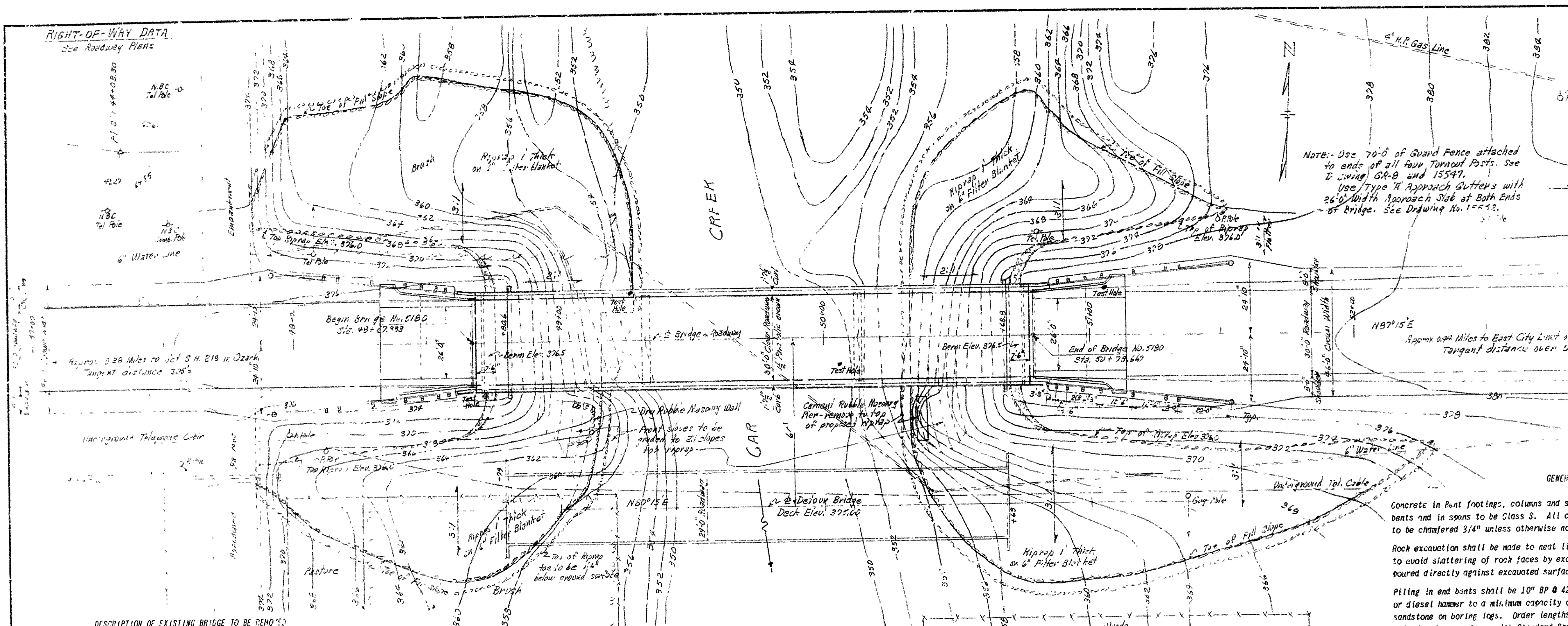


FED. ROAD NO.	STATE	CONTRACT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	DR-403-67-C-0072		9	37
JOB NO.		4585		9	37



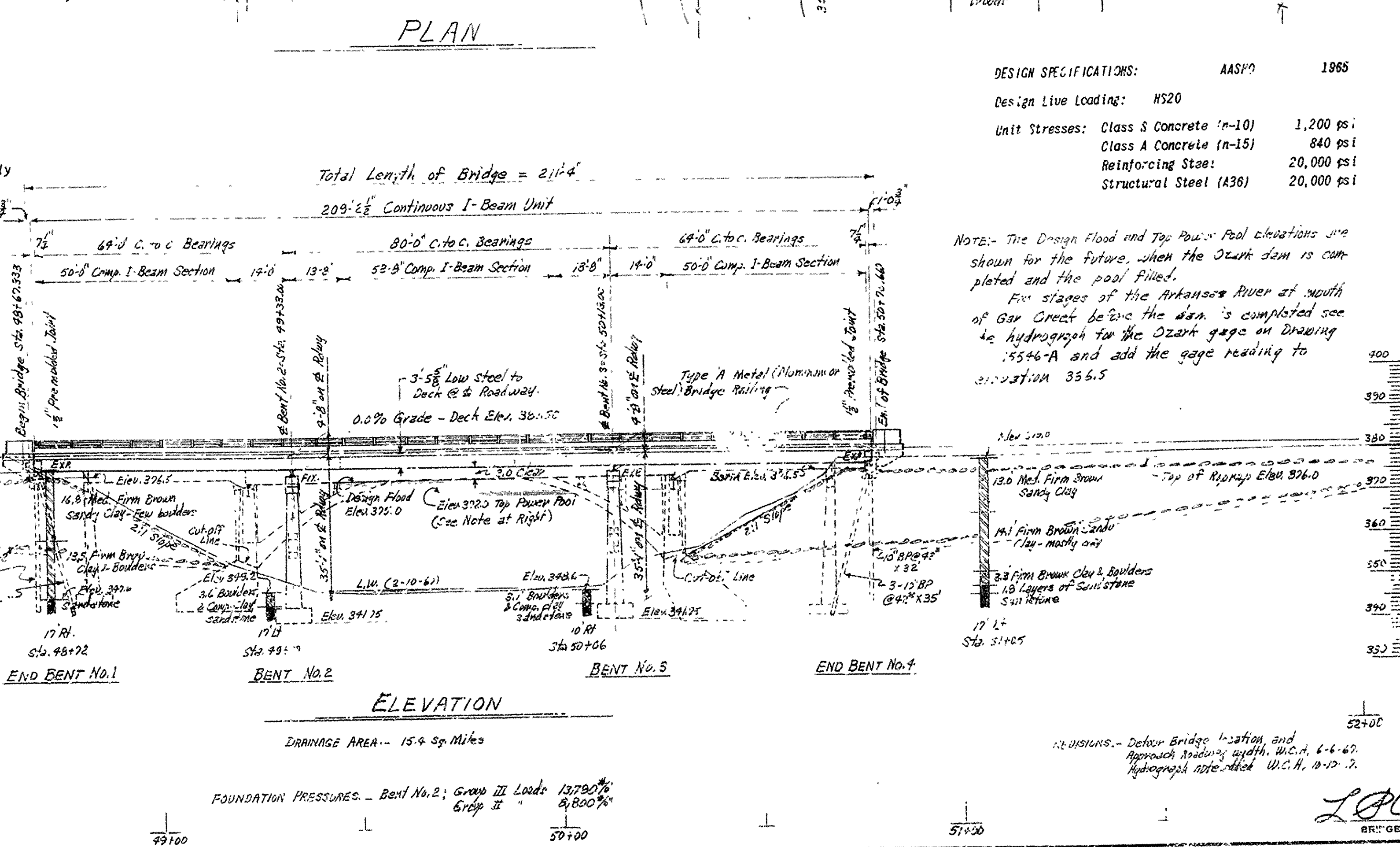
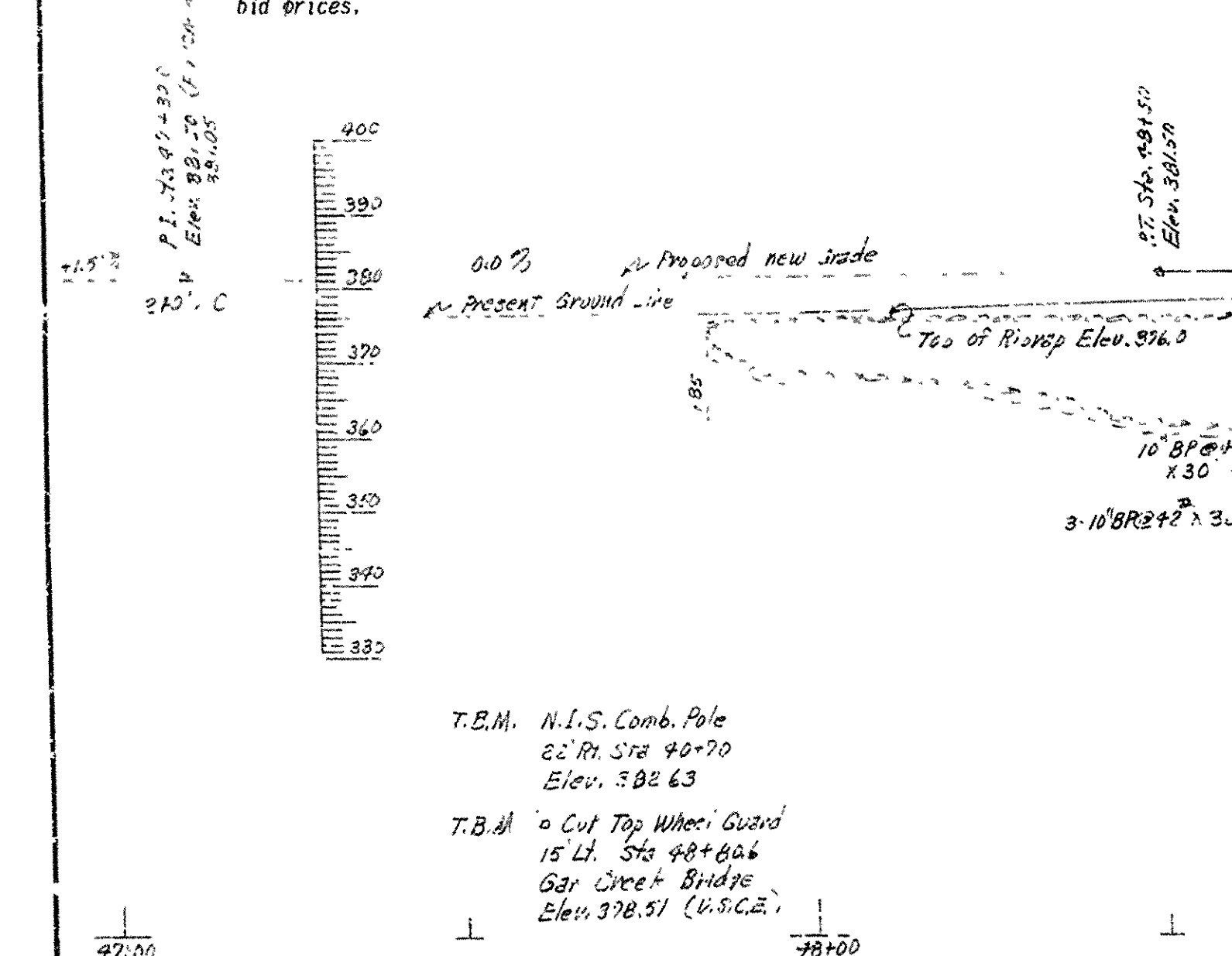
RIGHT-OF-WAY DATA
See Roadway Plans

DESCRIPTION OF EXISTING BRIDGE TO BE REMOVED

The original bridge as constructed in 1929 was of 2 girder reinforced concrete construction with 20' clear roadway. The center span, a 105' arch span, with flanking 41.5' deck concrete spans at each end resting on concrete column bents. In 1963 the bridge was widened to 30' roadway, by erection of 105' steel plate girder spans outside of the existing rings on each side of roadway, with concrete deck girder at each end, supported on steel fill cap. The plate girders and concrete girders were supported on steel floor beams thru the old pilaster columns over the arch abutments. There is approximately 32,000 lbs. of Low Alloy A441 Structural Steel in the plate girders and the remainder 20,400 lbs. is A7 steel.

The superstructure of the existing bridge shall be removed completely and the substructure partially so. The old end bents, including steel piling in the widened portion, shall be removed to a minimum of 2' below the proposed surface of the new front river slope. The old pilaster columns, and arch rings with columns shall be removed to the construction joint near the springing line. The existing rubble masonry piers shall be removed also.

Any material which may be salvaged shall become the property of the contractor, and the salvage value of such materials shall be reflected in the contractor's bid prices.



NOTE: Use 70'-0" of Guard Fence attached to ends of all four Turnout Posts. See Drawing GR-0 and 15547.
Use Type A Approach Gutters with 26'-0" Width Approach Slab at Both Ends of Bridge. See Drawing No. 15547.

GENERAL NOTES

Concrete in bent footings, columns and struts, shall be Class 4. Remainder of concrete in bents and in spans to be Class 5. All concrete to be poured in the dry. Exposed corners to be chamfered 3/4" unless otherwise noted.

Rock excavation shall be made to neat lines of concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock.

Piling in end bents shall be 10" BP @ 42# and shall be driven with an approved air, steam, or diesel hammer to a minimum capacity of 55 tons per pile, and into material designated as sandstone on boring logs. Order lengths as shown, cut-off, or build-up, if necessary, to be paid for in accordance with Standard Specifications. Piles in End Bent to be driven after the embankment is in place.

In general all construction joints in bents shall be horizontal and shall be provided with keys not less than 14" high covering the middle third of both dimensions.

Provide a roadway drains at both sides of roadway @ 25'-0" centers, symmetrical about centerline of bridge.

Removal or adjustment of public utilities where necessary shall not be at the Contractor's expense.

A detour bridge shall be constructed approximately 60' downstream from the existing bridge centerline. It shall be a minimum of 190' in length with 24' roadway and shall be designed for H-20 Loading. The deck shall be constructed to Elevation 375.

For Details of End Bents, see Drawing No. 15547.
For Details of Intermediate Bents, see Drawing No. 15548.
For Details of Continuous I-Beam Unit, see Drawing No. 15549, 15550, 15551 & 14992.
For Details of Metal Bridge Railing, see Drawing No. 14992.
For Details of Approach Slabs and Gutter, see Drawing No. 15552.

DESIGN SPECIFICATIONS:

Design Live Loading:	H20	
Unit Stresses:	Class 5 Concrete (n=10)	1,200 psi
	Class A Concrete (n=15)	840 psi
	Reinforcing Steel:	20,000 psi
	Structural Steel (A36)	20,000 psi

NOTE: The Design Flood and Top Power Pool Elevations are shown for the future, when the Ozark Dam is completed and the pool filled.
Five stages of the Arkansas River at mouth of Gar Creek below the dam is completed see the hydrograph for the Ozark gage on Drawing 15546-A and add the gage reading to elevation 356.5

SPECIFICATION: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1989, 1968 Supplemental Specifications thereto, and applicable Special Provisions.

**LAYOUT OF
BRIDGE OVER GAR CREEK
HIGHWAY 64 ALTERATIONS (OZARK RESERVOIR)
FR. NKLIN COUNTY
ROUTE 64 SEC. 3**

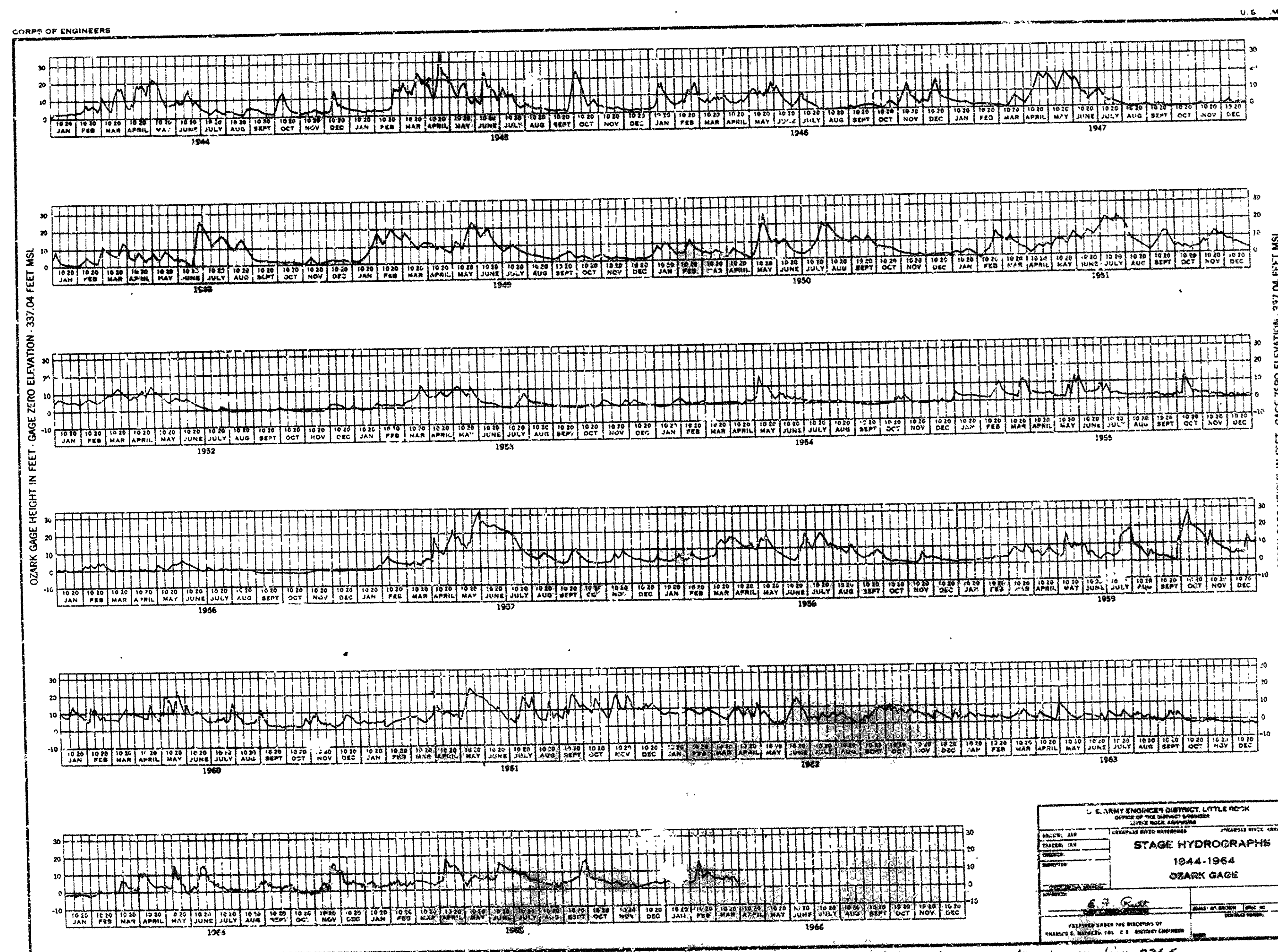
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: M.C.H. DATE: 4-6-67
TRACED BY: W.J.H. DATE: 4-10-67
CHECKED BY: J.M.H. DATE: 6-6-67

BRIDGE NO. 5180 DRAWING NO. 15546

REVISIONS: Detour Bridge Location and Approach Roadway Width, W.C.H. 6-6-67.
Hydrograph noted W.C.H. 10-10-7.

L.P. Carlson
CIVIL ENGINEER



NOTE: - To obtain the river stage elevation at mouth of Gar Creek, add gage reading to elevation 336.5

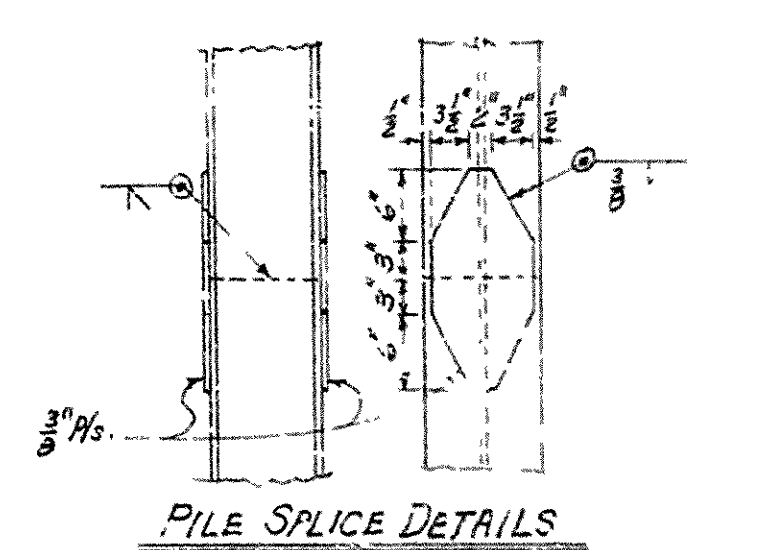
ARKANSAS STATE HIGHWAY COMMISSION	
LITTLE ROCK, ARKANSAS	
BRIDGE OVER GAR CREEK	
HIGHWAY 64 ALTERATIONS (OZARK RESERVOIR)	
HYDROGRAPH	
FRANKLIN COUNTY	US HIGHWAY 64 SEC. 2
DRAWN BY	DATE
CHECKED BY	DATE
BRIDGE NO. 5180	DRAWING NO. 15548-A

FED. ROAD NO.	STATE	COUNTY OF DRAWN	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	DAC 103-67-C-3072		10	37
JOB NO.		4585		10	37

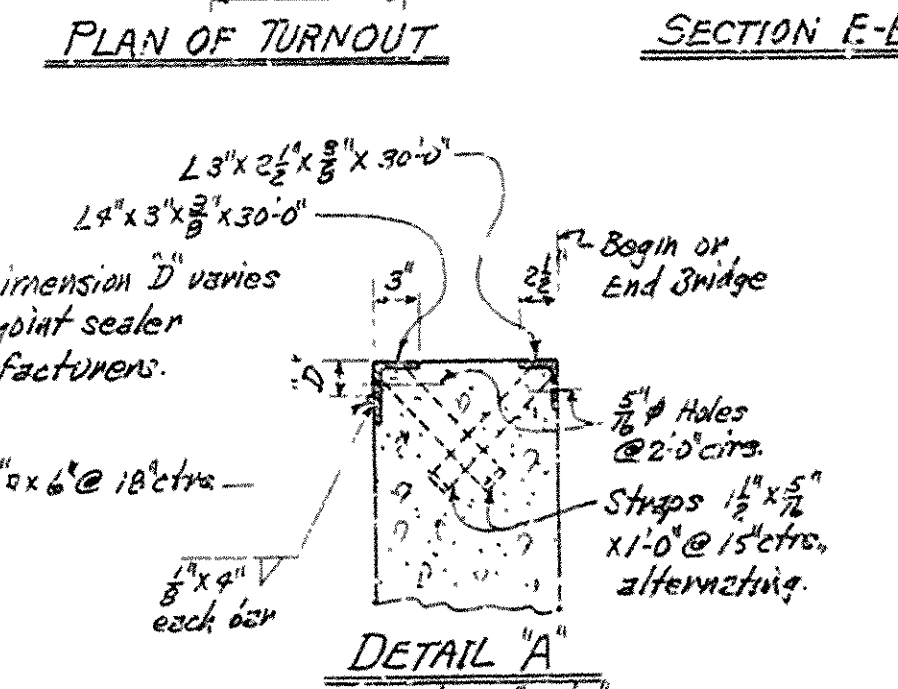
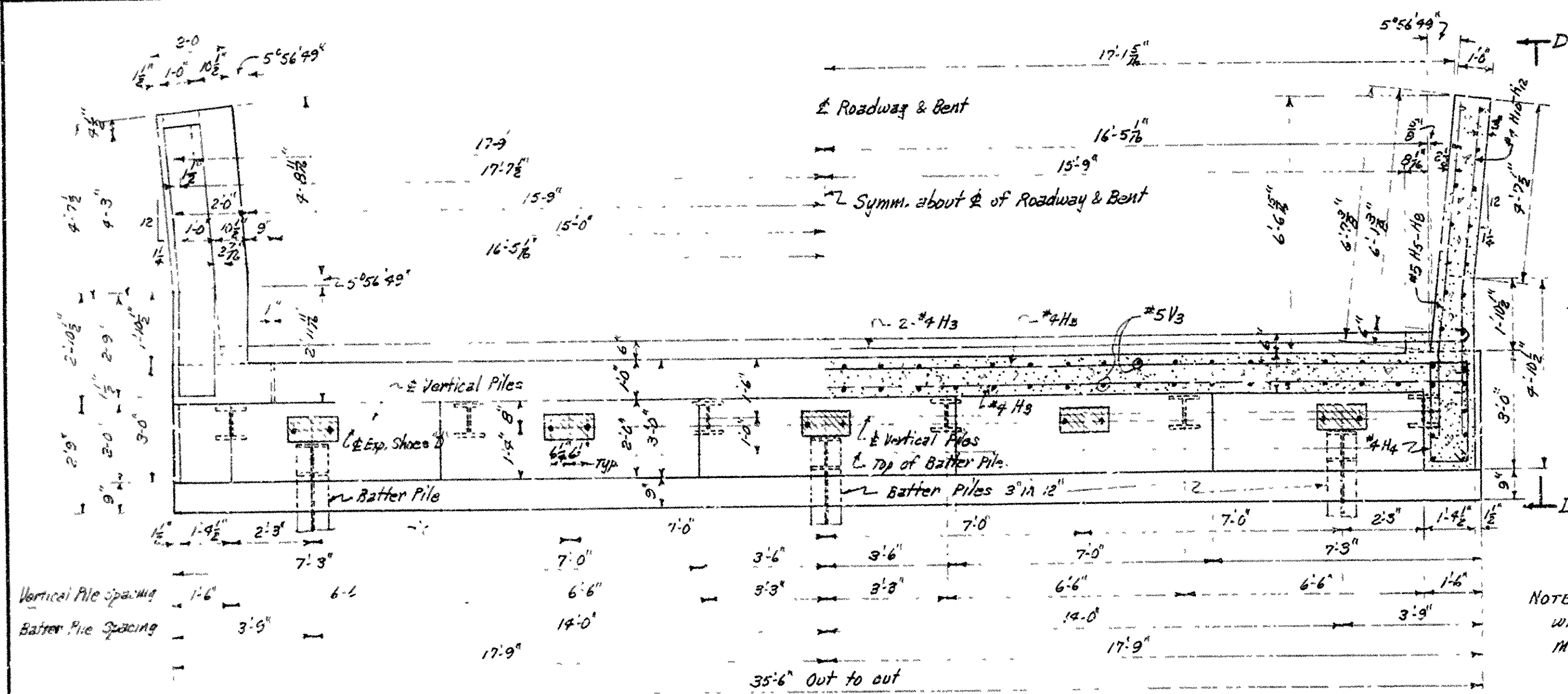
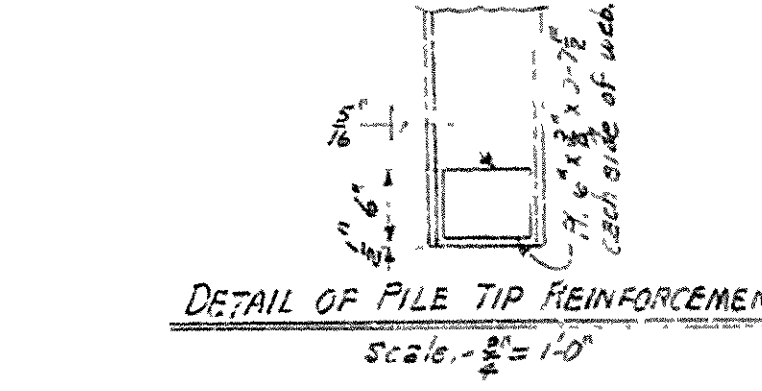
LIST OF BARS FOR END BENT NOS. 1 AND 4.

MARK	SIZE	NO. REBAR	LENGTH	A	B	PIN DIAM.	BENDING DIAGRAM
H1	#7	15	35'-1"	Straight			A
V8	#5	76	6'-5"	Straight			B
V2	#5	8	7'-0"	Straight			C
H2	#4	2	35'-1"	Straight			D
H3	#4	12	35'-8"	34'-10"	0'-4"	1/2"	E
H4	#4	12	26'-0"	25'-0"	1'-0"	1/2"	F
H5	#5	2	4'-3"	2'-3"	2'-0"	1/2"	G
H6	#4	2	5'-9"	2'-8"	3'-6"	1/2"	H
H7	#4	2	7'-3"	2'-3"	5'-0"	1/2"	I
H8	#5	6	6'-5"	6'-5"	3'-6"	1/2"	J
H9	#4	4	5'-2"	Straight			K
H10	#4	2	5'-2"	3'-6"	0'-8"	1/2"	L
H11	#4	2	6'-5"	3'-6"	2'-8"	1/2"	M
H12	#4	6	8'-5"	3'-6"	4'-11"	1/2"	N
H13	#4	4	7'-2"	2'-6"	4'-5"	1/2"	O
H14	#4	4	7'-0"	2'-7"	4'-7"	1/2"	P
H15	#4	4	5'-0"	Straight			Q
H16	#4	14	3'-9"	Straight			R
V1	#4	76	11'-10"	Straight			S
V2	#4	18	8'-10"	Straight			T
V3	#4	32	3'-7"	Straight			U
V4	#4	8	4'-5"	Straight			V
V5	#4	4	4'-6"	Straight			W
V6	#4	4	4'-0"	Straight			X
V7	#4	4	3'-2"	Straight			Y
V8	#4	4	3'-0"	Straight			Z
V9	#4	4	2'-6"	Straight			AA
T01	#5	17	5'-0"	Straight			AB
T02	#5	8	5'-0"	Straight			AC
T03	#4	8	15'-3"	4'-0"	4'-11"	1/2"	AD
T04	#4	2	13'-5"	3'-0"	3'-11"	1/2"	AE
T05	#4	4	5'-5"	Straight			AF

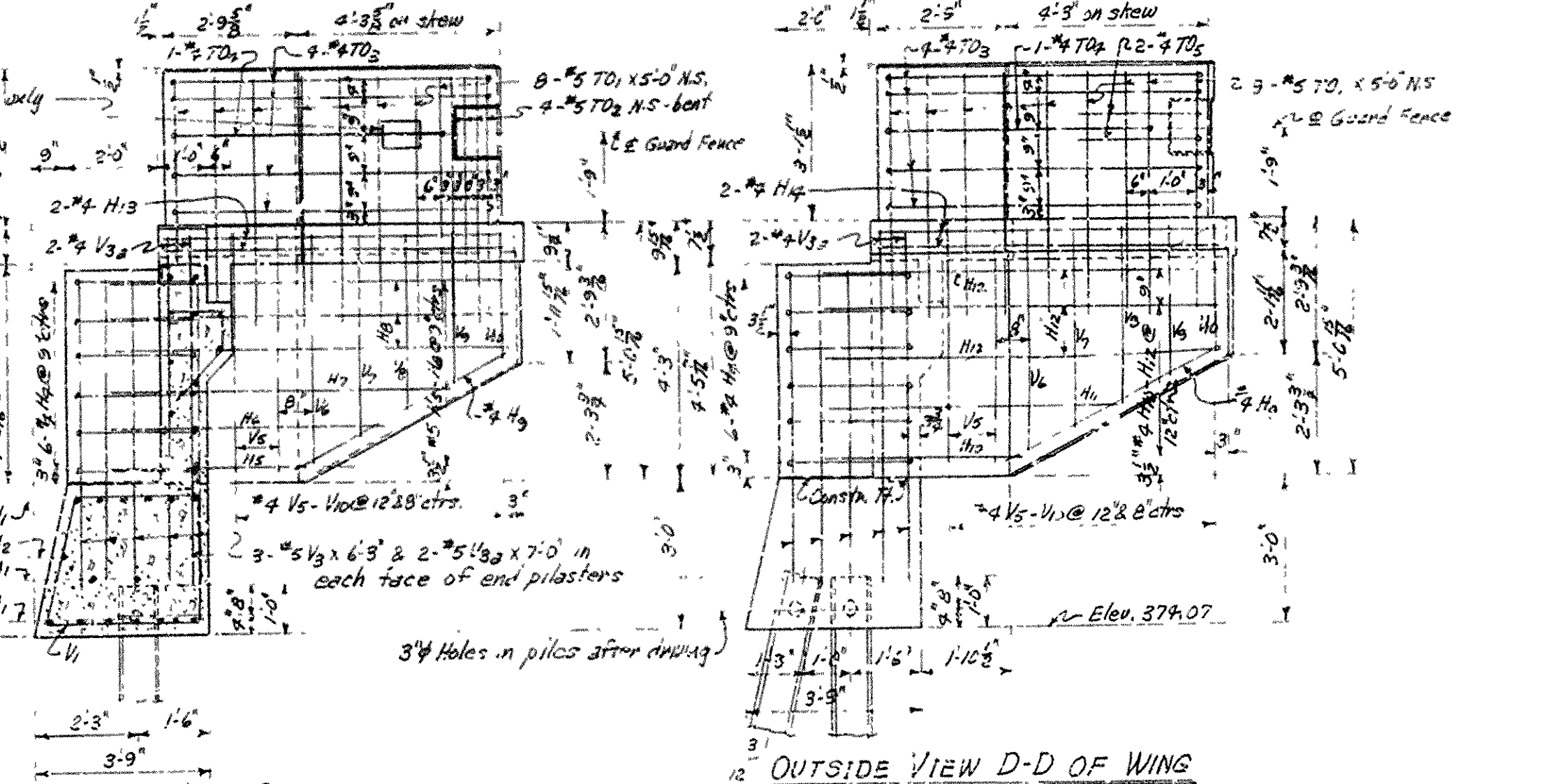
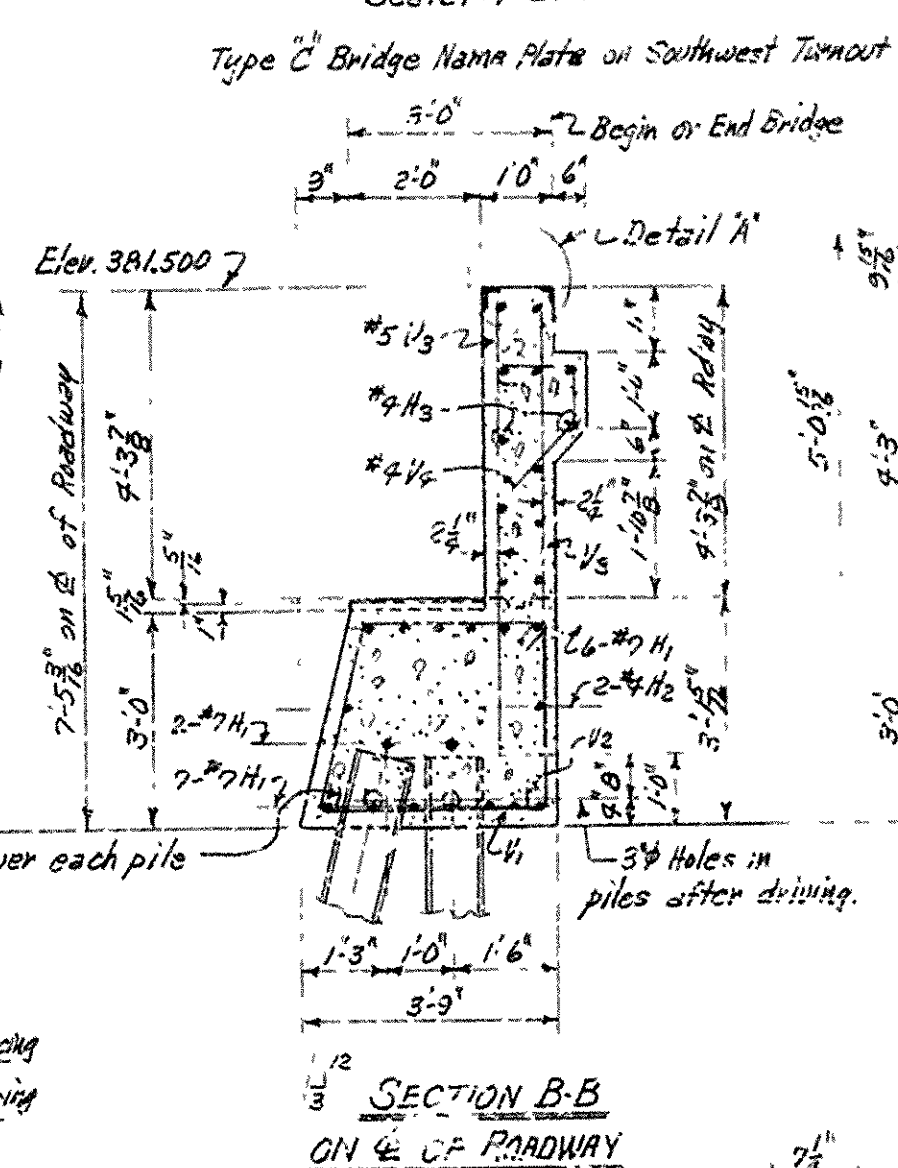
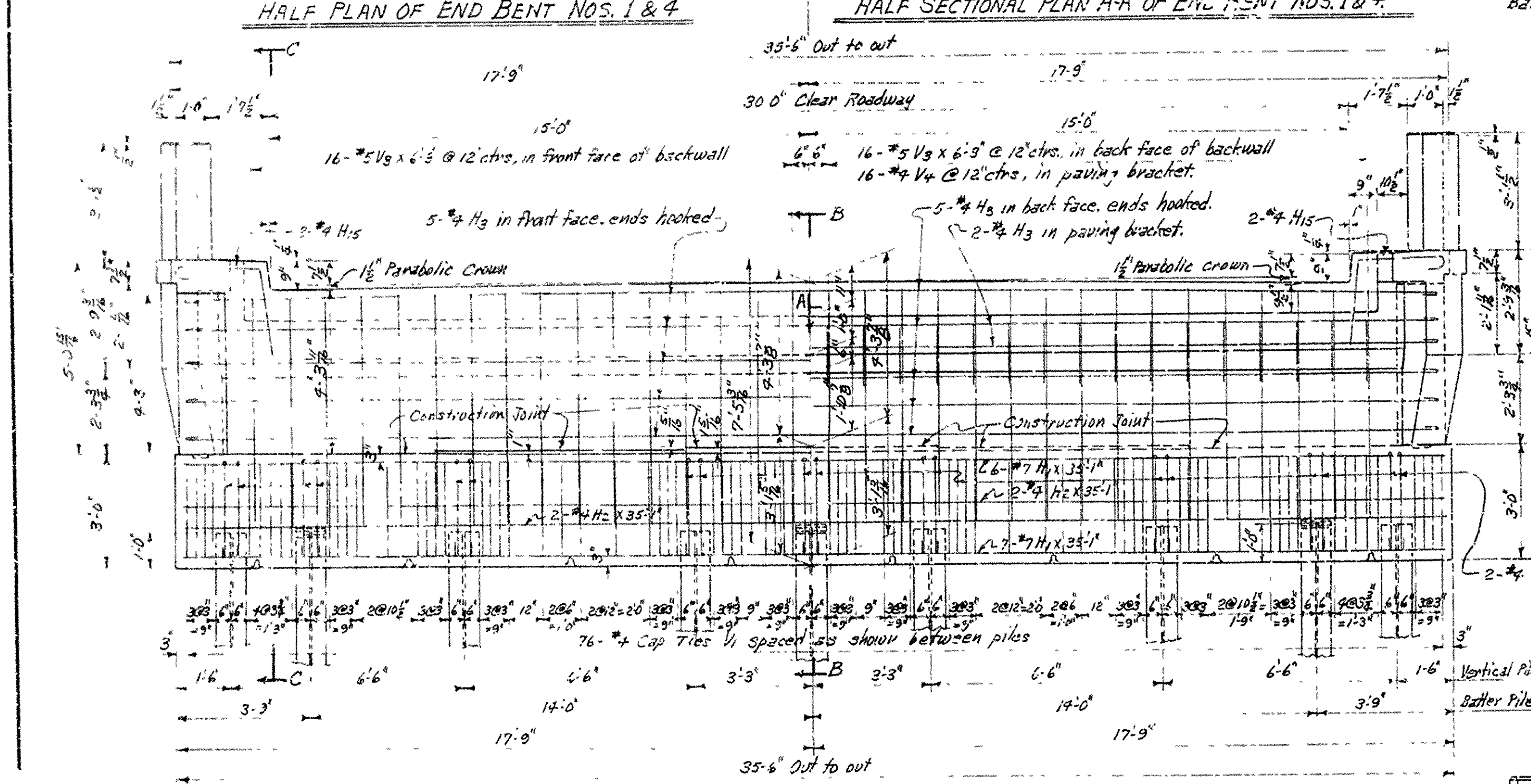
Note: Dimensions are to centers of bars.



NOTE: The Contractor may for his convenience and at his own expense provide as many as two splices per pile for steel bearing piling. Minimum spacing between splices shall be 9 feet.



NOTE: Dimension D varies with joint sealer manufacturers.



NOTE: The pile tip will be considered subsidiary to the item of Steel Bearing Piling. The 1/2" preformed joint sealer is a pay item. 1 wing of End Bents is a pay item.

GENERAL NOTES

Concrete in caps, backwalls, wings and turnout posts to be Class S. All concrete to be poured in the dry. All exposed corners to have 3/4" chamfers, except where otherwise noted.

Reinforcing steel to be deformed bars of intermediate or hard grade. Shop lists and bending diagrams must be submitted by the contractor and approved before fabrication is begun. Beam bolsters are to be used to accurately locate and space the bars. This work will be subsidiary to the item of Reinforcing Steel.

Construction joints in backwall and wings to be 1" deep, covering the middle third of narrow dimension of the wall or wing.

Piles in End Bents shall be 10" SP & 42# and shall be driven with an approved air, steam or diesel hammer to a minimum capacity of 55 tons, per pile, and into material designated as sandstone on boring logs. Piles in end bents to be driven after the embankment is in place.

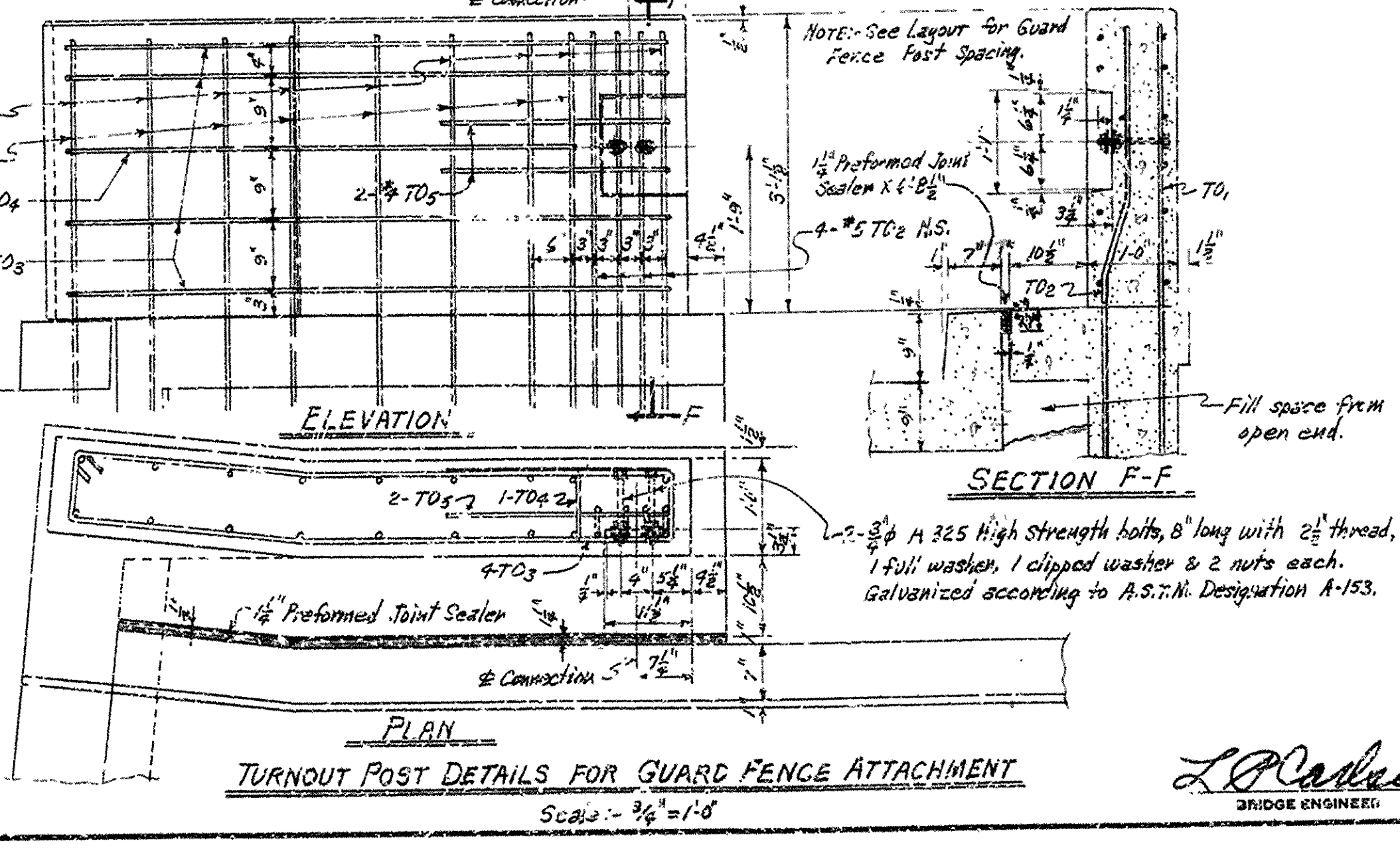
Guard fence anchors shall be placed in all four turnout posts of Bridge No. 5180.

Tops of the guard fence anchor bolts, the washers and nuts are to be galvanized to conform to A.S.T.M. Specifications Designation A-153.

The anchor bolts, washers, and nuts will not be paid for directly but will be considered subsidiary to the item of "Guard Fence".

For Layout of Bridge over Gar Creek, see Drawing No. 15546.

For Details of Continuous I-beam Unit, see Drawing Nos. 14992, 15549, 15550 & 15551.

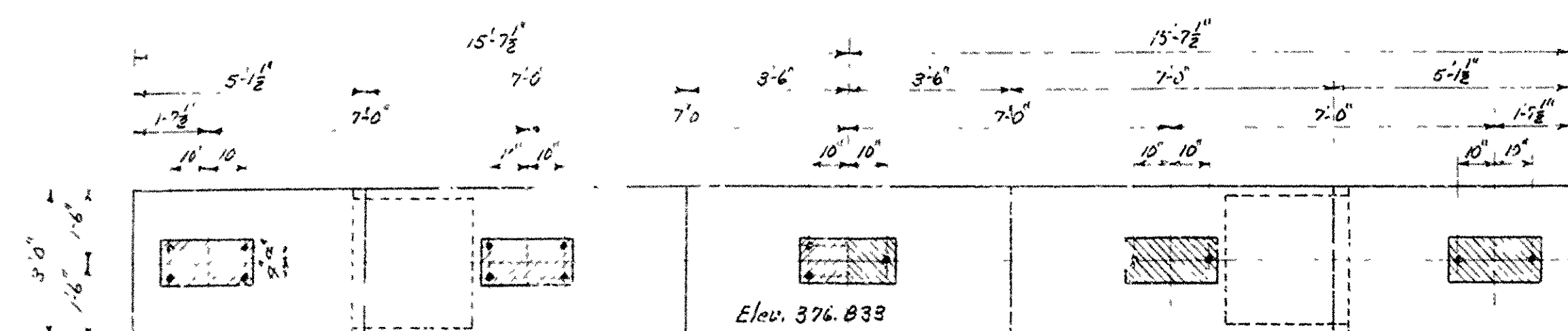


DETAILS OF END BENT NOS. 1 & 4
BRIDGE OVER GAR CREEK
HIGHWAY 64 ALTERATIONS (OZARK RESERVOIR)
FRANKLIN COUNTY
ROUTE 64 SEC. 3
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

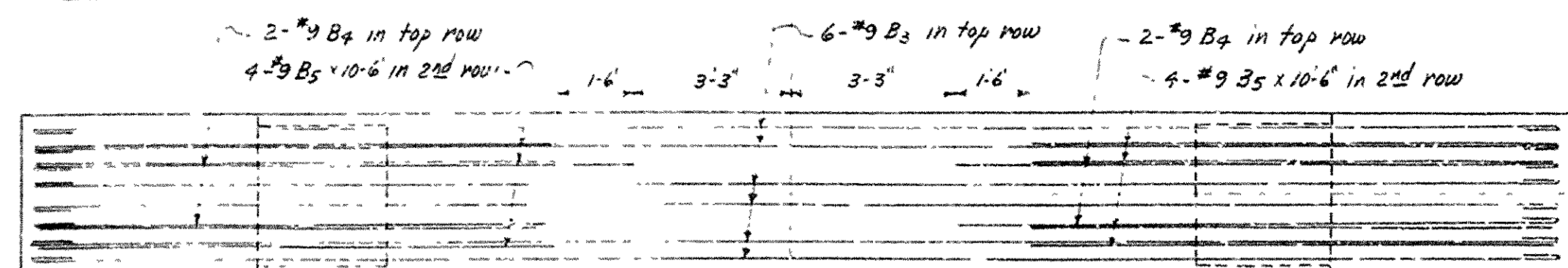
DRAWN BY: W.C.H. DATE: 5-1-67
TRACED BY: W.C.H. DATE: 5-3-67
CHECKED BY: J.E.M. DATE: 5-16-67

BRIDGE NO. 5180
DRAWING NO. 15547

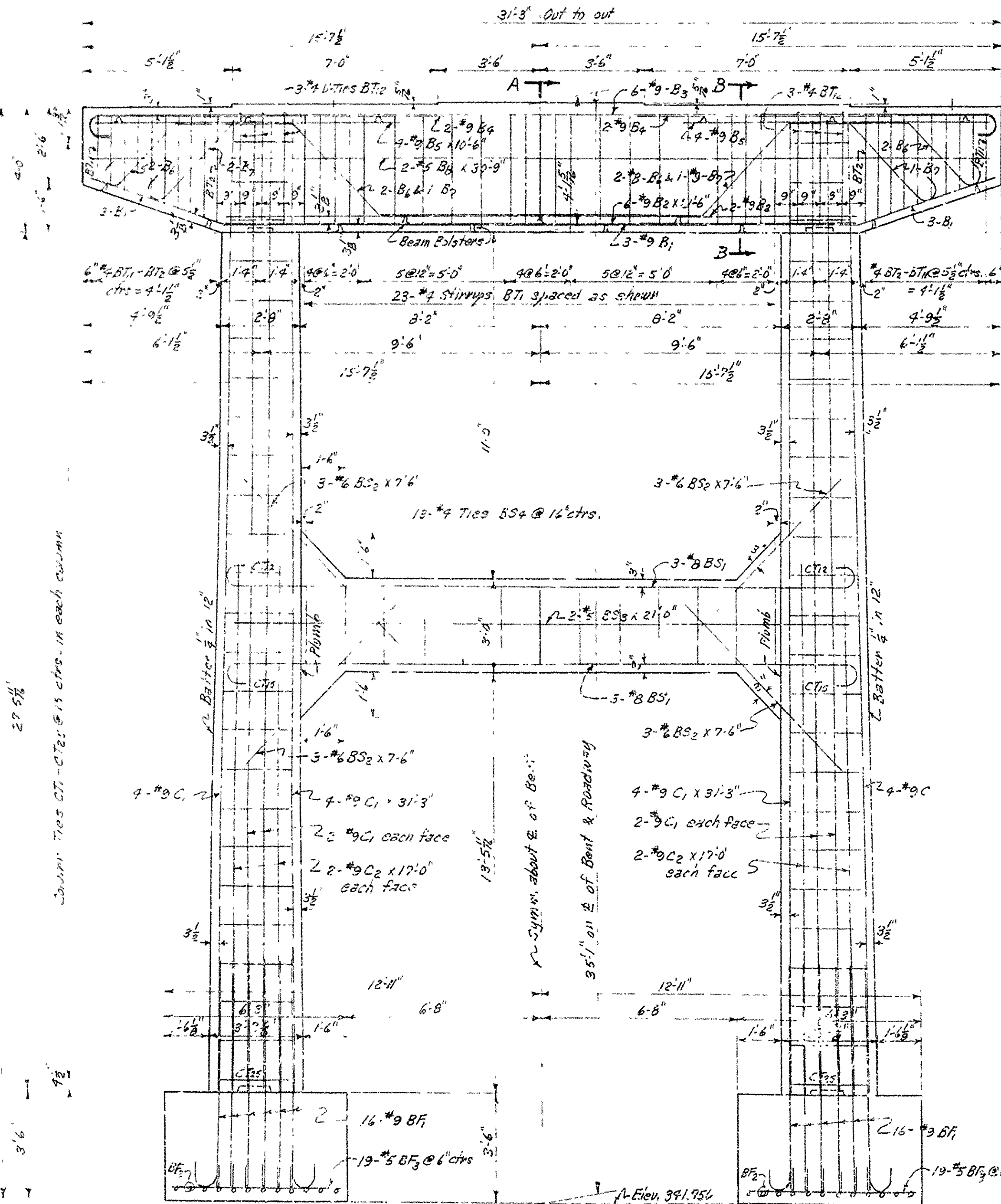
FED. ROAD NO.	STATE	CORPS OF ENGINEERS	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	DACW03-67-C-0072		11	37
JOB NO.			4585	11	37



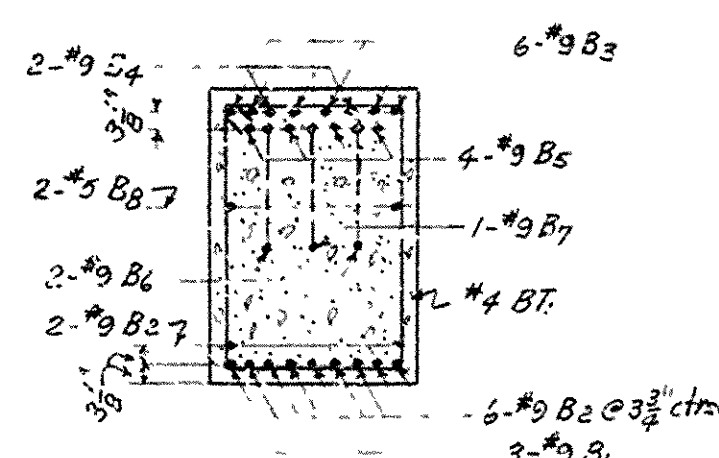
HALF PLAN OF CAP FOR BENT NO. 2 - FIXED SHOES "C"



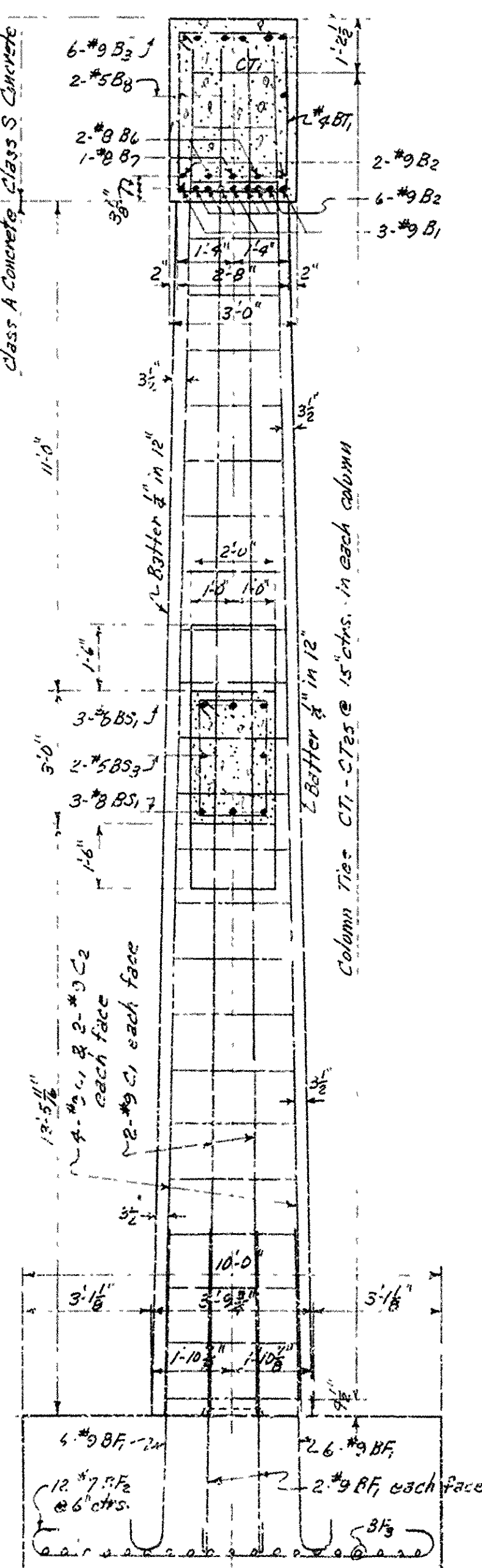
PLAN OF CAPS - SHOWING MAIN TOP REIN. STEEL



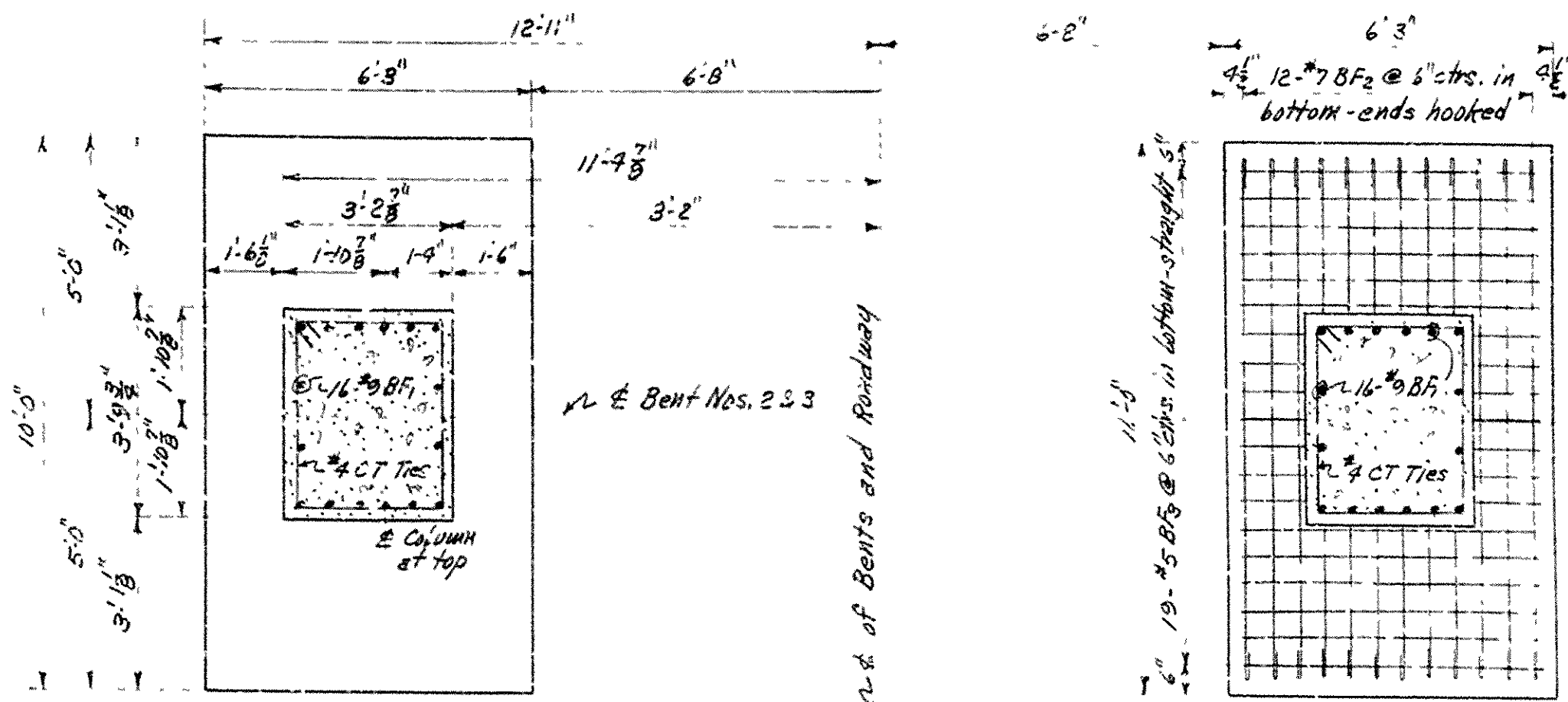
SIDE ELEVATION OF BENT NOS. 2 & 3



SECTION B-B



SECTION A-A



PLAN OF FOOTINGS - BENT NOS. 2 & 3

LIST OF BARS FOR BENT NOS. 2 & 3

MARK	SIZE	NO. REQ'D	BENT NO.	LENGTH	A	B	PIN DIAM.
B1	#9	32	32	8'-6"	7'-3"	10'	9"
C1	#9	24	24	31'-3"	Straight		
C2	#9	8	8	17'-0"	Straight		
B1	#9	3	3	31'-3"			9"
B2	#9	3	3	21'-6"	Straight		
B3	#9	6	6	33'-4"	30'-10"	10'	9"
B4	#9	4	4	13'-5"	12'-2"	10'	9"
B5	#9	8	8	10'-0"	Straight		
B6	#8	2	2	35'-6"			8"
B7	#8	1	1	32'-11"			8"
B8	#9	6	6	23'-6"	21'-3"	9"	8"
B9	#7	24	24	11'-2"	9'-6"	7'	5 1/2"
B10	#6	12	12	7'-6"	Straight		
B11	#5	2	2	21'-0"	Straight		
B12	#5	38	38	5'-9"	Straight		
B13	#5	2	2	30'-9"	Straight		
CT1	#4	2 Each	2 Each	Varies 9'-2" to 12'-11"	Varies 2'-2" to 2'-9 1/2"	Varies 2'-1 1/2" to 3'-4 1/2"	1 1/2"
CT2	#4	13	13	9'-1"	2'-7 1/2"	1'-7 1/2"	1 1/2"
CT3	#4	23	23	19'-7"	3'-7 1/2"	2'-7 1/2"	1 1/2"
CT4	#4	2 Each	2 Each	Varies 12'-1 1/2" to 10'-4"	Varies 3'-4 1/2" to 2'-5"	2'-1 1/2"	1 1/2"
CT5	#4	6	6	9'-10"	3'-7 1/2"	2'-7 1/2"	1 1/2"

NOTE: Dimensions are to centers of bars.

GENERAL NOTES

Concrete in caps to be Class S. Concrete in columns, struts and footings to be Class A and to be poured in the dry. All exposed corners to have 3/4" chamfers, except where otherwise noted.

Reinforcing steel to be deformed bars of intermediate or hard grade. Shop lists and bending diagrams must be submitted by the Contractor and approved before fabrication is begun. Beam bolsters are to be used to accurately locate and space the bars. They will be considered subsidiary to the item of "Reinforcing Steel."

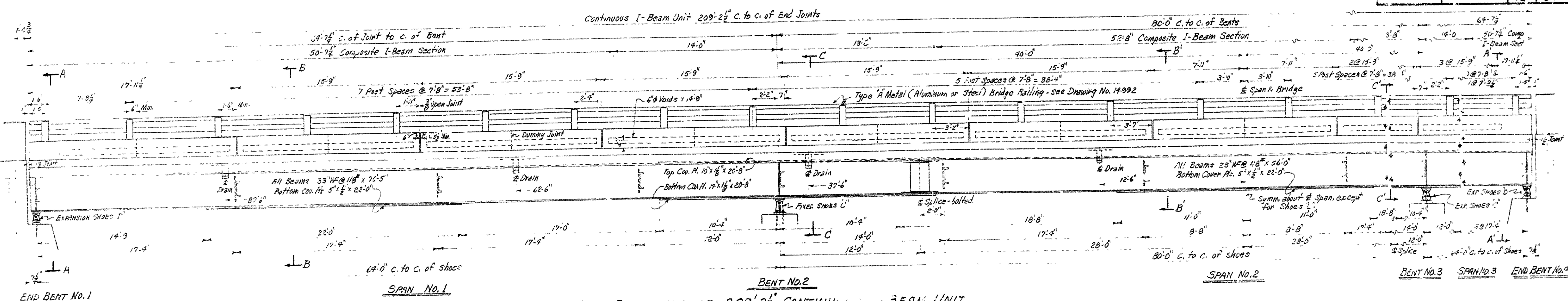
All construction joints are to be horizontal and shall be provided with keys 14" deep covering the middle third of both dimensions.

For details of Layout for Bridge No. 5180 over Car Creek, see Drawing No. 15548. For details of Continuous T-Beam Unit, see Drawing Nos. 14982, 15549, 15550 & 15551.

DETAILS OF INTERMEDIATE BENT NOS. 2 & 3
BRIDGE OVER GAR CREEK
HIGHWAY 64 ALTERATIONS (CZARK RESERVOIR)
FRANKLIN COUNTY
ROUTE 64 SEC. 3
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

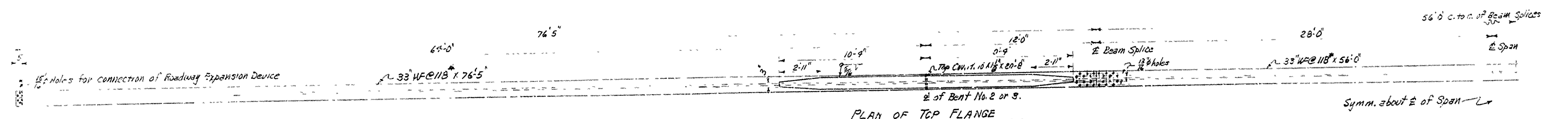
DRAWN BY: W.C.H. DATE: 9-25-67
TRACED BY: W.C.H. DATE: 9-26-67
CHECKED BY: J.E.M. DATE: 5-3-67
BRIDGE NO. 5180 DRAWING NO. 15548

163

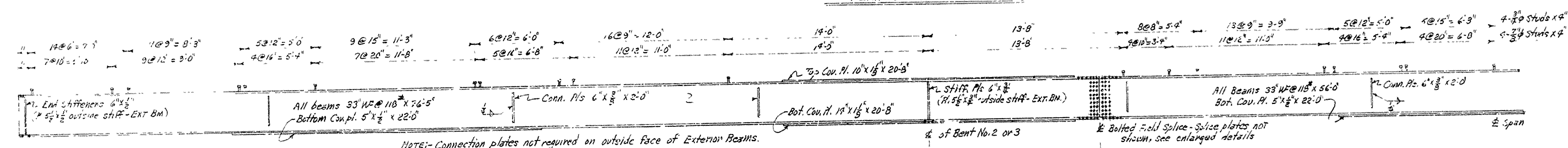


PART SIDE ELEVATION OF 209'-2½' CONTINUING BEAM UNIT

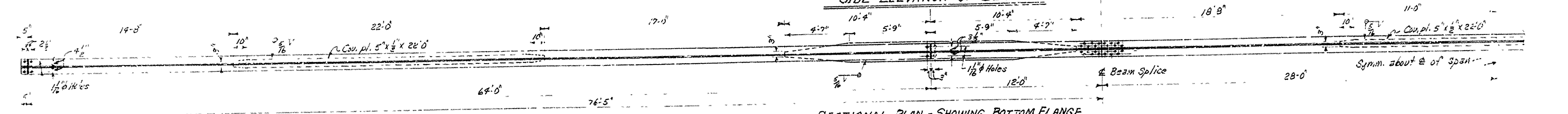
Scale:- $\frac{1''}{1'-0}$



PLAN OF TCP FLANGE



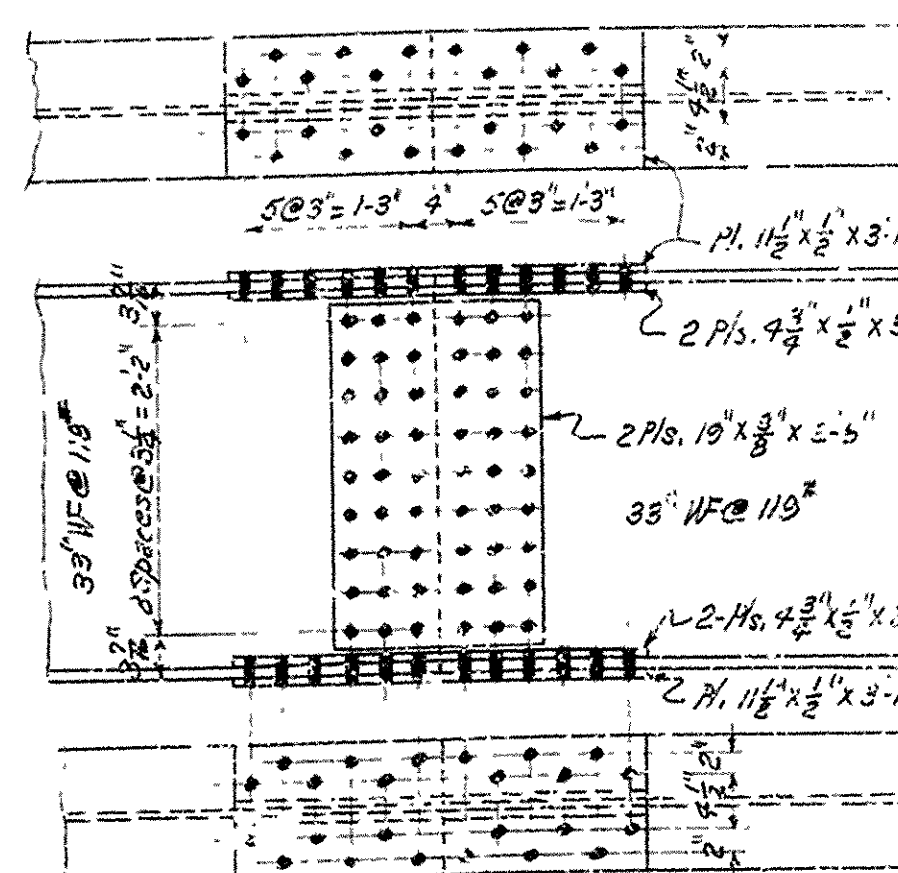
SIDE ELEVATION OF BEAMS



SECTIONAL PLAN - SHOWING BOTTOM FLANGE

DETAILS OF BEAMS

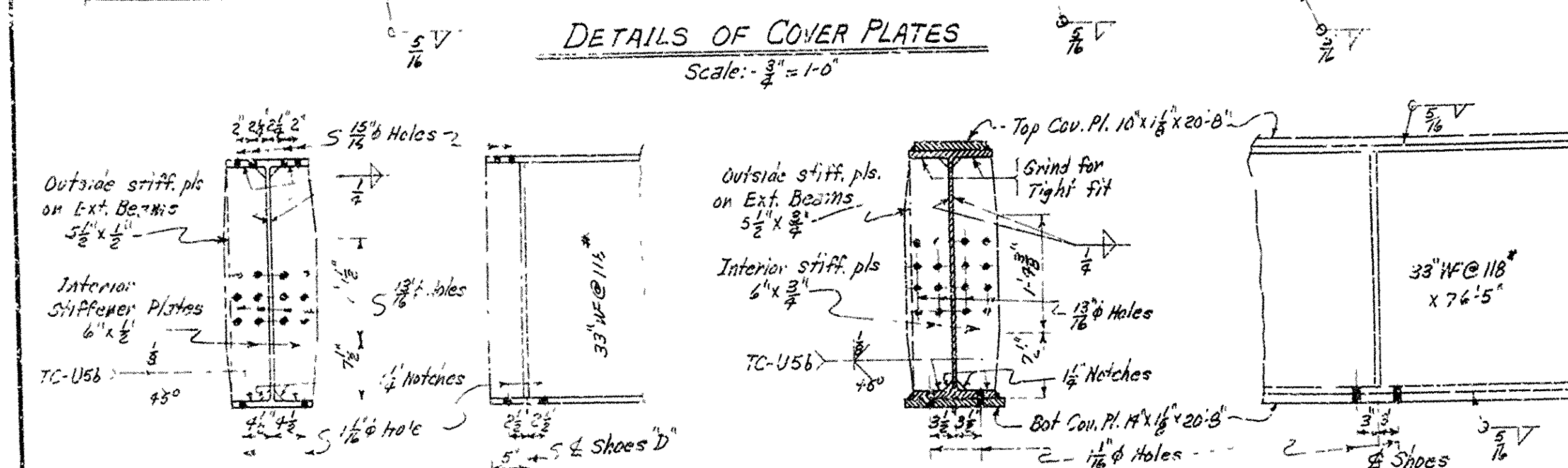
503/2 - 1A - 101



DETAILS OF BEAM SPLICE-BOLTED

All bolts to be $\frac{3}{4}"$ High strength bolts. - $\frac{13}{16}"$ Ø Open Hole.
 Scale: - $\frac{3}{8}" = 1'-0"$

NOTE:- Brts shall be placed with heads on the outside face of Exterior Beams and on bottom of beam flanges



END STIFFENERS AT BENT NOS. 1 & 4

STIFFENERS AT INTERMEDIATE BENT NOS. 2 & 3

STIFFENER DETAILS

NOTE- Omit holes in outside stiffeners
of Exterior Beams.

$$3/4^4 = 1/2^4$$

4 - $\frac{7}{8}$ " ϕ x 4" STUD SHEAR CONNECTORS
OR 4 - $\frac{3}{4}$ " ϕ x 4" STUD SHEAR CONNECTORS

NOTE:- The Contractor may furnish either type of sheep connectors at his option.
The stud connectors shall be galvanized flux filled, solid flange and shall be installed automatically and welded to the beam flanges in accordance with the recommendations of the manufacturer.
Either type shall be shop welded to flanges.
Measurement of structural steel in shear connectors shall be on basis of 0.80 pounds each for the number of $\frac{3}{4}$ connectors shown.

SHEET NO. 1 OF 3
DETAILS OF 20'-2 1/2" CONT. I-BEAM UNIT
BRIDGE OVER GAR CREEK
HIGHWAY 64 ALTERATIONS (OZARK RESERVOIR)
FRANKLIN COUNTY

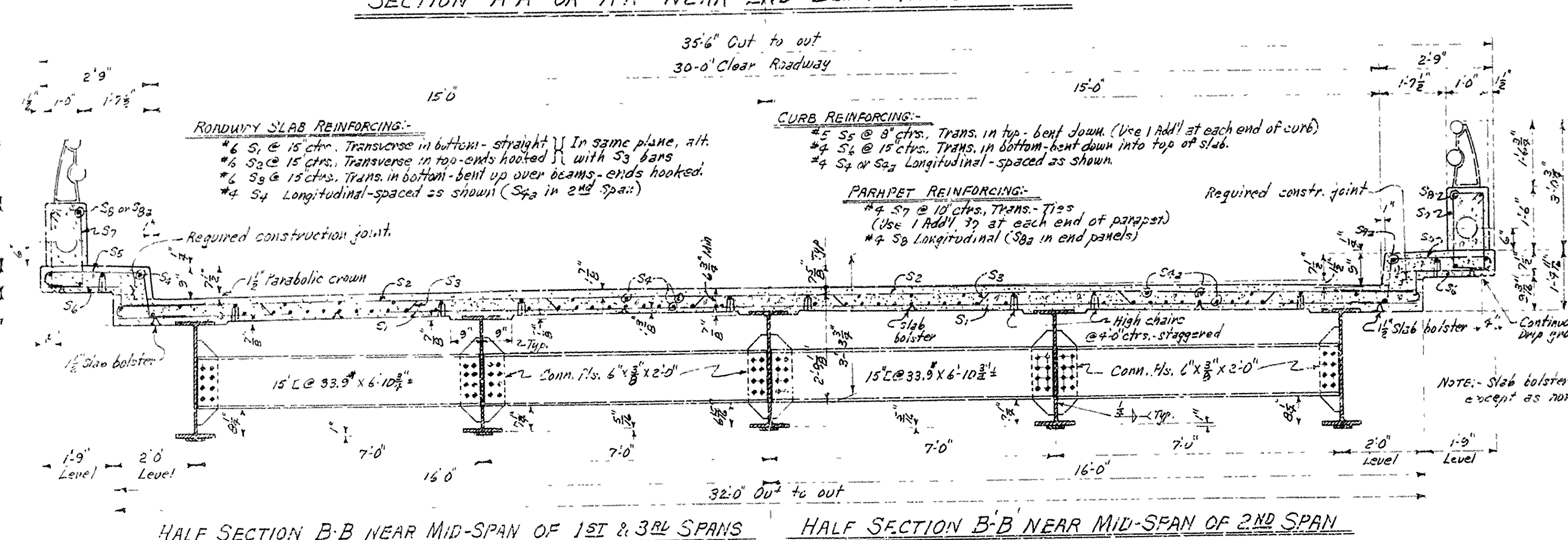
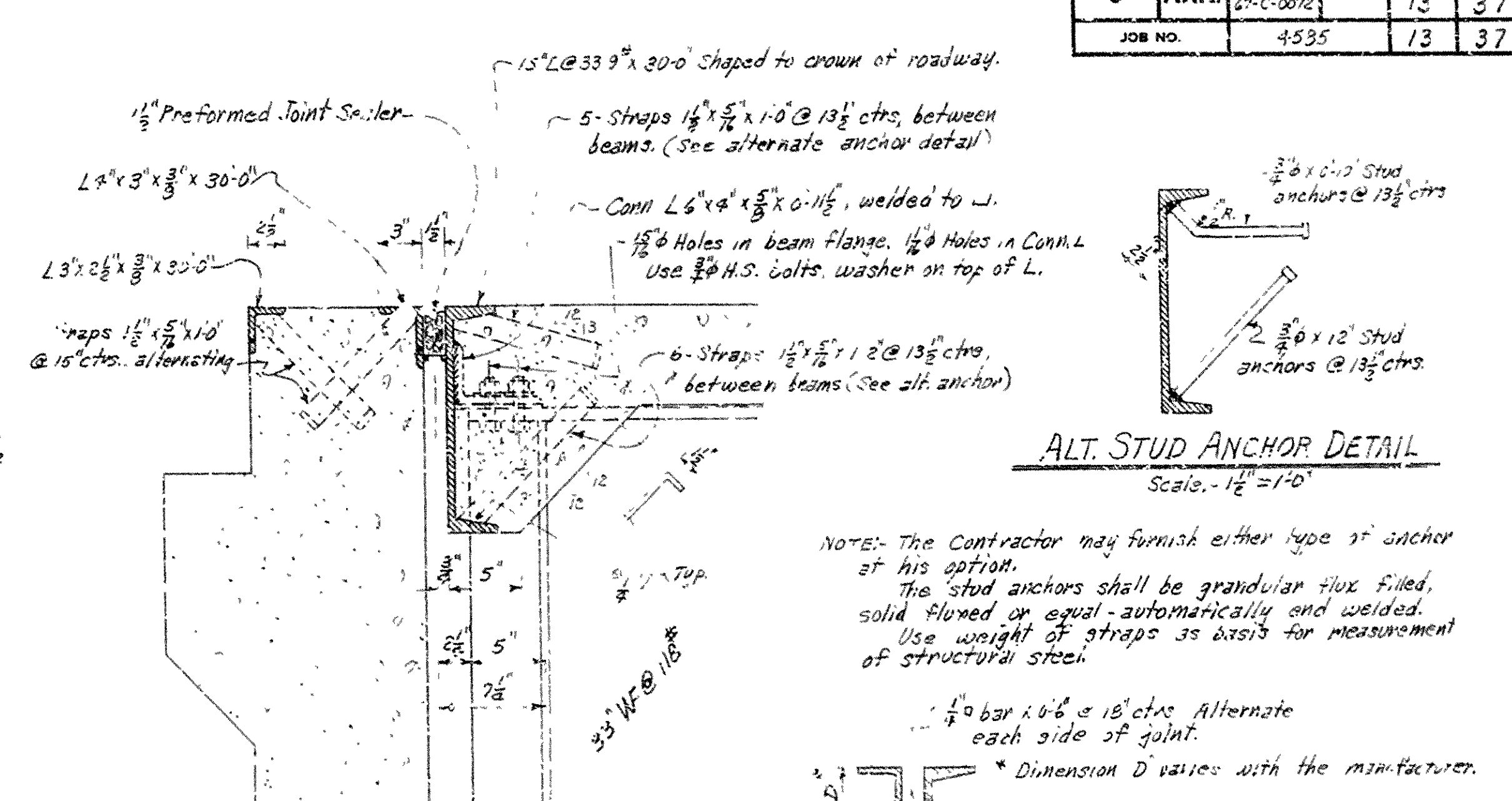
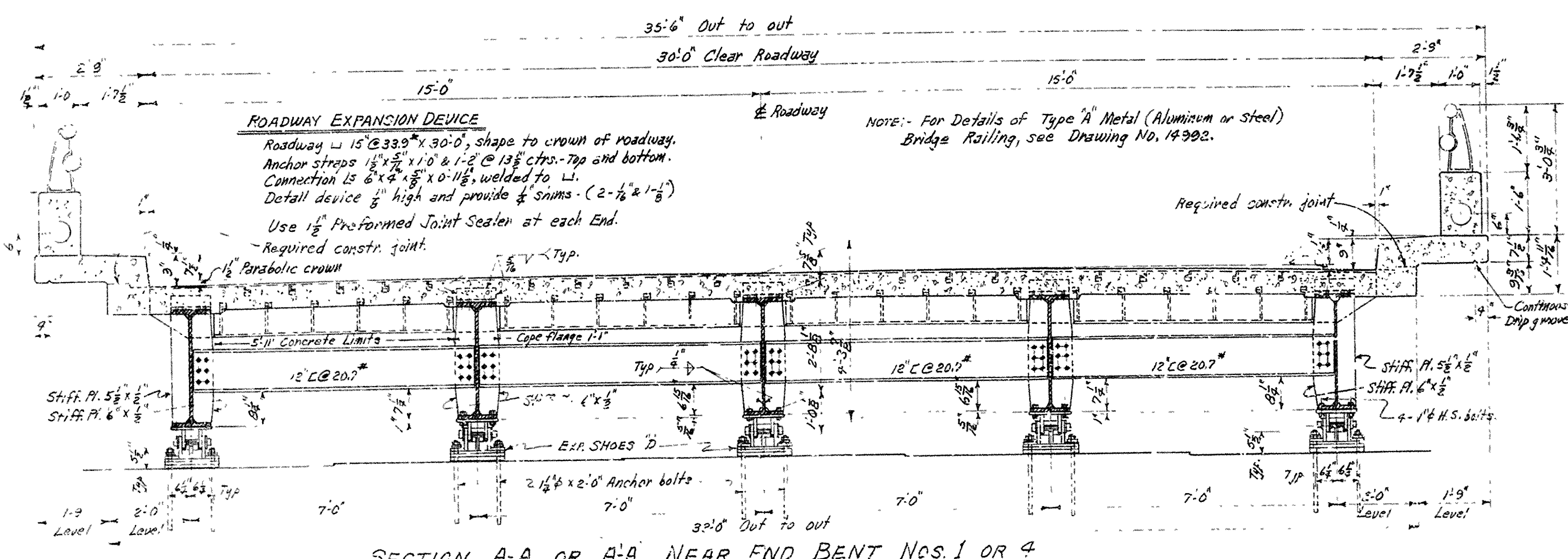
ROUTE 64 SEC. 3
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: W.C.H. DATE: 4-19-67
 TRACED BY: W.C.H. DATE: 4-19-67
 EXAMINED BY: W.C.H. DATE: 5-5-67

SCALE: As shown

BRIDGE NO. 5180 DRAWING NO. 15549

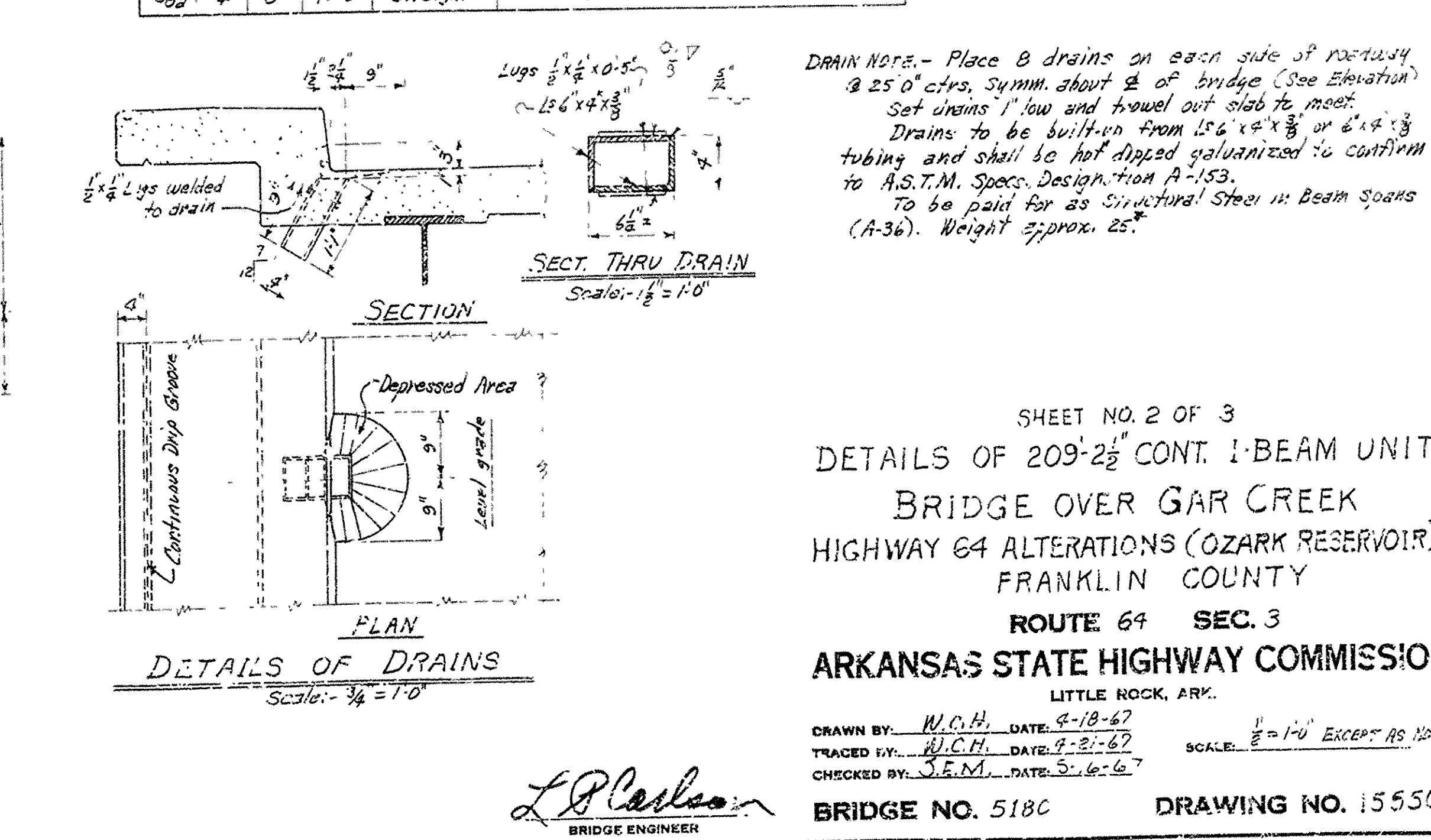
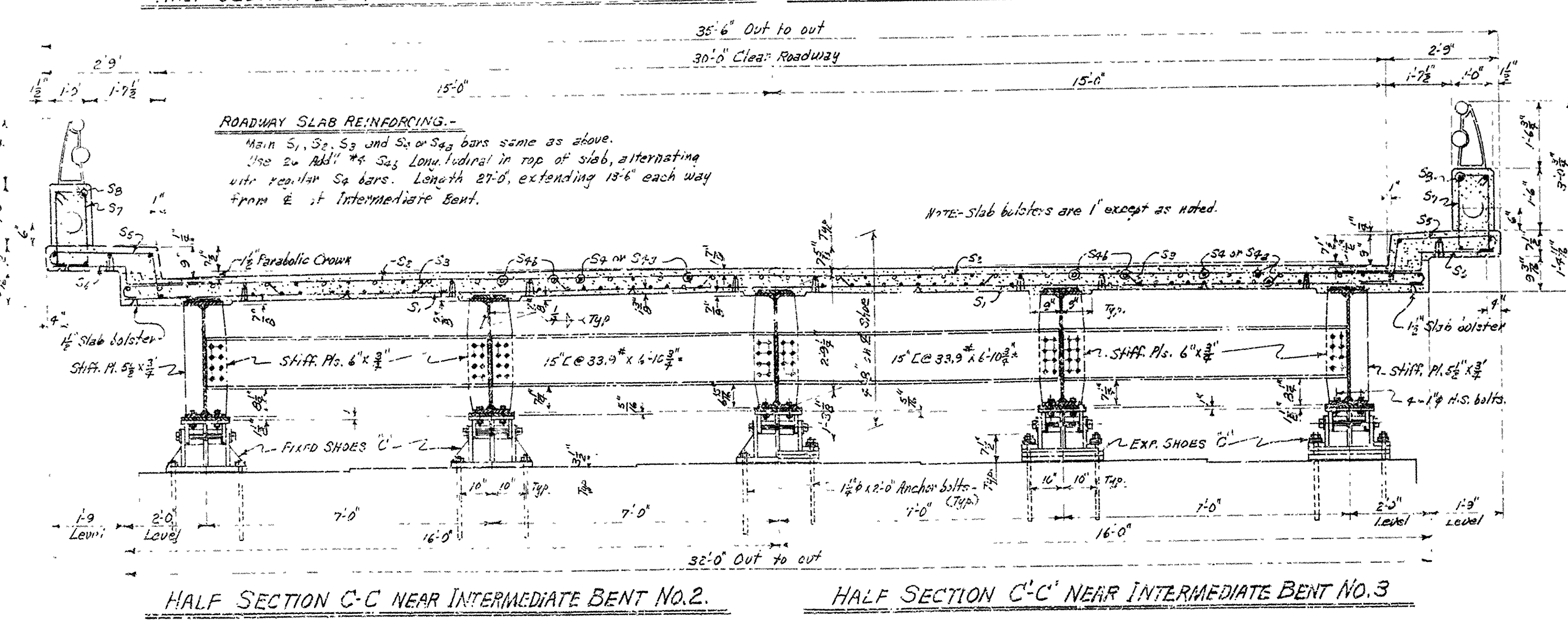
L P Carlos
BRIDGE ENGINEER



BAR LIST FOR SLAB OF 209'-2 1/2" CONT. I-BEAM UNIT

MARK	SIZE	NO. REIN.	LENGTH	PIN DIAM.	BENDING DIAGRAM
S1	#6	168	31'-8"	Straight	
S2	#6	168	33'-0"	3"	
S3	#6	167	33'-10"	2 1/2"	
S4	#4	312	33'-0"	Straight	
S4a	#4	234	29'-0"	Straight	
S4b	#4	52	27'-0"	Straight	
S5	#5	632	5'-3"	1 1/2"	
S6	#4	334	9'-3"	1 1/2"	
S7	#4	506	5'-10"	1 1/2"	
S8	#4	44	15'-4"	Straight	
S9a	#4	8	17'-6"	Straight	

NOTE: Dimensions are to centers of bars.



SHEET NO. 2 OF 3
 DETAILS OF 209'-2 1/2" CONT. I-BEAM UNIT
 BRIDGE OVER GAR CREEK
 HIGHWAY 64 ALTERATIONS (OZARK RESERVOIR)
 FRANKLIN COUNTY
 ROUTE 64 SEC. 3
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

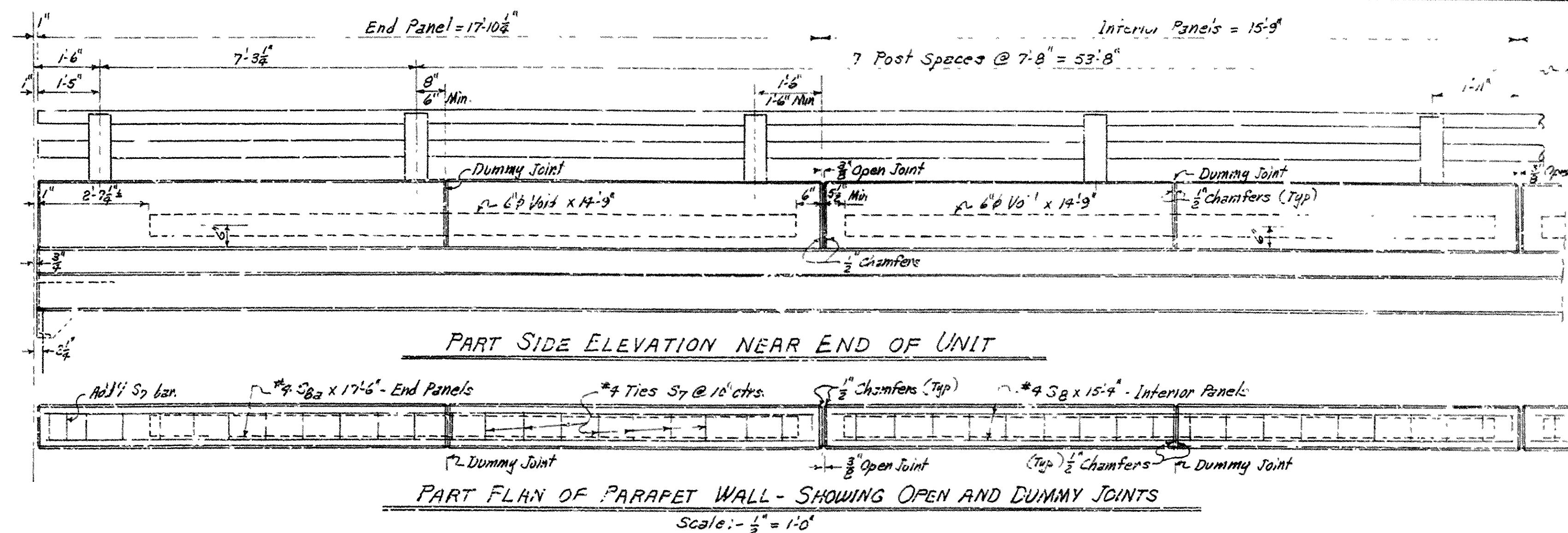
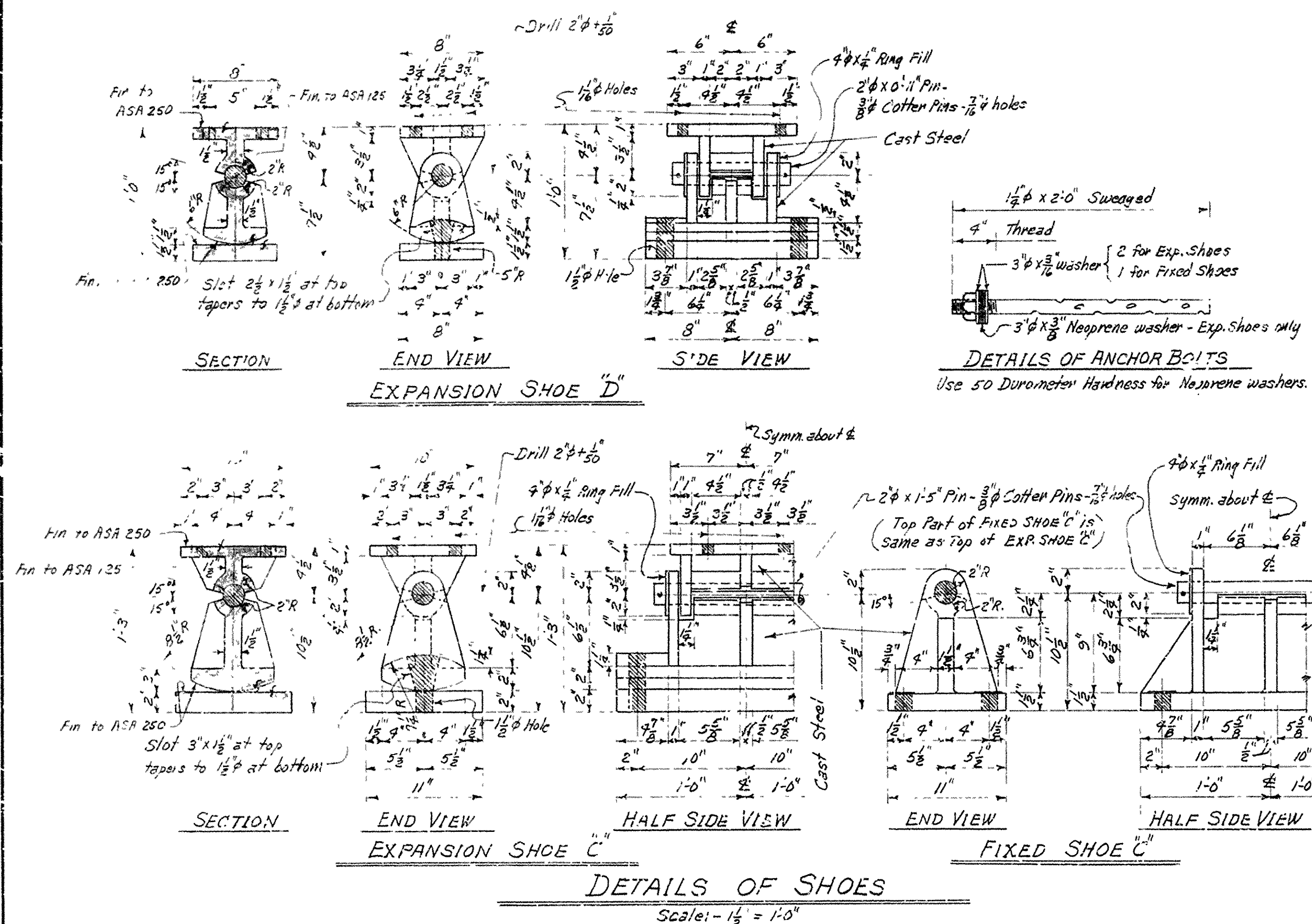
DRAWN BY: W.C.H. DATE: 9-18-67
 TRACED BY: W.C.H. DATE: 9-21-67
 CHECKED BY: J.E.M. DATE: 9-16-67

BRIDGE NO. 518C DRAWING NO. 15550

SCALE: 1/4" = 1'-0" EXCEPT AS NOTED

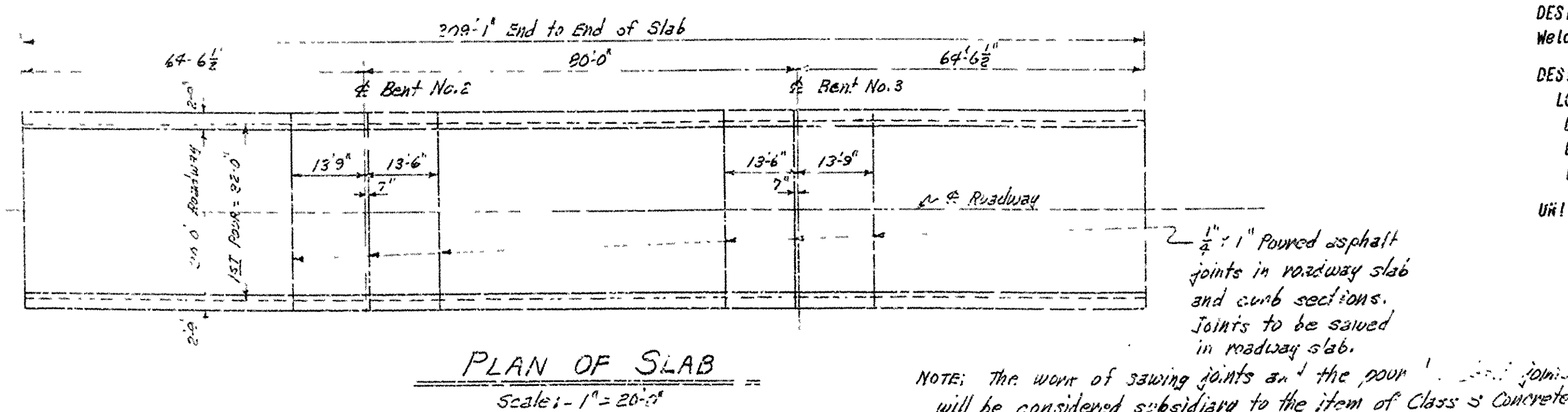
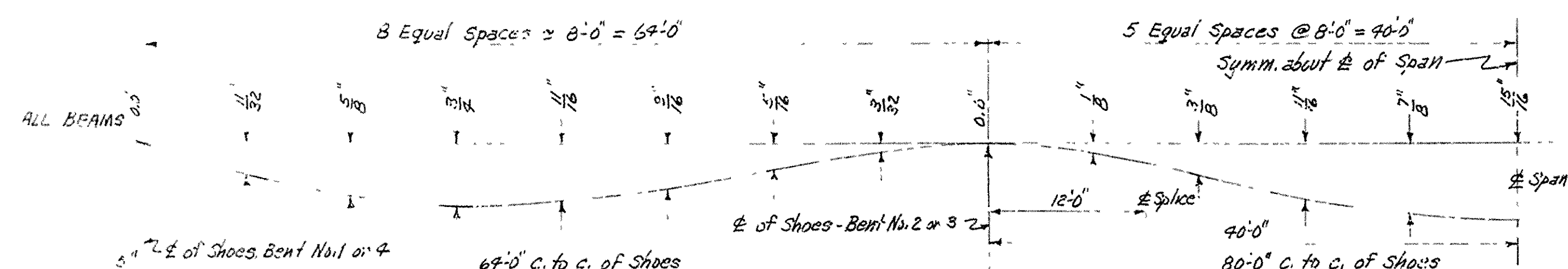
L.P. Clark
 BRIDGE ENGINEER

FED. ROAD NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	DAW-03-0072		14	37
JOB NO.		4585		14	37



GENERAL NOTES

- All concrete in deck slabs 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. The reinforcing steel is to be accurately located in the forms and firmly held in place by means of steel wire supports, sufficient in size and number 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, shall be submitted and approval secured before fabrication is begun.
- Field connections for struts shall be welded or bolted with high strength bolts. High strength bolts are to be used in the shoes and roadway expansion devices to the girder flanges. High strength bolts shall conform to A.S.T.M. Designation A 325.
- Anchor bolts and drains are to be galvanized in accordance with ASTM Specification, Designation A 153.
- Rivets: - 3/4" Ø; open holes 13/16" Ø, except as noted otherwise.
- All welded connections shall be made by the electric arc process. All welds to be 5/16" fillet welds unless otherwise noted. All design, material and workmanship shall conform to the current American Welding Society Standard Specifications for Welded Highway and Railway Bridges, and applicable Special Provisions.
- Shapes of equal or greater strength may be substituted for structural shapes shown, but payment will be made on shapes shown or actually used, whichever is the lesser.
- Linseed oil treatment shall be applied to the roadway surface, face and top of curbs and parapet walls. See Special Provision 802-8.
- The metal railing including posts and fastenings shall be paid for at the unit price per linear foot bid for Metal (Aluminum or Steel) Bridge Railing. See Standard Drawing No. 14-92.
- DESIGN SPECIFICATIONS: A.A.S.H.O. 1965 and American Welding Society Specifications for Welded Highway and Railway Bridges, current edition and applicable Special Provisions.
- DESIGN LIVE LOADING: HS 20 Loading
- LOAD DISTRIBUTION: TO INTERIOR GIRDER 740 #/lin. Ft. TO EXTERIOR GIRDER 670 #/lin. Ft.
- Dead Load to Girder 740 #/lin. Ft. 670 #/lin. Ft.
- Dead Load to Composite Girder 285 #/lin. Ft. 445 #/lin. Ft.
- Live Load to Composite Girder 1.273 Wheels + Impact 1.217 Wheels + Impact
- UNIT STRESSES: Class S Concrete (in-10) 1,200 #/in² Reinforcing Steel 20,000 #/in² Structural Steel (A-36) 20,000 #/in²
- DESIGN SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1953, with 1966 Supplemental Specifications, and applicable Special Provisions.



SLAB POURING NOTE
To control the deflection the Contractor will be required to pour the entire deck, exclusive of the curb sections, in one pour, using an approved retardant to delay initial set. Not less than 72 hours shall elapse between pouring of slab and the curb sections. First pour contains approximately 143.10 cu. yds.

LOADS	INT. BEAMS	EXT. BEAMS
Beam Dead Load	15%	15%
Slab Dead Load	68%	57%
Composite D.L.	17%	28%

SHEET NO. 3 OF 3
DETAILS OF 203'-2 1/2' CONT. I-BEAM UNIT
BRIDGE OVER GAR CREEK
HIGHWAY 64 ALTERATIONS (OZARK RESERVOIR)
FRANKLIN COUNTY

ROUTE 64 SEC. 3
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: W.C.H. DATE: 4-17-67
TRACED BY: W.C.H. DATE: 4-20-67
CHECKED BY: J.E.M. DATE: 5-18-67
BRIDGE NO. 5180 DRAWING NO. 15551