

320

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	F-01-2(20)		1	
STATE JOB NO. 7525					

STATE OF ARKANSAS  
STATE HIGHWAY COMMISSION

PLAN OF PROPOSED BRIDGES  
ARKADELPHIA-HOT SPRING CO. LINE  
BRIDGE WIDENING  
CLARK COUNTY  
FED. AID PROJECT NO. F-01-2(20)  
ROUTE 67 SEC. 6  
JOB NO 7525

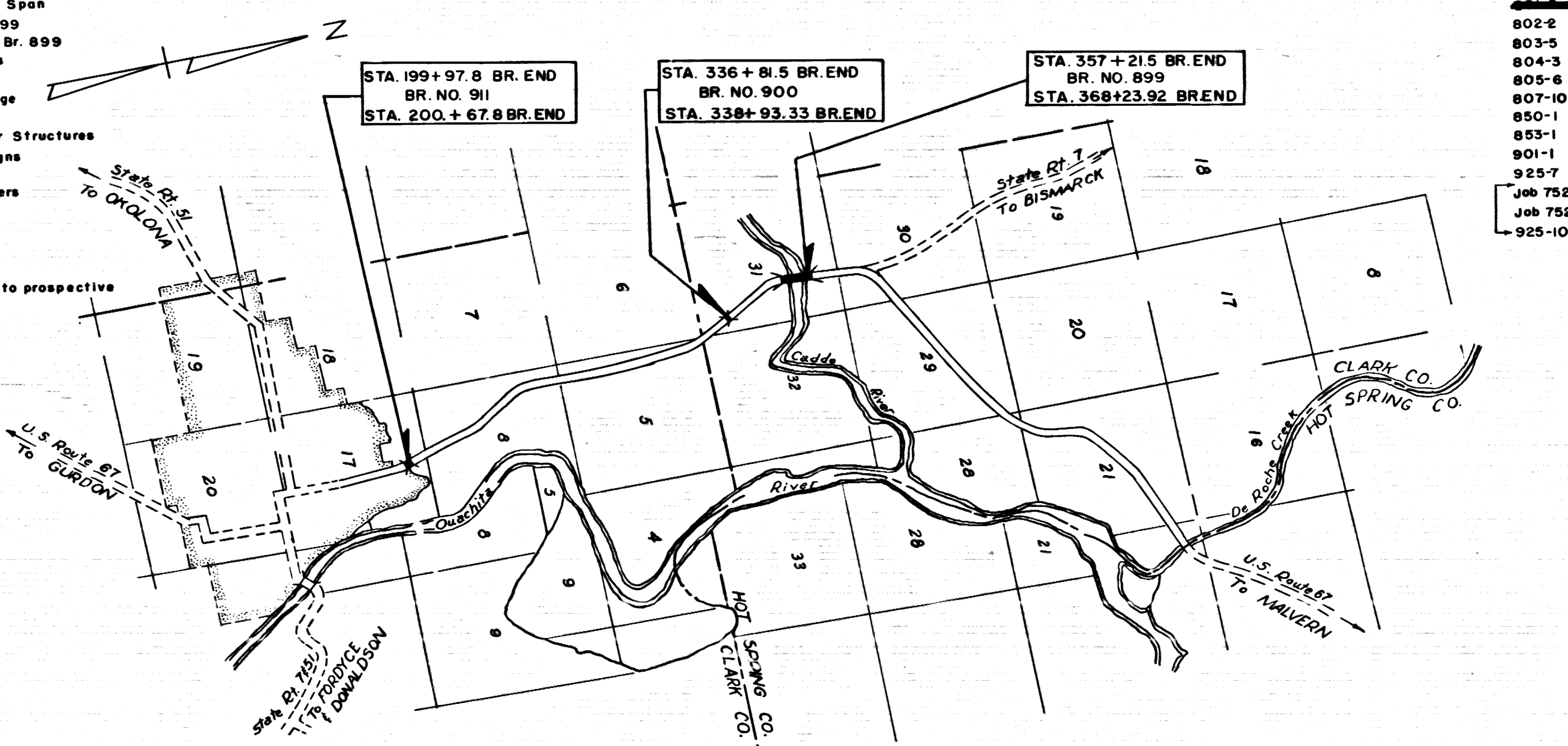
SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION  
STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION  
ADOPTED MARCH 1, 1940 WITH THE SPECIAL PROVISIONS LISTED BELOW

PAMPHLETS	PART
I	
II	7, 8A, 8B, 8C & 9
IX	

No.	TITLE
7-9	Required Contract Provisions for Federal-Aid Projects
2-1	Competency of Bidders
2-2	Equipment List Required
2-4	State License for Contractors
3-9	Award of Contract
8-2	Employment of Labor
8-7	Liquidated Damages
9-5	Partial Payments
9-7	Common Carrier Rates
9-9	Federal Excise Tax on Freight Shipments
802-2	Precast Concrete Products
803-5	Bar Reinforcement (20,000 p.s.i. design)
804-3	Concrete Piling
805-6	Steel Plate Guard
807-10	Assembly of Structural Joints Using High Strength Steel Bolts
850-1	Engineers Field Office
853-1	Machine Mixing
901-1	Concrete for Structures
925-7	Revision Article 925.2(a)
Job 7525	Remodeling Existing Bridges and Maintenance of Traffic
Job 7525	Coordination of Work
925-10	Guard Fences

SHEET NO.	DRWG. NO.	TITLE
1	9359	Title Sheet
2	9360	Summary of Bridge Quantities
3	9361	Layout of Bridge Over Mill Creek Br. 911
4	9362	Layout of Bridge Over Caddo River Relief Br. 900
5	9363 & 9364	Layout of Bridge Over Caddo River Br. 899
6	9365	Details of Widening Superstructure Br. 911
7	9366	Details of Widening Superstructure Br. 911
8	9367	Details of New Pier No. 3, Br. 899
9	9368	Details of Composite I-Beam Spans, Br. 899
10	9369	Details of Widening Substructure, 30' R.C.D.G. Spans (3 Girder Type) Br. 899
11	9370	Details of Widening Superstructure, 30' R.C.D.G. Spans (3 Girder Type) Br. 899
12	9371 & 9372	Details of Detour Bridge Over Caddo River
13	2273-A	Details of Existing Std. 30' R.C.D.G. Spans & Concrete Pile Bents (4 Girder Type)
14	1866	Details of Existing Substructure Br. 911
15	1042	Details of Existing 35' R.C.D.G. Spans 30° Skew
16	2272	Details of Existing 30' R.C.D.G. Spans (3 Girder Type)
17	2273	Details of Existing 30' R.C.D.G. Spans (4 Girder Type)
18	3536 & 3537	Details of Existing 200'-3" Truss Span
19	1881	Details of Existing Abut. No. 1 Br. 899
20	1882	Details of Existing Piers 1, 2, 3, & 4 Br. 899
21	2382	Details of Precast Concrete Piles
22	GR-7	Steel Plate Guard
23	* 1888	Embankment Construction at Bridge Ends and Backfill for Structures
24	* 1891	Basis for Computing Excavation for Structures
25	* 1896	Standard Barricades Warning and Signs
26	1897	Installation of Warning Signs
27	2389	Bridge Name Plates & R/W Markers
28		Details of Detour Bridge I-Beams as Originally Fabricated

\* This Standard not normally included in Plans sold to prospective bidders but may be had upon request.



LAYOUT  
Scale: 1" = 3000'  
FINAL LENGTH  
LENGTH OF PROJECT- 1384.25' or 0.262 Miles  
LENGTH OF BRIDGES- 1384.25' or 0.262 Miles  
LENGTH OF EMBANKMENT-  
LENGTH OF JOB- 1384.25' or 0.262 Miles

ARKANSAS STATE HIGHWAY DEPT.

RECOMMENDED FOR APPROVAL  
BRIDGE DESIGN ENGINEER

RECOMMENDED FOR APPROVAL  
ROADWAY DESIGN ENGINEER

RECOMMENDED FOR APPROVAL  
DISTRICT ENGINEER

APPROVED  
CHIEF ENGINEER

DEPARTMENT OF COMMERCE  
BUREAU OF PUBLIC ROADS

APPROVED  
DISTRICT ENGINEER

DATE

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	ARK.	701-2(20)		2	
JULY 1956		7525			

SUMMARY OF BRIDGE QUANTITIES - JOB 7525

Code No.	Bridge No.	ITEM No.	ITEM	103	103	103	SP & B02	SP & B02	SP & B02	SP & B03	SP & B04	SP & B05-G	SP & B07	B10	909	SP 925-10	929	SP Job 7525	
				DRY EXCAVATION FOR STRUCTURES	WET EXCAVATION FOR STRUCTURES	SOLID ROCK EXCAVATION FOR STRUCTURES	CLASS A CONCRETE FOR BRIDGES	CLASS S CONCRETE FOR BRIDGES	SEAL CONCRETE FOR BRIDGES	REINFORCING STEEL	CONCRETE PILING 16" OCTAG.	STEEL PLATE GUARD (10 GA.)	STRUCTURAL STEEL IN BEAM SPANS	UNTREATED TIMBER PILING	RIPRAP	GUARD FENCE (TYPE A)	BRIDGE NAME PLATES (TYPE C)	REMODELING EXISTING BRIDGES & MAINT. OF TRAFFIC	
UNIT OF BRIDGE				UNIT	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	LBS.	LIN. FT.	LIN. FT.	LBS.	LIN. FT.	C.Y.	LIN. FT.	EACH	COMPR. ITEM	
X031	899	Bent No. 1		12				10.38		700	68	7.75			34	57	1		
		Bents No. 2, 4, 6, 8, 10, 12, 14, 16, 18, 19, 21, 23, 25						54.60		7038	925								
		Bents No. 3, 5, 7, 9, 11, 13, 15, 17, 20, 22, 24 & 26						48.48		6298	875								
		Abut. No. 1		3				0.78		76						57			
		Pier No. 1						4.30		691	80								
		Pier No. 2						1.03		220									
		Pier No. 3			308		125.38		77.79	9396				1,325					
		Pier No. 4						0.94		160									
		Pier No. 5						4.30		691	80								
		Span No. 1						16.24		3261		5800							
		Spans No. 2-26						420.00		84121		1500.00							
		Span No. 27						17.10		4,609		60.00	142						
		Spans No. 28 & 31						35.36		9427		120.00	352						
		Spans No. 29 & 30						195.57		24,254		400.00	312,537						
		Span No. 32						18.16		4,772		6750	142						
		Bent No. 27						4.20		602	85								
Totals Bridge 899				15			125.38	781.24	77.79	156,396	2113	2213.25	313,173	1,325	34	114	1	85%	
X021	900	Bents No. 1 & 8		24				20.76		1,400	110	15.50			121	114	1		
		Bents No. 2, 4 & 6						12.12		2,311	185								
		Bents No. 3, 5 & 7						12.60		1,624	185								
		Spans No. 1 & 7						32.48		4,522		120.80							
		Spans No. 2-6						84.00		16,235		300.00							
Totals Bridge No. 900				24				161.96		28,092	480	436.30			121	114	1	10%	
X021	911	Abut. No. 1 & 2		13	35	7					125				52		1		
		Bent No. 1		7				14.67		2,860									
		Span No. 1						43		13,241		91							
		Span No. 2						43		12,427		91							
Totals Bridge 911				20	35	7		100.67		28,518	125	182			52		1	5%	
Totals Job No. 7525				59	343	7	125.38	1,043.87	77.79	213,006	2718.00	2,851.55	313,173	1,325	207	228	3	100%	

Rein. grade un steel is in place to prevent wire subside Shop wire supp fabricat Hard equiva posts an linear fo ends to All ex Bitum directly 5 concr

GENERAL NOTES

Reinforcing steel to be deformed bars of intermediate grade unless modified by Special Provisions. The reinforcing steel is to be accurately located in the forms and firmly held in place by means of steel wire supports, sufficient in number to prevent displacement during the course of construction. 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 steel plate guard 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 \$11.1 per linear foot for "Steel Plate Guard (10Ga)." Guard Fence at bridge ends to be type A, 12Ga, as shown on Dwg. No. GRT.

All exposed corners to have 3/8" chamfer unless otherwise noted.

Bituminous felt joints of roofing felt are not to be paid for directly but are to be considered as subsidiary to the item "Class S Concrete for Bridges."

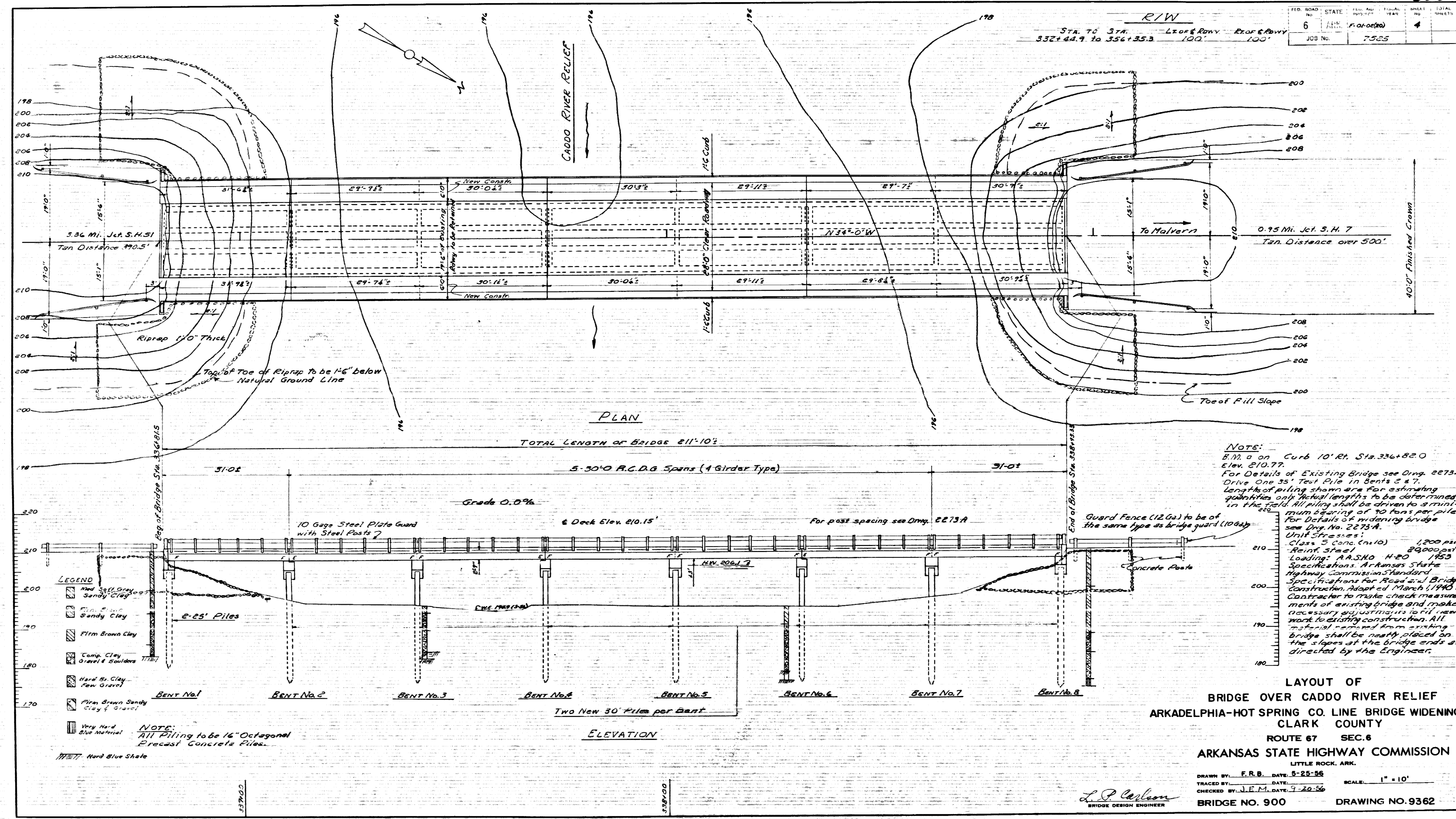
SUMMARY OF BRIDGE QUANTITIES  
ARKADELPHIA-HOT SPRING CO. LINE  
BRIDGE WIDENING  
CLARK COUNTY  
ROUTE 67 SEC. 6  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: K.E.C. DATE: 7-7-56  
TRACED BY: DATE:  
CHECKED BY: J.E.M. DATE: 2-27-57  
BRIDGE NO. 899, 900 & 911 DRAWING NO. 9360

L.P. Carlson  
BRIDGE DESIGN ENGINEER

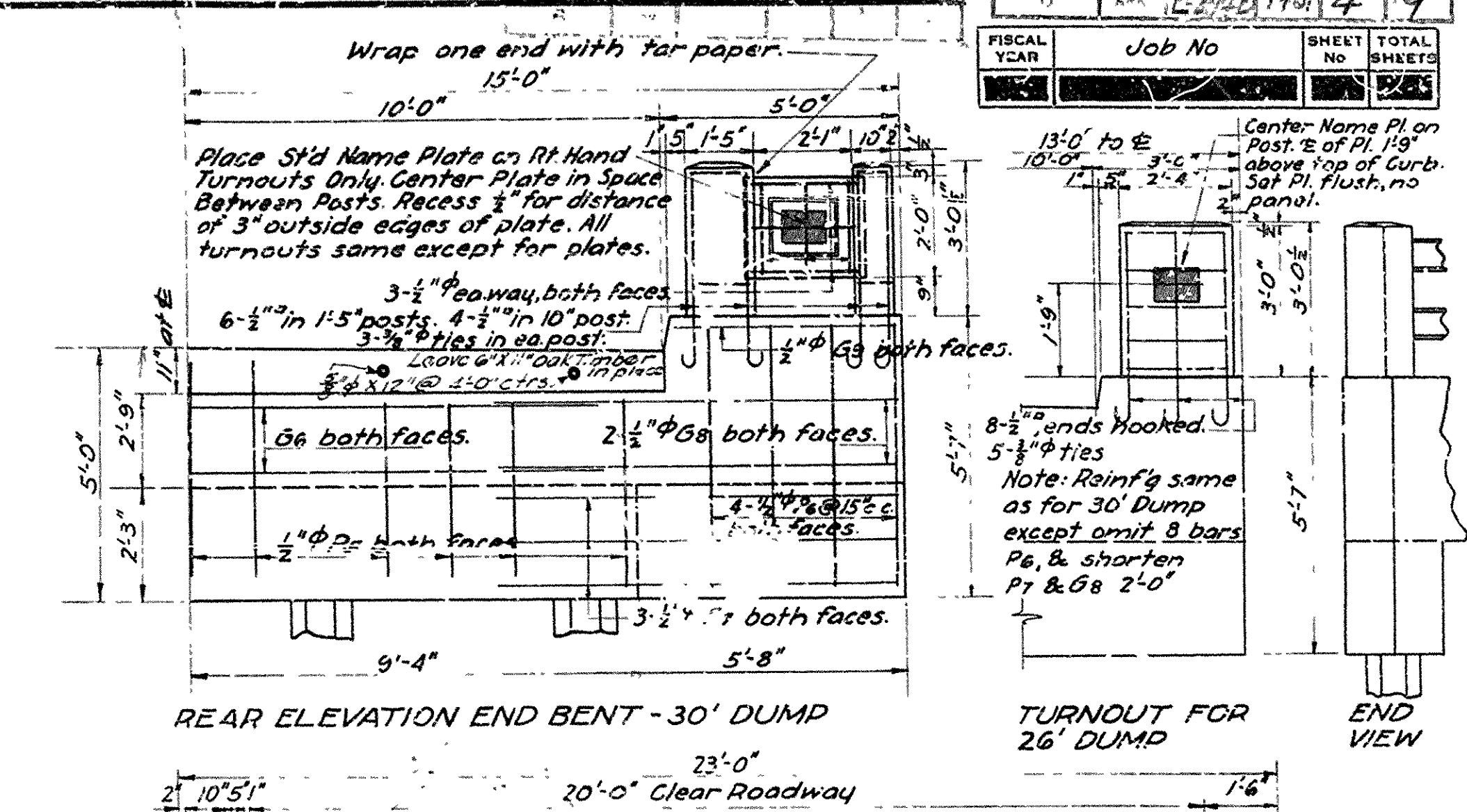
See 711 for 4A

See 711 for 4A



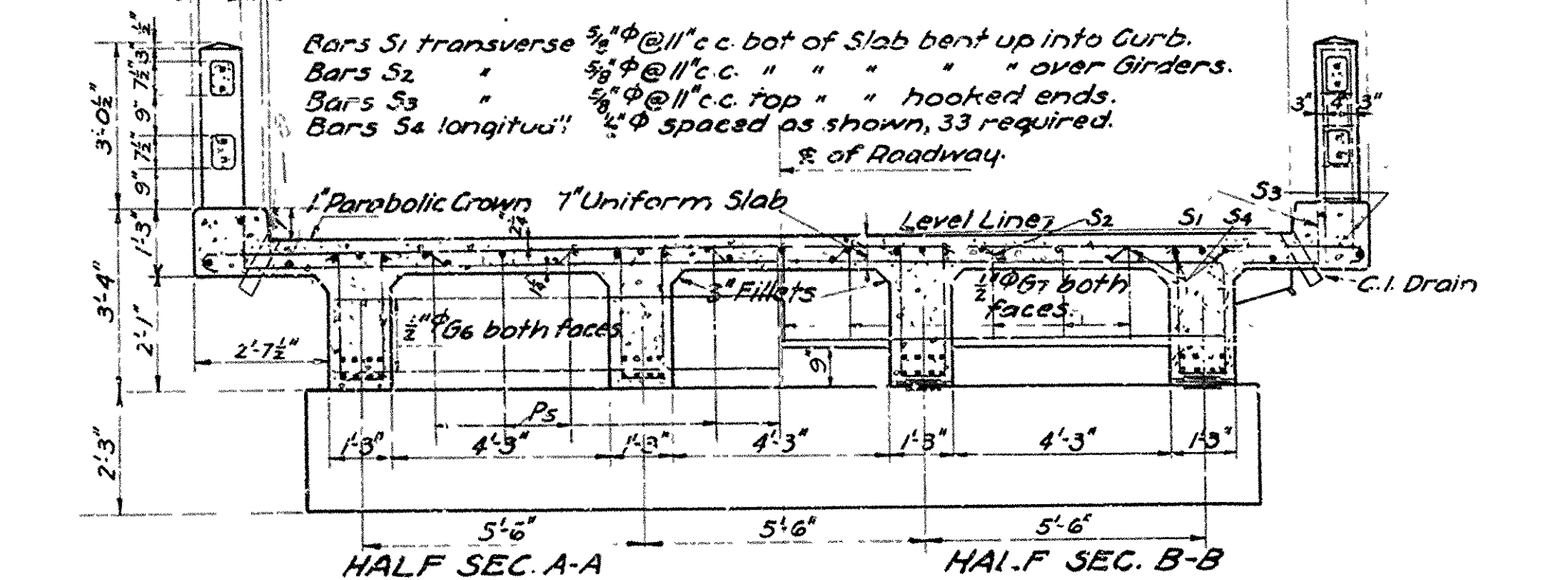
323

9362



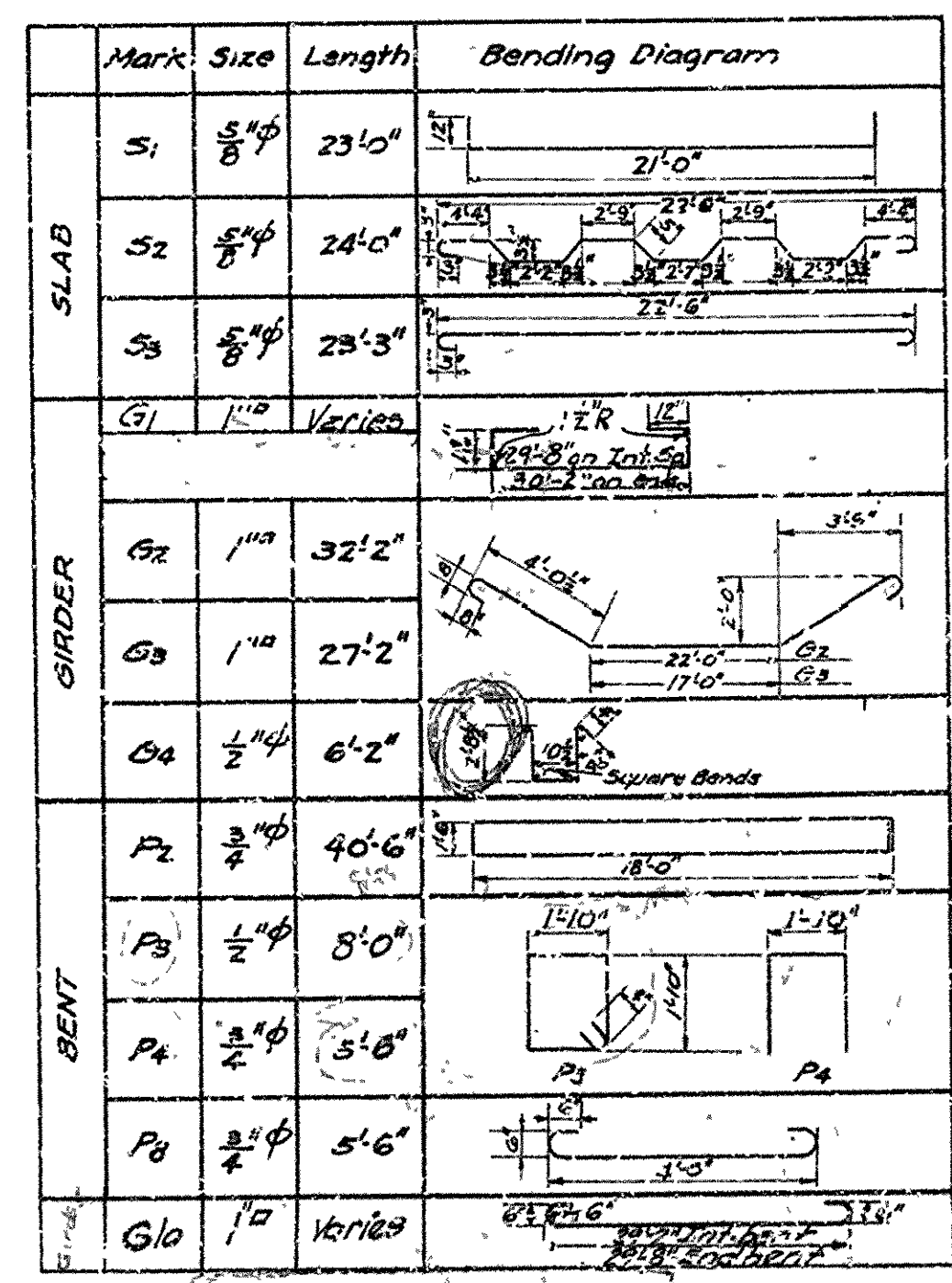
REAR ELEVATION END BENT - 30' DUMP

TURNOUT FOR  
26' DUMP



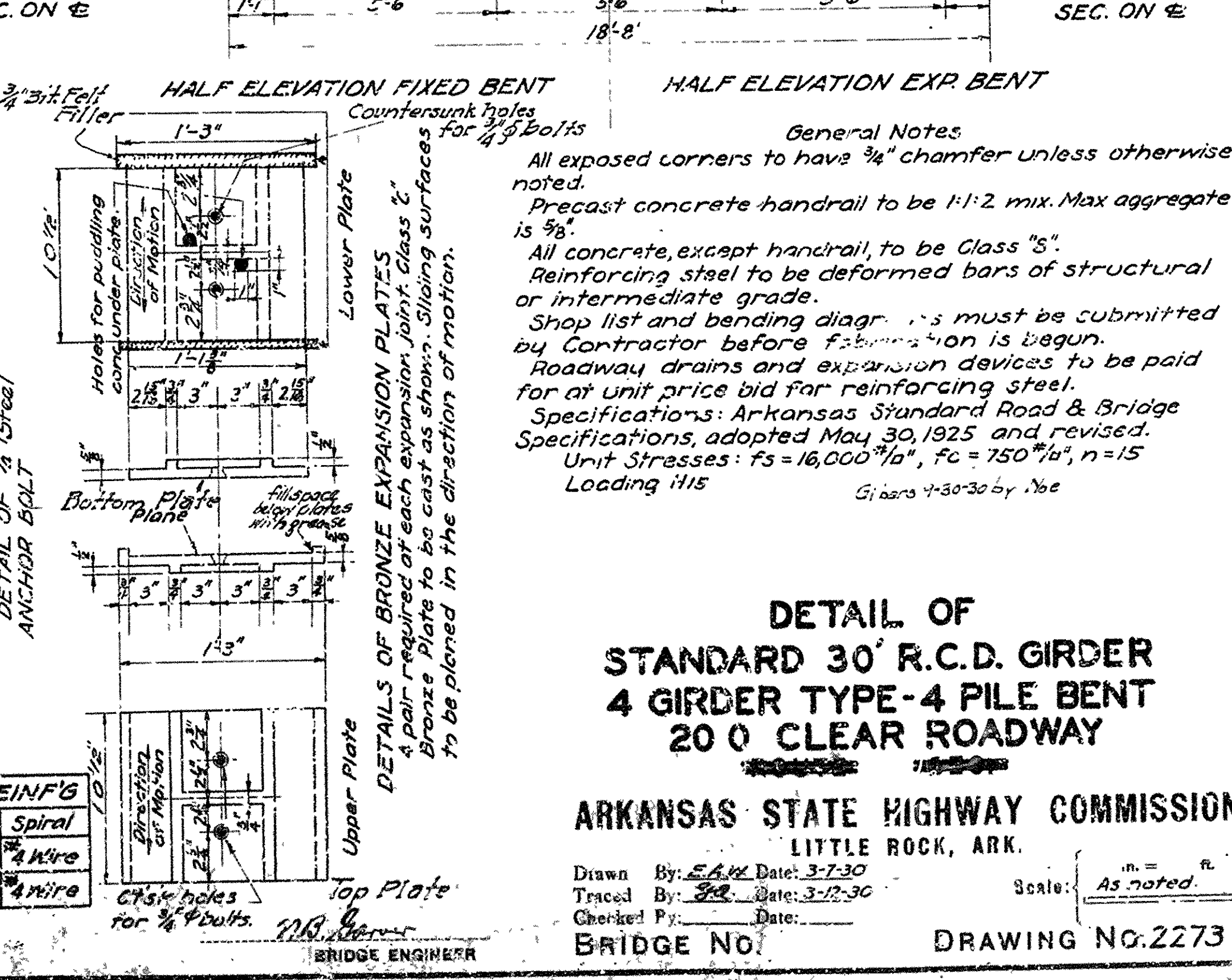
3-6  
HALF SEC. A-A

SEC. ON E



Technical drawing of a concrete pile with reinforcement details. The drawing includes a side elevation, a cross-section, and a detail of the top iron drain. Dimensions include: pile length 12'-0", pile diameter 16", reinforcement spacing 8", and reinforcement diameter 3/8". The top iron drain detail shows a 7" wide opening with 4" reinforcement bars and a 2" gap.

DETAIL OF  
CONC. PILE



General Notes

All exposed corners to have  $\frac{3}{4}$ " chamfer unless otherwise noted.

Precast concrete handrail to be 1:1:2 mix. Max aggregate is  $\frac{5}{8}$ ".

All concrete, except handrail, to be Glass "S".

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

Shop list and bending diagrams must be submitted by Contractor before fabrication is begun.

Roadway drains and expansion devices to be paid for at unit price bid for reinforcing steel.

Specifications: Arkansas Standard Road & Bridge Specifications, adopted May 30, 1925 and revised.

Unit Stresses:  $f_s = 16,000 \text{ psi}$ ,  $f_c = 750 \text{ psi}$ ,  $n = 15$

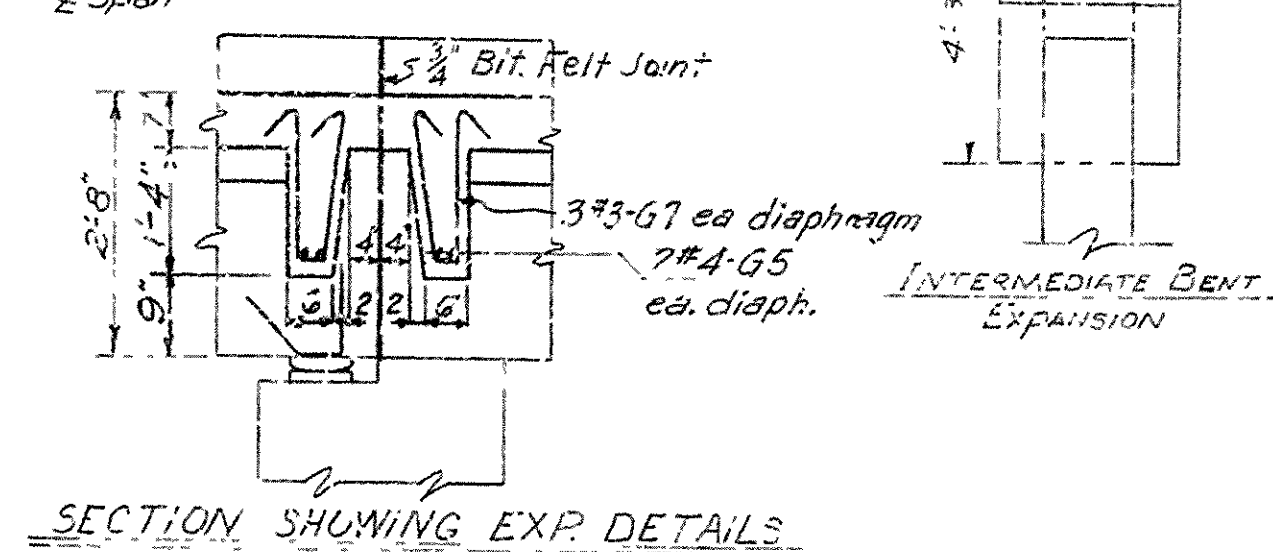
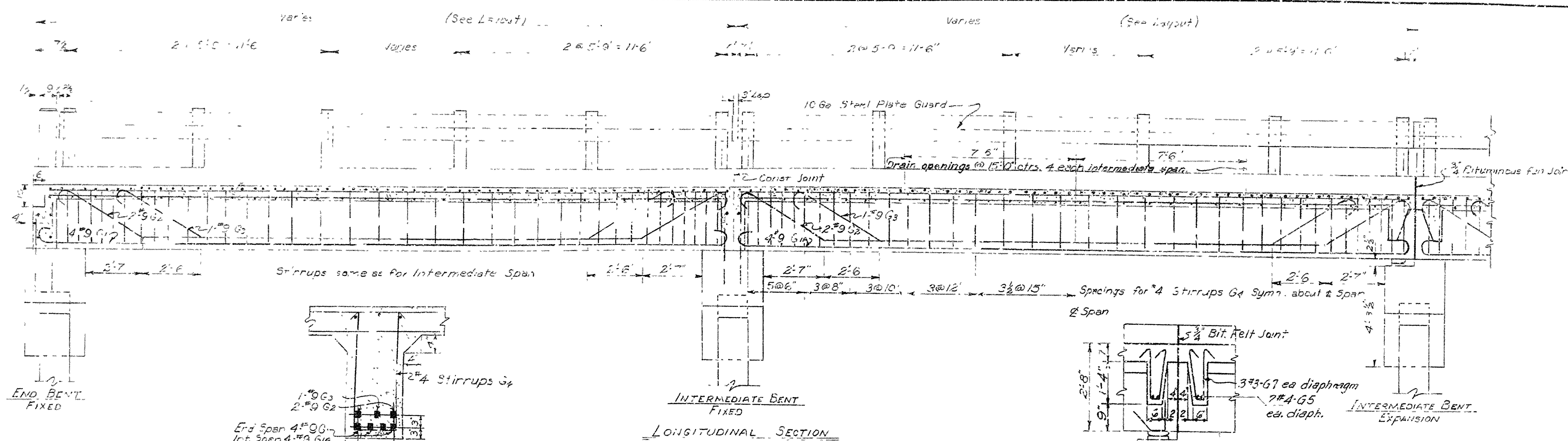
Loading 1115

Gi bars 4-30-30 by 15c

DETAIL OF  
STANDARD 30' R.C.D. GIRDER  
4 GIRDER TYPE-4 PILE BENT  
20 0 CLEAR ROADWAY

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

Drawn By: SAW Date: 3-7-30  
 Traced By: SR Date: 3-12-30  
 Checked By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Scale: As noted.  
 BRIDGE NO. \_\_\_\_\_ DRAWING NO. 2273



For details of design see drawings dated Jan'y 19, 1978.

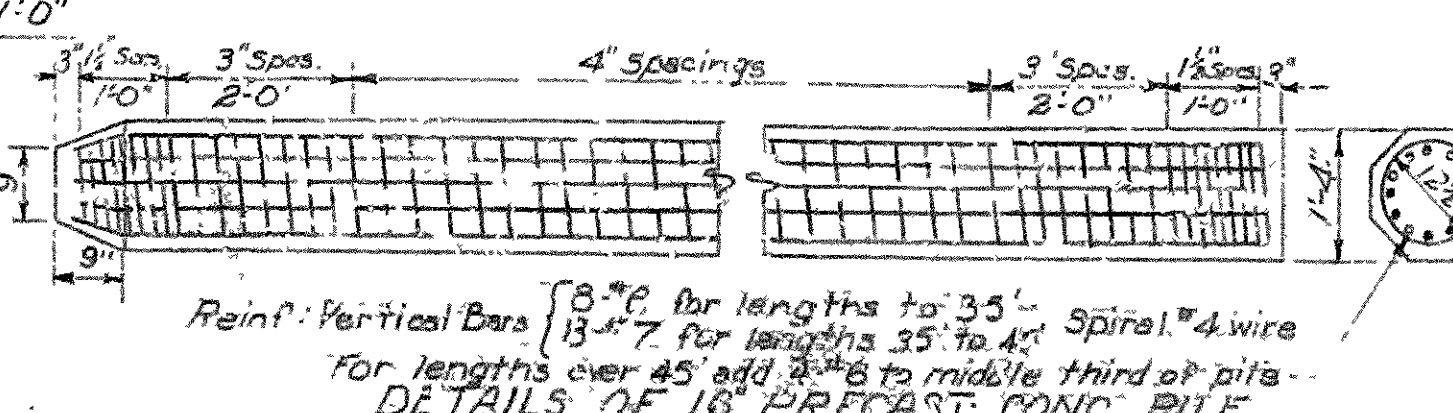
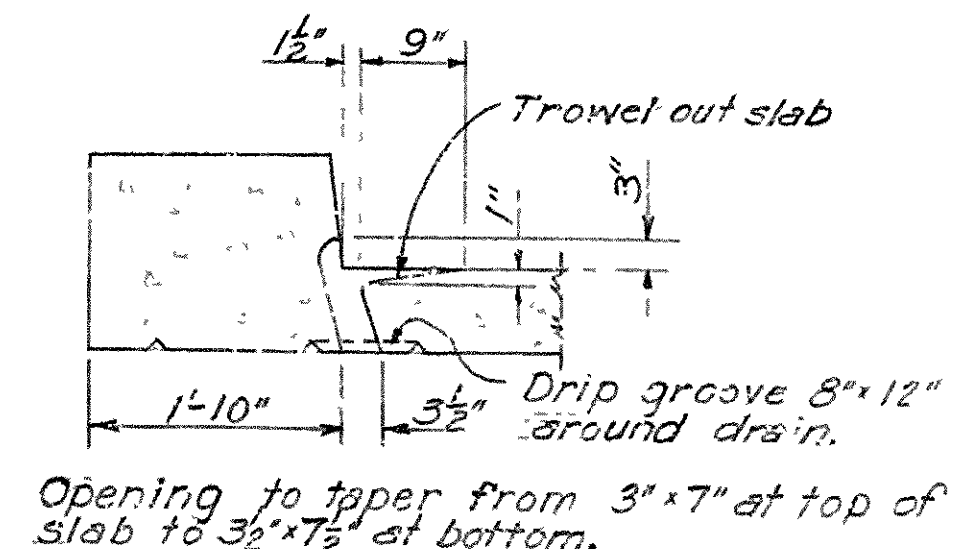
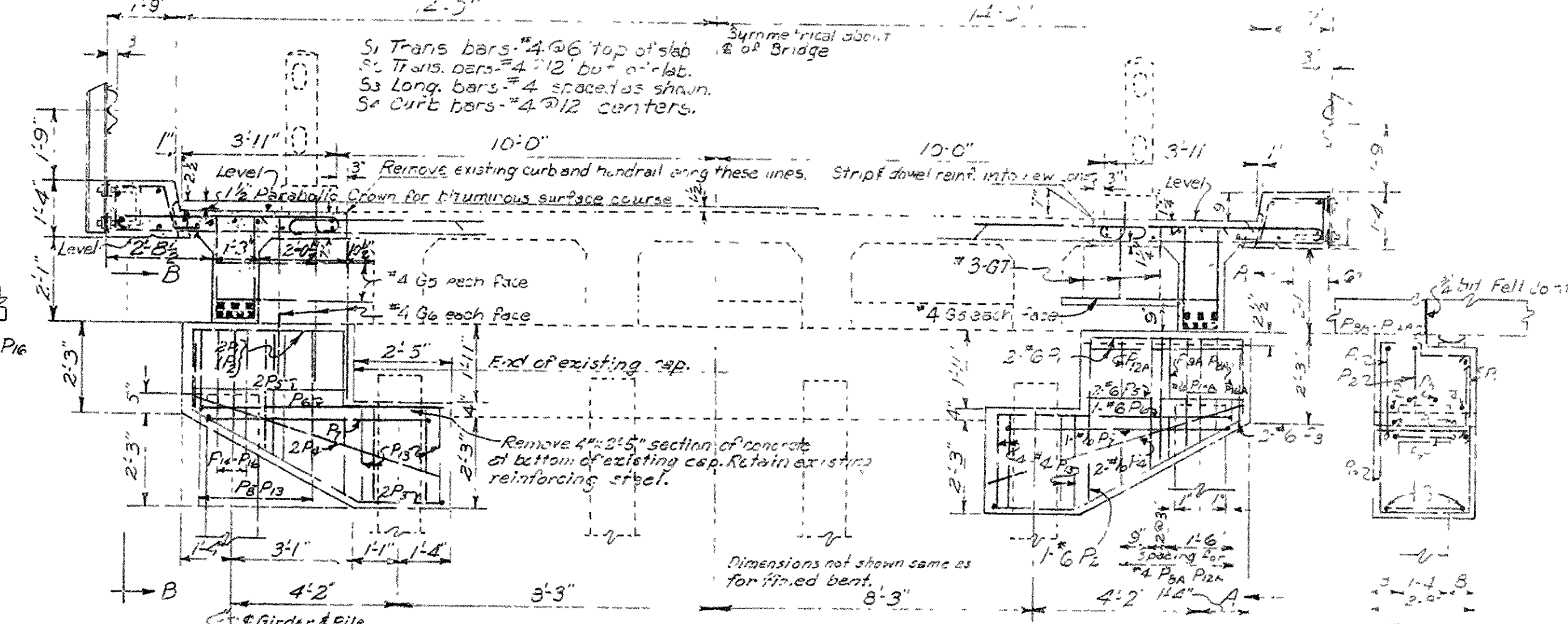
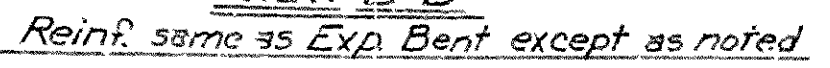
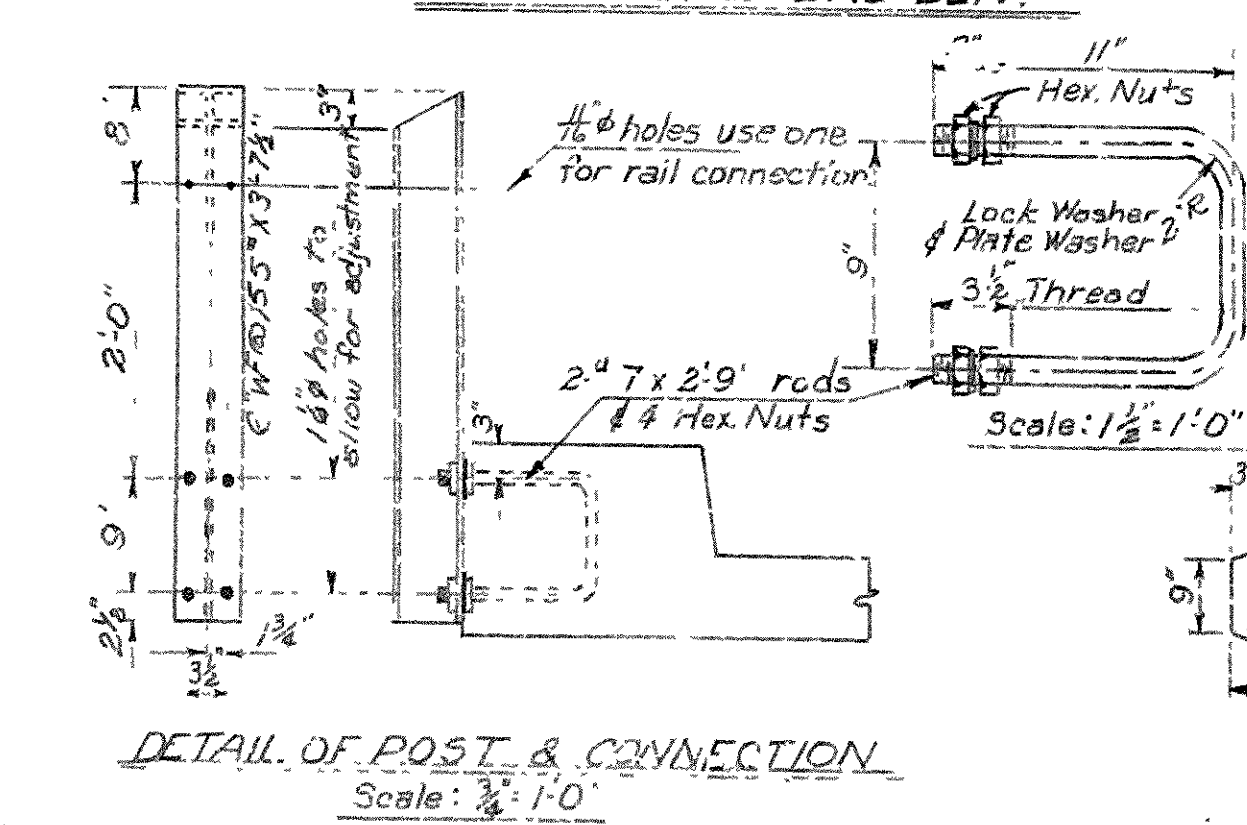
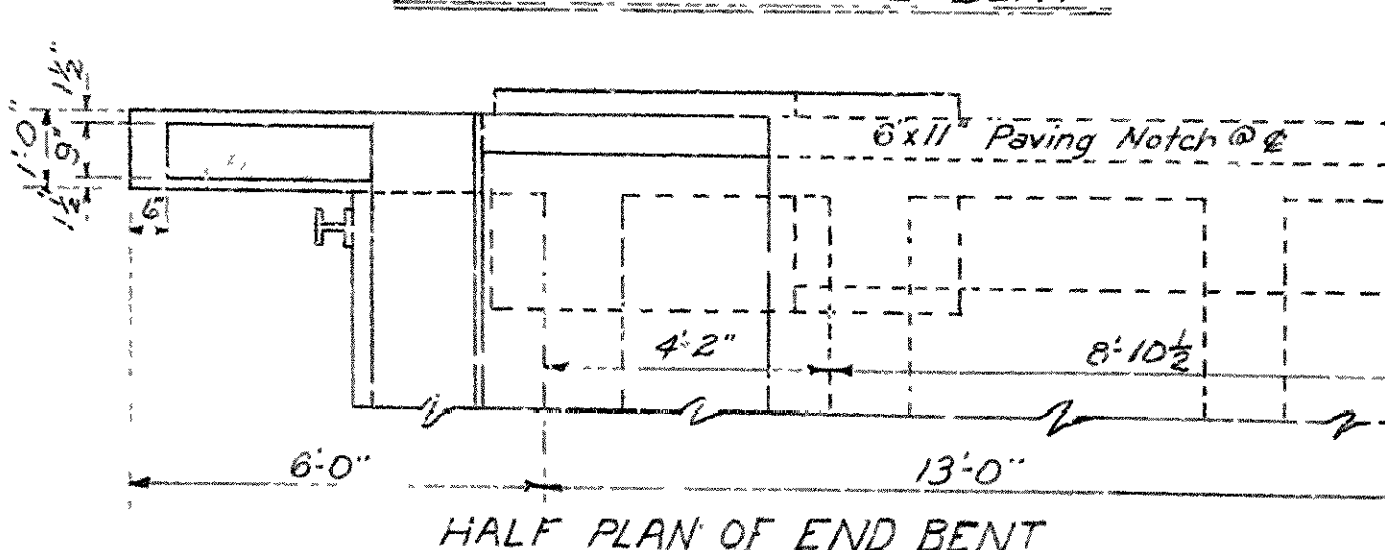
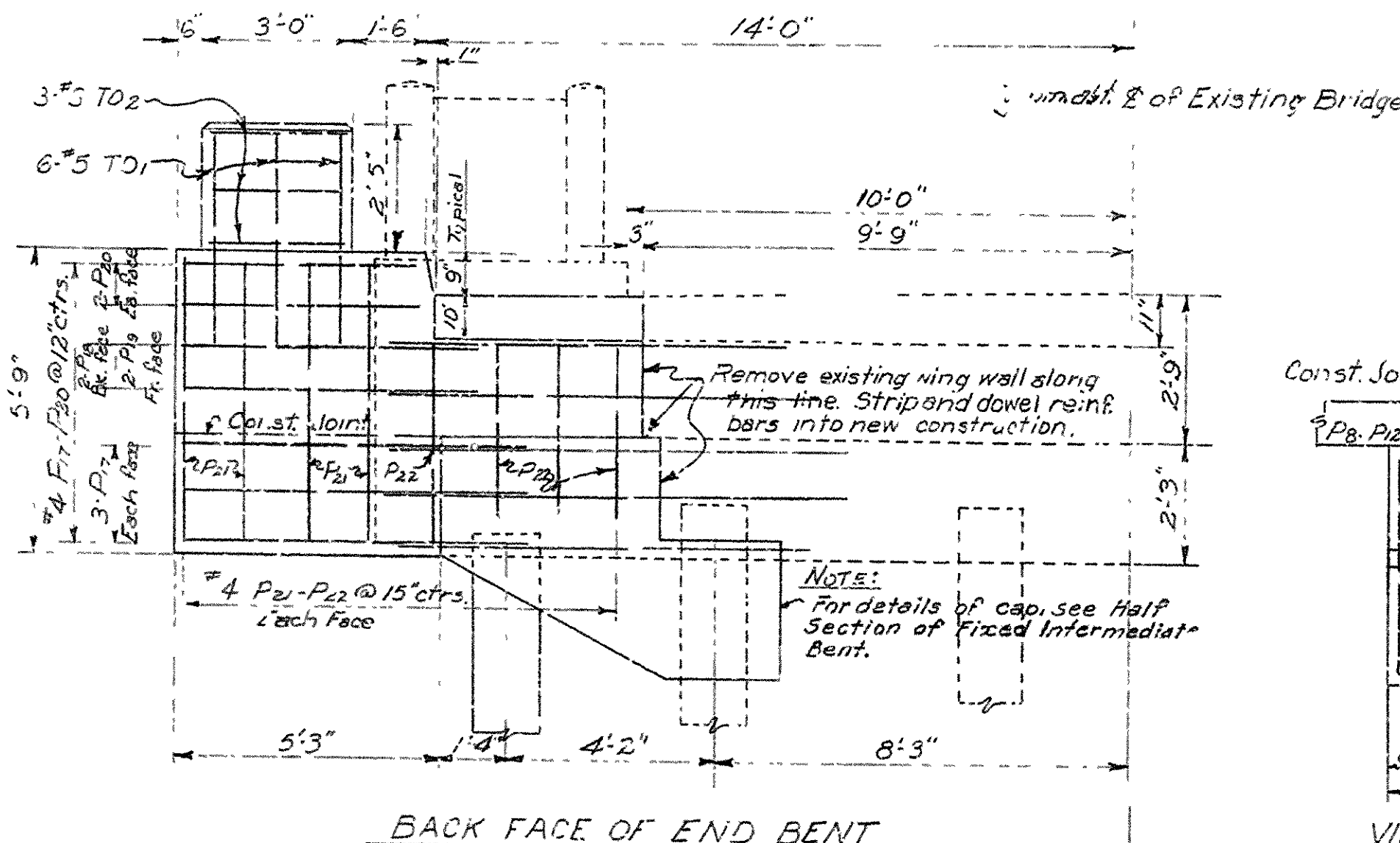
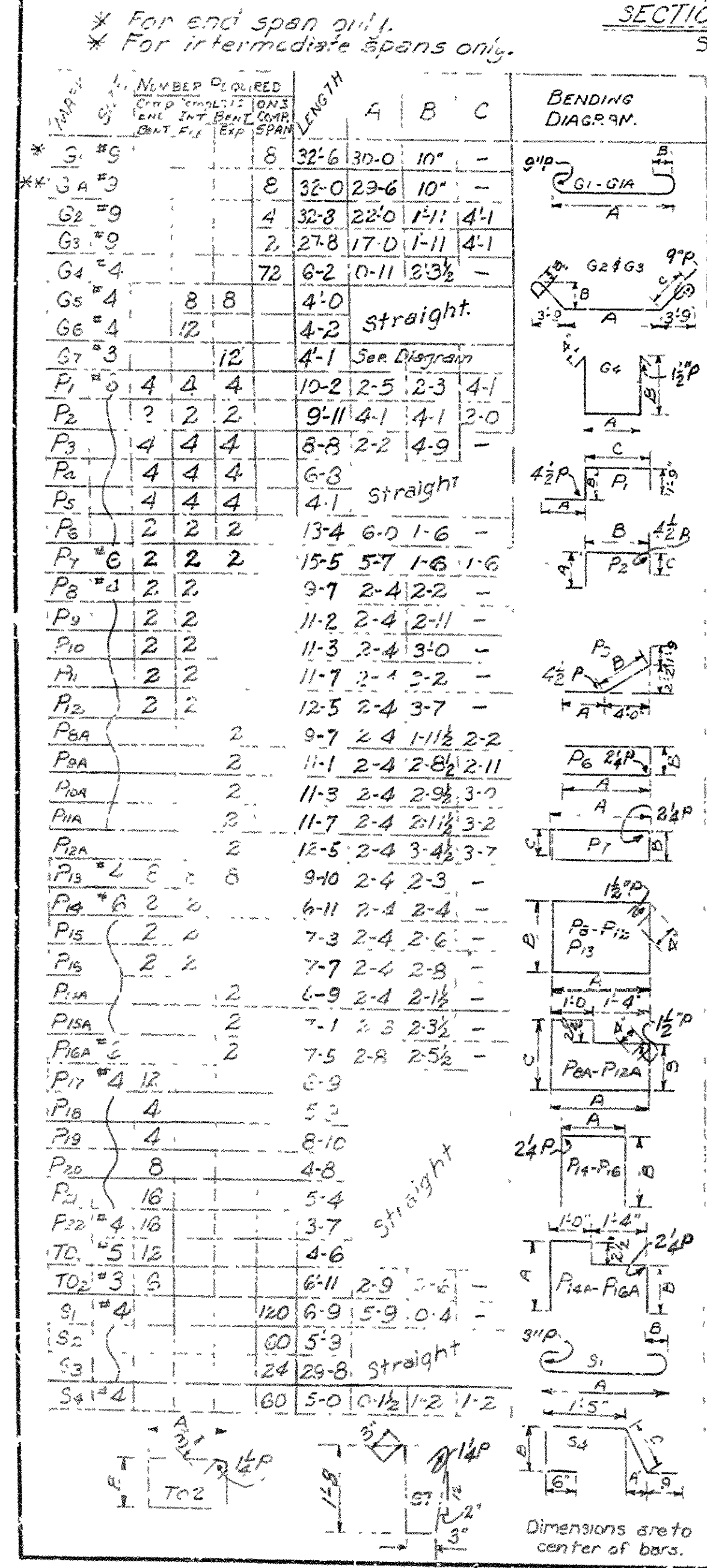
Structure steel beams - shown as provided under the ends of girders on main floor. Reinforcing steel bolts. The weight of these beams is included in the total weight. Bolts is included in the weight of reinforcing steel. All concrete to be Class G or better and must have 4% reinforcement unless otherwise noted.

The W-16 beam, post-tensioned or epoxied, is to be paid for directly but is to be considered as part of the main steel reinforcement for Bridges.

Reinforcing steel is to be deformed bar or intermediate grade steel as required by specific provisions. Reinforcing steel is to be laid in place by steel wire supports sufficient in size and number to properly support the steel in the forms. These supports will not be paid for directly but will be included in the unit price for the "Reinforcing Steel". Shop lists and bending diagrams of reinforcing steel including steel wire supports must be submitted and approved before fabrication is begun.

Handrail is 12 steel plate guard of the type shown on the plans or equivalent approved in writing as approved by the Engineer. It includes posts and fastenings at the top and at the end pieces, plus linear feet for steel plate guard (10 ga.).

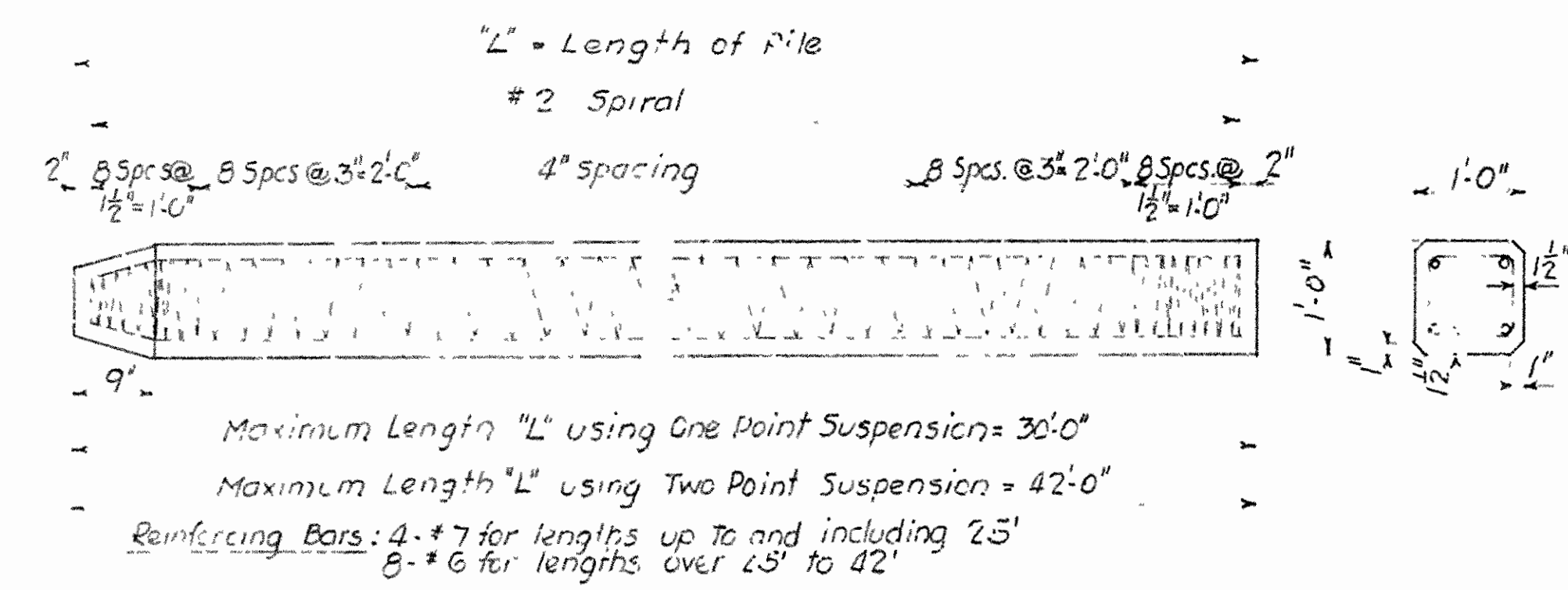
Specifications: Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction. Adopted March 1, 1942.



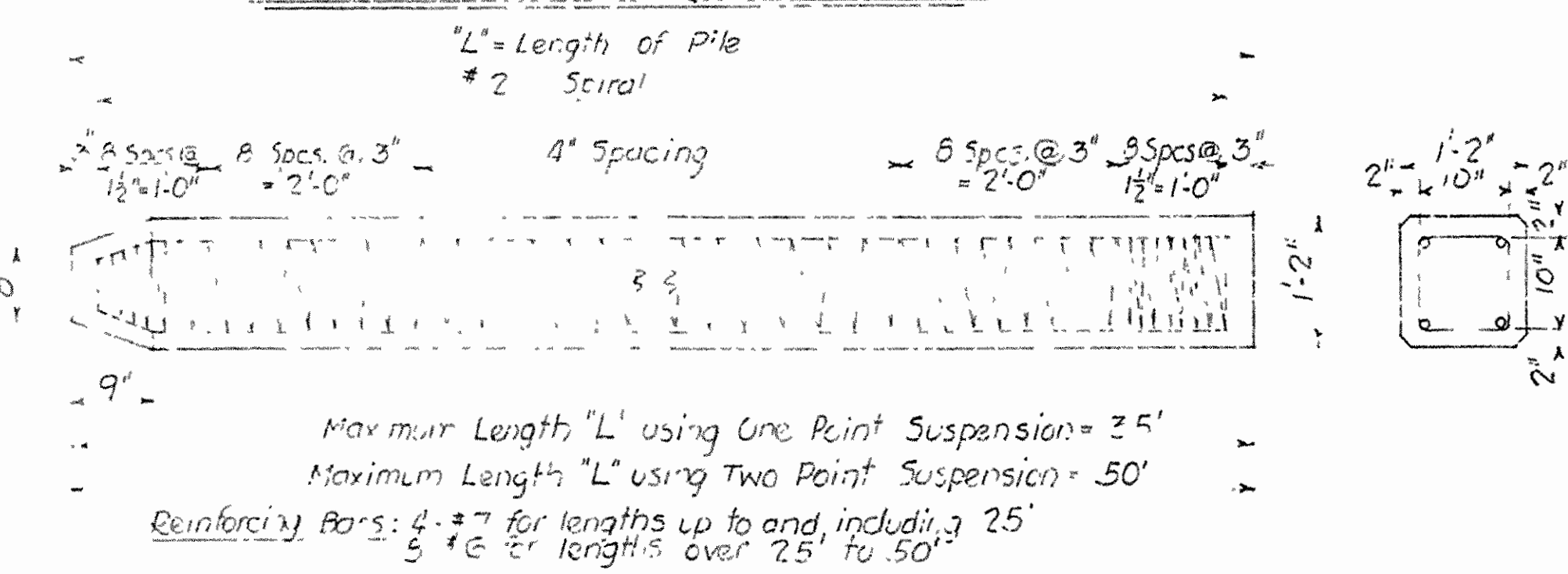
DETAILS OF WIDENING  
STANDARD 30' R.C. DECK GIRDER &  
CONCRETE PILE BENTS  
4 GIRDER TYPE-4 PILE BENT

ARKANSAS STATE HIGHWAY COMMISSION

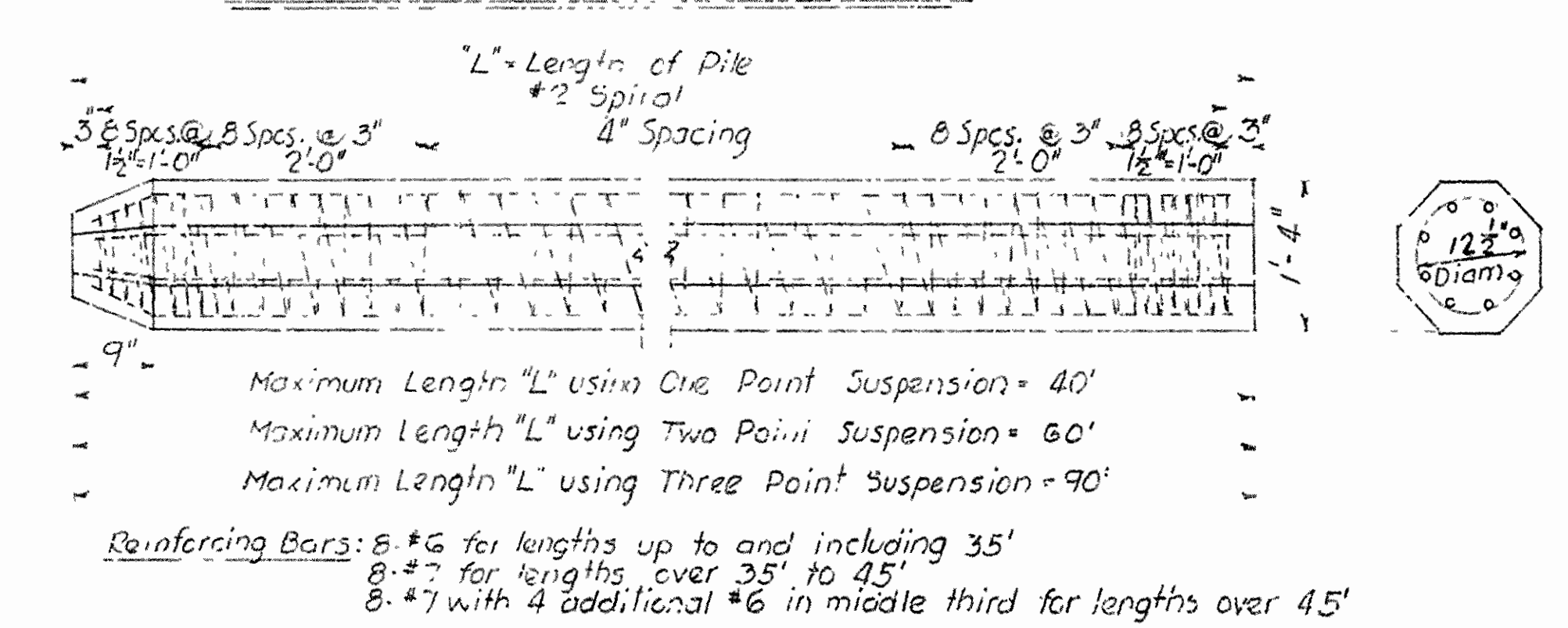
DRAWN BY: K.E.C DATE: 6-21-56  
 TRACED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 CHECKED BY: F.F.F DATE: 11-2-56  
 BRIDGE NO. \_\_\_\_\_ DRAWING NO. 2273A  
 SCALE:  $\frac{1}{8}" = 1'$  and as noted



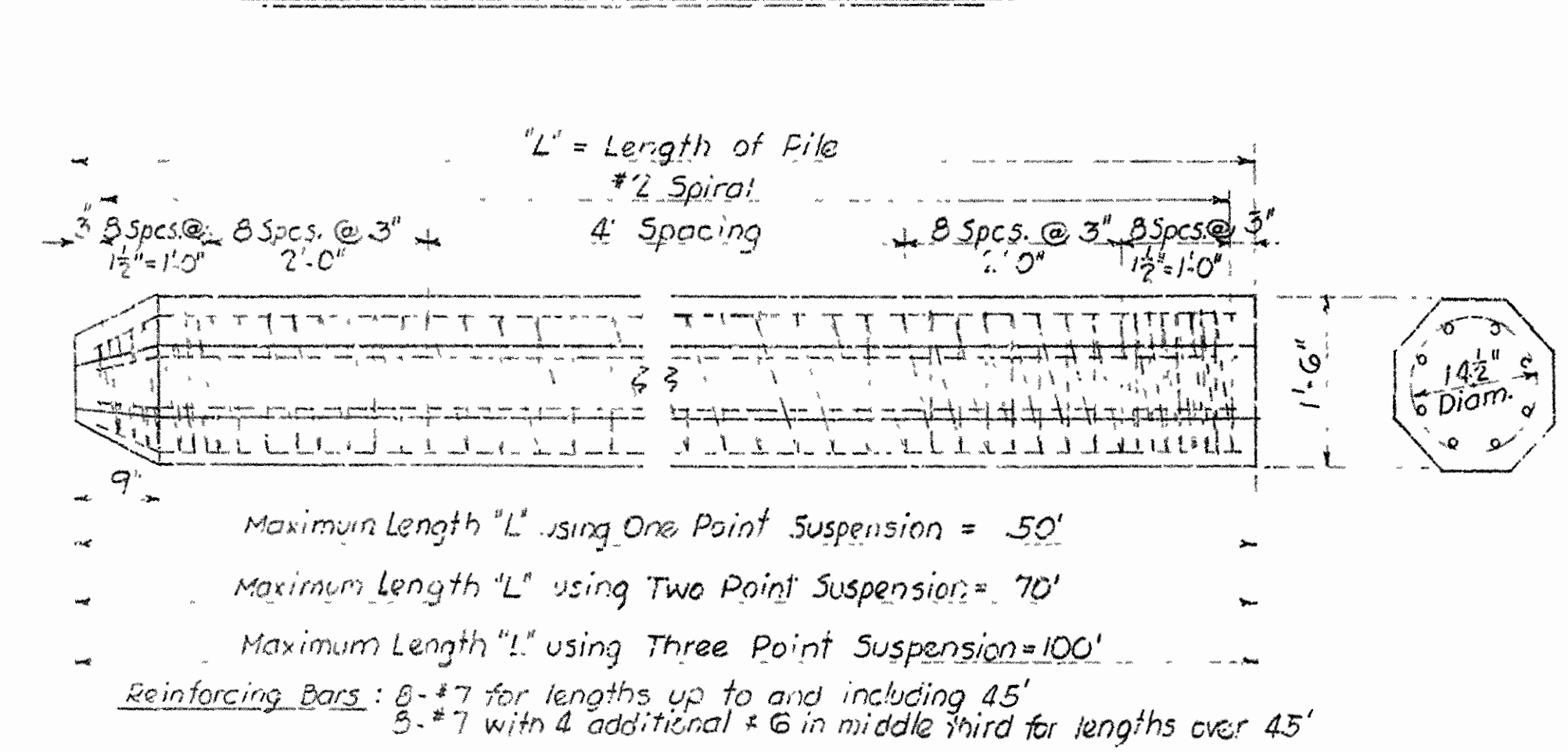
DETAILS OF 12" SQUARE PILE



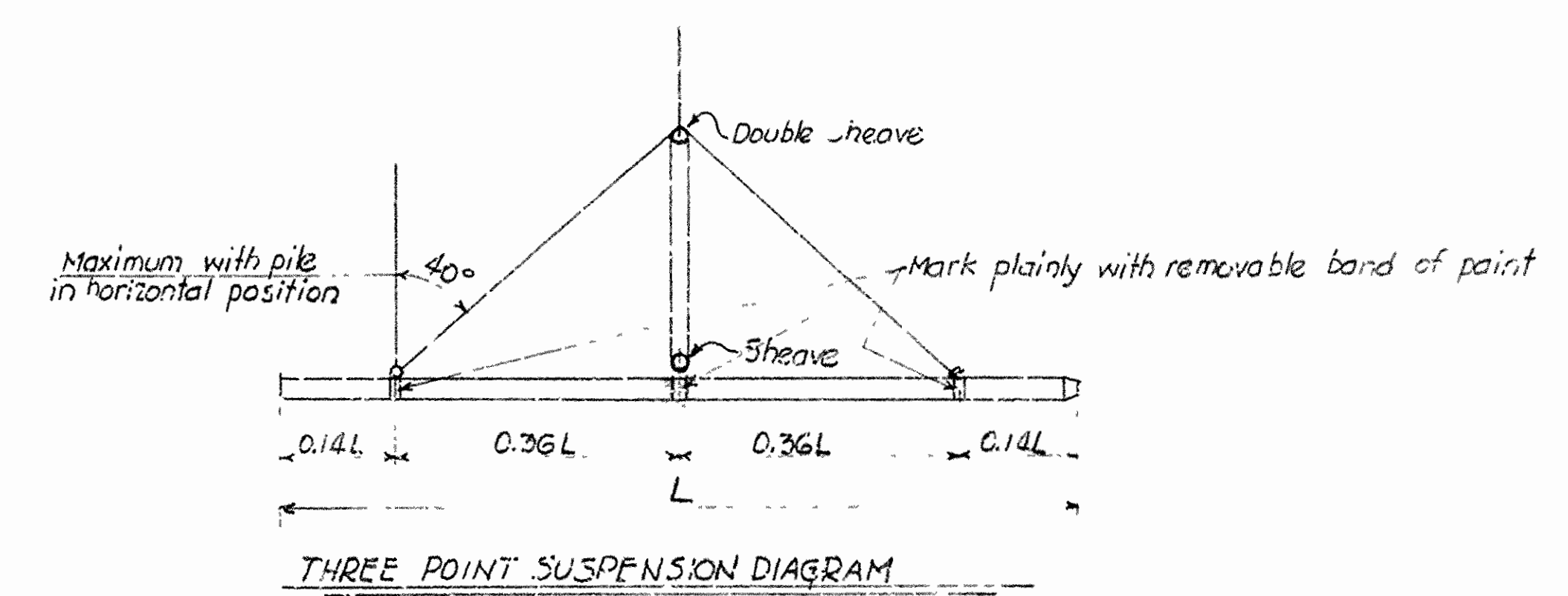
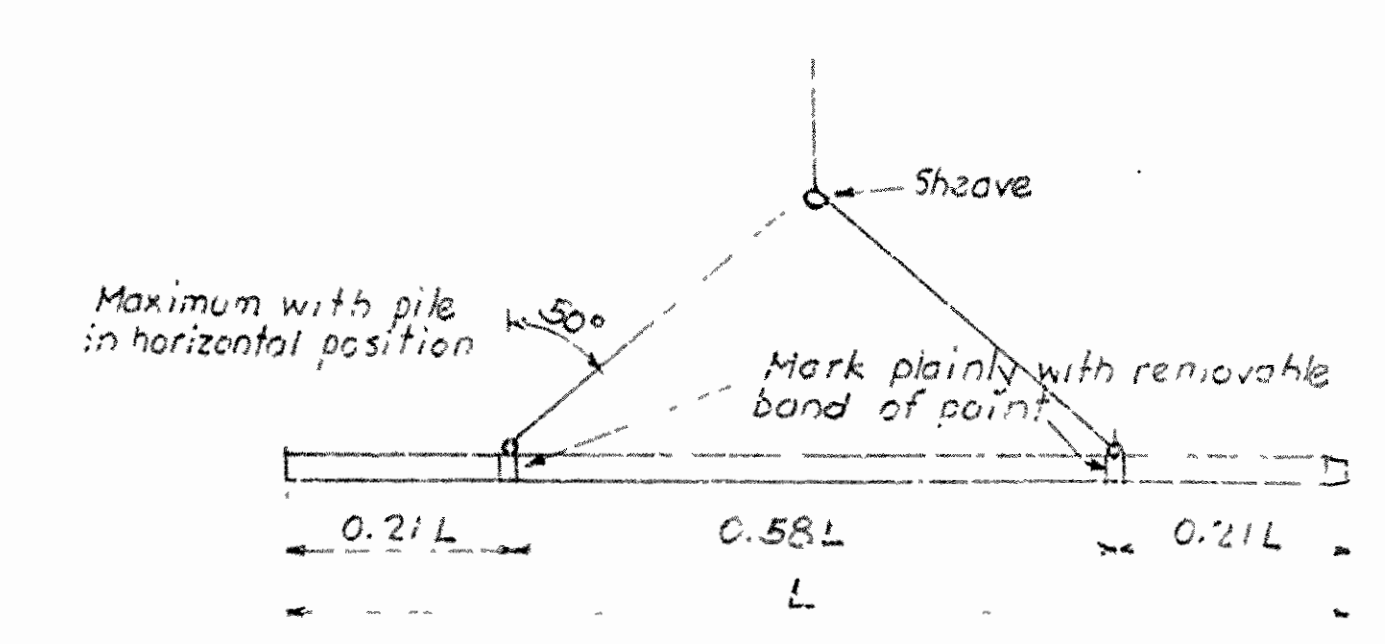
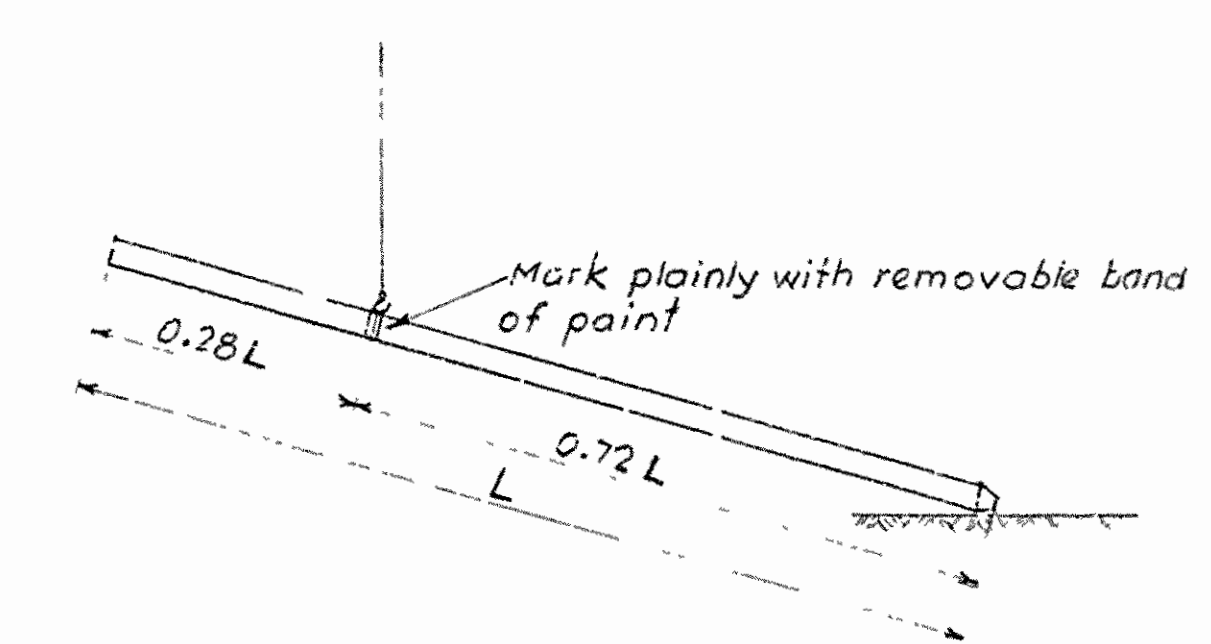
DETAILS OF 14" SQUARE PILE



DETAILS OF 16" OCTAGONAL PILE



DETAILS OF 16" OCTAGONAL PILE



GENERAL NOTES

All concrete to be Class "S"  
Longitudinal reinforcing steel shall be determined bars of intermediate grade, unless otherwise modified by Special Provisions. Spiral shall be formed from plain round billet steel reinforcing bars.  
SPECIFICATION 5: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1959.

Prestressing Alternate:-

As an alternate to the reinforcement shown, these piles may be prestressed by the use of steel strands of high tensile cold-drawn uncoated stress-relieved wire strands having an ultimate tensile strength of not less than 250,000 p.s.i. and an elongation at rupture of not less than 3% in 10"; number and size of strands and prestressing load to be as follows:-

Pile Size	Wire Strands	* Prestressing Force
	No. Nominal Dia.	Per Strand
12" Square	8 3/16"	10150*
14" Square	12 3/16"	10150*
16" Octagonal	12 3/8"	14000*
18" Octagonal	16 3/8"	14000*

\* Prestressing force to be not more than 0.7 of the ultimate value of strand.

To permit splicing for buildup, where necessary, of prestressed piles, reinforcing as shown in details shall be provided in butt end of pile for a length of 5' and 6' for No. 6 & No. 7 bars respectively.

Revisions:-  
Provisions for prestressing 1-6-58 H.B.  
Prestressing strands, forces 4-14-58 H.B.  
Number Prestressing Strands 16' Pile 10-31-58 H.B.  
General Notes 2-26-60 A.T.

DETAILS OF STANDARD PRECAST CONCRETE PILES

ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.  
DRAWN BY: C.W.H. DATE: 7-26-56  
CHECKED BY: J.P. DATE: 7-27-56  
BRIDGE NO. 2382

J.P. Carlson  
BRIDGE DESIGN ENGINEER

See Revised 5-22-61