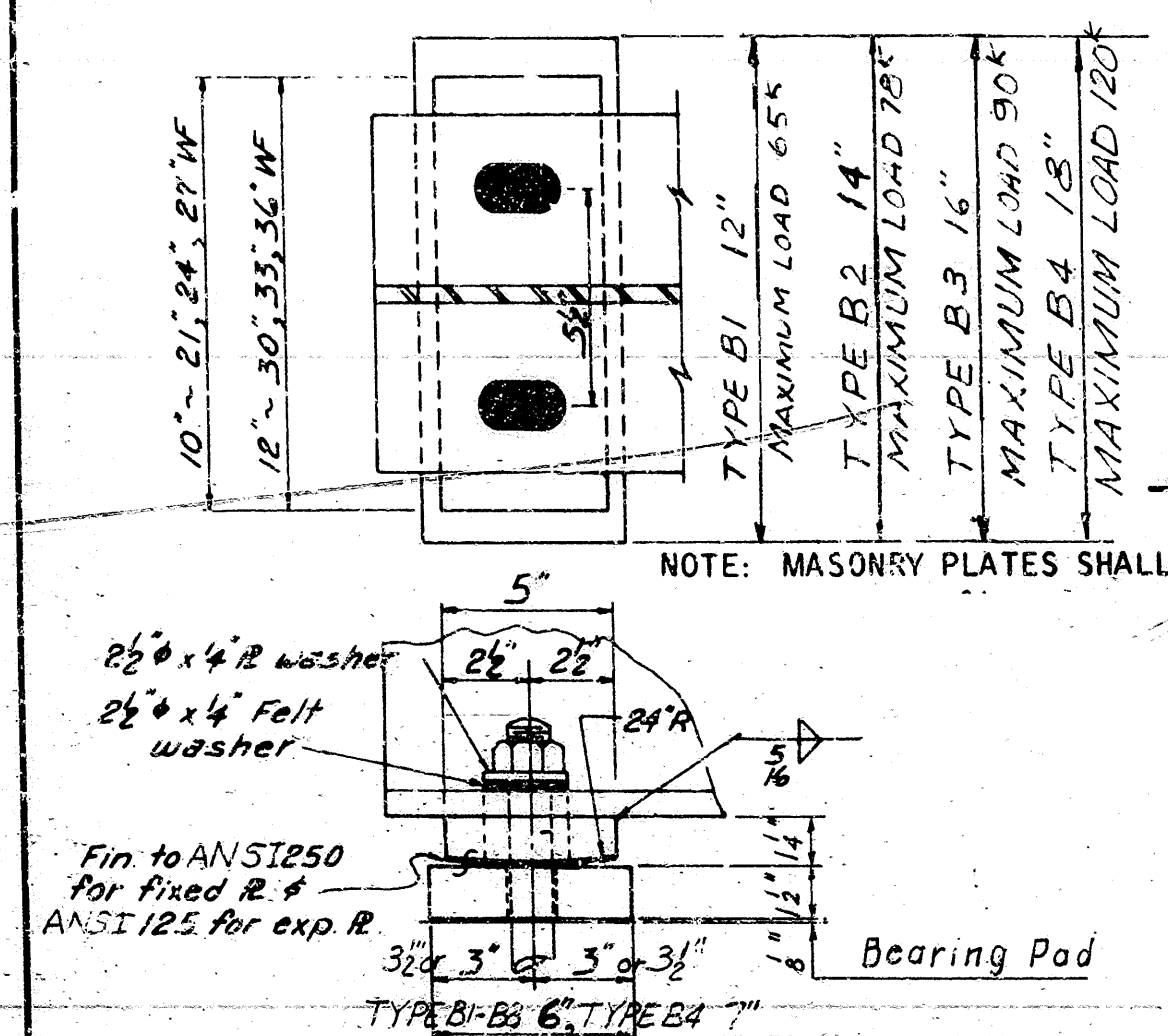
Revised painting note 2-15-80 M&C  
 Revised Detail A General Notes, and Type A & B  
 Replacing Deleted 12-9-80 J.M.H.  
 TYPE D1 EXPANSION OR  
 FIXED SHOE MAXIMUM LOAD 100K  
 TYPE D2 EXPANSION OR  
 FIXED SHOE MAXIMUM LOAD 120K  
 Revised Anchors & Joint Data J.P.S. 4-1-81

6-9-76 Revised general notes, shoe finish callout, added shoe note, and misc.  
 Revised Exp. Jt. Data Table by J.P.S. 9-24-76  
 Revised Exp. Jt. Data Table by L.M. 4-15-77  
 Revised for 1978 Specs. 9-15-78 K.D.H.  
 Added 1/2 inch bar note 2-8-79 K.D.H.

FIXED SHOE:  
 1 1/4" Ø HOLES IN MASONRY PLATE, SOLE PLATE, & BEAM FLANGE FOR SPANS THRU 50'  
 1 1/2" Ø HOLES FOR SPANS OVER 50'

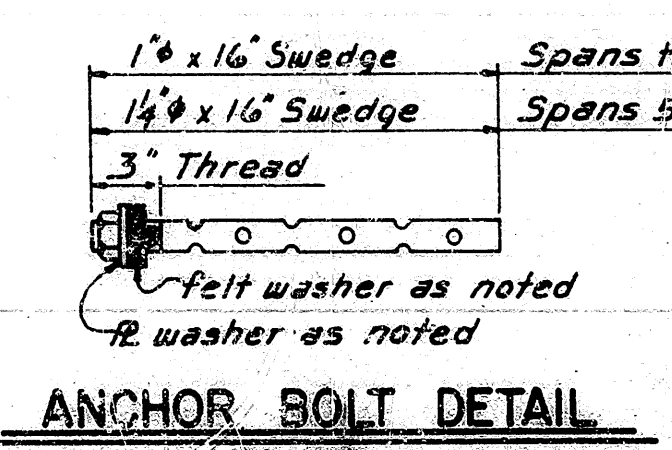
EXPANSION SHOE: (ALL SPANS THRU 50')  
 2 1/2" X 1 1/4" SLOTS IN SOLE PLATE & BEAM FLANGE WITH 1 1/4" Ø HOLES IN MASONRY PLATE.

EXPANSION SHOE: (ALL SPANS OVER 50')  
 3" X 1 1/2" SLOTS IN SOLE PLATE AND IN BEAM FLANGE WITH 1 1/2" Ø HOLES IN MASONRY PLATE.



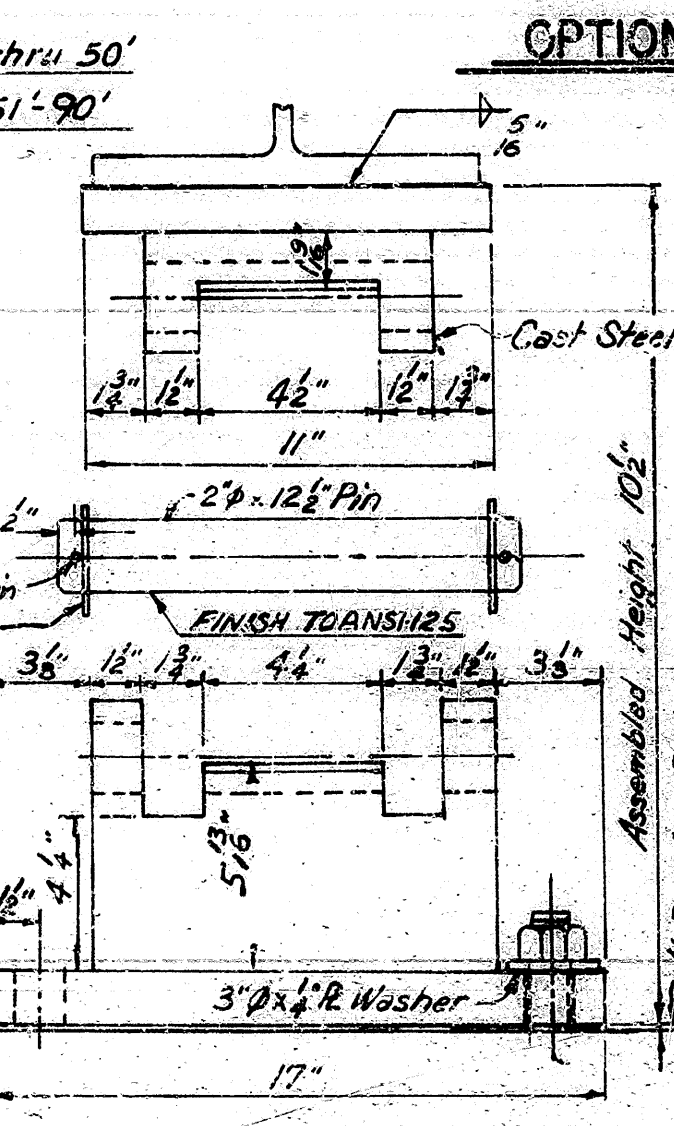
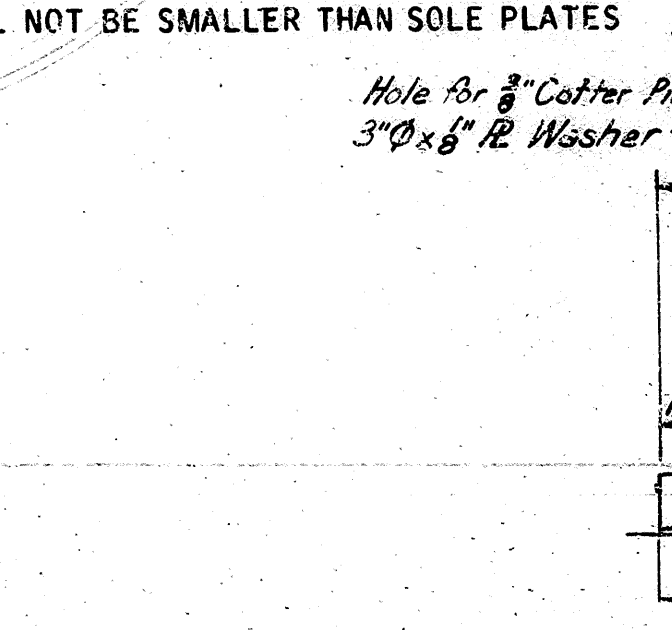
### TYPE "B" FIXED OR EXPANSION SHOE

USE FOR END BENTS - ALL SPANS UNLESS OTHERWISE NOTED.  
 USE FOR INT. BENTS 35'-60' SPANS UNLESS OTHERWISE NOTED.

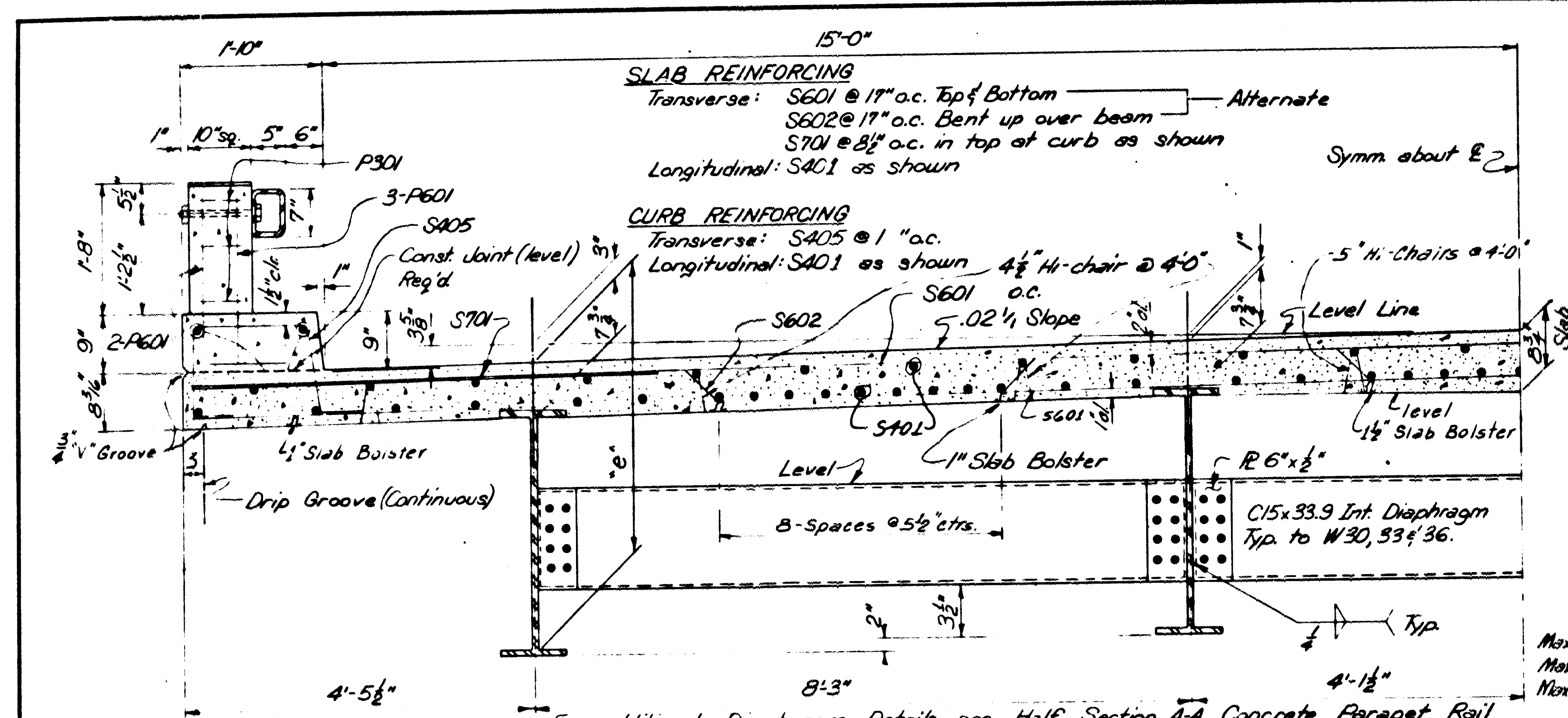


### ANCHOR BOLT DETAIL

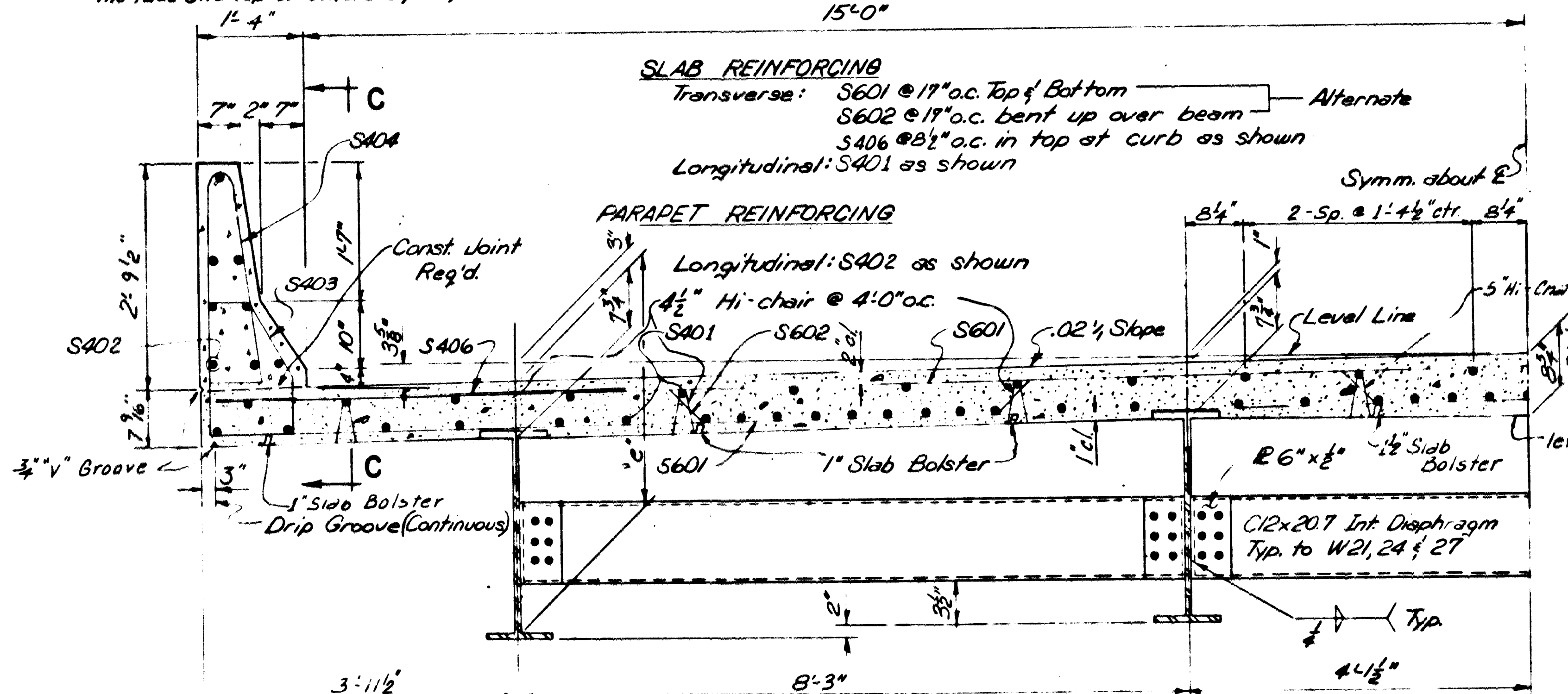
no scale







NOTE: Bailed Linseed treatment shall be applied to the roadway surface and the face and top of concrete parapet rail.



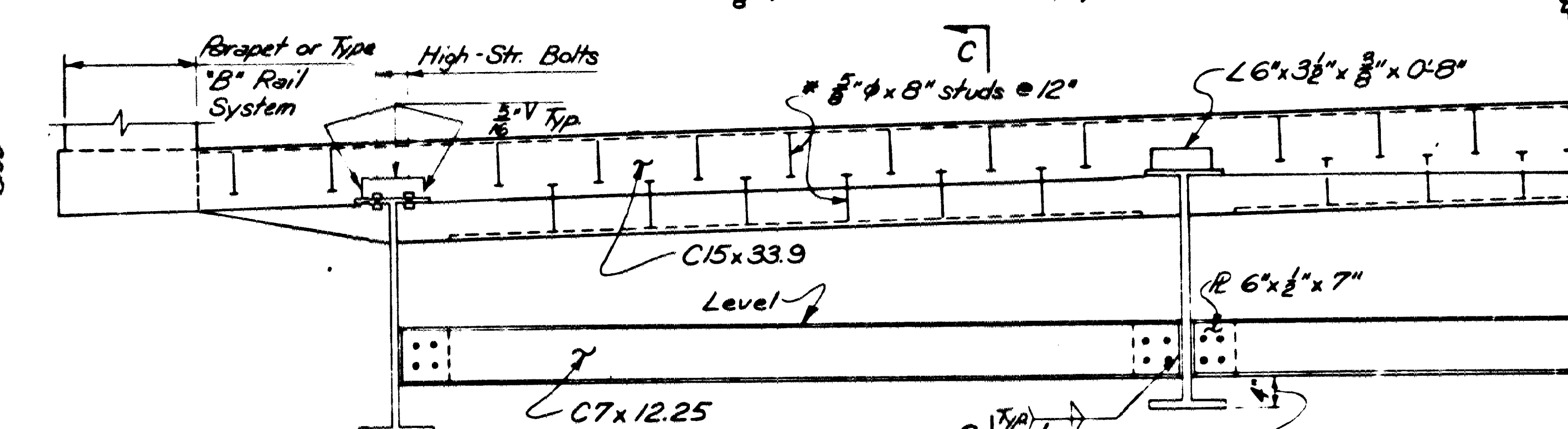
ALL W-BEAMS AND COVER PLATES ARE CONSIDERED MAIN LOAD CARRYING MEMBERS AND SHALL MEET THE CHARPY V-NOTCH TEST REQUIREMENTS OF SPECIAL PROVISION 801-4.

TABLE OF VARIABLES

BR NO.	SPAN		INTERIOR BEAM				EXTERIOR BEAM				DIAPHRAGM SPACING "d"	POST SPACING TYPE "B" RAIL			PARAPET JOINT SPACING "P"	VARIABLES OF SHEAR CONNECTOR SPACING					
	NO.	LENGTH	TYPE	BEAM SIZE	COVER R SIZE	"e"	DEAD LOAD DEFL.	BEAM SIZE	COVER R SIZE	"e"		DEAD LOAD DEFL.	a	b		c	g	h	i	j	p
5642	1-3	46'-0"	REG.	W24x68	1"x7½"x28'-0"	2'-6¾"	1¾"	W24x68	1"x7½"x28'-0"	2'-6¾"	1½"					18	7"	11	12"	6"	
5643	1-3	50'-0"	REG.	W27x84	⅞"x8"x24'-0"	2'-9⅜"	1¾"	W27x84	⅞"x8"x24'-0"	2'-9⅜"	1⅝"					16	9"	12	12"	0"	

Tabular Data by Jek Date 1-12-76  
Checked by ARW Date 1-14-76

Expansion Device  
Roadway C15x33.9x30'-0" (Square Bridge)  
Conn. Ls 6"x3 1/2"x 3/8"x 0'-8" (Square Bridge)  
Preformed Joint Sealer  
Supported by 1/2"x 0 bars.  
Detail device 6" high of provide 1/2" shims using 2-1/2"x 1-1/2"x 1/2" R.  
# 3/8"x 8" studs @ 12" o.c. Top of Bottom.



Cover Plate Welding Note  
Max. thick. of part 3/8" x 1/2" x 1/2"  
Max. thick. of part 1/2" x 1/2" x 1/2"  
Max. thick. of part 1/2" x 1/2" x 1/2"

\* See Drug No. M990F for alternate anchor details.

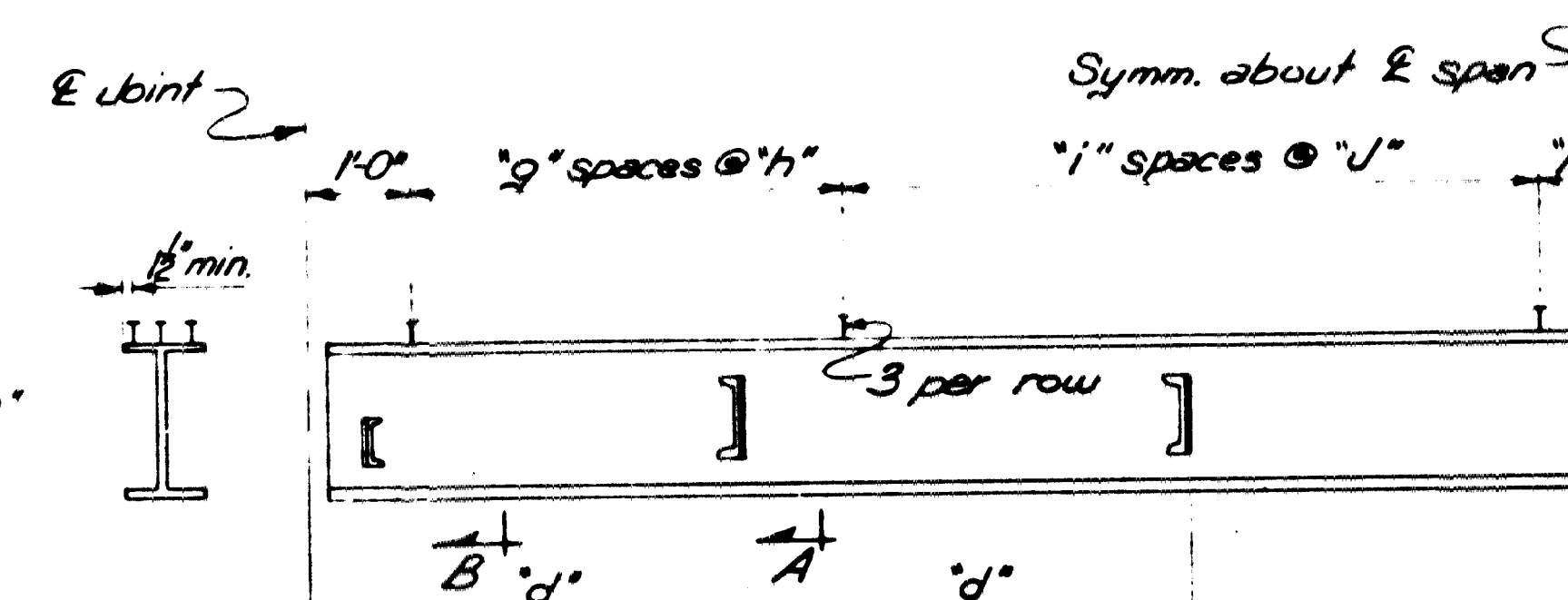
HALF SECTION B-B MODIFIED OR REGULAR SPANS

No Scale

Note: Holes for 3/8" high strength bolts may be 1/2" x 1/2" if a washer is supplied for use under both the nut and head of the bolt.

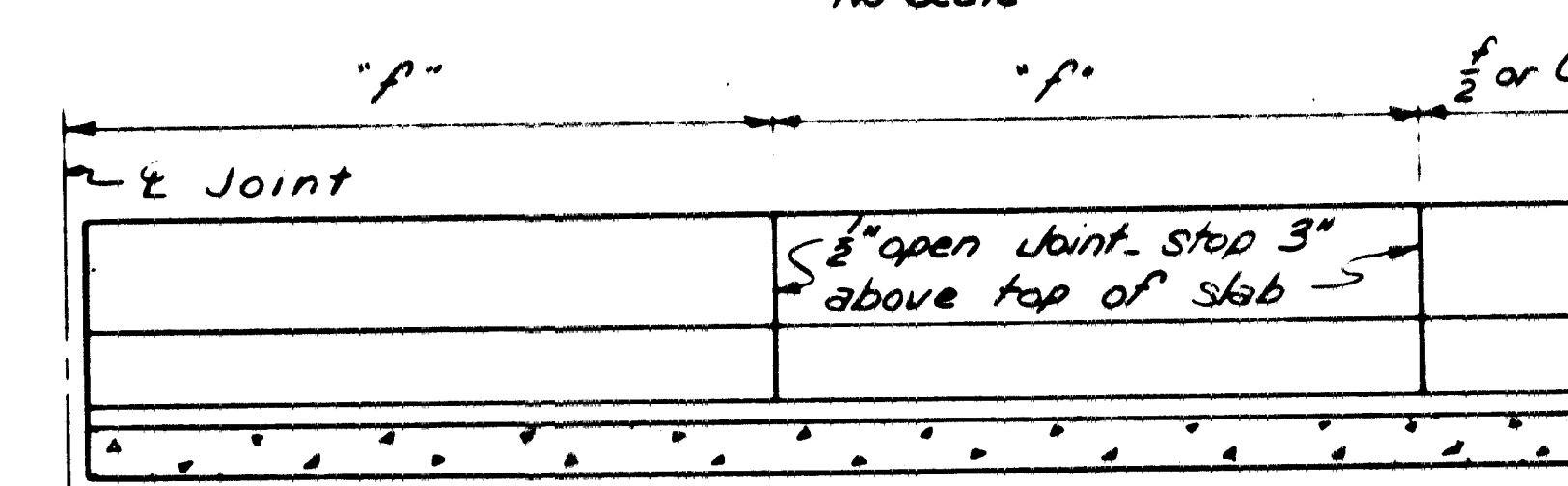
COVER PLATE DETAIL

No Scale



SPACING FOR 3/8" STUD SHEAR CONNECTORS & DIAPHRAGMS

No Scale



SECTION D-D

No Scale

\* Use for span length up to 40'  
\*\* Use for span length 40' to 70'  
\*\*\* Use for span length 70' to 90'

REINFORCING STEEL (PER SPAN)

MARK	CONCRETE PARAPET RAIL	LENGTH	PIN DIA.	SPAN LENGTH		NUMBER REQUIRED
				46	50	
S601	32'-4"	33'-4"	3/8"	194	194	
S602	33'-1"	34'-1"	3/8"	194	194	
S701	5'-8"	6'-2"	3/8"	194	194	
S702	5'-8"	6'-2"	3/8"	194	194	
S401	3'-7"	3'-7"	3/8"	194	194	
S402	3'-7"	3'-7"	3/8"	194	194	
S403	5'-9"	5'-9"	3/8"	194	194	
S404	5'-9"	5'-9"	3/8"	194	194	
S405	5'-9"	5'-9"	3/8"	194	194	
S406	5'-9"	5'-9"	3/8"	194	194	
P301	2'-8"	2'-8"	1/2"	194	194	
P601	2'-11"	2'-11"	3/4"	194	194	

BENDING DIAGRAMS

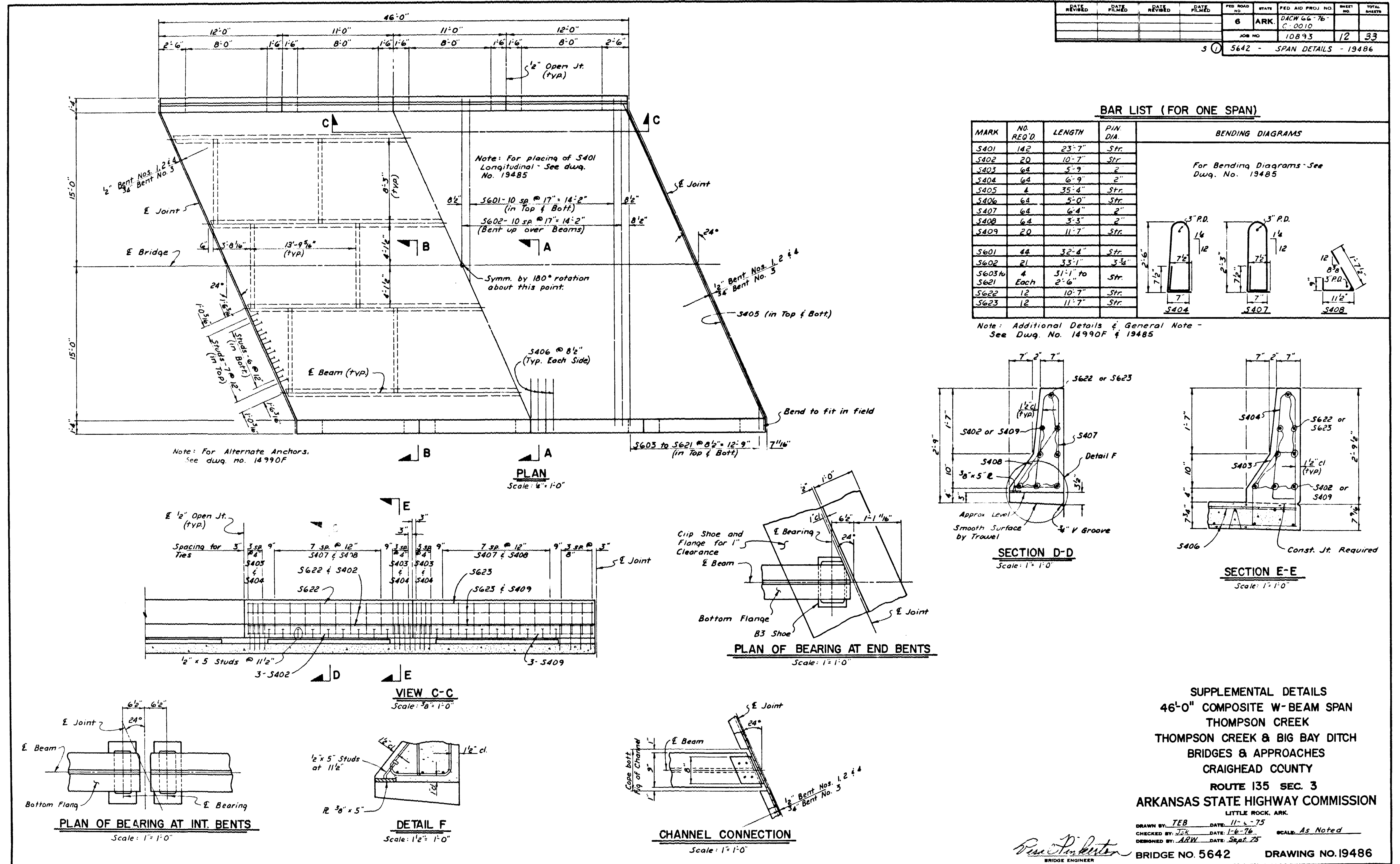
Dimensions are out to out of bars.

6'-2" 3'-9" 3'-9" 3'-9" 3'-9" 3'-9" 3'-9" 3'-9"

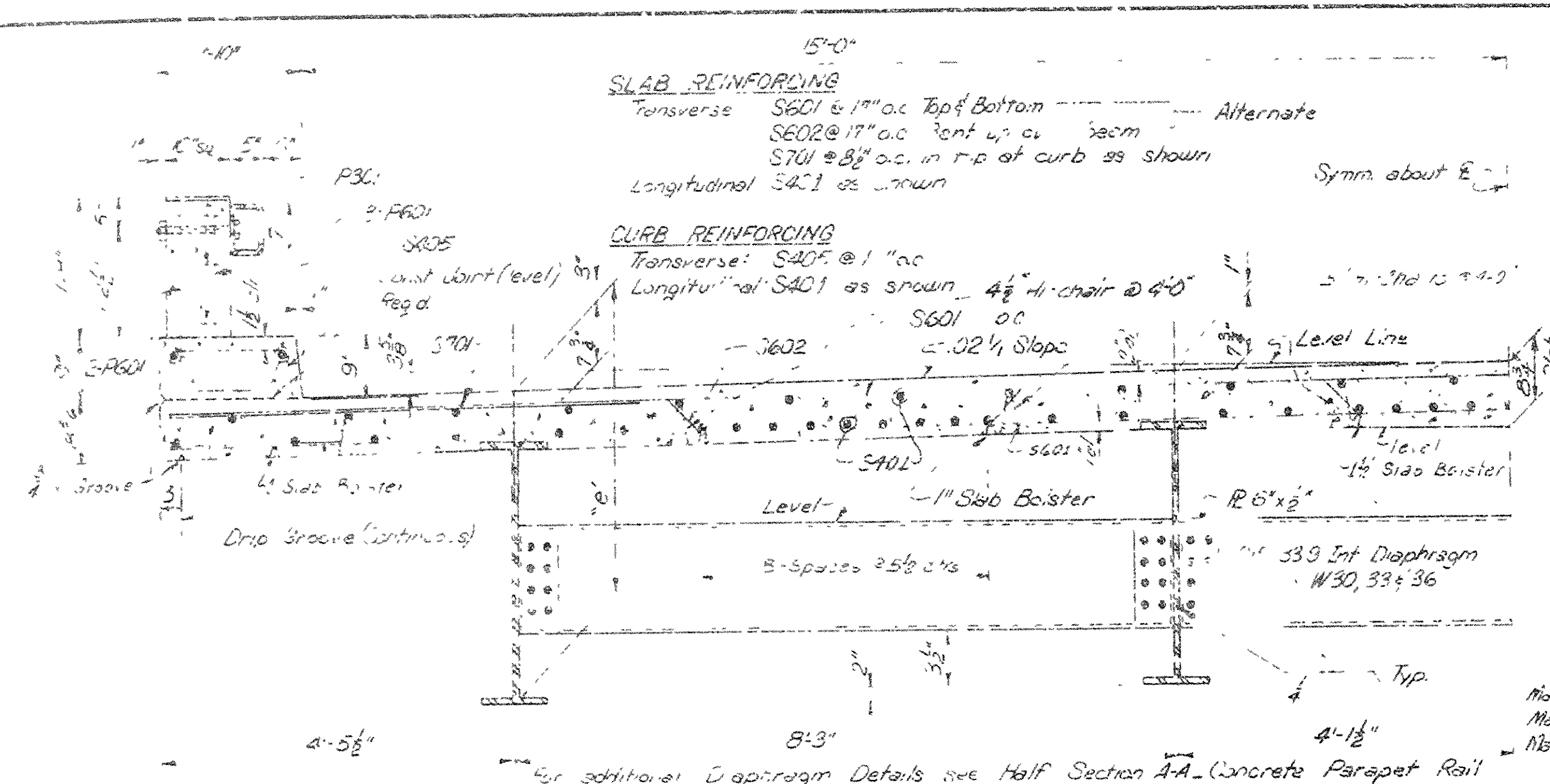
See Note 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

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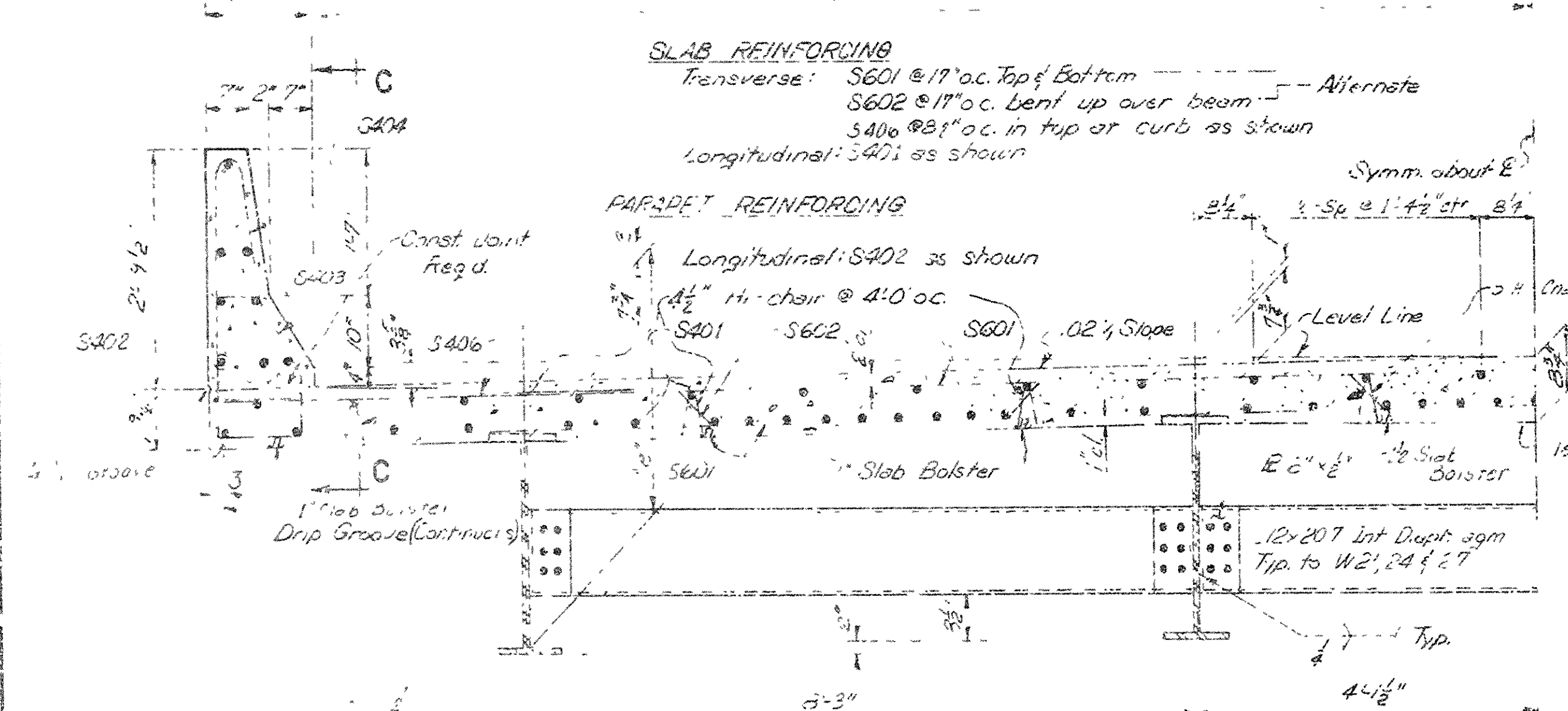








NOTE: Bolts Linseed treatment shall be applied to the roadway surface and the face and top of concrete parapet rail.  
**HALF SECTION A-A TYPE B RAIL**  
 Scale: 3/8"=1'-0"  
 15'-0"



For additional Diaphragm Details see Half Section A-A Type B Rail  
**HALF SECTION A-A CONCRETE PARAPET RAIL**  
 Scale: 3/8"=1'-0"  
 15'-0"

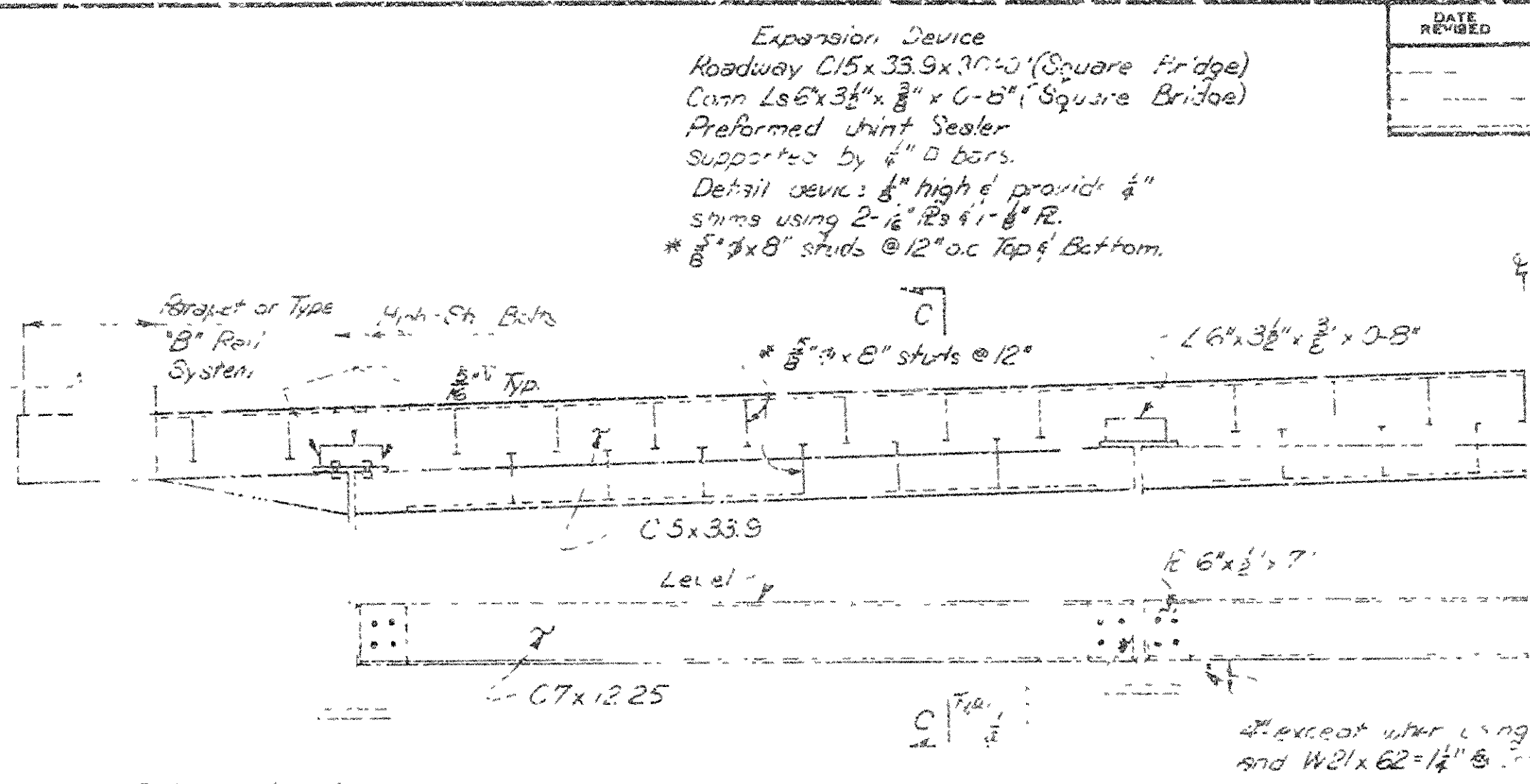
ALL W-BEAMS AND COVER PLATES ARE CONSIDERED MAIN LOAD CARRYING MEMBERS AND SHALL MEET THE CHARPY V-NOTCH TEST REQUIREMENTS OF SPECIAL PROVISION 807.4

TABLE C-1 VARIABLES														
SPAN	INTERIOR BEAM				EXTERIOR BEAM				POST SPACING		PARAPET VARIABLES OF JOINT SHEAR CONNECT.			
	BEAM TYPE	COVER IN	DEAD LOAD DEF.	BEAM COVER IN	COVER IN	BEAM TYPE	COVER IN	DEAD LOAD DEF.	BEAM TYPE	COVER IN	DEAD LOAD DEF.	BEAM TYPE	COVER IN	DEAD LOAD DEF.
1-3 4'-0"	W24x84	1 1/2"	28'-0" 2 1/2"	1 1/2"	W24x84	1 1/2"	28'-0" 2 1/2"	1 1/2"	W24x84	1 1/2"	28'-0" 2 1/2"	W24x84	1 1/2"	28'-0" 2 1/2"
1-3 150'-0" REL.	W27x84	1 1/2"	24'-0" 2 1/2"	1 1/2"	W27x84	1 1/2"	24'-0" 2 1/2"	1 1/2"	W27x84	1 1/2"	24'-0" 2 1/2"	W27x84	1 1/2"	24'-0" 2 1/2"

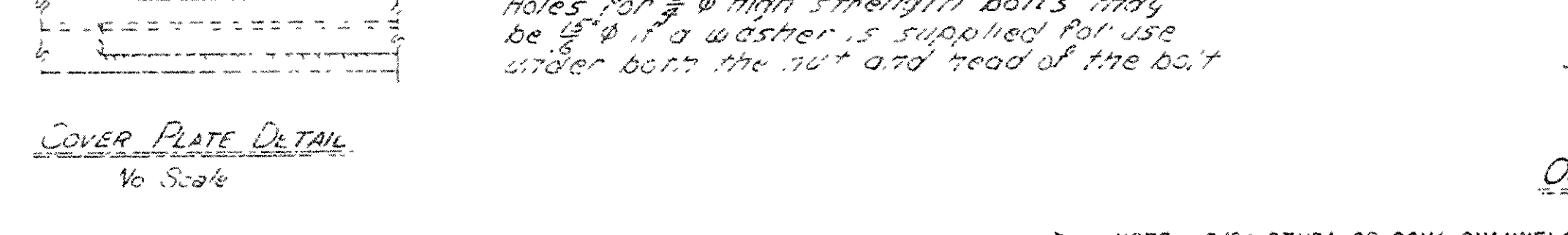
Checked by: AH

Date: 12/8-76

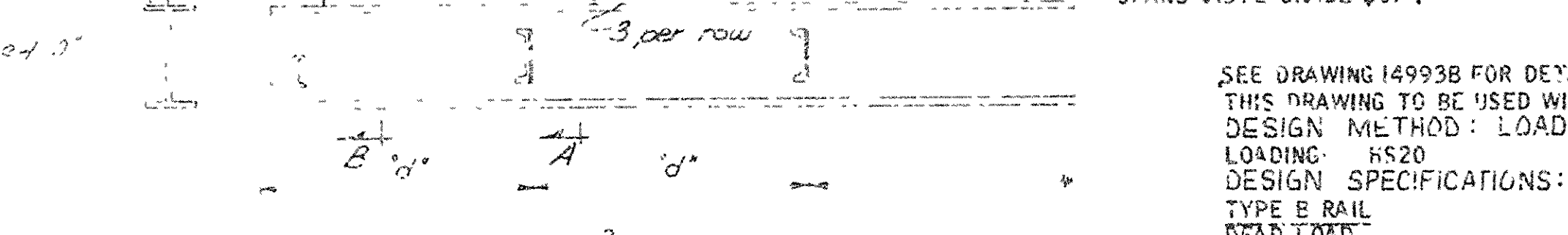
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NOTE: holes for 3/4" high strength bolts may be 1/2" if a washer is supplied for use under both the nut and head of the bolt.  
 \* See Drwg. No. 14990F for alternate anchor details.  
**COVER PLATE WELDING NOTE**  
 Max. thick of part under: 3/8" to 1/2"  
 Max. thick of part 1/2" to 3/4"  
 Max. thick of part 3/4" to 1"  
**COVER PLATE DETAIL**  
 No Scale



**SPACING FOR 3/4" STUD SHEAR CONNECTORS & DIAPHRAGMS**  
 No Scale



**REINFORCING STEEL (PER SPAN)**

MARK	LENGTH		SPAN LENGTH	
	CONCRETE PARAPET RAIL	TYPE B RAIL	46	50
S601	32'-4"	33'-4"	19486	19486
S602	33'-1"	34'-1"	19486	19486
S401	3'-1 1/2"	3'-1 1/2"	19486	19486
S701	5'-8"	6'-2"	19486	19486
S402	5'-6"	5'-6"	19486	19486
S403	5'-7"	5'-7"	19486	19486
S404	5'-9"	5'-9"	19486	19486
S405	5'-5"	5'-5"	19486	19486
S406	5'-11"	5'-11"	19486	19486
S407	5'-11"	5'-11"	19486	19486
S408	5'-11"	5'-11"	19486	19486
S409	5'-11"	5'-11"	19486	19486
S410	5'-11"	5'-11"	19486	19486
S411	5'-11"	5'-11"	19486	19486
S412	5'-11"	5'-11"	19486	19486
S413	5'-11"	5'-11"	19486	19486
S414	5'-11"	5'-11"	19486	19486
S415	5'-11"	5'-11"	19486	19486
S416	5'-11"	5'-11"	19486	19486
S417	5'-11"	5'-11"	19486	19486
S418	5'-11"	5'-11"	19486	19486
S419	5'-11"	5'-11"	19486	19486
S420	5'-11"	5'-11"	19486	19486
S421	5'-11"	5'-11"	19486	19486
S422	5'-11"	5'-11"	19486	19486
S423	5'-11"	5'-11"	19486	19486
S424	5'-11"	5'-11"	19486	19486
S425	5'-11"	5'-11"	19486	19486
S426	5'-11"	5'-11"	19486	19486
S427	5'-11"	5'-11"	19486	19486
S428	5'-11"	5'-11"	19486	19486
S429	5'-11"	5'-11"	19486	19486
S430	5'-11"	5'-11"	19486	19486
S431	5'-11"	5'-11"	19486	19486
S432	5'-11"	5'-11"	19486	19486
S433	5'-11"	5'-11"	19486	19486
S434	5'-11"	5'-11"	19486	19486
S435	5'-11"	5'-11"	19486	19486
S436	5'-11"	5'-11"	19486	19486
S437	5'-11"	5'-11"	19486	19486
S438	5'-11"	5'-11"	19486	19486
S439	5'-11"	5'-11"	19486	19486
S440	5'-11"	5'-11"	19486	19486
S441	5'-11"	5'-11"	19486	19486
S442	5'-11"	5'-11"	19486	19486
S443	5'-11"	5'-11"	19486	19486
S444	5'-11"	5'-11"	19486	19486
S445	5'-11"	5'-11"	19486	19486
S446	5'-11"	5'-11"	19486	19486
S447	5'-11"	5'-11"	19486	19486
S448	5'-11"	5'-11"	19486	19486
S449	5'-11"	5'-11"	19486	19486
S450	5'-11"	5'-11"	19486	19486
S451	5'-11"	5'-11"	19486	19486
S452	5'-11"	5'-11"	19486	19486
S453	5'-11"	5'-11"	19486	19486
S454	5'-11"	5'-11"	19486	19486
S455	5'-11"	5'-11"	19486	19486
S456	5'-11"	5'-11"	19486	19486
S457	5'-11"	5'-11"	19486	19486
S458	5'-11"	5'-11"	19486	19486
S459	5'-11"	5'-11"	19486	19486
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S462	5'-11"	5'-11"	19486	19486
S463	5'-11"	5'-11"	19486	19486
S464	5'-11"	5'-11"	19486	19486
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S468	5'-11"	5'-11"	19486	19486
S469	5'-11"	5'-11"	19486	19486
S470	5'-11"	5'-11"	19486	19486
S471	5'-11"	5'-11"	19486	19486
S472	5'-11"	5'-11"	19486	19486
S473	5'-11"	5'-11"	19486	19486
S474	5'-11"	5'-11"	19486	19486
S475	5'-11"	5'-11"	19486	19486
S476	5'-11"	5'-11"	19486	19486
S477	5'-11"	5'-11"	19486	19486
S478	5'-11"	5'-11"	19486	19486
S479	5'-11"	5'-11"	19486	19486
S480	5'-11"	5'-11"	19486	19486
S481	5'-11"	5'-11"	19486	19486
S482	5'-11"	5'-11"	19486	19486
S483	5'-11"	5'-11"	19486	19486
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S487	5'-11"	5'-11"	19486	19486
S488	5'-11"	5'-11"	19486	19486
S489	5'-11"	5'-11"	19486	19486
S490	5'-11"	5'-11"	19486	19486
S491	5'-11"	5'-11"	19486	19486
S492	5'-11"	5'-11"	19486	19486
S493	5'-11"	5'-11"	19486	19486
S494	5'-11"	5'-11"	19486	19486
S495	5'-11"	5'-11"	19486	19486
S496	5'-11"	5'-11"	19486	19486
S497	5'-11"	5'-11"	19486	19486
S498	5'-11"	5'-11"	19486	19486
S499	5'-11"	5'-11"	19486	19486
S500	5'-11"	5'-11"	19486	19486

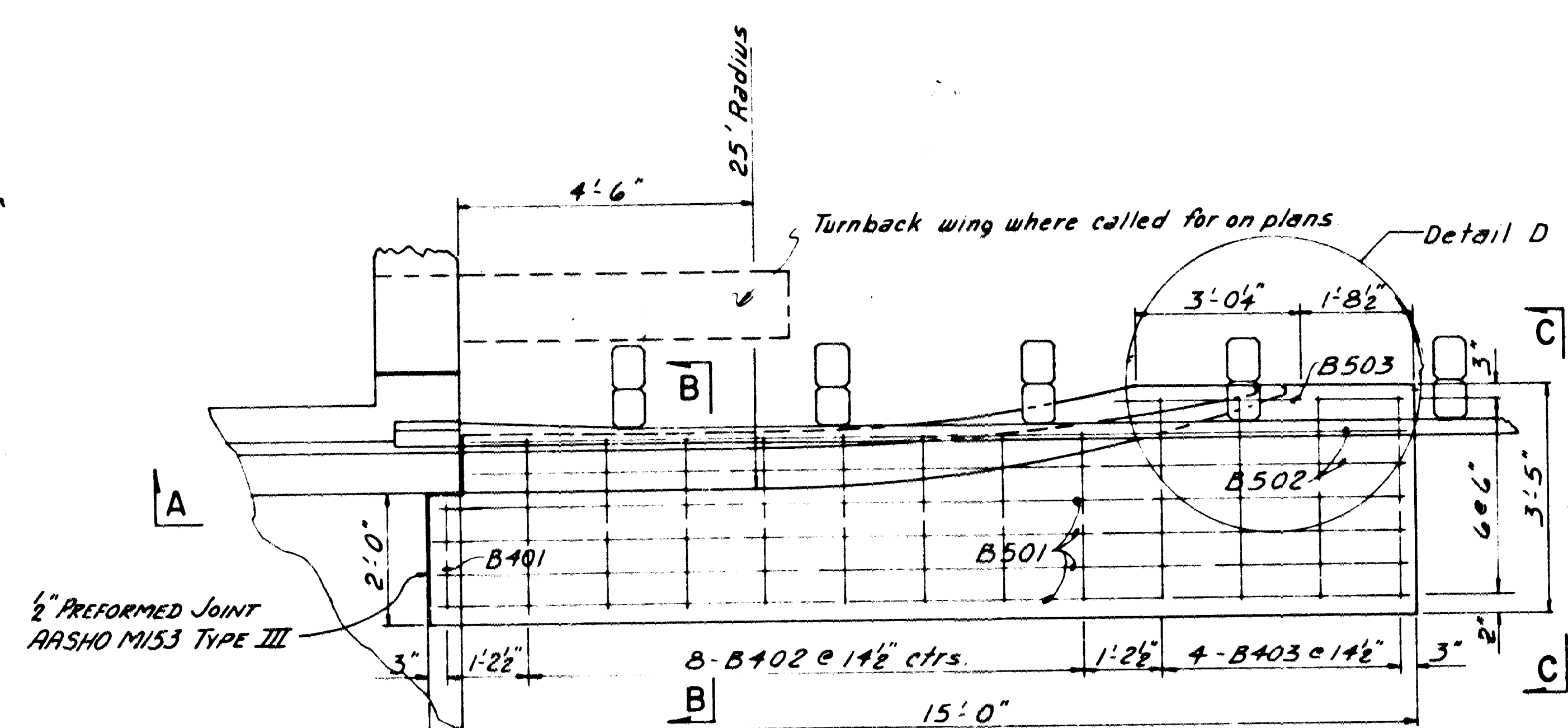
**BENDING DIAGRAMS**  
 Dimensions are out to out of bars.  
 See Note 1 for details.  
 See Note 2 for details.  
 See Note 3 for details.  
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 See Note 5 for details.  
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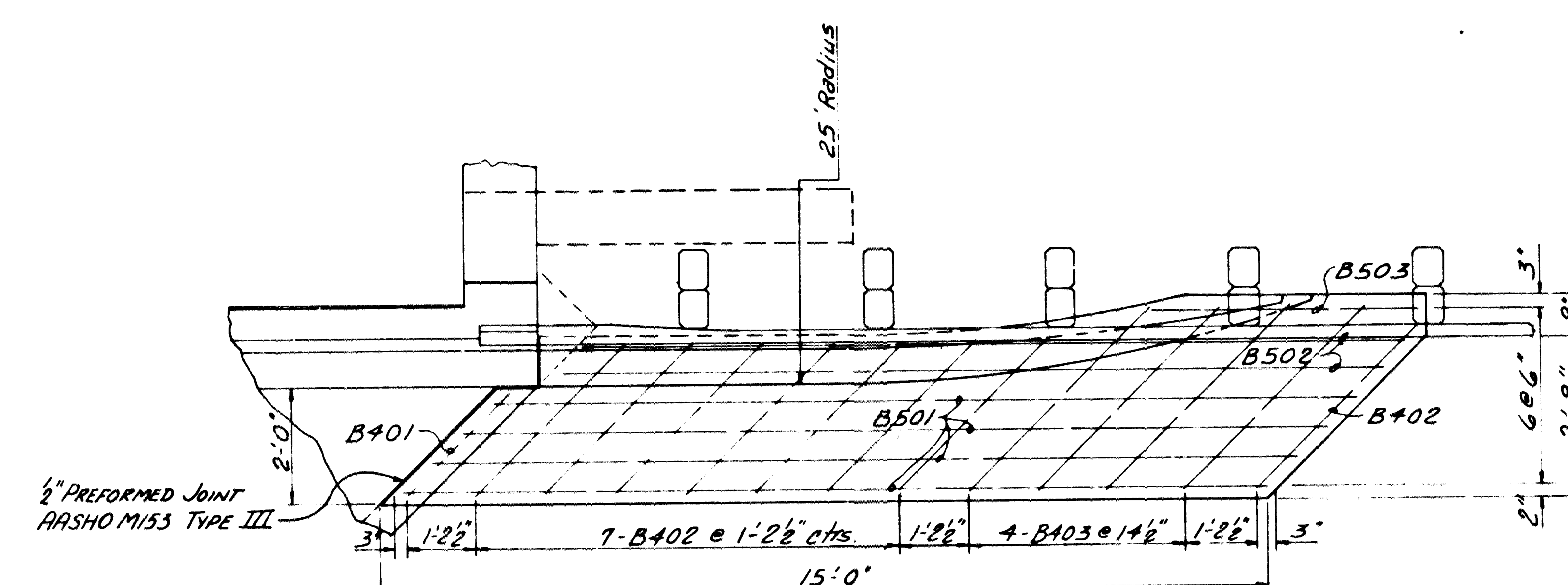




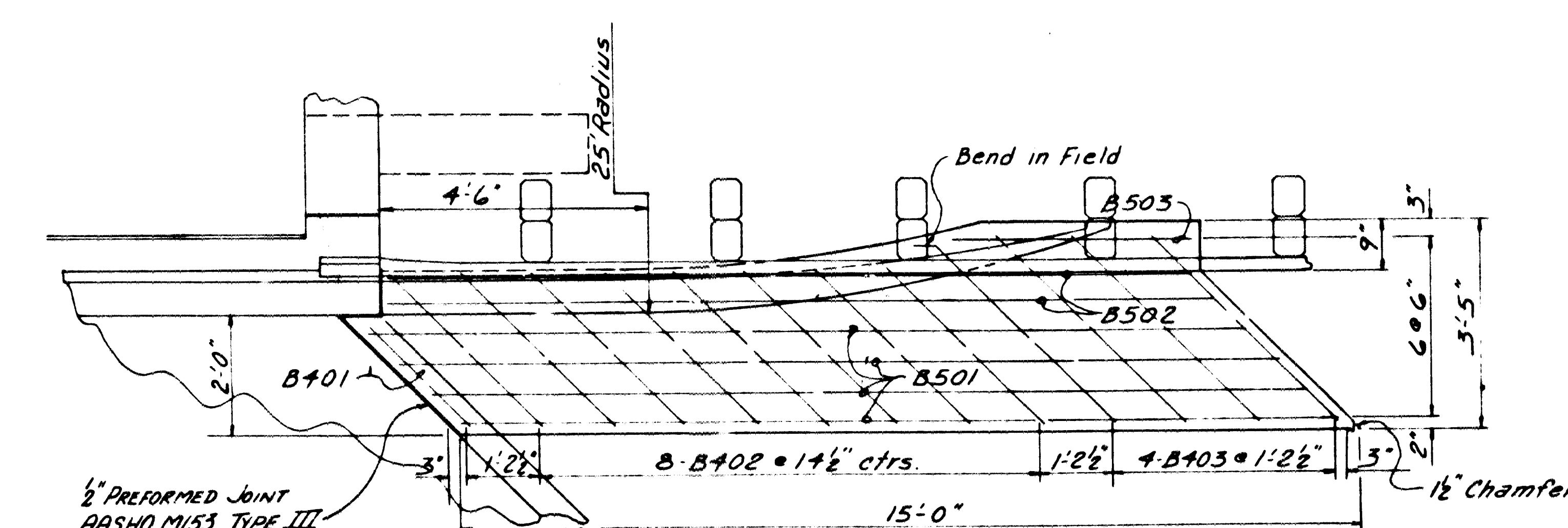
DATE	REVISED	DATE	REVISED	DATE	REVISED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
10-19-72	11-1-73	7-16-73	8-28-73			6	ARK	DACH 44-16-C-0010		16	33
JOB NO. 10893											
S 15642.3 - Type J Gutters 19490											



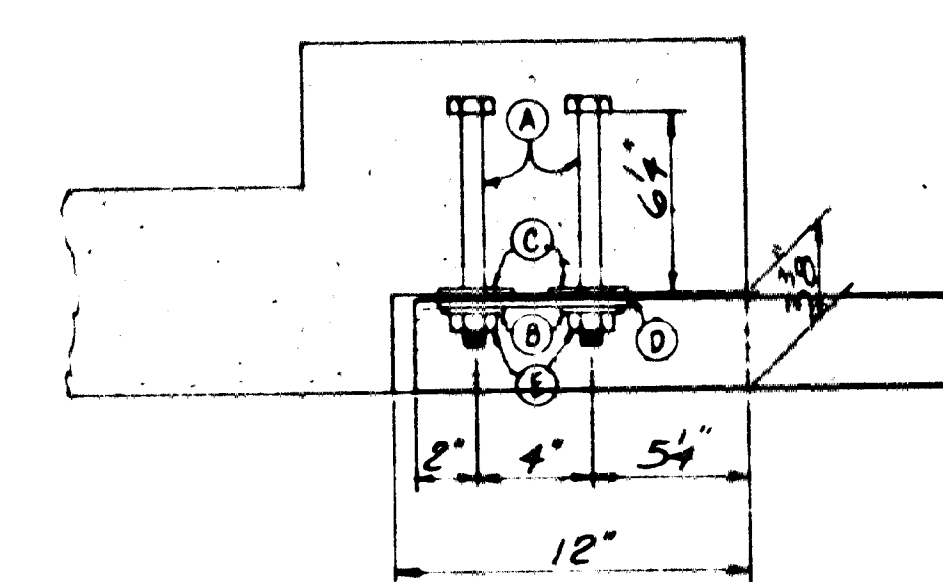
HALF PLAN OF APPROACH GUTTER FOR SQUARE BRIDGE



HALF PLAN OF APPROACH GUTTER FOR LEFT FORWARD SKEW BRIDGE

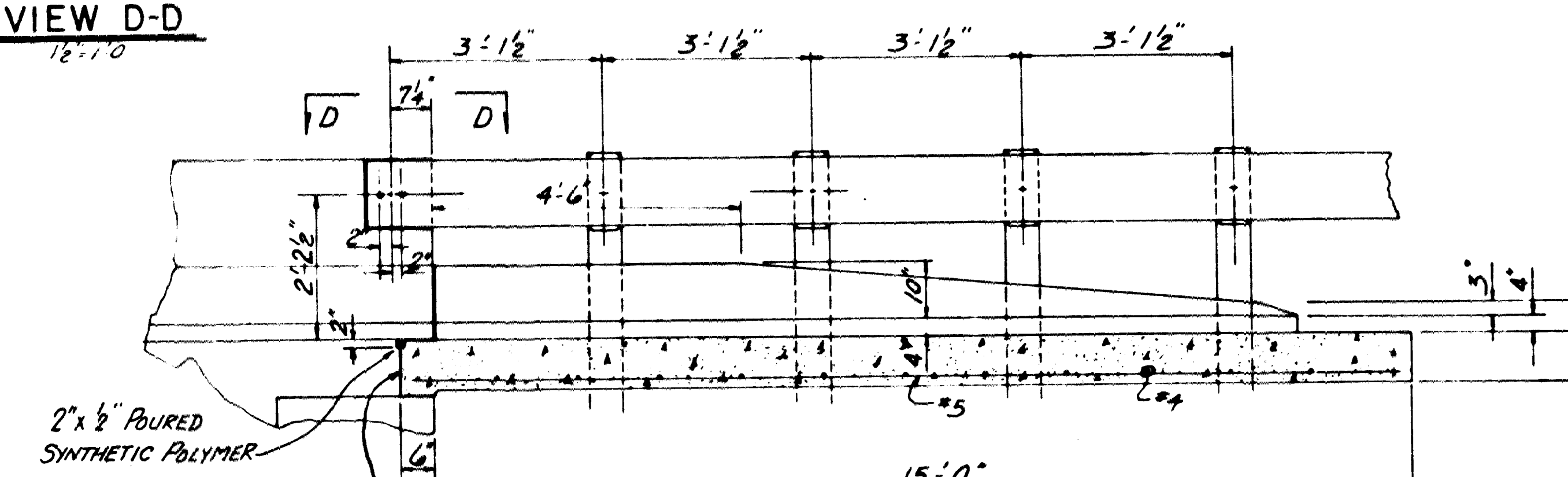


HALF PLAN OF APPROACH GUTTER FOR RIGHT FORWARD SKEW BRIDGE

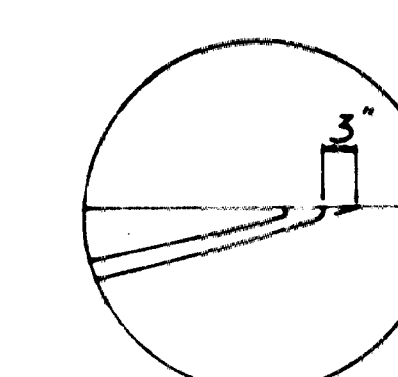


VIEW D-D  
12'-0"

- ① (2) 8" A-325 High Strength Bolts with 1 1/2" Threads  
 ② (2) Clipped Hardened Washers  
 ③ (2) Full Hardened Washers  
 ④ (1) 2 1/2" x 1/4" x 1" Double Washer  
 ⑤ (2) Nuts

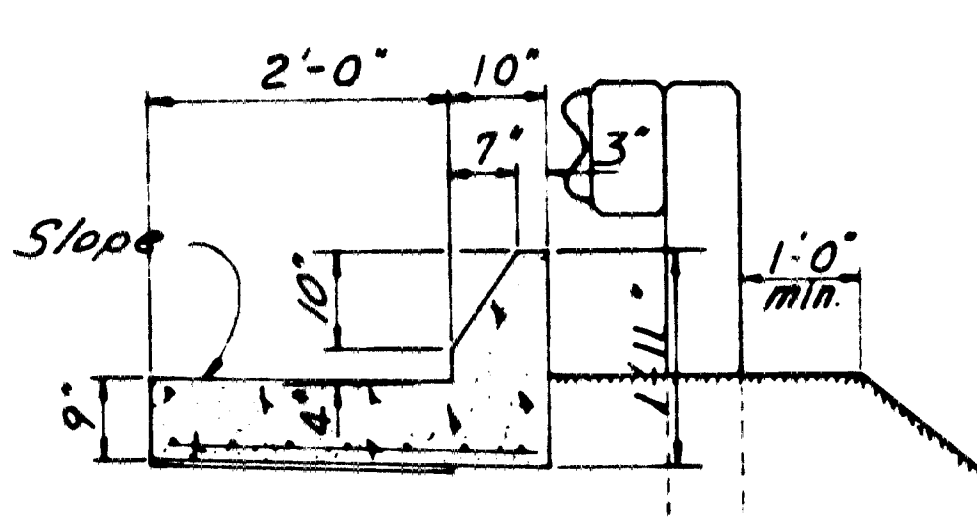


SECTION A-A



DETAIL D

Match Bridge Deck Slope



SECTION B-B  
No Scale

BAR LIST FOR ONE APPROACH  
(TWO GUTTERS)

MARK	NO.	REQD.	LENGTH
B501	2	1'-6"	
B502	16	2'-4"	
B503	8	3'-0"	
B504	8	1'-6"	
B505	4	1'-0"	
B506	2	4'-3"	

\*As shown for Square Bridge, x Sec. of angle for Skewed Bridge.

FOR INFORMATION ONLY  
APPROX. QUANTITIES, SQUARE BRIDGE  
TWO GUTTERS

CONCRETE 3.14 Cu Yds.  
REINFORCING STEEL 231 Lbs.

APPROACH SLAB NOTES

CONCRETE IN APPROACH SLABS TO BE CLASS A OR S OR PAVEMENT MIXTURE.

REINFORCING STEEL TO BE ASTM A615, GRADE 40.

APPROACH GUTTERS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR "APPROACH GUTTERS, TYPE J.". THE PRICE BID SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS, INCLUDING REINFORCING STEEL, CONCRETE, EXCAVATION AND FORMS AND LABOR TO COMPLETE GUTTERS.

FOR DETAILS OF POSTS, GUARD RAIL AND ATTACHMENT OF GUARD RAIL TO POSTS SEE JOB DETAILS PERTAINING TO THESE ITEMS.

TYPE J APPROACH GUTTERS USED IN CONJUNCTION WITH TYPE L APPROACH SLABS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH BID FOR "APPROACH SLABS AND GUTTERS, TYPE L J." WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS, INCLUDING REINFORCING STEEL, CONCRETE, EXCAVATION AND FORMS AND LABOR TO COMPLETE THE SLABS AND GUTTERS.

DETAILS OF STANDARD  
TYPE J

APPROACH GUTTERS

ROUTE 135 SEC. 3  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: M.W.M. DATE: 2-18-71  
TRACED BY: DATE: 2-23-71  
CHECKED BY: E.M.H. DATE: 2-23-71  
BRIDGE NO. 5642, 5643 DRAWING NO. 1898J

File as Drawing No. 19490

Added Quantities 7-16-73 K.M.G.  
Revised curb height, JCK 1-15-76

W. A. Linton  
BRIDGE ENGINEER



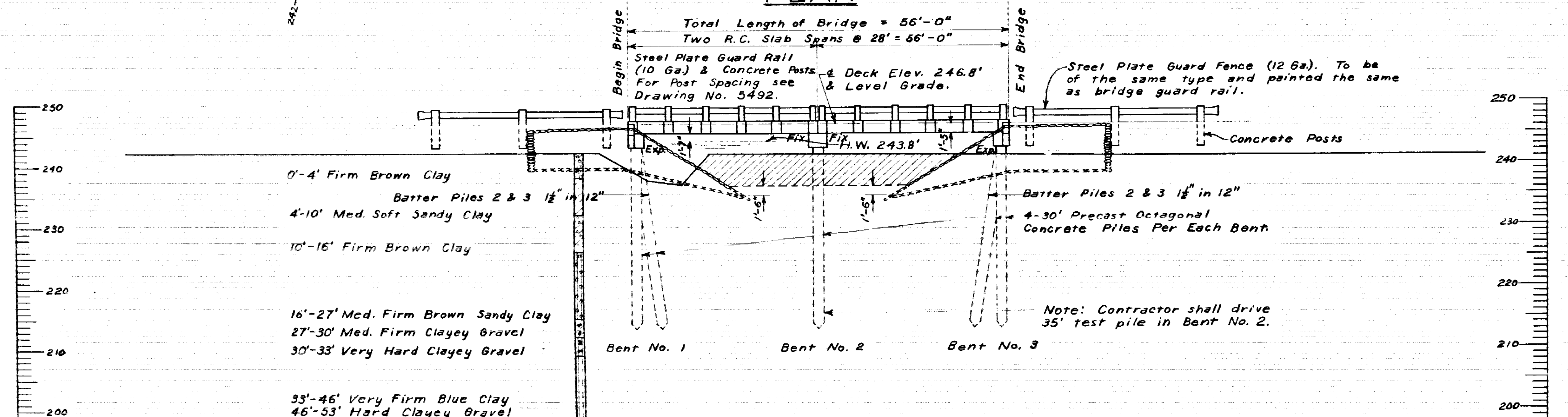
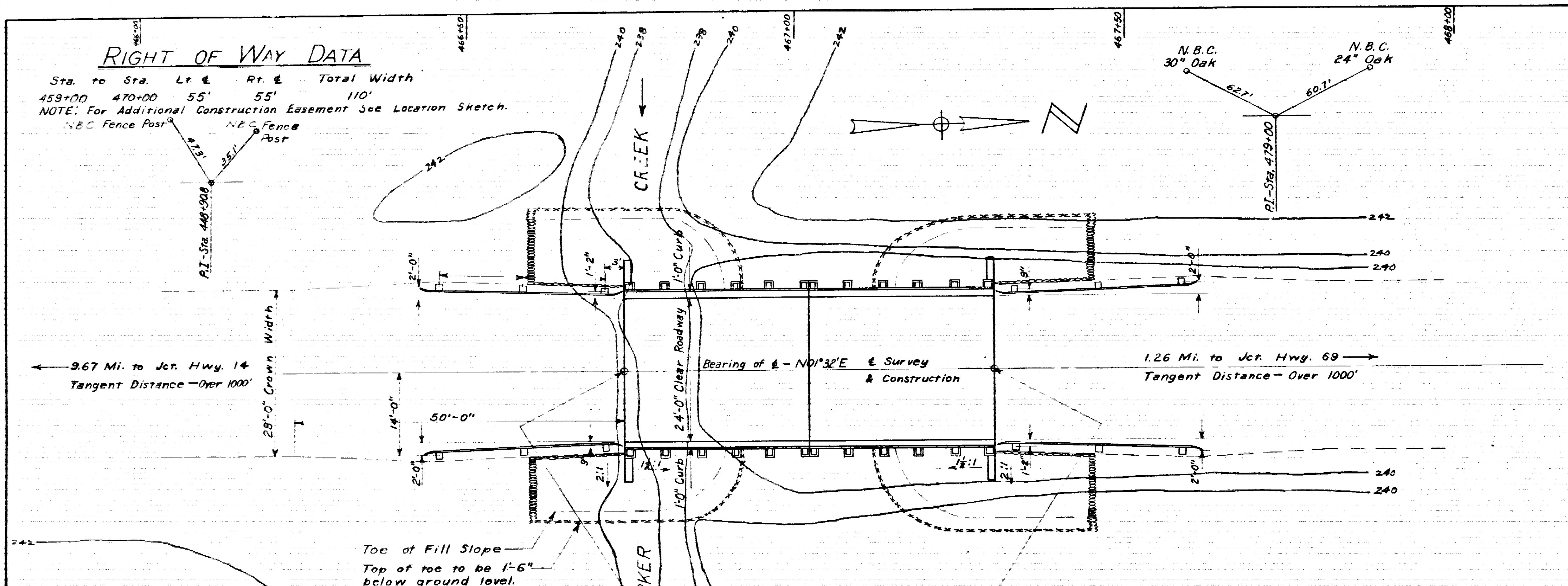
DATE	TO AND FROM	TIME	SHIFT	TOTAL SHEETS
APR	S-205(2)			
B No.	10504	29		

RIGHT OF WAY DATA

Sta.	to Sta.	Lt. E	Rt. E	Total Width
459+00	470+00	55'	55'	110'

NOTE: For Additional Construction Easement See Location Sketch.

N.B.C. Fence Post      N.B.C. Fence



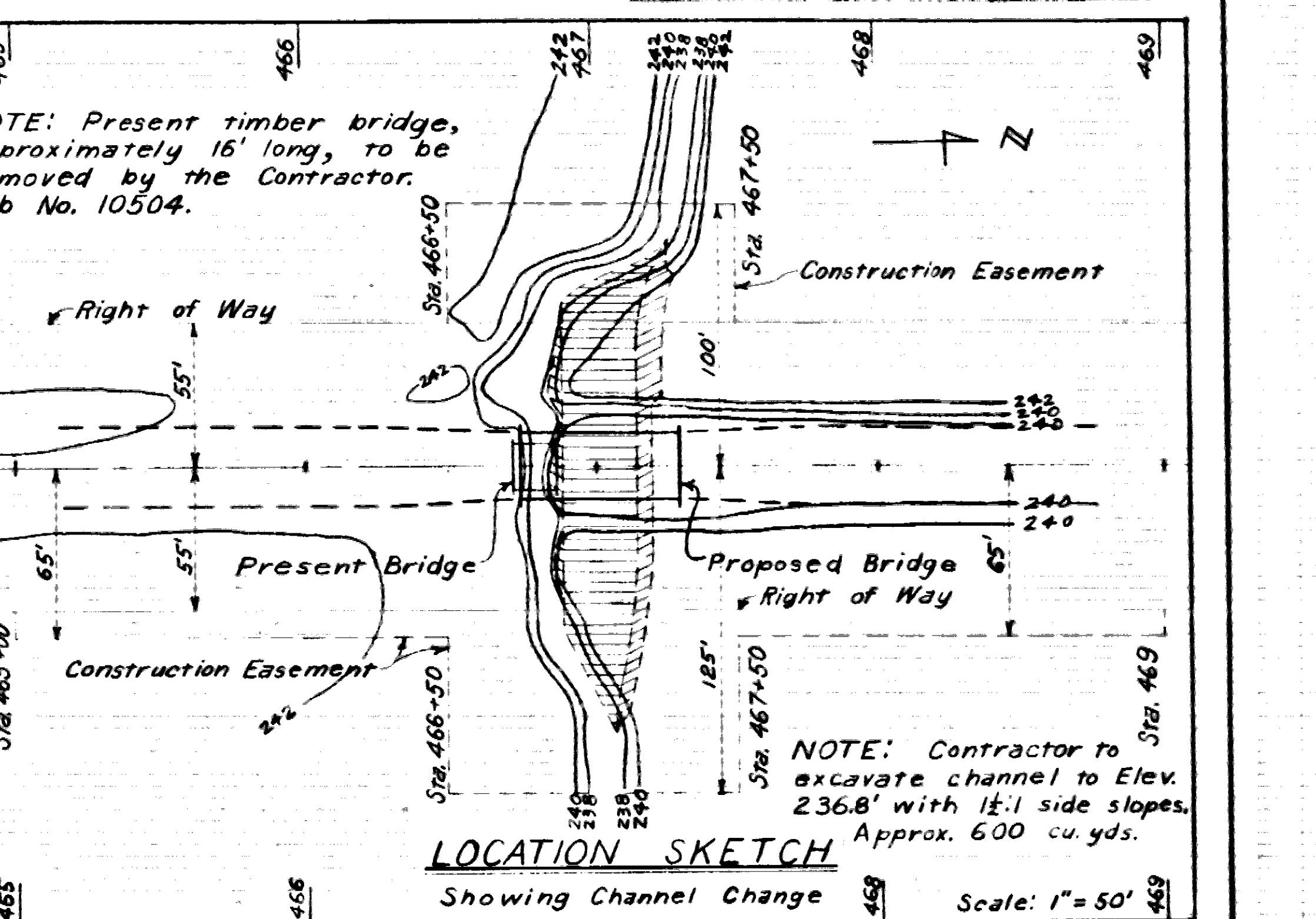
DESIGN SPECIFICATIONS - AASHO 1953

LIVE LOADING  
UNIT STRESSES:  
Class "S" Concrete ( $n=10$ )  
Reinforcing Steel

H-15 Rt. 15.0'  
Gr. Elev. 242.0'  
Sta. 466+67  
1,200 psi.  
20,000 psi.

ELEVATION

Drainage Area = 3.0 Sq. Mi.  
C = 0.8



## GENERAL NOTES

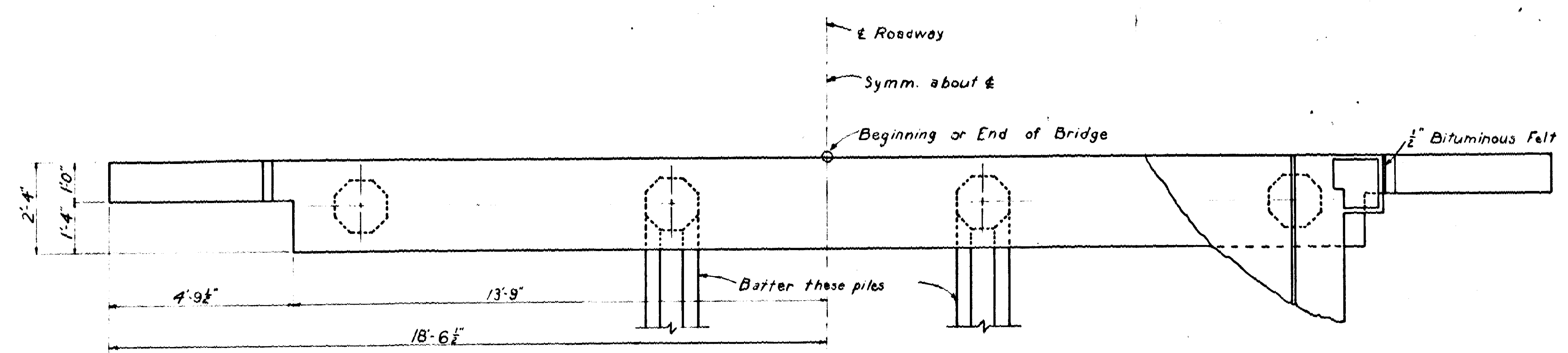
BENCH MARK: Nail in P.P. 32'-0" Rt. of Sta. 463+65.  
variation 243.12'.  
All piling shall be 30' Precast 16" Octagonal Concrete  
piles. Lengths of piling shown are for estimating quantities  
only. Actual lengths to be determined in the field.  
35 test pile in Bent No. 2. Piles in End Bents 1 & 3  
to be driven under embankment is in place. Drive piles to  
minimum bearing capacity of 32 tons per pile and a  
minimum penetration of 20'-0". For Details see Drawing Nos.  
12 and 5492-A.

LAYOUT OF BRIDGE  
OVER BARKER CREEK  
HARRISBURG—CRAIGHEAD CO.  
POINSETT COUNTY  
ROUTE 1 SEC. 16  
ANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

Drawn By: W.R. Date: 4-14-88  
Traced By: \_\_\_\_\_ Date: \_\_\_\_\_  
Checked By: W.R. Date: 4-20-88  
Scale: 1 in. = 10 ft.  
BRIDGE NO. 3009 DRAWING NO. 8811  
J. Carlson  
Jgs Design Engineer

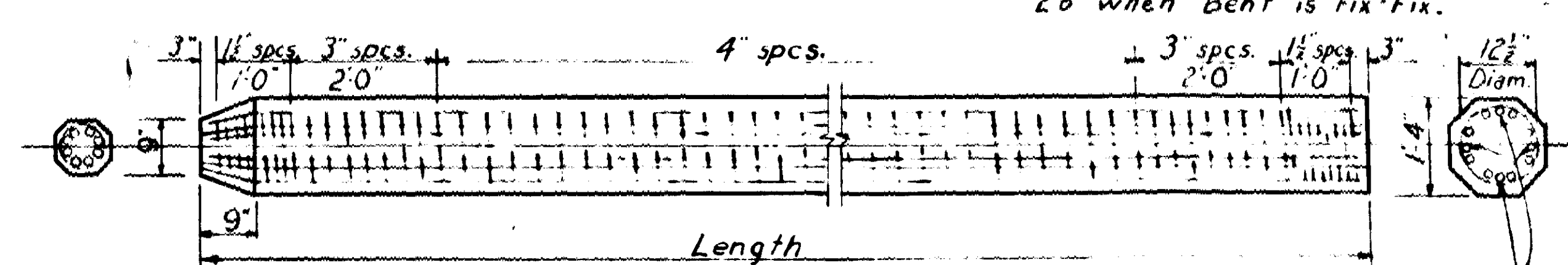


FEED ROAD DIST NO.	STATE	PROJECT NO.	PIECE NO.	SHEET NO.	TOTAL SHEETS
6	ARK.				
STATE JOB NO.					

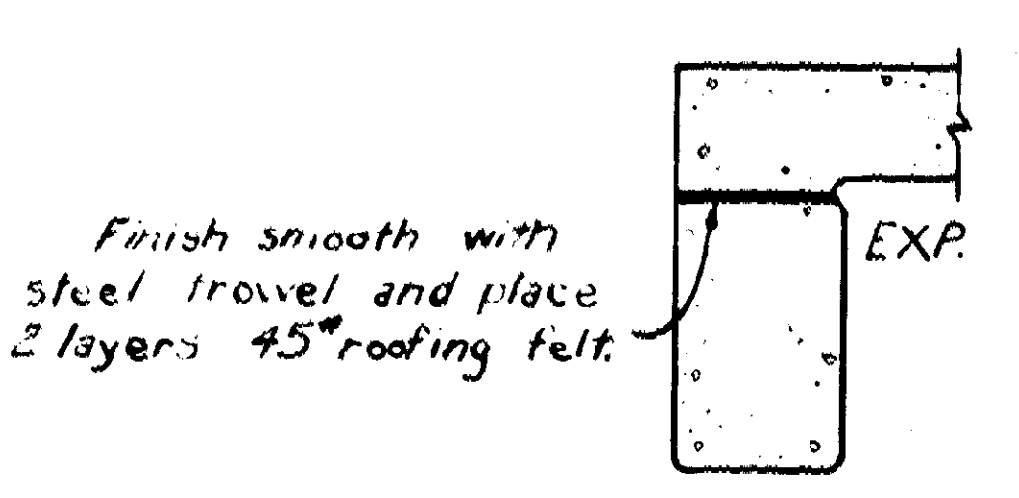
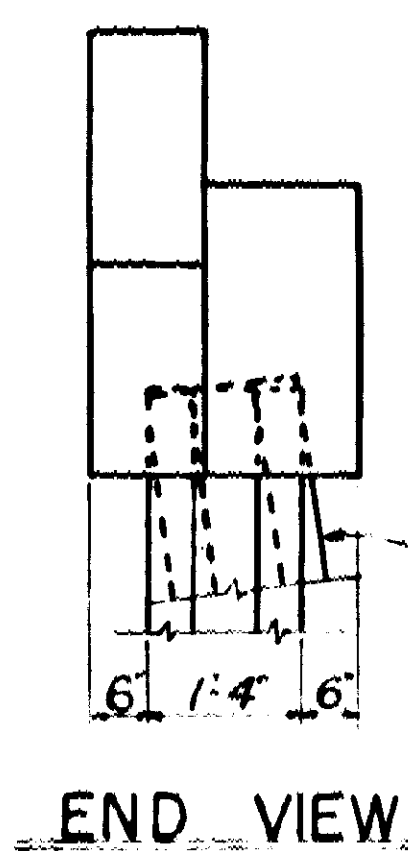
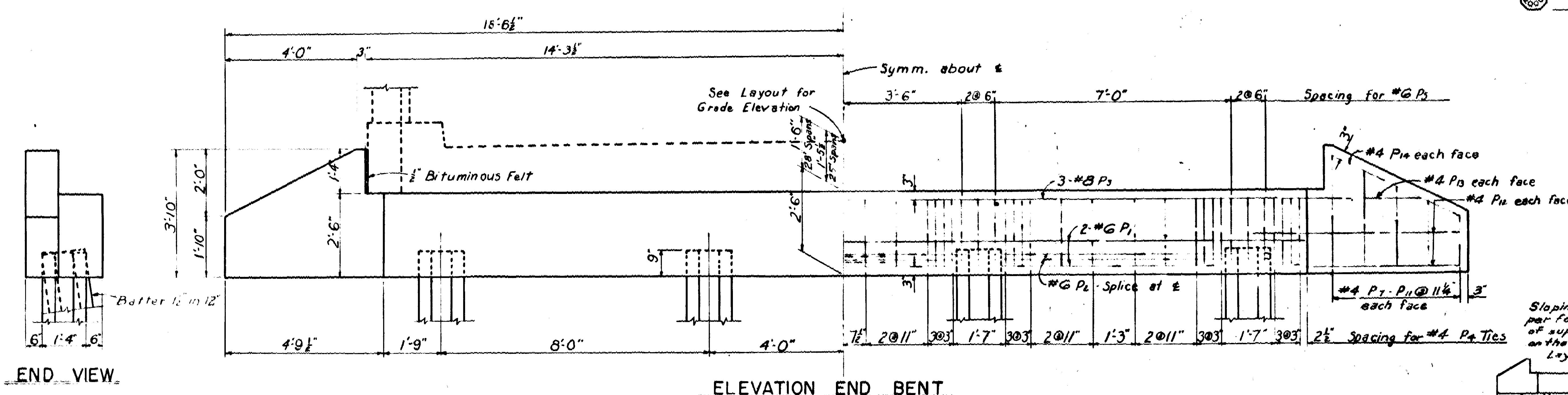


BENT BARS									
NO. IN END BENT	NO. IN INTERM. BENT	MARK	SIZE	LENGTH	A	B	BENDING DIAGRAM		
4	4	P <sub>1</sub>	#6	29'3"	14'0"	1'5"			
4	4	P <sub>2</sub>	#4	8'9"	2'1 1/2"	1'11 1/2"			
12	12	P <sub>3</sub>	#6	6'1"	2'1 1/2"	1'11 1/2"			
Dimensions are to centers of bars									

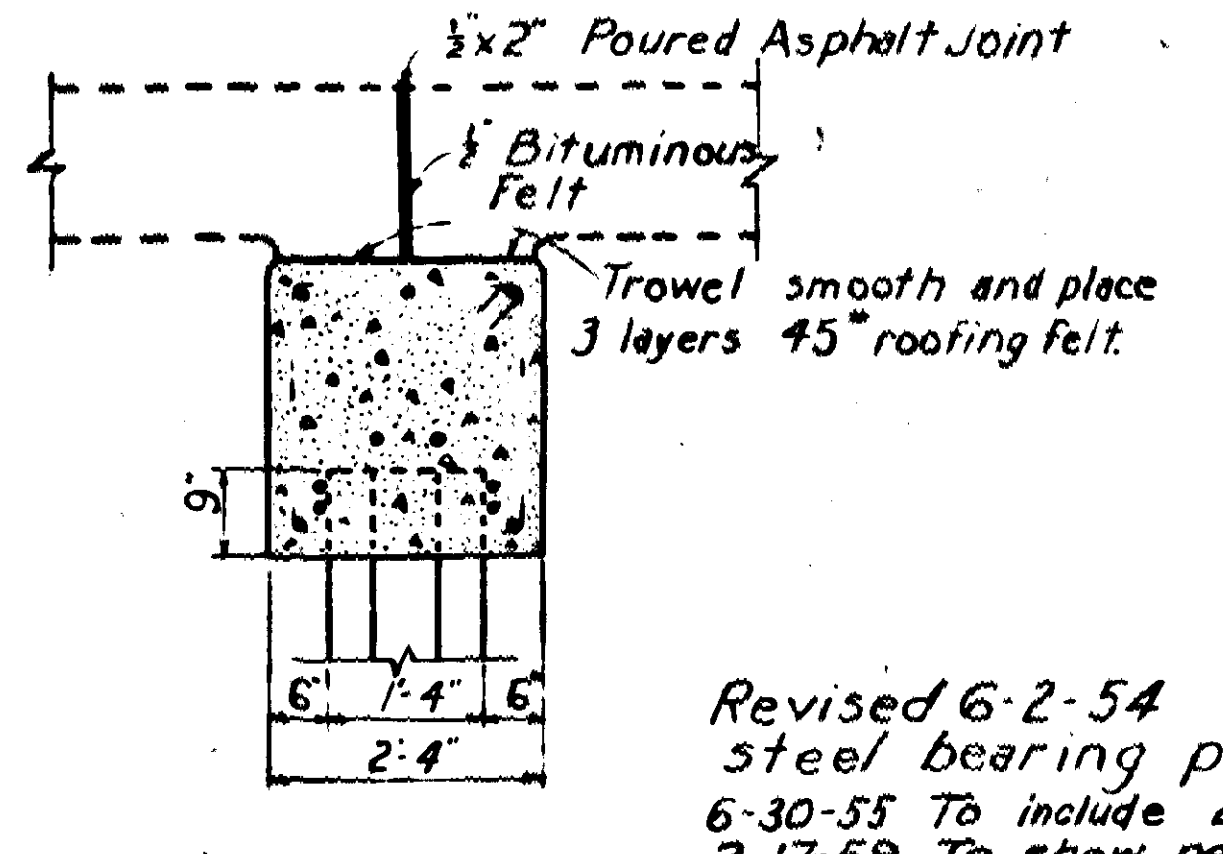
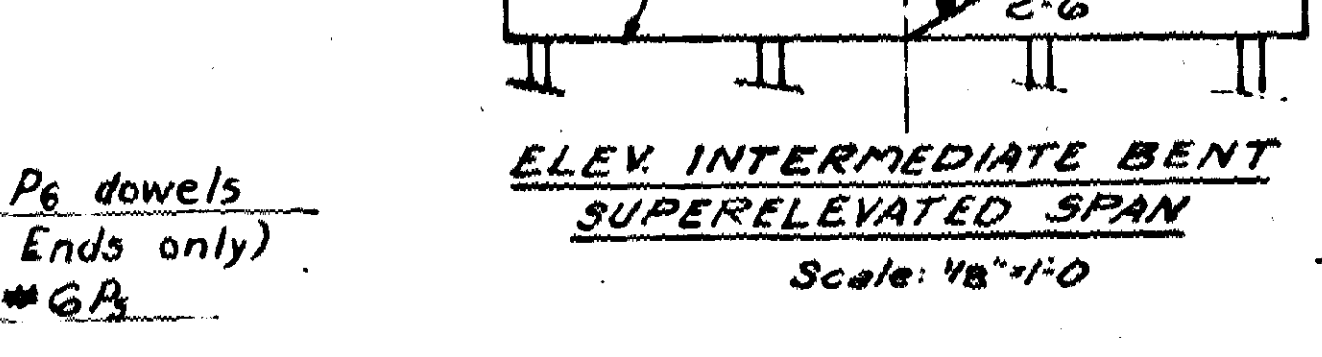
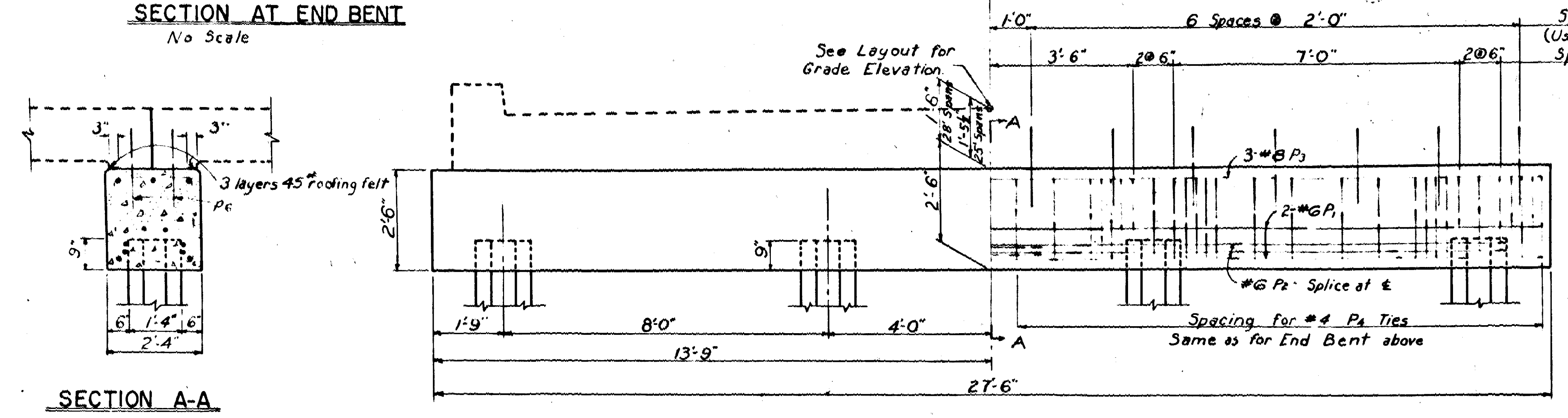
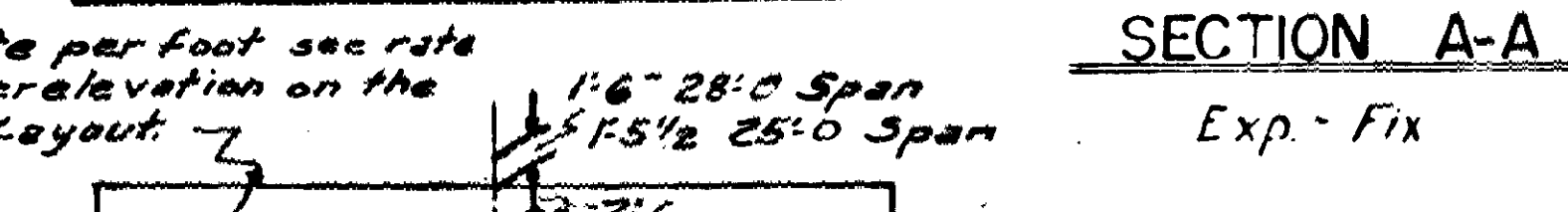
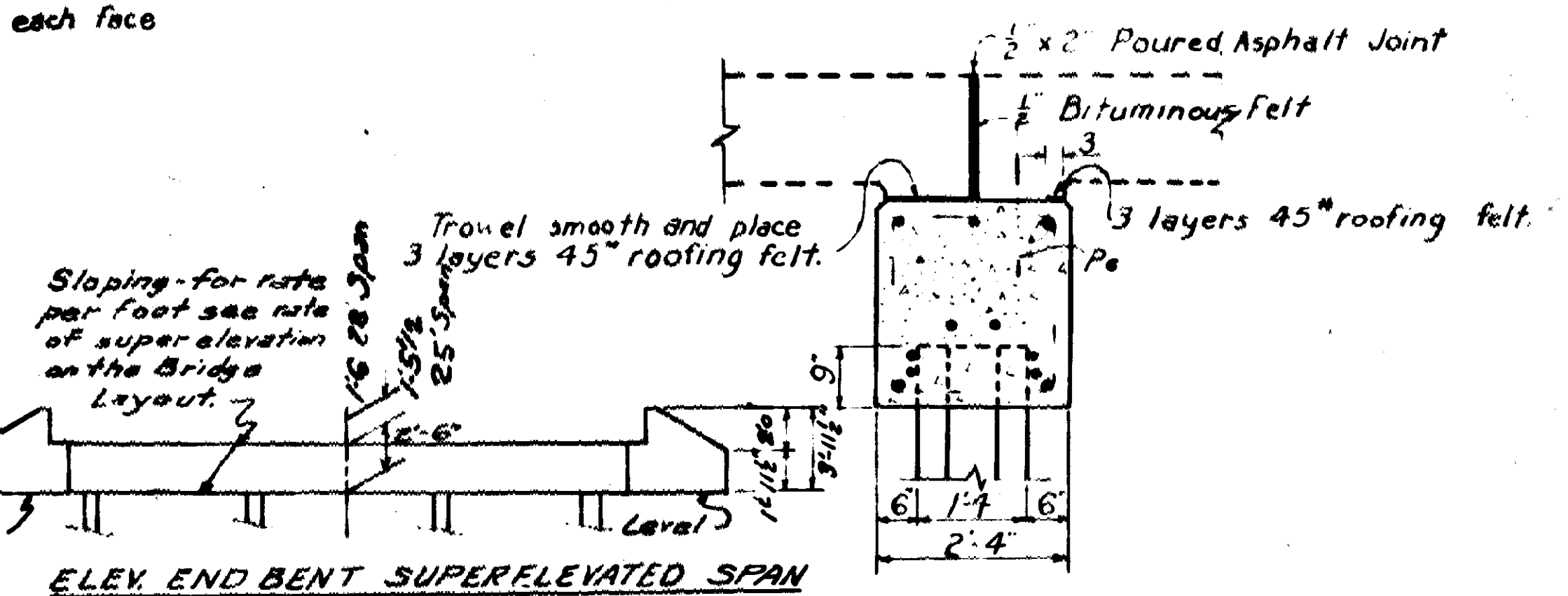
<u>STRAIGHT BARS</u>					
<u>NO. IN</u> <u>END</u> <u>BENT</u>	<u>NO. IN</u> <u>INTERM.</u> <u>BENT</u>	<u>MARK</u>	<u>SIZE</u>	<u>LENGTH</u>	
4	4	P <sub>1</sub>	#6	27'2"	
3	3	P <sub>2</sub>	#8	27'2"	
14	14	P <sub>3</sub>	#6	2'0"	
4		P <sub>4</sub>	#4	1'7"	
4		P <sub>5</sub>	#4	2'7"	
4		P <sub>6</sub>	#4	2'7"	
4		P <sub>7</sub>	#4	2'1"	
4		P <sub>8</sub>	#4	3'6"	
8		P <sub>9</sub>	#4	7'0"	
4		P <sub>10</sub>	#4	5'0"	
4		P <sub>11</sub>	#4	4'3"	



Reinforcing: Vertical Bars { 8-#6 Lengths to 35' } #2 Spiral  
 For lengths over 45' add 4-#6 thru middle third of pile.



Drive piles in Intermediate Bents to a minimum bearing of 32 kips per pile.  
 Drive piles in End Bents to a minimum bearing of 30 tons per pile.  
 Use steel bearing piles when called for on layout.



GENERAL NOTES:  
 All concrete to be Class "5" and to be poured in the dry for additional General Notes and details of slab spans see Drwg. No. 5492 or 5463.

Revised to show Superelevated Caps E.R.B. 7-18-59

DETAILS OF STANDARD R.C. PILE BENTS FOR 25'-0" & 28'-0" R.C. SLAB SPANS

Revised 6-2-54 To include steel bearing piling, L.P.C.  
 6-30-55 To include 25'-0" spans, W.R.  
 2-17-59 To show new reinforcing bar designations, R.L.C.

24'-0" CLEAR RDWY. - 1'-0" CURBS

ARKANSAS STATE HIGHWAY COMMISSION

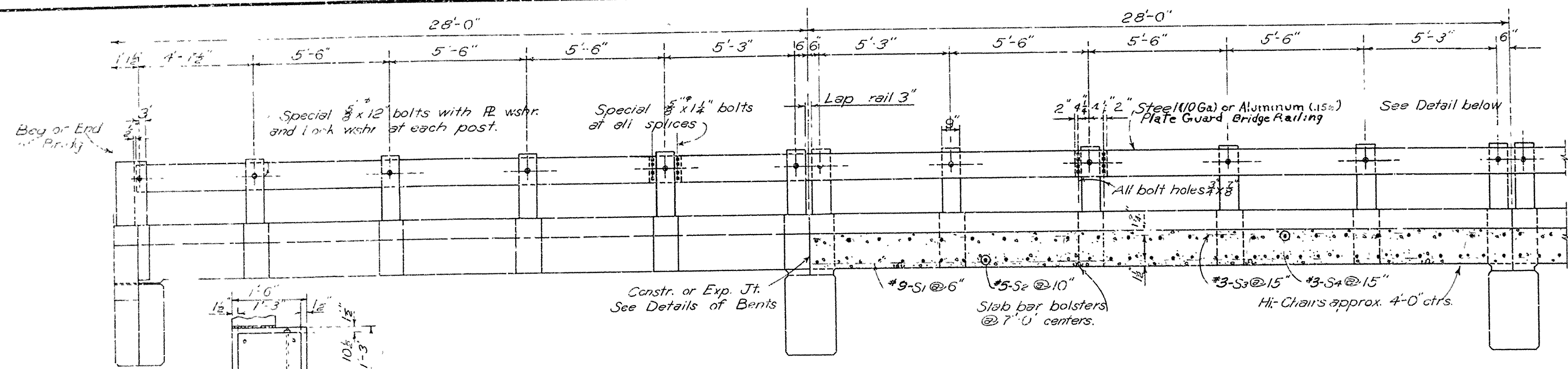
LITTLE ROCK, ARK.

Drawn By: A.B. Date: 8-3-53  
 Traced By: A.E.C. Date: 6-15-55  
 Checked By: W.W.M. Date: 8-10-53

DRAWING NO. 5492-A



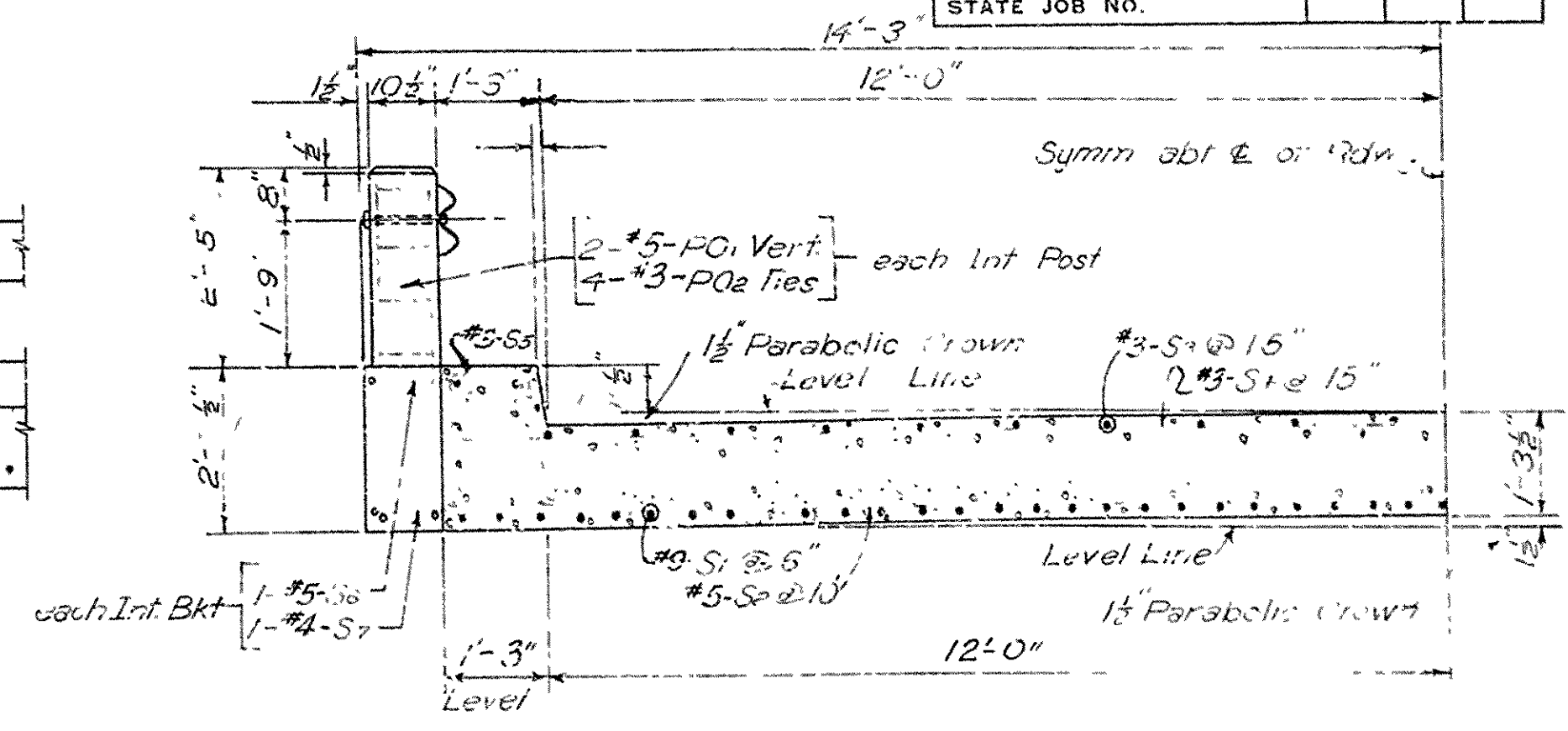
FILE NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK			
STATE JOB NO.				



ELEVATION

SECTION ON C OF RDWY.

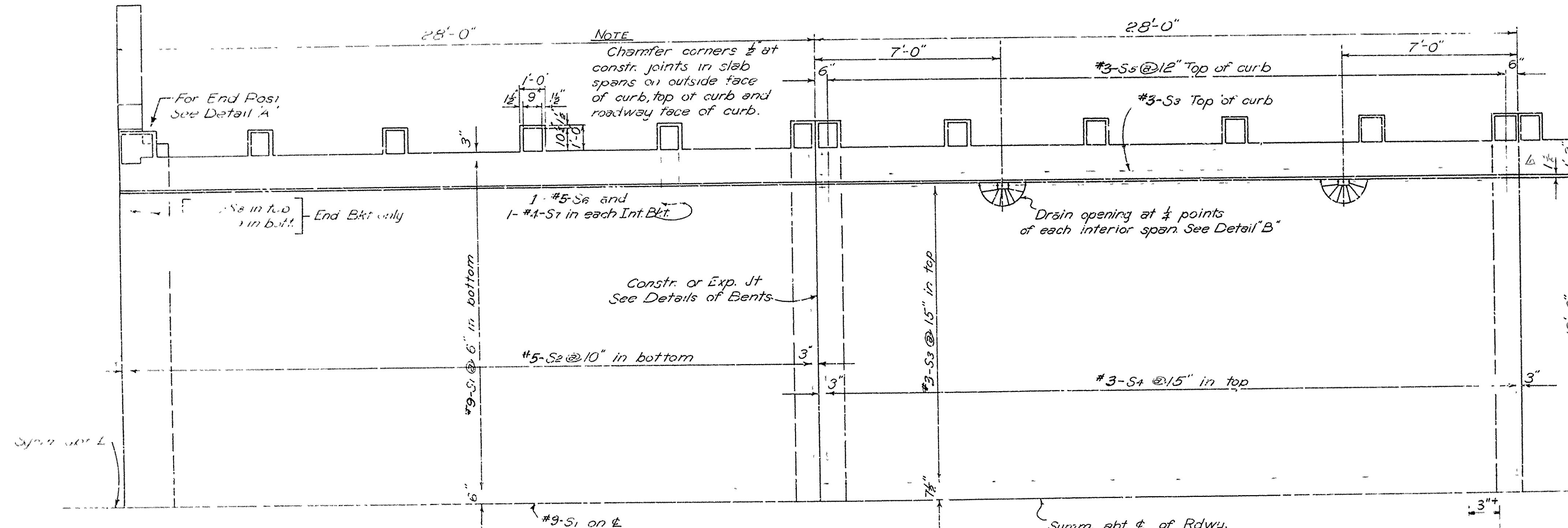
SCALE: 3/8" = 1'-0"



TYPICAL CROSS SECTION

SCALE: 3/8" = 1'-0"

DETAIL A  
SCALE: 3/8" = 1'-0"



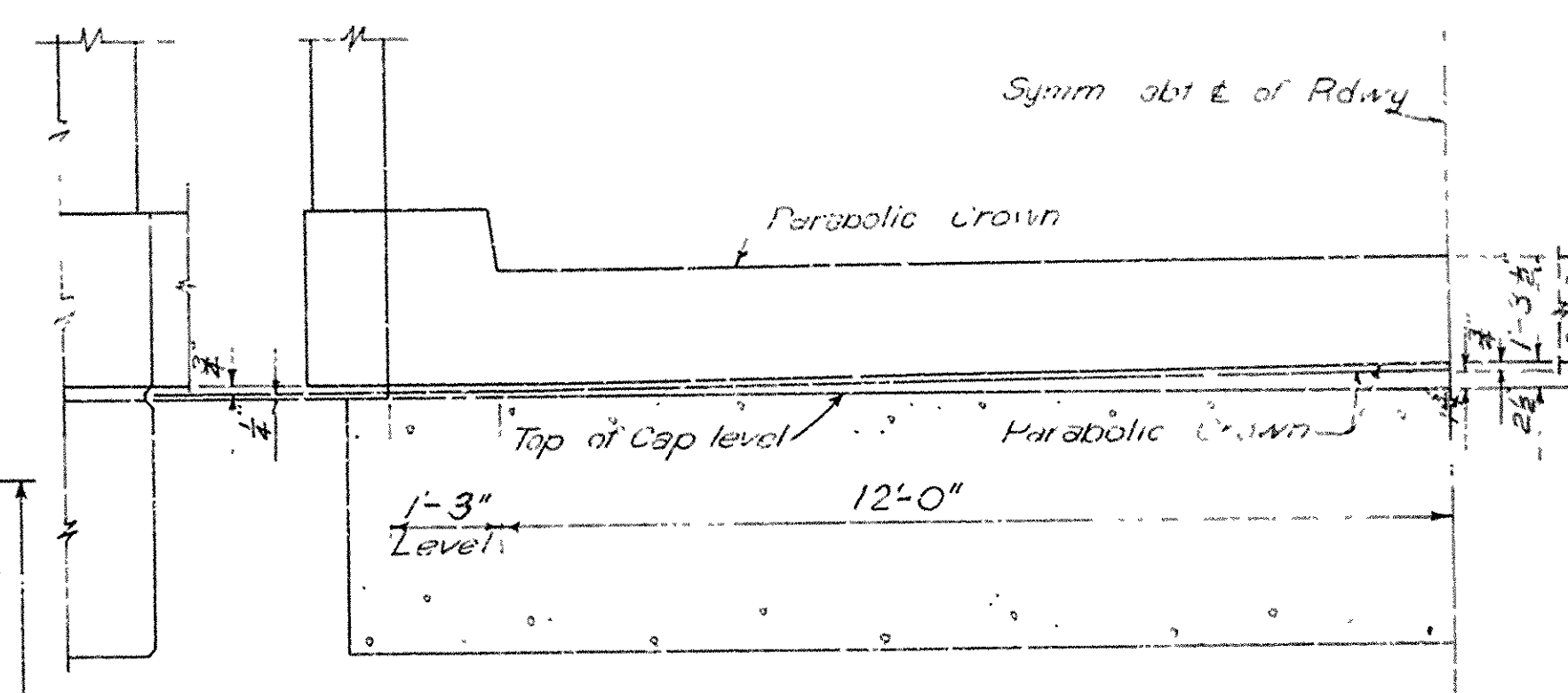
HALF PLAN END SPAN

HALF PLAN INTERMEDIATE SPAN

SHOWING STEEL IN BOTTOM OF SLAB  
TOP SLAB STEEL SAME AS SHOWN FOR INT. SPAN

SHOWING STEEL IN TOP OF SLAB  
BOT. SLAB STEEL SAME AS SHOWN FOR END SPAN

SCALE: 3/8" = 1'-0"



SECTION AT BENT

SHOWING HOW THICKNESS OF PARABOLIC SLAB IS INCREASED AT BENT TO MEET LEVEL CAP.  
SCALE: 3/8" = 1'-0"

LIST OF REINFORCING STEEL

MARK	SIZE	LENGTH	BENDING DIAGRAM
S1	#9	27'-8"	
S2	#5	26'-2"	
S3	#3	27'-8"	
S4	#3	26'-2"	
S5	#3	5'-10"	
S6	#5	10'-2"	
S7	#4	6'-7"	
S8	#5	2'-7"	
S9	#4	3'-6"	
PO1	#5	9'-1"	
PO2	#3	2'-10"	
PO3	#3	4'-4"	
PO4	#5	4'-3"	

GENERAL NOTES

All concrete to be Class "S". All exposed corners to be chamfered 3/4" unless otherwise noted.  
Reinforcing steel to be deformed bars of intermediate or hard grade.  
An 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 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 bending diagrams of reinforcing steel including wire supports shall be submitted and approved secured before fabrication is begun.  
Roofing and bituminous felt shall be measured and paid for as Class S Concrete.  
The steel plate guard rail shall be of the type shown or an equivalent rigid type as approved by the Engineer. The steel plate guard rail, including post, and fastenings, shall be paid for at the unit price bid per linear foot for Steel or Aluminum Plate Guard Bridge Railing.  
SPECIFICATIONS Arkansas State Highway Commission Standard Specifications for Highway Construction, adopted Edition - 1957

H 15 LOADING (A.A.S.H.O. 1957 REVISED)

LOAD DISTRIBUTION TO SLAB:  
Dead Load = 209 #/ft.  
Live Load = 0.182 Wheel/ft. width  
Impact = 30%

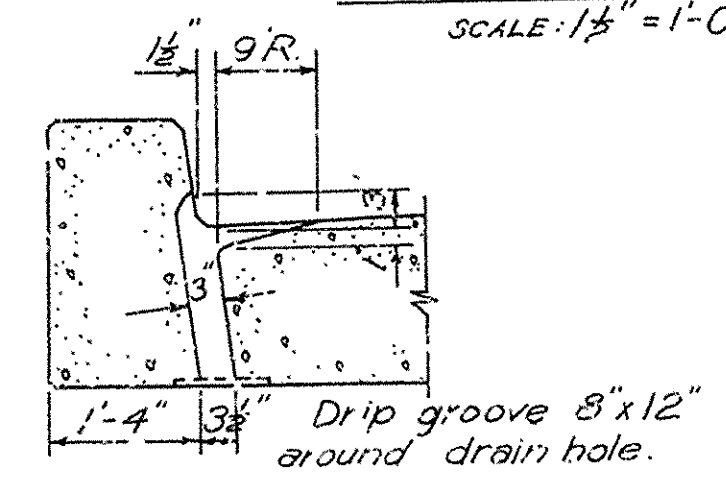
OR LANE LOADS

Uniform Load = 436 #/ft.  
Concentrated LL = 1227 #  
Impact = 30%

UNIT STRESSES  
Class "S" Concrete (n=10) 1200 #/ft.  
Reinforcing Steel 20,000 #/ft.

SECT. OF GUARD RAIL

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



DETAIL B  
SECTION THRU DRAIN OPENING

SCALE: 3/8" = 1'-0"

Openings to taper from 3' x 6' at top of slab to 3' x 7' at bottom. Set entrance to openings 1' low and throw out slab to meet.

Revisions:  
Add 4 2'-2 1/2" to S5 W.W.M. 5-26-54  
Changed S2 to straight bar W.W.M. 11-1-54  
Changed note for payment of Bituminous and Roofing felt F.R.B. 5-4-56  
Changed bar designation and roadway to gutter line. W.E.M. 11-7-57  
Steel Plate Guard splices; Notes for reinforcing steel and Bridge Railing; Design Loading (1957). L.H.T. 9-15-59  
Revised Guard Rail Note J.M.H. 7-15-60

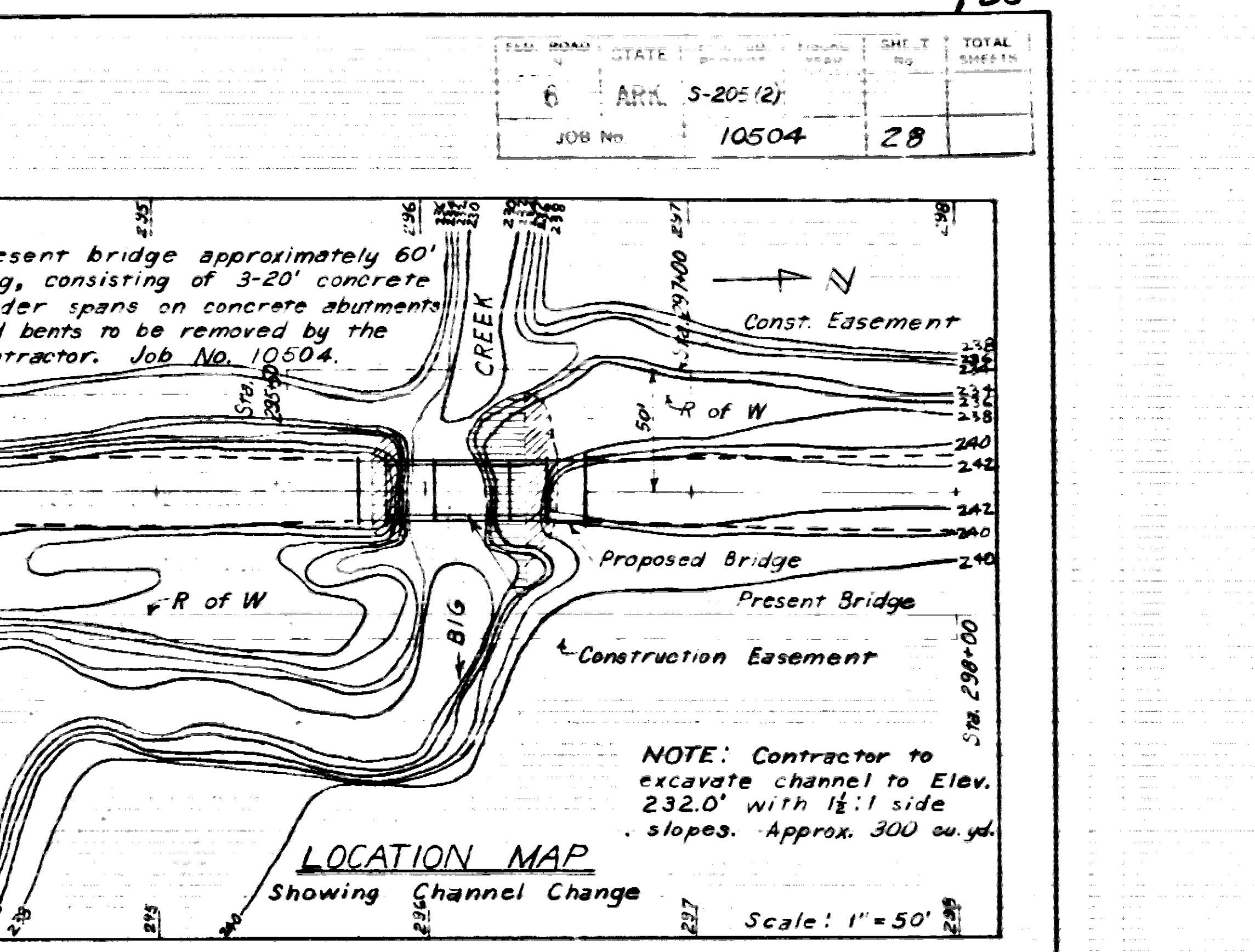
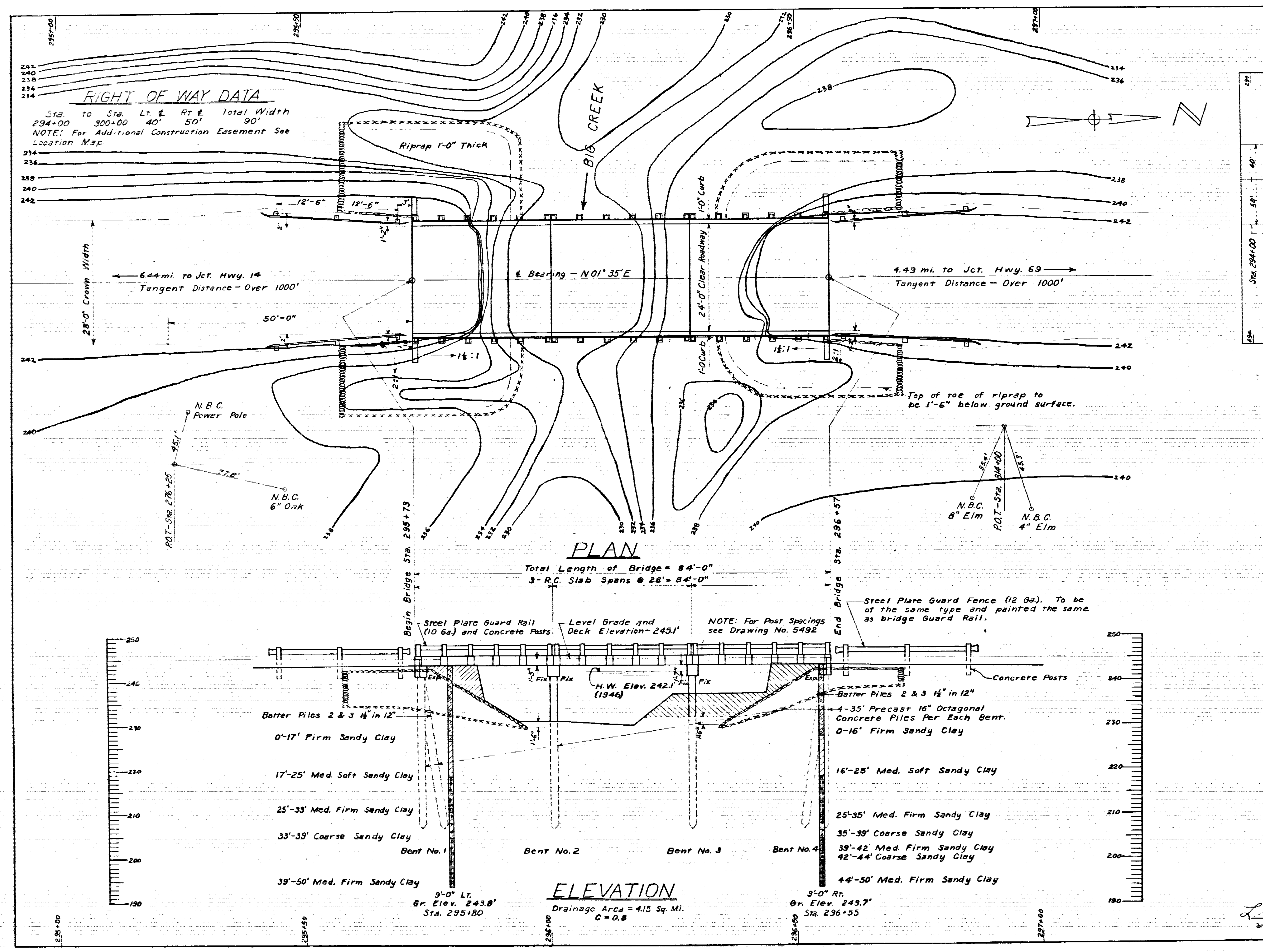
DETAILS OF STANDARD  
28'-0" R.C. SLAB SPAN

24'-0" CLEAR RDWY. 1'-0" CURBS

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

Drawn By: W.W.M. Date: 5-5-52  
Traced By: L.W.H. Date: 6-15-55  
Checked By: [Signature] Date: 7-12-56  
BRIDGE NO. [Blank] DRAWING NO. 5492





### GENERAL NOTES

BENCH MARK: Nail in P.P. 45' Lt. Sta. 295+12. Elevation 241.79'.  
All piling shall be 35' Precast 16" Octagonal Concrete piles.  
Lengths of piling shown are for estimating quantities only. Actual lengths to be determined in the field. Drive one 35' test pile in Bent No. 2. Drive piles to a minimum bearing capacity of 32 tons per pile and minimum penetration of 20'-0". For Details see Drawing Nos. 5492 and 5492-A.

### DESIGN SPECIFICATIONS - AASHO 1953

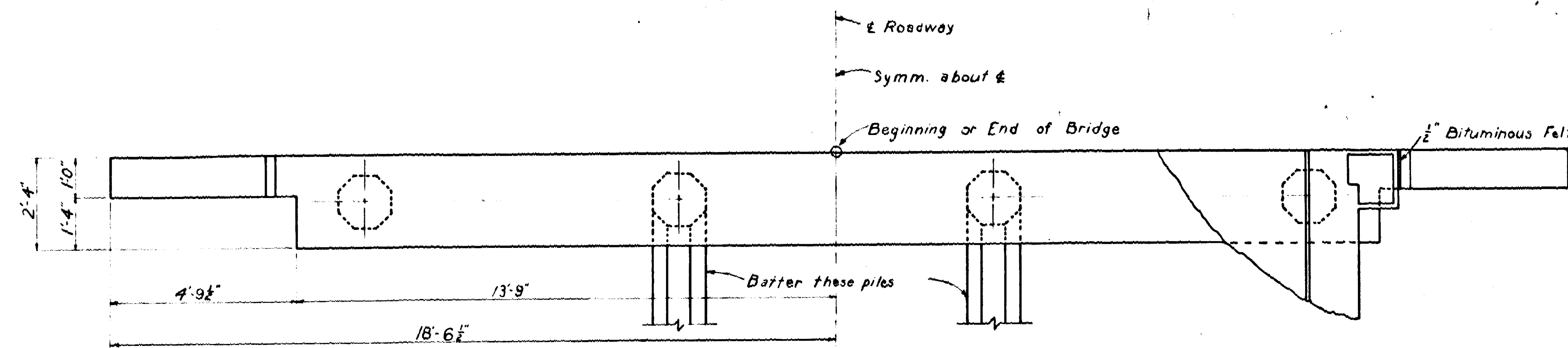
LIVE LOADING UNIT STRESSES: H-15  
Class "S" Concrete (n=10) 4,200 psi.  
Reinforcing Steel 20,000 psi.

LAYOUT OF BRIDGE  
OVER BIG CREEK  
HARRISBURG - CRAIGHEAD CO.  
POINSETT COUNTY  
ROUTE 1 SEG. 16  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
Drawn By: W.L.R. Date: 4-8-55  
Checked By: J.E.M. Date: 4-8-55  
BRIDGE NO. 3008 DRAWING NO. 8810

L.P. Carlson  
Bridge Engineer



FEED ROAD DIST NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
STATE JOB NO.				



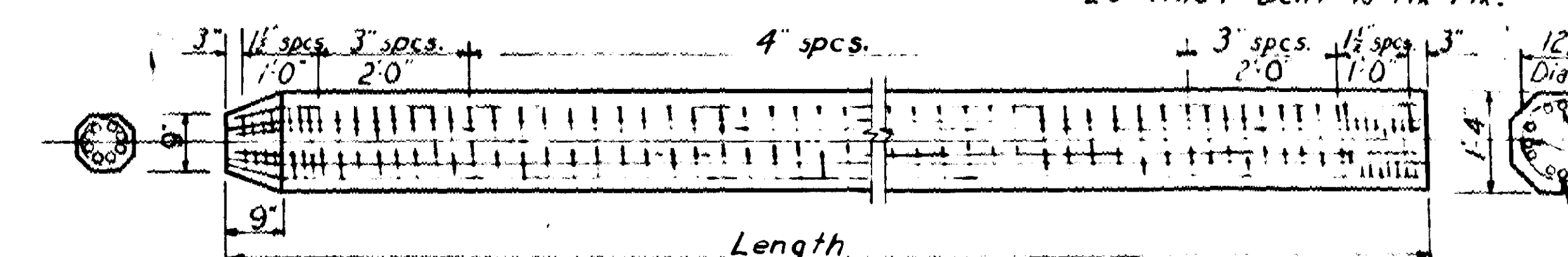
PLAN OF END BENT

BENT BARS									
NO. IN END BENT	NO. IN INTERM. BENT	MARK	SIZE	LENGTH	A	B	BENDING DIAGRAM		
4	4	P <sub>1</sub>	#6	29'3"	14'-0"	1'-5"			
4	4	P <sub>2</sub>	#4	8'-9"	2'-1 1/2"	1'-11 1/2"			
12	12	P <sub>3</sub>	#6	6'-1"	2'-1 1/2"	1'-11 1/2"			

Dimensions are to centers of bars

STRAIGHT BARS				
NO. IN END BENT	NO. IN INTERM. BENT	MARK	SIZE	LENGTH
4	4	P <sub>1</sub>	#6	27'-2"
3	3	P <sub>2</sub>	#8	27'-2"
14	14 or 16	P <sub>3</sub>	#6	2'-0"
4		P <sub>4</sub>	#4	1'-7"
4		P <sub>5</sub>	#4	2'-7"
4		P <sub>6</sub>	#4	2'-1"
4		P <sub>7</sub>	#4	2'-6"
8		P <sub>8</sub>	#4	7'-0"
4		P <sub>9</sub>	#4	5'-0"
4		P <sub>10</sub>	#4	4'-3"
4		P <sub>11</sub>	#4	3'-6"
4		P <sub>12</sub>	#4	7'-0"
4		P <sub>13</sub>	#4	5'-0"
4		P <sub>14</sub>	#4	4'-3"

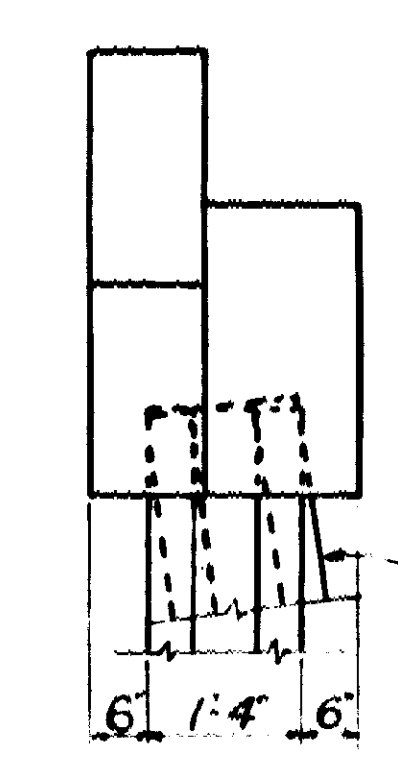
\* Use only when end is fixed.  
 \*\* Use 14 when Bent is fix-Exp and 28 when Bent is fix-Fix.



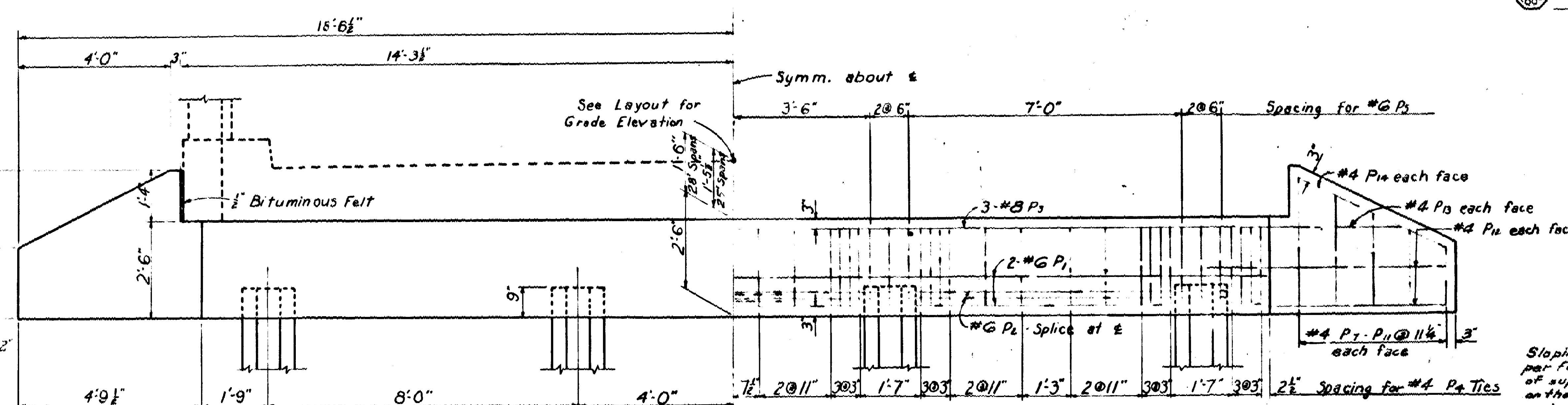
Reinforcing: Vertical Bars { 8-#6 Lengths to 35' } #2 Spiral  
 For lengths over 45' add 4-#6 thru middle third of pile.

DETAILS OF 16" PRECAST CONCRETE PILES

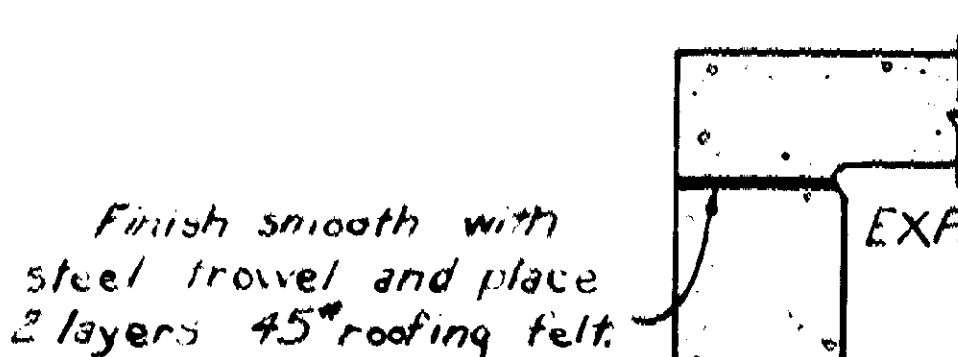
Drive piles in Intermediate Bents to a minimum bearing of 32 kips per pile.  
 Drive piles in End Bents to a minimum bearing of 30 tons per pile.  
 Use steel bearing piles when called for on layout.



END VIEW

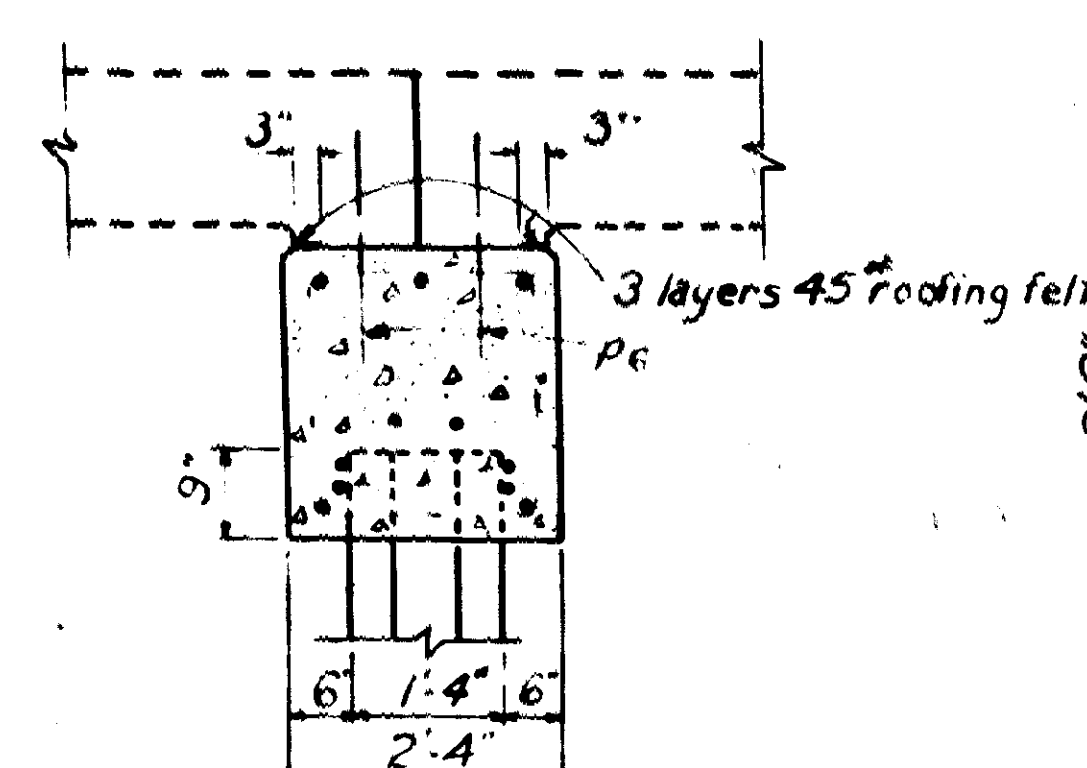


ELEVATION END BENT



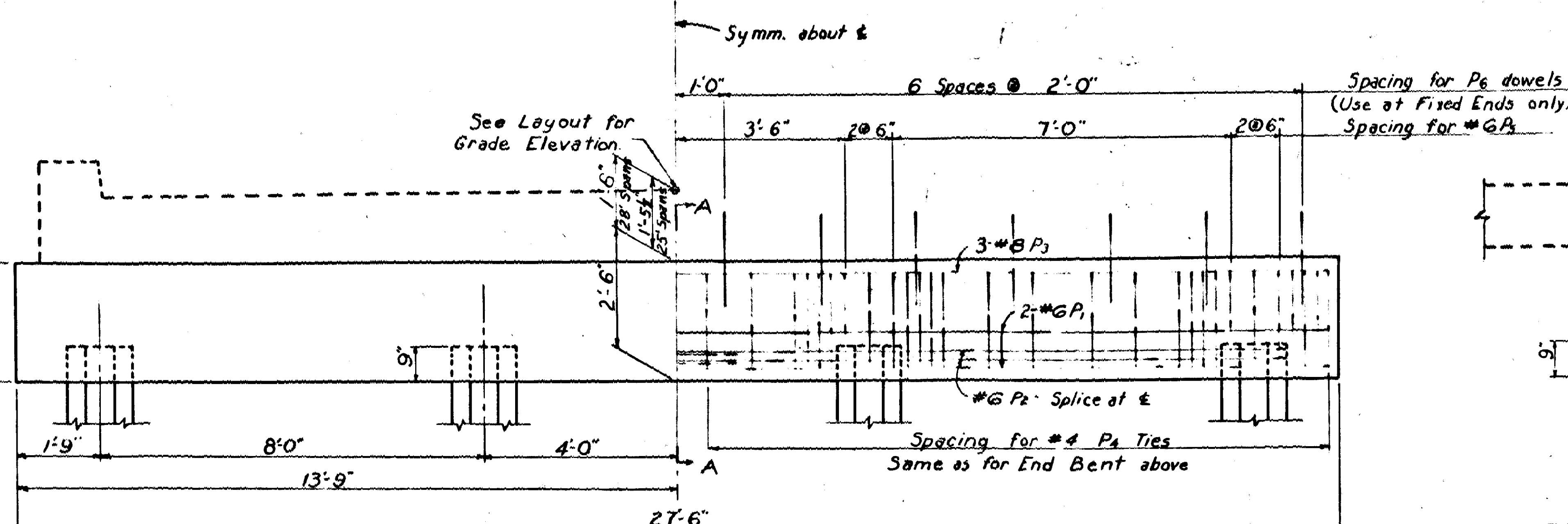
SECTION AT END BENT

No Scale

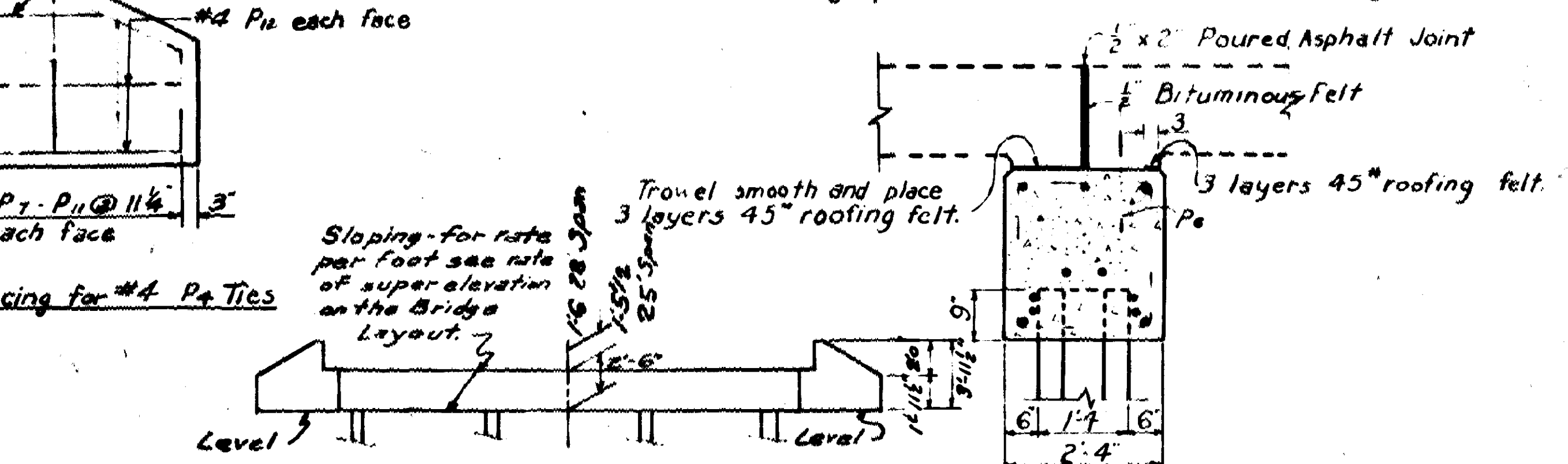


SECTION A-A

Fix - Fix



ELEVATION INTERMEDIATE BENT



ELEV END BENT SUPERELEVATED SPAN

Sloping - for rate per foot see rate of super-elevation on the Bridge Layout.

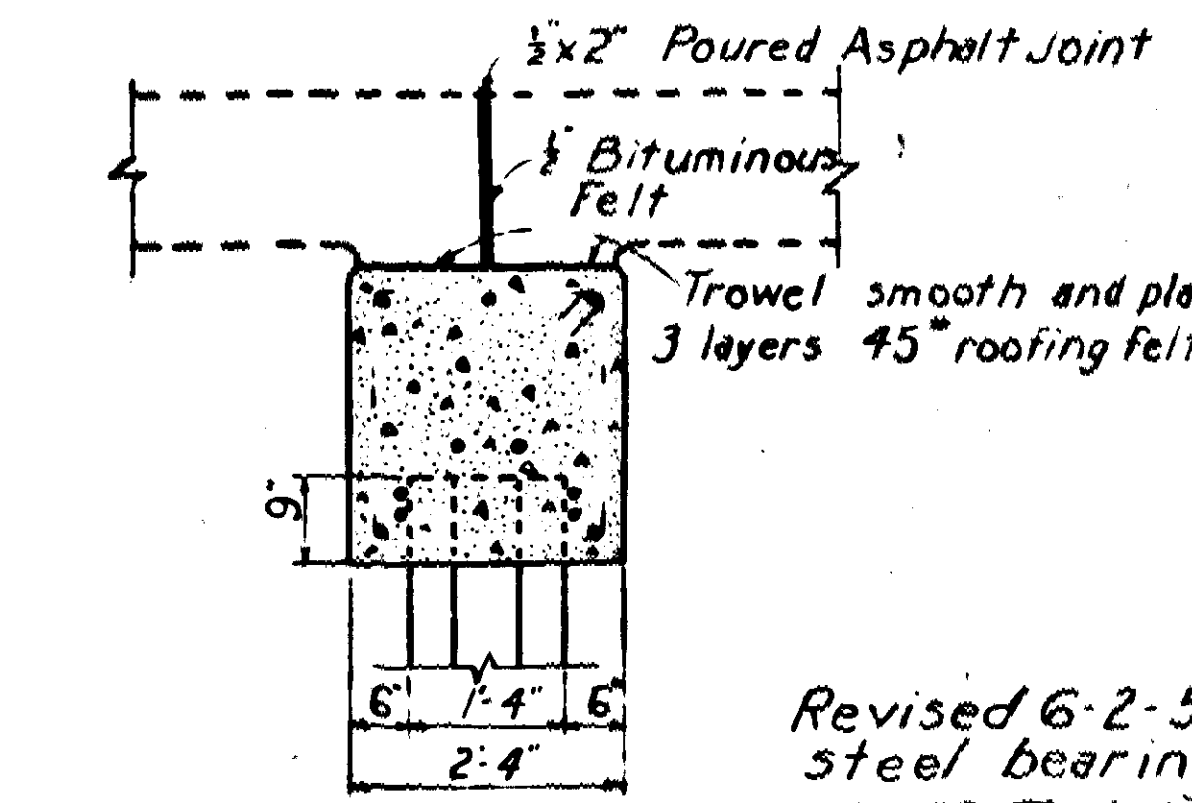
ELEV INTERMEDIATE BENT SUPERELEVATED SPAN

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

GENERAL NOTES:

All concrete to be Class "5" and to be poured in the dry for additional General Notes and details of slab spans see Drwg. No. 5492 or 5463.

Revised to show Super-elevated Caps E.R.B. 7-18-59



SECTION A-A

Exp. - Exp.

DETAILS OF STANDARD R.C. PILE BENTS FOR 25'-0" & 28'-0" R.C. SLAB SPANS

Revised 6-2-54 To include steel bearing piling, L.P.C.  
 6-30-55 To include 25'-0" spans, W.R.  
 2-17-59 To show new reinforcing bar designations, R.L.C.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

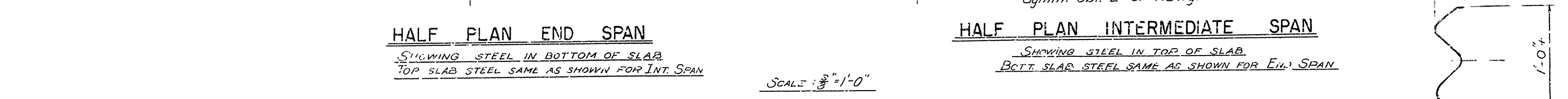
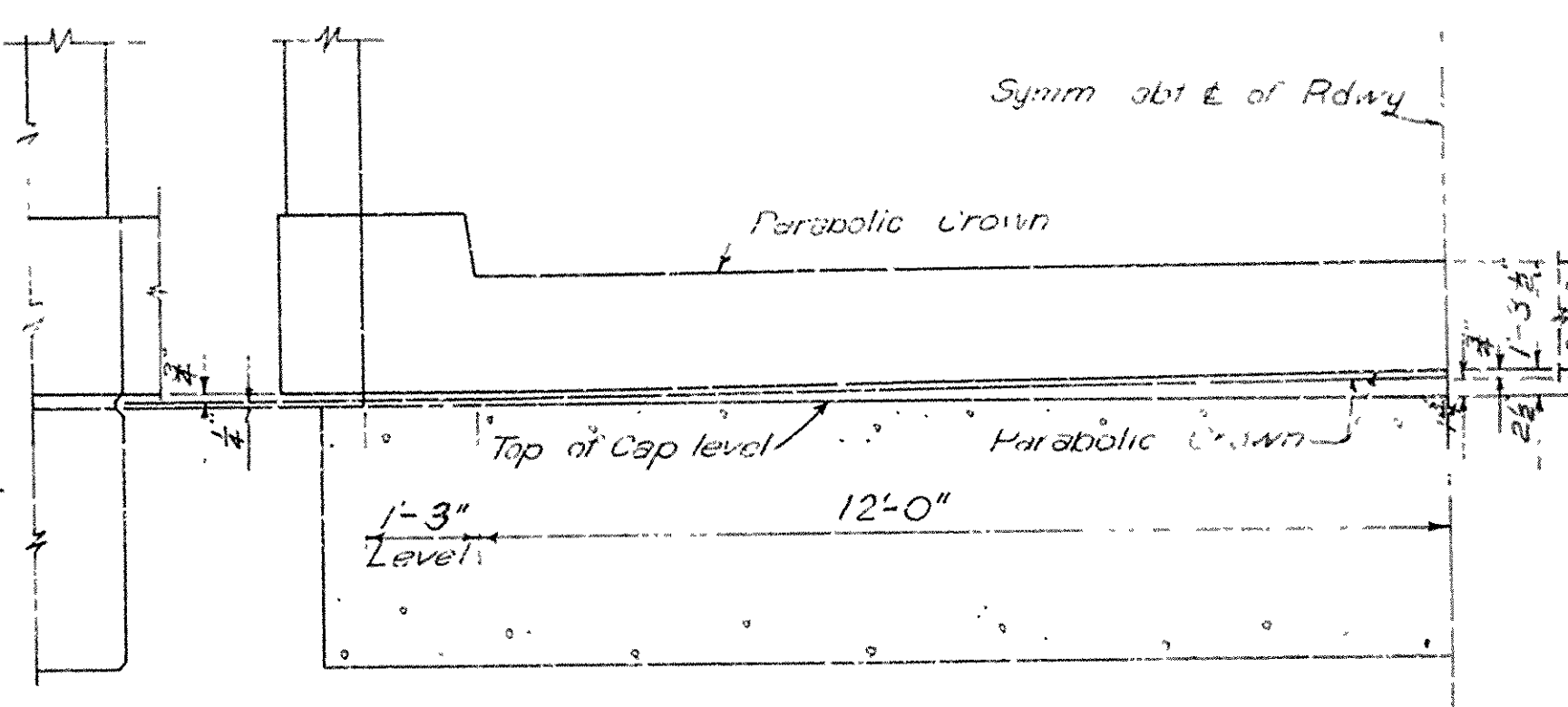
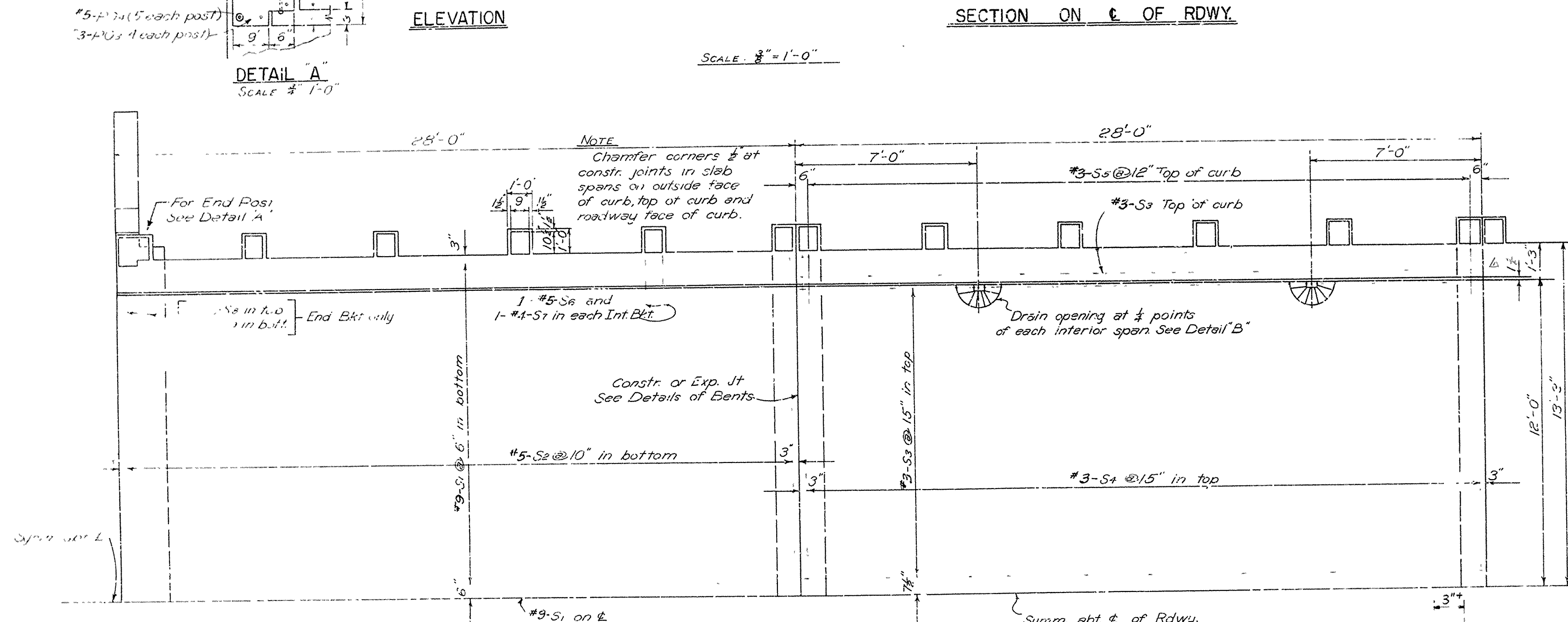
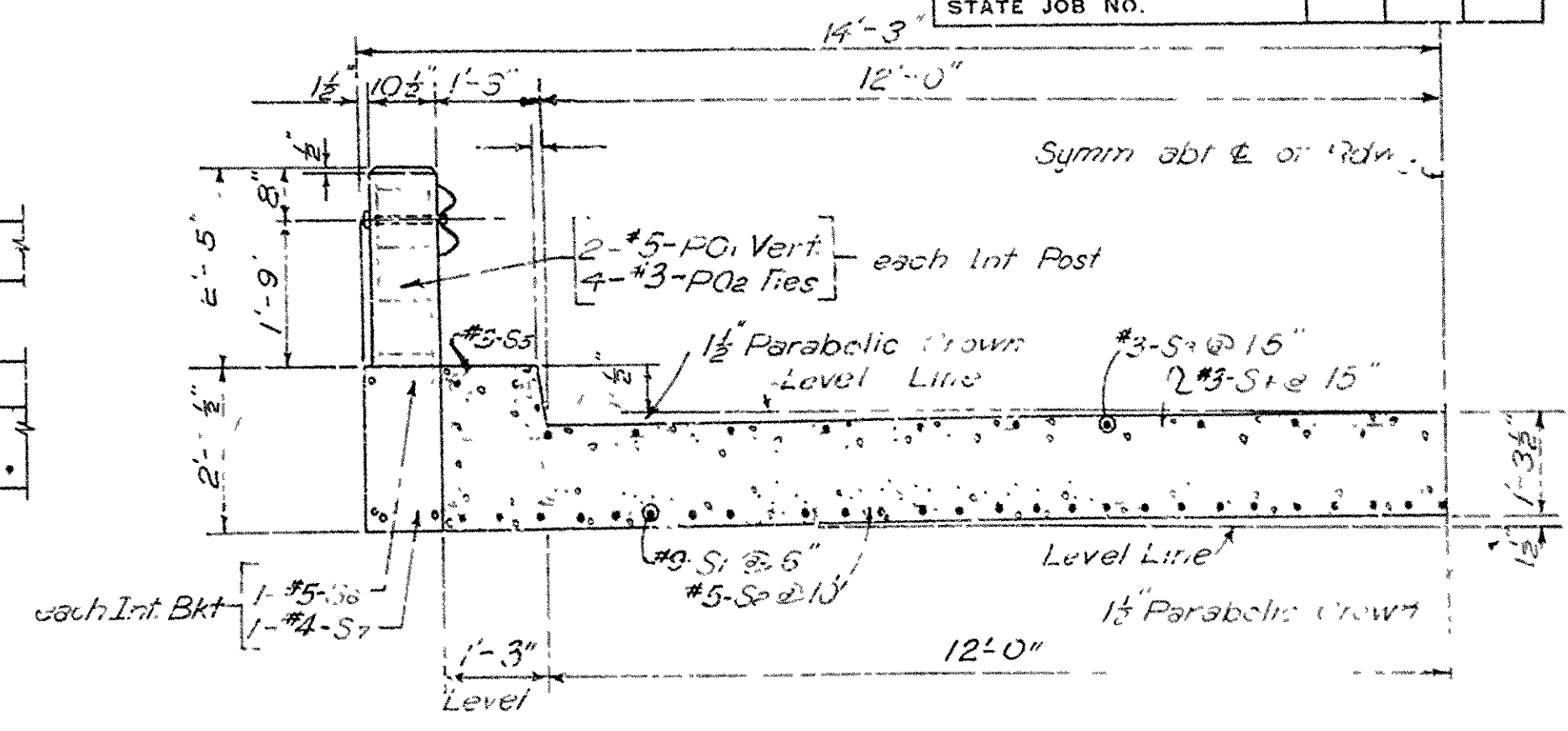
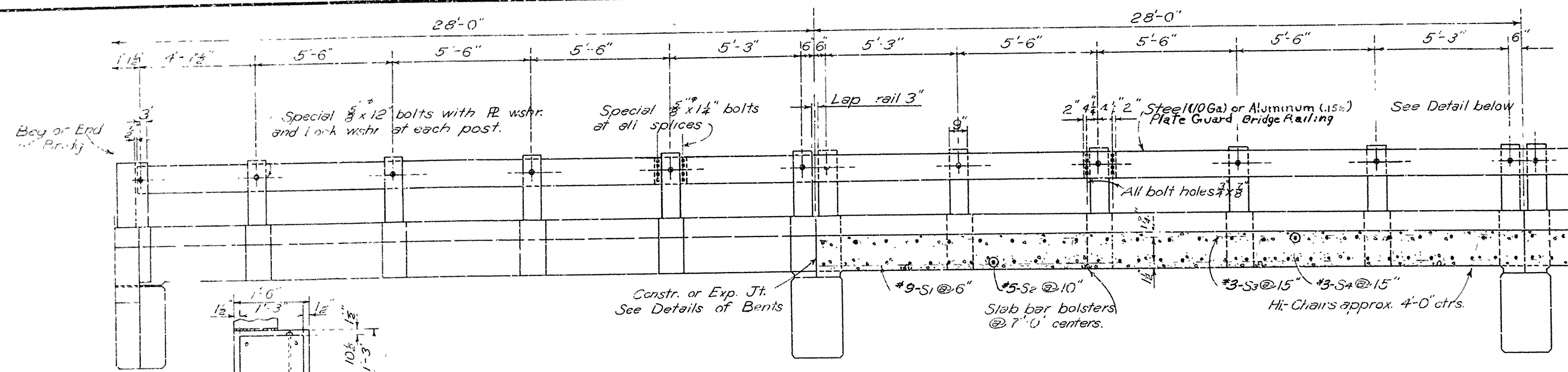
24'-0" CLEAR RDWY. - 1'-0" CURBS

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

DRAWING NO. 5492-A

Drawn By: A.R. Date: 6-3-53  
 Traced By: A.E.C. Date: 6-15-55  
 Checked By: W.W.M. Date: 6-10-55





# LIST OF REINFORCING STEEL

MARK	SIZE	LENGTH	
S1	#9	27'-8"	Straight
S2	#5	26'-2"	
S3	#3	27'-8"	
S4	#3	26'-2"	
S5	#3	5'-10"	
S6	#5	10'-2"	
S7	#4	6'-7"	
S8	#5	2'-7"	
S9	#4	3'-6"	<div style="text-align: center;"> </div>
PO1	#5	9'-1"	
PO2	#3	2'-10"	
PO3	#3	4'-4"	
PO4	#5	4'-3"	
			Str

The bending diagram illustrates the layout of reinforcement bars S1 through S9. Key dimensions include:
 

- Bar S1: 27'-8" straight length.
- Bar S2: 26'-2" straight length.
- Bar S3: 27'-8" straight length.
- Bar S4: 26'-2" straight length.
- Bar S5: 5'-10" straight length.
- Bar S6: 10'-2" straight length.
- Bar S7: 6'-7" straight length.
- Bar S8: 2'-7" straight length.
- Bar S9: 3'-6" straight length.

 The diagram also shows various bends and clearances, such as 1'-11", 1'-10", 1'-

## GENERAL NOTES

All concrete to be Class "S". All exposed corners to be chamfered  $\frac{3}{4}$ " unless otherwise noted.

Reinforcing steel to be deformed bars of intermediate or hard grade.

An 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 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 bending diagrams of reinforcing steel including wire supports shall be submitted and approved before fabrication is begun.

Roofing and bituminous felt shall be measured and paid for as Class S Concrete.

The steel plate guard rail shall be of the type shown or an equivalent rigid type as approved by the Engineer. The steel plate guard rail including post and fastenings, shall be paid for at the unit price bid per linear foot for "Steel or Aluminum Plate Guard Bridge Railing"

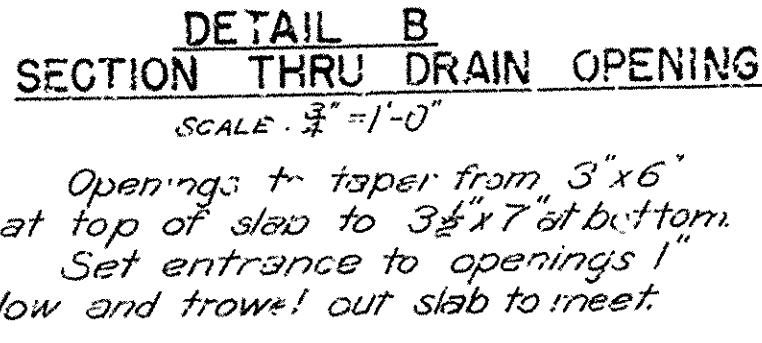
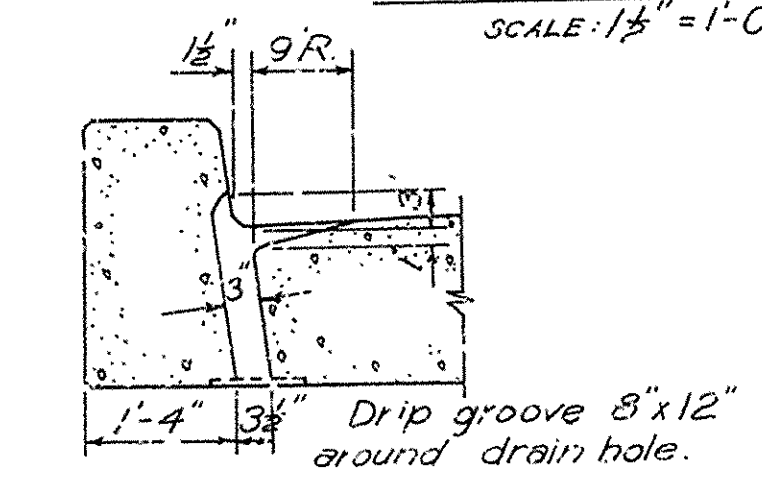
SPECIFICATIONS Arkansas State Highway Commission Standard Specifications for Highway Construction, adopted Edition - 1935

H 15 LOADING (A.A.S.H.O. 1957 REVISED)

LOAD DISTRIBUTION TO SLAB:  
Dead Load = 209 #/ft.  
Live Load = 0.182 Wheel/ft. width  
Impact = 30%

OR LANE LOADS  
Uniform Load = 436 #/ft.  
Concentrated LL = 1227 #  
Impact = 30%

UNIT STRESSES  
Class "S" Concrete (n=10) 1200 #/ft.  
Reinforcing Steel 22,000 #/ft.

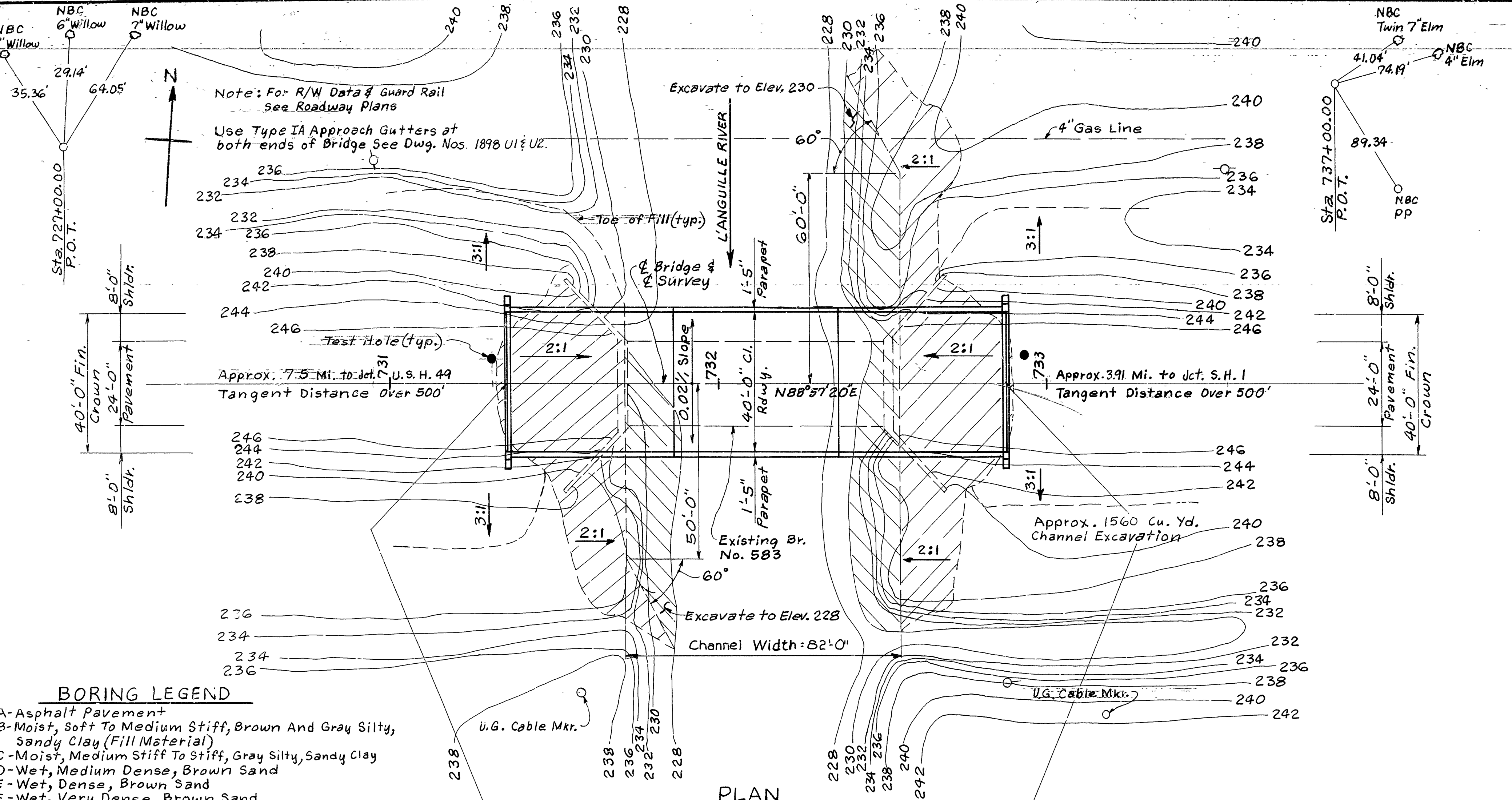


Revisions:  
 Add'd 2'-2 1/2" to Ss W/M. 5-26-54  
 Changed S2 to straight bar W/W/M 11-1-54  
 Changed note for payment of Bituminous  
 & Roofing felt F.R.B. 5-4-56  
 Changed bar designation and roadway  
 to gutter line. W.E.W. 11-7-57  
 Steel Plate Guard splices; Notes for  
 reinforcing steel and Bridge Railing;  
 Design Loading; (1957). L.H.T. 9-15-59  
 Revised Guard Rail Note J.M.H. 7-15-66

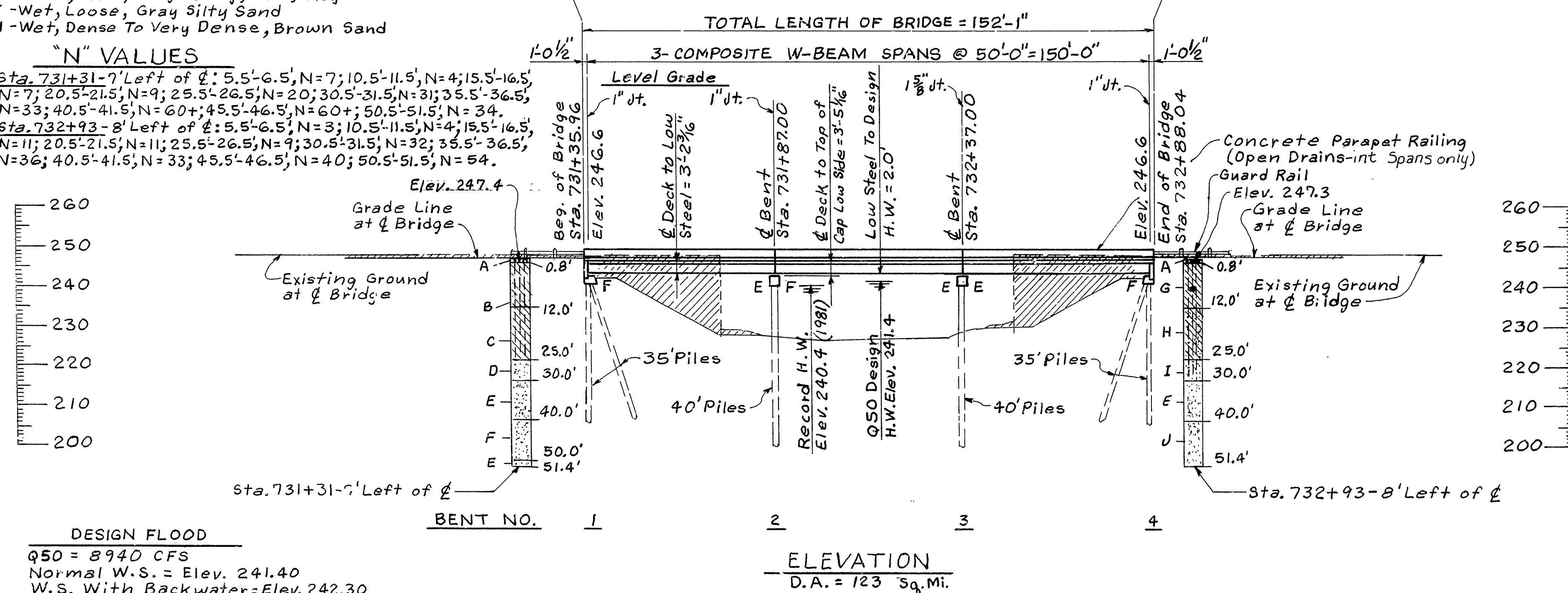
3 DETAILS OF STANDARD  
 28'-0" R.C. SLAB SPAN  
 4'-0" CLEAR RDWY. 1'-0" CURBS  
 3AS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.  
 W.M. Date: 5-5-52  
 L.W.H. Date: 6-15-55 and P.F. 7-55 Scale: as noted  
 Date: 7-13-56  
 No. DRAWING No. 5492



DATE	REVISION	DATE	REVISION	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
							10	34



- BORING LEGEND**
- A-Asphalt Pavement
  - B-Moist, Soft To Medium Stiff, Brown And Gray Silty, Sandy Clay (Fill Material)
  - C-Moist, Medium Stiff To Stiff, Gray Silty, Sandy Clay
  - D-Wet, Medium Dense, Brown Sand
  - E-Wet, Dense, Brown Sand
  - F-Wet, Very Dense, Brown Sand
  - G-Moist, Soft, Brown And Gray Silty, Sandy Clay With Some Organic Matter (Fill Material)
  - H-Moist, Stiff, Gray Sandy, Silty Clay
  - I-Wet, Loose, Gray Silty Sand
  - J-Wet, Dense To Very Dense, Brown Sand
- "N" VALUES**
- Sta. 731+31-7' Left of C: 5.5'-6.5', N=7; 10.5'-11.5', N=4; 15.5'-16.5', N=7; 20.5'-21.5', N=9; 25.5'-26.5', N=20; 30.5'-31.5', N=3; 35.5'-36.5', N=33; 40.5'-41.5', N=60; 45.5'-46.5', N=60; 50.5'-51.5', N=34.
- Sta. 732+93-8' Left of C: 5.5'-6.5', N=3; 10.5'-11.5', N=4; 15.5'-16.5', N=11; 20.5'-21.5', N=11; 25.5'-26.5', N=9; 30.5'-31.5', N=32; 35.5'-36.5', N=36; 40.5'-41.5', N=33; 45.5'-46.5', N=40; 50.5'-51.5', N=54.



**GENERAL NOTES**

BENCH MARK: CHISELED " " TOP N.W. WING WALL, 12' LT., STA. 731+70, ELEV. 247.82.

ALL CONCRETE SHALL BE POURED IN THE DRY.

ALL PILING SHALL BE 18" SQ. PRECAST CONCRETE AND SHALL BE DRIVEN WITH AN APPROVED AIR, STEAM, OR DIESEL HAMMER TO A MINIMUM BEARING CAPACITY OF 65 TONS PER PILE, AND TO A MINIMUM PENETRATION OF 20' BELOW THE GROUND LINE. LENGTHS OF PILING SHOWN ARE ASSUMED FOR ESTIMATING QUANTITIES ONLY. ACTUAL LENGTHS TO BE DETERMINED IN THE FIELD. DRIVE ONE 40' CONCRETE TEST PILE IN BENT NO. 1 AND ONE 45' CONCRETE TEST PILE IN BENT NO. 3.

FOR DETAILS OF END BENTS, AND INTERMEDIATE BENTS, SEE DWG. NO. 27707

FOR DETAILS OF 50'-0" COMPOSITE W-BEAM SPANS, SEE DWG. NO. 27708

FOR DETAILS OF PRECAST CONCRETE PILING, SEE DWG. NO. 2383

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1978 AND APPLICABLE SPECIAL PROVISIONS.

THE BRIDGE DECK SHALL BE GIVEN A TINE FINISH AS SPECIFIED FOR FINAL FINISHING IN SUBSECTION 802.23 FOR CLASS 6 ROADWAY SURFACE FINISH.

DESIGN SPECIFICATIONS: AASHTO 1983 EDITION WITH INTERIMS.

LIVE LOADING: HS20

METHOD OF DESIGN: LOAD FACTOR

UNIT STRESSES: CLASS "S" OR "S(AE)" CONCRETE = 3500 PSI  
REINFORCING STEEL (GRADE 60) = 60,000 PSI  
STRUCTURAL STEEL (A572-GR.50) = 50,000 PSI

DETOUR CONSTRUCTION: THE CONTRACTOR SHALL BUILD A 90' DETOUR BRIDGE 45' RIGHT OF CENTERLINE SURVEY WITH A MINIMUM DECK ELEVATION OF 244.0, AND A 24' MINIMUM ROADWAY WIDTH ACCORDING TO SECTION 603 OF THE STANDARD SPECIFICATIONS, SF 603-3 AND DWG. NOS. 2391 & 2392A. IF TIMBER PILING AND PINE TIMBER ARE USED ON THIS TEMPORARY BRIDGE STRUCTURE, THE MATERIALS SHALL BE TREATED WITH A PRESERVATIVE ACCORDING TO THE STANDARD SPECIFICATIONS.

REMOVAL OF EXISTING BRIDGE: THE CONTRACTOR SHALL REMOVE THE EXISTING 83.5 X 20' PONY TRUSS CONSISTING OF A CONCRETE DECK WITH AN ASPHALT OVERLAY SUPPORTED BY CONCRETE ABUTMENTS. ALL MATERIAL FROM THE EXISTING BRIDGE SHALL BECOME THE PROPERTY OF THE CONTRACTOR FOR HIS DISPOSAL.

LAYOUT OF BRIDGE OVER  
L'ANGUILLE RIVER  
L'ANGUILLE RIVER BR. & APPRS.  
POINSETT COUNTY  
ROUTE 14 SEC. 13  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: LDF DATE: 12-19-84  
CHECKED BY: CRH DATE: 1-7-85  
DESIGNED BY: ARW DATE: 10-17-84

BRIDGE NO. 6150 DRAWING NO. 27706

SCALE: 1" = 20'-0"

**BASIC FLOOD**

Q100 = 9890 CFS  
Normal W.S. = Elev. 241.70  
W.S. With Backwater = Elev. 242.6

*Paul Pinkerton*  
BRIDGE ENGINEER



Left		Right	Total
40		60	100' Sta 231+00 to 234+00
40		40	80'

SUMMARY OF BRIDGE QUANTITIES			CODE NO. X 020			
ITEM NO.	ITEM	UNIT	BENTS 1-5	BENTS 2-4	SPANS 1-4	TOTAL
103	Dry Excavation for Structures	Cu.Yd.	68			68
SP2802	Class "3" Concrete for Bridges	Cu.Yd.	1956	2046	7948	11550
SP2803	Reinforcing Steel	Lb.	2168	3359	16,866	19,628
SP2804	Concrete Piling (16" Octagonal)	Lin.Ft.	200	305		505
SP2805	Steel Plate Guard Rail (10 Gage)	Lin.Ft.			147	147
929	Bridge Name Plates (Type "C")	Each	1			1
SP1029	Removal of Existing Bridge Structures and Maintenance of Traffic	Comp. Item				*50%

### GENERAL NOTES

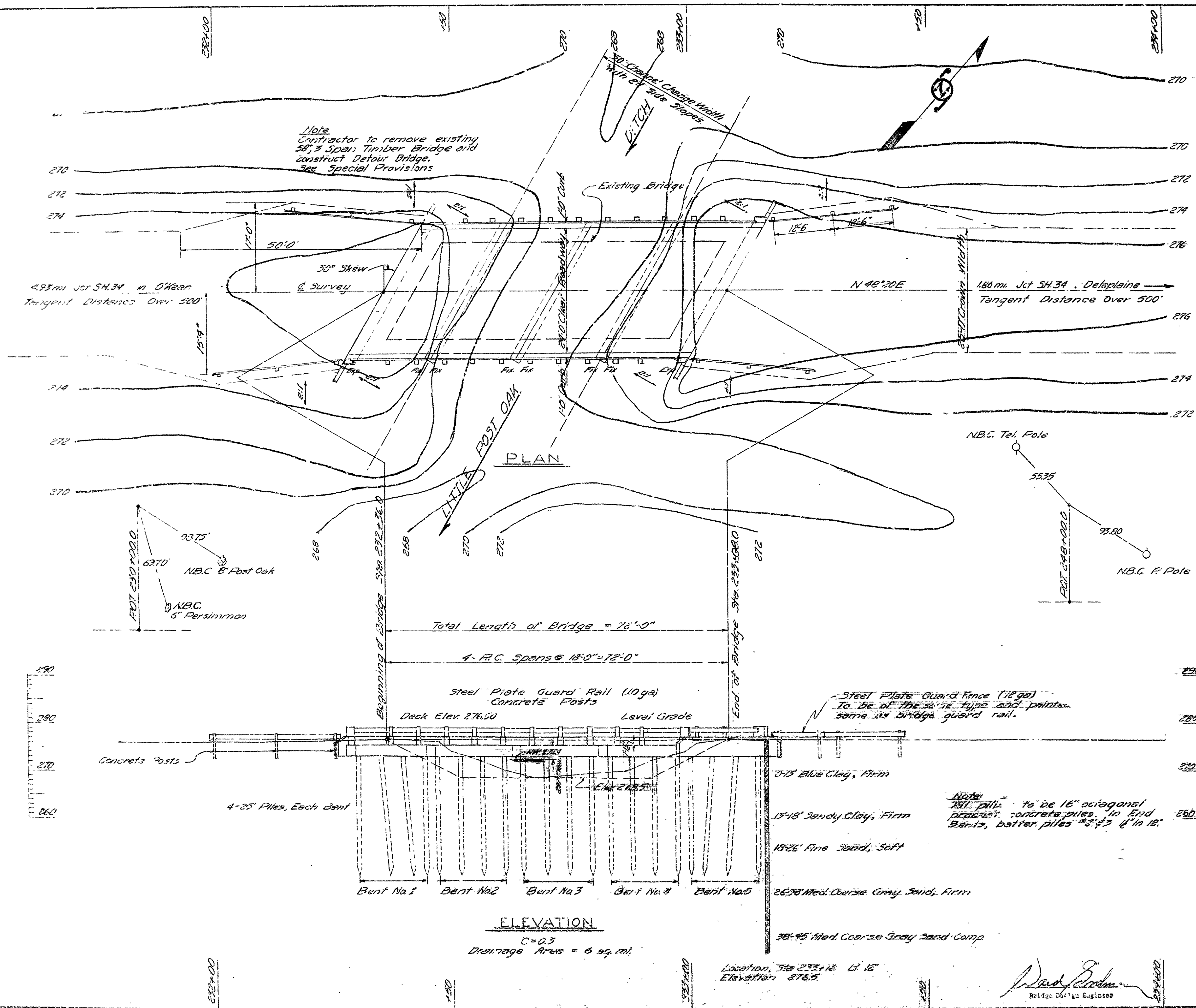
Loading: 4-15      A.A.S.H.O. 1949 (Revised)

Stresses:

Reinforcing Steel	20,000 psi
Class "S" Concrete ( $f_c=10$ )	1200 psi

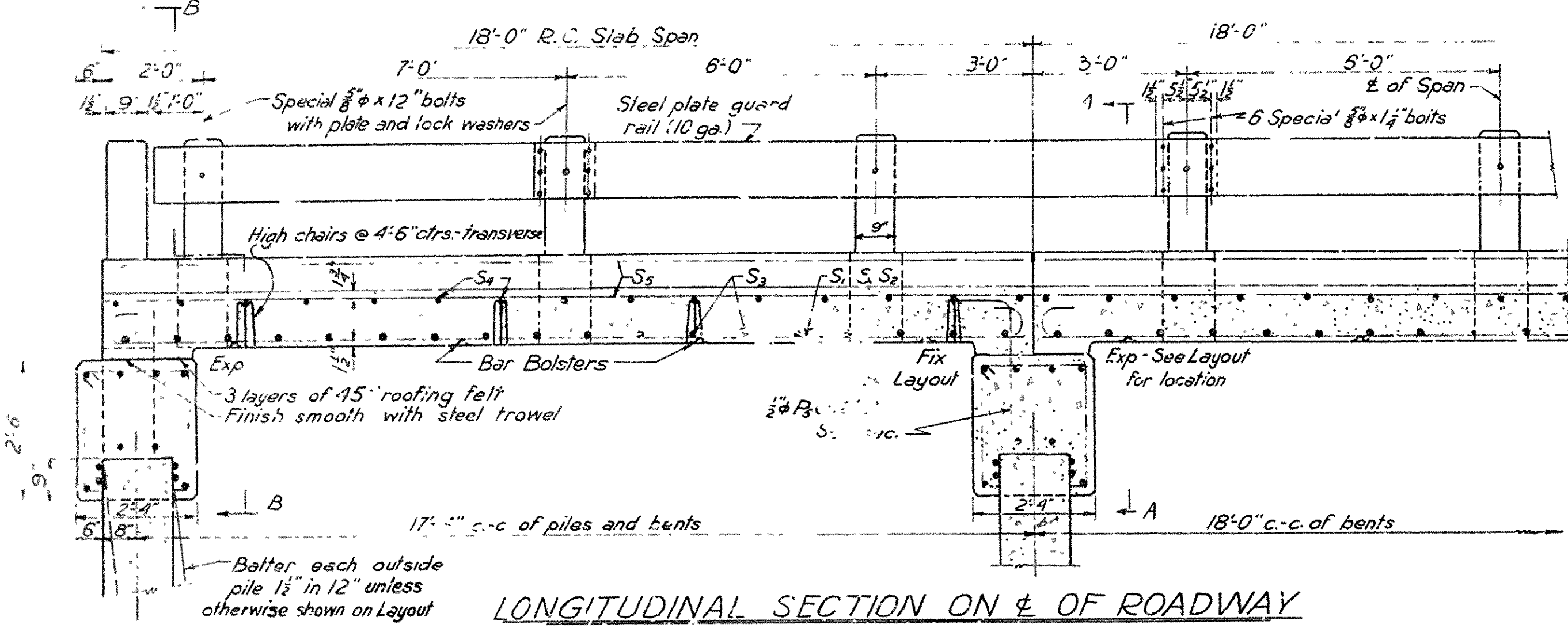
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: YFH DATE: 12-10-55 SCALE: 1 inch = 10 feet  
 TRACED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 CHECKED BY: FRB DATE: 1-11-56  
 BRIDGE NO. 830 DRAWING NO. 8426

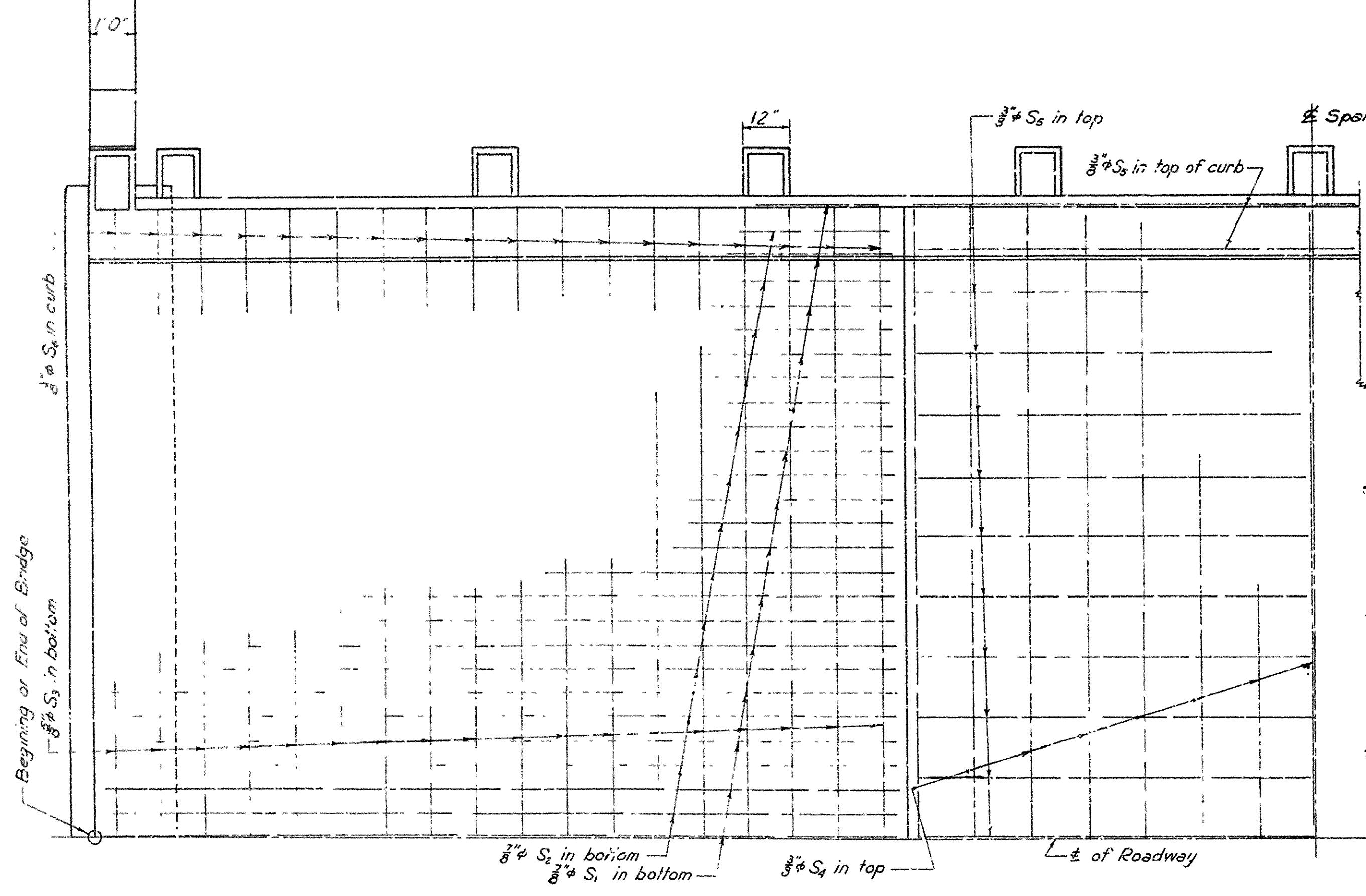




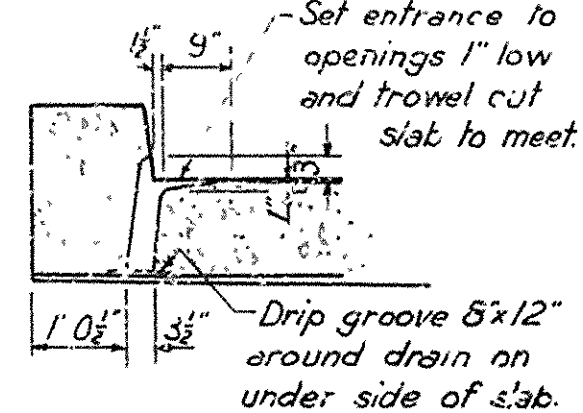
FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.				
STATE JOB NO.					



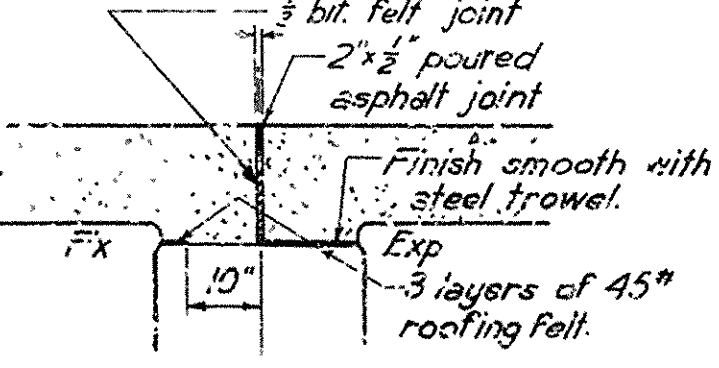
LONGITUDINAL SECTION ON 1/2 OF ROADWAY



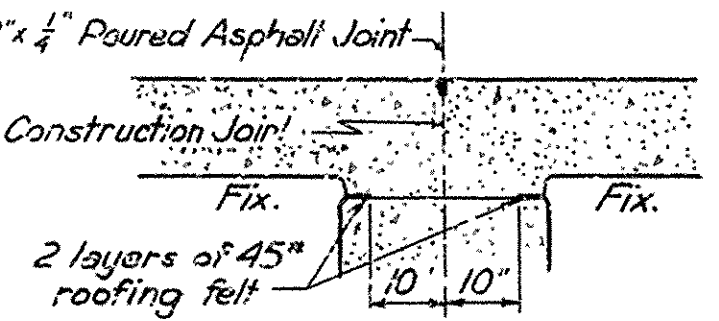
HALF PLAN



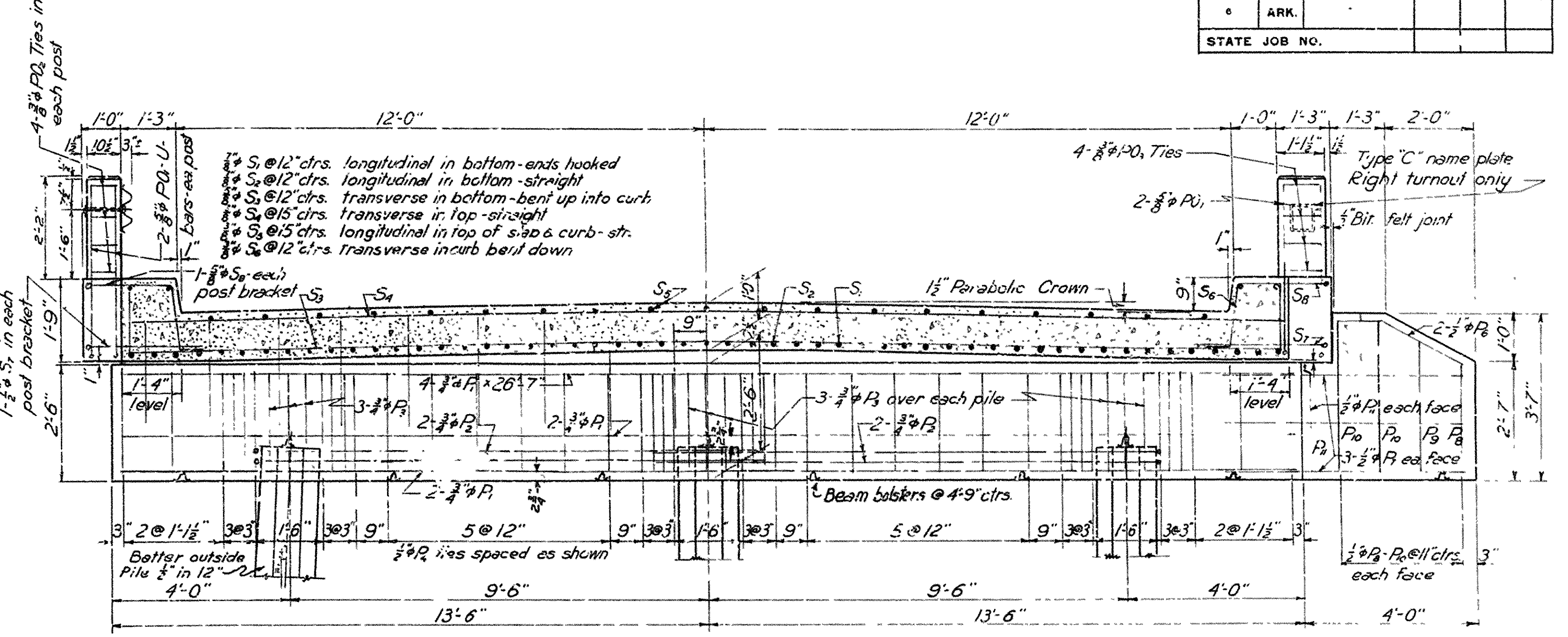
**SFC. THRU DRAIN OPENING**  
 Note: Place drain openings on each side of roadway near mid-span.  
 Opening to taper from 3'-6" at top of slab to 3'-7" at bottom



**RDWK EXP. JOINT AT EXP. BENT**  
 Note: Expansion joint, when completed, shall be free of all concrete, stone or other material which may prevent expansion of the slab spans.



**CONSTRUCTION JOINT AT FIXED BENTS**



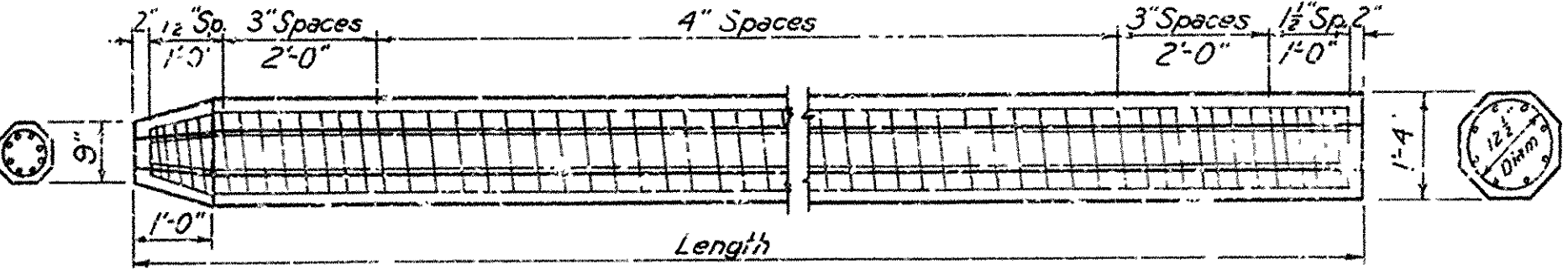
HALF SECTION A-A

HALF SECTION B-B

BAR LIST PER UNIT

BENT BARS						STRAIGHT BARS			
MARK	SIZE	No.	LENGTH	A	B	MARK	SIZE	No.	LENGTH
S <sub>1</sub>	1/2"	27	19'-1"			S <sub>2</sub>	3/8"	26	17'-7"
P <sub>1</sub>	3/4"	4	24'-5"	11'-6"	1'-5"	P <sub>2</sub>	3/4"	8	26'-7"
S <sub>3</sub>	5/8"	18	28'-11"			S <sub>4</sub>	3/8"	13	
S <sub>5</sub>	3/8"	36	3'-1"			S <sub>6</sub>	3/8"	1	8"
S <sub>7</sub>	1/2"	8 End 6 Int.	6'-8"	3'-0"	0'-8"	P <sub>3</sub>	1/2"	12 End 5'-6"	
S <sub>8</sub>	5/8"	8 End 6 Int.	8'-10"			P <sub>4</sub>	1/2"	4 End 2'-4"	
P <sub>5</sub>	3/4"	9	6'-4"	2'-2"	2'-0"	P <sub>5</sub>	1/2"	4 End 2'-10"	
P <sub>6</sub>	1/2"	10	9'-1"	2'-2"	2'-0"	P <sub>6</sub>	1/2"	8 End 3'-3"	
P <sub>7</sub>	1/2"	18 or 36	3'-3"			P <sub>7</sub>	1/2"	4 End 2'-2"	
P <sub>8</sub>	1/2"	4 End	3'-3"						
P <sub>9</sub>	3/8"	16 End 12 Int.	7'-7 1/2"	3'-7"	0'-5 1/2"				
P <sub>10</sub>	3/8"	24	3'-1"	0'-7 1/2"	0'-6 1/2"				
P <sub>11</sub>	3/8"	8 End	3'-7"	0'-10 1/2"	0'-5 1/2"				

Note: Dimensions relating to reinforcing steel are to centers of bars.



Reinforcing: Vertical Bars: 8-3/4" for lengths up to and including 35'  
 8-3/4" for lengths 35' to 45'  
 Lengths over 45': 8-3/4" and 4-3/4" in middle third of pile.  
 Spiral: No. 4 wire for all lengths

DETAILS OF 16" OCTAGONAL RECAST CONC. PILE

GENERAL NOTES

All concrete to be Class "S". All exposed corners to be chamfered 3/4" unless otherwise noted.  
 Reinforcing steel to be deformed bars of intermediate grade unless modified by Special Provisions. Shop lists and bending diagrams must be submitted and approval secured before fabrication is begun.  
 All reinforcing steel shall be accurately located in the forms and firmly held in place by means of steel wire supports of sufficient size and number to prevent displacement during the course of construction. Wire supports will not be paid for directly but will be considered subsidiary to the item of Reinforcing Steel. Shop list and diagrams must be submitted for approval.  
 Payment for roofing felt, bituminous felt, and poured asphalt joints is to be included in the price bid for Class "S" Concrete for Bridges.  
 The steel plate guard rail shall be of the type shown or an equivalent rigid type as approved by the Engineer. The steel plate guard rail, including all concrete posts, shall be paid for at the unit price bid per 'near foot for "Steel Plate Guard Rail".  
 Shop Paint: The steel plate guard rail 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.  
 All piles are to be driven to minimum capacity of 35 tons each.  
 Volume occupied by embedded piles will not be included in the pay quantity of concrete in caps.  
 SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1, 1940.

DESIGN LIVE LOAD: H-15 LOADING A.A.C.H.O. 1949 Rev.

DESIGN UNIT STRESSES:  
 Class "S" Concrete (n=10) 1200 psi  
 Reinforcing Steel (Int. grade) 20,000 psi  
 Concrete Piles 32.0 Tons

DETAILS OF STANDARD 18'-0" R.C. SLAB SPANS AND BENTS

24'-0" CLEAR ROADWAY 1'-0" CURBS

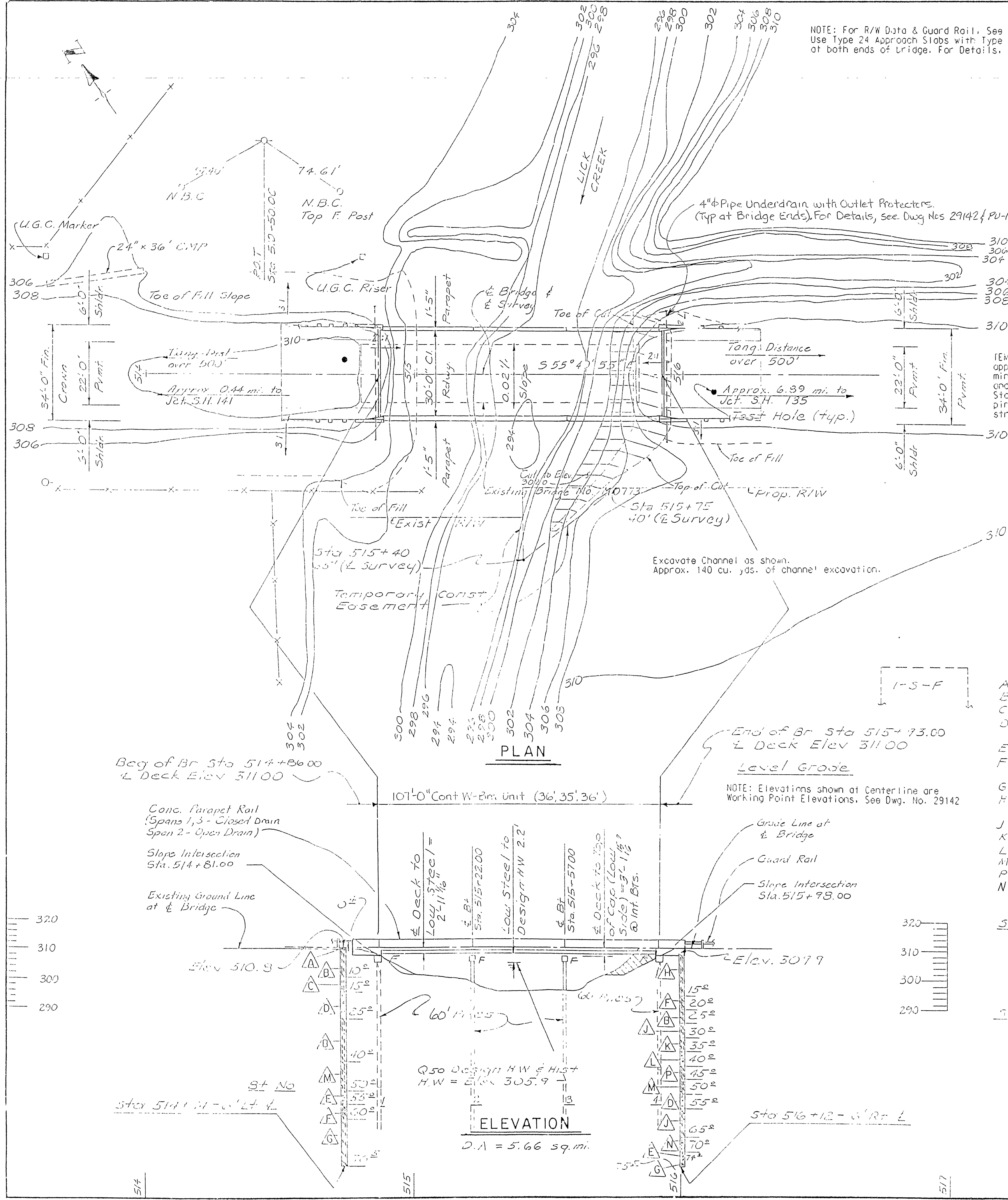
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.

Drawn By: A.J. Date: 4-28-52  
 Traced By: J.E.H. Date: 4-30-52  
 Checked By: J.E.H. Date: 5-20-52

BRIDGE NO. DRAWING NO. 5308





NOTE: For R/W Data & Guard Rail, See Rdy. Plans.  
Use Type 24 Approach Slabs with Type "B" Approach Gutters  
at both ends of Bridge. For Details, see Dwg. Nos. 2016B & 2017

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	PROJ. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	100225	10	29	
				6253	LAYOUT	29.40		

GENERAL NOTES

BENCH MARK: N.I.S. P.P. 39' RT. STA. 513+63, ELEV. 306.9

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 1931 edition, with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges, 1989 with current interim specifications.

LIVE LOADING: HS20 METHOD OF DESIGN: Load Factor  
SEISMIC PERFORMANCE CATEGORY "B"

MATERIALS AND STRENGTHS:  
Class S(AE) Concrete (superstructure)  $f'_c = 4,000$  psi  
Class S Concrete (substructure)  $f'_c = 3,500$  psi  
Reinforcing Steel (#615 or #617, GR. 60)  $f_y = 60,000$  psi  
Structural Steel (A588)  $f_y = 50,000$  psi  
Structural Steel (A36)  $f_y = 36,000$  psi

BORING LOGS: Boring logs may be obtained from the Programs and Contracts Division.

PILE DRIVING: Piling for Bents 1 and 4 shall be 14" Dia. Concrete Filled Steel Shell Piling and shall be driven to a minimum safe bearing capacity of 44 tons per pile. Piling in Bents 2 and 3 shall be 18" Dia. Concrete Filled Steel Shell Piling and shall be driven to a minimum safe bearing capacity of 55 tons per pile. All piling shall be driven with an approved air, steam, or diesel hammer. Piling in and bents shall be driven after embankment to bottom of cap is in place. Piling in Bents 2 and 3 shall have a minimum penetration of 25' below natural ground. Lengths of piling shown are assumed for estimating quantities only. Actual lengths to be determined in the field. Drive one 65' test pile in Bent 1 and one 65' test pile in Bent 3. See Special Provision Job No. 100226 "Steel Shell Piling".

PILE ENCASEMENT: Pile encasement for Bents 2 & 3 shall extend 3' into the ground and 5' above ground. See Drawing Number 29143 for additional information.

BRIDGE DECK: The concrete bridge deck shall be given a fine finish as specified for final finishing in subsection 802.20 for Class 5 Bridge Roadway Surface Finish.

BOILED LINSEED OIL: Boiled linseed oil treatment shall be applied to the roadway surface and to the face and top of the concrete parapet rail.

DETAIL DRAWINGS:

DRAWING NO.

Bents  
107' Cont. W-Beam Unit 29141  
Concrete Filled Steel Shell Piling 29142-29143

EXISTING BRIDGE: The existing bridge No. M0773 (log mile 9.75) is 21' wide and 106' long and consists of a concrete and timber superstructure supported by a timber substructure.

REMOVAL AND SALVAGE: The existing bridge (M0773) shall be removed in accordance with section 205 of the Standard Specifications. All material from the existing bridge shall become the property of the contractor.

BORING LEGEND

- A - Asphalt Pavement.
- B - Moist, Medium Stiff, Brown Silty Clay.
- C - Wet, Very Loose, Brown Silty Sand.
- D - Wet, Loose to Medium Dense, Brown Sand and Gravel.
- E - Wet, Very Dense, Gray Sand and Gravel.
- F - Moist, Stiff, Gray Sandy, Silty Clay with some Gravel.
- G - Moist, Hard, Gray Silty Clay.
- H - Moist, Very Stiff, to stiff, Brown to Brown and Gray Sandy, Silty Clay.
- J - Moist, Very Stiff, Gray Silty Clay.
- K - Moist, Soft, Brown and Gray Sandy, Silty Clay.
- L - Wet, Dense, Gray Sand with organic Matter.
- M - Moist, stiff, Gray Sandy, Silty Clay.
- P - Moist, soft, Gray Silty Clay.
- N - Moist, Medium Dense, Gray Clayey Sand and Gravel

"N" VALUES

Sta 514+74 : 5.5'-6.5' N=7; 10.5'-11.5' N=3  
15.5'-16.5' N=7; 20.5'-21.5' N=17; 25.5'-26.5' N=11;  
30.5'-31.5' N=7; 35.5'-36.5' N=5; 40.5'-41.5' N=6;  
45.5'-46.5' N=8; 50.5'-51.5' N=55; 55.5'-56.5' N=9;  
60.5'-61.5' N=40; 65.5'-66.5' N=38; 70.5'-71.5' N=57  
75.5'-76.5' N=66  
Sta 516+12 : 5.5'-6.5' N=20; 10.5'-11.5' N=11; 15.5'-16.5' N=10  
20.5'-21.5' N=5; 25.5'-26.5' N=17; 30.5'-31.5' N=3  
35.5'-36.5' N=31; 40.5'-41.5' N=4; 45.5'-46.5' N=9;  
50.5'-51.5' N=20; 55.5'-56.5' N=9; 60.5'-61.5' N=10;  
65.5'-66.5' N=24; 70.5'-71.5' N=43; 74.5'-75.5' N=65

LAYOUT OF BRIDGE OVER  
LICK CREEK  
LICK CREEK STR. & APPRS.

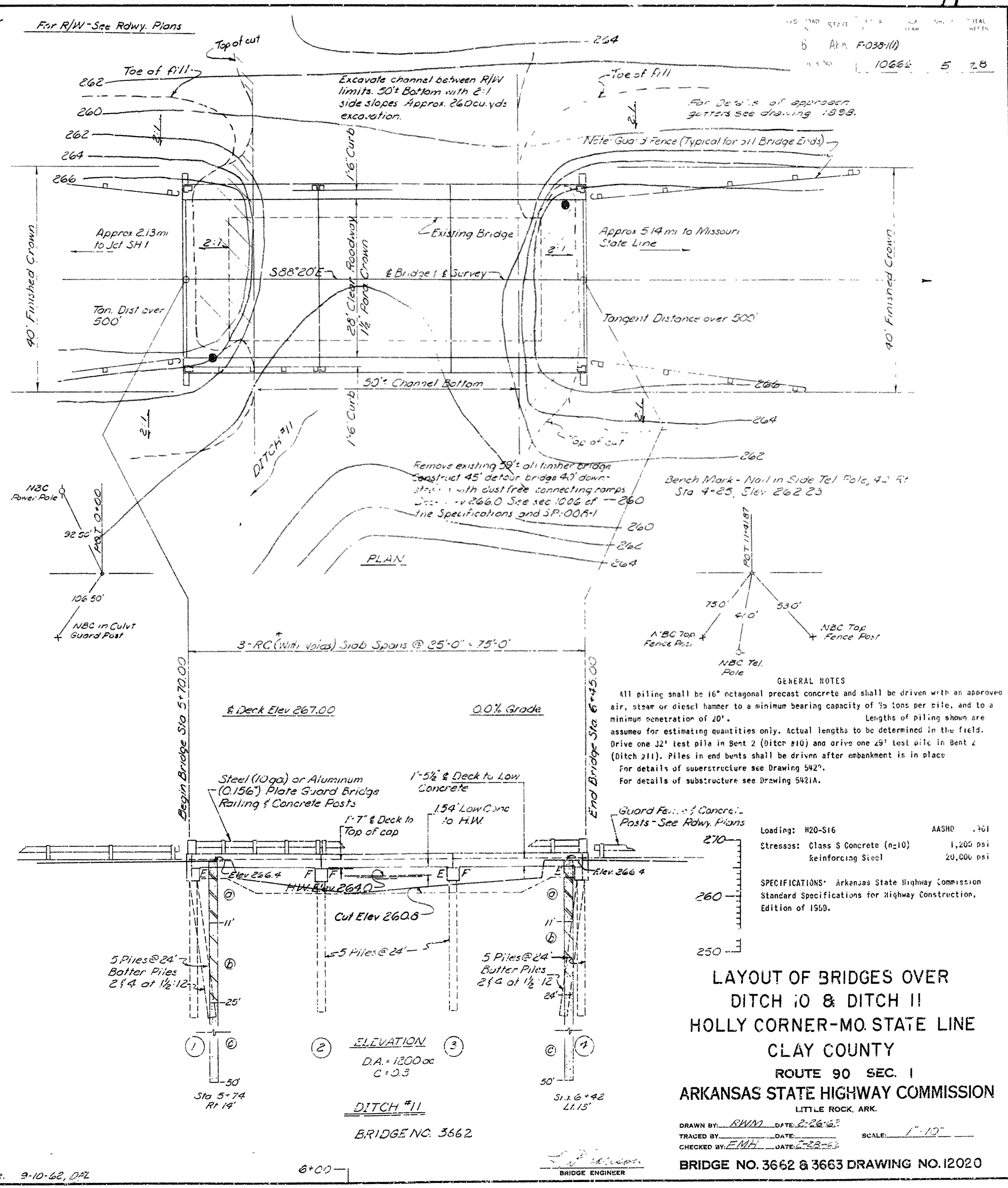
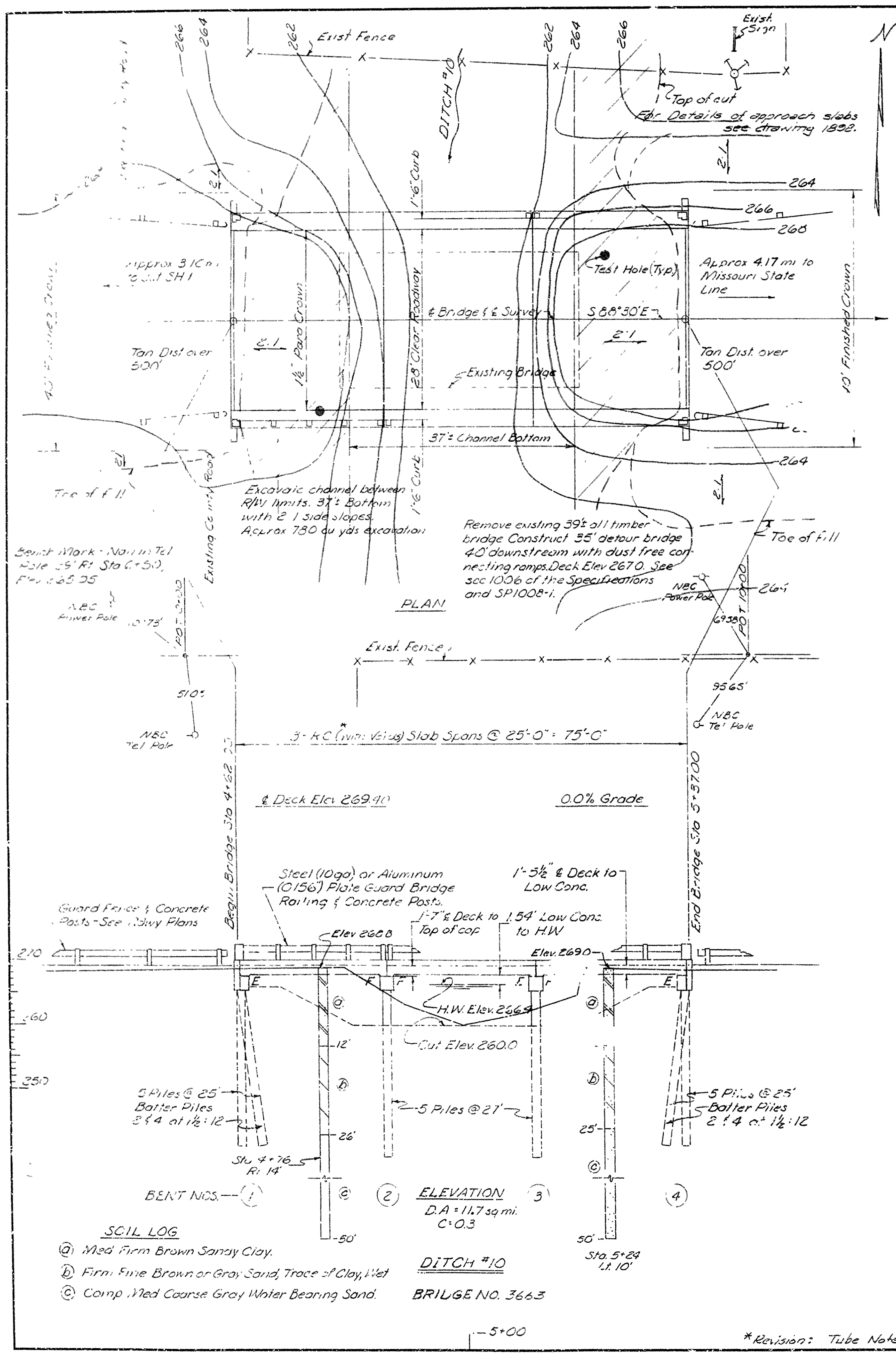
GREENE COUNTY  
ROUTE 34 SEC. 3  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: J.P.S. DATE: 11-15-65  
CHECKED BY: J.P.S. DATE: 11-15-65  
DESIGNED BY: J.P.S. DATE: 11-15-65

BRIDGE NO. 6253 DRAWING NO. 29140







**LAYOUT OF BRIDGES OVER DITCH #10 & DITCH #11 HOLLY CORNER-MO. STATE LINE CLAY COUNTY ROUTE 90 SEC. 1 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.**

LOADING: H20-S16 AASHTO 1961  
Stresses: Class S Concrete (n=10) 1,200 psi  
Reinforcing Steel 20,000 psi

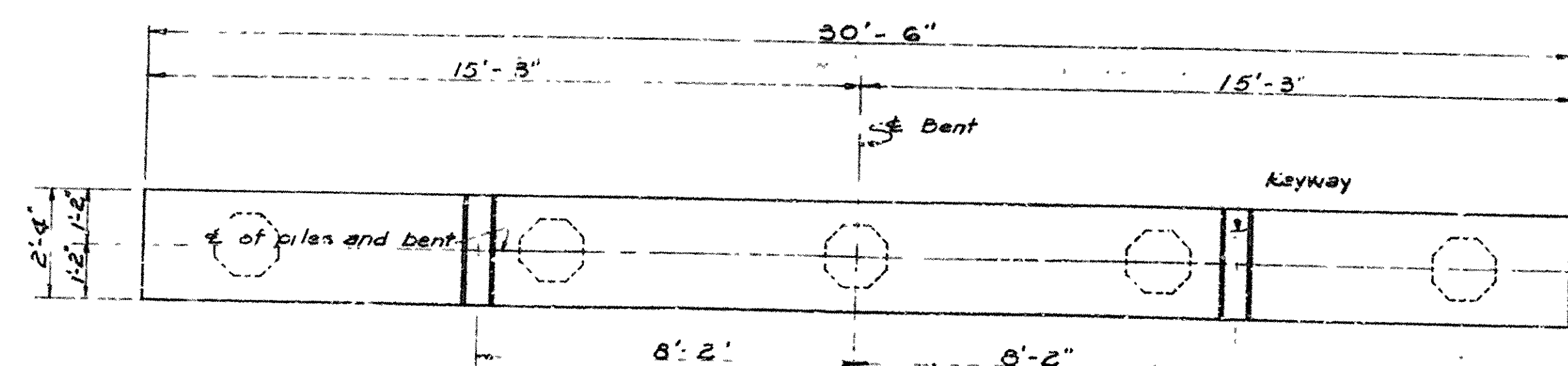
SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1969.

DRAWN BY: RWM DATE: 2-26-62  
TRACED BY: DATE: 2-26-62  
CHECKED BY: FMH DATE: 2-26-62

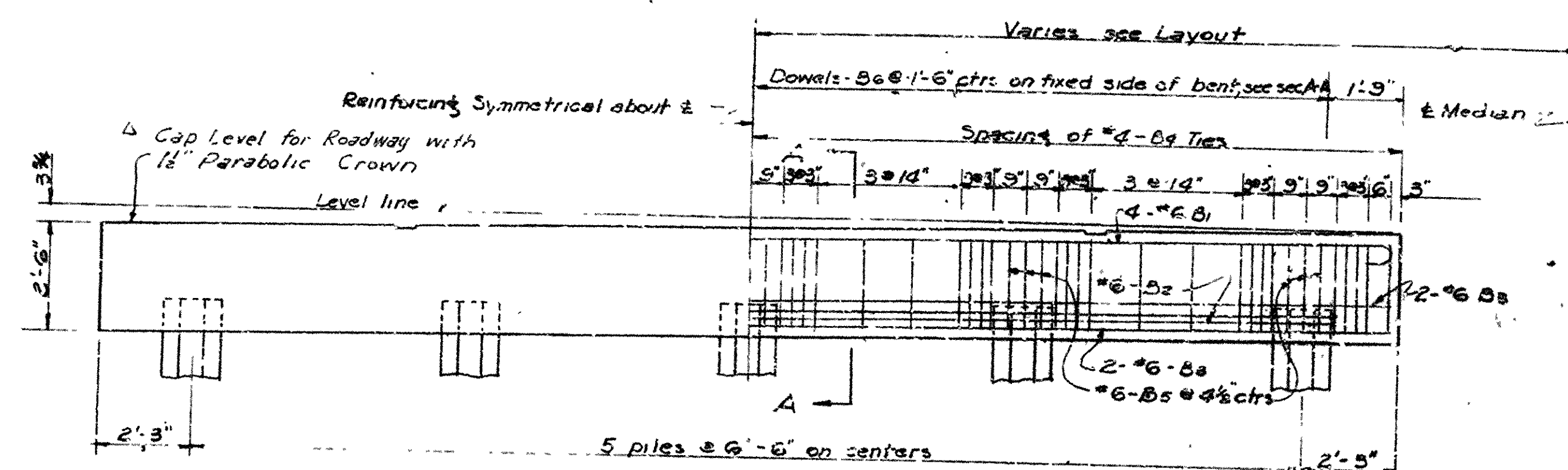
SCALE: 1"=10'

BRIDGE NO. 3662 & 3663 DRAWING NO. 12020

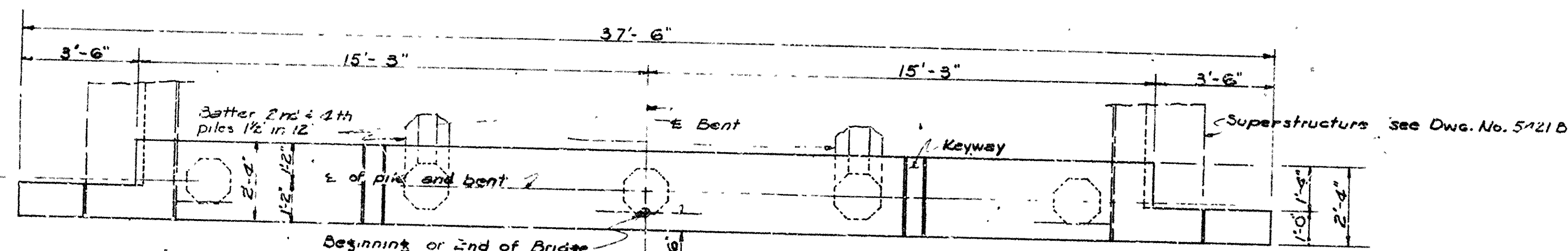




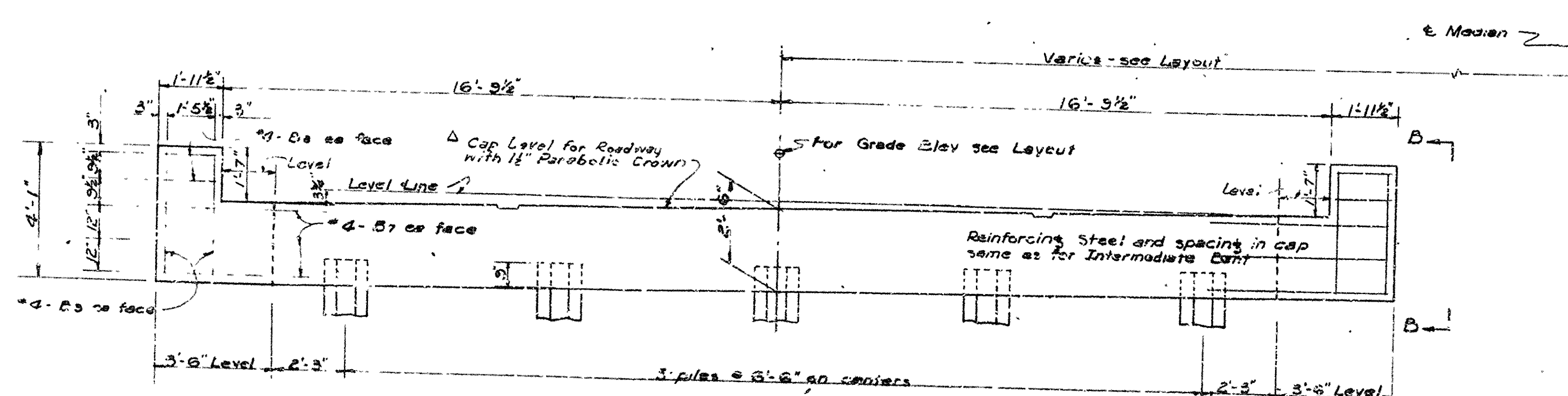
PLAN OF INTERMEDIATE BENT



ELEVATION OF INTERMEDIATE BENT

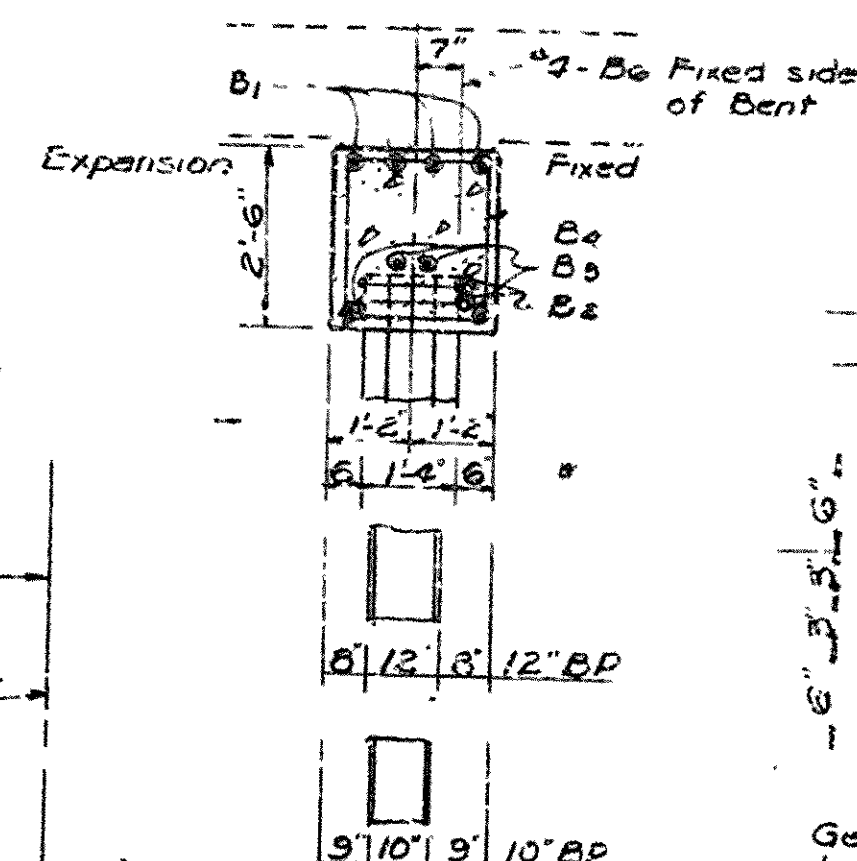


PLAN OF END BENT

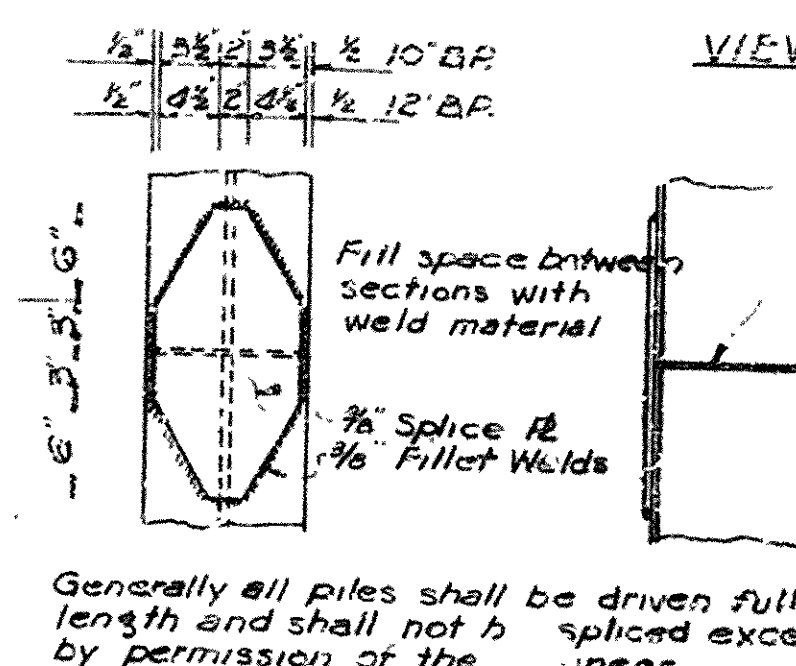


ELEVATION OF END BENT (BACK FACE)

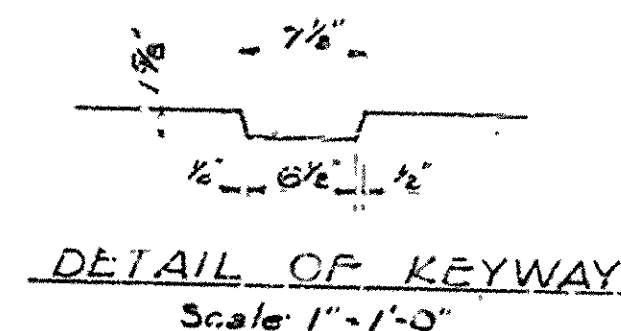
NOTE: Reverse crown when the median is on the left.



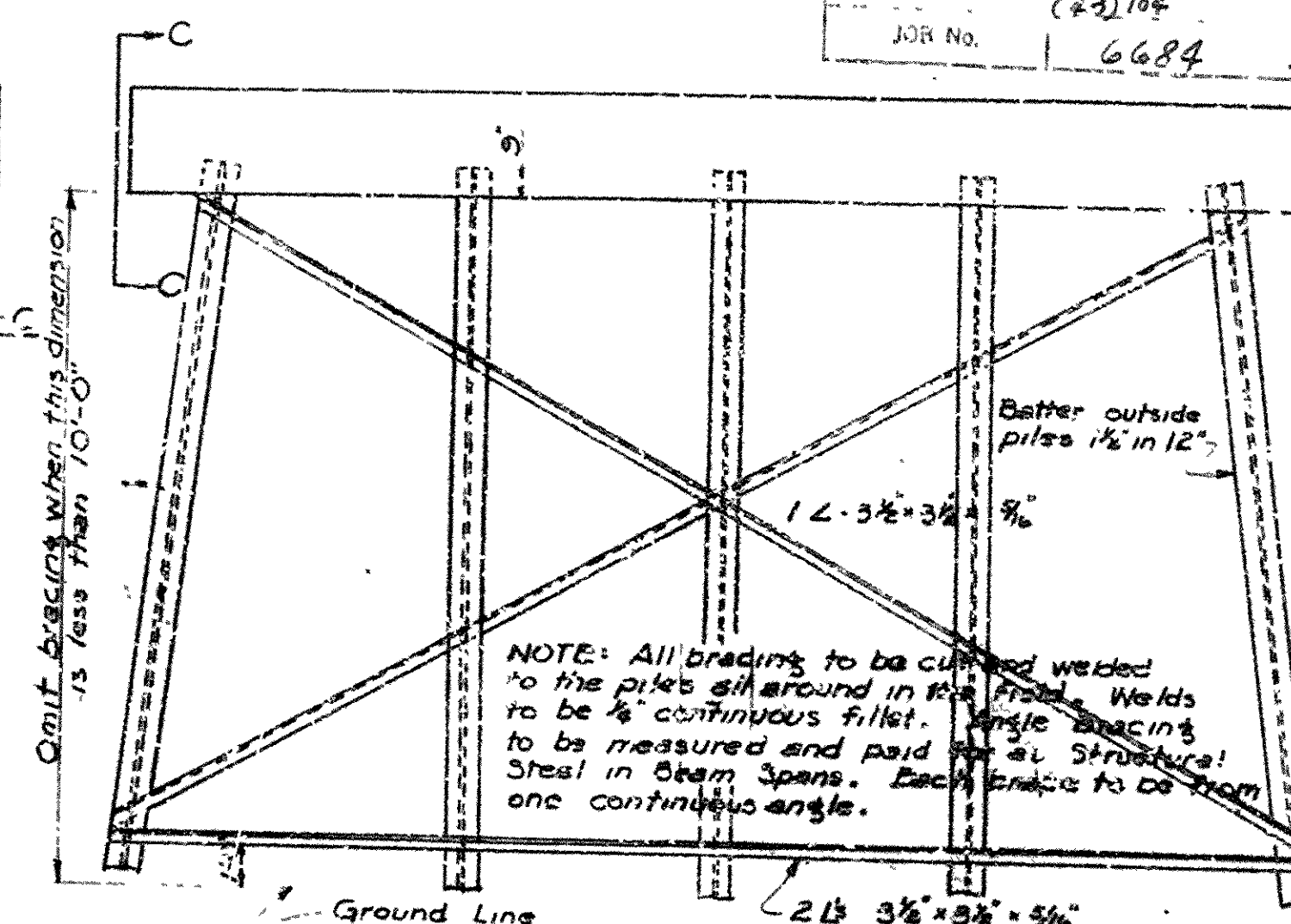
SECTION A-A



STEEL SPLICE DETAILS  
Scale 1" = 1'-0"



DETAIL OF KEYWAY  
Scale 1" = 1'-0"



TYPICAL INTERMEDIATE BENT - STEEL PILES  
No Scale

### GENERAL NOTES

All concrete to be Class S and shall be poured in the dry. All exposed corners to be chamfered 1/4" unless otherwise noted.  
Reinforcing steel to be deformed bars of intermediate grade unless otherwise noted by Special Provisions. Shop lists and bending diagrams are to be submitted for approval before fabrication is begun.  
All piling shall be driven to a minimum capacity of 55 tons per pile.  
Piling shall be either 10" H&D 2", 12" H&D 3" steel bearing piles or 16" octagonal precast concrete piles as shown on the layout.  
Volume occupied by embedded pile heads will not be included in the pay quantities of concrete caps.  
For Details of Standard 30'-0" R.C. Slab Spans see Drawing No. 5421B  
SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1959.

### BAR LIST PER BENT

MARK	SIZE	NO. PER BENT		LENGTH	BENDING DIAGRAM
		END	INT		
B1	#6	4	4	31'-6"	
B2	#6	4	4	31'-6"	
B3	#6	4	4	30'-1"	
B4	#2	50	50	8'-11"	
B5	#6	15	15	6'-3"	
B6	#4	-	-	2'-6"	
B7	#4	12	-	3'-0"	
B8	#4	8	-	1'-8"	
B9	#4	6	-	3'-5"	
B10	#4	6	-	3'-5"	

Dimensions are to centers of bars

### DETAILS OF STANDARD PILE BENTS FOR STD. 30'-0" R.C. SLAB SPANS

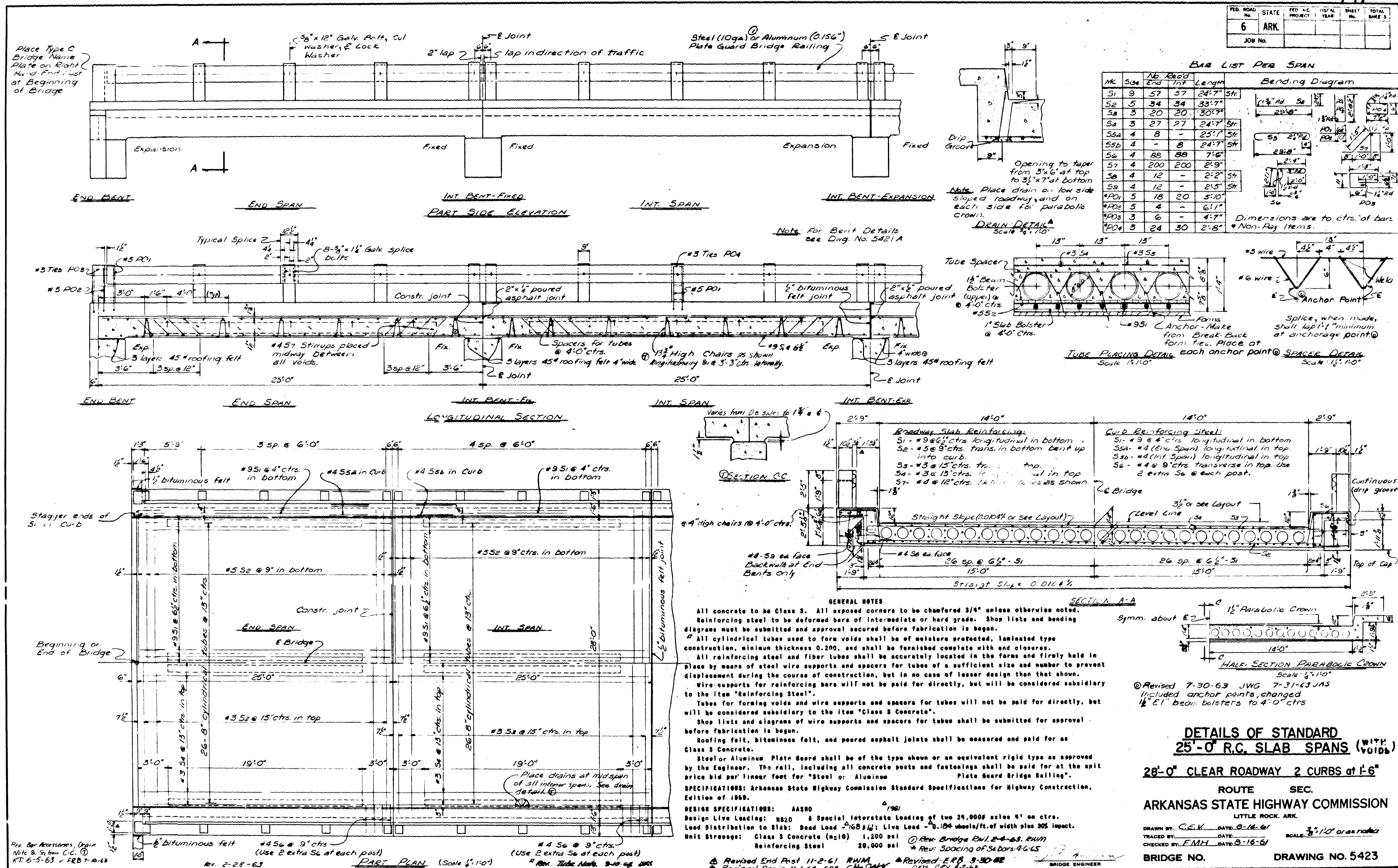
28'-0" CLEAR ROADWAY 2 CURBS @ 1'-6"  
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

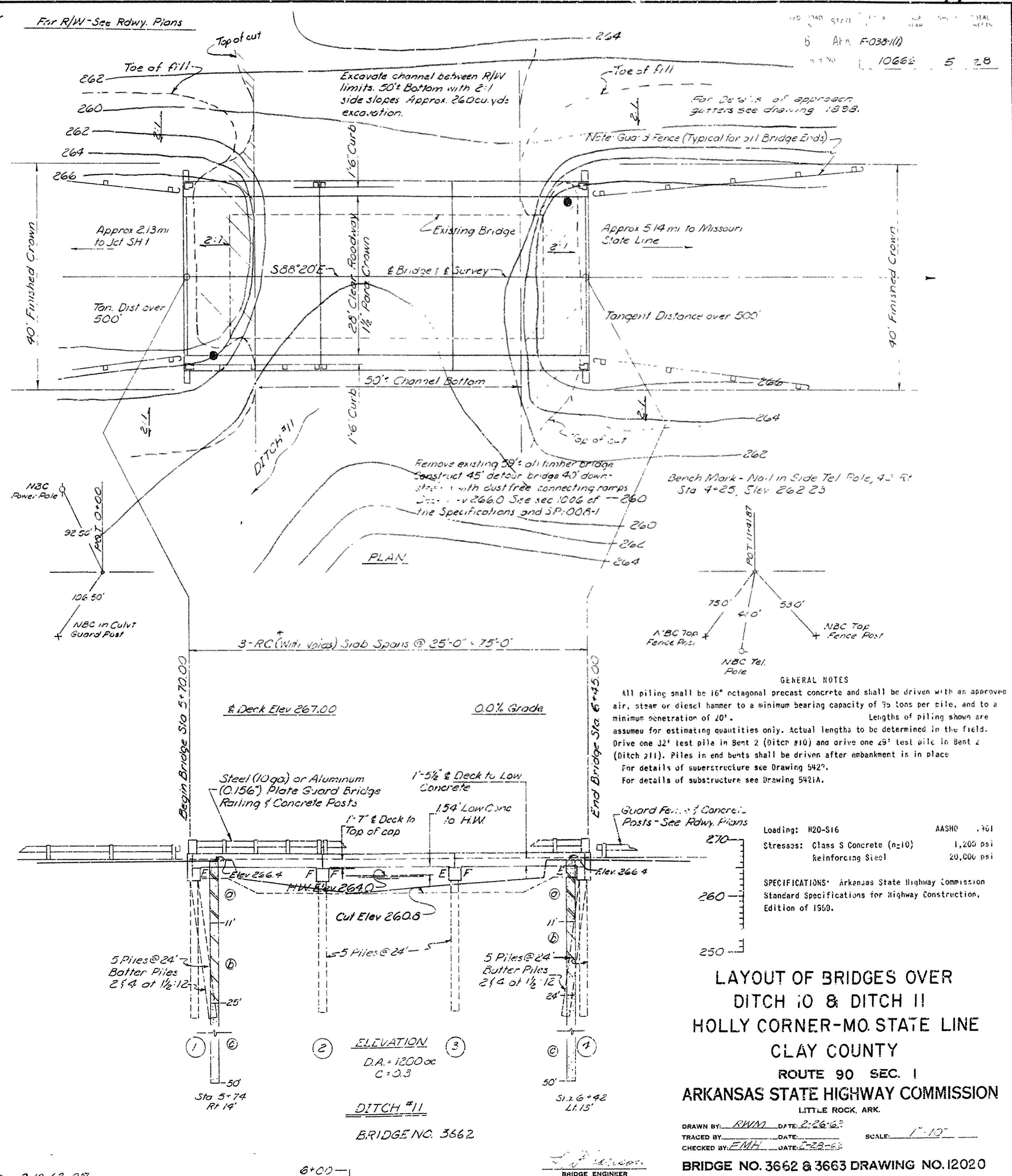
DRAWN BY: *Aug* DATE: 7-16-57  
TRACED BY: *DM* DATE: 6-14-59  
CHECKED BY: *DM* DATE: 6-14-59  
BRIDGE NO. DRAWING NO. 5421A  
File 25 DWG No. 100234

*J. H. Carlson*  
BRIDGE DESIGN ENGINEER



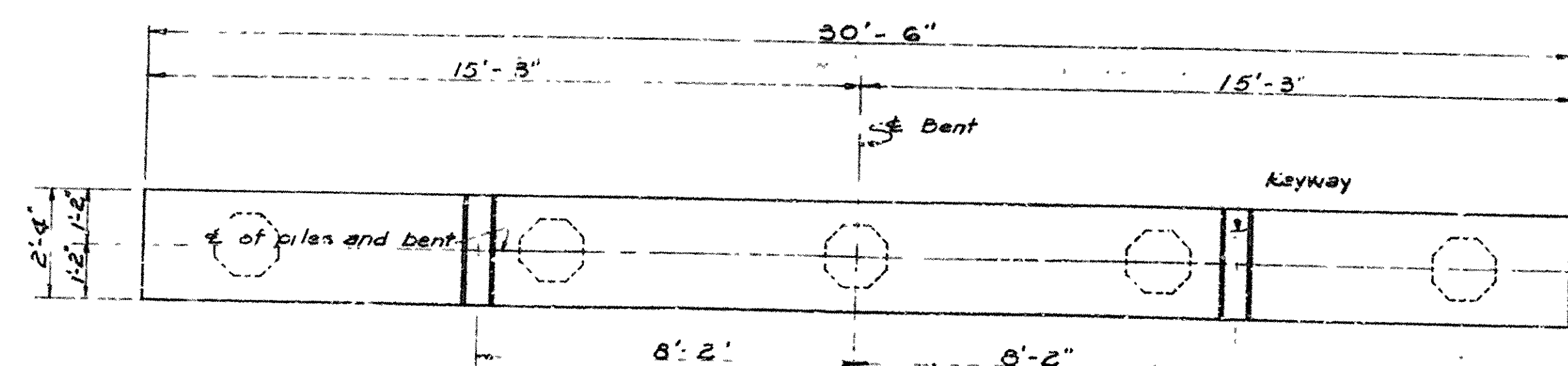




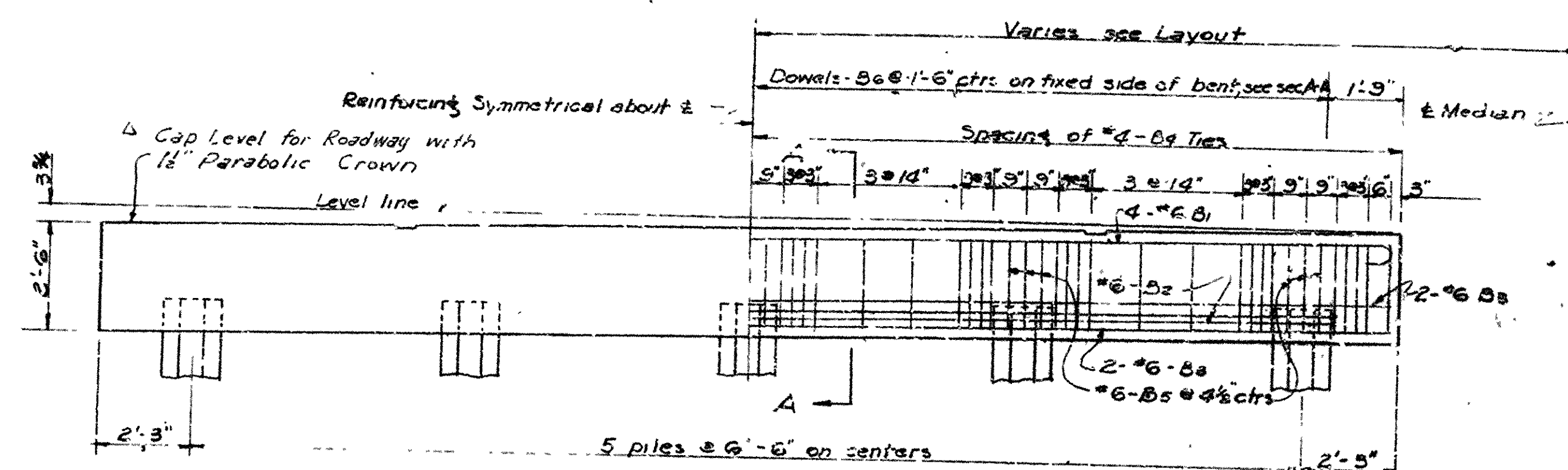


LAYOUT OF BRIDGES OVER  
DITCH 10 & DITCH 11  
HOLLY CORNER-MO. STATE LINE  
CLAY COUNTY  
ROUTE 90 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: RWM DATE: 2-26-65  
TRACED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ SCALE: 1"=10'  
CHECKED BY: FMH DATE: 2-22-65  
BRIDGE NO. 3662 & 3663 DRAWING NO. 12020

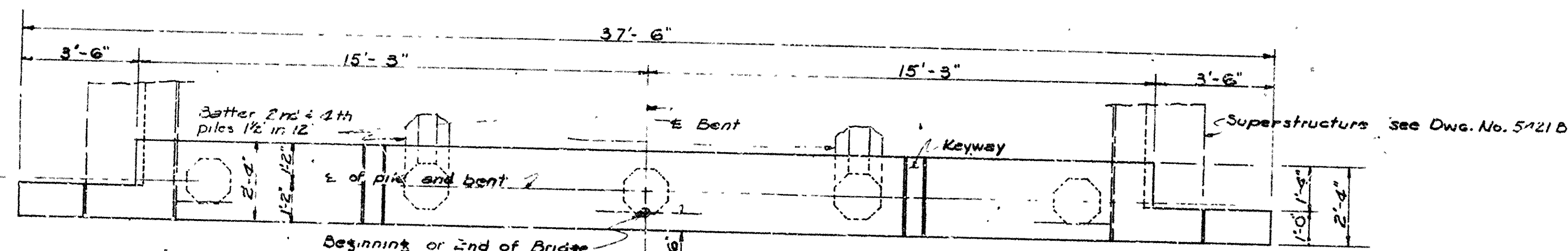




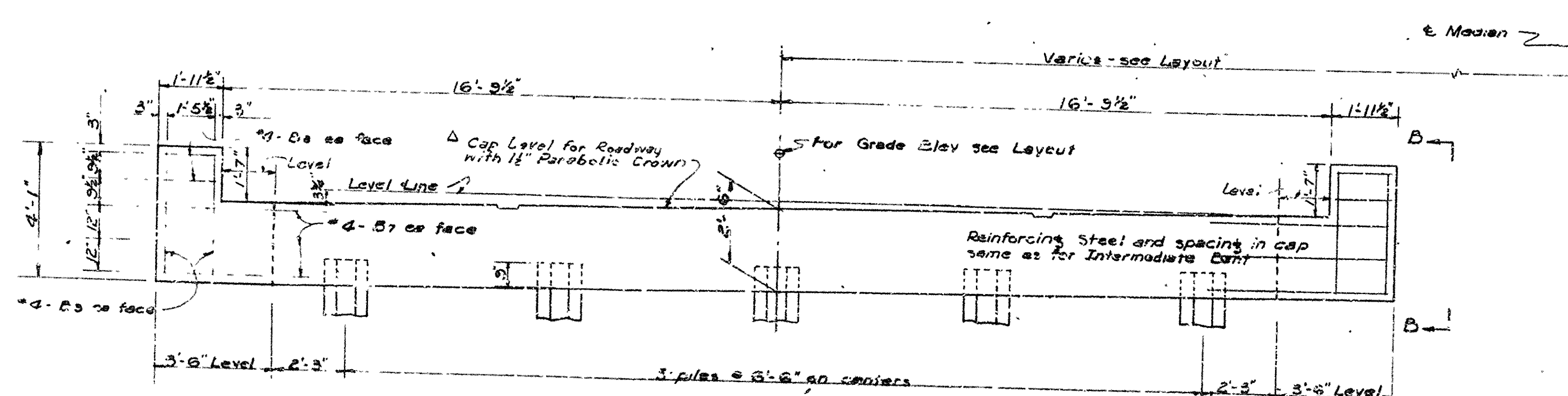
PLAN OF INTERMEDIATE BENT



ELEVATION OF INTERMEDIATE BENT

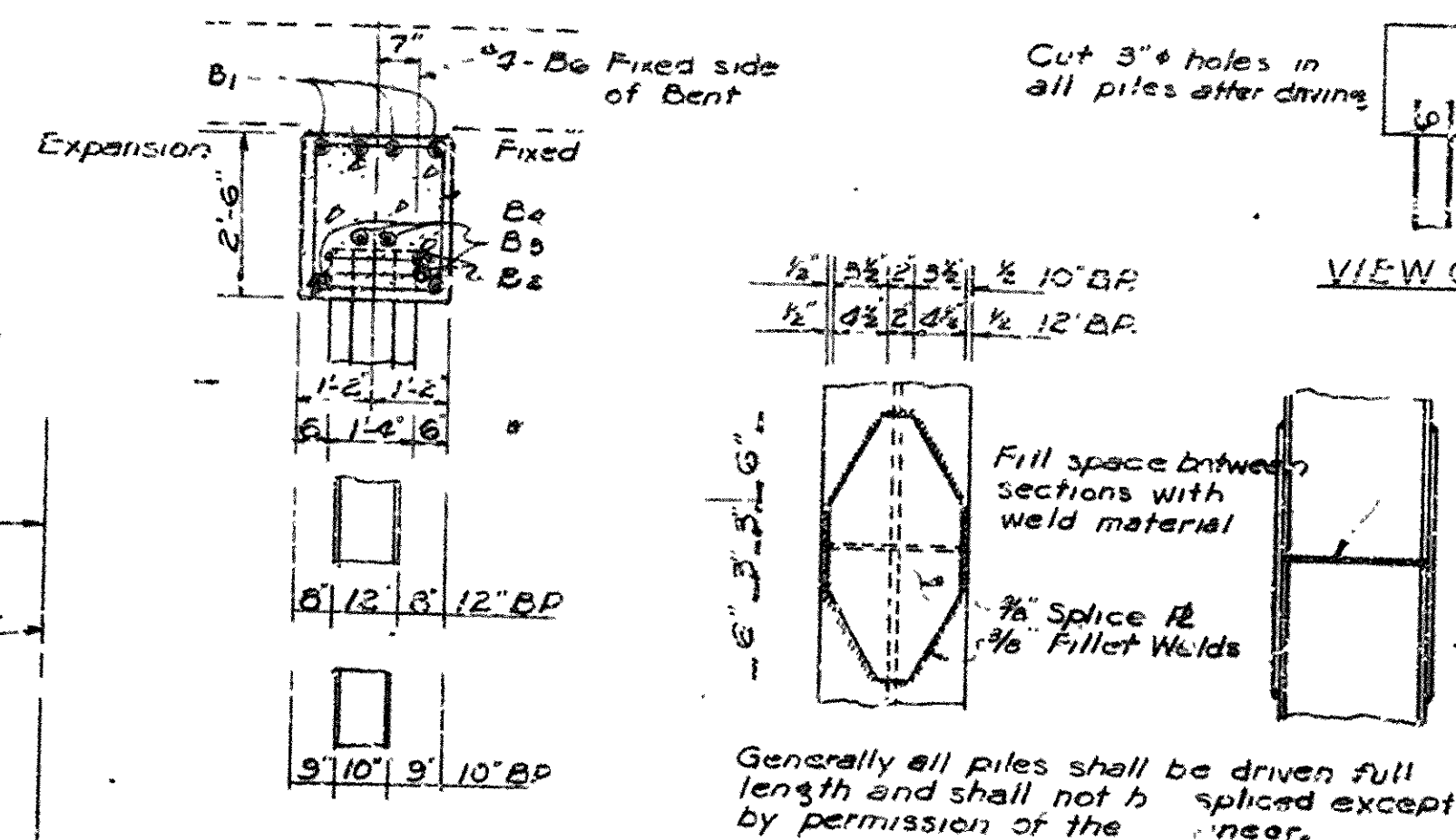


PLAN OF END BENT



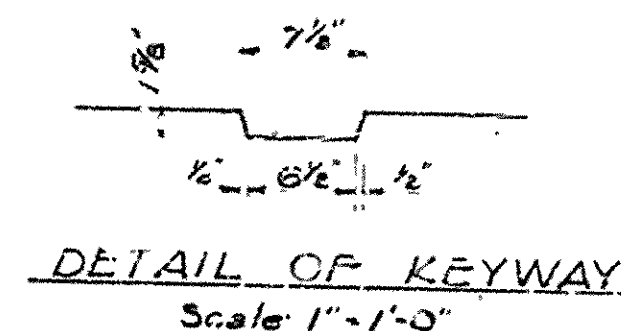
ELEVATION OF END BENT (BACK FACE)

NOTE: Reverse crown when the median is on the left.

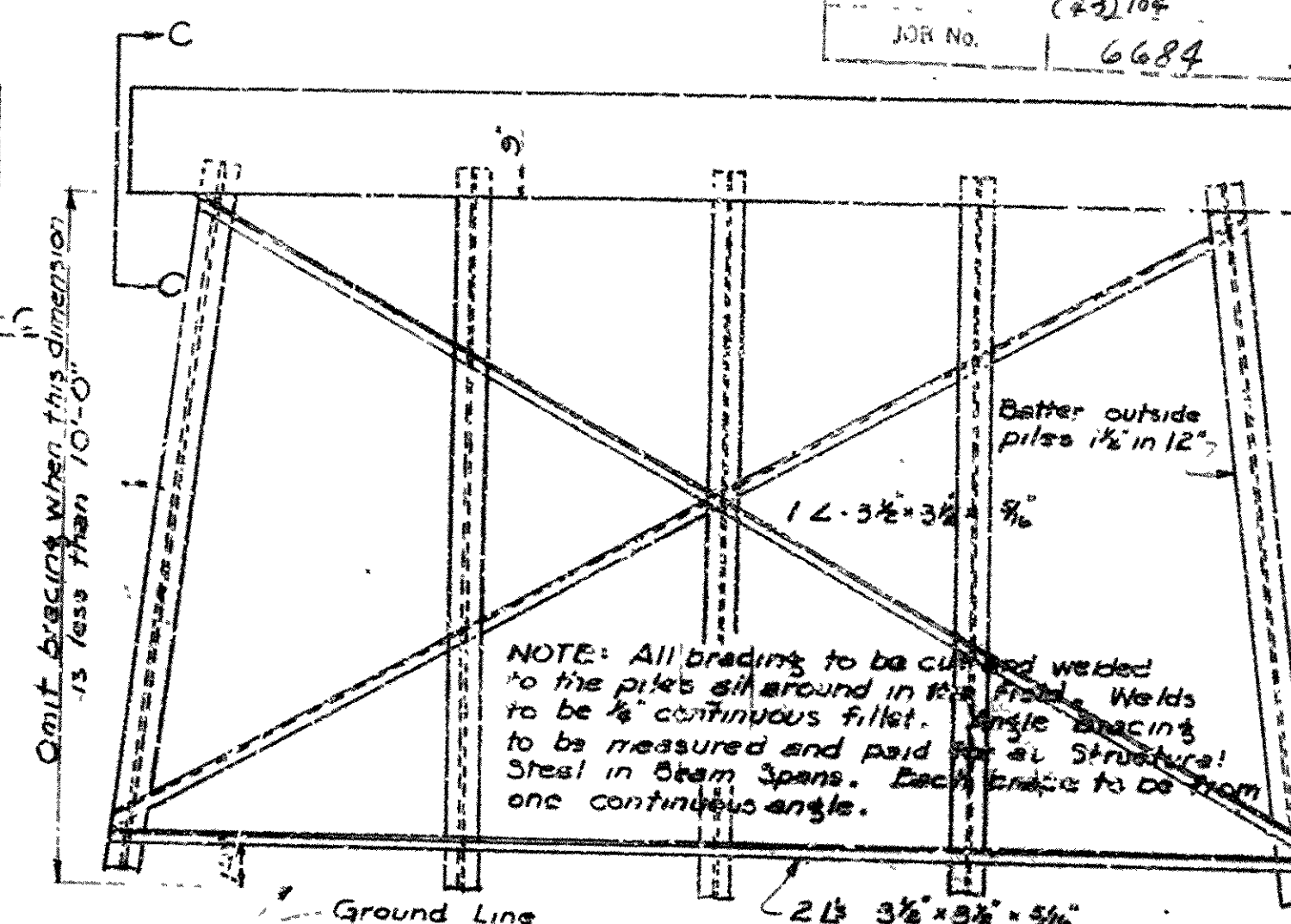


SECTION A-A

STEEL SPLICE DETAILS  
Scale 1" = 1'-0"



DETAIL OF KEYWAY  
Scale 1" = 1'-0"



TYPICAL INTERMEDIATE BENT - STEEL PILES  
No Scale

### GENERAL NOTES

All concrete to be Class S and shall be poured in the dry. All exposed corners to be chamfered 1/4" unless otherwise noted.  
Reinforcing steel to be deformed bars of intermediate grade unless otherwise noted by Special Provisions. Shop lists and bending diagrams are to be submitted for approval before fabrication is begun.  
All piling shall be driven to a minimum capacity of 55 tons per pile.  
Piling shall be either 10" H x 42 lb, 12" H x 55 lb steel bearing piles or 16" octagonal precast concrete piles as shown on the layout.  
Volume occupied by embedded pile heads will not be included in the pay quantities of concrete caps.  
For Details of Standard 30'-0" R.C. Slab Spans see Drawing No. 5421B  
SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1959.

### BAR LIST PER BENT

MARK	SIZE	NO. PER BENT	END	INT	LENGTH	BENDING DIAGRAM
B1	#6	4	4	4	31'-6"	B1 31'-6"
B2	#6	4	4	4	31'-6"	
B3	#6	4	4	4	30'-1"	B3 30'-1"
B4	#2	50	50	50	8'-11"	
B5	#6	15	15	15	6'-3"	B5 6'-3"
B6	#4	12	12	12	2'-6"	
B7	#4	12	12	12	3'-0"	B7 3'-0"
B8	#4	8	8	8	1'-8"	
B9	#4	6	6	6	3'-5"	B9 3'-5"

Dimensions are to centers of bars

### DETAILS OF STANDARD PILE BENTS FOR STD. 30'-0" R.C. SLAB SPANS

28'-0" CLEAR ROADWAY 2 CURBS @ 1'-6"

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: *Aug* DATE: 7-16-57  
TRACED BY: *DM* DATE: 6-14-59  
CHECKED BY: *DM* DATE: 6-14-59

BRIDGE NO. DRAWING NO. 5421A  
File 25 DWG No. 100234

*J. H. Carlson*  
BRIDGE DESIGN ENGINEER

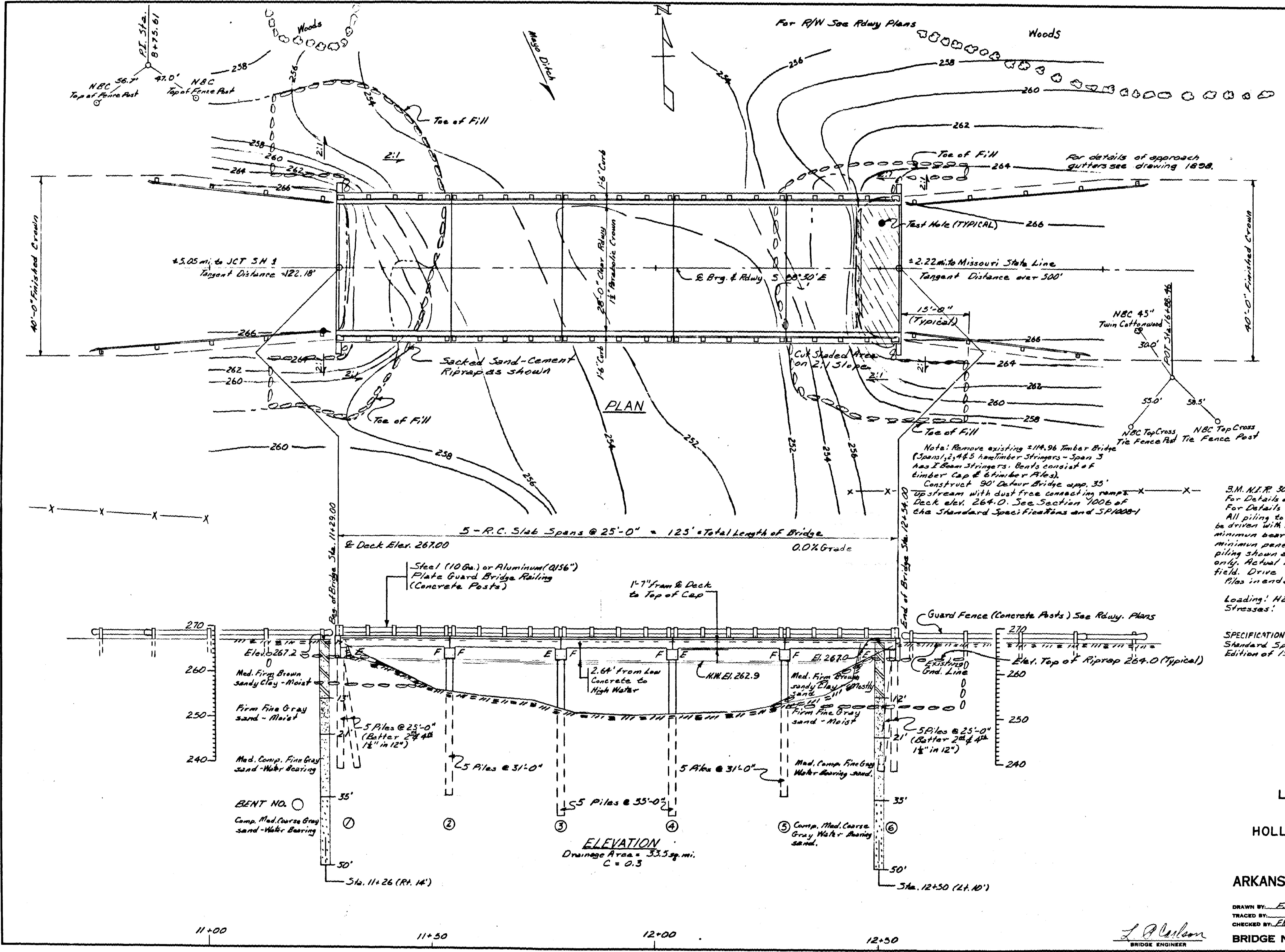
END VIEW 3-B







FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	F-028-100		20	28
JOB NO.		10666			



**GENERAL NOTES**

3.M. A.P.R. 30' (typical) to 13+45 Elevation 261.73  
For Details of Superstructure See Day No. 3+23  
For Details of Substructure See Day No. 3+21A  
All piling to be 16" Octagonal Precast Concrete and shall be driven with approved driving hammer to a minimum bearing capacity of 33 tons per pile and a minimum penetration 20". Length of piling shown are assumed for estimating quantities only. Actual lengths shall be determined in the field. Drive one 40' Test Pile in Bent No. 4. Piles in end Bents to be driven after embankment is in place.

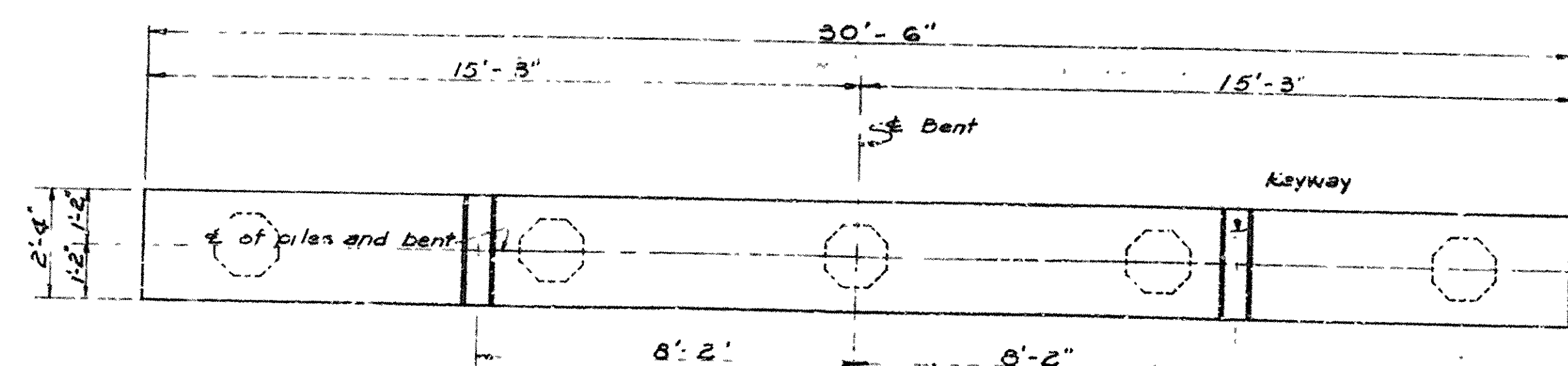
Loading: H20-316 AASHTO 1961  
Stresses: Class 3 Concrete (AASHTO) 1,200 psi  
Reinforcing Steel 20,000 psi

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

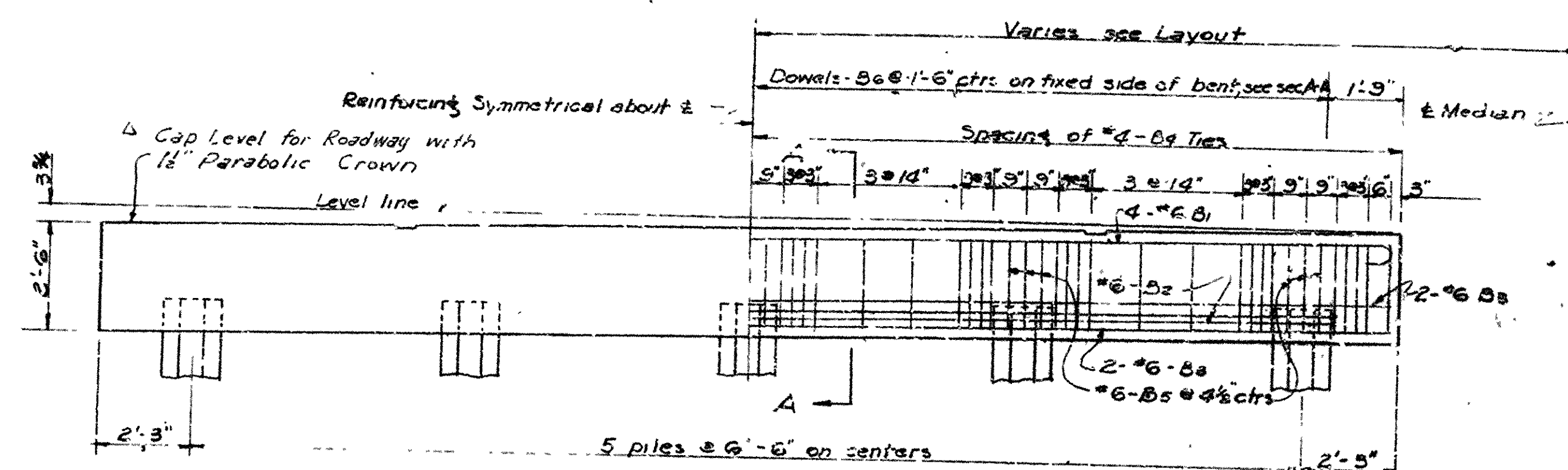
LAYOUT OF BRIDGE OVER  
MAYO DITCH  
HOLLY CORNER-MO. STATE LINE  
CLAY COUNTY  
ROUTE 90 SEC. I  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: F.E. DATE: 2-23-62  
CHECKED BY: ENH DATE: 3-26-62  
BRIDGE NO. 3664 DRAWING NO. 12021

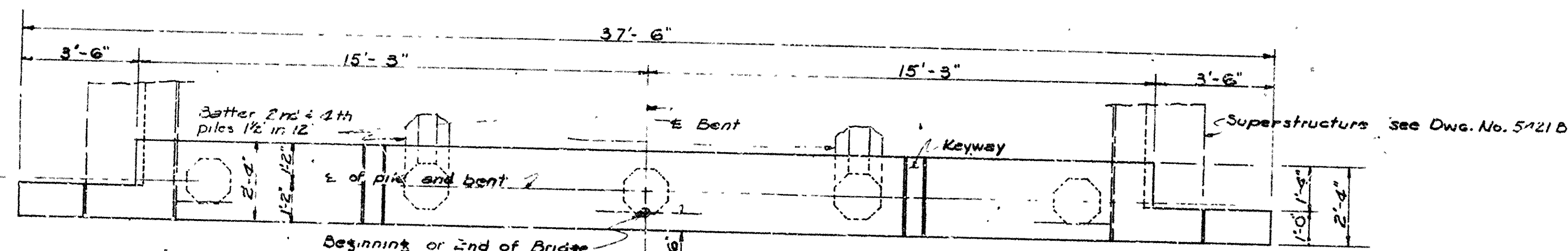




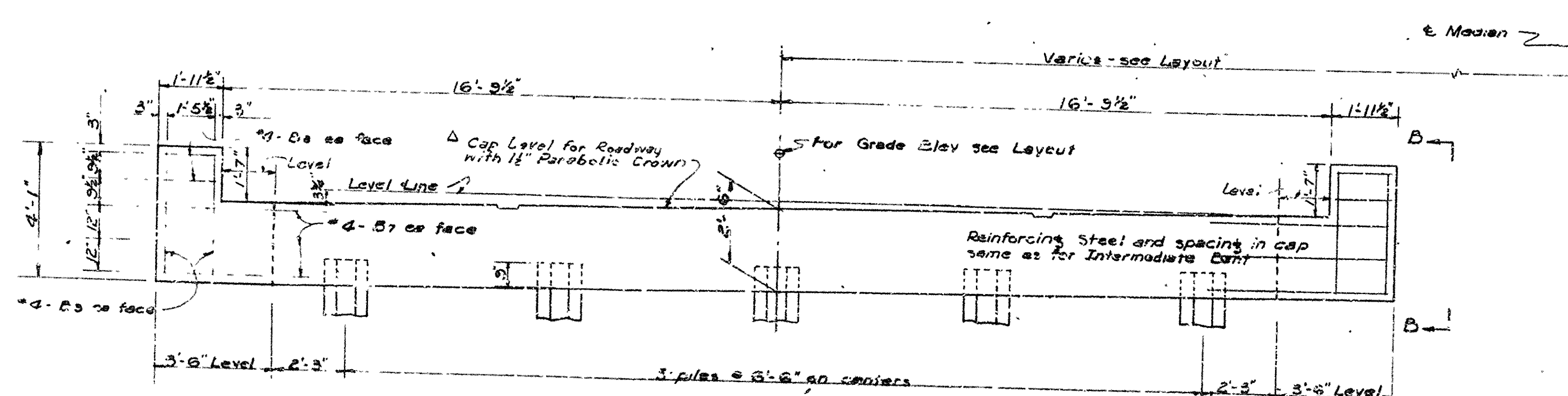
PLAN OF INTERMEDIATE BENT



ELEVATION OF INTERMEDIATE BENT

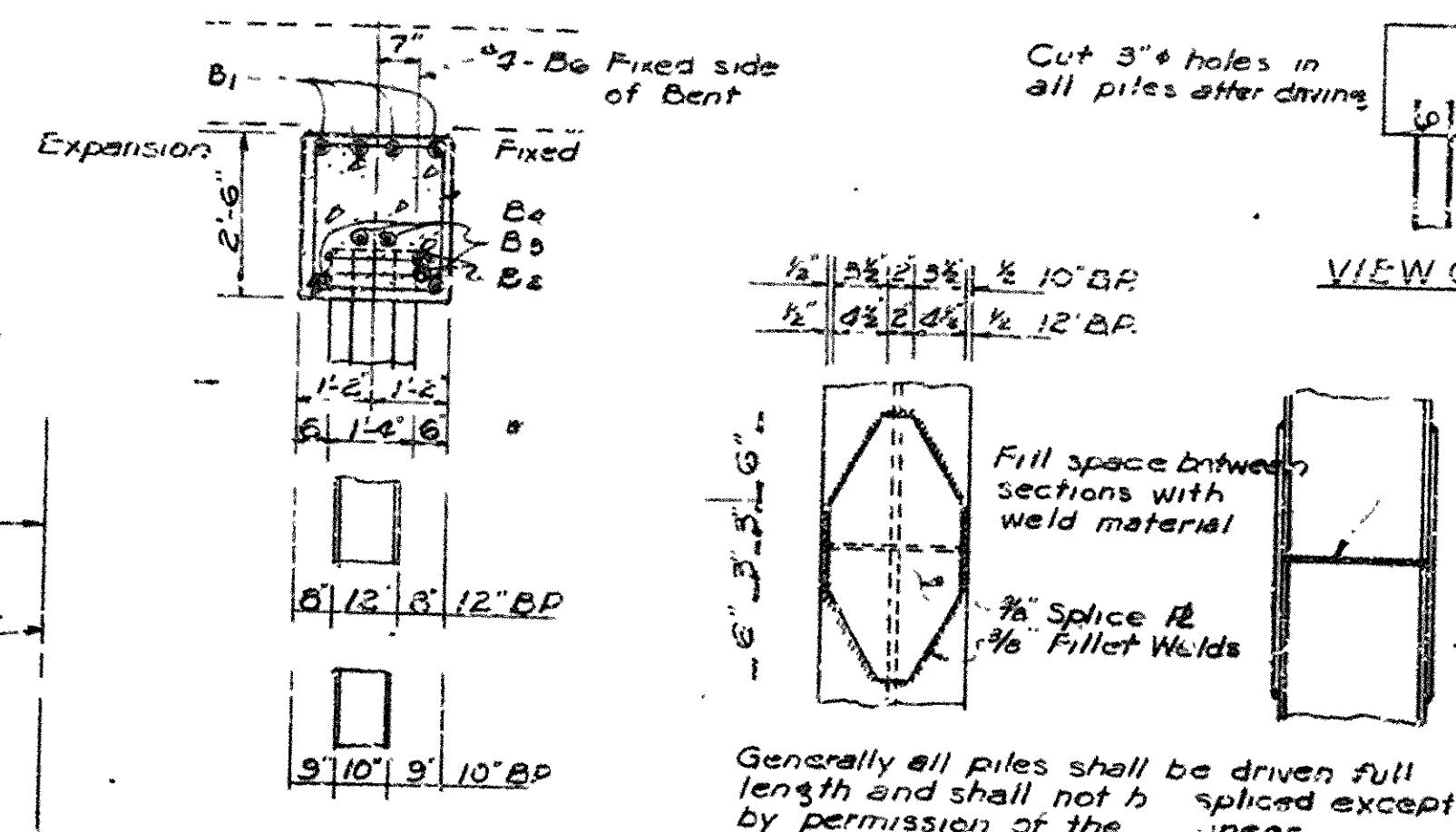


PLAN OF END BENT



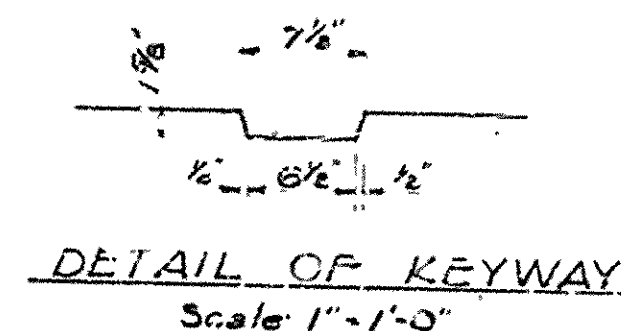
ELEVATION OF END BENT (BACK FACE)

NOTE: Reverse crown when the median is on the left.

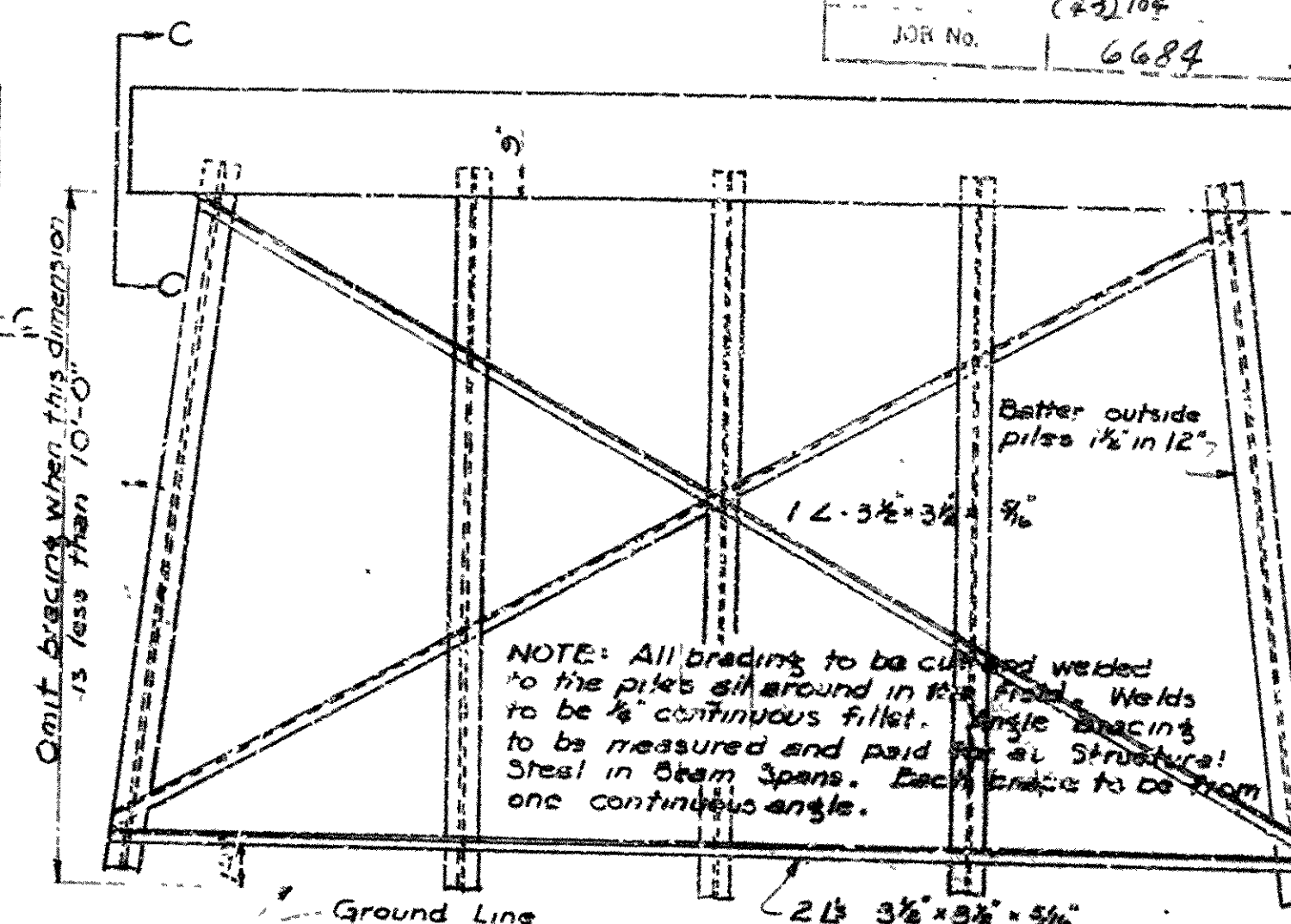


SECTION A-A

STEEL SPLICE DETAILS  
Scale 1" = 1'-0"



DETAIL OF KEYWAY  
Scale 1" = 1'-0"



TYPICAL INTERMEDIATE BENT - STEEL PILES  
No Scale

# GENERAL NOTES

All concrete to be Class S and shall be poured in the dry. All exposed corners to be chamfered 1/4" unless otherwise noted.  
Reinforcing steel to be deformed bars of intermediate grade unless otherwise noted by Special Provisions. Shop lists and bending diagrams are to be submitted for approval before fabrication is begun.  
All piling shall be driven to a minimum capacity of 55 tons per pile.  
Piling shall be either 10" H x 42", 12" H x 55" steel bearing piles or 16" octagonal precast concrete piles as shown on the layout.  
Volume occupied by embedded pile heads will not be included in the pay quantities of concrete caps.  
For Details of Standard 30'-0" R.C. Slab Spans see Drawing No. 5421B  
SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1959.

## BAR LIST PER BENT

MARK	SIZE	NO. PER BENT	END	INT	LENGTH	BENDING DIAGRAM
B1	#6	4	4	4	31'-6"	B1 31'-6"
B2	#6	4	4	4	31'-6"	
B3	#6	4	4	4	30'-1"	B3 30'-1"
B4	#2	50	50	50	8'-11"	
B5	#6	15	15	15	6'-3"	B5 6'-3"
B6	#4	12	12	12	2'-6"	
B7	#4	12	12	12	3'-0"	B7 3'-0"
B8	#4	8	8	8	1'-8"	
B9	#4	6	6	6	3'-5"	B9 3'-5"

Dimensions are to centers of bars

## DETAILS OF STANDARD PILE BENTS FOR STD. 30'-0" R.C. SLAB SPANS

28'-0" CLEAR ROADWAY 2 CURBS @ 1'-6"  
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: *[Signature]* DATE: 7-16-57  
TRACED BY: *[Signature]* DATE: 6-14-59  
CHECKED BY: *[Signature]* DATE: 6-14-59  
BRIDGE NO. DRAWING NO. 5421A  
File 85 DWG No. 100234

*[Signature]*  
BRIDGE DESIGN ENGINEER







DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100566	66	223
				07038	LAYOUT			47477

# GENERAL NOTES

BENCH MARK: \*917, southwest corner of existing bridge, 34.38' Rt. of Sta. 227+91.85, Elev. 249.39.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2003 edition) with applicable supplemental specifications and special provisions. Section and Subsection refer to the Standard Construction Specification unless otherwise noted in the Plans.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2004 Edition).

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: 3

## MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)  $f'_c = 4,000$  psi  
Class S Concrete (substructure)  $f'_c = 3,500$  psi  
Reinforcing Steel (AASHTO M31 or M53, Gr. 60)  $f_y = 60,000$  psi  
Structural Steel (AASHTO M270, Gr. 36)  $F_y = 36,000$  psi  
Structural Steel (AASHTO M270, Gr. 50W)  $F_y = 50,000$  psi

BORING LOGS: Boring logs may be obtained from the Programs and Contracts Division.

CONCRETE FILLED STEEL SHELL PILING: Piling for Bents 1 & 4 shall be 16" diameter concrete filled steel shell piles and shall be driven to a minimum safe bearing capacity of 30 tons per pile. Piling for Bents 2 & 3 shall be 18" diameter concrete filled steel shell piles and shall be driven to a minimum safe bearing capacity of 50 tons per pile. All piles shall be driven with an approved air, steam, or diesel hammer. Drive all piles to a minimum penetration of 20' below natural or excavated ground. Piling in and bents shall be driven after embankment to bottom of cap is in place. Length of piling shown are assumed for estimating quantities only. Actual lengths to be determined in the field. No payment will be made for cut-off or build-up. Test piles are not required but may be driven for the contractor's information in accordance with Subsection 805.08(g).

PREBORING: Preboring is required for all piling at Bents 1 and 4 to a depth of 10' below bottom of cap. Prebored holes shall be 6" greater than the diameter of the pile and shall be backfilled with loose sand after piles are in place. The Contractor shall be responsible for keeping prebored holes free of debris prior to backfilling, which may require the use of temporary casings or other methods. Preboring and temporary casing if necessary will not be paid for directly but will be considered subsidiary to "Steel Shell Piling (16" Dia.)".

PILE ENCASEMENT: Pile encasement for Bents 2 & 3 shall extend 3 feet into the ground and to the bottom of the cap. See Dwg. No. 47488 for additional details.

PIPE UNDERDRAIN: One Pipe Underdrain with Outlet Protectors shall be installed behind each Bridge End in accordance with Section 611. Pipe Underdrains will not be paid for directly but shall be considered subsidiary to "Unclassified Excavation".

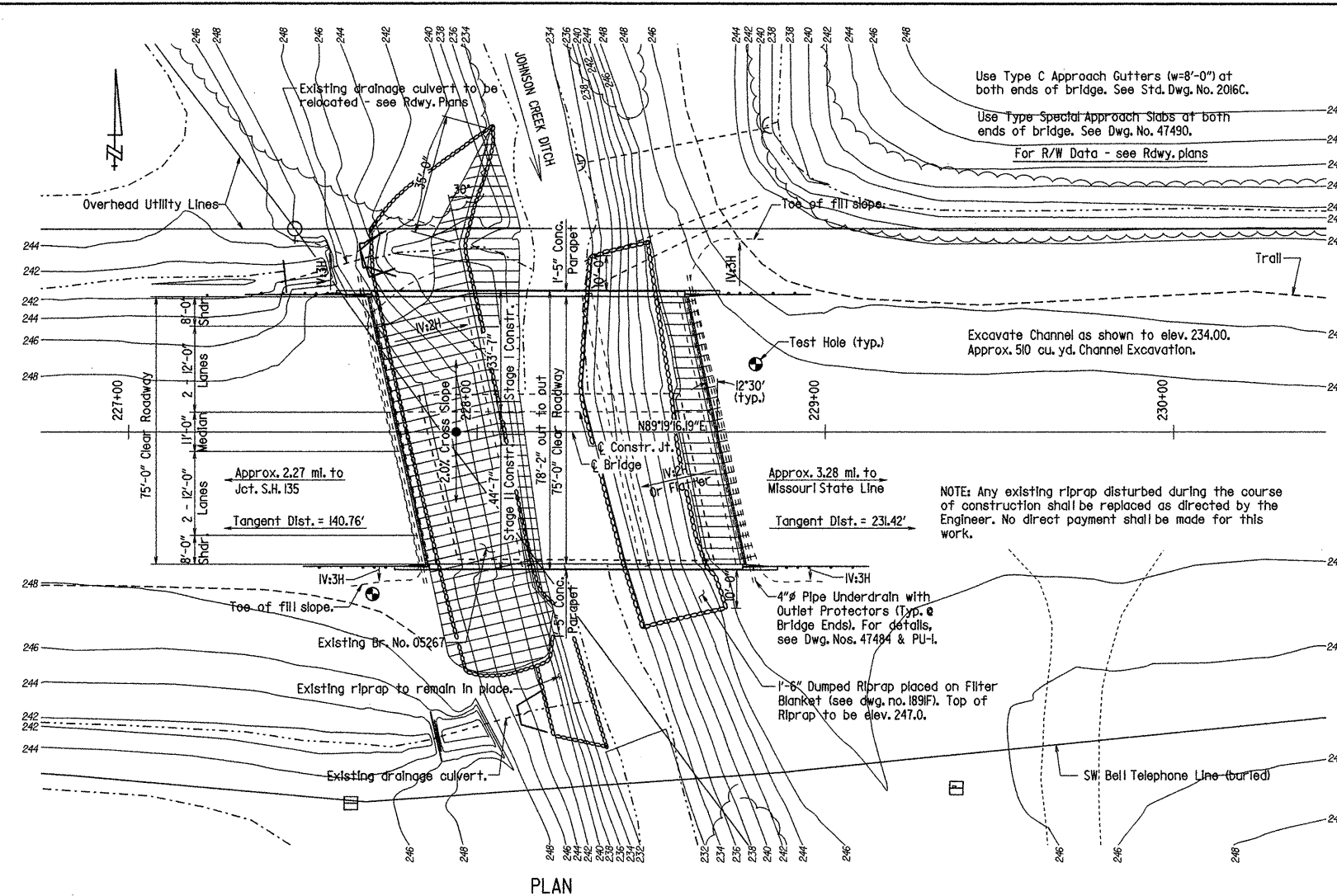
BRIDGE DECK: The concrete bridge deck shall be given a fine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

DETAIL DRAWINGS:	DRAWING NO.
End Bents	47480
Int. Bents	47481
90" Integral W-Beam Unit	47482-47487
Elastomeric Bearings	47489
Type C Approach Gutters	2016C
Type Special Approach Slab	47490
Concrete Filled Steel Shell Piles	47488

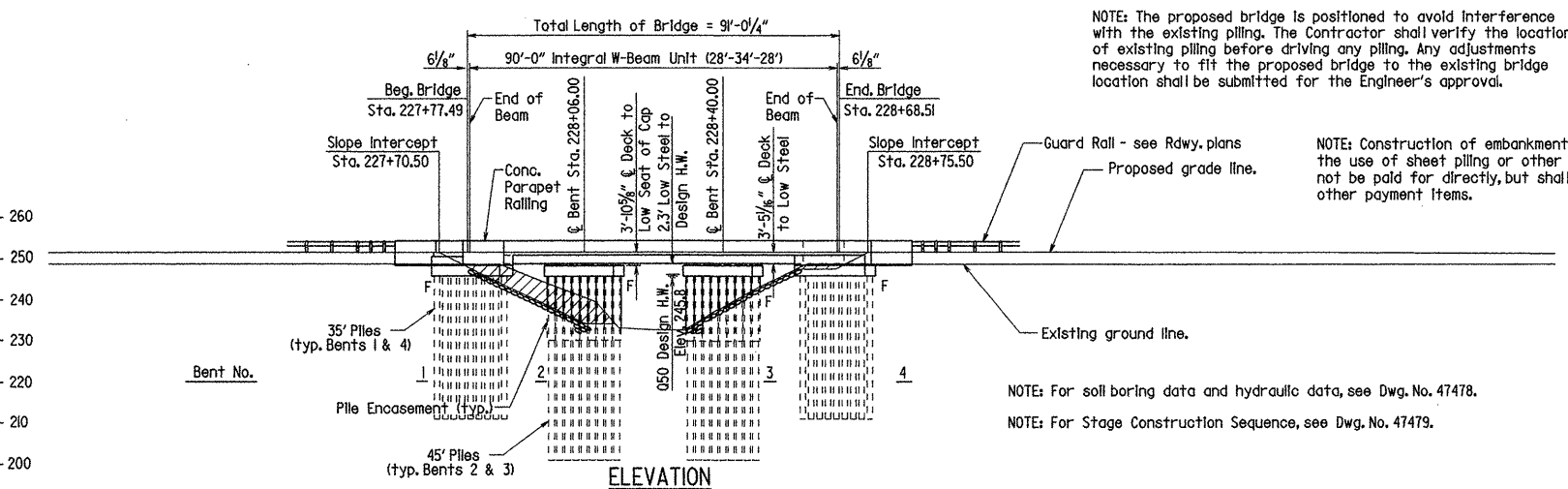
EXISTING BRIDGE: The existing three-span bridge, No. 05267, (L.M. 4.96) is 75' long and 46.3' wide and consists of a concrete superstructure supported by a concrete pile substructure.

REMOVAL AND SALVAGE: After Stage I of the new bridge is open to traffic, the existing bridge, No. 05267, shall be removed in accordance with Section 205. All material from the existing bridge shall become the property of the Contractor.

MAINTENANCE OF TRAFFIC: See Roadway Plans.



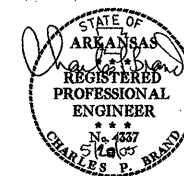
Level Grade  
@ Deck Elev. 251.50 (At working point, see Dwg. No. 47482.)



NOTE: For soil boring data and hydraulic data, see Dwg. No. 47478.

NOTE: For Stage Construction Sequence, see Dwg. No. 47479.

NOTE: Construction of embankments at bridge ends may require the use of sheet piling or other shoring methods. This shall not be paid for directly, but shall be considered subsidiary to other payment items.



SHEET 1 OF 2  
LAYOUT OF BRIDGE OVER  
JOHNSON CREEK DITCH  
PARAGOULD - BIG SLOUGH DITCH (F)  
GREENE COUNTY  
ROUTE 412 SEC. 9  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: K.W.Y. DATE: 9-20-04 FILENAME: bl00566x11.dgn  
CHECKED BY: MAH DATE: 4-29-05 SCALE: 1" = 20'  
DESIGNED BY: E.W.Y. DATE: 8-04  
BRIDGE NO. 07038 DRAWING NO. 47477



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100566	80	223
				07039	LAYOUT			47491

#### GENERAL NOTES

BENCH MARK: #918, southwest corner of existing bridge, 35.00' Rt. of Sta. 257+43.65, Elev. 249.20.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2003 edition) with applicable supplemental specifications and special provisions. Section and Subsection refer to the Standard Construction Specification unless otherwise noted in the Plans.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2004 Edition).

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: 3

#### MATERIALS AND STRENGTHS:

Class (SAC) Concrete (superstructure)	f'c = 4,000 psi
Class S Concrete (substructure)	f'c = 3,500 psi
Reinforcing Steel (AASHTO M31 or M53, Gr. 60)	f <sub>y</sub> = 60,000 psi
Structural Steel (AASHTO M270, Gr. 36)	F <sub>y</sub> = 36,000 psi
Structural Steel (AASHTO M270, Gr. 50W)	F <sub>y</sub> = 50,000 psi

BORING LOGS: Boring logs may be obtained from the Programs and Contracts Division.

CONCRETE FILLED STEEL SHELL PILING: Piling for Bents 1 & 4 shall be 16" diameter concrete filled steel shell piles and shall be driven to a minimum safe bearing capacity of 30 tons per pile. Piling for Bents 2 & 3 shall be 18" diameter concrete filled steel shell piles and shall be driven to a minimum safe bearing capacity of 50 tons per pile. All piles shall be driven with an approved air, steam, or diesel hammer. All piling shall be driven to a minimum tip elevation of 208.0 or lower. Piling in end bents shall be driven after embankment to bottom of cap is in place. Length of piling shown are assumed for estimating quantities only. Actual lengths to be determined in the field. No payment will be made for cut-off or build-up. Test piles are not required but may be driven for the contractor's information in accordance with Subsection 805.08(g).

Water Jetting or other methods approved by the Engineer may be needed to achieve the minimum pile penetration. Any cost associated with achieving the minimum pile penetration shall be included in the item "Steel Shell Piling (16" Dia.)" and "Steel Shell Piling (18" Dia.)".

PREBORING: Preboring is required for all piling at Bents 1 and 4 to a depth of 10' below bottom of cap. Prebored holes shall be 6" greater than the diameter of the pile and shall be backfilled with loose sand after piles are in place. The Contractor shall be responsible for keeping prebored holes free of debris prior to backfilling, which may require the use of temporary casings or other methods. Preboring and temporary casing if necessary will not be paid for directly but will be considered subsidiary to "Steel Shell Piling (16" Dia.)".

PILE ENCASEMENT: Pile encasement for Bents 2 & 3 shall extend 3 feet into the ground and to the bottom of the cap. See Dwg. No. 47488 for additional details.

PIPE UNDERDRAIN: One Pipe Underdrain with Outlet Protectors shall be installed behind each Bridge End in accordance with Section 611. Pipe Underdrains will not be paid for directly but shall be considered subsidiary to "Unclassified Excavation".

BRIDGE DECK: The concrete bridge deck shall be given a fine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

#### DETAIL DRAWINGS:

DETAIL DRAWINGS:	DRAWING NO.
End Bents	47494
Int. Bents	47495
90' Integral W-Beam Unit	47496-49501
Elastomeric Bearings	47489
Type C Approach Gutters	2016C
Type Special Approach Slab	47490
Concrete Filled Steel Shell Piles	47488

EXISTING BRIDGE: The existing three-span bridge, No. 05301, (L.M. 5.52) is 75' long and 46.3' wide and consists of a concrete superstructure supported by a concrete pile substructure.

REMOVAL AND SALVAGE: After Stage I of the new bridge is open to traffic, the existing bridge, No. 05301, shall be removed in accordance with Section 205. All material from the existing bridge shall become the property of the Contractor.

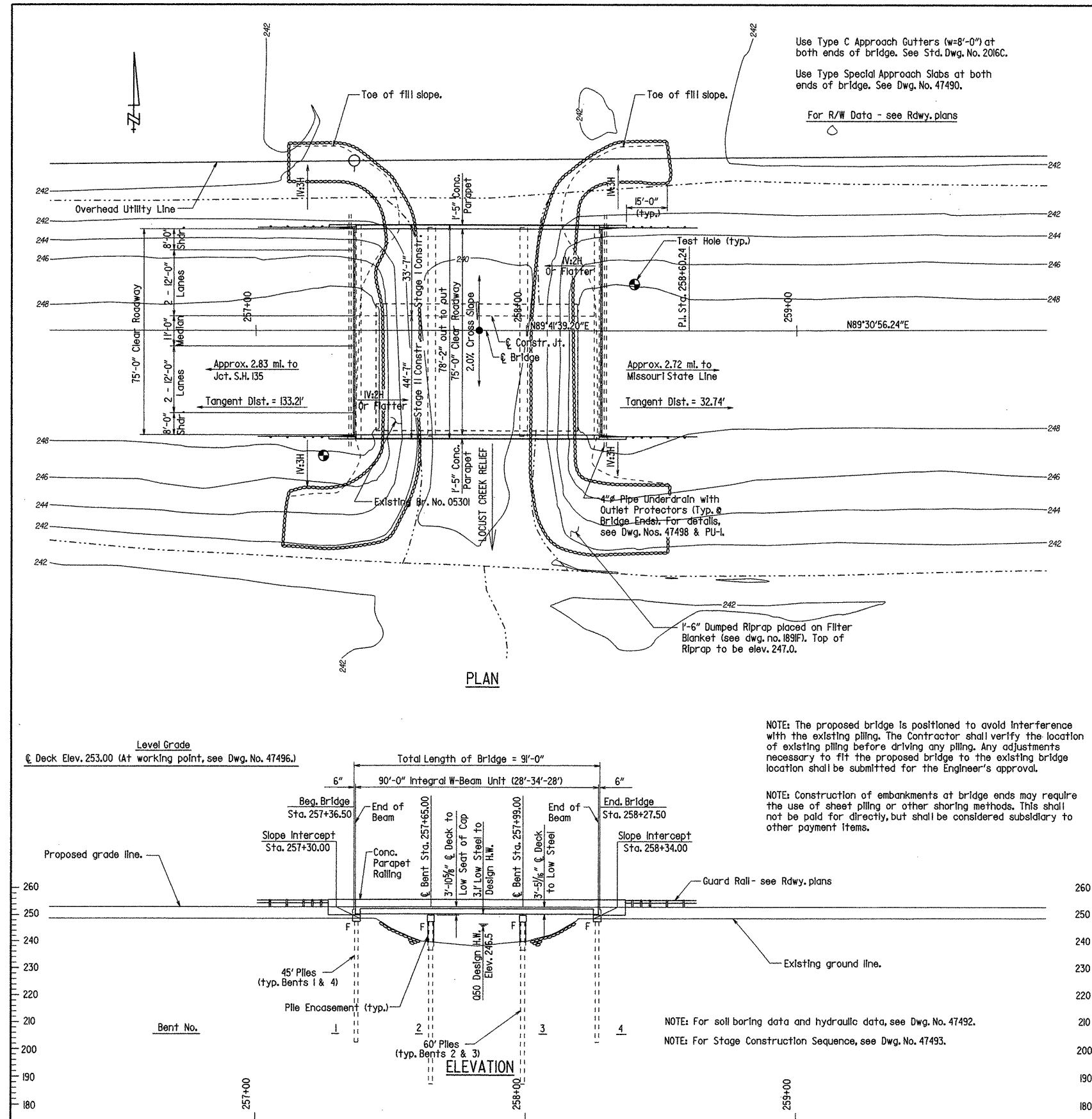
MAINTENANCE OF TRAFFIC: See Roadway Plans.



BRIDGE ENGINEER

### SHEET 1 OF 2 LAYOUT OF BRIDGE OVER LOCUST CREEK RELIEF PARAGOULD - BIG SLOUGH DITCH (F) GREENE COUNTY ROUTE 412 SEC. 9 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.

DRAWN BY: K.W.Y. DATE: 9-20-04 FILENAME: bl00566x2.11.dgn  
CHECKED BY: M.H. DATE: 4-28-05 SCALE: 1" = 20'  
DESIGNED BY: E.W.V. DATE: 8-04  
BRIDGE NO. 07039 DRAWING NO. 47491





DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						100566	91	223
						07040	LAYOUT	47502

# GENERAL NOTES

BENCH MARK: \*22, AHTD aluminum cap and rebar, 18.09' Lt. of Sta. 269+06.00, Elev. 249.31.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2003 edition) with applicable supplemental specifications and special provisions. Section and Subsection refer to the Standard Construction Specification unless otherwise noted in the Plans.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2004 Edition).

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: 3

MATERIALS AND STRENGTHS:

Class SAE Concrete (superstructure)  $f'_c = 4,000$  psi  
Class S Concrete (substructure)  $f'_c = 3,500$  psi  
Reinforcing Steel (AASHTO M31 or M53, Gr. 60)  $f_y = 60,000$  psi  
Structural Steel (AASHTO M270, Gr. 36)  $F_y = 36,000$  psi  
Structural Steel (AASHTO M270, Gr. 50W)  $F_y = 50,000$  psi

BORING LOGS: Boring logs may be obtained from the Programs and Contracts Division.

CONCRETE FILLED STEEL SHELL PILING: Piling for Bents 1 & 4 shall be 16" diameter concrete filled steel shell piles and shall be driven to a minimum safe bearing capacity of 40 tons per pile. Piling for Bents 2 & 3 shall be 20" diameter concrete filled steel shell piles and shall be driven to a minimum safe bearing capacity of 65 tons per pile. All piles shall be driven with an approved air, steam, or diesel hammer. Drive all piles to a minimum penetration of 20' below natural ground. Piling in end bents shall be driven after embankment to bottom of cap is in place. Length of piling shown are assumed for estimating quantities only. Actual lengths to be determined in the field. No payment will be made for cut-off or build-up. Test piles are not required but may be driven for the contractor's information in accordance with Subsection 805.08(g).

PREBORING: Preboring is required for all piling at Bents 1 and 4 to a depth of 10' below bottom of cap. Prebored holes shall be 6" greater than the diameter of the pile and shall be backfilled with loose sand after piles are in place. The Contractor shall be responsible for keeping prebored holes free of debris prior to backfilling, which may require the use of temporary casings or other methods. Preboring and temporary casing if necessary will not be paid for directly but will be considered subsidiary to "Steel Shell Piling (16" Dia.)."

PILE ENCASEMENT: Pile encasement for Bents 2 & 3 shall extend 3 feet into the ground and to the bottom of the cap. See Dwg. No. 47488 for additional details.

PIPE UNDERDRAIN: One Pipe Underdrain with Outlet Protectors shall be installed behind each Bridge End in accordance with Section 611. Pipe Underdrains will not be paid for directly but shall be considered subsidiary to "Unclassified Excavation".

BRIDGE DECK: The concrete bridge deck shall be given a fine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

DETAIL DRAWINGS:

DRAWING NO.  
End Bents 47505  
Int. Bents 47506  
142" Integral W-Beam Unit 47507-47512  
Elastomeric Bearings 47489  
Type C Approach Gutters 2016C  
Type Special Approach Slab 47490  
Concrete Filled Steel Shell Piles 47488

EXISTING BRIDGE: The existing three-span bridge, No. 05268, (L.M. 5.71) is 132' long and 46.3' wide and consists of a concrete superstructure supported by a concrete pile substructure.

REMOVAL AND SALVAGE: After Stage I of the new bridge is open to traffic, the existing bridge, No. 05268, shall be removed in accordance with Section 205. All material from the existing bridge shall become the property of the Contractor.

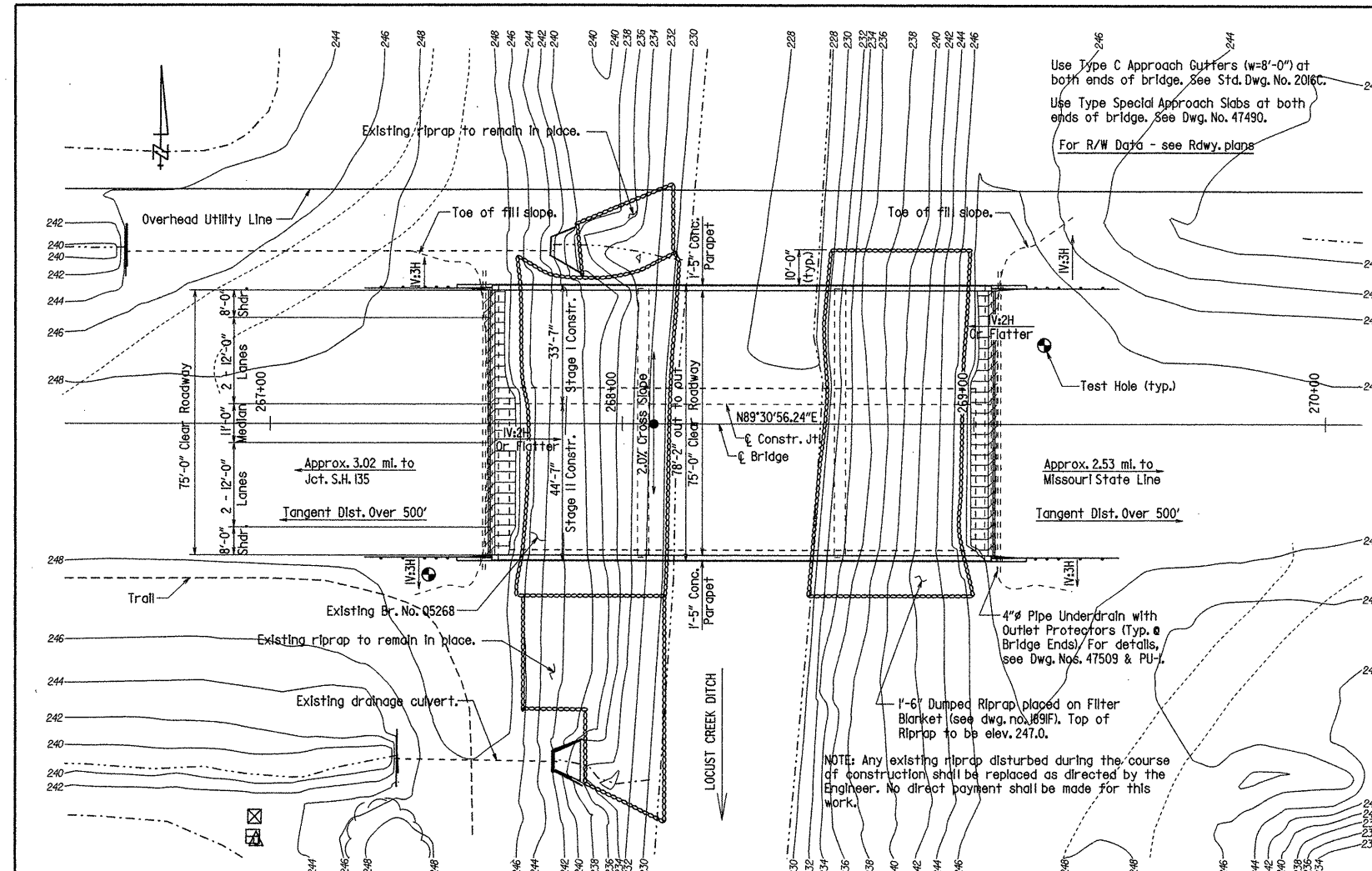
MAINTENANCE OF TRAFFIC: See Roadway Plans.



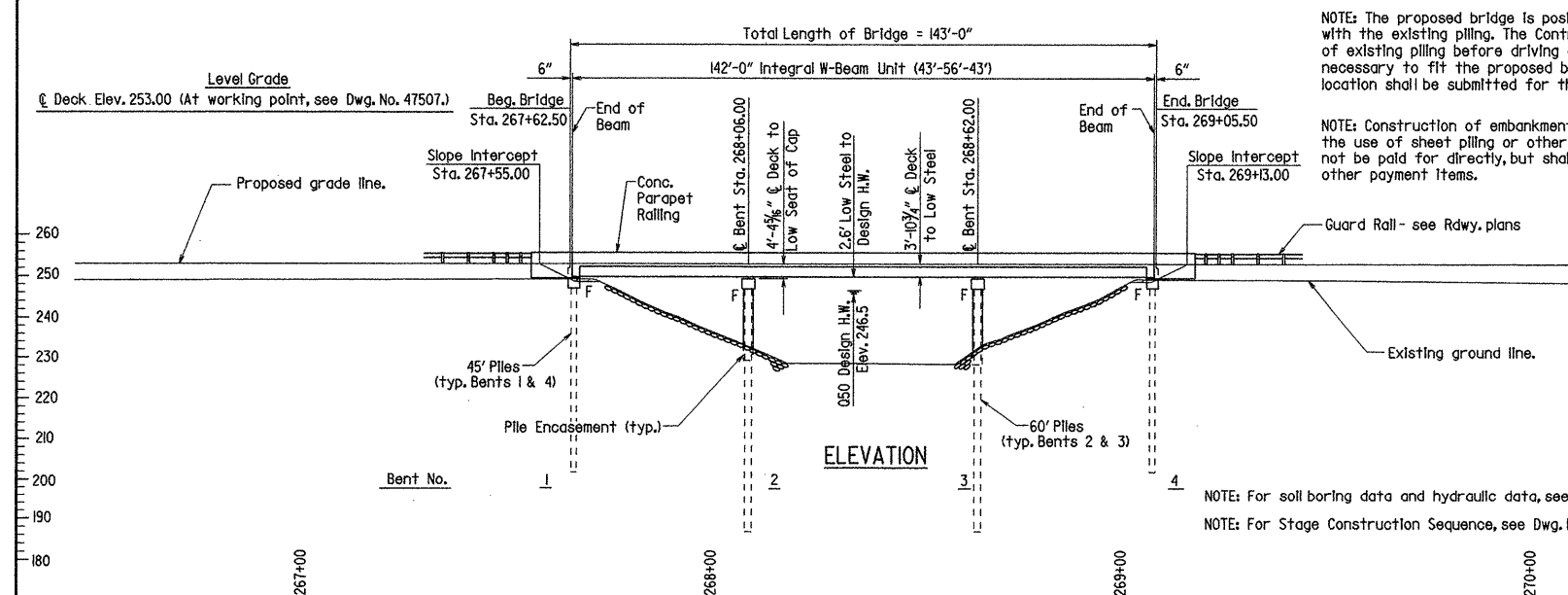
BRIDGE ENGINEER

SHEET 1 OF 2  
LAYOUT OF BRIDGE OVER  
LOCUST CREEK DITCH  
PARAGOULD - BIG SLOUGH DITCH (F)  
GREENE COUNTY  
ROUTE 412 SEC. 9  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: K.W.Y. DATE: 9-20-04 FILENAME: b100566x3 11.dgn  
CHECKED BY: MHH DATE: 4-25-05 SCALE: 1" = 20'  
DESIGNED BY: K.W.Y. DATE: 8-04  
BRIDGE NO. 07040 DRAWING NO. 47502



## PLAN



## ELEVATION

NOTE: The proposed bridge is positioned to avoid interference with the existing piling. The Contractor shall verify the location of existing piling before driving any piling. Any adjustments necessary to fit the proposed bridge to the existing bridge location shall be submitted for the Engineer's approval.

NOTE: Construction of embankments at bridge ends may require the use of sheet piling or other shoring methods. This shall not be paid for directly, but shall be considered subsidiary to other payment items.

NOTE: For soil boring data and hydraulic data, see Dwg. No. 47503.

NOTE: For Stage Construction Sequence, see Dwg. No. 47504.



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100566	102	223
				07041	LAYOUT			4753

# GENERAL NOTES

BENCH MARK: \*919 southwest corner of existing bridge, 35.01' Rt. of Sta. 285+72.32, Elev. 247.48.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2003 edition) with applicable supplemental specifications and special provisions. Section and Subsection refer to the Standard Construction Specification unless otherwise noted in the Plans.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2004 Edition).

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: 3

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)  $f'_c = 4,000$  psi  
Class S Concrete (substructure)  $f'_c = 3,500$  psi  
Reinforcing Steel (AASHTO M31 or M53, Gr. 60)  $f_y = 60,000$  psi  
Structural Steel (AASHTO M270, Gr. 36)  $F_y = 36,000$  psi  
Structural Steel (AASHTO M270, Gr. 50W)  $F_y = 50,000$  psi

BORING LOGS: Boring logs may be obtained from the Programs and Contracts Division.

CONCRETE FILLED STEEL SHELL PILING: Piling for Bents 1 & 4 shall be 16" diameter concrete filled steel shell piles and shall be driven to a minimum safe bearing capacity of 30 tons per pile. Piling for Bents 2 & 3 shall be 18" diameter concrete filled steel shell piles and shall be driven to a minimum safe bearing capacity of 50 tons per pile. All piles shall be driven with an approved air, steam, or diesel hammer. All piling shall be driven to a minimum tip elevation of 220.0 or lower. Piling in end bents shall be driven after embankment to bottom of cap is in place. Length of piling shown are assumed for estimating quantities only. Actual lengths to be determined in the field. No payment will be made for cut-off or build-up. Test piles are not required but may be driven for the contractor's information in accordance with Subsection 805.08(g).

Water Jetting or other methods approved by the Engineer may be needed to achieve the minimum pile penetration. Any cost associated with achieving the minimum pile penetration shall be included in the Item "Steel Shell Piling (16" Dia.)" and "Steel Shell Piling (18" Dia.)".

PREBORING: Preboring is required for all piling at Bents 1 and 4 to a depth of 10' below bottom of cap. Prebored holes shall be 6" greater than the diameter of the pile and shall be backfilled with loose sand after piles are in place. The Contractor shall be responsible for keeping prebored holes free of debris prior to backfilling, which may require the use of temporary casings or other methods. Preboring and temporary casing if necessary will not be paid for directly but will be considered subsidiary to "Steel Shell Piling".

PILE ENCASEMENT: Pile encasement for Bents 2 & 3 shall extend 3 feet into the ground and to the bottom of the cap. See Dwg. No. 47488 for additional details.

PIPE UNDERDRAIN: One Pipe Underdrain with Outlet Protectors shall be installed behind each Bridge End in accordance with Section 611. Pipe Underdrains will not be paid for directly but shall be considered subsidiary to "Unclassified Excavation".

BRIDGE DECK: The concrete bridge deck shall be given a fine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

DETAIL DRAWINGS:

DETAIL DRAWINGS:	DRAWING NO.
End Bents	47494
Int. Bents	47495
90' Integral W-Beam Unit	47496-49501
Elastomeric Bearings	47489
Type C Approach Gutters	2016C
Type Special Approach Slab	47490
Concrete Filled Steel Shell Piles	47488

EXISTING BRIDGE: The existing three-span bridge, No. 05269, (L.M. 6.05) is 75' long and 46.3' wide and consists of a concrete superstructure supported by a concrete pile substructure.

REMOVAL AND SALVAGE: After Stage I of the new bridge is open to traffic, the existing bridge, No. 05269, shall be removed in accordance with Section 205. All material from the existing bridge shall become the property of the Contractor.

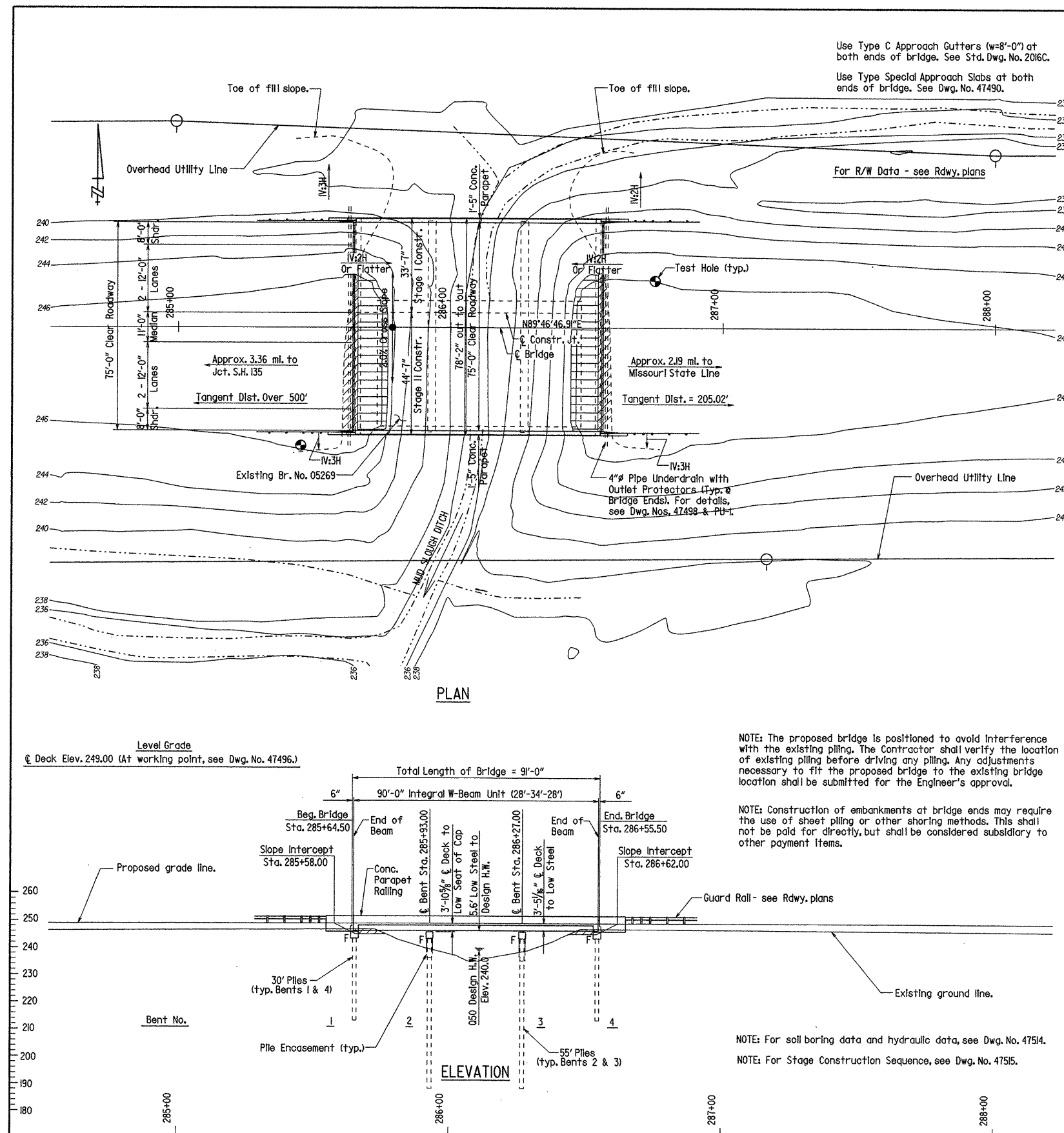
MAINTENANCE OF TRAFFIC: See Roadway Plans.



BRIDGE ENGINEER

SHEET 1 OF 2  
LAYOUT OF BRIDGE OVER  
MUD SLOUGH DITCH  
PARAGOULD - BIG SLOUGH DITCH (F)  
GREENE COUNTY  
ROUTE 412 SEC. 9  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: K.W.Y. DATE: 9-20-04 FILENAME: b100566x411.dgn  
CHECKED BY: M.H. DATE: 4-22-05 SCALE: 1" = 20'  
DESIGNED BY: K.W.Y. DATE: 9-20-04  
BRIDGE NO. 07041 DRAWING NO. 47513





Use Type C ("w" = 8'-0") Approach Gutters with Type Special Approach Slabs at both bridge ends.  
See Drwg. No. 2016C and 45968  
For R/W and Guardrail Details - See Rdwy. Plans.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100478	40	122
						06972	LAYOUT	45953

#### GENERAL NOTES

BENCH MARK: 18" Oak 165.69' Rt. Sta. 137+32.845 Elevation 241.47.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable supplemental specifications and special provisions. Unless otherwise noted in the plans, Section and subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges (2002 edition) with current interim specifications.

LIVE LOADING: HS20 METHOD OF DESIGN: Load Factor  
SEISMIC PERFORMANCE CATEGORY: C

#### MATERIALS AND STRENGTHS:

Class (SAE) Concrete (superstructure)  $f'c = 4,000$  psi  
Class S Concrete (substructure)  $f'c = 3,500$  psi  
Reinforcing Steel (AASHTO M31 or M53, GR. 60)  $F_y = 60,000$  psi  
Structural Steel (AASHTO M270, Gr. 36)  $F_y = 36,000$  psi  
Structural Steel (AASHTO M270, Gr. 50W)  $F_y = 50,000$  psi

BORING LOGS: Boring logs may be obtained from the Programs and Contracts Division.

STEEL SHELL PILING: End bent piling shall be 16" diameter concrete filled steel shells and shall be driven with an approved air, steam, or diesel hammer to a minimum ultimate bearing capacity of 152 tons per pile. Drive one 80' test pile in Bent 1 and one 55' test pile in Bent 8.

Piling in Bents 2 through 7 shall be 24" diameter concrete filled steel shells and shall be driven with an approved air, steam, or diesel hammer to a minimum ultimate bearing capacity of 220 tons per pile. All 24" diameter piles shall have an approved conical point and alternate tips will not be permitted. Drive one 80' test pile in Bents 3 & 6.

Piling in end bents shall be driven after embankment to bottom of cap is in place. Piling in Bents 1 through 7 shall have a tip elevation of 170.0 or lower. Piling in Bent 8 shall have a tip elevation of 195.5 or lower. Lengths of piling shown are assumed for estimating quantities only. Actual piling lengths will be determined in the field. Preboring or jetting may be required to obtain the required tip elevation and shall not be paid for directly but shall be considered subsidiary to "Steel Shell Piling".

DRIVING SYSTEM: The driving system approval and ultimate bearing capacity determination shall be based on the requirements of Section 805.09(b) of the Standard Specifications (Method B, "Wave Equation Analysis"). It is estimated that the minimum required rated energy of the hammer will be 17,000 foot pounds per blow for 16" diameter piling and 28,000 foot pounds per blow for 24" diameter piling.

PILE ENCASEMENT: Pile encasement for Bents 2 through 7 shall extend 3' into the ground and to the bottom of cap. See Drawing Number 45958 for additional information.

BRIDGE DECK: The concrete bridge deck shall be given a fine finish as specified for final finishing in subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

#### DETAIL DRAWINGS:

Soil Borings 45954  
End Bents 45955 & 45957  
Intermediate Bents 45956  
460' Cont. W-Beam Unit 45959 - 45966  
Elastomeric Bearings 45967

EXISTING BRIDGE: Existing Bridge No. 03037 (Log Mile 7.65) is 26' wide and 450' long and consists of 14 - 42' steel beam spans with a concrete deck. The spans are supported by a concrete substructure. The existing bridge is located approximately 67 feet downstream from the proposed new bridge. (Dwg. Nos. 5453, 5453A & 8930)

REMOVAL AND SALVAGE: After the new bridge is open to traffic, existing bridge No. 03037 shall be removed in accordance with Section 205. All materials from the existing bridge shall become the property of the Contractor.

#### HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	** DISCHARGE	*NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	25200	245.6	245.6
Base	100	28250	246.2	246.2
Extreme	500	32000	246.8	246.8
Overtopping	> 500	-	-	-

\* Unconstricted water surface without structure or roadway approaches.

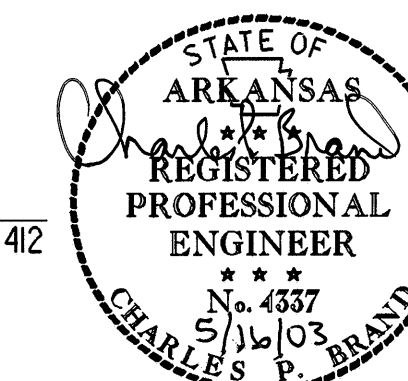
Drainage area = 211 square miles.  
(Includes St. Francis River)

Historical H.W. Elev. = 245.9 ft.

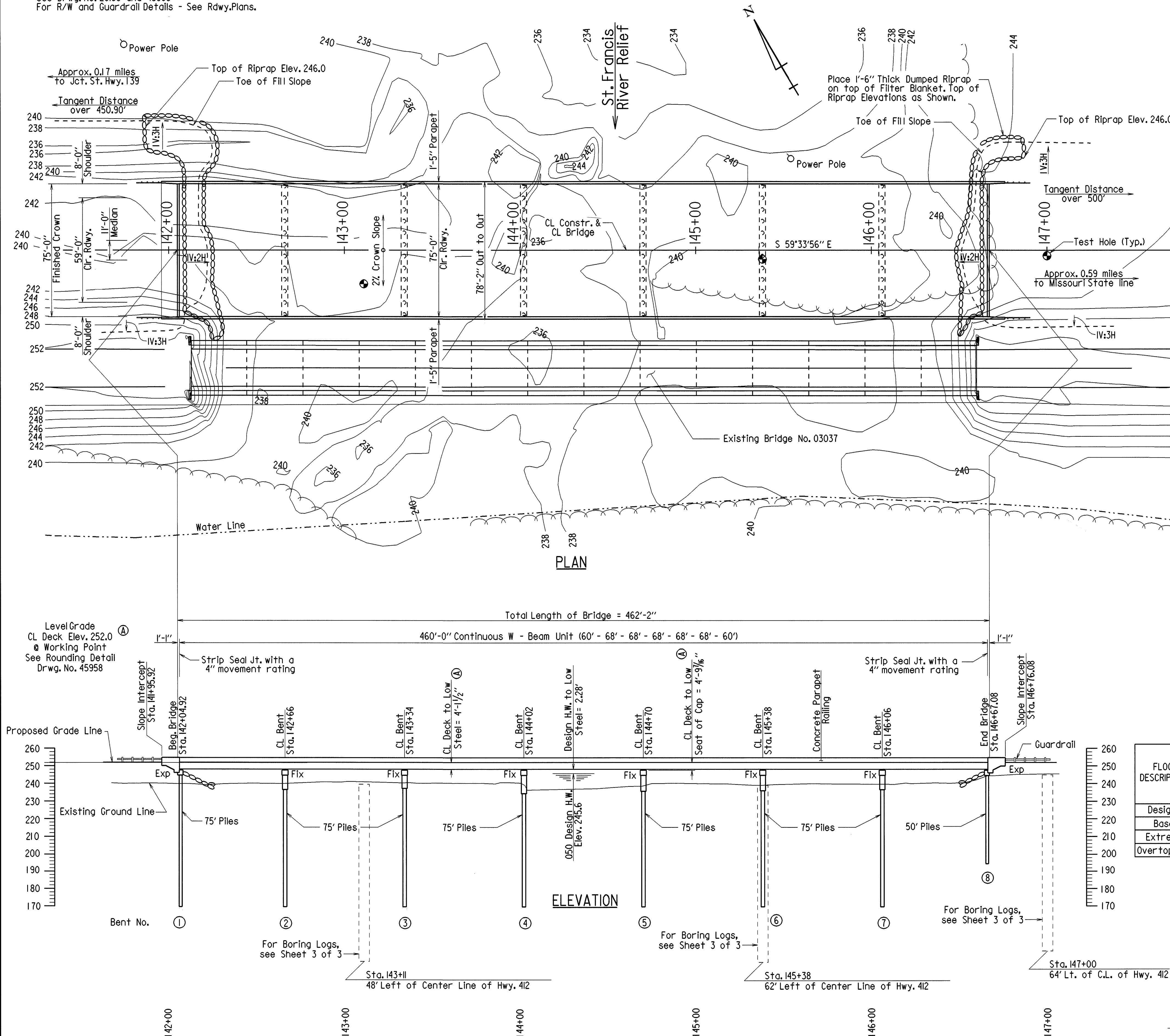
\*\* Discharges shown are those of the St. Francis River as a whole. It is estimated that about 20% of these flows pass through the St. Francis Relief Bridge.

(SHEET 2 OF 3)  
LAYOUT OF BRIDGE OVER  
ST. FRANCIS RELIEF  
ST. FRANCIS RIVER RELIEF & BIG SLOUGH  
STRS. & APPRS.(F)  
GREENE COUNTY  
ROUTE 412 SEC. 9  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: SAT DATE: 5/9/02 FILENAME: B100478.LI  
CHECKED BY: JAC DATE: 4/25/03 SCALE: 1"=30'  
DESIGNED BY: SAT DATE: 9/10/02  
BRIDGE NO. 06972 DRAWING NO. 45953



BRIDGE ENGINEER





Use Type C ("w" = 8'-0") Approach Gutters with Type Special Approach Slabs at both bridge ends.  
See Drwg. No. 2016C and 45968  
For R/W and Guardrail Details - See Rdwy. Plans.

\* Install Bridge End Terminals as shown. Eliminate or modify approach curb sections to fit bridge end terminal. No payment shall be made for eliminating or modifying these curbs but shall be included in payment made for Approach Gutters (Type C).

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100478	39	122
				06971	LAYOUT		45952	

#### GENERAL NOTES

BENCH MARK: BM 44.53' Lt. Sta. 114+93.254 Elevation = 251.95

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable supplemental specifications and special provisions. Unless otherwise noted in the plans, section and subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges (2002 edition) with current interim specifications.

LIVE LOADING: HS20

METHOD OF DESIGN: Load Factor

SEISMIC PERFORMANCE CATEGORY: C

#### MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)  $f'_c = 4,000$  psi  
Class S Concrete (substructure)  $f'_c = 3,500$  psi  
Reinforcing Steel (AASHTO M31 or M53, Gr. 60)  $F_y = 60,000$  psi  
Structural Steel (AASHTO M270, Gr. 36)  $F_y = 36,000$  psi  
Structural Steel (AASHTO M270, Gr. 50W)  $F_y = 50,000$  psi

BORING LOGS: Boring logs may be obtained from the Programs and Contracts Division.

STEEL SHELL PILING: End bent piling shall be 16" diameter concrete filled steel shells and shall be driven with an approved air, steam, or diesel hammer to a minimum ultimate bearing capacity of 220 tons per pile. All 24" diameter piles shall have an approved conical point and alternate tips will not be permitted. Drive one 50' test pile in Bent 1 and one 45' test pile in Bent 8.

Piling in Bents 2 through 7 shall be 24" diameter concrete filled steel shells and shall be driven with an approved air, steam, or diesel hammer to a minimum ultimate bearing capacity of 220 tons per pile. All 24" diameter piles shall have an approved conical point and alternate tips will not be permitted. Drive one 70' test pile in Bents 3 & 6.

Piling in end bents shall be driven after embankment to bottom of cap is in place. Piling in Bent 1 shall have a tip elevation of 200.5 or lower. Piling in Bent 8 shall have a tip elevation of 205.5 or lower. Piling in Bents 2 through 7 shall have a tip elevation of 180.0 or lower. Lengths of piling shown are assumed for estimating quantities only. Actual piling lengths will be determined in the field. Preboring or jetting may be required to obtain the required tip elevation and shall not be paid for directly but shall be considered subsidiary to "Steel Shell Piling".

DRIVING SYSTEM: The driving system approval and ultimate bearing capacity determination shall be based on the requirements of Section 805.09(b) of the Standard Specifications (Method B, "Wave Equation Analysis"). It is estimated that the minimum required rated energy of the hammer will be 17,000 foot pounds per blow for 16" diameter piling and 28,000 foot pounds per blow for 24" diameter piling.

PILE ENCASEMENT: Pile encasement for Bents 2 through 7 shall extend 3' into the ground and to the bottom of cap. See Drawing Number 45958 for additional information.

BRIDGE DECK: The concrete bridge deck shall be given a fine finish as specified for final finishing in subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

#### DETAIL DRAWINGS:

DRAWING NO.  
Soil Borings 45954  
End Bents 45955 & 45957  
Intermediate Bents 45956  
460' Cont. W-Beam Unit 45959 - 45966  
Elastomeric Bearings 45967

EXISTING BRIDGE: Existing Bridge No. 01664 (Log Mile 7.09) is 26' wide and 462' long and consists of 11 - 42' steel beam spans with a concrete deck. The spans are supported by a concrete substructure. The existing bridge is located approximately 65 feet upstream from the proposed new bridge. (Dwg. Nos. 5443, 5444 & 6980)

REMOVAL AND SALVAGE: After the new bridge is open to traffic, existing bridge No. 01664 shall be removed in accordance with Section 205. All materials from the existing bridge except the Bridge End Terminals shall become the property of the Contractor.

#### HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	*NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	10330	245.7	245.8
Base	100	11610	246.3	246.4
Extreme	500	15350	246.9	247.1
Overtopping	> 500	-	-	-

\* Unconstricted water surface without structure or roadway approaches.  
Drainage area = 254 square miles.  
Historical H.W. Elev. = 246.4 ft.

(SHEET 1 OF 3)

LAYOUT OF BRIDGE OVER

BIG SLOUGH DITCH

ST. FRANCIS RIVER RELIEF & BIG SLOUGH

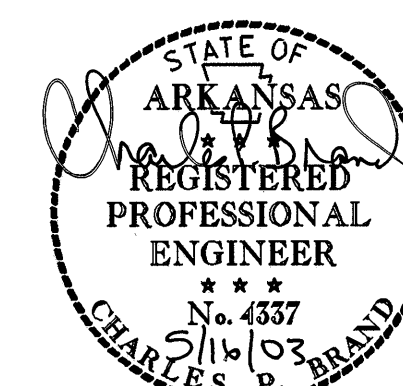
STRS. & APPRS. (F)

GREENE COUNTY

ROUTE 412 SEC. 9

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

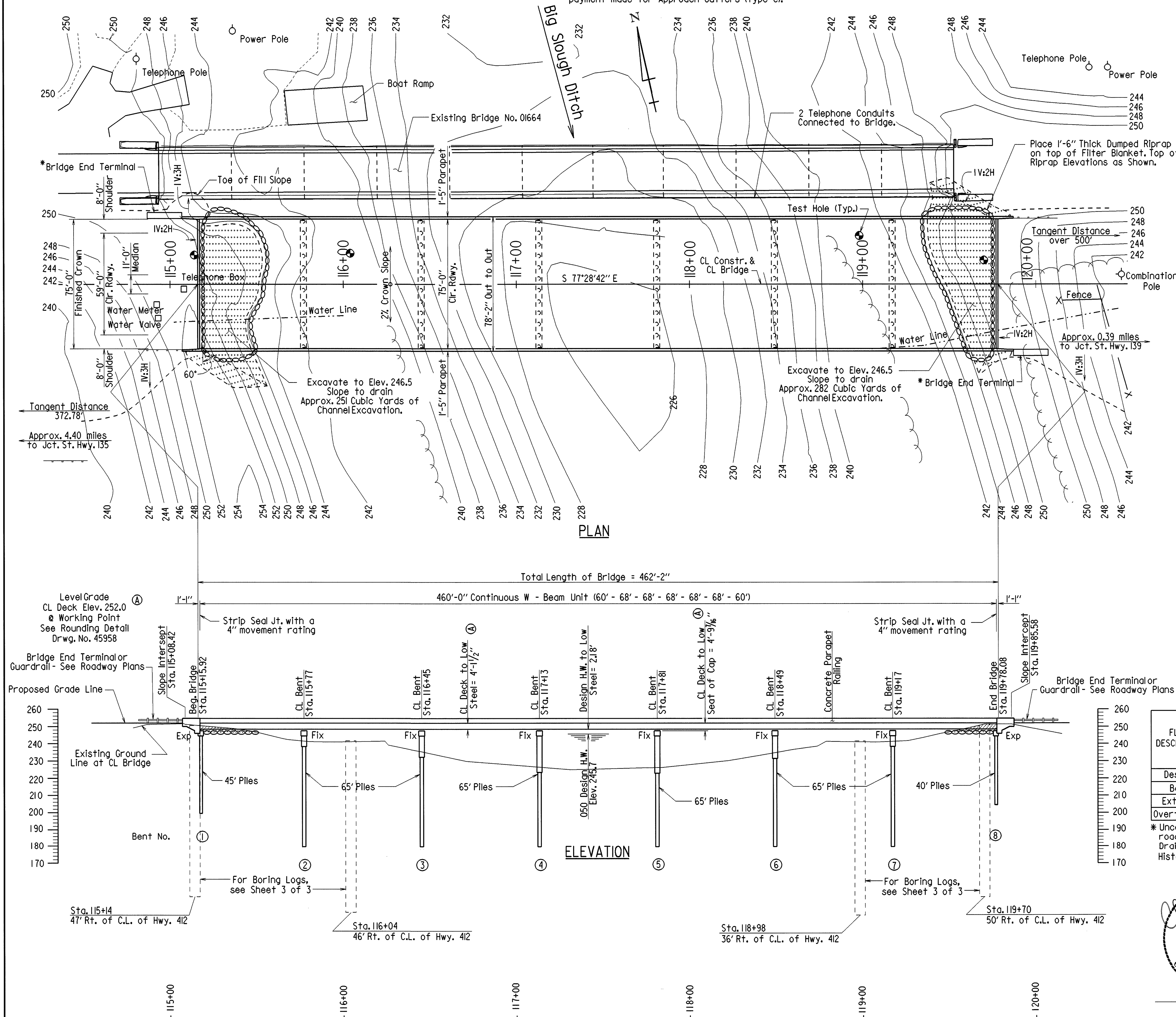


DRAWN BY: SAT DATE: 5/9/02 FILENAME: b100478.LI

CHECKED BY: JAC DATE: 6/15/03 SCALE: 1"=30'

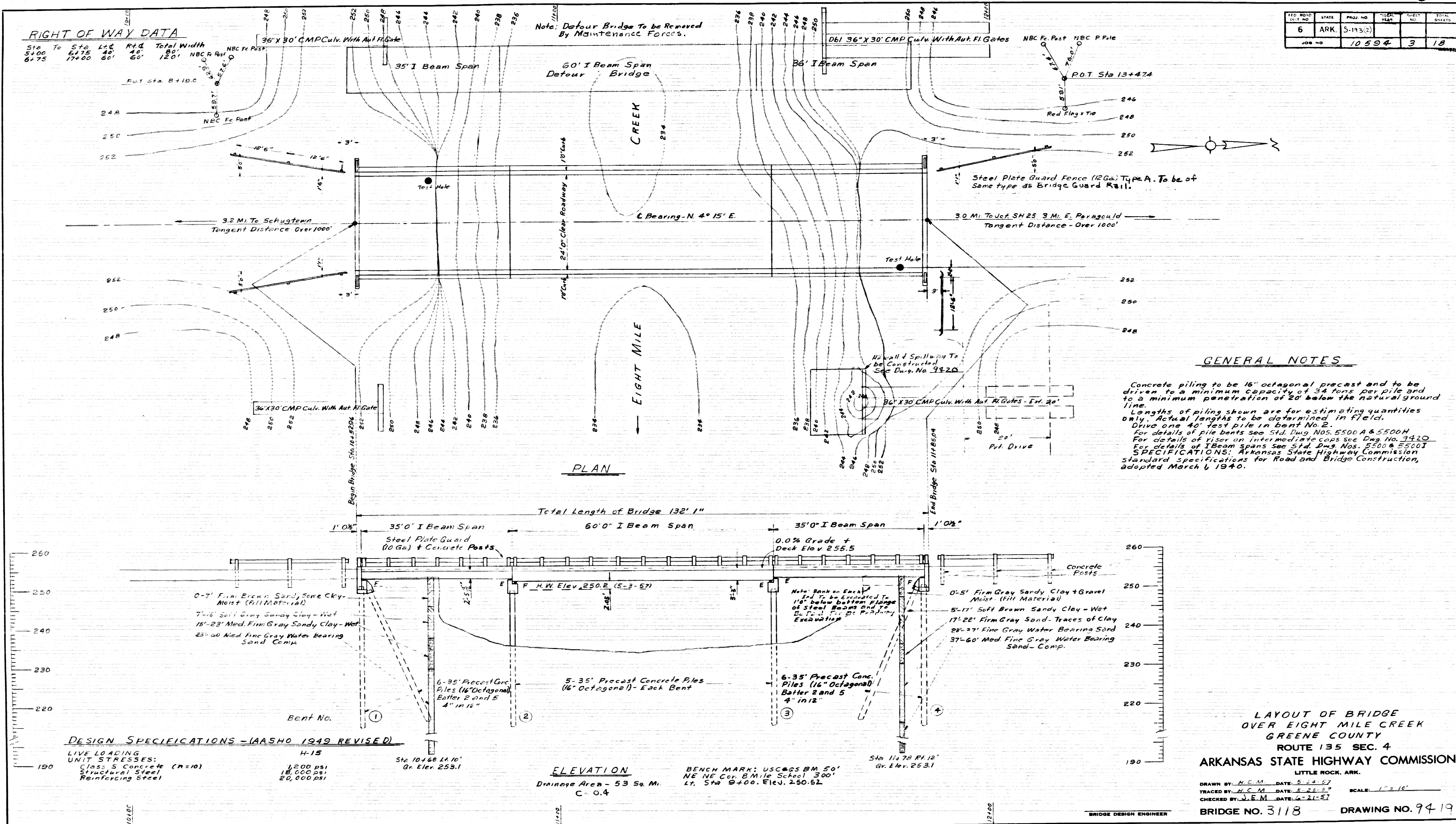
DESIGNED BY: SAT DATE: 9/10/02

BRIDGE NO. 06971 DRAWING NO. 45952



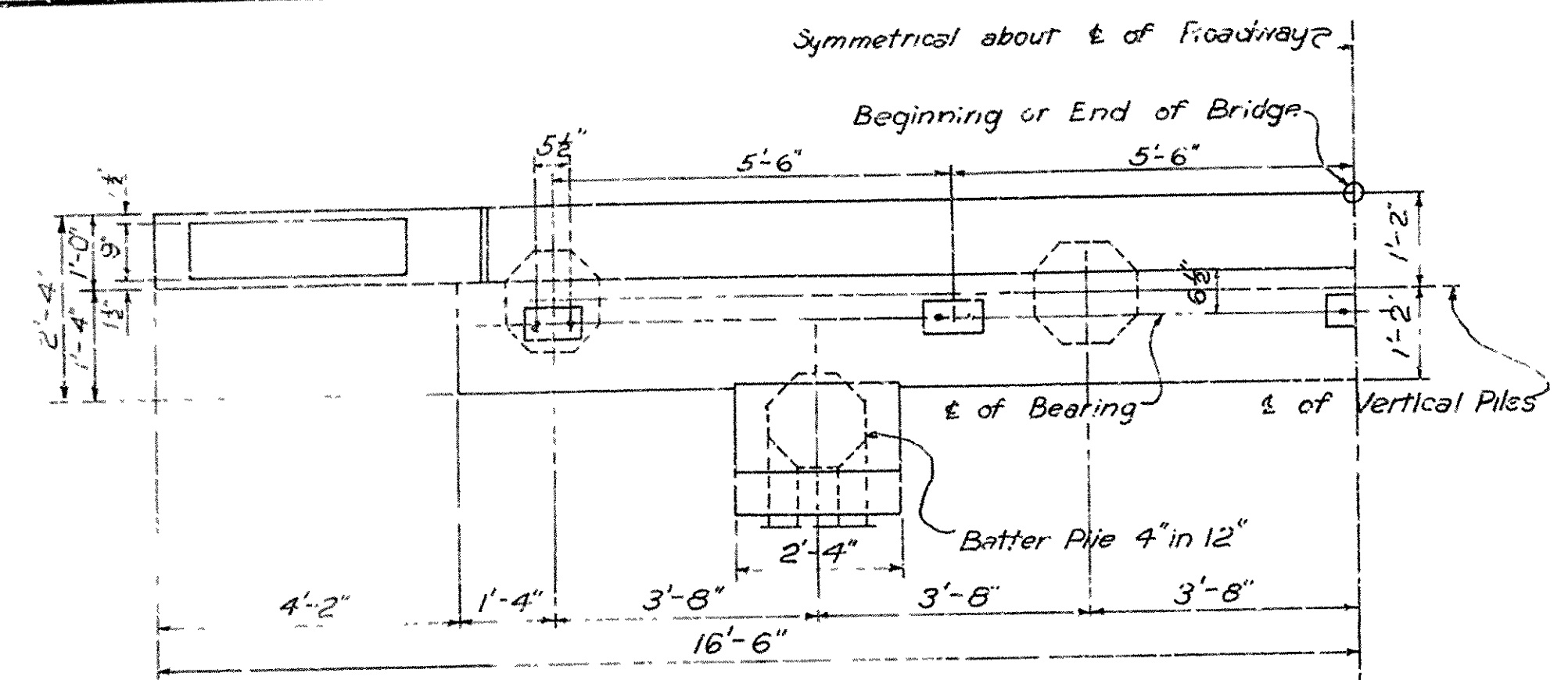


PROJ. NO.	STATE	PROJ. NO.	YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	S-113(3)		3	18
JOB NO.		10594		3	18

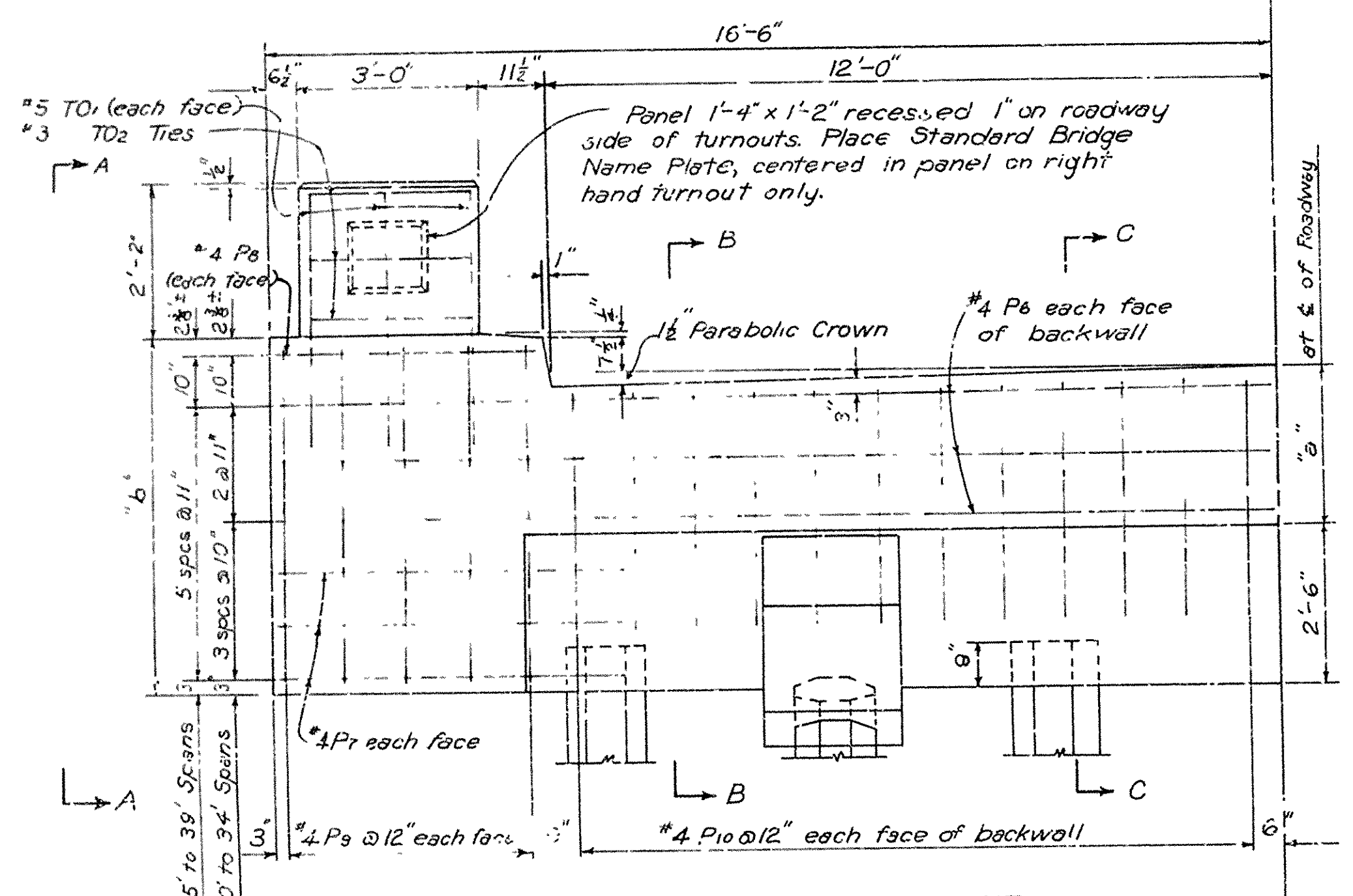




FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.				
STATE JOB NO.					

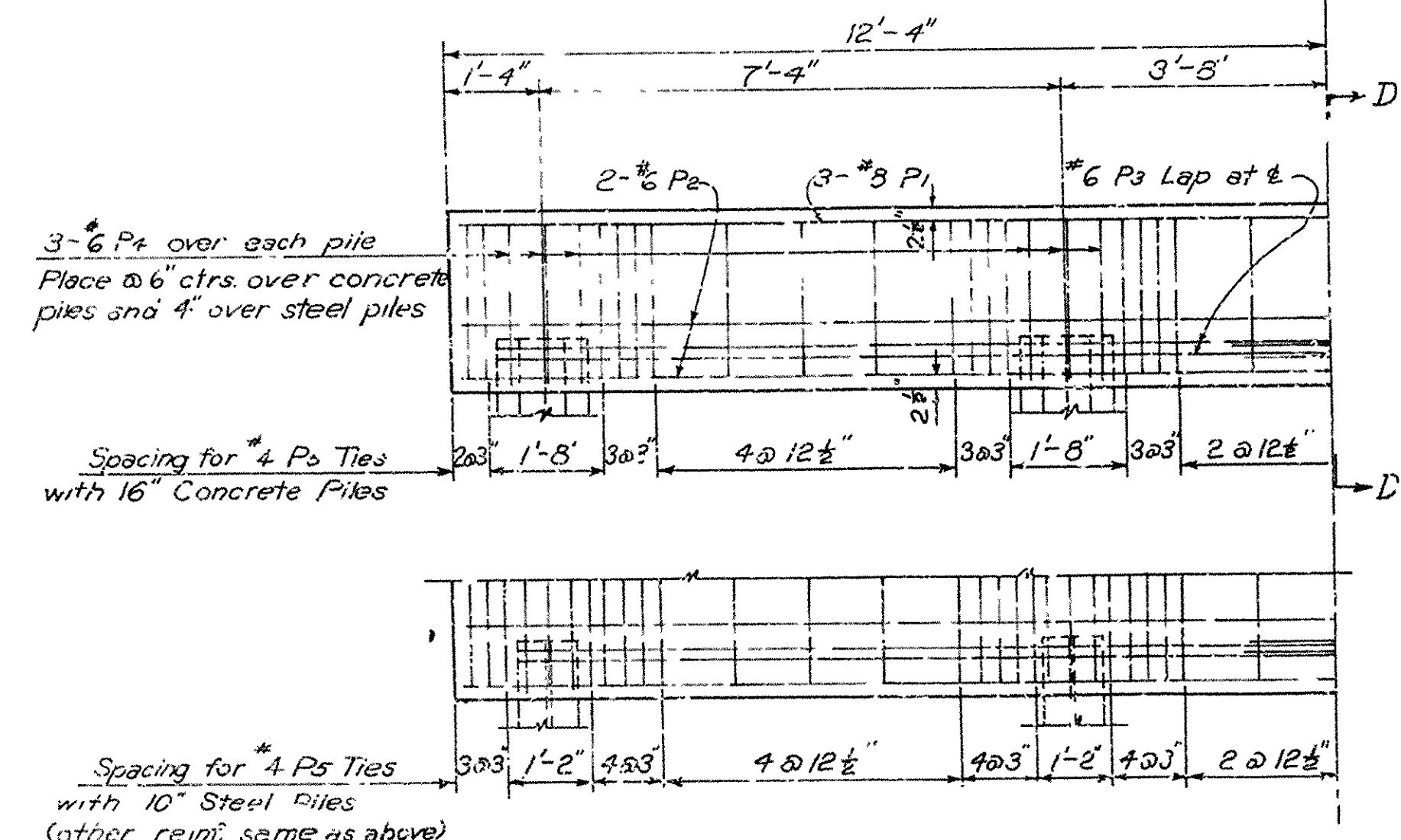


HALF PLAN OF END BENT

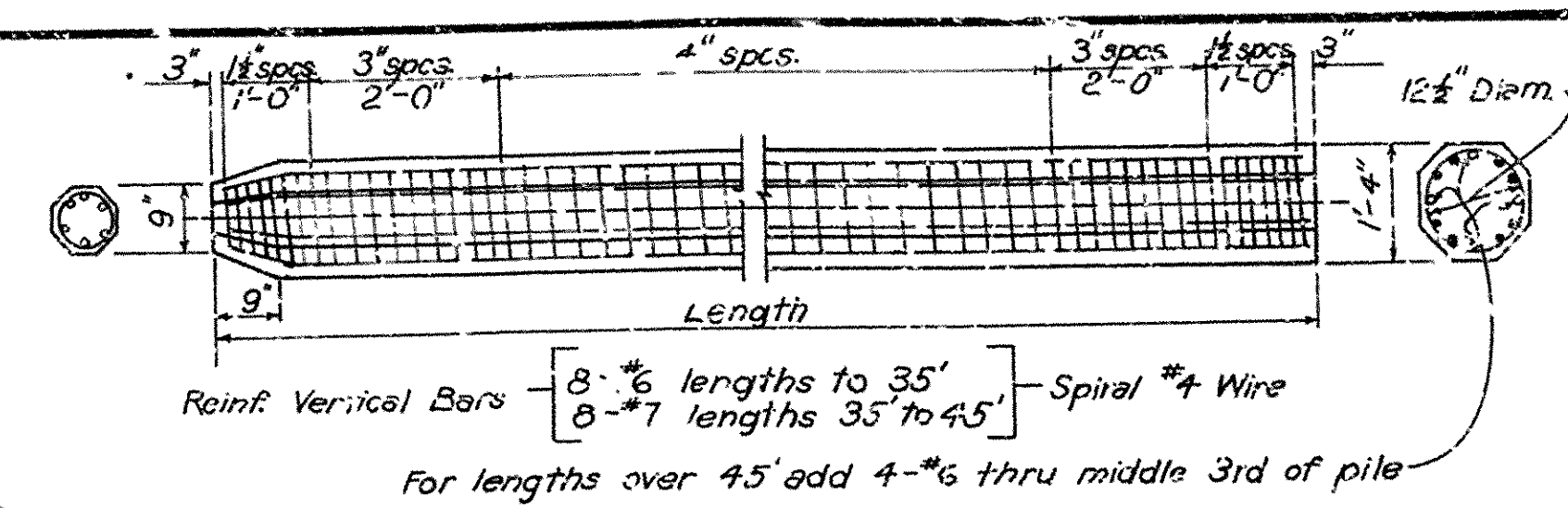


HALF ELEVATION END BENT

Cap Reinforcing same as shown for Intermediate Bent



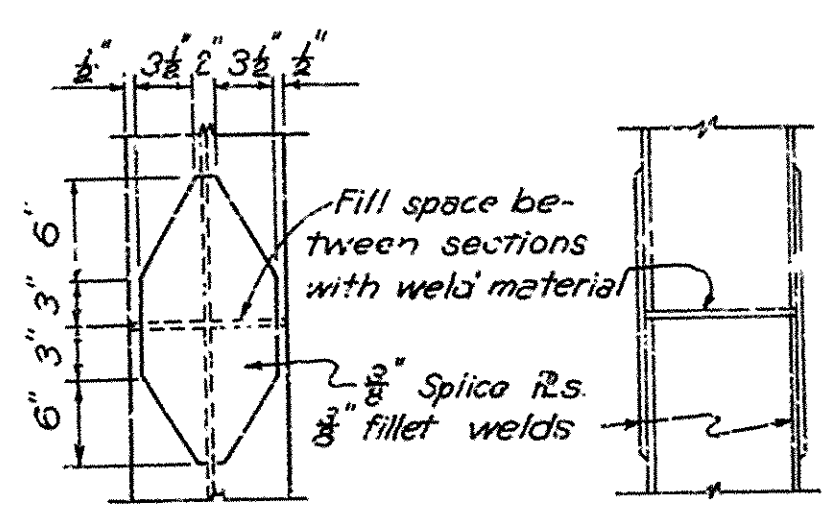
HALF ELEVATION INTERMEDIATE BENT



DETAILS OF 16" PRECAST CONCRETE PILE

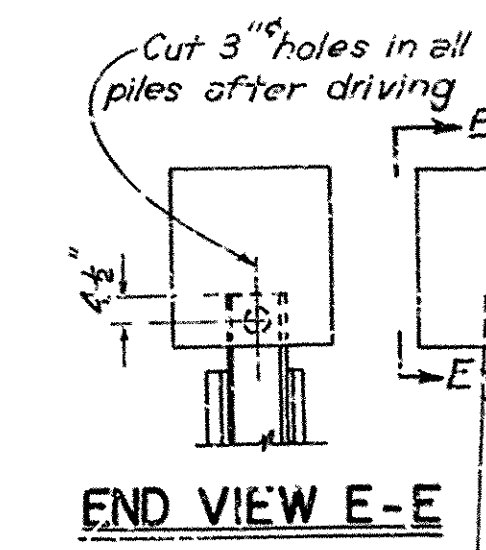
LIST OF VARIABLES

Span	Vert. Dimensions	"a"	"b"
30'	2'-5 3/8"	5'-7 3/8"	
31'	2'-5 1/8"	5'-7 1/8"	
32'	"	"	
33'	2'-5 1/2"	5'-7 1/2"	
34'	"	"	
35'	2'-8 7/8"	5'-10 7/8"	
36'	"	"	
37'	"	"	
38'	2'-0 5/8"	5'-10 5/8"	
39'	"	"	

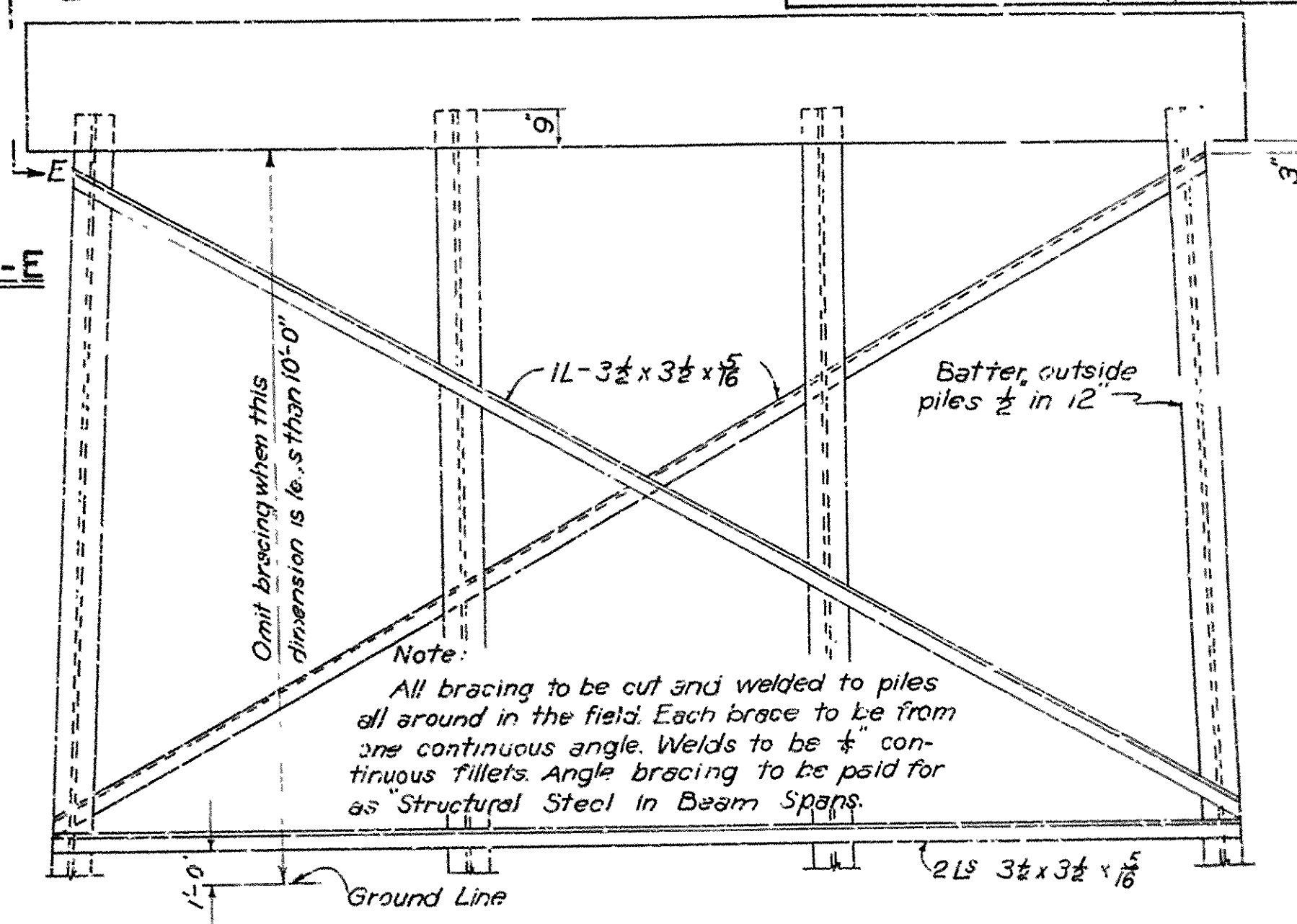


STEEL PILE SPLICE DETAILS

Generally all piles shall be driven full length and shall not be spliced except by permission of the Engineer.



END VIEW E-E



TYPICAL BRACING INTERMEDIATE BENT

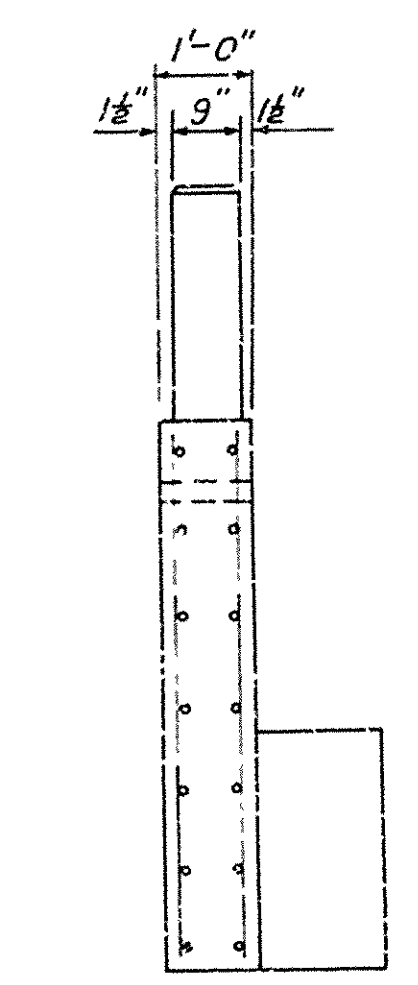
Scale 3/8"=1'-0"

LIST OF REINFORCING STEEL FOR BENTS

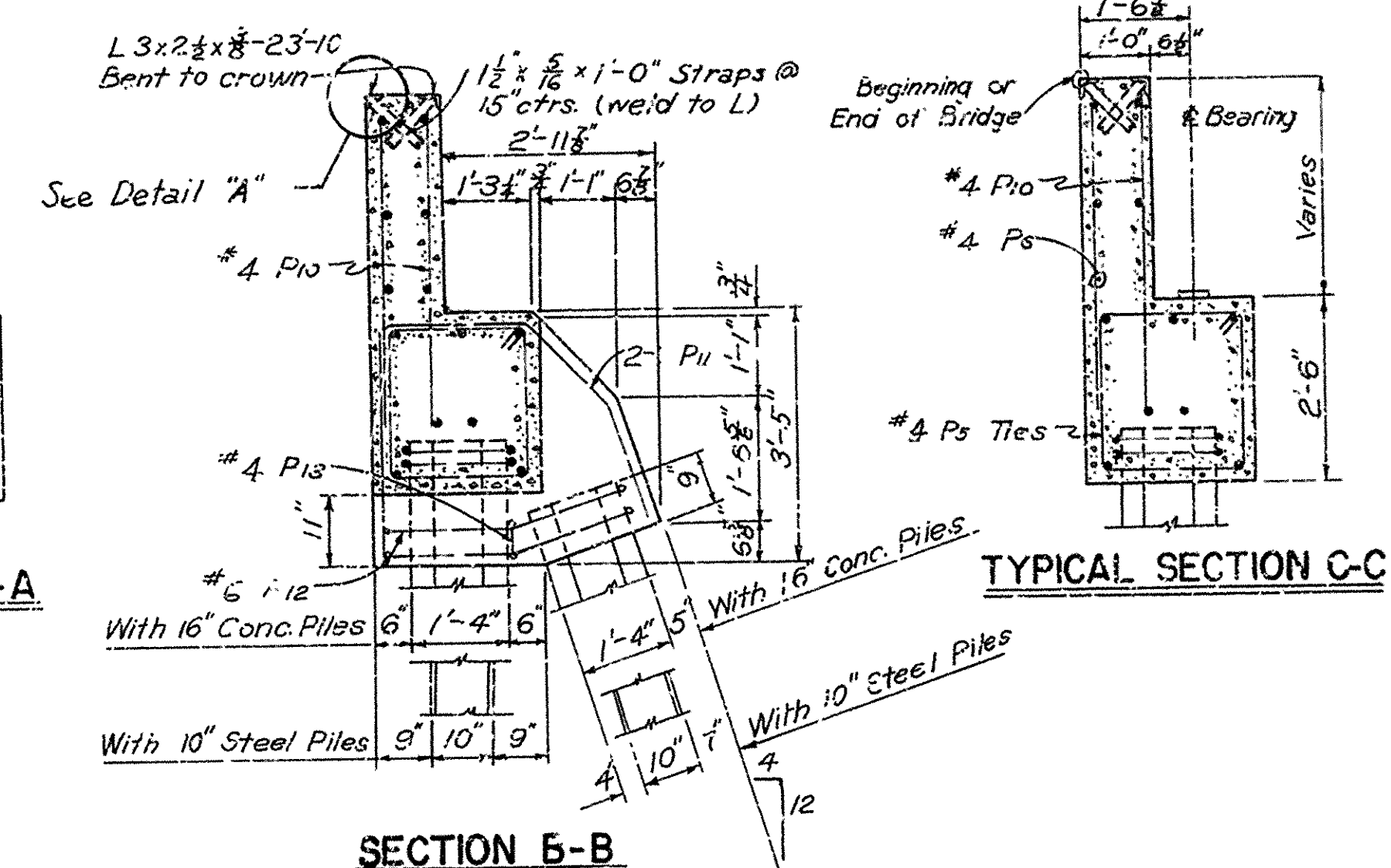
MK	SIZE	NO. IN BENTS	END	INT.	LENGTH	PIN DIA.
P1	8	3	3	24'-4"	2 1/2"	Straight
P2	6	4	4	24'-4"	2 1/2"	Straight
P3	"	4	4	27'-4"	2 1/2"	Straight
P4	"	12	12	6'-3"	2 1/2"	Straight
P5	4	37	37	8'-11"	1 1/2"	Straight
P6	"	6		32'-8"	2 1/2"	Straight
P7	"	12		5'-5"	2 1/2"	Straight
P8	"	4		4'-2"	2 1/2"	Straight
P9	"	20		5'-3" for 30'-34" Spans	2 1/2"	Straight
P10	"	48		4'-0" for 30'-34" Spans	2 1/2"	Straight
P11	"	4		4'-3" for 35'-39" Spans	2 1/2"	Straight
P12	"	4		11'-2"	2 1/2"	Straight
P13	4	2		5'-3"	1 1/2"	Straight
T01	5	12		4'-0"	5/8"	Straight
T02	3	6		6'-11"	1 1/2"	Straight

Dimensions are in ctrs. of bars.

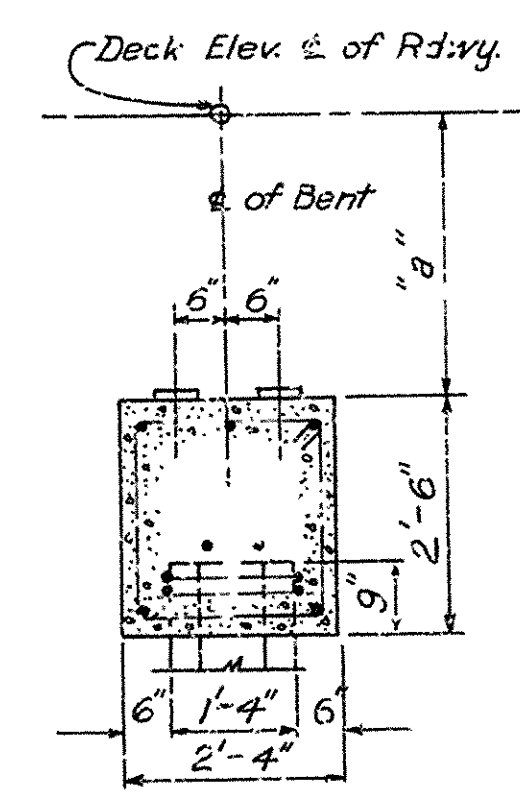
\*45 bars if steel piles are used.



END VIEW A-A

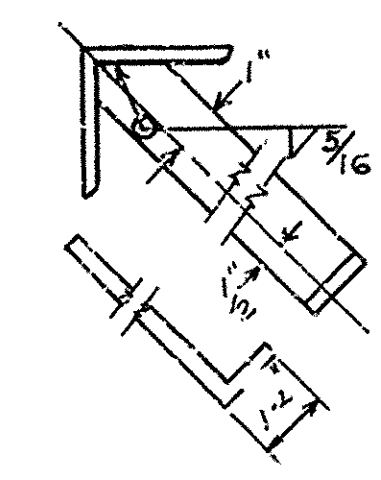


SECTION B-B AT BATTER PILES



SECTION D-D

Showing concrete pile only



DETAIL "A"

Scale: 3/8"=1'-0"

NOTES

Steel Piles are to be driven to refusal. Concrete Piles are to be driven to a minimum capacity of 30 tons. For details of superstructure and for General Notes, see Dwg. No. 5499 or 5500. Use type of Pile called for on Bridge Layout.

Revised roadway width, bar nos, straps, curb width, and added Detail "A". FDN 4-16-58

DETAILS OF STANDARD R.C. PILE BENTS  
30' TO 39' I-BEAM SPANS  
24'-0" CLEAR RDWY. 1'-0" CURBS

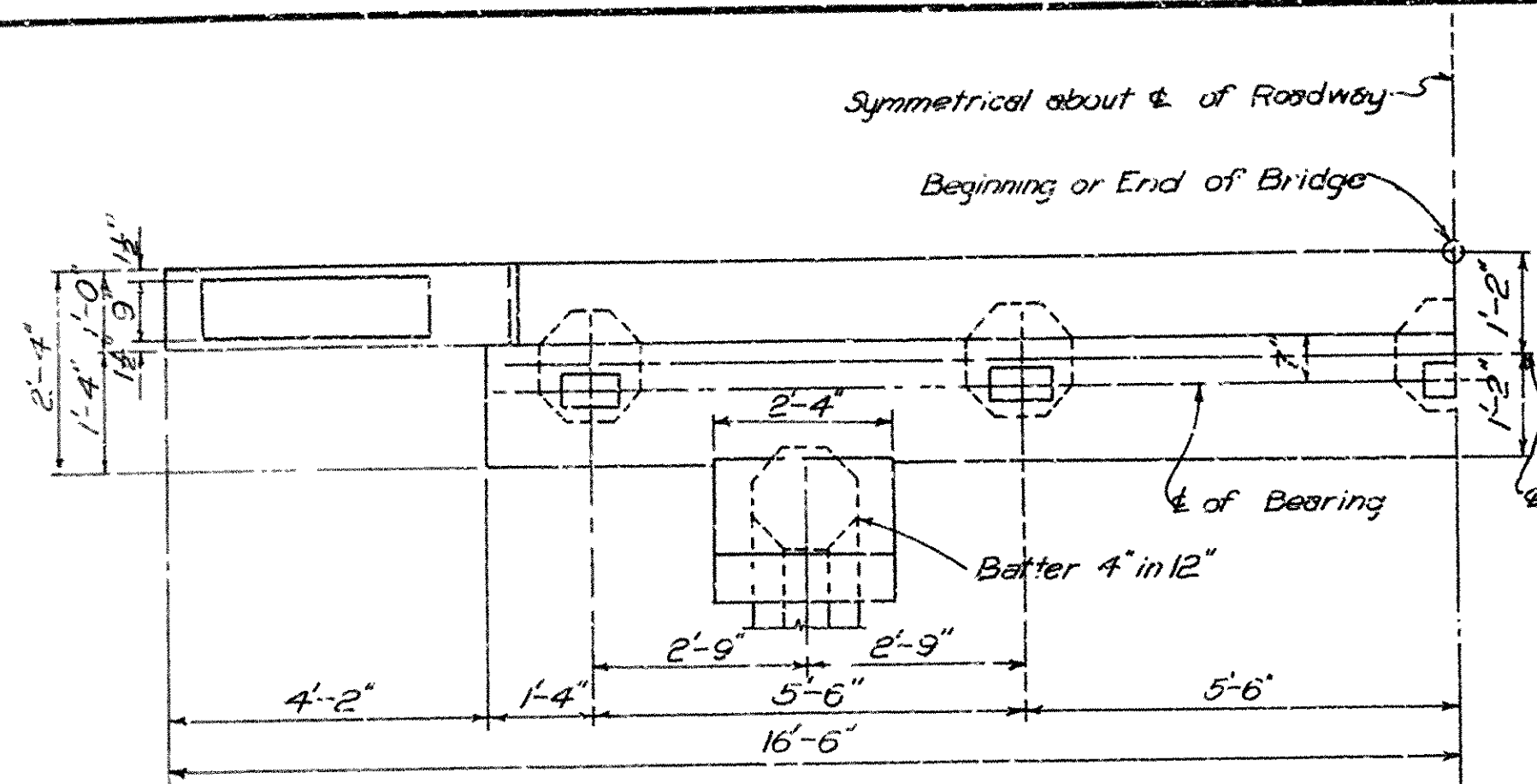
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

Drawn By: W.W.M. Date: 2-9-52  
Traced By: L.W.H. Date: 7-6-54  
Checked By: J.F.R. Date: 7-6-54  
BRIDGE NO. DRAWING NO. 5500A

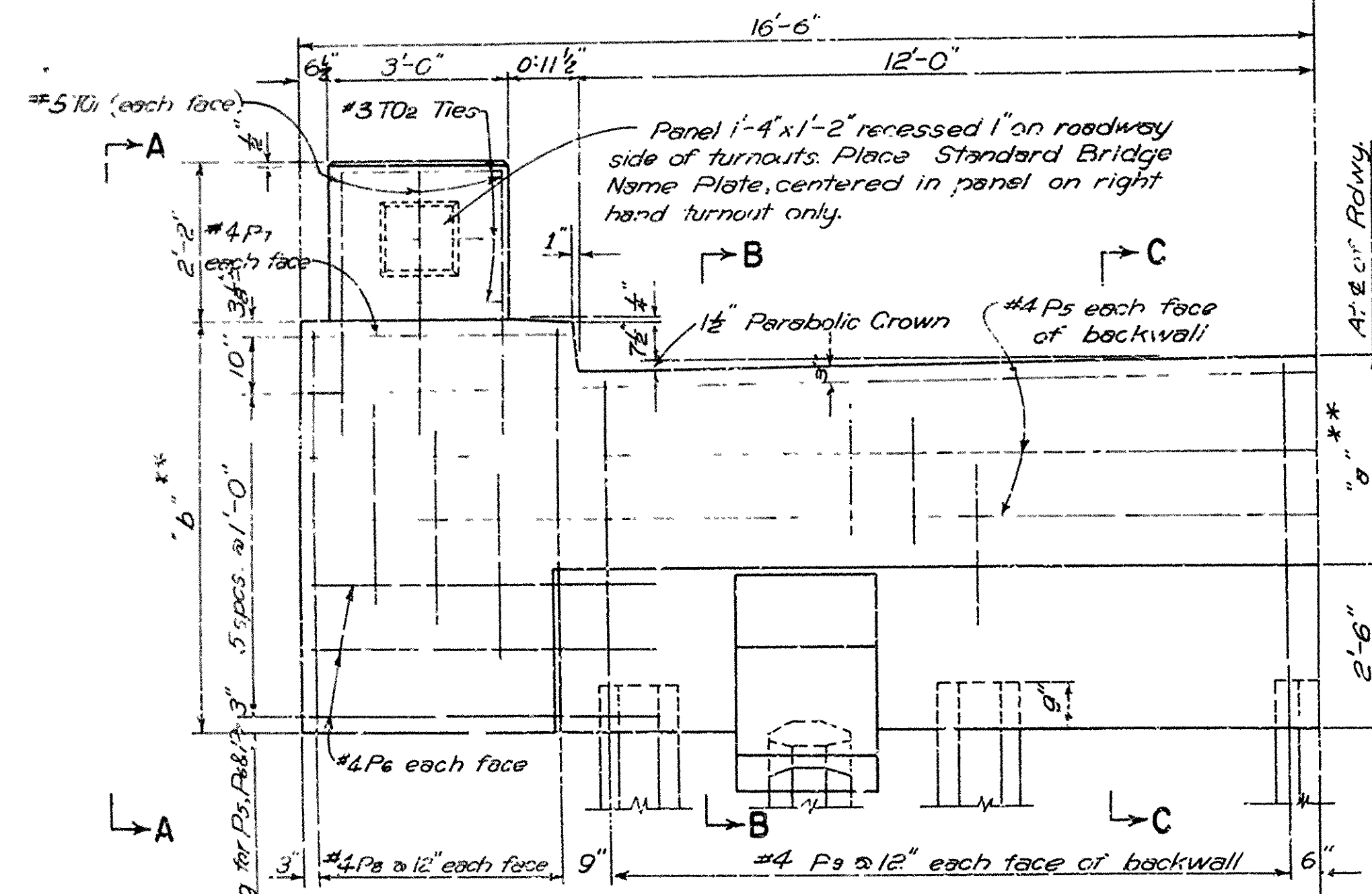
Ward Johnson  
BRIDGE ENGINEER



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

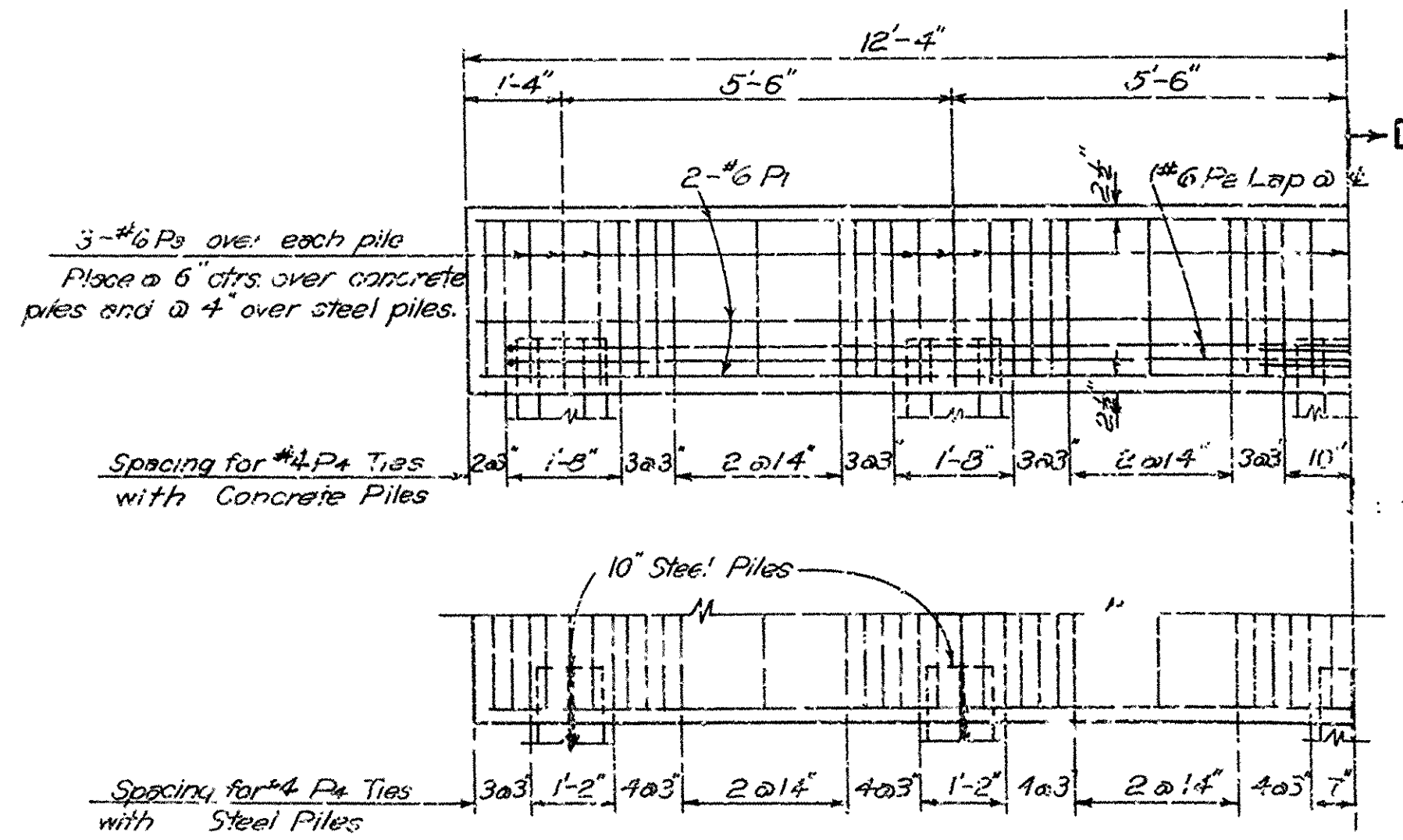


HALF PLAN OF END BENT



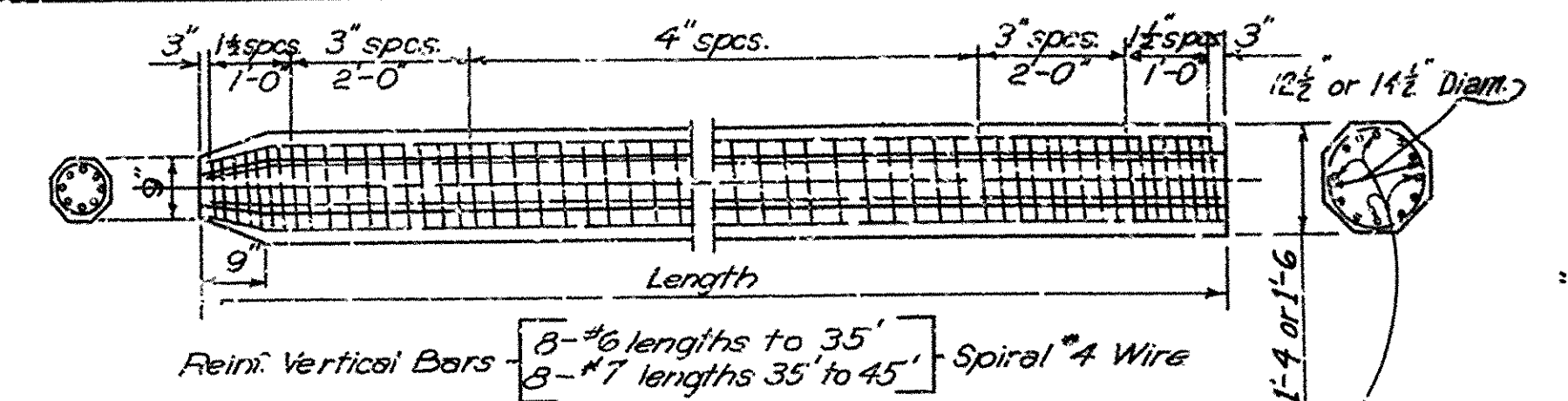
HALF ELEVATION END BENT

Cap reinforcing same as shown for Intermediate Bent



HALF ELEVATION INTERMEDIATE BENT

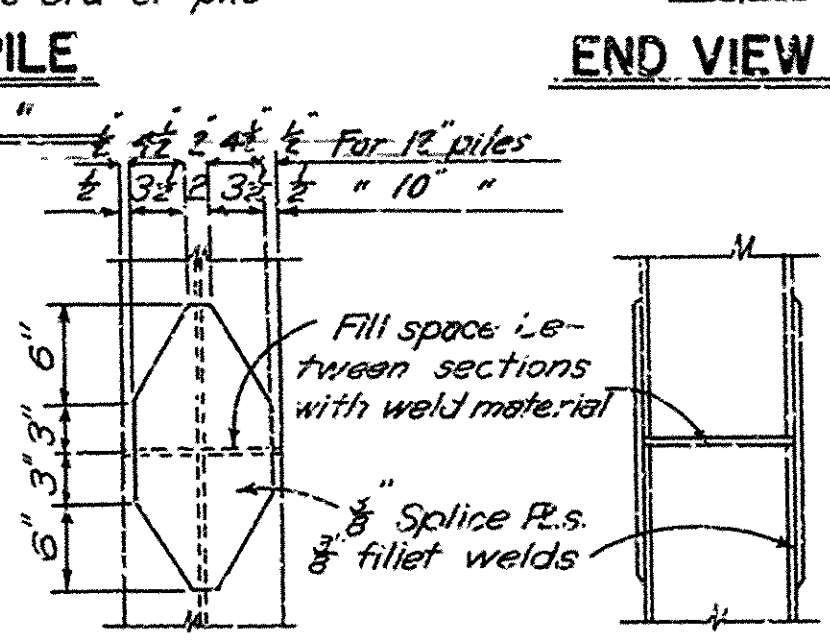
(other reinf. same as above)



DETAILS OF 16" PRECAST CONCRETE PILE

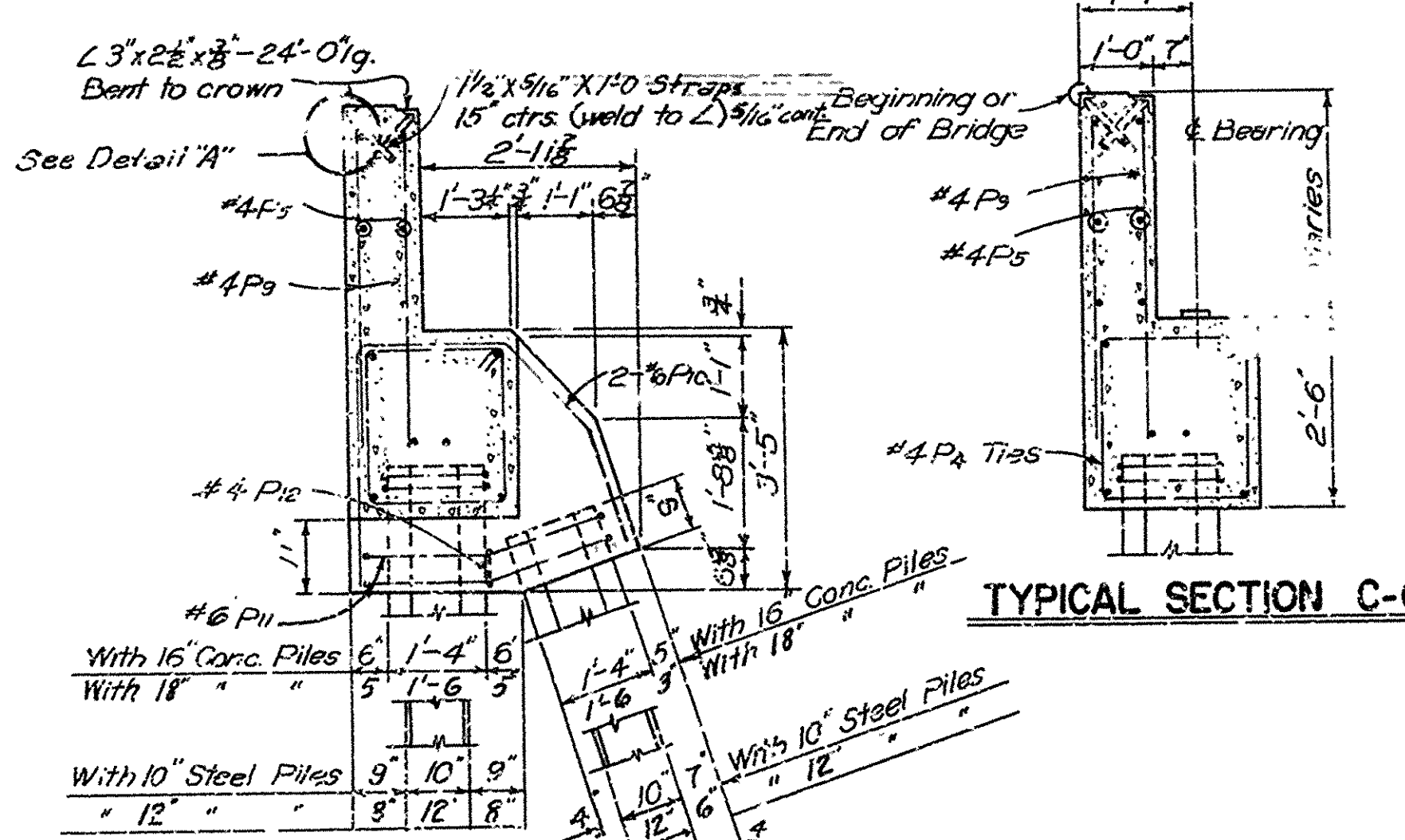
LIST OF VARIABLES \*\*

Span	Vertical Dimensions	a"	b"	c"
46'	3'-2 3/8"	5'-7 1/8"	3'-6 3/8"	
47'	"	"	"	
48'	"	"	"	
49'	"	"	"	
50'	"	"	"	
51'	"	"	"	
52'	"	"	"	
53'	"	"	"	
54'	3'-2 1/8"	6'-4 7/8"	3'-6 1/8"	
55'	"	"	"	



STEEL PILE SPLICE DETAILS

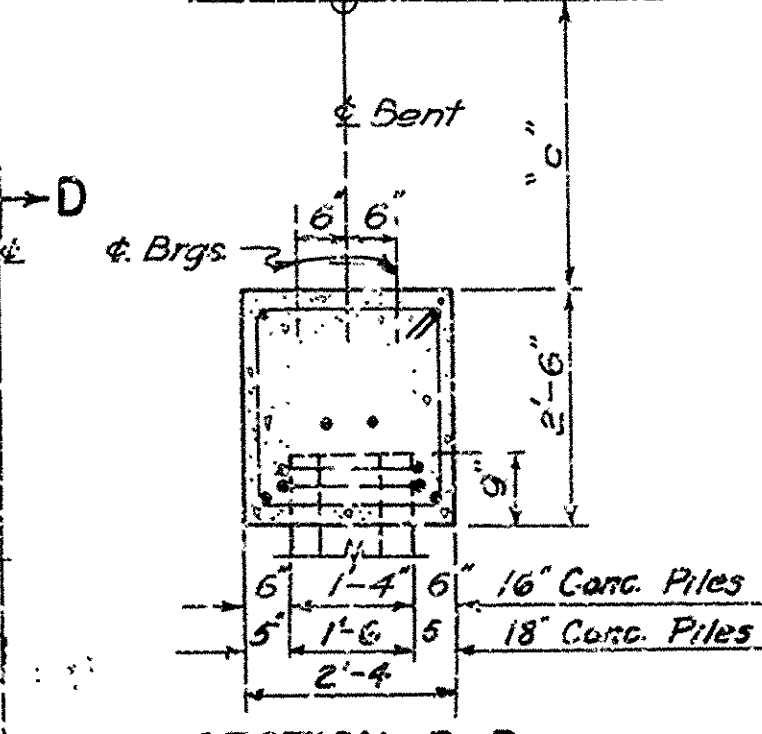
Generally all piles shall be driven full length and shall not be spliced except by permission of the Engineer.



TYPICAL SECTION C-C

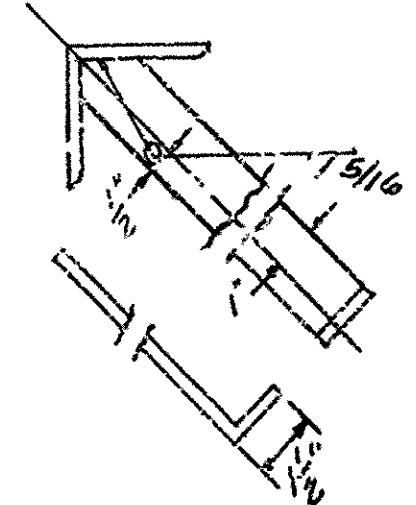
SECTION B-B AT BATTER PILES

Deck Elev. & of Rdwy.



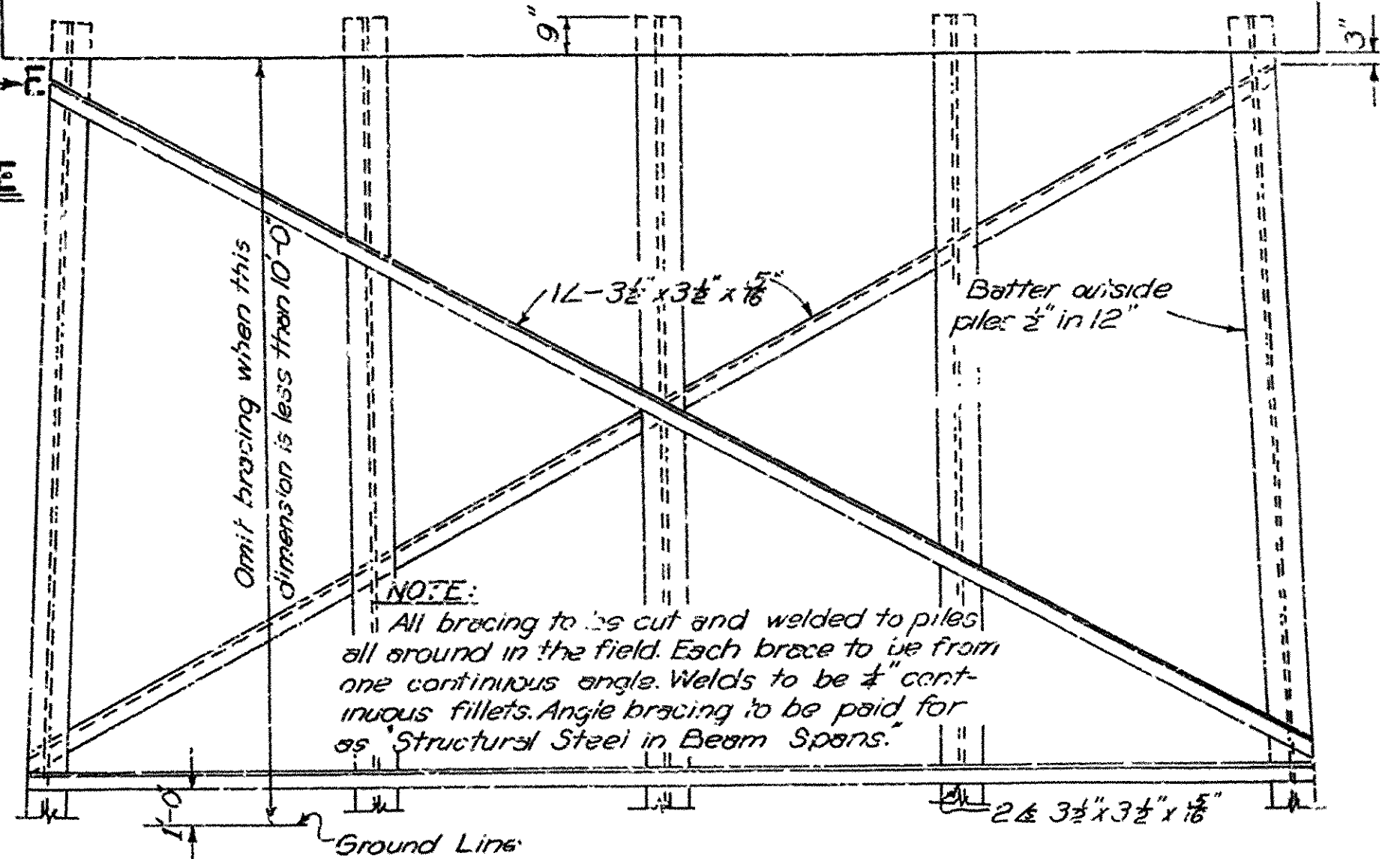
SECTION D-D

(Showing conc. pile 1'-4")



Detail A (typ)  
Scale: 3" = 1'-0"

END VIEW E-E



TYPICAL BRACING INTERMEDIATE BENT

Scale: 3" = 1'-0"

LIST OF REINFORCING STEEL

NO.	SIZE	NO. IN BENTS	LENGTH	BENDING DIAGRAM	
				INT.	EXT.
P1	6	6	24'-4"	Str.	13'-2" for 16" pile
P2	"	4	27'-5"		13'-1" for 16" pile
P3	"	15	6'-2"		2'-0" P2
P4	4	40	8'-11"		2'-0" P3
P5	"	6	32'-5"		2'-0" P4
P6	"	12	5'-8"		2'-0" P5
P7	"	4	4'-2"		2'-0" P6
P8	"	20	5'-0"		2'-0" P7
P9	"	48	4'-6"		2'-0" P8
P10	6	4	7'-10"		2'-0" P9
P11	"	4	11'-2"		2'-0" P10
P12	4	2	5'-3"		2'-0" P11
P13	"	"	"		2'-0" P12
P14	"	"	"		2'-0" P13
P15	"	"	"		2'-0" P14
P16	"	"	"		2'-0" P15
P17	"	"	"		2'-0" P16
P18	"	"	"		2'-0" P17
P19	"	"	"		2'-0" P18
P20	"	"	"		2'-0" P19
P21	"	"	"		2'-0" P20
P22	"	"	"		2'-0" P21
P23	"	"	"		2'-0" P22
P24	"	"	"		2'-0" P23
P25	"	"	"		2'-0" P24
P26	"	"	"		2'-0" P25
P27	"	"	"		2'-0" P26
P28	"	"	"		2'-0" P27
P29	"	"	"		2'-0" P28
P30	"	"	"		2'-0" P29
P31	"	"	"		2'-0" P30
P32	"	"	"		2'-0" P31
P33	"	"	"		2'-0" P32
P34	"	"	"		2'-0" P33
P35	"	"	"		2'-0" P34
P36	"	"	"		2'-0" P35
P37	"	"	"		2'-0" P36
P38	"	"	"		2'-0" P37
P39	"	"	"		2'-0" P38
P40	"	"	"		2'-0" P39
P41	"	"	"		2'-0" P40
P42	"	"	"		2'-0" P41
P43	"	"	"		2'-0" P42
P44	"	"	"		2'-0" P43
P45	"	"	"		2'-0" P44
P46	"	"	"		2'-0" P45
P47	"	"	"		2'-0" P46
P48	"	"	"		2'-0" P47
P49	"	"	"		2'-0" P48
P50	"	"	"		2'-0" P49
P51	"	"	"		2'-0" P50
P52	"	"	"		2'-0" P51
P53	"	"	"		2'-0" P52
P54	"	"	"		2'-0" P53
P55	"	"	"		2'-0" P54
P56	"	"	"		2'-0" P55
P57	"	"	"		2'-0" P56
P58	"	"	"		2'-0" P57
P59	"	"	"		2'-0" P58
P60	"	"	"		2'-0" P59
P61	"	"	"		2'-0" P60
P62	"	"	"		2'-0" P61
P63	"	"	"		2'-0" P62
P64	"	"	"		2'-0" P63
P65	"	"	"		2'-0" P64
P66	"	"	"		2'-0" P65
P67	"	"	"		2'-0" P66
P68	"	"	"		2'-0" P67
P69	"	"	"		2'-0" P68
P70	"	"	"		2'-0" P69
P71	"	"	"		2'-0" P70
P72	"	"	"		2'-0" P71
P73	"	"	"		2'-0" P72
P74	"	"	"		2'-0" P73
P75	"	"	"		2'-0" P74
P76	"	"	"		2'-0" P75
P77	"	"	"		2'-0" P76
P78	"	"	"		2'-0" P77
P79	"	"	"		2'-0" P78
P80	"	"	"		2'-0" P79
P81	"	"	"		2'-0" P80
P82	"	"	"		2'-0" P81
P83	"	"	"		2'-0" P82
P84	"	"	"		2'-0" P83
P85	"	"	"		2'-0" P84
P86	"	"	"		2'-0" P85
P87	"	"	"		2'-0" P86
P88	"	"	"		2'-0" P87
P89	"	"	"		2'-0" P88
P90	"	"	"		2'-0" P89
P91	"	"	"		2'-0" P90
P92	"	"	"		2'-0" P91
P93	"	"	"		2'-0" P92
P94	"	"	"		2'-0" P93
P95	"	"	"		2'-0" P94
P96	"	"	"		2'-0" P95
P97	"	"	"		2'-0" P96
P98	"	"	"		2'-0" P97
P99	"	"	"		2'-0" P98
P100	"	"	"		2'-0" P99

Dimensions are to ctrs. of bars.

\*\* 50 Bars, if steel piles are used.

NOTES

Steel Piles are to be driven to refusal. Concrete Piles to be driven to a minimum capacity of 34 Tons. For Details of Superstructure and for General Notes, see Dwg. No. 5500.I. Use type of pile called for on Bridge Layout.

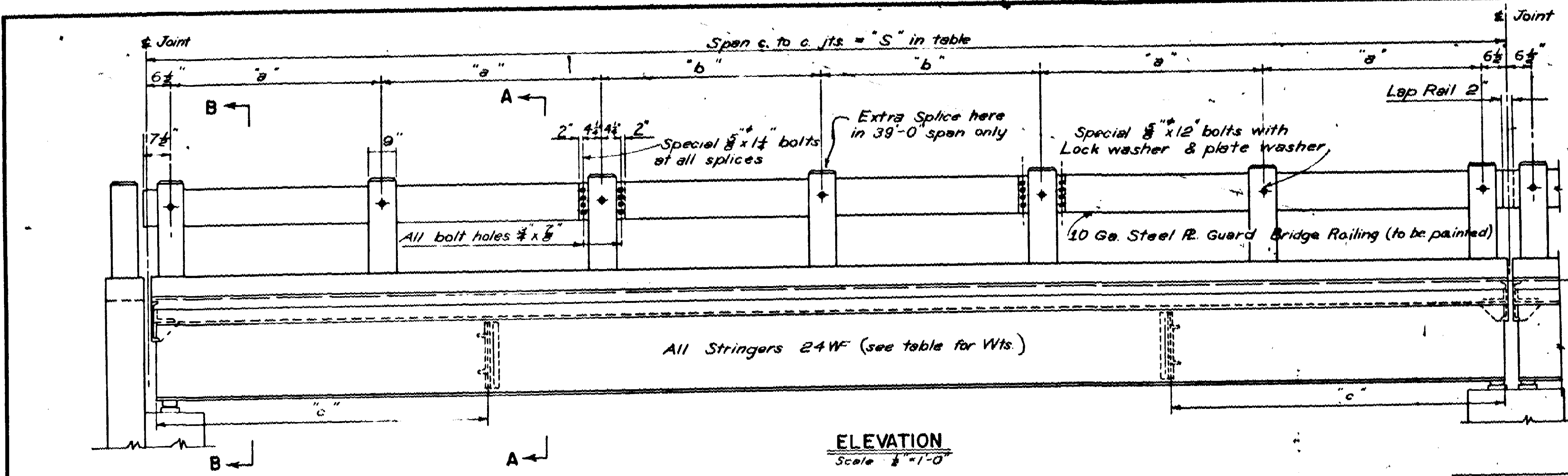
Revised to include 18" Piles - 9-21-54 WWM  
Revised to include 12" " 10-10-55 WWM  
Revised to include Pile for 18" Piles - 7-17-57 REC  
Revised: Cure dimensions, bar numbers, & shapes E.R.B. 11-5-57  
Added detail A. E.R.B. 11-7-57  
Revised Curb Widths 4-25-58 K.E.C.

DETAILS OF  
STANDARD PILE BENTS  
46' TO 55' I-BEAM SPANS  
24'-0" CLF R RDWY. 1'-0" CURBS

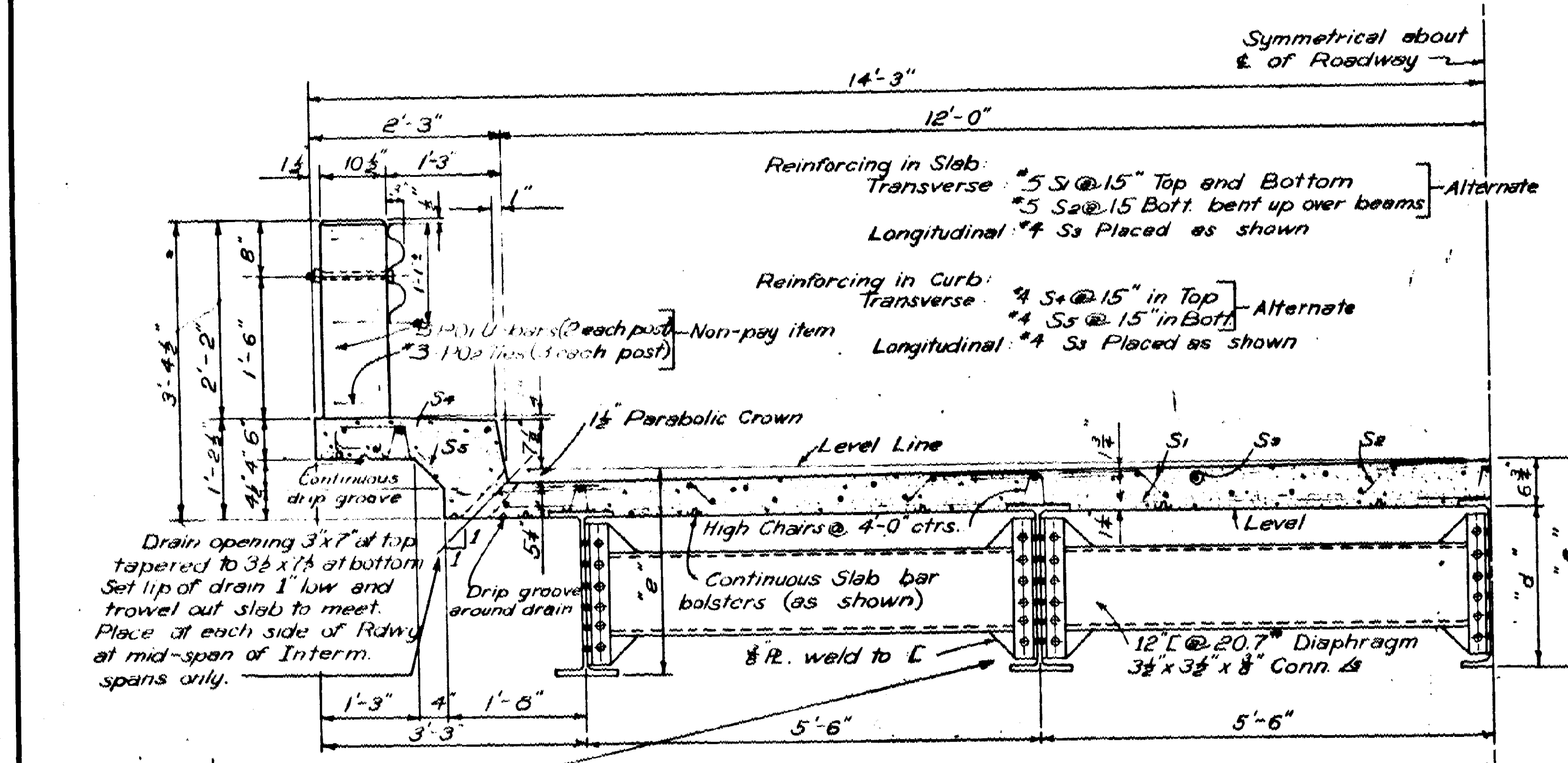
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

Drawn By: WWM Date: 2-27-53  
Traced By: LWH Date: 3-2-54  
Checked By: L Date: 3-4-54  
BRIDGE NO. DRAWING NO. 5500H

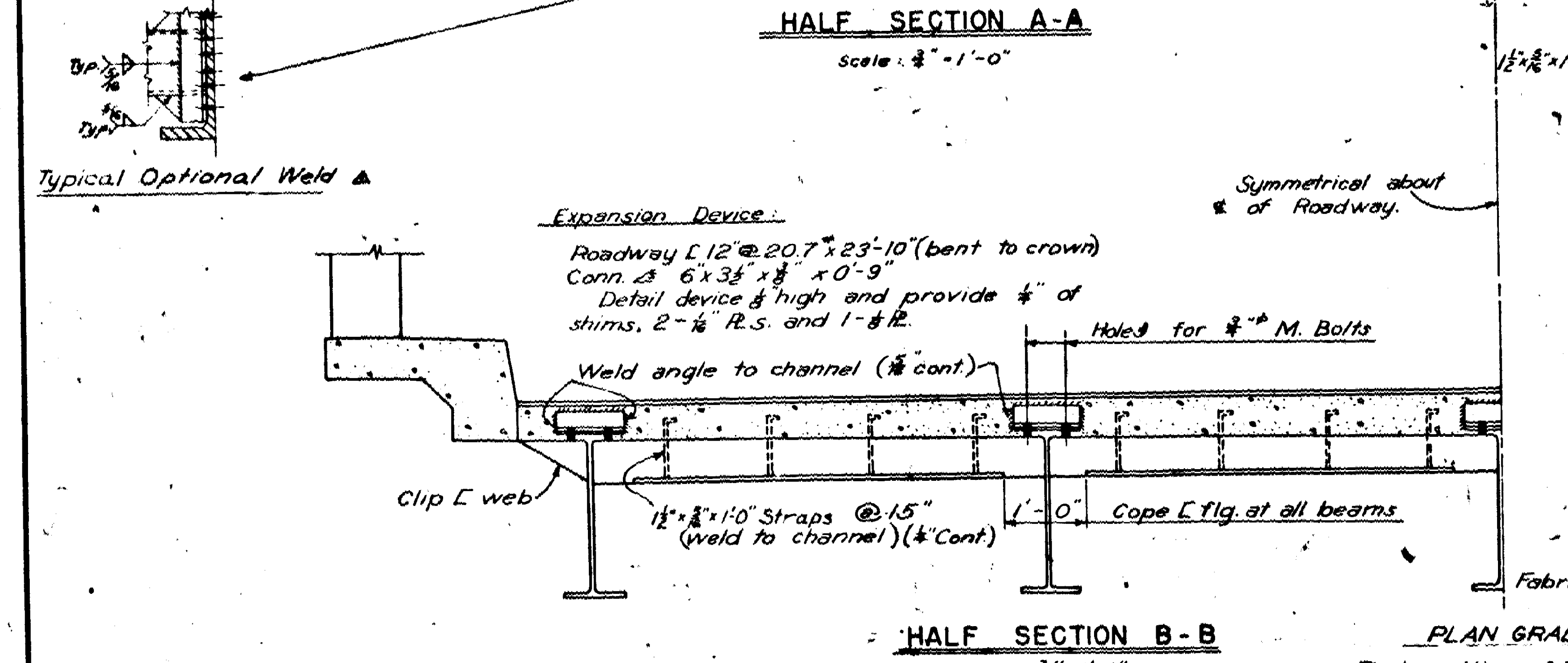




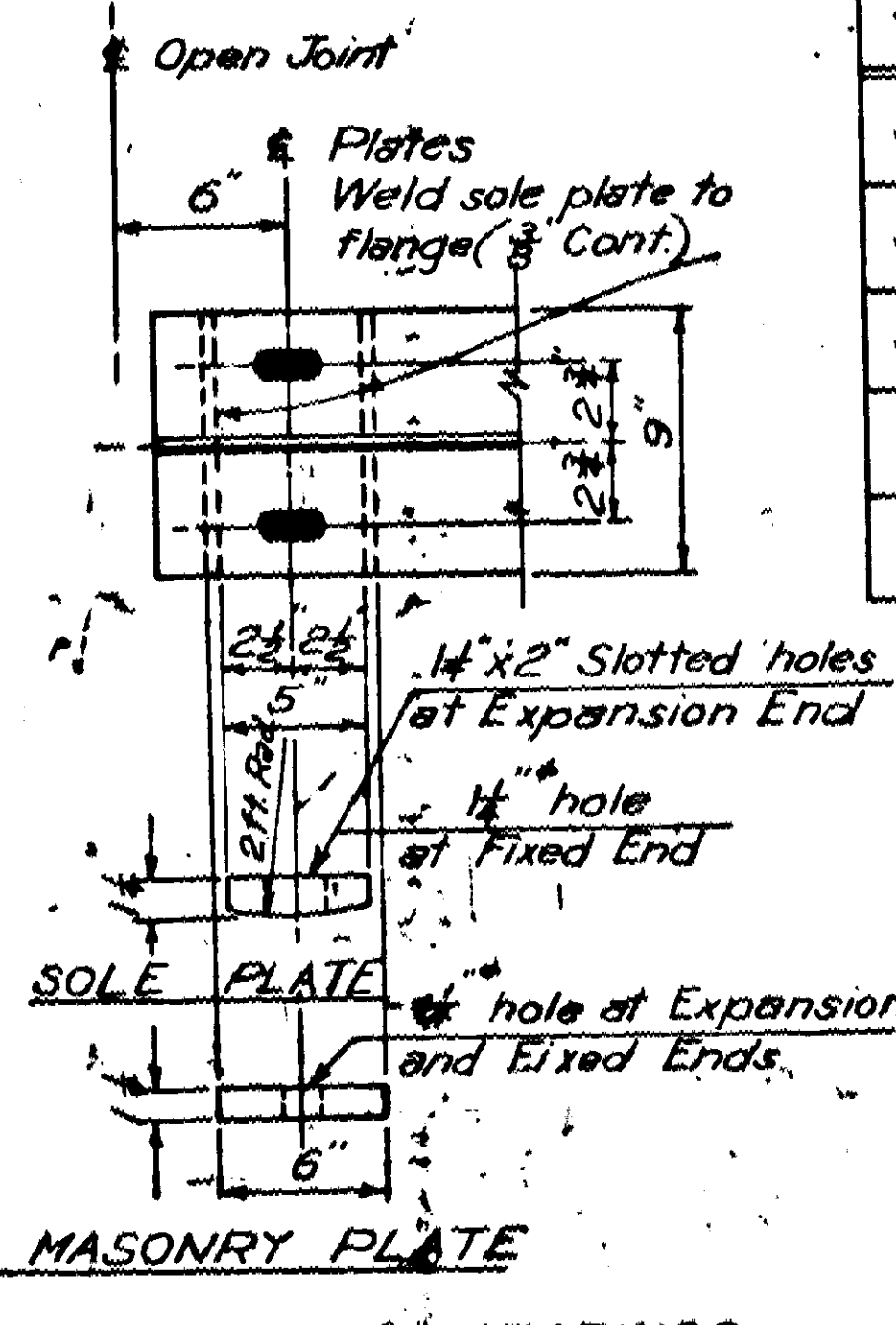
ELEVATION  
Scale: 1/2" = 1'-0"



HALF SECTION A-A  
Scale: 1/2" = 1'-0"

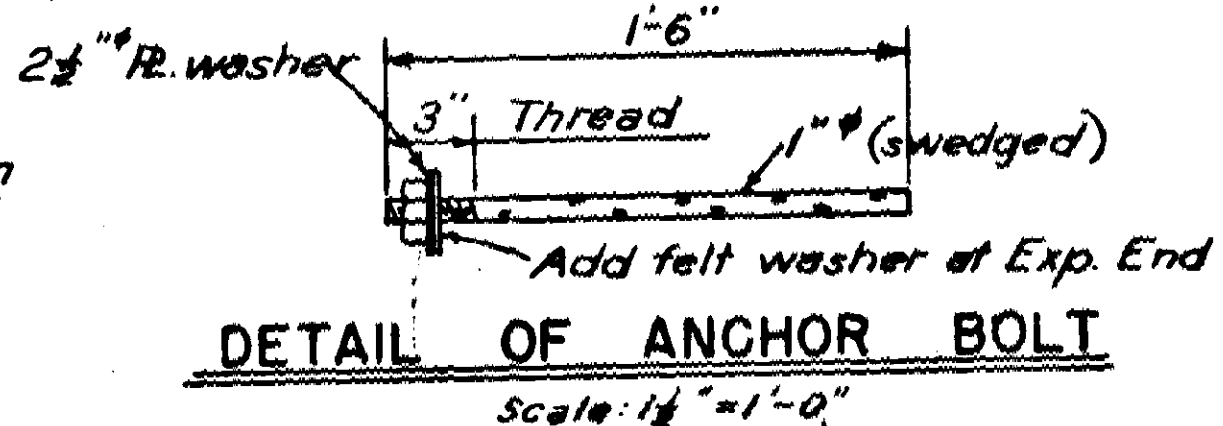


HALF SECTION B-B  
Scale: 1/2" = 1'-0"

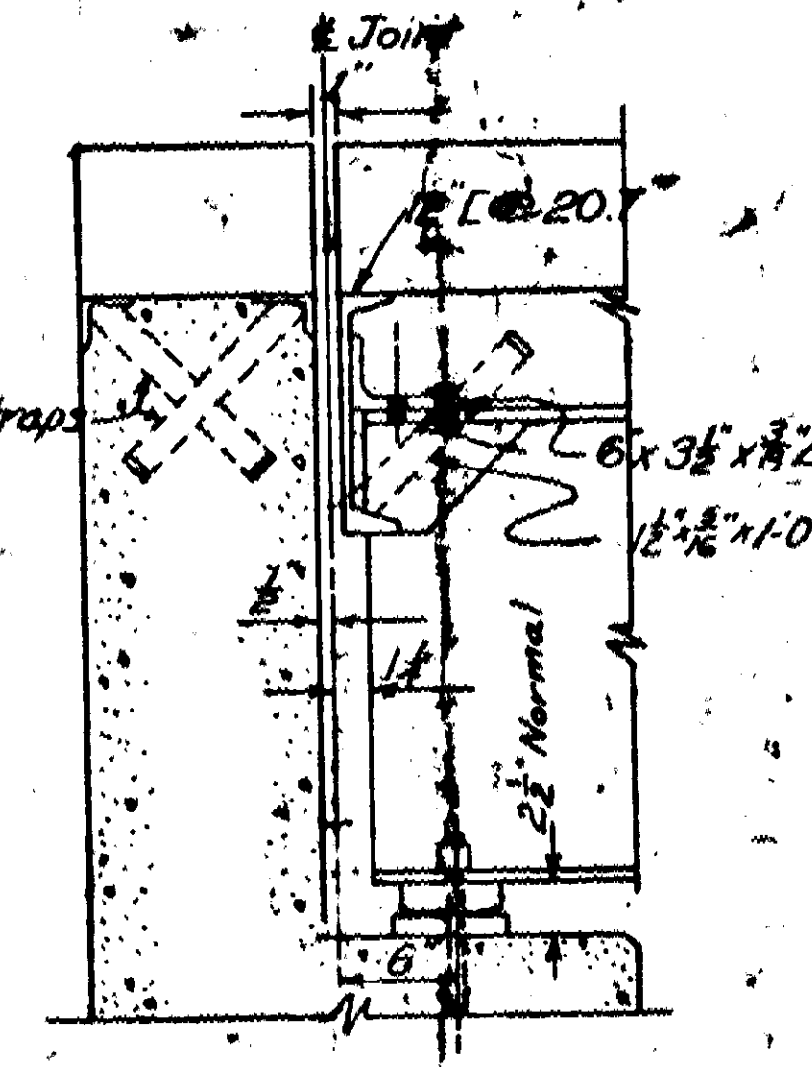


DETAILS OF BEARINGS  
Scale: 1/2" = 1'-0"

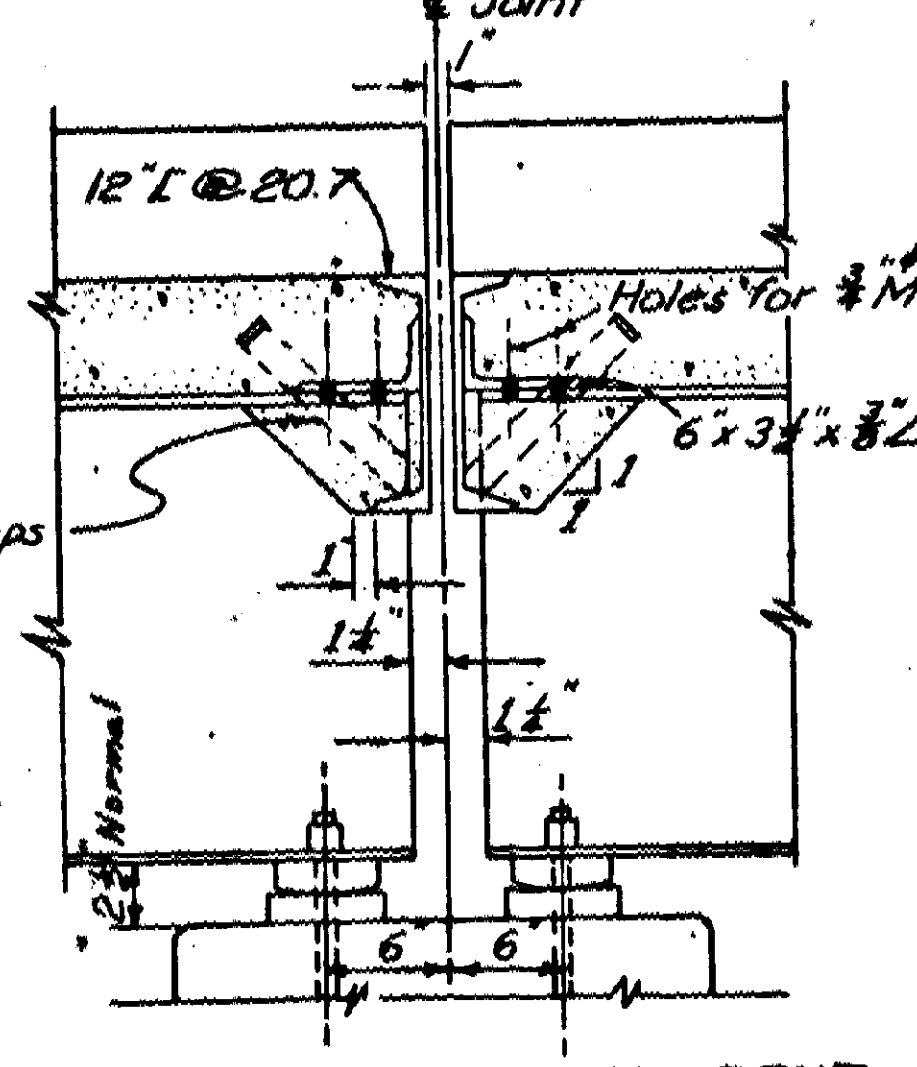
Span	Req'd	Post Spacing		Strut	Vert. Dims @		D.L.
"S"	Stringers	"a"	"b"	"c"	"d"	"e"	Def.
35'	24WF76	5'-7"	5'-9"	8'-9"	1'-11 $\frac{1}{2}$ "	2'-5 $\frac{1}{8}$ "	$\frac{1}{8}$ "
36'	24WF76	5'-9"	5'-11"	9'-0"	1'-11 $\frac{1}{2}$ "	2'-5 $\frac{1}{8}$ "	$\frac{1}{8}$ "
37'	24WF76	5'-11"	6'-1"	9'-3"	1'-11 $\frac{1}{2}$ "	2'-5 $\frac{1}{8}$ "	$\frac{1}{2}$ "
38'	24WF84	6'-2"	6'-4"	9'-6"	1'-11 $\frac{1}{2}$ "	2'-6 $\frac{1}{8}$ "	$\frac{1}{2}$ "
39'	24WF84	6'-2"	6'-6"	9'-9"	1'-11 $\frac{1}{2}$ "	2'-6 $\frac{1}{8}$ "	$\frac{9}{16}$ "



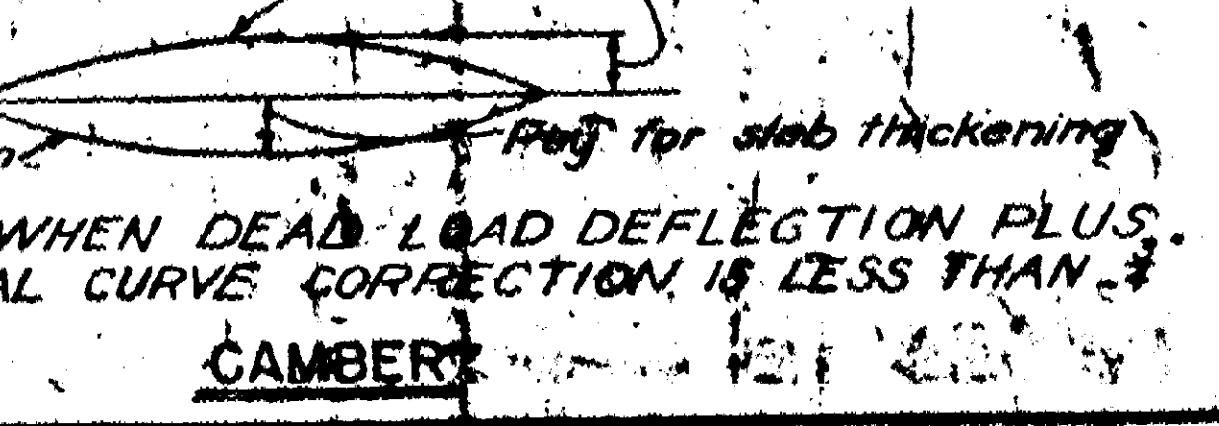
DETAIL OF ANCHOR BOLT  
Scale: 1/2" = 1'-0"



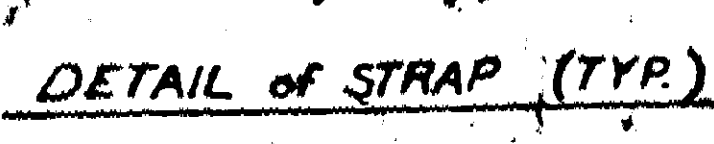
JOINT AT END BENT  
Scale: 1/2" = 1'-0"



JOINT AT INTERM. BENT  
Scale: 1/2" = 1'-0"



CAMBER



DETAIL OF STRAP (TYP)

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

LIST OF REINFORCING STEEL		Bending Diagram	
Mark	Size	No. in Each Span	Length
S1	#5	56 58 60 62 64	25'-0"
S2	#5	27 28 29 30 31	25'-0"
S3	#4	47	5'-5"
S4	#4	56 58 60 62 64	4'-5"
S5	#4	54 56 58 60 62	3'-0"
P01	#5	28	5'-4"
P02	#3	42	2'-8"

GENERAL NOTES	
All concrete to be Class S. All exposed corners to have 1/4" chamfer unless otherwise noted.	
Field Connections for diaphragms to be riveted or bolted with high strength bolts.	
Rivets - 3/4" Open holes 1/2" except where noted otherwise.	
Structural shapes of equal or greater strength may be substituted for shapes shown but payment will be made on basis of shapes shown or those actually used, whichever is the lesser.	
All welded connections to be 1/4" fillet shop welds except as noted. All welding shall conform to the American Welding Society Standard Specifications for Welded Highway & Railway Bridges, 5th Edition, 1956.	
Shop Paint - All structural steel, except surfaces in contact with concrete shall be given one coat of red lead and raw linseed oil before shipment.	
Field Paint - 1st Coat - Red lead tinted with lamp black.	
2nd Coat - Aluminum Paint.	
All bearing plates and roadway expansion devices to be paid for as "Structural Steel in Beam Spans."	
Bearings shall be finally seated in a manner set forth by the Specifications.	
This work and material are to be considered as subsidiary to the item "Structural Steel in Beam Spans" and will not be paid for directly.	
This drawing shows general features of design only. Shop drawings shall be made in accordance with the Specifications, submitted and approval secured before fabrication is begun.	
In order to secure a good riding surface, it will be required that the floor slab be struck off from curb to curb with a full span length longitudinal strike-off. The strike-off shall be sufficiently stiff so as to have no appreciable vertical deflection.	
Reinforcing steel to be deformed bars of intermediate or hard grade; see Special Provisions. Steel to be accurately located in the forms and firmly held in place by means of steel wire supports, sufficient in number and size to 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 bending diagrams of reinforcing steel, including wire supports, shall be submitted and approval secured before fabrication is begun.	
Handrail to be steel plate guard bridge railing of the type shown or an equivalent rigid type as approved by the Engineer. The rail including posts and fastenings shall be paid for at the unit price bid per linear foot for Steel R. Guard Bridge Railing.	
SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction, adopted March 1, 1940.	
Loading H 15 (AASHTO 1957)	
Dead Load = 760 lb. (Wt. per ft. of W. used)	Outside Stringers
Truck Live Load = 0.90 wheels	
Dead Load = 546 lb. (Wt. per ft. of W. used)	Inside Stringers
Truck Live Load = 1.1 wheels	
Unit Stresses:	
Structural Steel	15,000 psi
Reinforcing Steel	20,000 psi
Class S Concrete (n=10)	1,200 psi

REVISIONS  
Changed - camber diagram W.W.M. 6-26-54

DETAILS OF STANDARD  
35'-39' I-BEAM SPANS  
24'-0" CLEAR RDWY. 1'-0" CURBS

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
Drawn By: J.W.M. Date: 12-20-52  
Checked By: J.L.L. Date: 6-25-53  
BRIDGE NO. DRAWING NO. 5500



STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
ARK			

### LIST OF REINFORCING STEEL

SPAN	NO. OF BARS IN EACH SPAN	LENGTH	BENDING DIAGRAM
46'	76	76	2'-9"
47'	76	76	2'-4"
48'	76	76	2'-4"
49'	76	76	2'-4"
50'	76	76	2'-4"
51'	76	76	2'-4"
52'	76	76	2'-4"
53'	76	76	2'-4"
54'	76	76	2'-4"
55'	76	76	2'-4"
56'	76	76	2'-4"
57'	76	76	2'-4"
58'	76	76	2'-4"
59'	76	76	2'-4"
60'	76	76	2'-4"

### LIST OF VARIABLES 46'-55' & 60' SPANS

Span	Reqd. Stringer	Post Spacing	Strut	D.L. Def.	Y
46'-0"	30WF108	5'-0"	6	15'-4"	2'-11 1/2"
47'-0"	"	5'-0"	6	15'-9"	"
48'-0"	"	5'-0"	6	15'-9"	"
49'-0"	"	5'-0"	6	15'-9"	"
50'-0"	"	5'-0"	6	15'-9"	"
51'-0"	30WF116	5'-0"	6	17'-0"	"
52'-0"	"	5'-0"	6	17'-0"	"
53'-0"	"	5'-0"	6	17'-0"	"
54'-0"	30WF124	5'-0"	6	17'-0"	2'-11 1/2"
55'-0"	"	5'-0"	6	17'-0"	"
60'-0"	33WF130	5'-0"	8	20'-0"	3'-3"

### GENERAL NOTES

All concrete to be Class "S". All exposed corners to have 1/2" chamfer unless otherwise noted.

Field Connections for diaphragms to be riveted or bolted with high strength bolts.

Rivets - 1/2" Open holes 1/2" except where noted otherwise.

Structural shapes of equal or greater strength may be substituted for shapes shown but payment will be made on basis of shapes shown or those actually used, whichever is the lesser.

All welded connections to be 1/2" fillet shop welds except as noted. All welding shall conform to the American Welding Society Standard Specifications for Welded Highway and Railway Bridges, 5th Edition 1955.

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

Field Paint - 1st Coat - Red lead lined with lamp black.

2nd Coat - Aluminum Paint.

All bearing plates and roadway expansion devices to be paid for as Structural Steel in Beam Spans.

Bearings shall be finally sealed in the manner set forth in the Specifications. This work and material are to be considered as subsidiary to the item Structural Steel in Beam Spans and will not be paid for directly.

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

In order to secure a good riding surface it will be required that the floor slab be struck off from curb to curb with at least a half span length longitudinal strike-off. The strike-off shall be sufficiently stiff so as to have no appreciable vertical deflection.

Reinforcing steel to be deformed bars of intermediate or hard grade. Steel to be accurately located in the forms and firmly held in place by means of steel wire supports, sufficient in number and size to 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 directly but will be considered subsidiary to the item of Reinforcing Steel.

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

Handrail to be Plate Guard Bridge Railing of the type shown or an equivalent rigid type as approved by the Engineer. The rail including posts and fastenings shall be paid for at the unit price bid per linear foot for "Steel or Aluminum Plate Guard Bridge Railing."

SPECIFICATIONS, Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of Dec 9, 1953.

### LOADING HIS (AASHO 1957)

Load Distribution Outside Stringer	Load Distribution Inside Stringer
Dead Load = 760 #/ft (Wt. per ft. of W. used)	Dead Load = 546 #/ft (Wt. per ft. of W. used)
Live Load = 180 #/ft	Live Load = 265 #/ft
Conc. Live Load = 5100 # for moment	Conc. Live Load = 7400 # for moment
Truck Live Load = 2300 # for shear	Truck Live Load = 10720 # for shear
Truck Live Load = 0.80 wheels	Truck Live Load = 11 wheels

Unit Stresses
Structural Steel 18,000 #/sq in
Reinforcing Steel 20,000 #/sq in
Class "S" Conc. (f=10) 1200 #/sq in

### DETAILS OF STANDARD 46'-55' & 60' I-BEAM SPANS 24'-0" CLEAR RDWY. 1'-0" CURBS

#### REVISIONS

Changed Camber Diagram WWM, 6-24-54

Added 60' Span WWM, 6-28-54

Revised: Curbs details & bar mass or 1/2" shop added Detail 11 E. R. H. 11-5-57

Revised: Expansion Device E. R. H. 11-6-57

Revised: Straps or expansion device, E. R. H. 11-14-58

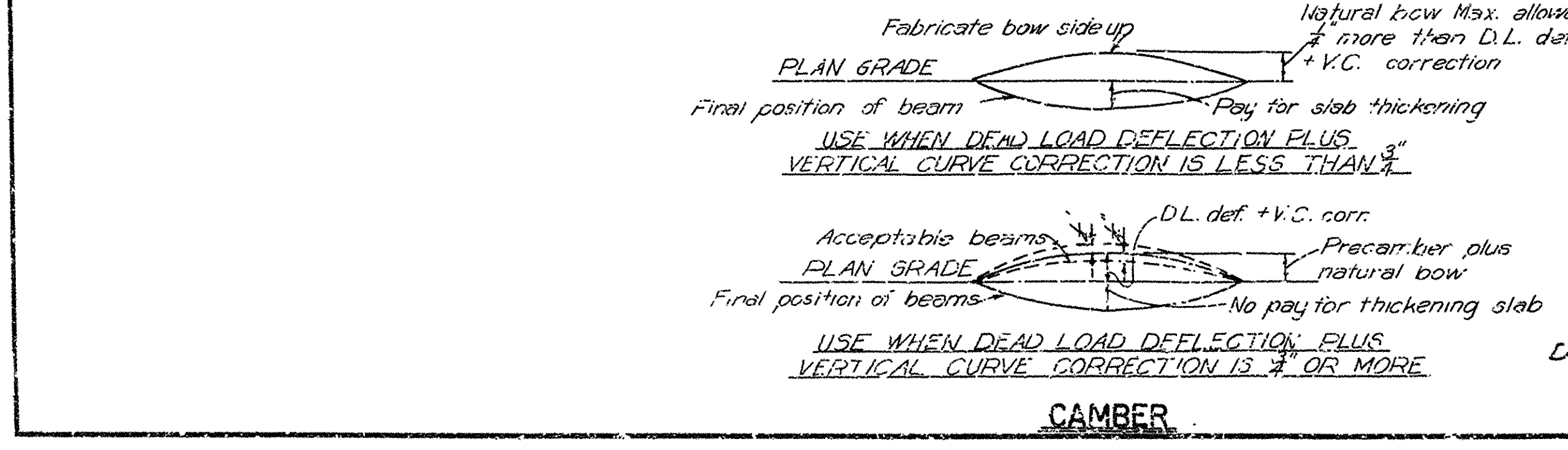
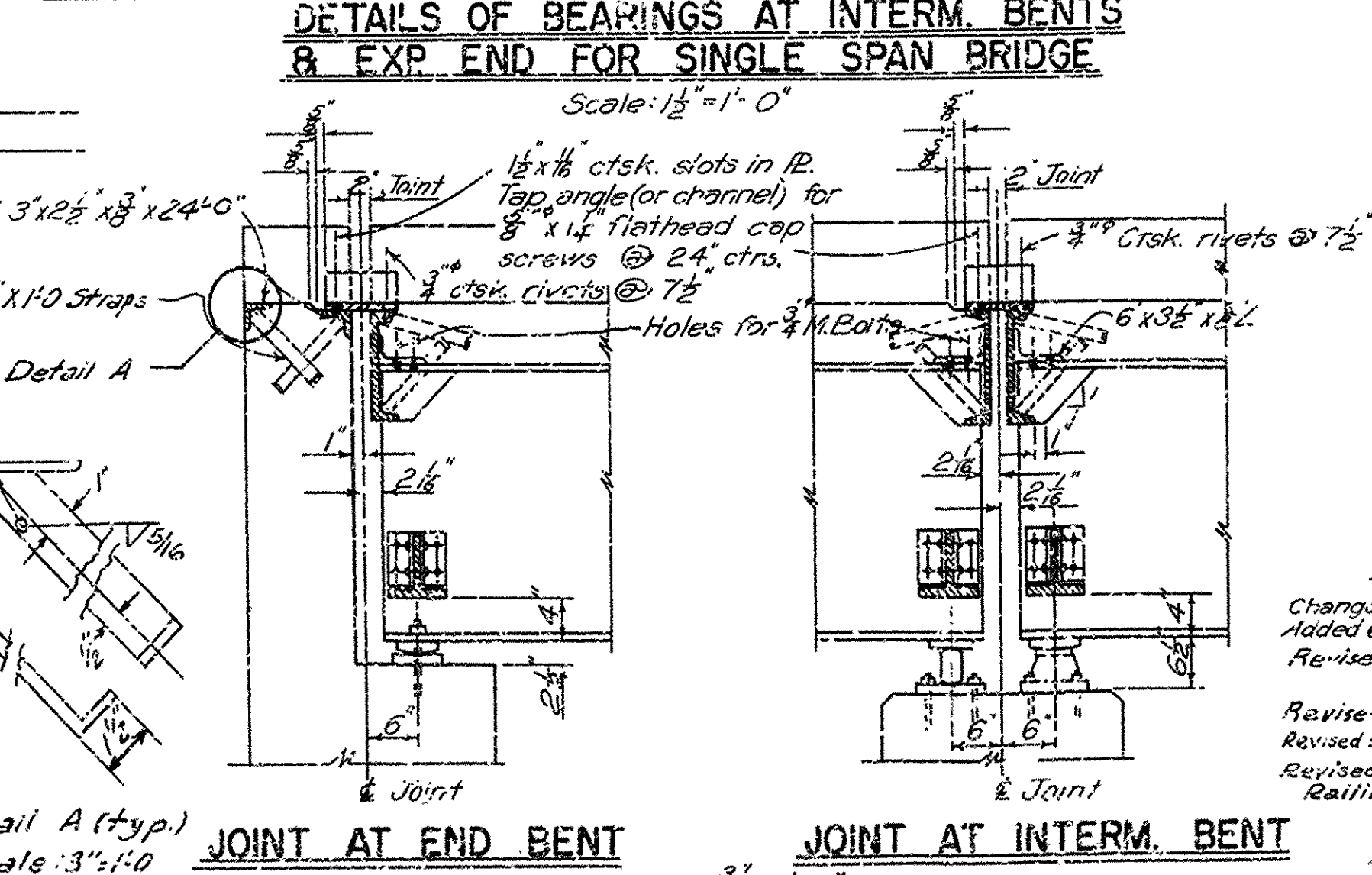
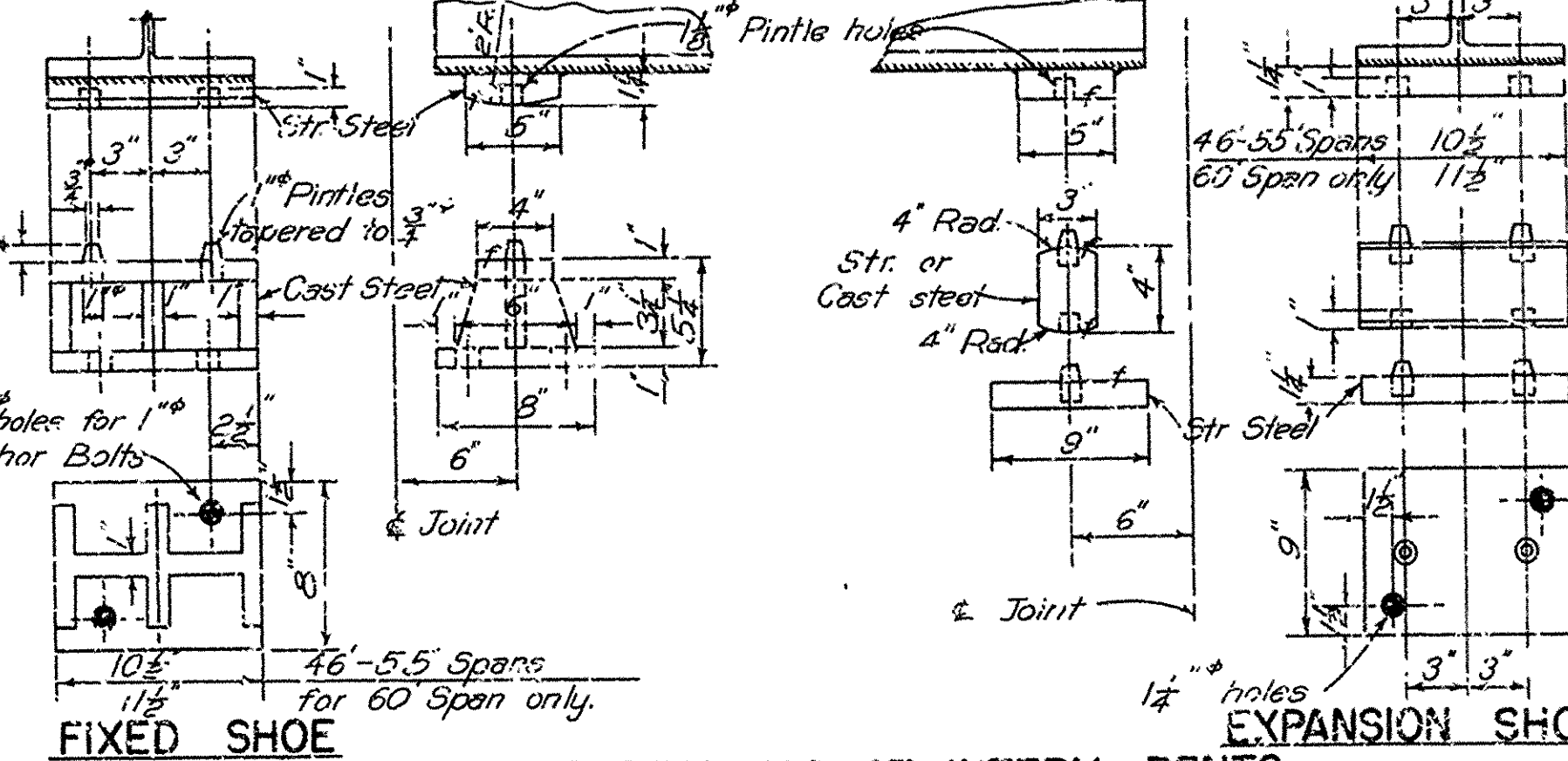
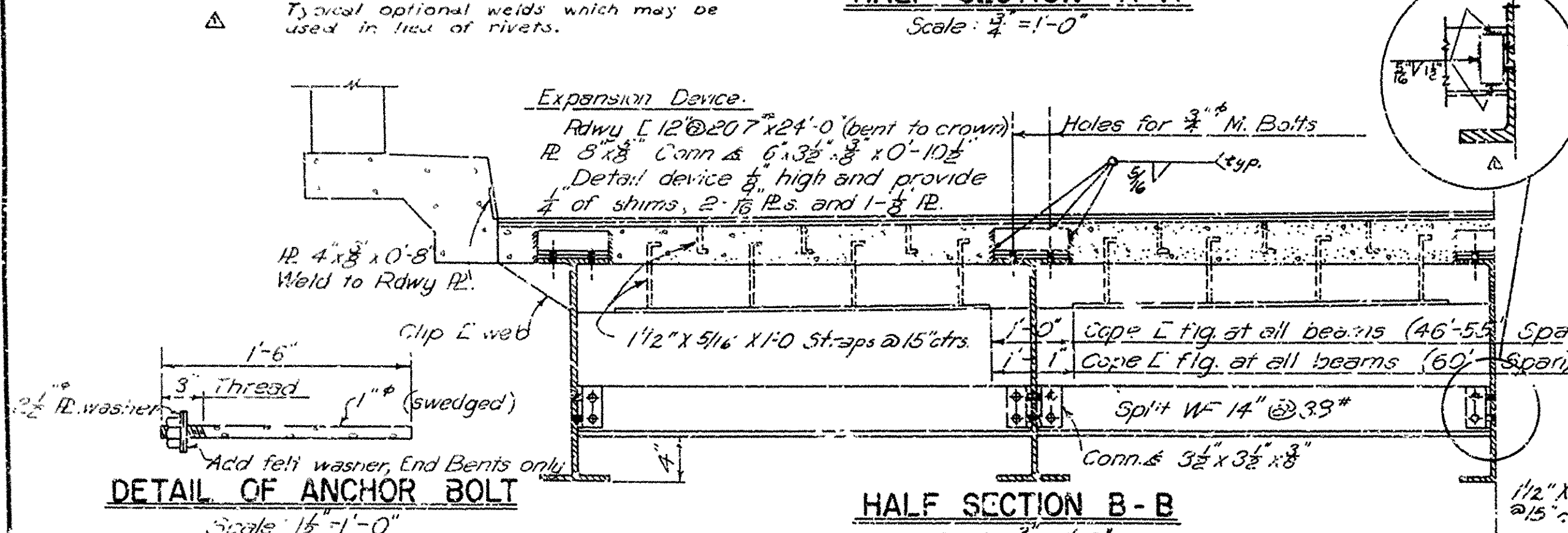
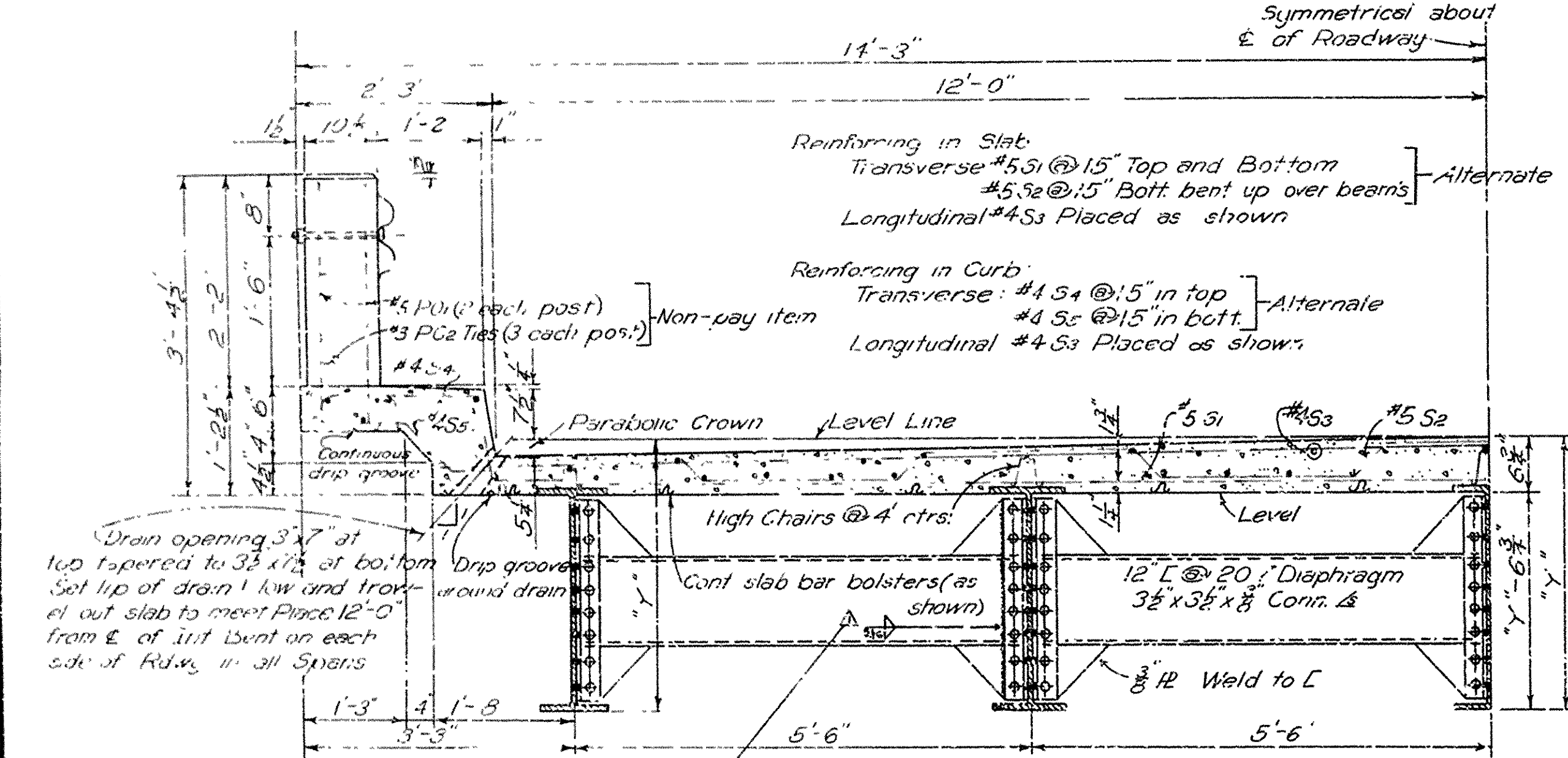
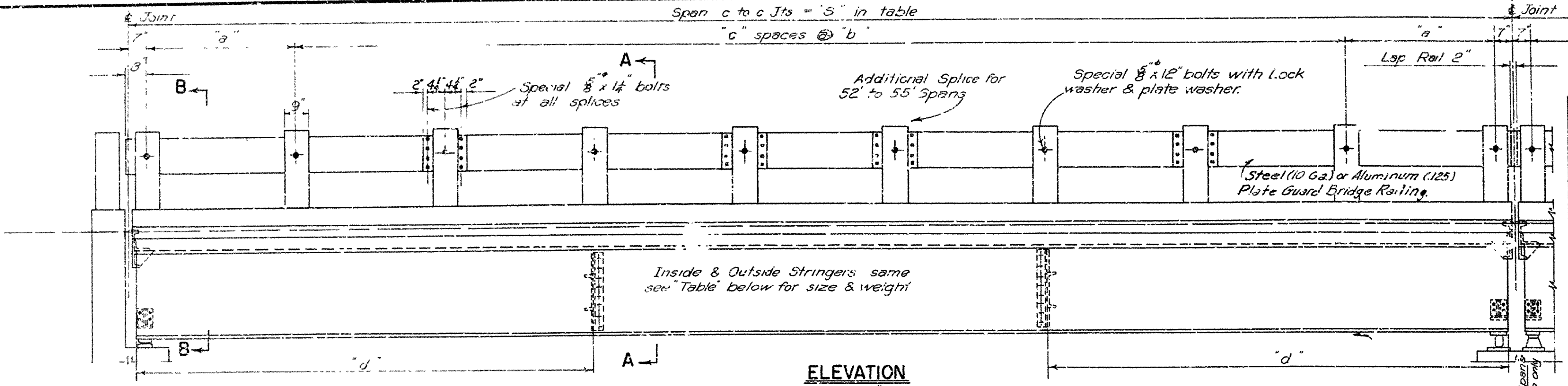
Revised: Optional Weld, Steel Bn Railing, and General Notes E. R. H. 11-19-58

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

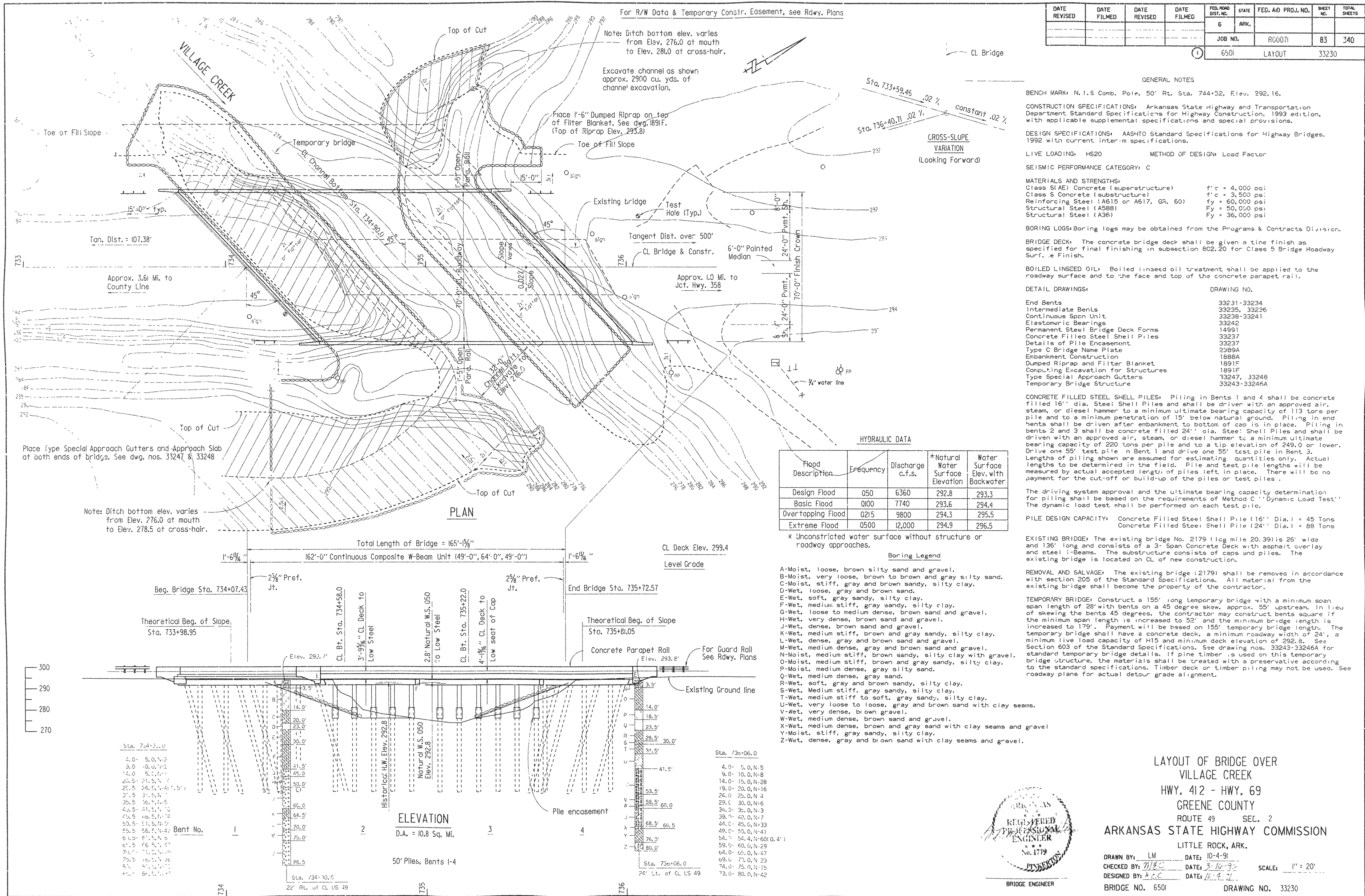
Drawn By: WWM, Date: 2-24-54  
Traced By: WWM, Date: 1-13-55  
Checked By: JHK, Date: 3-4-53

BRIDGE NO. DRAWING NO. 55001

Rev. changed Specs. removed rail section added Alum. Rail Feb 50









For R/W Data and Temporary Construction Easement - See Rdwy. Plans

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		100282	12	56
				6461	LAYOUT			32749

# GENERAL NOTES

BENCH MARK: Square Cut in NE Headwall, Elev. 237.50

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 1991 edition, with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges, 1989 with current interim specifications and Supplement A, Standard Specifications for Seismic Design of Highway Bridges.

LIVE LOADING: HS20 METHOD OF DESIGN: Load Factor  
SEISMIC PERFORMANCE CATEGORY: C

MATERIALS AND STRENGTHS:  
Class S(AE) Concrete (superstructure)  $f'_c = 4,000$  psi  
Class S Concrete (substructure)  $f'_c = 3,500$  psi  
Reinforcing Steel (A615 or A617, GR. 60)  $f_y = 60,000$  psi  
Structural Steel (A588)  $F_y = 50,000$  psi  
Structural Steel (A36)  $F_y = 36,000$  psi  
Steel Shell Piles (ASTM A252, Grade 3)  $F_y = 45,000$  psi

STEEL PILING: Piling in Bents 1 and 4 shall be concrete filled 14" dia. Steel Shell Piles and shall be driven with an approved air, steam, or diesel hammer to a minimum ultimate bearing capacity of 10 tons per pile and to a minimum penetration of 10' below natural ground. Piling in end bents shall be driven after embankment to bottom of cap is in place. Piling in bents 2 and 3 shall be concrete filled 20" dia. Steel Shell Piles and shall be driven with an approved air, steam, or diesel hammer to a minimum ultimate bearing capacity of 193 tons per pile and to a minimum penetration of 20' below excavated channel bottom. Drive one 40' test pile in Bent 1 and drive one 65' test pile in Bent 3. Lengths of piling shown are assumed for estimating quantities only. Actual lengths to be determined in the field.

The driving system approval and the ultimate bearing capacity determination for piling shall be based on the requirements of SP Job 100282 "Wave Equation Analysis". It is estimated that the minimum required rated energy of the hammer will be 12,500 foot pounds per blow for Bents 1 & 4, and 25,000 foot pounds per blow for Bents 2 & 3.

Pile Design Capacity: Concrete Filled Steel Shell Pile (14" Dia.) = 40 Tons  
Concrete Filled Steel Shell Pile (20" Dia.) = 70 Tons

BRIDGE DECK: The concrete bridge deck shall be given a fine finish as specified for final finishing in subsection 802.20 for Class 5 Bridge Roadway Surface Finish.

BOILED LINSEED OIL: Boiled linseed oil treatment shall be applied to the roadway surface and to the face and top of the concrete parapet rail.

DETAIL DRAWINGS: DRAWING NO.

End Bents 32750-32752  
Intermediate Bents 32753  
Continuous W-Beam Unit 32754-32757  
Elastomeric Bearings 32759  
Permanent Steel Bridge Deck Forms 14991  
Concrete Filled Steel Shell Piles 32758  
Type C Bridge Name Plate 2389A  
Embankment Construction 1888A  
Computing Excavation for Structures 1891F  
Type Special Approach Cutters & Approach Slabs 32774-32775  
Temporary Bridge Structure 32769, 32770, 32773

EXISTING BRIDGE: The existing bridge No. M2092 (log mile 11.56) is 25' wide and 90' long and consists of a girder type concrete superstructure and timber bent and timber pile substructure. The existing bridge is located on the centerline of the proposed new bridge.

REMOVAL AND SALVAGE: The existing bridge (M2092) shall be removed in accordance with section 205 of the Standard Specifications. All material from the existing bridge shall become the property of the contractor.

TEMPORARY BRIDGE: Construct a 93' long temporary bridge with a minimum span length of 19' approx. 45' downstream. The temporary bridge, including bents, shall be constructed on a 30 degree left forward skew angle. The temporary bridge shall have a minimum roadway width of 20', a minimum live load capacity of H15 and a minimum deck elevation of 233.50. See Section 603 of the Standard Specifications. See drawing nos. 32769, 32770, 32773 for temporary bridge details. If timber piling and pile encasement are used on this temporary bridge structure, the materials shall be treated with a preservative according to the Std. Specifications. See roadway plans for actual detour grade and alignment.

Pile Encasement: Pile encasement for Bents 2 and 3 shall extend from 3' below the ground line to the bottom of the cap. See dwg. no. 14995A for additional information.

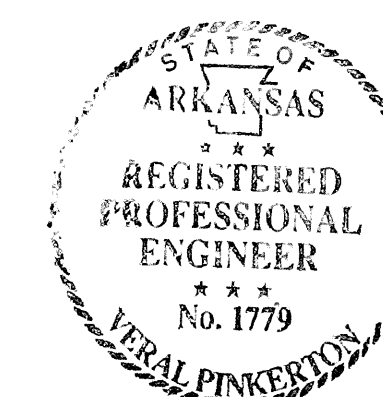
# BORING LEGEND

- Brown, sand strata-lenses, oxidized, stiff fat clay.
- Brown, clay strata lenses, silt.
- Brown and gray, oxidized, hard, fat clay.
- Gray, oxidized, concretions, slickensides, fat clay.
- Gray, oxidized, stiff fat clay.
- Gray, oxidized, concretions, stiff fat clay.
- Gray, oxidized, concretion, slickensides, stiff fat clay.
- Gray, silt strata-lenses, sand strata-lenses, medium fat clay.
- Gray, silt strata-lenses, sand strata-lenses, medium lean clay.
- Brown, fine, saturated sand.
- Brown and Gray, fine saturated sand
- Gray, medium, saturated, sand.
- Gray, fine, saturated sand.
- Gray, fine to medium, lignite, saturated sand.
- Gray, fine, lignite, saturated sand.
- Gray, gravelly, lignite, saturated sand.
- Brown, silt strata-lenses, stiff fat clay.
- Brown oxidized, stiff, fat clay.
- U. Brown, silt strata-lenses, oxidized, medium fat clay.
- V. Brown and gray, oxidized, stiff fat clay.
- W. Brown and Gray, oxidized, concretions, stiff fat clay.
- X. Gray, medium, lean clay.
- Y. Gray, sand strata-lenses, medium, fat clay.
- Z. Gray, fine, clay strata-lenses, saturated sand.

# HYDRAULIC DATA

Flood Description	Frequency	Discharge c.f.s.	*Natural Water Surface Elevation	Water Surface Elev. with Backwater
Design Flood	050	4050	233.5	233.9
Basic Flood	0100	4600	234.7	235.0
Extreme Flood	0500	6000	235.3	235.8
Overtopping Flood	>0500	-	-	-

\* Unconstricted water surface without structure or roadway approaches.



BRIDGE ENGINEER

LAYOUT OF BRIDGE OVER  
KOCHTITZKI DITCH  
KOCHTITZKI DITCH NO. 1 STRS. & APPRS.  
MISSISSIPPI COUNTY  
ROUTE 158 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: LM DATE: 6-18-91  
CHECKED BY: DHP DATE: 2-7-92  
DESIGNED BY: DFL DATE: 6-24-92  
BRIDGE NO. 6461 DRAWING NO. 32749