

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7-4-73	7-25-73			6	ARK.	STATE			
12-4-73	2-1-74			JOB NO.	5632		10	53	

502 - 5471 LAYOUT - 18039

GENERAL NOTES

BENCH MARK - NAIL IN SIDE OF POWER POLE 23' RIGHT OF STA. 25+61 AT ELEVATION 227.91.

ALL CONCRETE IN THE SUPERSTRUCTURE SHALL BE CLASS S(AE). ALL CONCRETE IN THE SUBSTRUCTURE SHALL BE CLASS S AND SHALL BE POURED IN THE DRY. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.

ALL PILING SHALL BE 16" OCTAGONAL PRECAST CONCRETE AND SHALL BE DRIVEN WITH AN APPROVED AIR, STEAM, OR PNEUMATIC HAMMER TO A MINIMUM CAPACITY OF 44 TONS PER PILE AND TO A MINIMUM PENETRATION OF 20 FEET BELOW THE GROUND LINE. LENGTHS OF PILING SHOWN ARE ASSUMED FOR ESTIMATING QUANTITIES ONLY. ACTUAL LENGTHS ARE TO BE DETERMINED IN THE FIELD. DRIVE ONE (1) TEST PILE IN BENT NOS. 2, 4, 6, & 8. THE TEST PILES IN BENTS 2 AND 8 SHALL BE TEST LOADED.

PILES IN END BENTS SHALL BE DRIVEN AFTER EMBANKMENT TO SUBGRADE IS IN PLACE

IN GENERAL, ALL CONSTRUCTION JOINTS IN BENTS SHALL BE HORIZONTAL AND SHALL BE PROVIDED WITH KEYS NOT LESS THAN 1-1/2" HIGH COVERING THE MIDDLE THIRD OF BOTH DIMENSIONS.

REMOVAL OR ADJUSTMENT OF PUBLIC AND RAILROAD UTILITIES, WHERE NECESSARY, SHALL NOT BE AT THE CONTRACTOR'S EXPENSE.

FOR DETAILS OF END BENTS, SEE DWG. NOS. 18041
FOR DETAILS OF INTERIOR BENTS, SEE DWG. NOS. 18042 THRU 18044
FOR DETAILS OF 330' PLATE GIRDER UNIT, SEE DWG. NOS. 18046 THRU 18048
FOR DETAILS OF 80' W-BEAM SPANS, SEE DWG. NOS. 18045 & 14996E.
FOR DETAILS OF CONCRETE RIPRAP, SEE DWG. NO. 14995A

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

DESIGN SPECIFICATIONS: AASHTO 1969, INTERIM SPECIFICATIONS, 1970 AND 1971, AMERICAN WELDING SOCIETY SPECIFICATIONS FOR WELDED HIGHWAY AND RAILWAY BRIDGES, CURRENT EDITION.

DESIGN LIVE LOAD:	HS20		
CLASS S CONCRETE (N=I)	1,200 PSI	STRUCTURAL STEEL (A36)	20,000 PSI
CLASS S(AE) CONCRETE (N=I)	1,200 PSI	STRUCTURAL STEEL (A572-50)	27,000 PSI
REINFORCING STEEL	20,000 PSI		

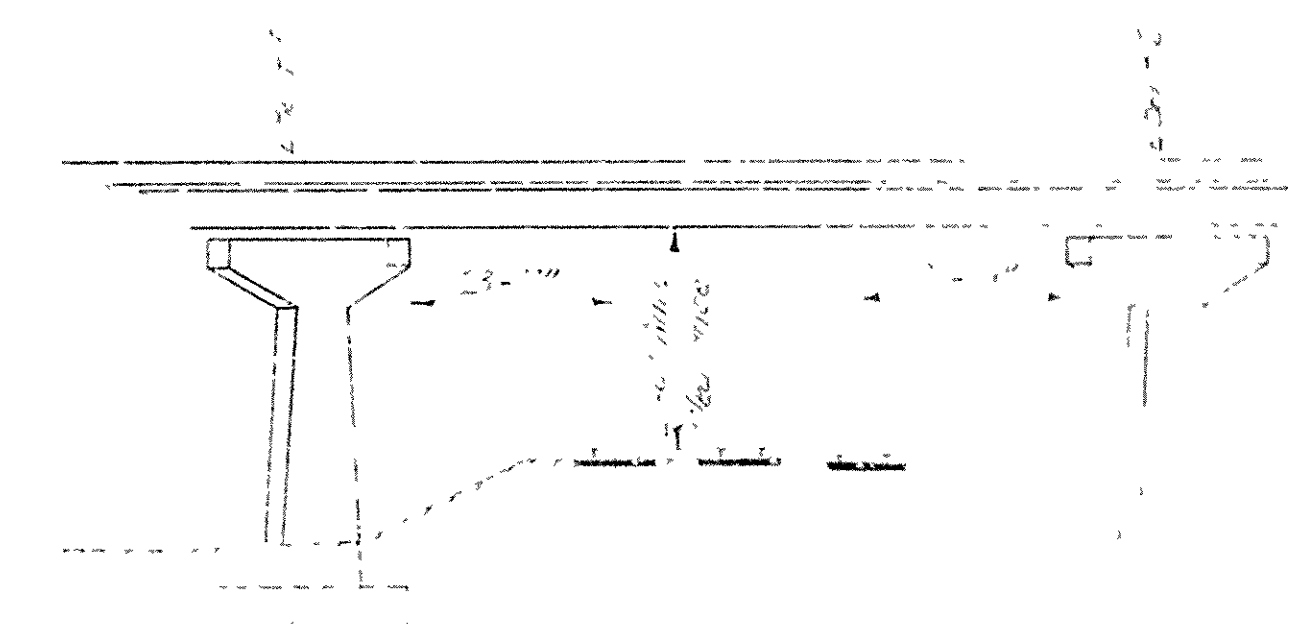
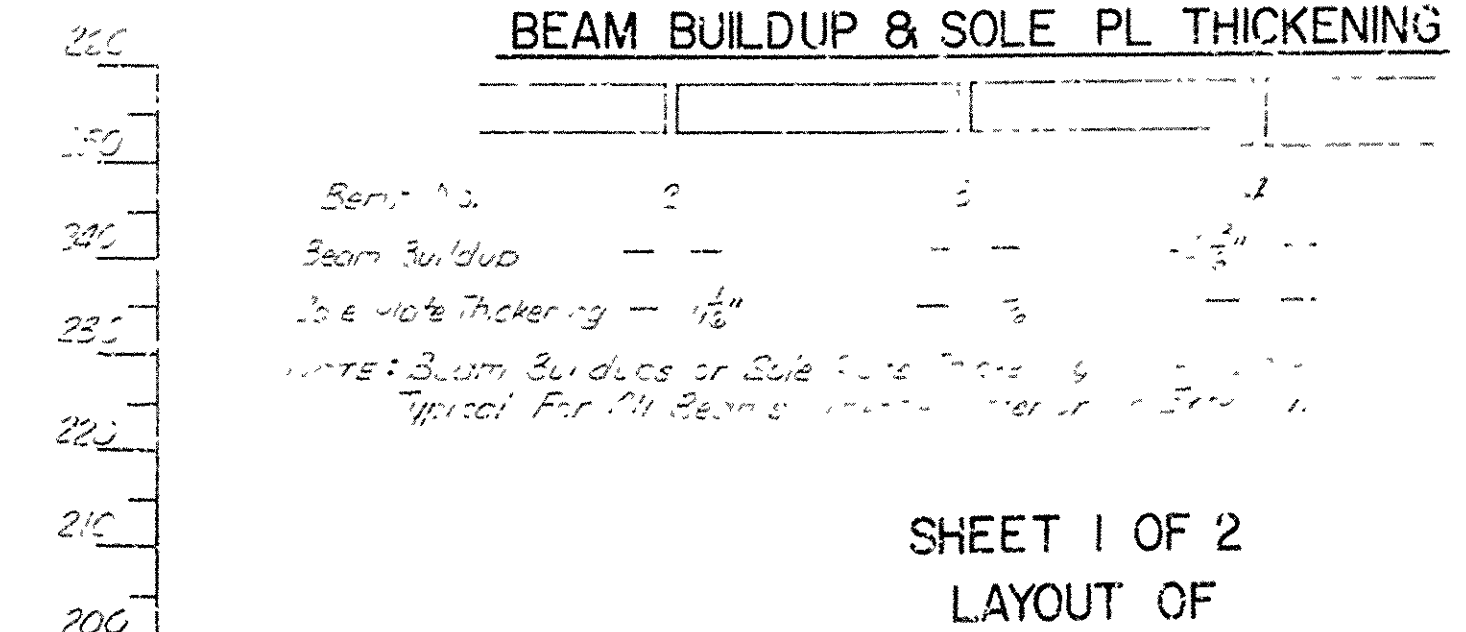


EXHIBIT "B"
no date

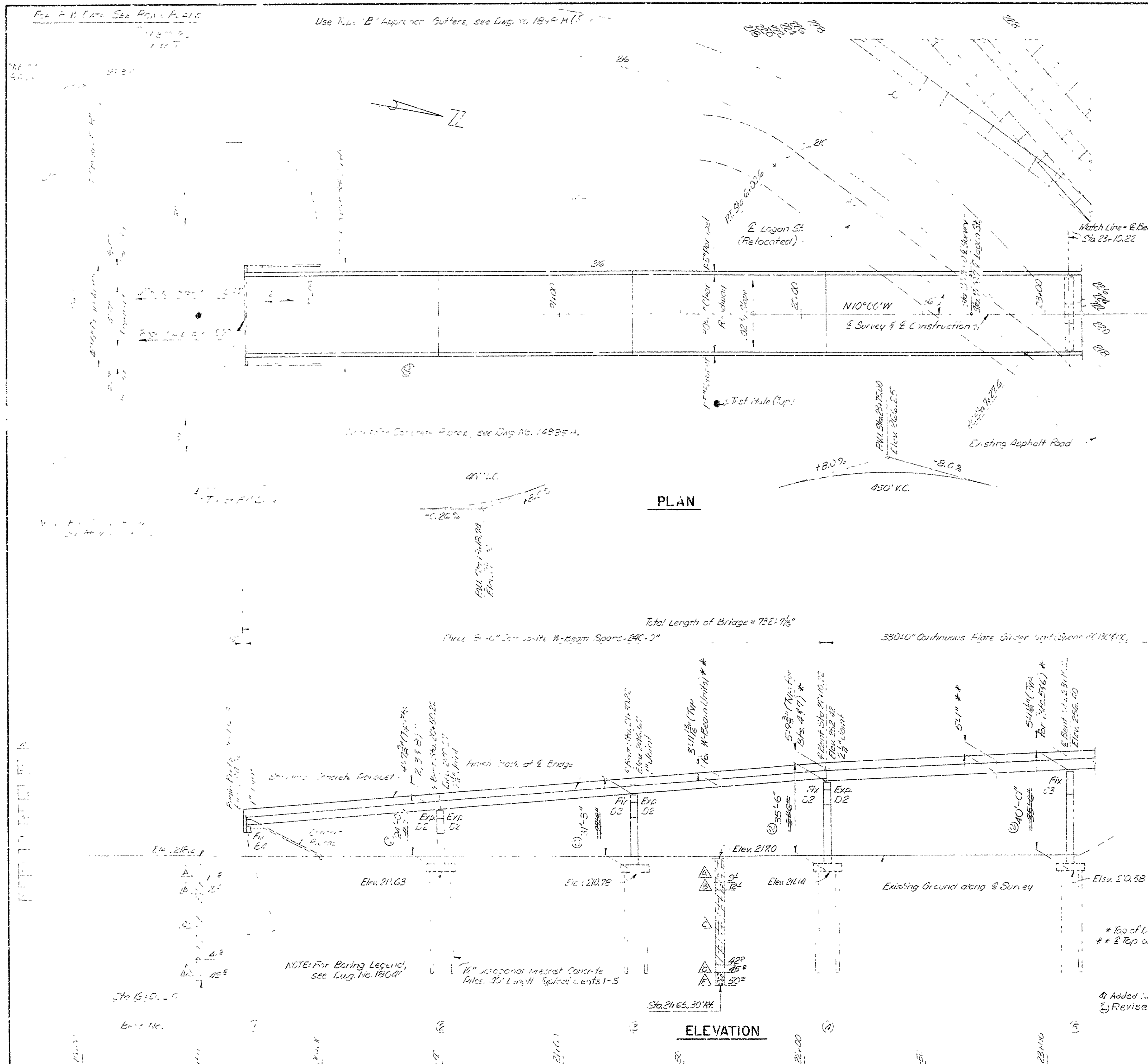
BEAM BUILDUP & SOLE PL THICKENING



SHEET 1 OF 2
LAYOUT OF
HWY. 69 R.R. GRADE SEPARATION
(NEWPORT)
JACKSON COUNTY

ROUTE 69 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: K.A. 2 DATE: 8-2-72
 TRACED BY: _____ DATE: _____ SCALE: 1"=40'-0"
 CHECKED BY: E.T. DATE: 10-10-72
 BRIDGE NO. 5502 DRAWING NO. 18039



Technical drawings of three types of structural beams:

- C902:** A simple I-beam with width A and height B .
- B420:** A box beam with width A and height B , featuring a $\frac{1}{4}$ inch fillet at the corners.
- B401 to B419 & C401 to C419:** A curved beam with a width of 12 inches at the ends, a height of $3\frac{1}{2}$ inches at the ends, and a central width of A . The height at the ends is labeled B .
- B901, F801 & F802:** A wide-flange beam with a width of A and a height of B , featuring a $\frac{1}{4}$ inch fillet at the corners.

Note:-
All concrete shall be Class 5 and shrinkage poured in the dry.
All exposed corners to be chamfered $\frac{1}{4}$ unless otherwise noted.
Reinforcing Steel to be ASTM A615, Grade 60.
Shop List and Bending Diagrams must be submitted and approval secured before fabrication is begun.
All Piling shall be 16" OC Precast Piling

DETAILS OF INT. BENTS 2 & 8
HWY. 69 R.R. GRADE SEPARATION
(NEWPORT)
JACKSON COUNTY
ROUTE 69 SEC. 5
ARKANSAS STATE HIGHWAY COMMISSION

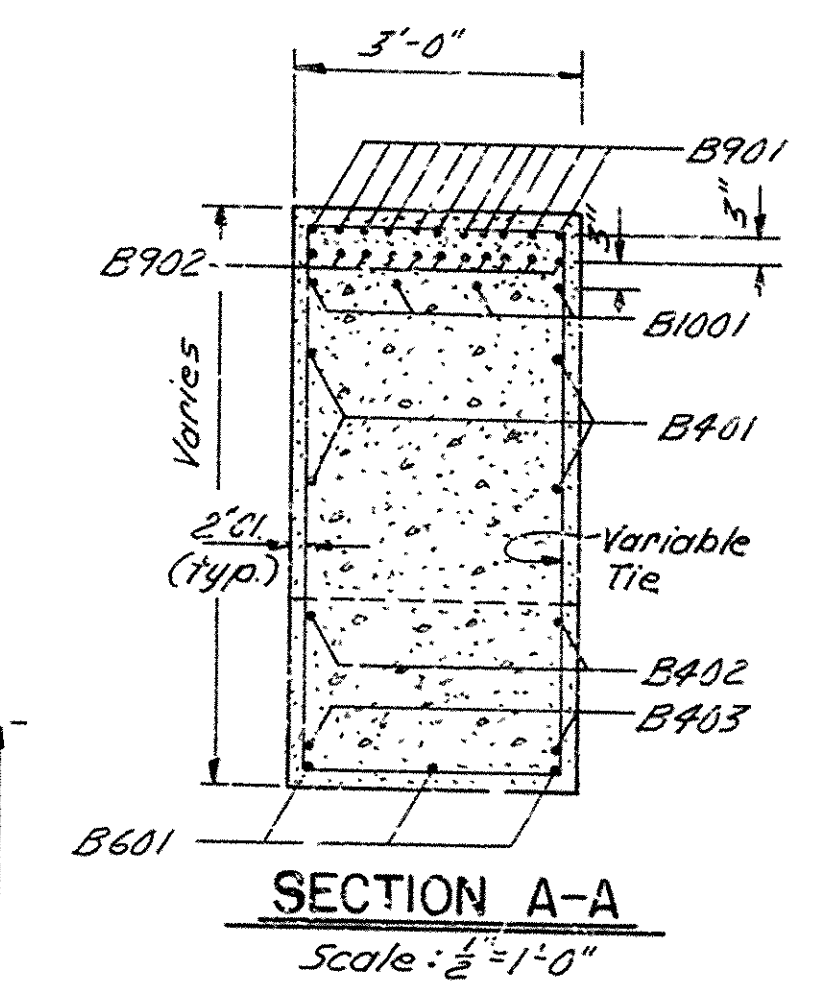
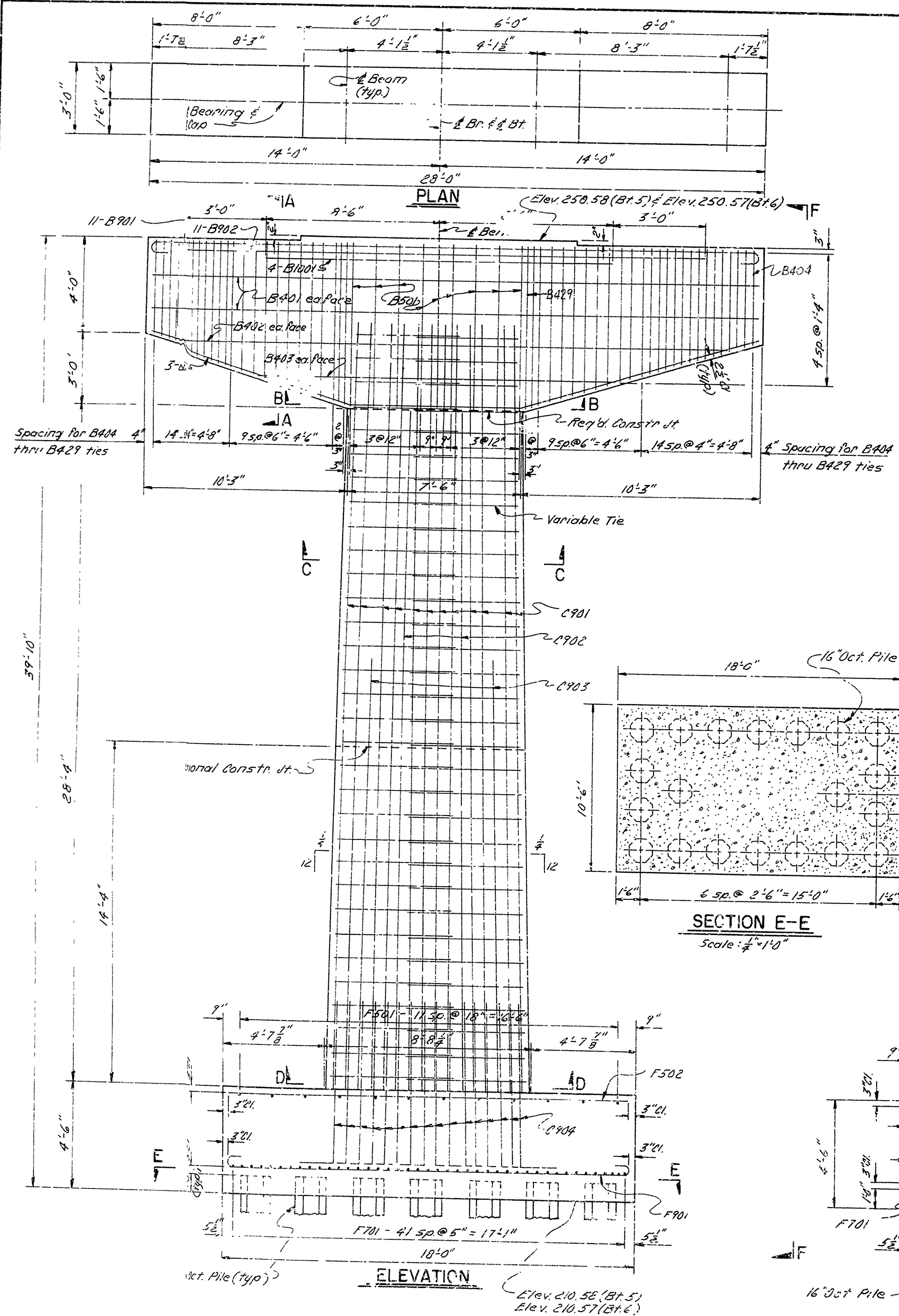
LITTLE ROCK, ARK.
DRAWN BY: J.P.S. DATE: 11-30-72
TRACED BY: _____ DATE: _____ SCALE: 3" = 1'-0" or as noted
CHECKED BY: _____ DATE: _____
BRIDGE NO. 5502 DRAWING NO. 18042



Note: Splice C902 bars to all C901, C903 & C1001 bars in Section C-C

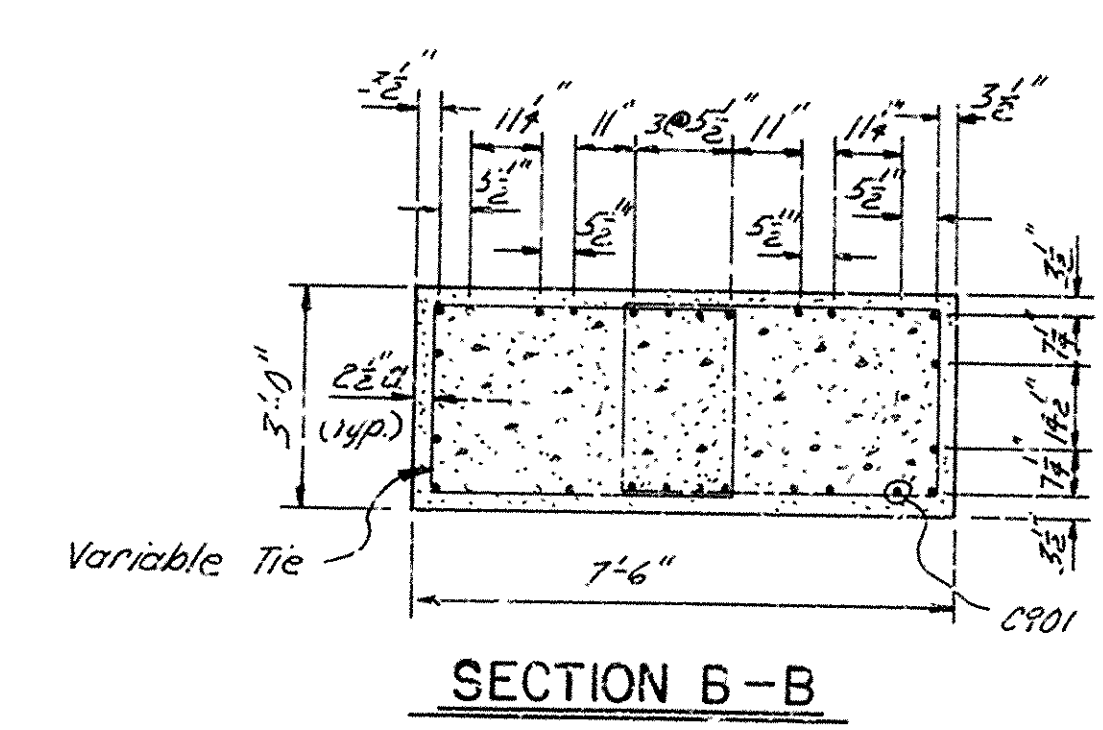
115

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
				6	ARK.	STATE		15	53
				JOB NO.		5632			
				S ①		5502 DTL'S. OF INT. BT. 18044			

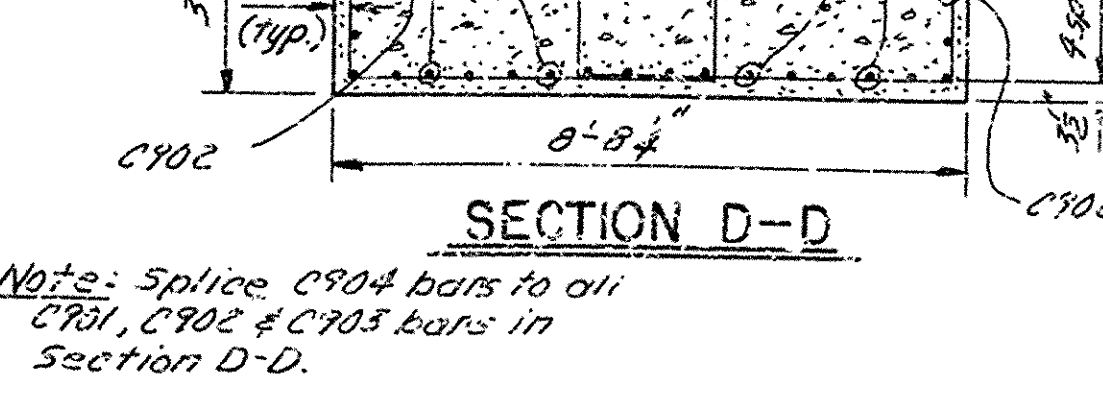
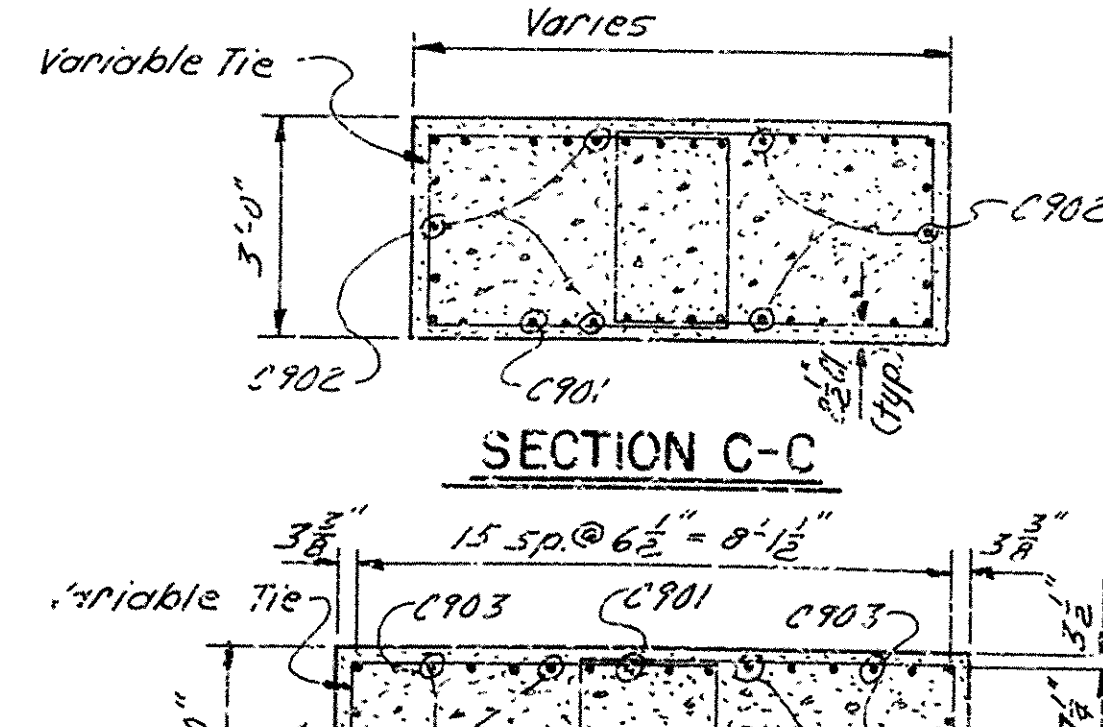


BAR LIST PER BENT									
MK.	No.	Req'd.	Length	A	B	Pin Dia.	Bending Diagrams		
B401	4	27'-8"				5/8"	A		
B402	2	25'-1"				5/8"			
B403	2	16'-0"				5/8"	B		
B404	2 ea.	13'-4" to 16'-1"	2'-8"	5'-9" to 5'-1 1/2"	2"				
B501	9	15'-9"	2'-8"	6'-8"	2 1/2"		C		
B601	3	23'-4"	7'-1"	10'-8"	3 1/2"				
B701	11	30'-2"	27'-8"	10"	9"		D		
B702	11	25'-0"				5/8"			
B1001	4	17'-0"				5/8"	E		
C401 to C432	2 ea.	14'-2" to 15'-9"	2'-7"	4'-3" to 5'-0 1/2"	2"				
C701	28	31'-11"				5/8"	F		
C702	6	28'-4"				5/8"			
C703	4	18'-0"				5/8"	G		
C704	38	8'-0"	6'-9"	1'-6"	6"				
F501	12	10'-0"				5/8"	H		
F502	7	17'-6"				5/8"			
F701	42	11'-8"	10'-0"	7"	5 3/4"		I		
F701 to B427	2 ea.	20'-0" to 18'-9"	17'-6"	10"	9"				
B428	2	18'-10"	2'-8"	6'-6"	2"		J		
B429	2	19'-0"	2'-8"	6'-7"	2"				

Dimensions are out to out of Bars.



Note:
All concrete shall 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 ASTM A615, Grade 40.
Shop List and Bending Diagrams must be submitted and approved secured before fabrication is begun.
All Piling shall be 16" Oct. Precast Piling.

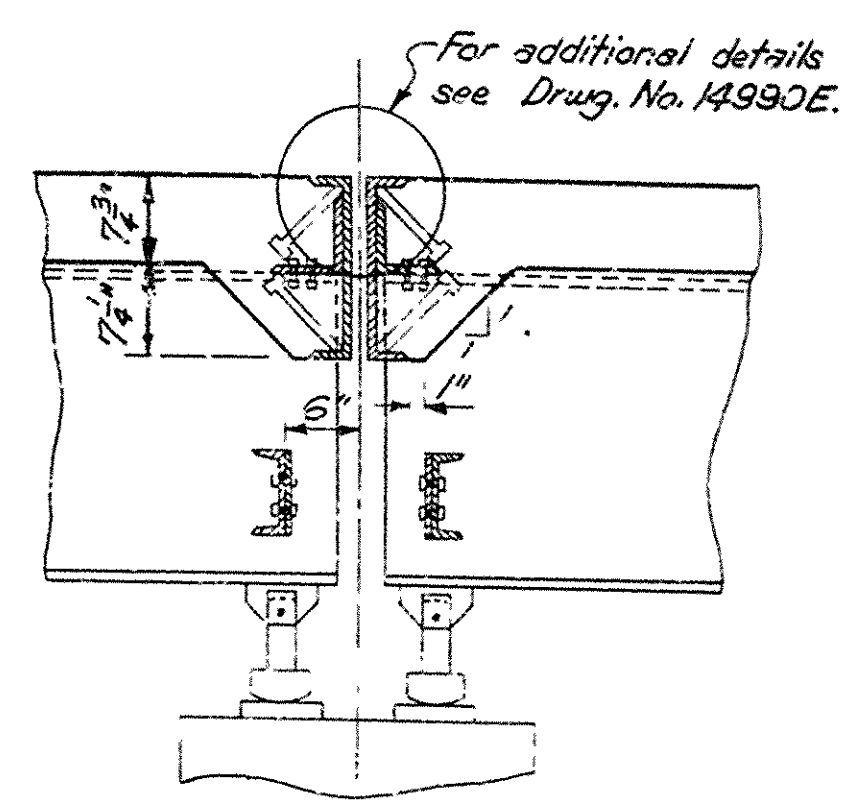
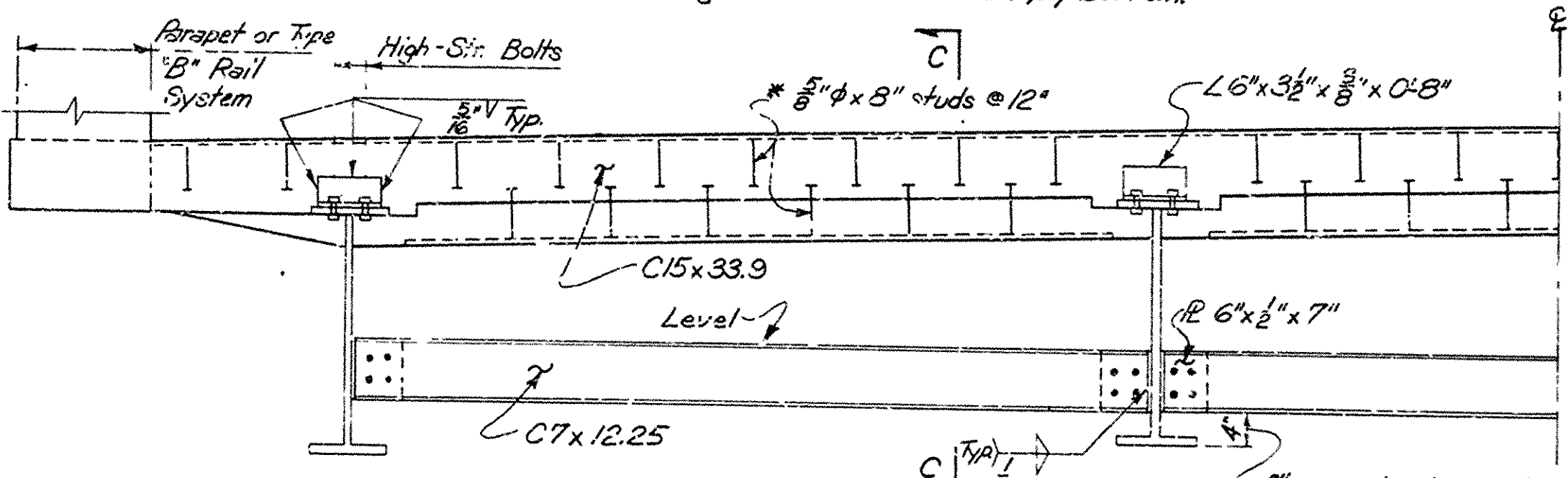


DATE	REVISION	DATE	REVISION	DATE	REVISION	DATE	REVISION	FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
								6	ARK.	STATE		16	53
JES. NO. 5632													

S 5502 DTL'S OF W-BM SPAN 18045

* THE CONTRACTOR MAY ELECT TO FORM THE UNDERSIDE OF THE SLAB LEVEL BETWEEN INTERIOR BEAMS WITH NO COMPENSATION FOR ADDITIONAL CONCRETE. WHEN THIS OPTION IS USED THE CENTERLINE SLAB DIMENSION IS 8 3/4". THE 1" HAUNCH AT THE BEAMS ARE STILL REQUIRED.

Expansion Device
Roadway C15x33.9x30'0" (Square Bridge)
Conn. L6x3 1/2 x 3/8 x 0'-8" (Square Bridge)
Preformed Joint Sealer
supported by 1/2" dia bars.
Detail device 1/2" high & provide 1/2" shims using 2-1/2" Re 1-8" R.
* 3/8" x 8" studs @ 12" o.c. Top of Bottom.



Cover Plate Welding Note
Max. thick. of part under 3/4" = 1/2"
Max. thick. of part 3/4" to 1 1/4" = 3/8"
Max. thick. of part 1 1/4" to 1 3/4" = 5/16"

* See Drug. No. 14990E for alternate anchor details.

HALF SECTION B-B MODIFIED OR REGULAR SPANS

No Scale

Holes for 3/4" high strength bolts may be 1 1/2" if a washer is supplied for use under both the nut and head of the bolt.

COVER PLATE
No Scale

OPTIONAL CHANNEL SHEAR CONNECTORS

No Scale

NOTE: 7/8" STUDS OR C3X6 CHANNELS MAY BE USED IN PLACE OF THE 3/4" STUDS THAT ARE SHOWN, AT THE RATIO OF 0.735-7/8" STUD OR 2.0 INCHES OF C3X6 CHANNEL IN PLACE OF ONE 3/4" STUD. THE STUD CONNECTORS SHALL BE 5" LONG AND MAY BE GRANULAR FLUX FILLED, SOL'D FLUXED, OR EQUAL, AND AUTOMATICALLY END WELDED TO THE BEAM FLANGES IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER. 3/4" STUDS WILL BE USED AS BASIS OF MEASUREMENT OF STRUCTURAL STEEL IN SHEAR CONNECTORS.

ALL STRUCTURAL STEEL SHALL BE PAID FOR AT THE PRICE BID PER POUND FOR "STRUCTURAL STEEL IN BEAM SPANS (A572 GRADE 50)".

SEE DRAWING 14993B FOR DETAILS OF TYPE B RAIL.
THIS DRAWING TO BE USED WITH DRAWING 14990E.

LOADING: HS20

TYPE B RAIL
DEAD LOAD:

INTERIOR BEAM

EXTERIOR BEAM

a. TO WF BEAM

808#/H. 15(WT/FT OF WF)

854#/H. 15(WT/FT OF WF)

b. TO COMPOSITE BEAM

278#/

278#/

LIVE LOAD:

TO EACH COMPOSITE BEAM 1,500 WHEELS + IMPACT

1,423 WHEELS + IMPACT

CONCRETE PARAPET RAIL
DEAD LOAD:

a. TO WF BEAM

808#/H. 15(WT/FT OF WF)

b. TO COMPOSITE BEAM

332#/

332#/

LIVE LOAD:

TO EACH COMPOSITE BEAM 1,500 WHEELS + IMPACT

1,423 WHEELS + IMPACT

UNIT STRESSES:

CLASS 5 OR C1.55 (A6) CONCRETE (N-10)
STRUCTURAL STEEL (A572, GRADE 50)
STRUCTURAL STEEL (A36)

1,200 PSI
27,000 PSI BEAMS & COVER PLATES ONLY
20,000 PSI
20,000 PSI

REINFORCING STEEL

BEAM AND COVER PLATES SHALL BE A572 GRADE 50, ALL OTHER STRUCTURAL STEEL SHALL BE A36.

DETAILS OF STANDARD
COMPOSITE I-BEAM SPAN
30'-0" CLEAR ROWW.
0.02' PEAKED CROWN

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: K.M.S. DATE: 11/20/71

TRACED BY: DATE: SCALE: As Noted

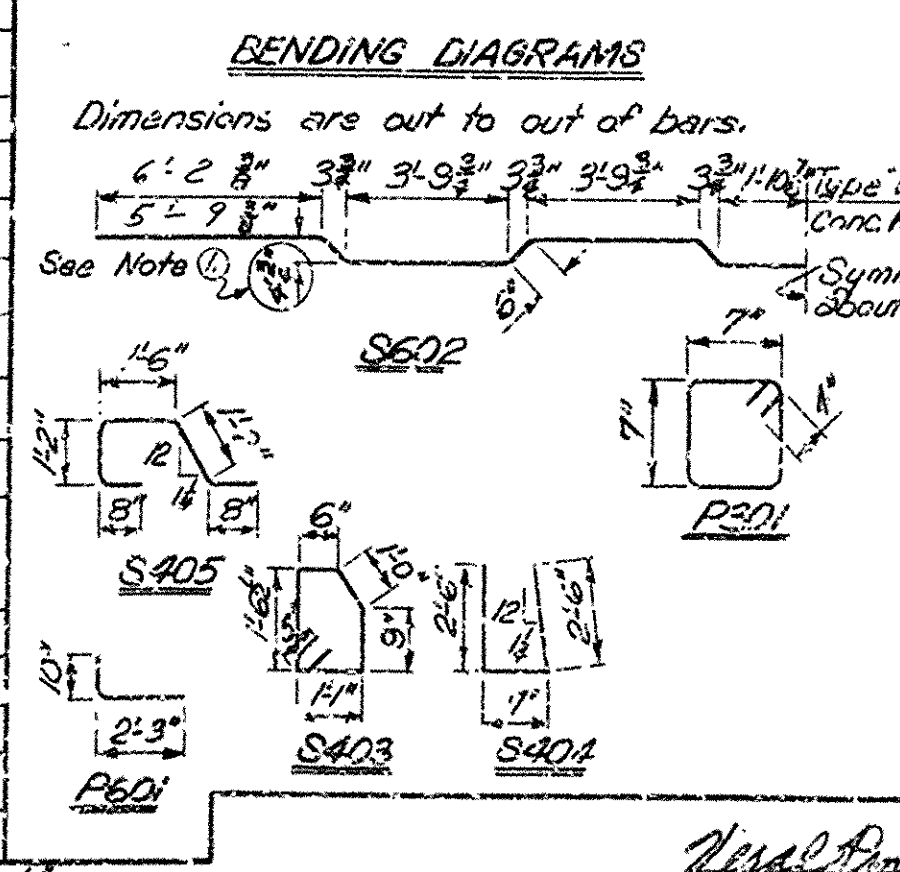
CHECKED BY: D.V. DATE: 4-21-71

BRIDGE NO. 5502

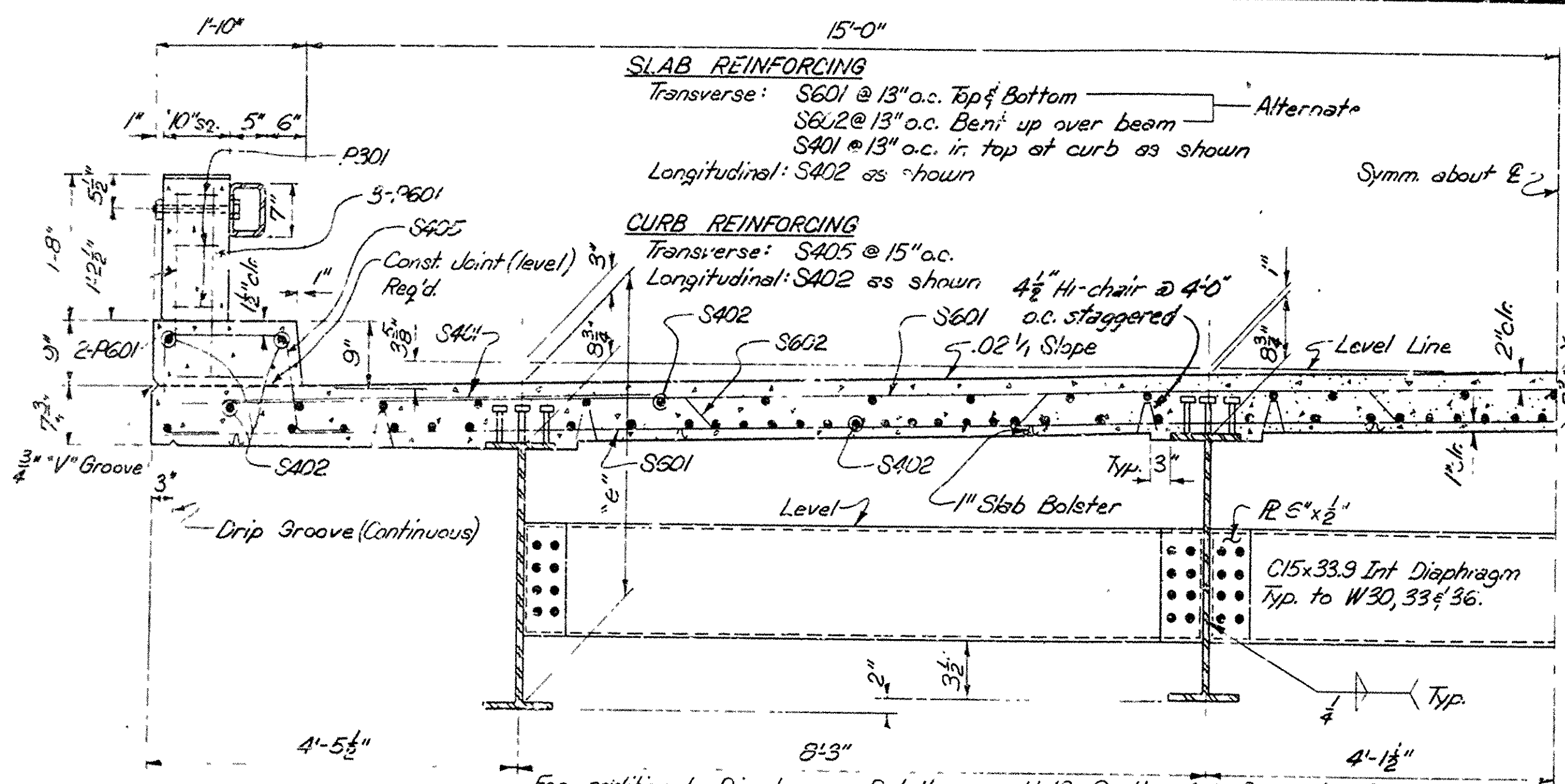
DRAWING NO. 18045

REINFORCING STEEL (PER SPAN)

MARK	LENGTH	PIN DIA.	SPAN LENGTH
CONCRETE PARAPET RAIL	TYPE 'B' RAIL		NUMBER REQUIRED
S601	32'-6"	3 1/2"	148
S602	32'-3"	3"	74
S401	5'-11"	8 1/2"	148
S402	27'-8"	8 1/2"	285
S403	5'-4"	2"	184
S404	5'-9"	2"	184
S405	5'-0"	2"	184
S406	5'-6"	8 1/2"	48
P301	2'-3"	1"	1
P601	3'-0"	3"	1

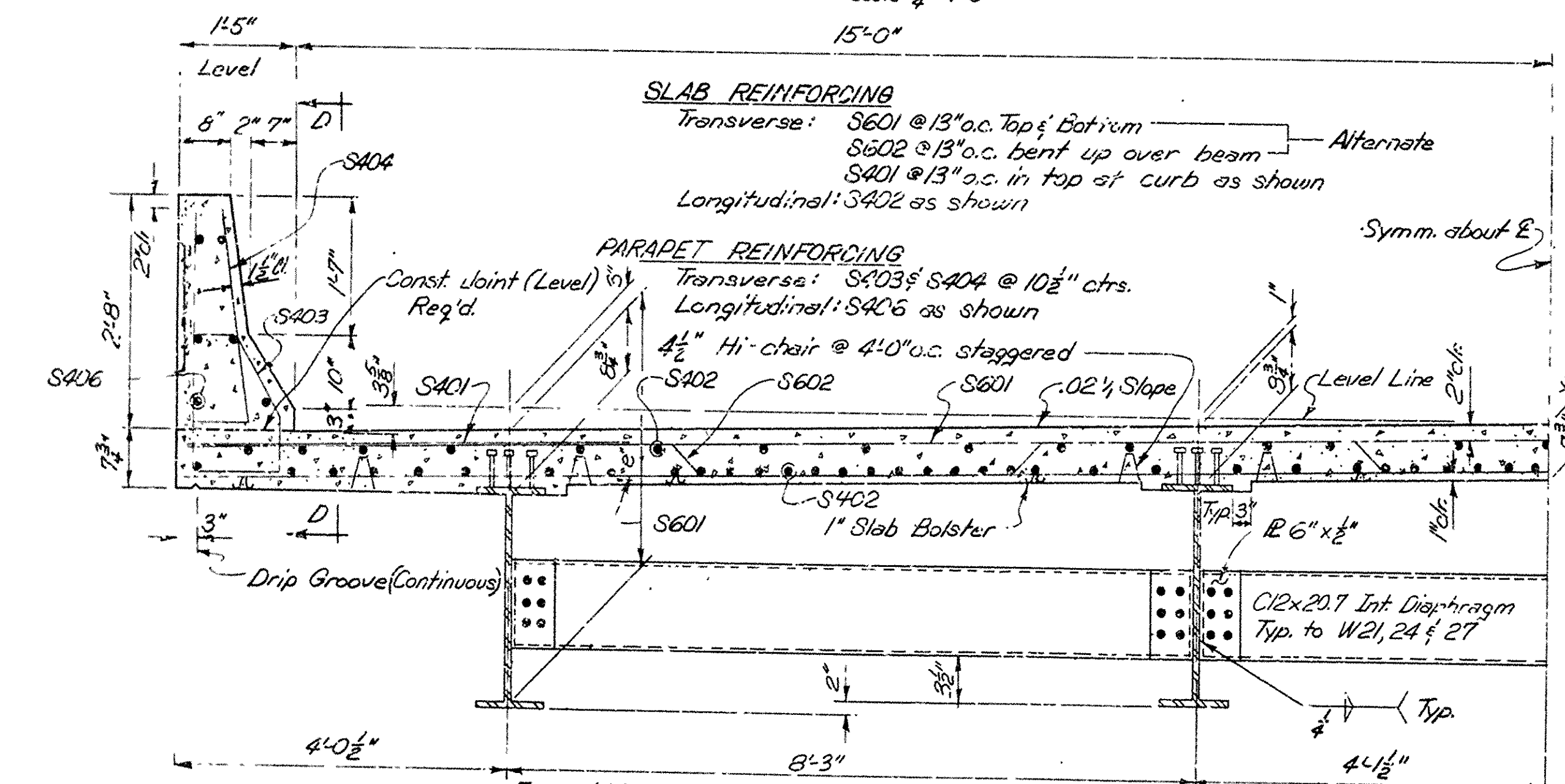


① No under tolerance, 3/4" over tolerance.



HALF SECTION A-A TYPE B RAIL

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



HALF SECTION A-A CONCRETE PARAPET RAIL

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

Note: For Detail of Enhancement of Parapet Railing - see Drug. No. 18049.

TABLE OF VARIABLES

% S (Span) varies 40-79

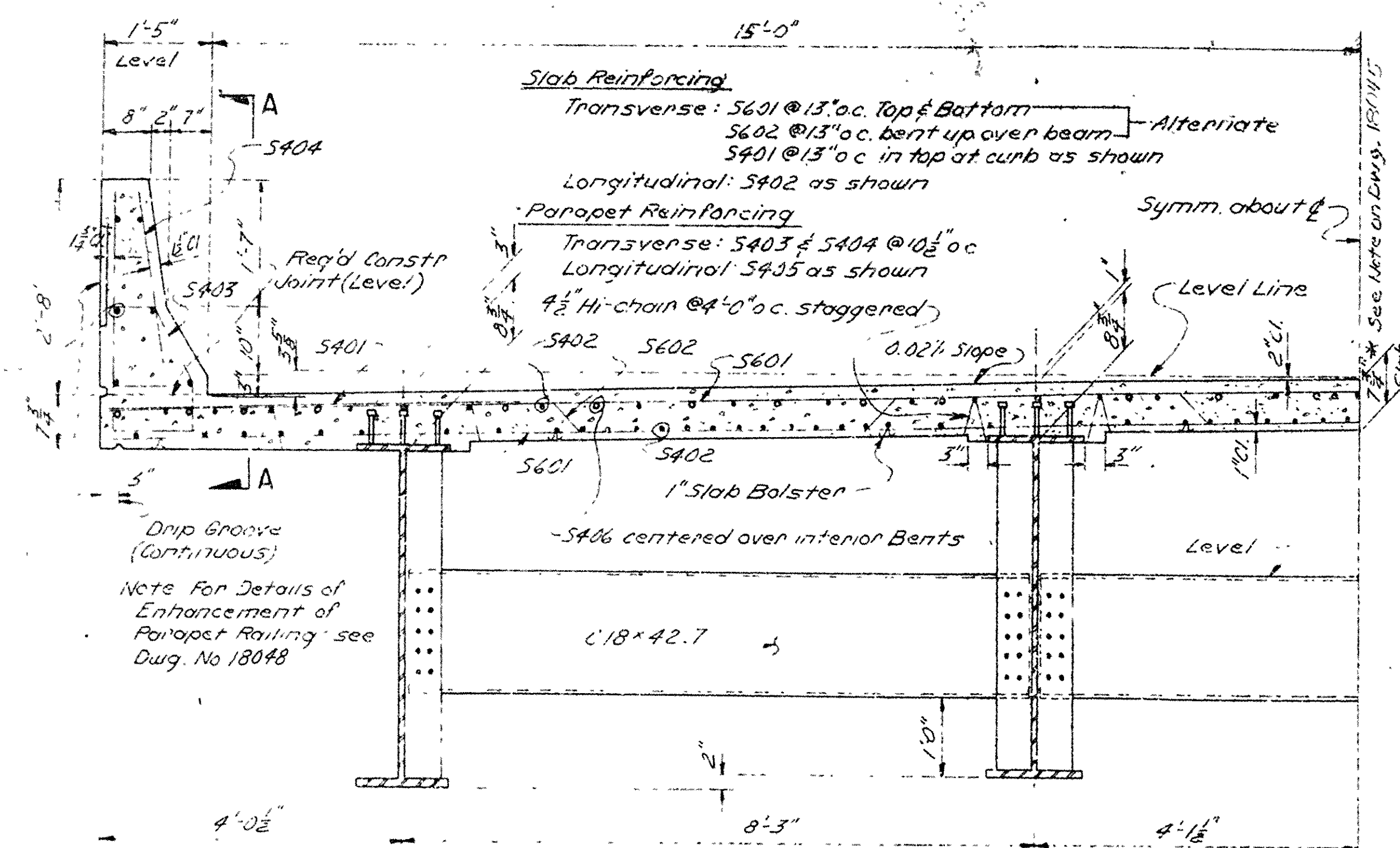
BR. NO.		SPAN		INTERIOR BEAM					EXTERIOR BEAM					POST SPACING TYPE 'B' RAIL			PARAPET JOINT SPACING "S"	VARIABLES OF SHEAR CONNECT-ION SPACING					
				BEAM SIZE	COVER R. SIZE	"e"	DEAD LOAD DEFL.	BEAM SIZE	COVER R. SIZE	"e"	DEAD LOAD DEFL.	g	h					i	j	p			
5502		5	80'-0"	F-10	W36x135	1 1/2"x10"x5 1/2" C"	3'-7 1/2"	2 1/2"	W36x135	1 1/2"x10"x5 1/2" C"	3'-7 1/2"	2 1/2"	20'-0"	a	b	c	20'-0"	13	11"	25	13"	0	
Tabular Data by <u>CEC</u> 10-6-2011																							

Tabular Data by C.E.A. Date 21 Nov 72
Checked by E.T.E. Date 18 Dec 72

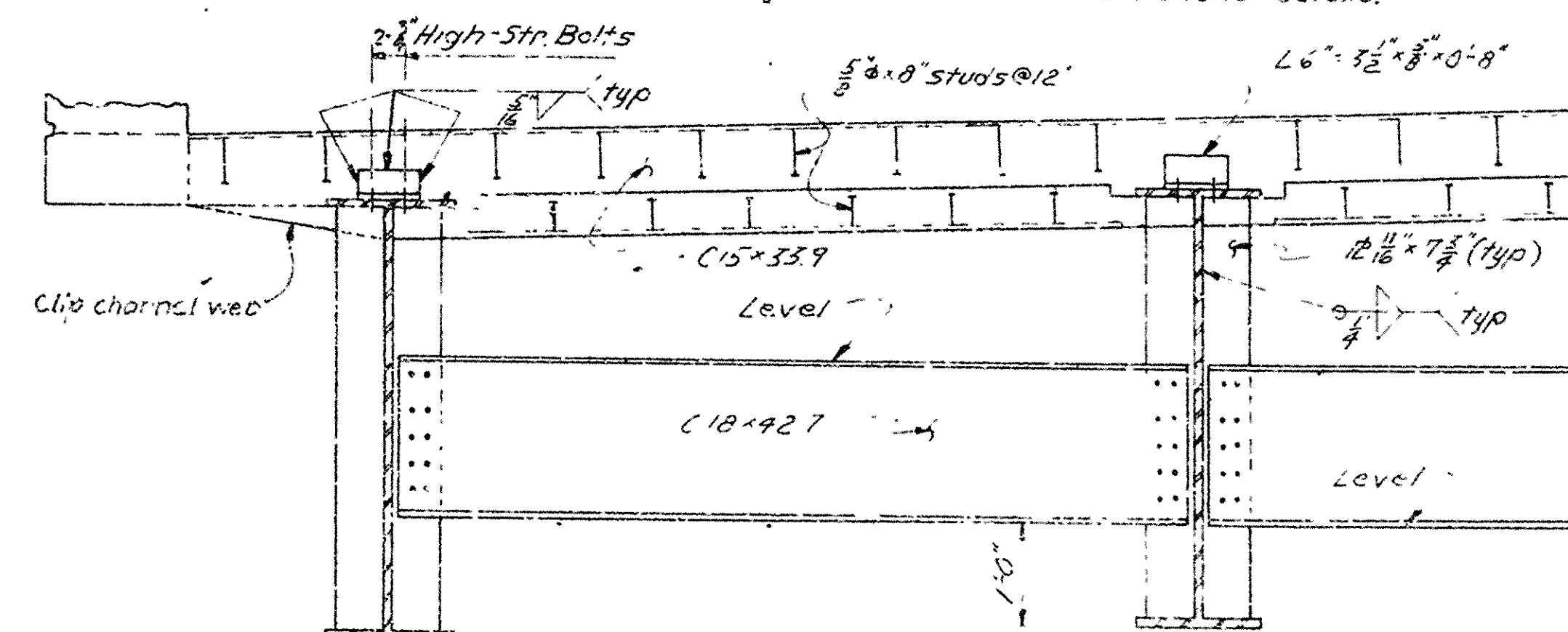
BAR LIST

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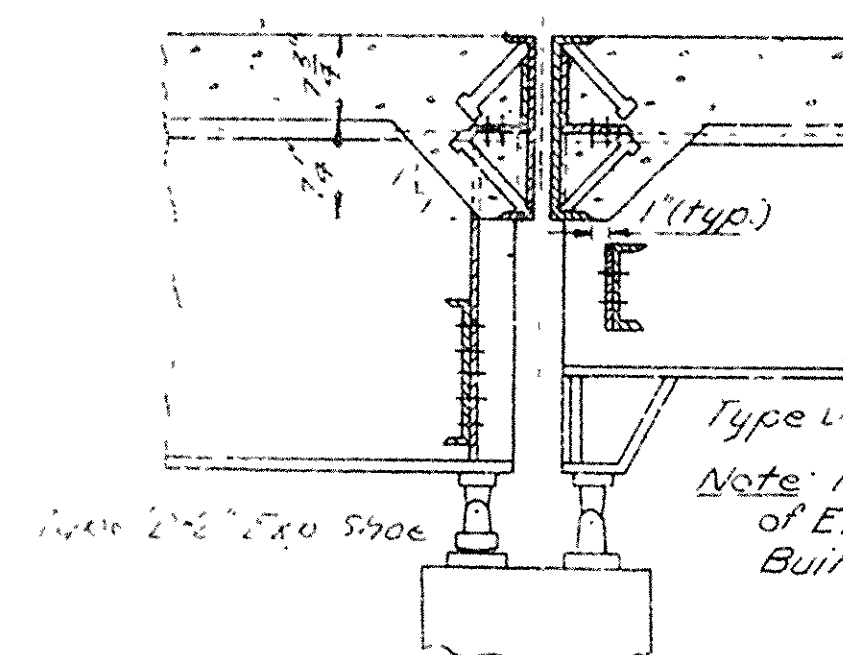
Dimensions are out to out
of bars.



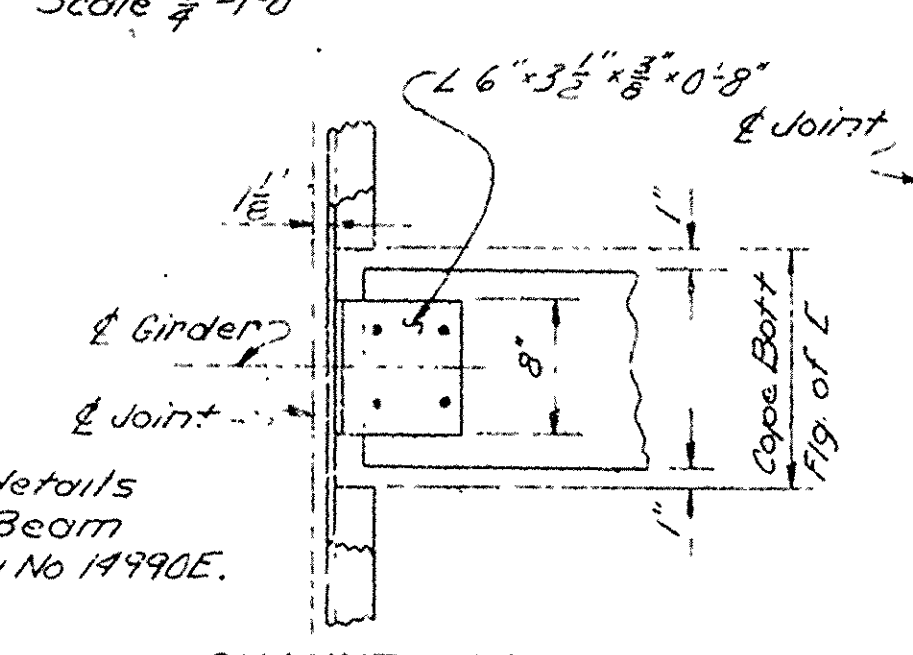
Scale 1/4" = 1'-0"



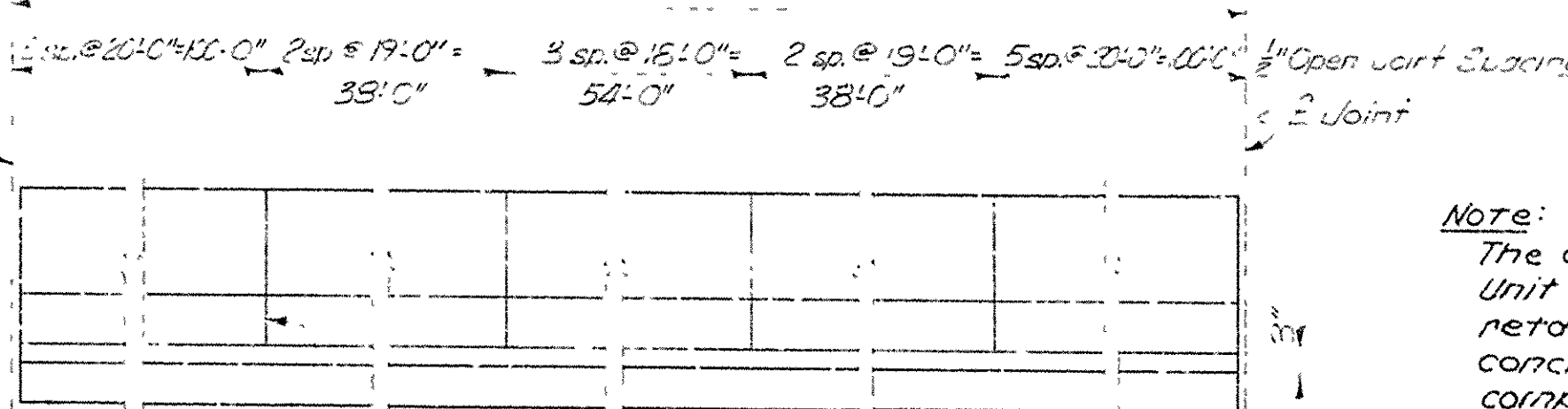
HALF SECTION AT EXPANSION DEVICE



No Scale



No Score

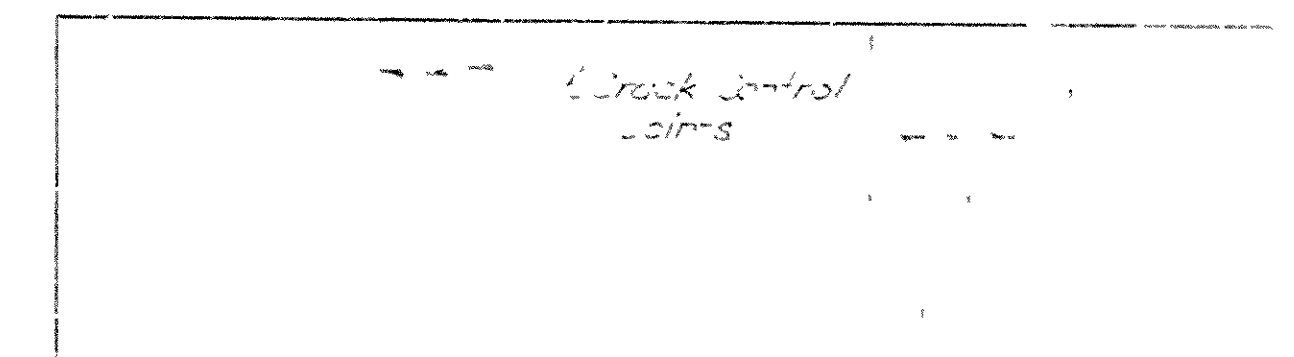


No Score

GENERAL NOTES

Note

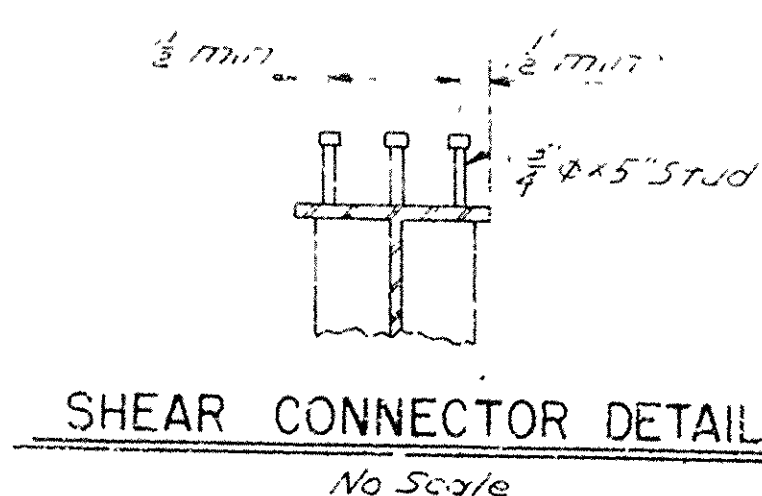
The Contractor may pour the 330' Unit in one continuous pour using retardant to delay the set of the concrete until the entire Unit is complete. If the Contractor elects to use the pouring sequence shown, a min of 12 hours must elapse between each pour. Pours with the same number may be poured separately, or as one pour.



POURING SEQUENCE

16.12.14

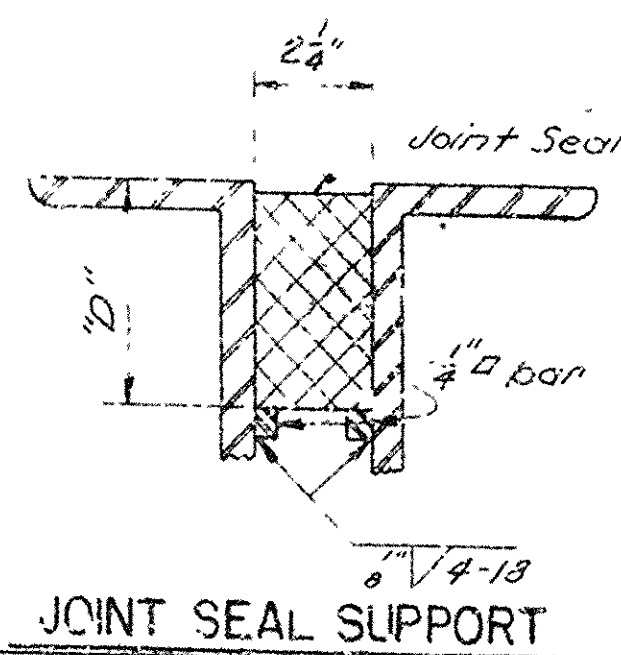
$\frac{1}{4}$ " x 1" poured asphalt 11 in slab and curb. To be paid for as Class 'S' concrete.



No Scale

Note

Stud shear connectors shown shall be 5" long, granular flux filled, solid fluted, square, and automatically end welded to girder flanges in accordance with recommendations of the manufacturer. $\frac{3}{4}$ " diameter studs may be substituted for the $\frac{3}{4}$ " diameter studs shown at the ratio of 0.75 $\frac{3}{4}$ " studs in place of 1 $\frac{3}{4}$ " stud. The $\frac{3}{4}$ " studs shall be used as the basis of payment of 74 lbs. per one hundred studs.



No Score

Name _____

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. The seal width for a joint = $\frac{1}{2}$ "

CONCRETE - ALL CONCRETE IN THE SUPERSTRUCTURE SHALL BE CLASS S-60. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED. THE CONTRACTOR MAY POUR THE DECK SLAB OF THE CONTINUOUS UNIT AS ONE CONTINUOUS POUR, USING A RETARDING AGENT TO RETARD THE SET UNTIL THE POUR IS COMPLETE. IN LIEU OF A CONTINUOUS POUR THE CONTRACTOR SHALL FOLLOW THE POURING SEQUENCE SHOWN

REINFORCING STEEL - REINFORCING STEEL SHALL BE ASTM A615, GRADE 40. REINFORCING BARS SHALL 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 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.

STRUCTURAL STEEL - THE FLANGES OF GIRDERS SHALL BE FABRICATED FROM PLATES OF THE MATERIAL SHOWN ON THE GIRDER ELEVATIONS. BEARING STEEL CASTINGS SHALL BE ASTM A27, GRADE 70-40. FIELD CONNECTIONS SHALL BE MADE WITH 3/4" ASTM A325 BOLTS IN 1 3/16" OPEN HOLES. ALL OTHER STRUCTURAL STEEL SHALL BE ASTM A36. MINIMUM EDGE DISTANCE SHALL BE 1 1/2" MINIMUM SPACING 2 1/2" FOR 3" BOLTS. SUBSTITUTION OF SHAPES - SHAPES OF EQUAL OR GREATER STRENGTH AND STIFFNESS MAY BE SUBSTITUTED FOR STRUCTURAL SHAPES SHOWN. CHANGES IN FLANGE PLATE SIZES AND FIELD SPLICE POSITIONS ARE SUBJECT TO THE APPROVAL OF THE BRIDGE ENGINEER. PAYMENT WILL BE MADE ON THE BASIS OF THE PLAIN SHAPE.

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

WELDING - ALL WELDING SHALL BE MADE BY THE ELECTRIC ARC PROCESS, AND SHALL CONFORM TO THE CURRENT AMERICAN WELDING SOCIETY STANDARD SPECIFICATIONS FOR WELDING HIGHWAY AND RAILWAY BRIDGES AND APPLICABLE SPECIAL PROVISIONS.

PAINTING - ALL STRUCTURAL STEEL EXCEPT SURFACES IN CONTACT WITH CONCRETE AND SURFACES OF BOLTED CONNECTIONS WITHIN 3 INCHES OF HOLES SHALL BE GIVEN ONE SHOP COAT ... AFTER ERECTION ALL EXPOSED STEEL SURFACES WHICH DID NOT RECEIVE A COAT OF SHOP PAINT EXCEPT SURFACES IN CONTACT WITH CONCRETE SHALL BE GIVEN ONE PRIME COAT. TWO COATS OF FIELD PAINT SHALL BE APPLIED TO ALL EXPOSED STEEL SURFACES.

WELDING - ALL WELDING THAT IS TO BE DONE DURING FABRICATION OF STRUCTURAL STEEL, INCLUDING TEMPORARY WELDS, SHALL BE DETAILLED ON THE SHOP DRAWINGS AND SUBMITTED FOR APPROVAL. IF THE CONTRACTOR OR ERECTOR SHOULD WANT TO MAKE ADDITIONAL WELDS, WHETHER TEMPORARY OR PERMANENT, HE SHALL SUBMIT DETAILED DRAWINGS WITH A FORMAL REQUEST TO THE BRIDGE DESIGN DIVISION OF THE ARKANSAS STATE HIGHWAY DEPARTMENT FOR APPROVAL.

PAYMENT FOR STRUCTURAL STEEL - TOP AND BOTTOM FLANGE PLATES OF 1/4" THICKNESS LOCATED OVER INTERIOR SUPPORTS SHALL BE PAID FOR AT THE PRICE BID PER POUND FOR STRUCTURAL STEEL IN PLATE GIRDER SPANS (A572, GRADE 50). ALL OTHER STRUCTURAL STEEL SHALL BE PAID FOR AT THE PRICE BID PER POUND FOR STRUCTURAL STEEL IN PLATE GIRDER SPANS (A36).

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

DESIGN SPECIFICATIONS - AASHTO 1969, INTERIM SPECIFICATIONS 1970
AND 1971 AND AMERICAN WELDING SOCIETY SPECIFICATIONS FOR
WELDED HIGHWAY AND RAILWAY BRIDGES. CURRENT EDITION.

DESIGN LOADINGS

LOADING TO GIRDERS	EXTERIOR	INTERIOR
DEAD LOAD:		
TO BEAM	803#/FT. + STEEL	808#/FT. + STEEL
TO COMPOSITE BEAM	332#/FT.	332#/FT.
LIVE LOAD: HS 20	1.423 WHEELS + IMPACT	1.500 WHEELS + IMPACT

CRACK CONTROL JOINT

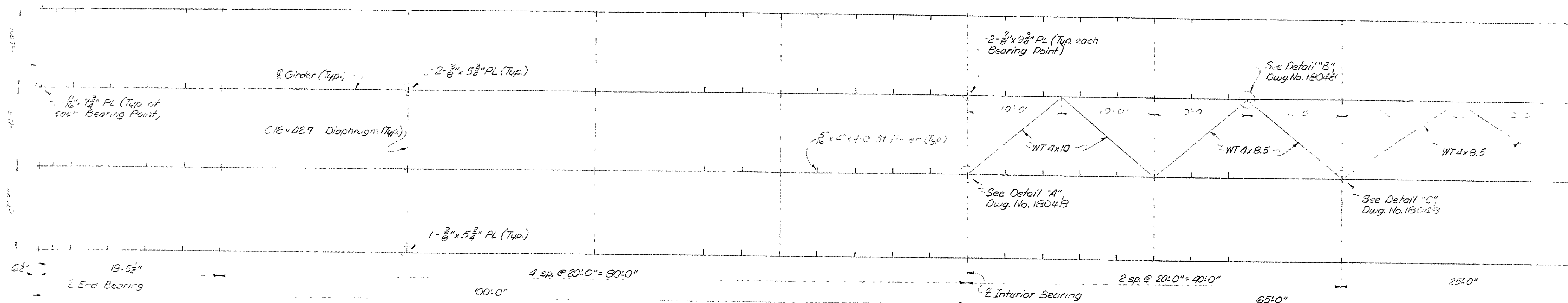
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SHEET 1 OF 3
DETAILS OF 330' SOUTHWEST CORNER

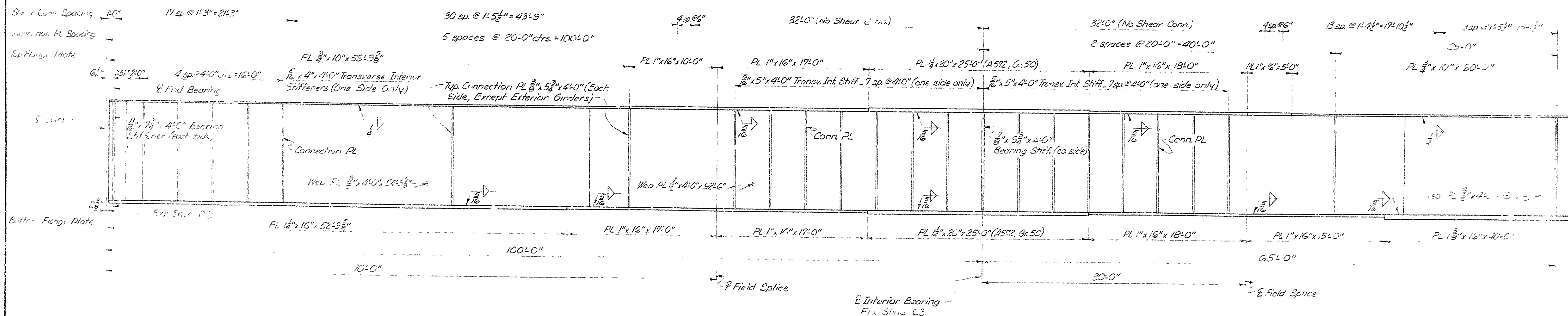
PLATE GIRDER UNIT
HWY. 69 R.R. GRADE SEPARATION
(NEWPORT)
JACKSON COUNTY
ROUTE 69 SEC.
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.
DRAWN BY: J.P.S. DATE: 2-72
TRACED BY: _____ DATE: _____ SCALE: as noted
CHECKED BY: 21 DATE: 2-72
BRIDGE NO. 5502 DRAWING NO. 18046

DATE REVISION	DATE FILMED	DATE REVISION	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ.	FIS AL YR	SHEET NO.	TOTAL SHEETS
10-2-72	501-10-23-73			E	ARK.	STATE		13	53
				JOB NO.	5502			18	53
				S 5502 DTL PL 3 R.R. HWY - 18047					



FRAMING PLAN
No Scale



TYPICAL LONGITUDINAL GIRDER DETAIL
No Scale

SHEET 2 OF 3
DETAILS OF 330'-0" CONTINUOUS
PLATE GIRDER UNIT
HWY 69 R.R. GRADE SEPARATION
(NEWPORT)
JACKSON COUNTY
ROUTE 69 SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: K.A.G. DATE: 20 Oct. 72
TRACED BY: D.V. DATE: 11-1-72 SCALE: 1/8"=1'-0"
CHECKED BY: D.V. DATE: 11-1-72
BRIDGE NO. 5502 DRAWING NO. 18047

