

INDEX OF SHEETS

SHEET NO.	CRWG. NO.	TITLE
1	8512	Title Sheet
2	8513	Summary of Quantities & Typical Section
3	9514	Layout of Bridge No. 2115
4	8515	Layout of Bridge No. 2474
5	5497-A	Details of Bents for Spans 40'-45', Skew 30°
6	5497	Details of Std. I-Beam Spans 40'-45', Skew 30°
7	5495	Details of Std. I-Beam Spans 40'-45', Straight
8	5495-A	Details of Bents for Spans 40'-45', Straight
9	5435-B	Details of Special Bents
10	2389	Bridge Name Plates
11	1888	Embankment Constr. at Bridge Ends & Backfill for Structures
12	1831	Basls for Computing Excavation for Structures
13	1896	Standard Barricade, Warning and Signs

ROUTE 143 SEC. 1

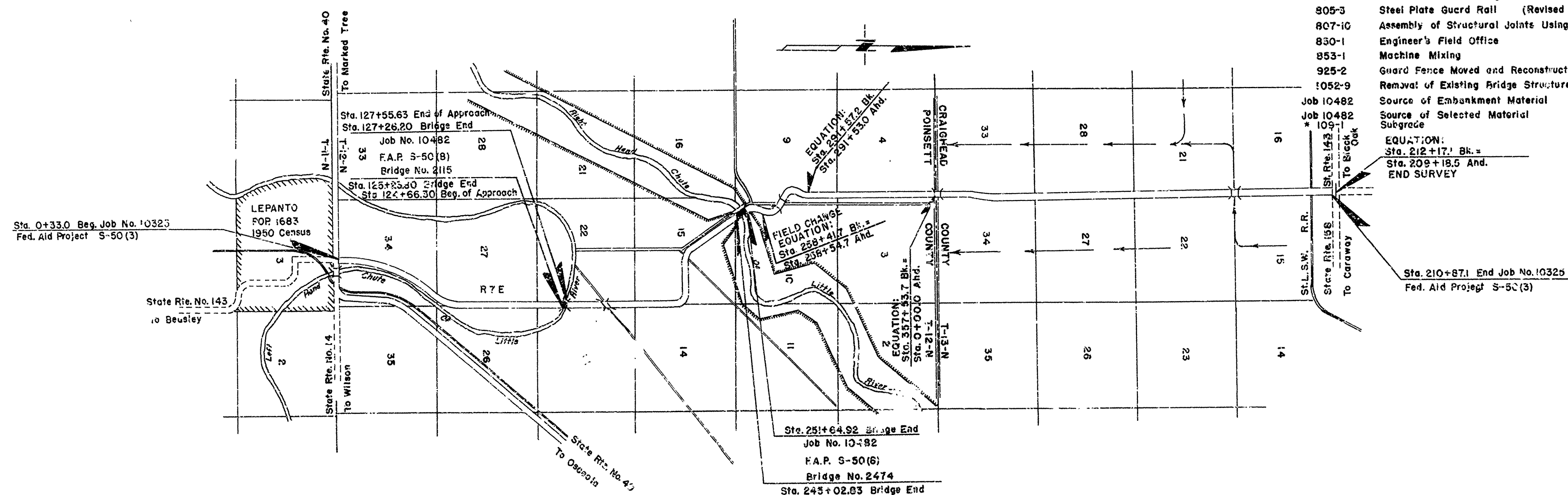
JOB NO 10482

FED. AID PROJECT S-50(8)

**SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION
STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
ADOPTED MARCH 1, 1946 WITH THE SPECIAL PROVISIONS LISTED BELOW**

PAMPHLETS	
DIVISION	PART
I	
II	1, 8a, 8b, 9
IV	
SPECIAL PROVISIONS	

No.	TITLE	No. SHEETS
7-9	Required Contract Provisions for Federal Aid Projects	9
2-1	Competency of Bidders	2
2-2	Equipment List Required	1
2-4	State License for Contractors	1
3-8	Termination of Contract	1
4-1	Revision of Article 4.9	1
6-1	Furnishing Materials from Bars, Pits and Quarries	2
7-10	Public Convenience and Safety	1
8-3	Employment of Labor for Federal Aid Projects	1
9-5	Partial Payments	1
9-9	Federal Excise Tax on Freight Shipments	1
* 125	Special Compaction of Earthwork	3
126	Embankment Material	2
127	Selected Material	2
202-1	Gravel Base Course	2
803-5	Revision of Article 803.21 Bar Reinforcement (20,000 lb./sq.in.)	1
804-2	Precast Concrete Piling	1
805-3	Steel Plate Guard Rail (Revised 12-28-49)	1
807-1G	Assembly of Structural Joints Using High Tensile Steel Bolts	3
830-1	Engineer's Field Office	1
853-1	Machine Mixing	1
925-2	Guard Fence Moved and Reconstructed	1
1052-9	Removal of Existing Bridge Structures and Maintenance of Traffic	1
Job 10482	Source of Embankment Material	1
Job 10482	Source of Selected Material	1
* 109-1	Subgrade	2



LAYOUT *FINAL LENGTH*
Scale: 1 in. = 3000 ft.

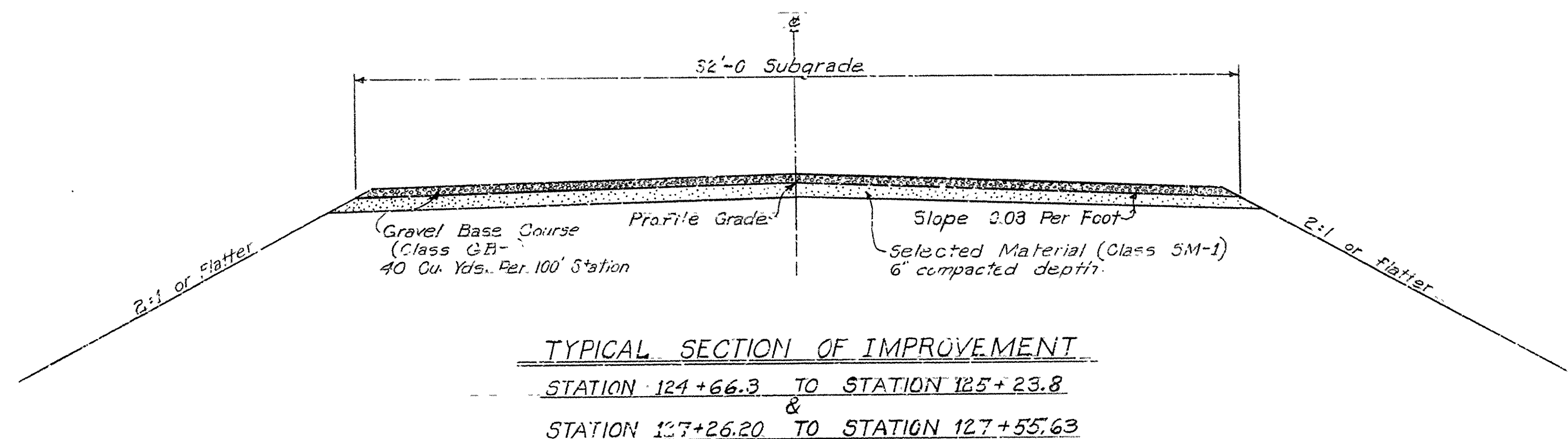
LENGTH OF PROJECT= 951.42 Feet = 0.180 Miles 0.179
 LENGTH OF BRIDGES= 864.49 Feet = 0.164 Miles 0.163
 LENGTH OF EMBANKMENT= 86.93 Feet = 0.016 Miles
 LENGTH OF JOB= 951.42 Feet = 0.180 Miles

W. L. Egan
BRIDGE DESIGN ENGINEER

BRIDGE No. 2115 & 2474

DRAWING No. 8512

FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.	5-50 (8)		2	12
JOB No.		10482			



SUMMARY OF QUANTITIES

CONTINUATION OF QUANTITIES										BRIDGE NO. 2474								TOTAL JOB No. 104822	
ITEM NO.	ITEM	UNIT	BRIDGE NO. 2115						BENTS No. 1 & 6	BENTS No. 2, 3, 14 & 15	BENTS No. 4-8 INCL. & 13	BENTS No. 9-12 INCL.	SPANS No. 1-15 INCL.	SOUTH APPROACH	NORTH APPROACH	TOTAL	TOTAL JOB No. 104822		
			BENTS No. 1 & 6	BENTS No. 2-5 INCL.	SPANS No. 1-5 INCL.	SOUTH APPROACH Sta. 124+66.3 to Sta. 125+23.8	NORTH APPROACH Sta. 127+26.20 to Sta. 127+55.63	TOTAL											
ROADWAY ITEMS	SP-125	Special Compaction of Earthwork	Cu. Yd.				1,540	550	2,090								2,090		
	SP-126	Embankment Material (Class EM-13)	Cu. Yd.				1,540	550	2,090								2,090		
	SP-127	Selected Material (Class SM-1)	Cu. Yd.				43	22	65								65		
	SP-202-1	Gravel Base Course (Class GB-2)	Cu. Yd.				23	12	35								35		
	SP-925-2	Guard Fence Moved & Reconstructed	Lin. Ft.				57	57	114					57	57	114	228		
BRIDGE ITEMS CODE NO. X031	103	Dry Excavation For Structures	Cu. Yd.	116					116	150						150	266		
	SP-802	Class 5 Concrete For Bridges	Cu. Yd.	23.84	23.52	117.15			164.51	21.12	20.48	30.72	120.04	385.05			666.97		
	SP-803	Reinforcing Steel	Lb.	2,880	3,380	20,325			26,585	2,636	3,080	1,620	4,416	68,113			109,459		
	SP-804	Concrete Piling (16" Octagonal)	Lin. Ft.	560	810				1,370	560	924	1,505	45				4,454		
	SP-805-3	Steel Plate Guard Rail (10 ga.)	Lin. Ft.	18.13		400			418.13	15.67				1320.00			1,753.80		
	SP-807	Structural Steel in Beam Spans	Lb.	884		109,360			110,244	778				353,473			464,500		
	929	Bridge Name Plates (Type C)	Each	1					1	1						1	2		
	SP-1052-9	Removal of Existing Bridge Structures and Maintenance of Traffic	Comp. Item						** 40%							*** 60%	100%		
	SP-804(S.A.)	Concrete Piling (18" Octagonal)	Lin. Ft.										1,312.25			1,312.25	35		

* for subsidiary item see drawing back
** Includes detour ramps and Bridge.
*** Includes maintenance of traffic over existing Bridge.
See Special Provision: SP-7-10 and SP-1052-9

SUMMARY OF QUANTITIES AND TYPICAL SECTION LEFT AND RIGHT HAND CHUTES OF LITTLE RIVER

POINSETT COUNTY
ROUTE 143 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.
Date 5-1-54
Date 5-3-54
Scale: None

BRIDGES NO. 2115 & 2474 DWG. NO. 6513

* CONCRETE PILING (18" OCTAGONAL)

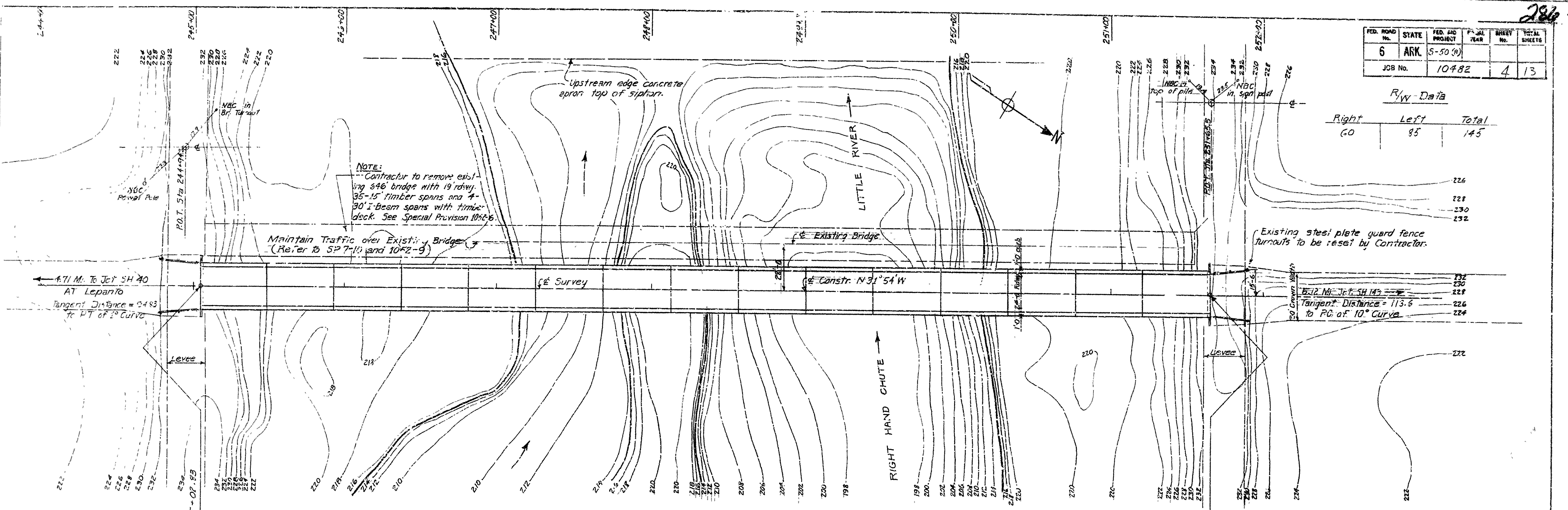
	Bent 9	Bent 10	Totals
120' to bed driven	1,008'		1,008'
5' @ 58' " " "		240'	240'
Build up on rest pile		10.25'	10.25'
Splice " " "		4'	4'
Total			1,312.25'

Revisions
* Field Change No. 1 L.P.C. 8-11-54

Bridge Under Construction

FED. ROAD No.	STATE	FED. AID PROJECT	F.Y. YEAR	SHEET No.	TOTAL SHEETS
6	ARK.	5-50 (A)		4	13
JOB No.		10482			

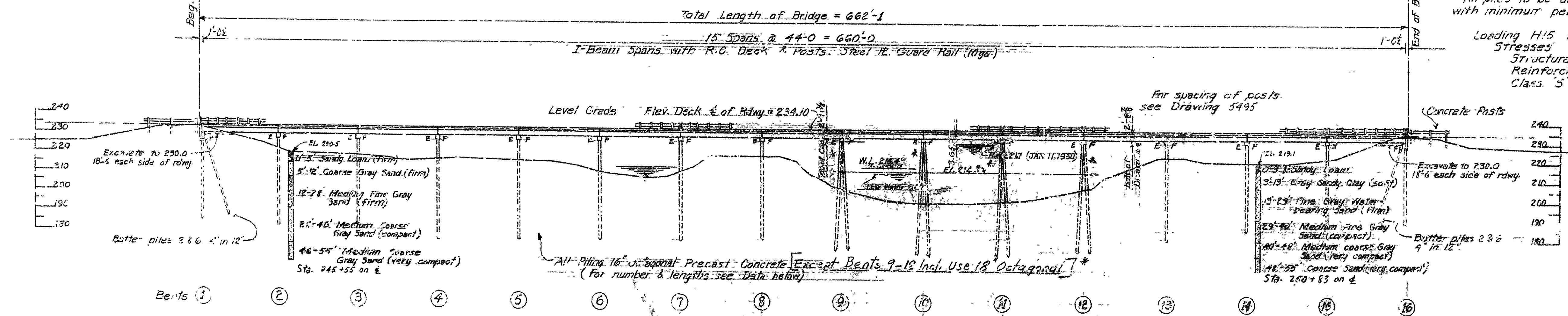
R/W Data		
Right	Left	Total
60	85	145



PLAN

NOTES
B.M. Two nails in top of Cap - Sta. 245+12 L.T. 16' Elevation = 232.94
For details of Substructure see Dwg. 5495A
For details of Superstructure see Dwg. 5495
Lengths of piling shown are for estimating purposes only. Actual lengths to be determined in the field.
Drive test piles as follows: One 55' pile at Bent 4, one 45' at Bent 10 and one 50' pile at Bent 14.
All piles to be driven to a minimum bearing of 30 Tons, with minimum penetration of 20'

Loading H-15 (A.A.S.H.O. 1949 Revised)
Stresses
Structural Steel 18000 #/sq in.
Reinforcing 10000 #/sq in.
Class 'C' Conc. (n=10) 1200 #/sq in.



ELEVATION

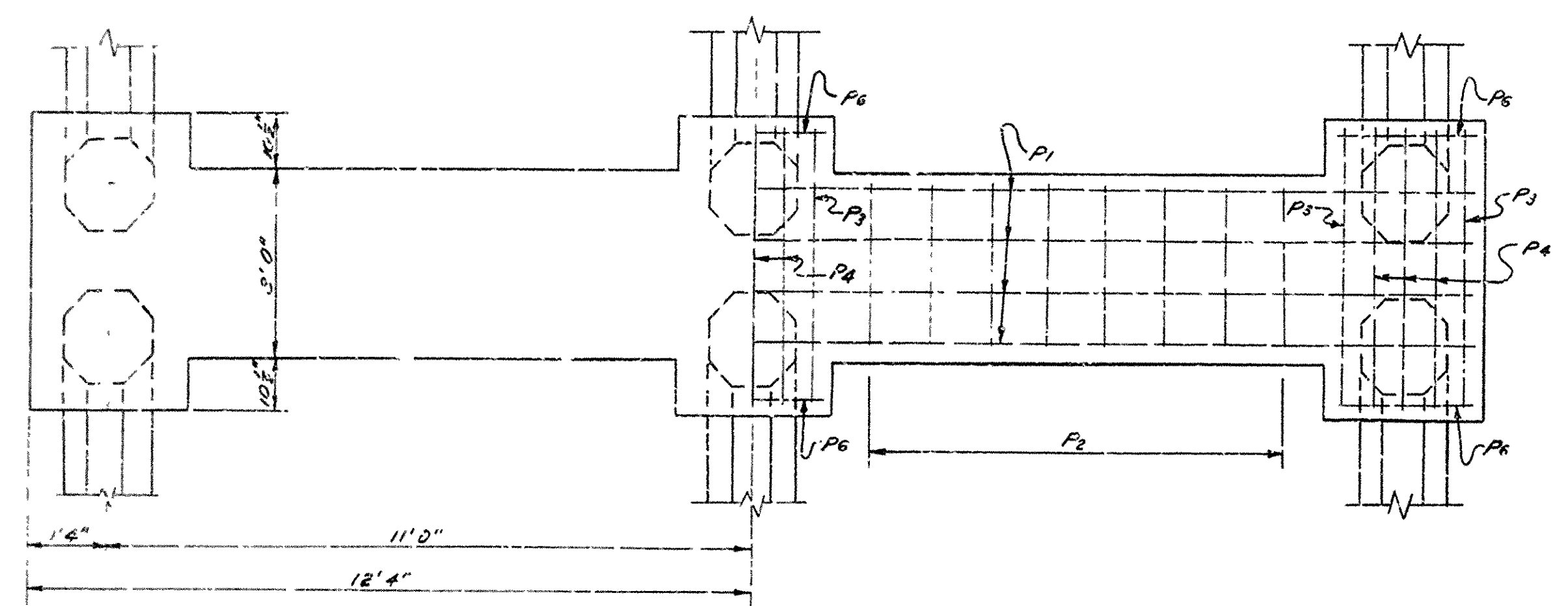
PILING DATA		
Bents	No. Piles	Lengths
1-8	7	40'
9-11	5	40'
12-14	5	50'
15-16	6	58'

REVISIONS
Change span lengths 4-23-54 WMM
Added note SP 7-10 5-10-54 WMM
Field Change No. 1 8-11-54 LFC

LAYOUT OF BRIDGE OVER
RIGHT HAND CHUTE OF LITTLE RIVER

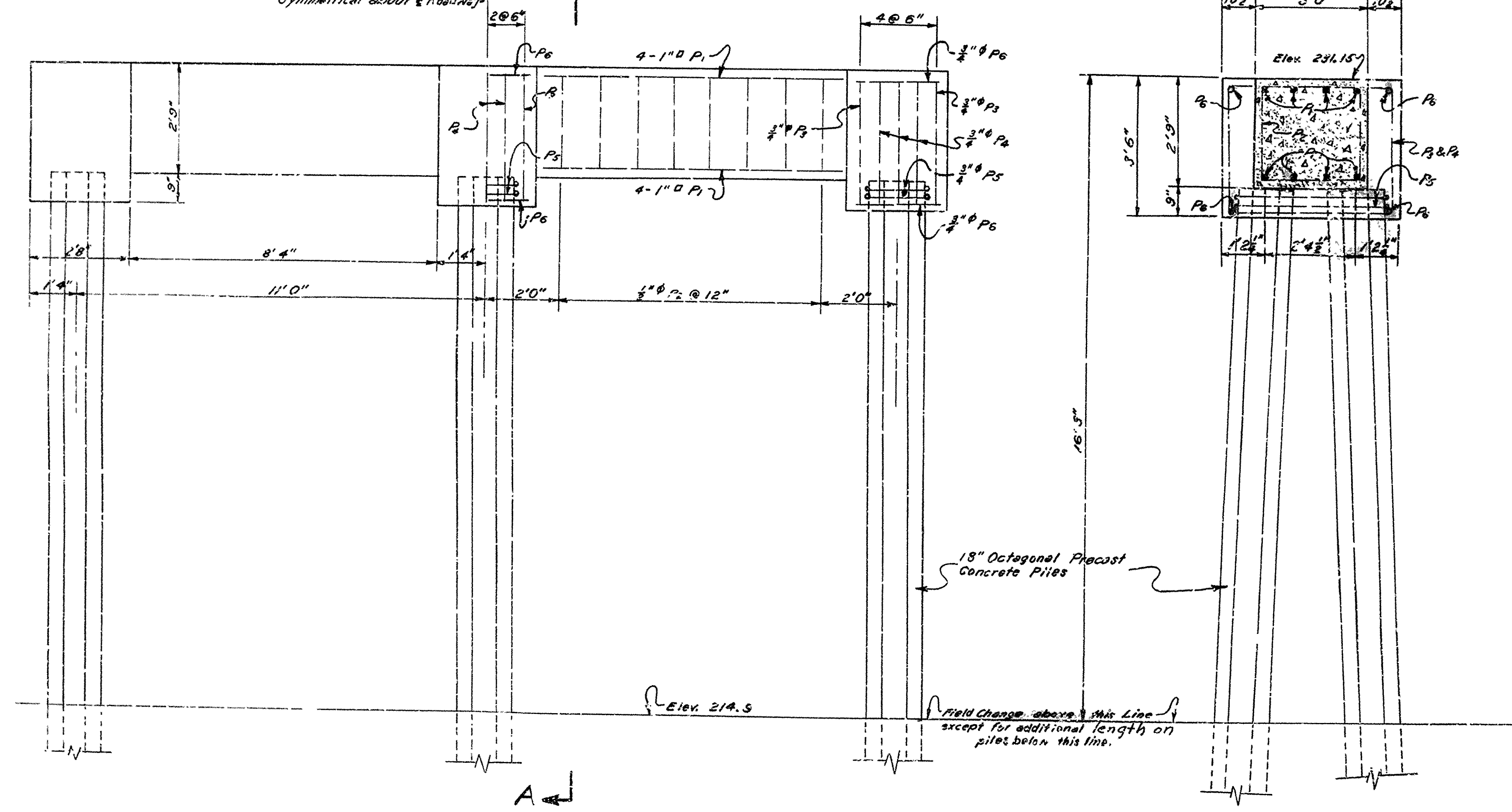
PONSETT COUNTY
ROUTE 143 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
Drawn By: M. W. M. Date: 8-24-54
Traced By: Date:
Checked By: E. P. R. Date: 1-24-55
Scale: 1 in. = 30 ft.
BRIDGE NO. 2474 DRAWING NO. 6515

PROJECT NO.	STATE	FED. AID	FISCAL YEAR	TOTAL SHEETS
6	ARK	5-50(8)		
JO. NO.	10482	9.A		

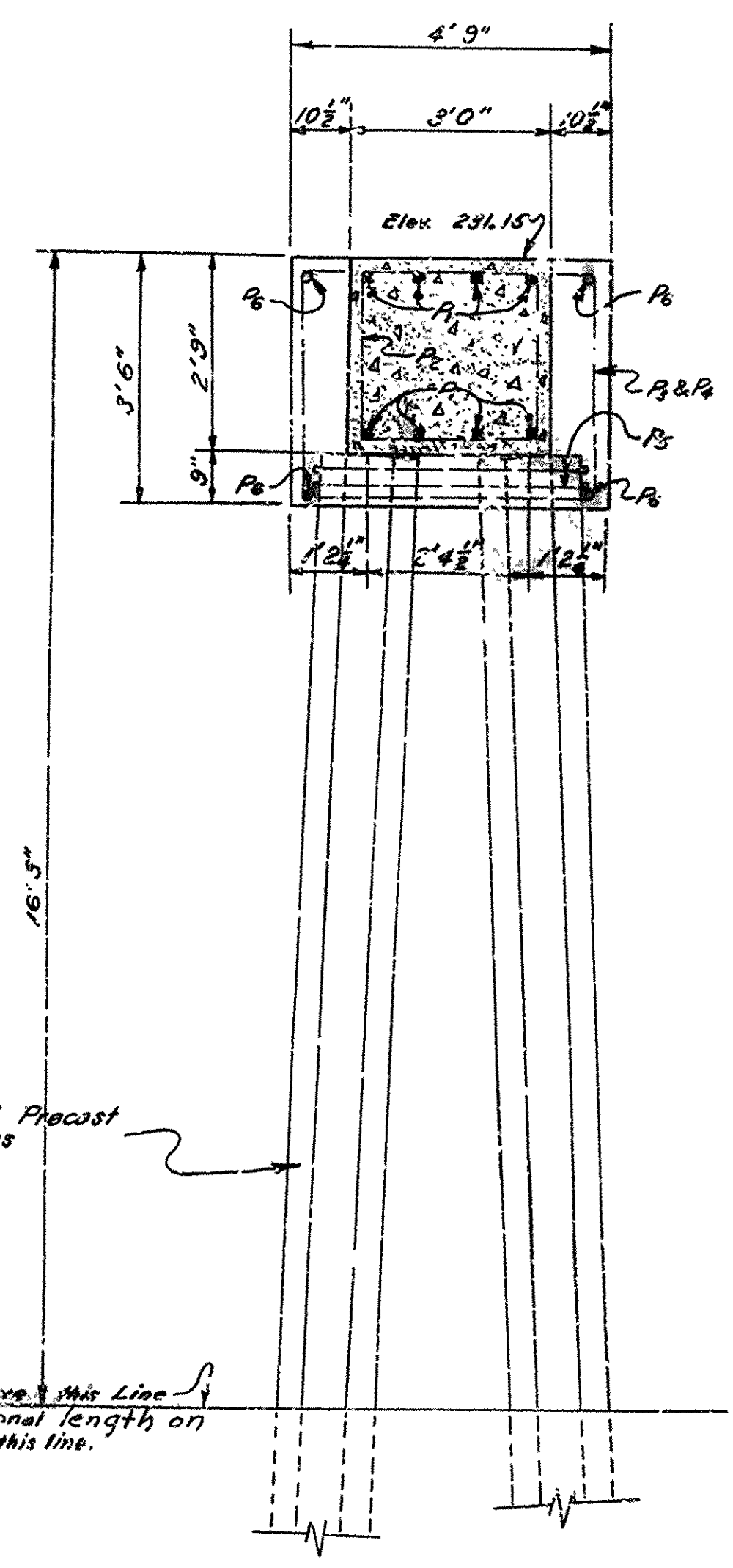


PLAN OF CAP

Symmetrical about A-A



ELEVATION



SECTION A-A

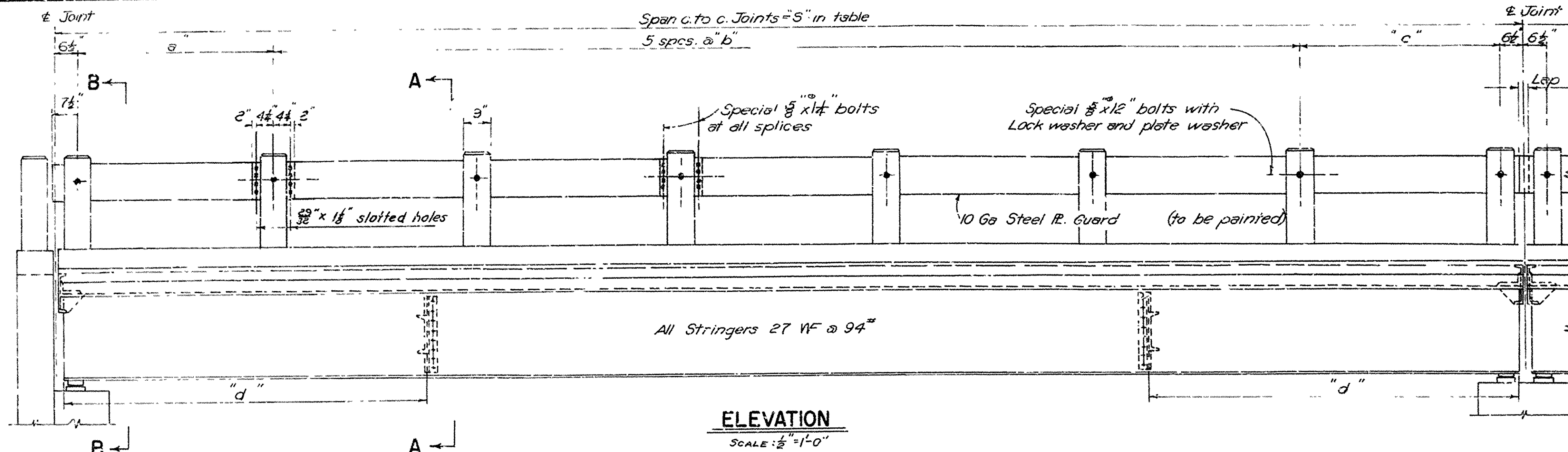
LIST OF REINFORCING STEEL						
MARK	SIZE	NUMBER EACH BENT	LENGTH	A	B	BENDING DIAGRAM
P ₁	1"Ø	8	24' 4"	Start		
P ₂	1/2"Ø	16	10' 3"	2' 7 1/2"	2' 4 1/2"	
P ₃	3/4"Ø	6	15' 7"	4' 4"	3' 1"	
P ₄	3/4"Ø	9	10' 6"			
P ₅	3/4"Ø	6	11' 11"	1' 7"	4' 0"	
P ₆	3/4"Ø	12	2' 4"	Start		
Dimensions are to ctrs. of bars.						

NOTES

Concrete piles to be driven to a minimum bearing capacity of 30 tons.
For details of superstructure and general notes, see Drawing No. 5435.
For details of piling, see Drawing No. 5435-A.
All concrete to be Class "S".

FIELD CHANGE NO. 1
DETAILS OF BENTS 9-12 INCLUSIVE
RIGHT HAND CHUTE OF LITTLE RIVER
POINSETT COUNTY
ROUTE 143 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
Drawn By: LRC Date: 9-8-54
Traced By: LRC Date: 9-8-54
Checked By: Date: _____
Scale: 1/2" = 1'0"
BRIDGE NO. 2474 DRAWING NO. 8315-A

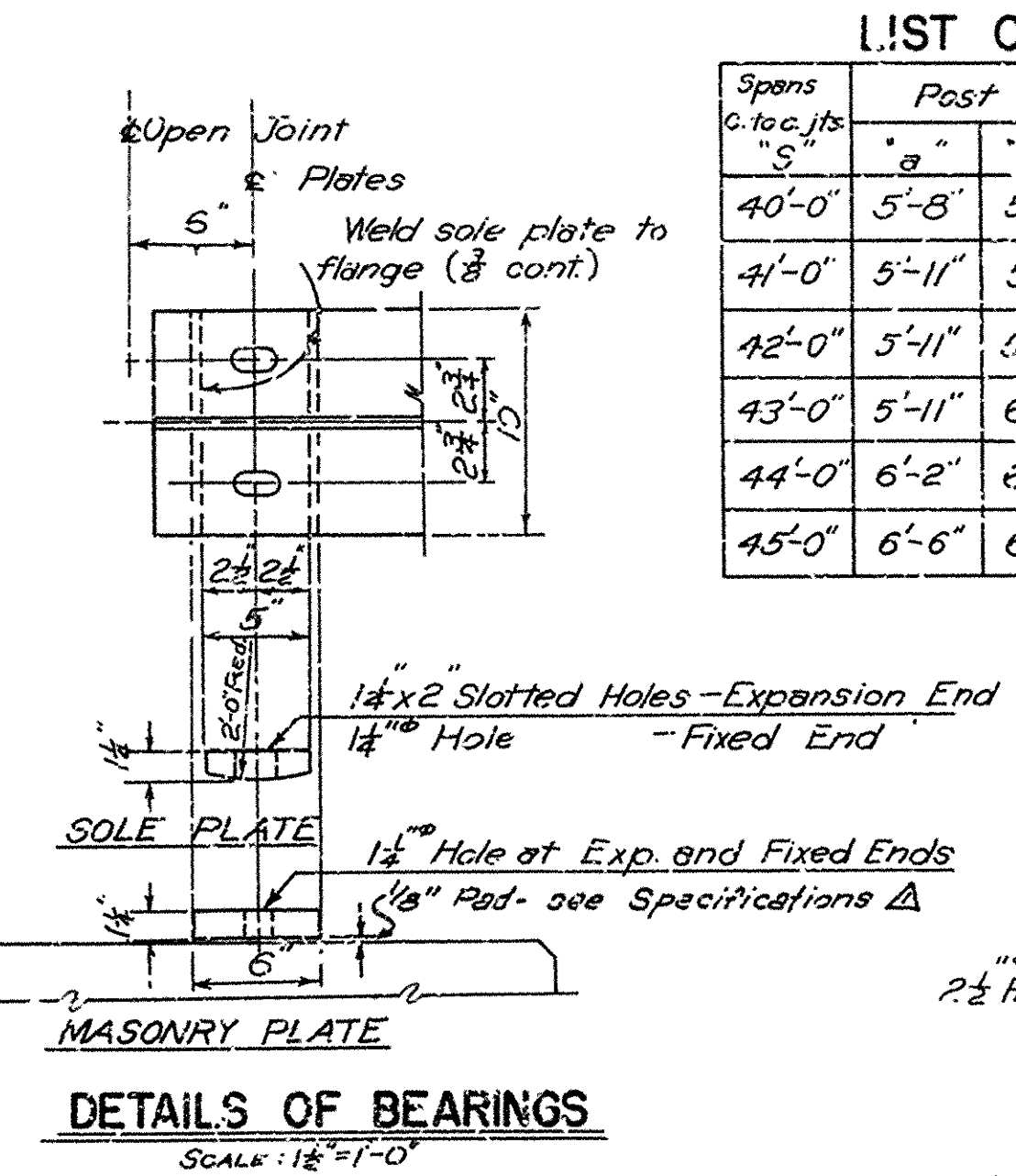
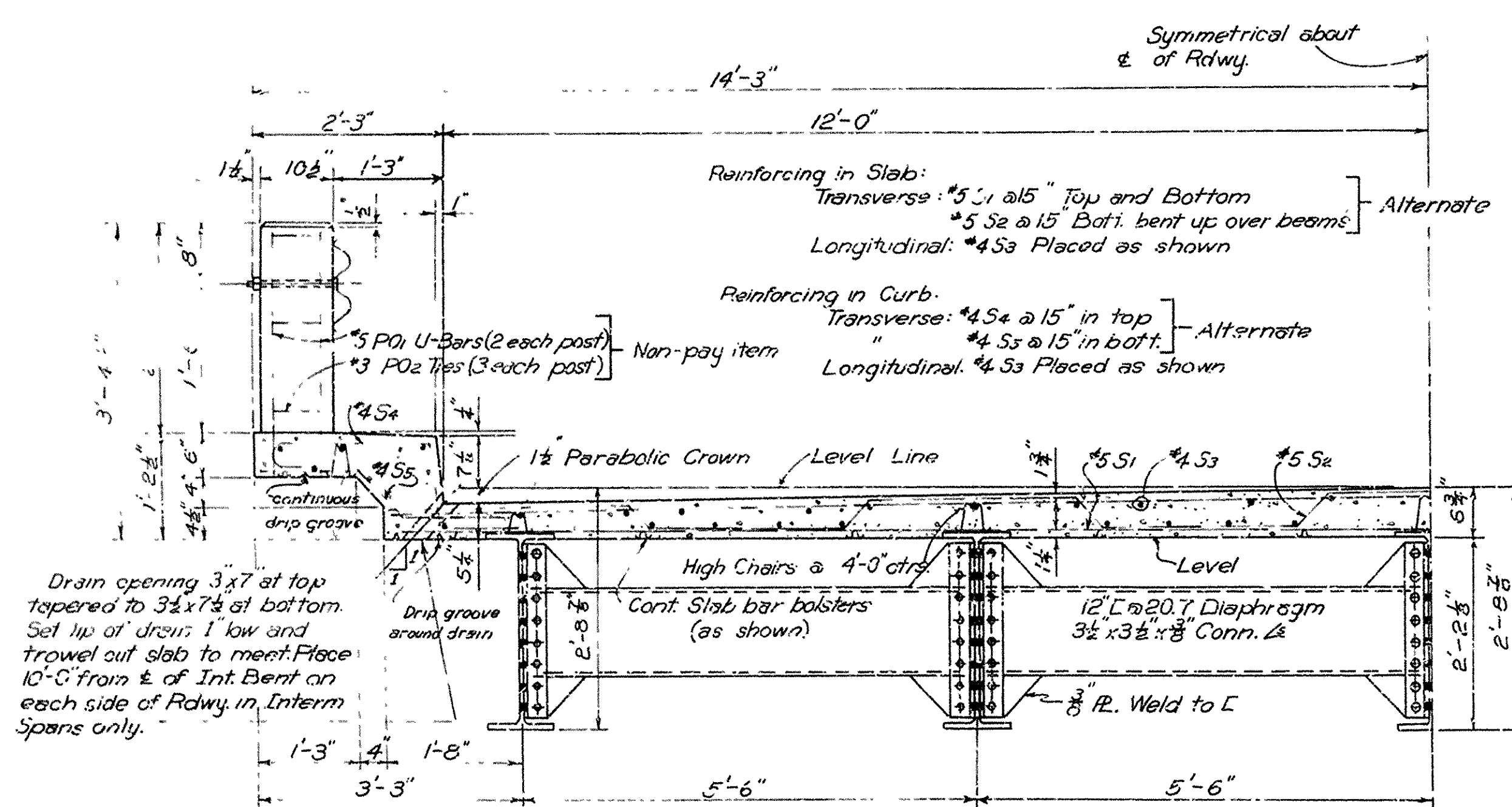
Bridge Design Engineer



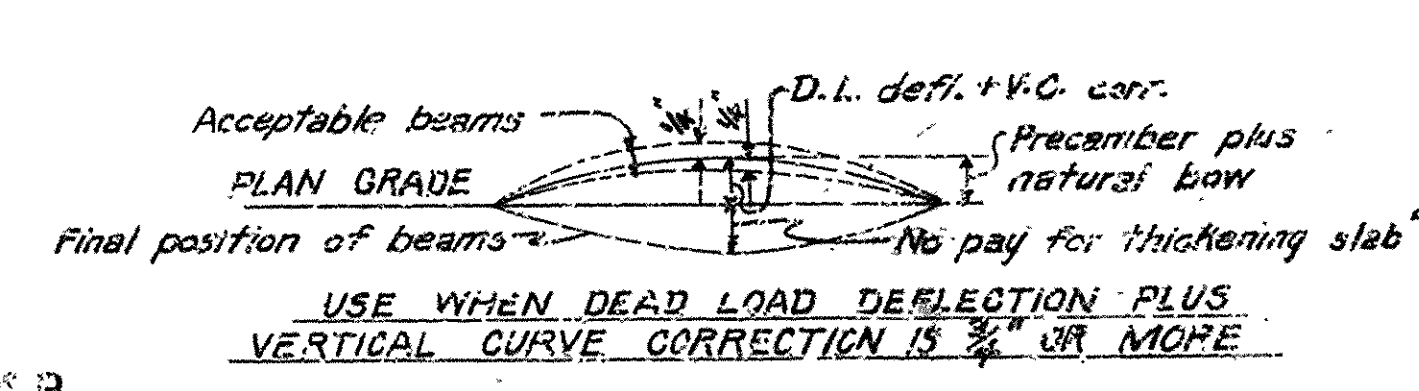
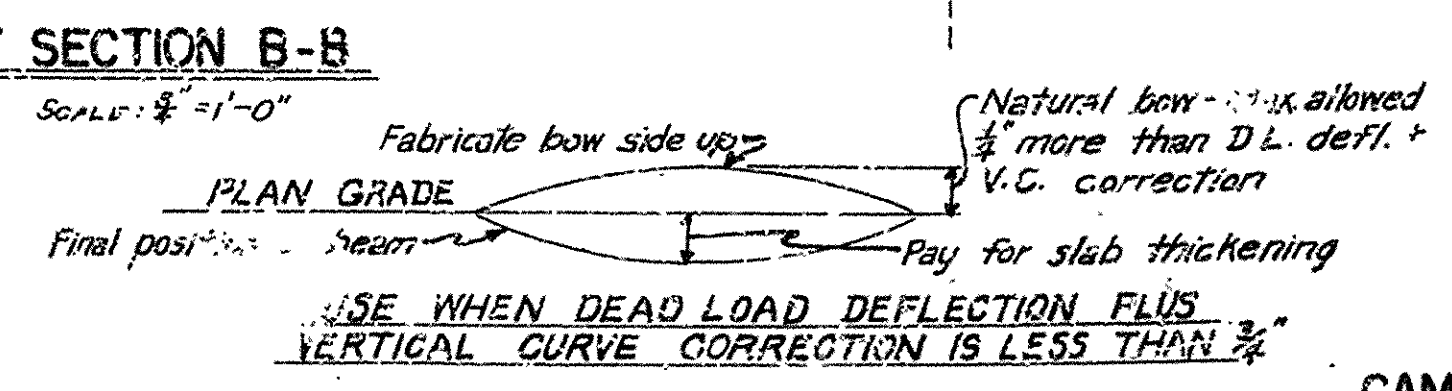
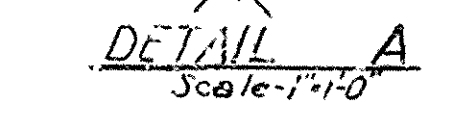
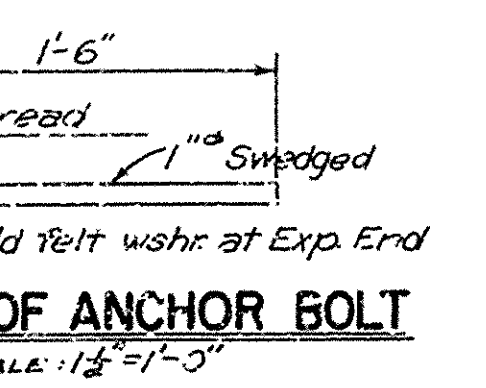
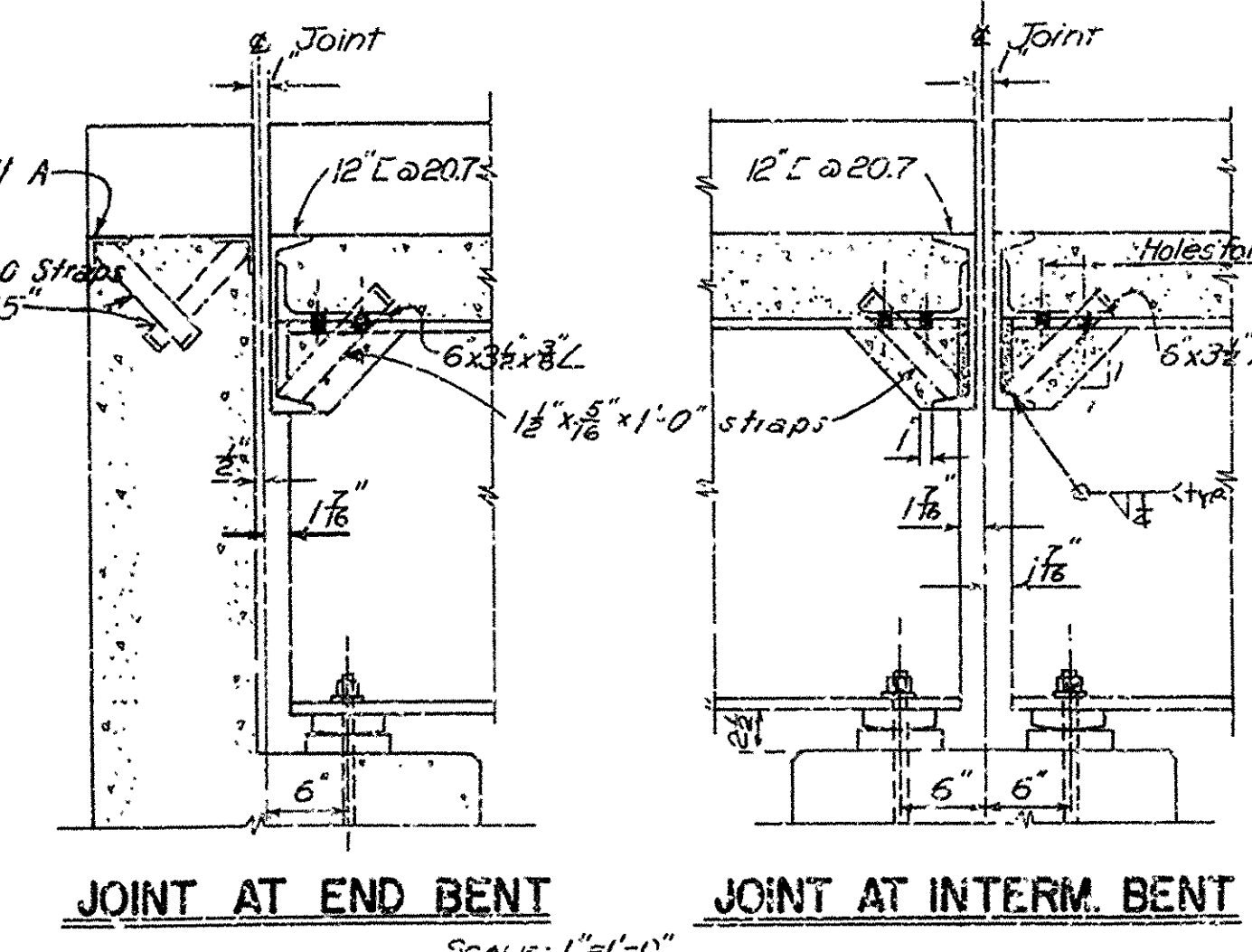
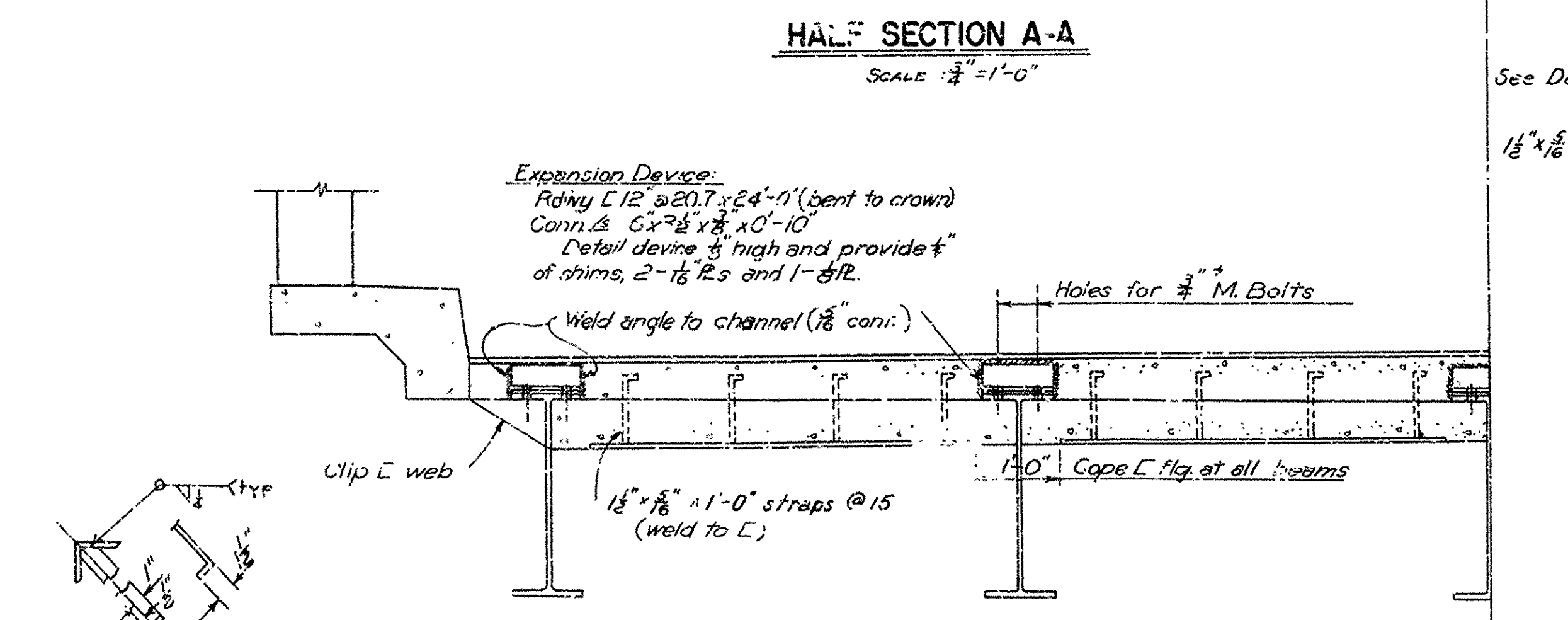
LIST OF REINFORCING STEEL									
MARK	SIZE	NO. IN EACH SPAN	SPAN	LENGTH	PIN DIA.	BENDING DIAGRAM			
S1	#5	64	66	68	70	72	25'-0"	5' 11"	1 1/2"
S2	"	31	32	33	34	35	25'-9"	1 1/2"	1 1/2"
S3	#4	47					5'-5"	5' 11"	1 1/2"
S4	"	64	66	68	70	72	4'-5"	3"	
S5	"	62	64	66	68	70	3'-0"	1 1/2"	
F01	#5	32					5'-4"	1 1/2"	
F02	#3	48					2'-8"	1 1/2"	

* Non-pay item

Dimensions are to ctrs. of bars.



LIST OF VARIABLES				
Spans c. to c. Jts	Post Spacing	Strut Spacing	D.L. Defl.	
40'-0"	5'-8"	5'-6 1/2"	5'-6 1/2"	10'-0"
41'-0"	5'-11"	5'-8"	5'-8"	10'-3"
42'-0"	5'-11"	5'-10"	5'-10"	10'-6"
43'-0"	5'-11"	6'-0"	6'-0"	10'-9"
44'-0"	6'-2"	6'-1 1/2"	6'-1 1/2"	11'-0"
45'-0"	6'-6"	6'-3"	6'-2"	11'-3"



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: 1/2" Open holes 1/8" 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 and Railway Bridges, 5th Ed 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 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 approved 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. 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 approved secured before fabrication is begun.

Handrail to be steel plate guard rail 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 lineal foot for Steel Plate Guard Bridge Railing.

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

Unit Stresses		Loading H15 (AASHTO 1957)	
Structural Steel	18,000 #/sq"	Dead Load	850 #
Reinforcing Steel	20,000 #/sq"	Truck L.L.	0.80 wheels
Class S Concrete (n=10)	1,200 #/sq"	Dead Load	640 #
		Truck L.L.	1.1 wheels

Outside Stringers

Inside Stringers

DETAILS OF
STANDARD 40'-45' I-BEAM SPANS
24'-0" CLEAR RDWY. 1'-0" CURBS

REVISIONS

Changed Camber Diagram. RWTM 9-29-54

Bar max. Rwy Width, Straps, and Steel Plate Guard. FDN 7-24-58

Notes for Field Paint, Bearings and Bridge Railing. FDN 1-27-58

Added bearing pad. R.L.C 5-4-59

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: W.W.L. Date: 2-16-52

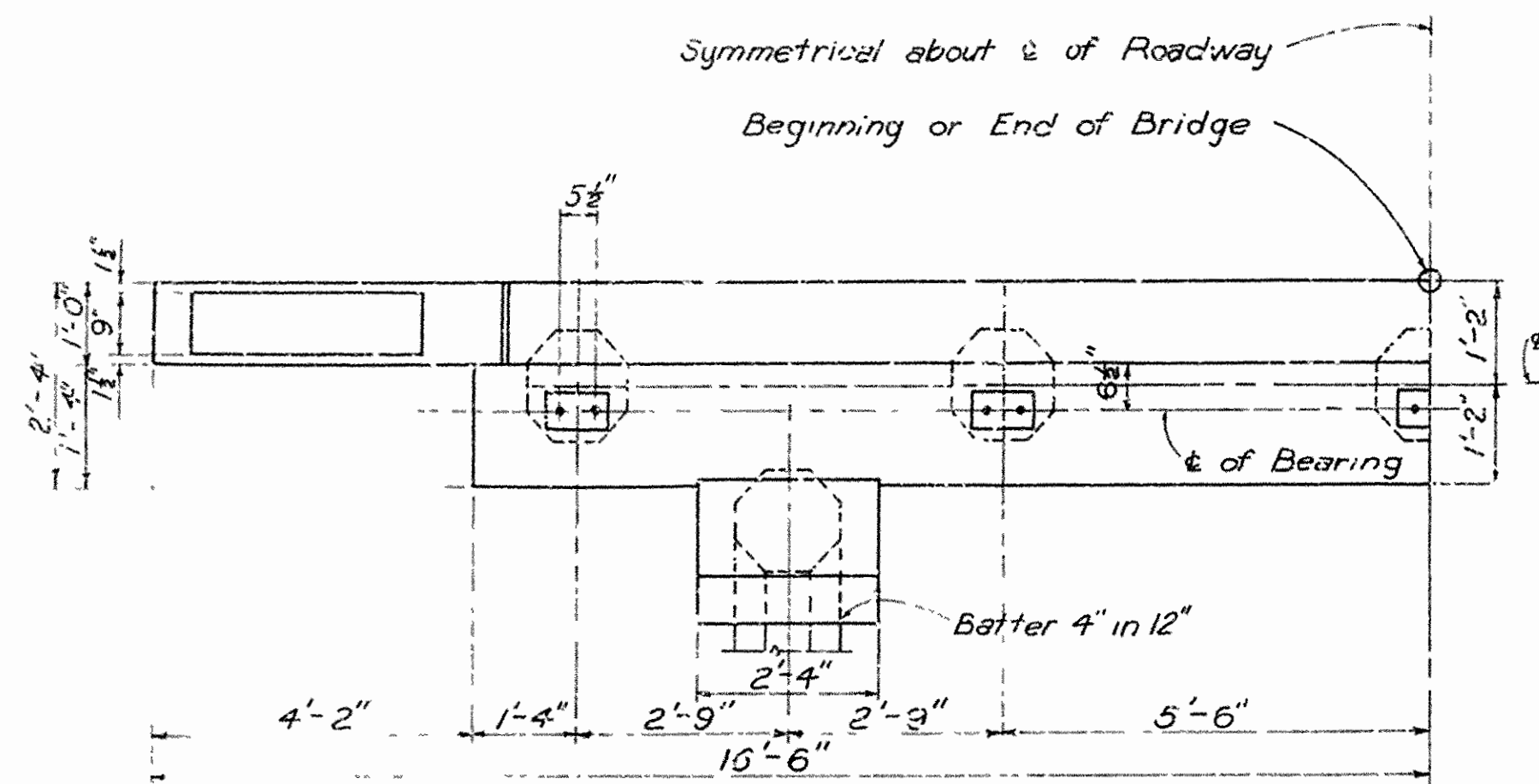
Traced By: L.W.H. Date: 7-28-52

Checked By: J.M.H. Date: 7-28-52

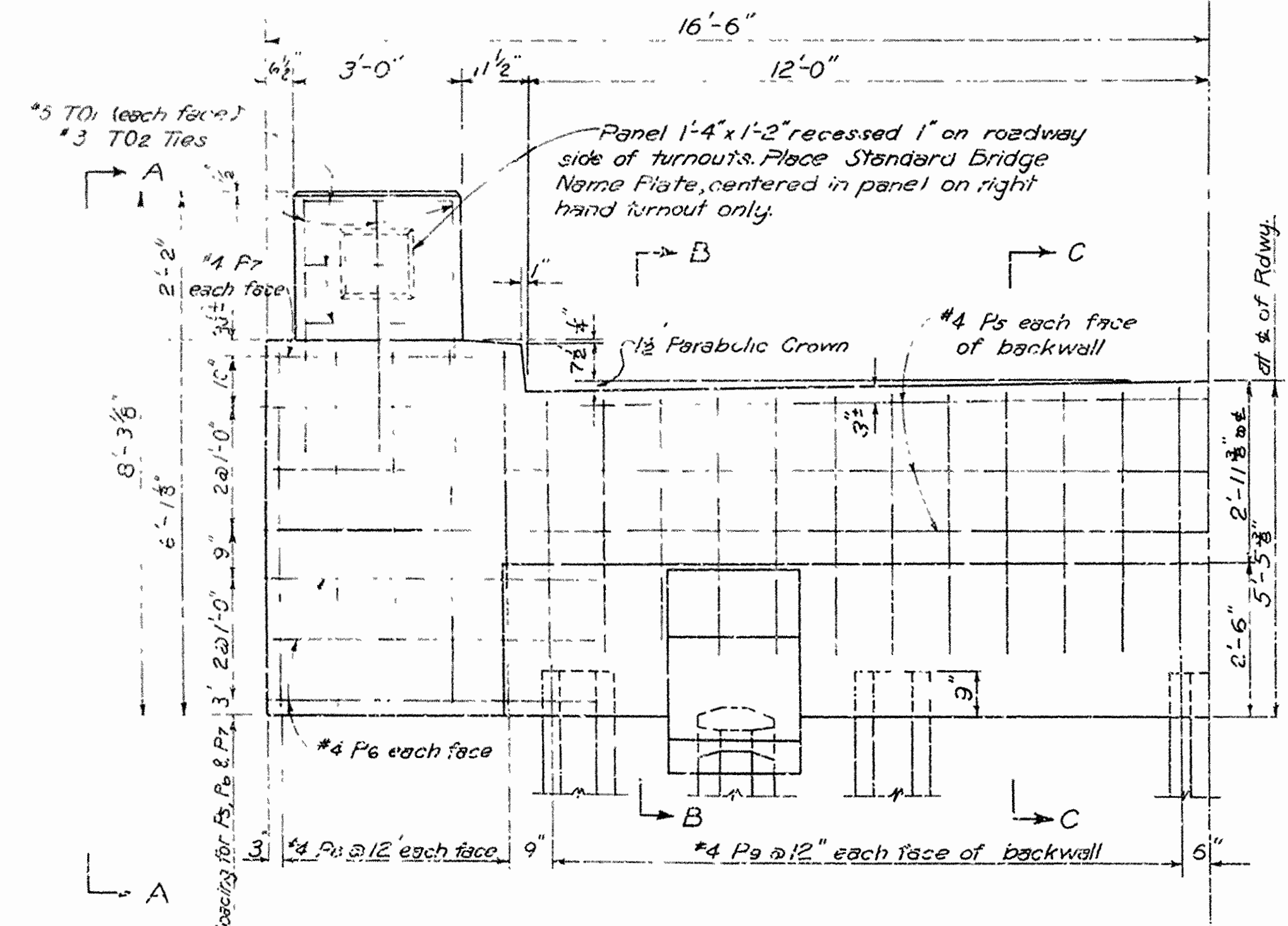
Scale: as noted

DRAWING NO. 5495

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

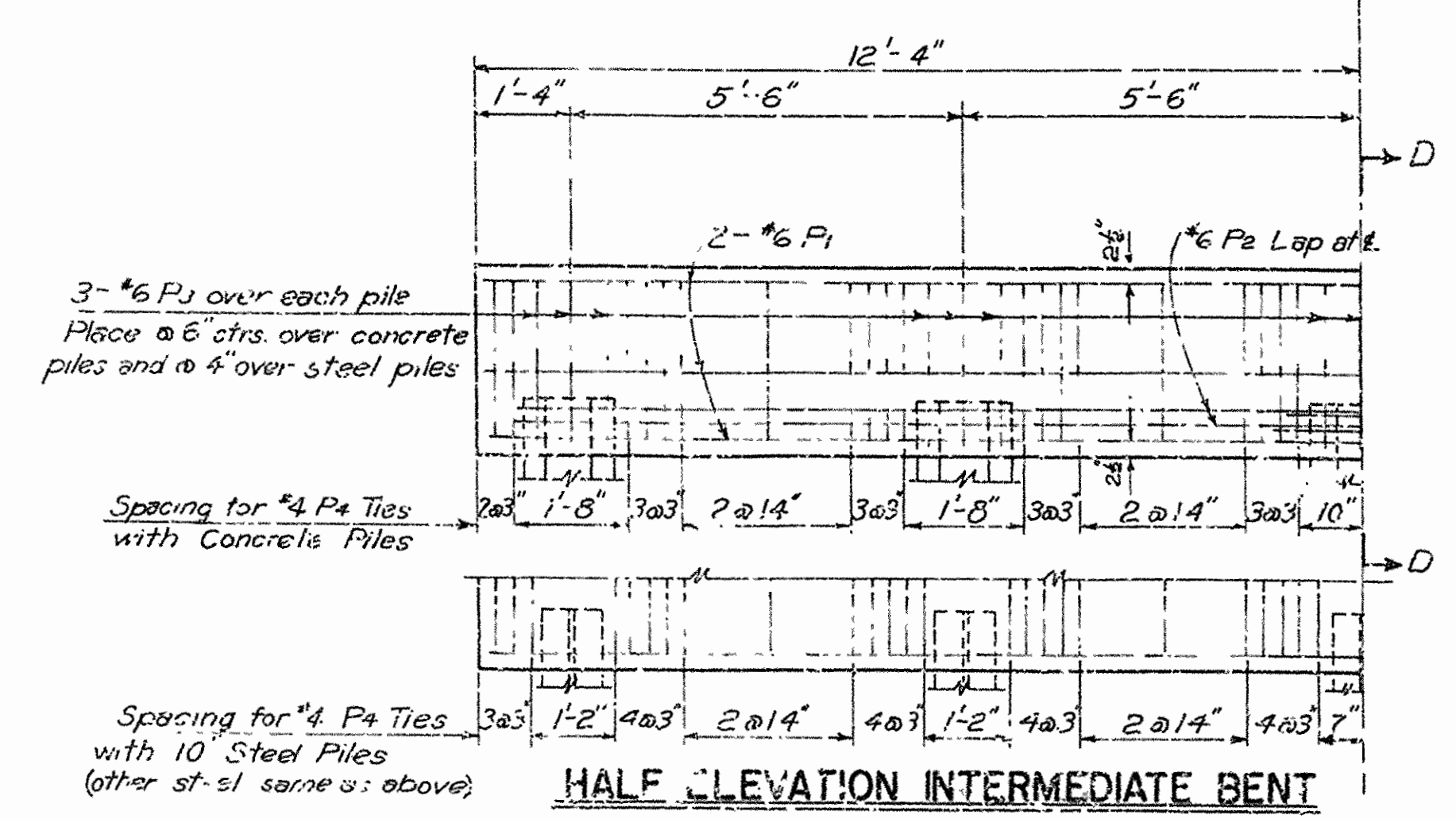


HALF PLAN OF END BENT

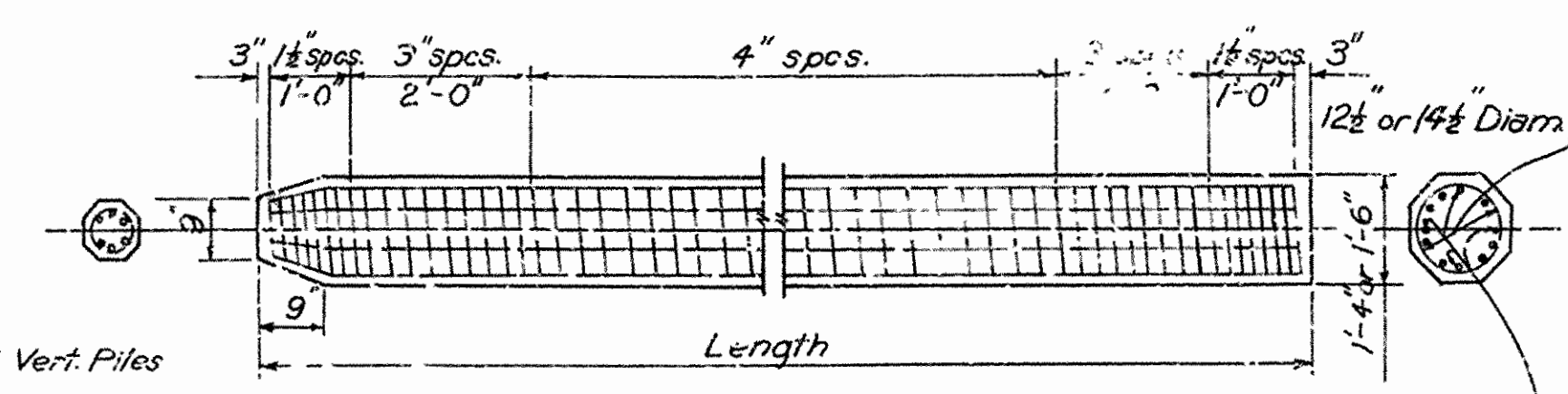


HALF ELEVATION END BENT

Cap reinforcing same as shown for Intermediate Bent

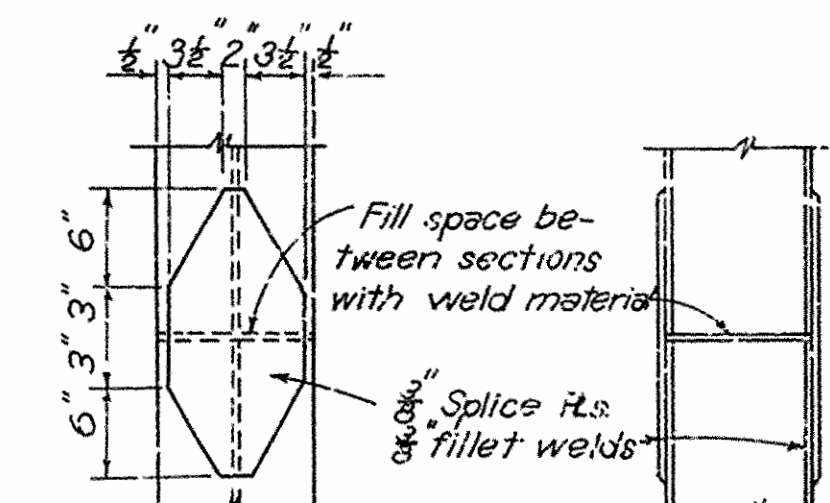


HALF ELEVATION INTERMEDIATE BENT



DETAILS OF PRECAST CONCRETE PILE

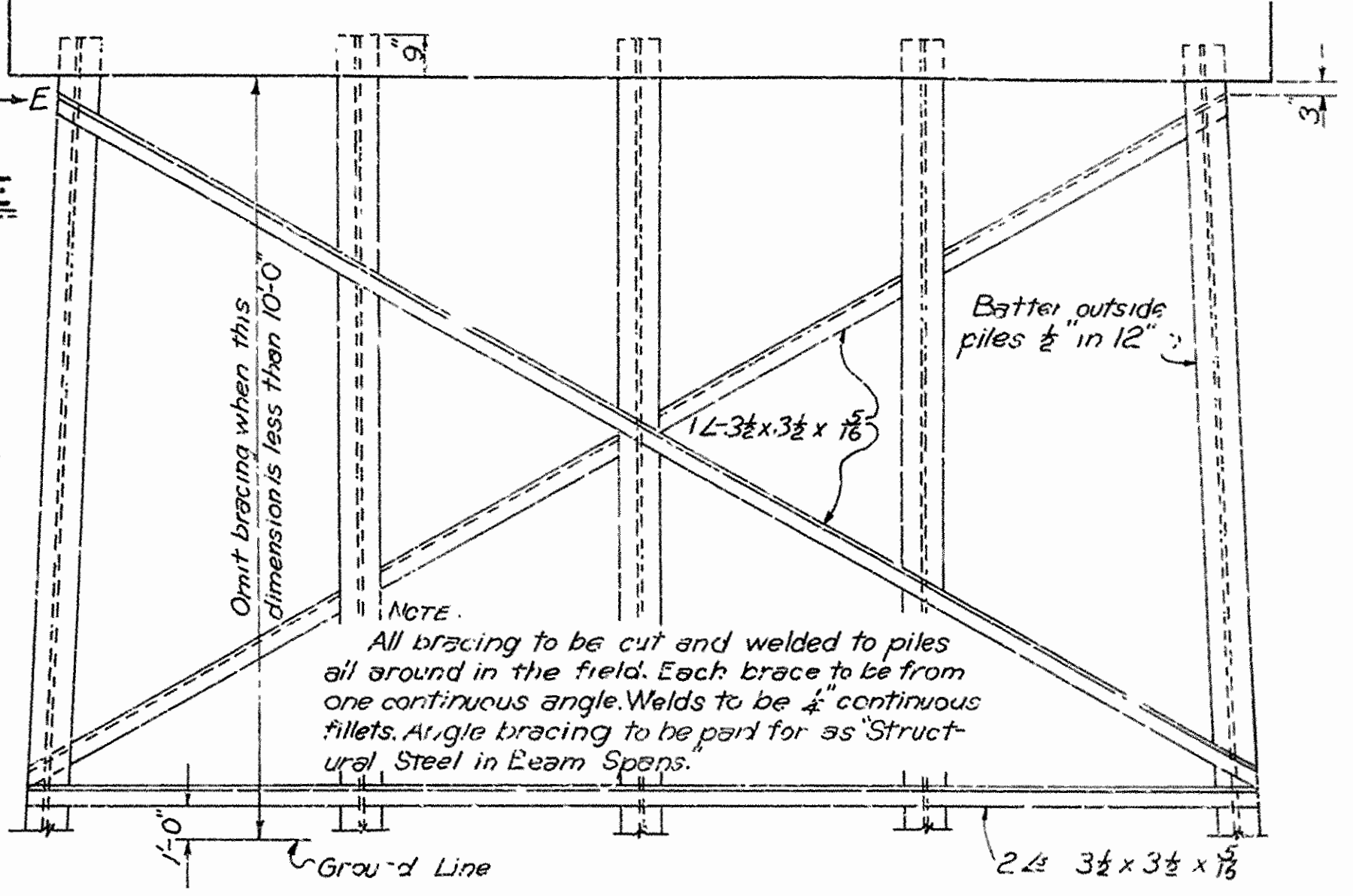
See Layout for size (16' or 18')



PILE SPLICE DETAILS

Scale: 1"=1'-0"
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

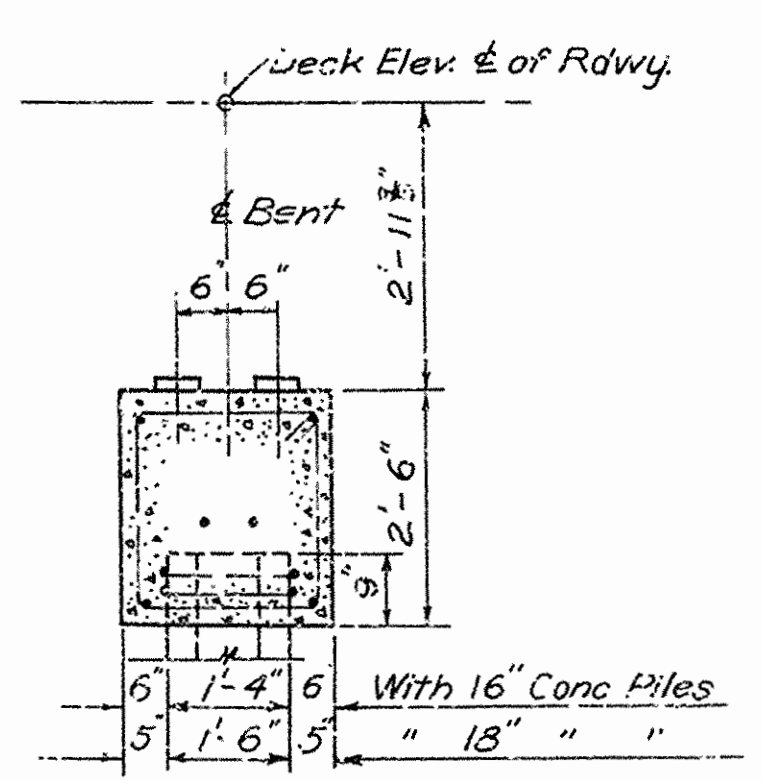
NO.	SIZE	NO. IN END	LENGTH	BENDING DIAGRAM
P1	#6	6	24'-4"	Str.
P2	"	4	27'-7"	Str.
P3	"	15	6'-2"	Str.
P4	#4	40	8'-11"	Str.
P5	"	6	32'-8"	Str.
P6	"	12	5'-8"	Str.
P7	"	4	4'-2"	Str.
P8	"	20	5'-9"	Str.
P9	"	48	4'-3"	Str.
P10	#6	4	7'-10"	Str.
P11	"	4	11'-2"	Str.
P12	#4	2	5'-3"	Str.
T01	#5	12	4'-0"	Str.
T02	#3	6	6'-11"	Str.

* 50 bars if steel piles are used.

NOTES

Steel piles are to be driven to refusal. Concrete piles are to be driven to a minimum capacity of 25 tons.
For details of superstructure end for General Notes, see Divg. No. 5495. Use type of pile called for on Bridge Layout.

Revised to include Pz bars for 18" piles 7-17-51 K.C.C.
Revised Roadway and Curb Widths 4-25-58 K.C.C.
Revised Bar nos. and Straps 7-24-58 F.D.N.

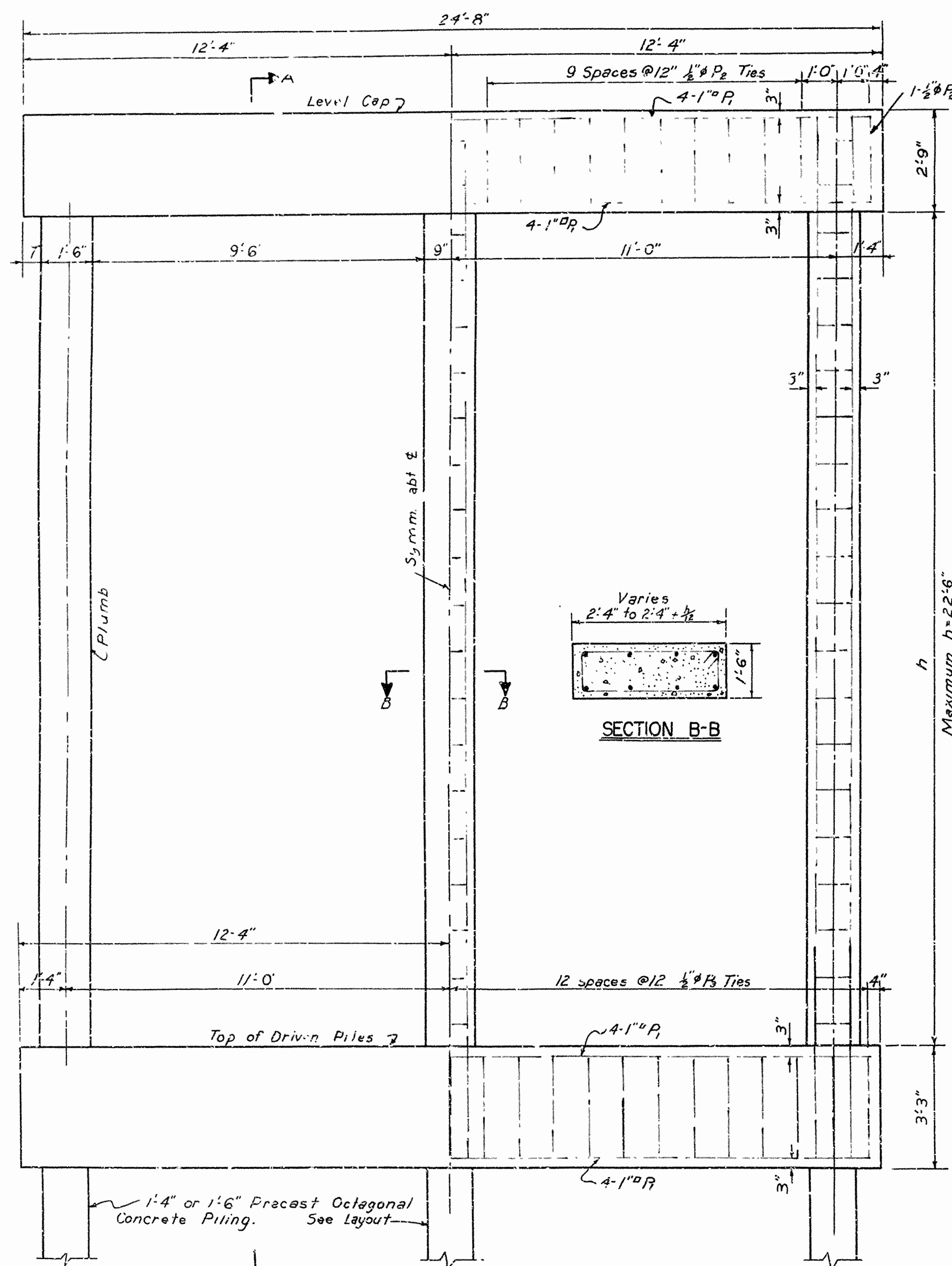


SECTION D-D
(showing concrete pile only)

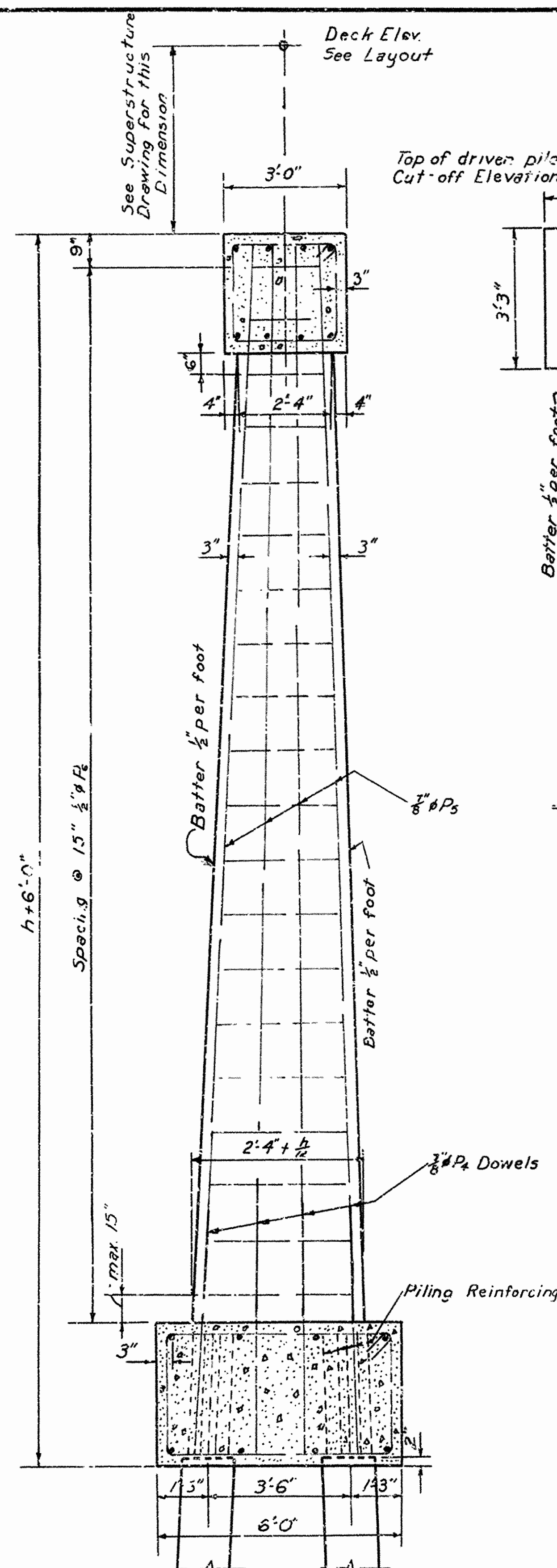
DETAILS OF
STANDARD C. PILE BENTS
40' TO 45' I-BEAM SPANS
24'-0" CLEAR RDWY. 1'-0" CURBS

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
Drawn By: J.W.H. Date: 9-22-52
Traced By: J.W.H. Date: 2-14-54
Checked By: J.W.H. Date: 7-14-54
BRIDGE NO. DRAWING NO. 5495A

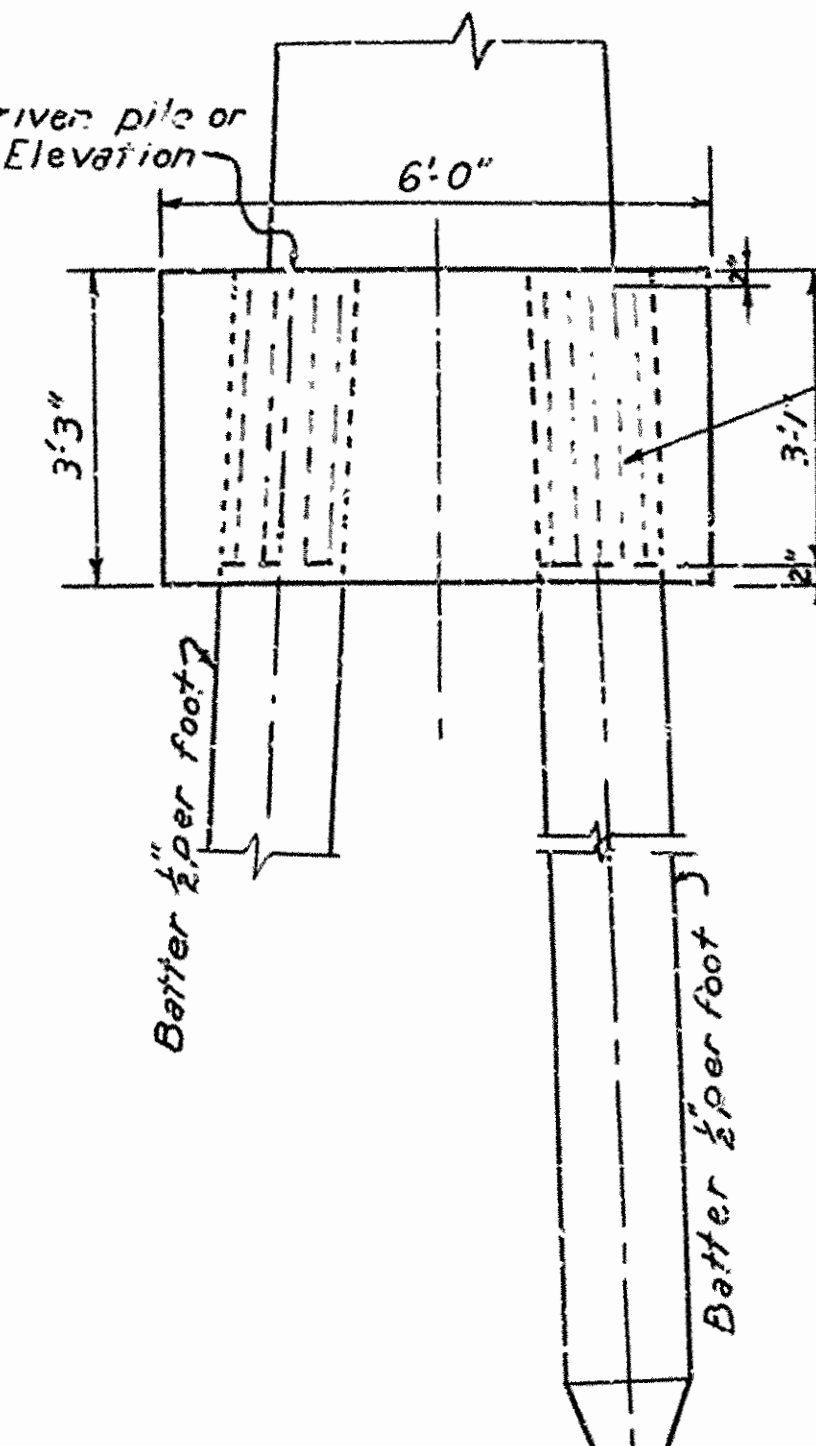
FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.				
STATE JOB NO.					



ELEVATION



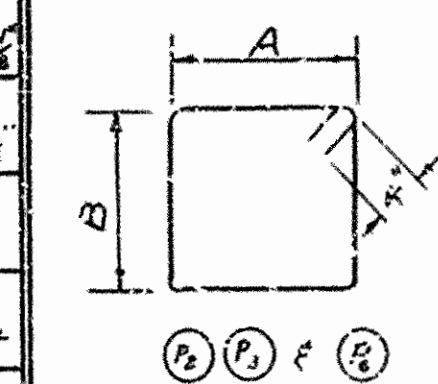
SECTION A-A



DETAILS OF PILE CAP

LIST OF REINFORCING STEEL

MARK	SIZE	NUMBER	LENGTH	Dimensions	
				A	B
P_1	1" ϕ	16	24'-4"	Straight	
P_2	$\frac{1}{2}$ " ϕ	22	10'-9"	2'-7"	2'-4"
P_3	$\frac{1}{2}$ " ϕ	25	17'-9"	5'-7"	2'-10"
P_4	$\frac{3}{8}$ " ϕ	24	6'-0"	Straight	
P_5	$\frac{3}{8}$ " ϕ	24	h + 2'-7"	Straight	
P_6	$\frac{1}{2}$ " ϕ	Varies	Varies 6'-7" to 1'-11"	Varies 1'-9" min. increase 1'-11" per 12"	1'-11"



NOTES

Concrete piles to be driven to a minimum bearing capacity of 30 tons.

For details of superstructure and General Notes see Drawings No. 5495, 5499, 5500 or 5500I.

For details of piling see Drawings No. 5495-A, 5500-A or 5500-H.

All concrete to be class "5".

MEASUREMENT & STRIPPING NOTE

Measurement for payment of concrete piling shall be made to top of strut, except as herein after provided.

Work of stripping pile to provide lap of longitudinal bars shall not be paid for directly, but shall be considered subsidiary to the item of "Concrete Piling".

Cut-off, if necessary, shall be paid for in accordance with the Standard Specifications.

In case buildup is necessary, due to insufficient bearing, measurement for payment of concrete piling shall be to top of build-up pile, with an allowance for splicing of 4'-0" per splice. The bars which extend beyond top of build-up pile, to provide lap with column dowels, shall be paid for at the unit price bid for "Reinforcing Steel".

**DETAILS OF
SPECIAL R.C. BENT
30'-55' I-BEAM SPANS
24'-0" CLEAR RDWY. 1' 0" CURB
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.**

Drawn By: V.F.H. Date: 2-27-54
Traced By: K.E.C. Date: 7-11-55
Checked By: W.W.M. Date: 2-2-54

DRAWING No. 5495-B

W. A. GORDMAN
BRIDGE DESIGN ENGINEER