

PROJECT  
LOCATION

MILLER COUNTY

"A FULLY CONTROLLED ACCESS FACILITY"

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
CONSTRUCTION PLANS FOR STATE HIGHWAY

# STATE LINE INTERCHANGE - HWY. 71 (F)

MILLER COUNTY

ROUTE 245 SECTION I  
FED. AID PROJECT NH-9414(7)

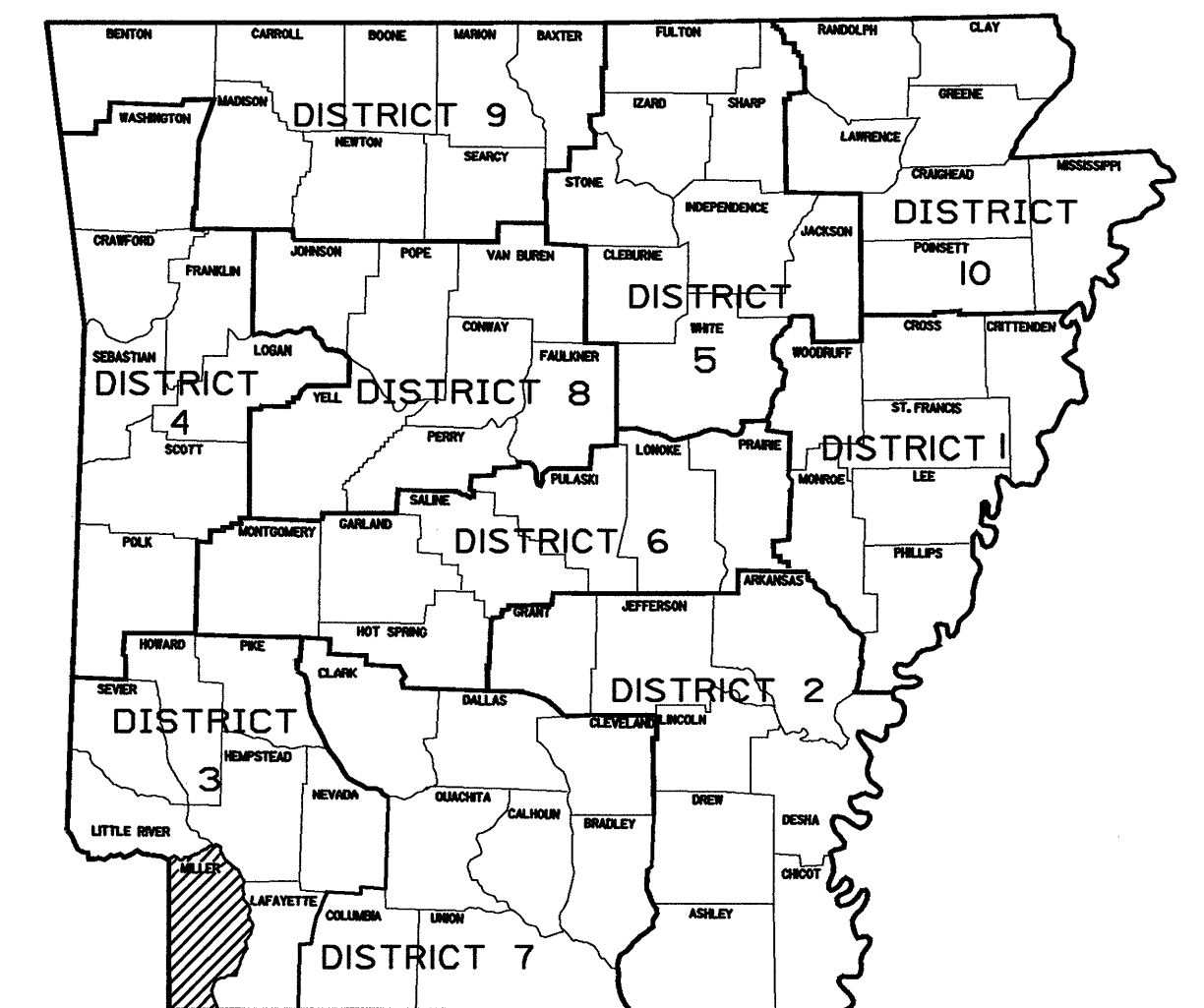
JOB 030035

SCALE: = 1:10000

THIS IS A METRIC PROJECT

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	030035	1	109

② STATE LINE INTERCHANGE - HWY. 71 (F)



ARK. HWY. DIST. NO. 3

## BRIDGE DATA

- ① STA. 115+30.673 BR. END  
55.654m W-BEAM UNIT  
BR. NO. A6816  
12.0m CLEAR ROADWAY  
STA. 115+86.327 BR. END
- ② STA. 115+30.673 BR. END  
55.654m W-BEAM UNIT  
BR. NO. B6816  
15.6m CLEAR ROADWAY  
STA. 115+86.327 BR. END
- ③ STA. 130+90.868 BR. END  
81.64m CONT. PLATE GIRDER UNIT  
BR. NO. A6817  
15.6m CLEAR ROADWAY  
STA. 131+72.032 BR. END
- ④ STA. 130+90.868 BR. END  
81.64m CONT. PLATE GIRDER UNIT  
BR. NO. B6817  
19.2m CLEAR ROADWAY  
STA. 131+72.032 BR. END

## EXCEPTIONS TO JOB 030035 (BRIDGES)

- A STA. 119+89.389 BR. END  
288.829m CONT. PLATE GIRDER UNIT  
BR. NO. A6679  
12.0m CLEAR ROADWAY  
STA. 122+81.998 BR. END
- B STA. 119+74.038 BR. END  
288.829m CONT. PLATE GIRDER UNIT  
BR. NO. B6679  
12.0m CLEAR ROADWAY  
STA. 122+59.448 BR. END

## STRUCTURES OVER 6.0m SPAN

- △ STA. 109+70 IN PLACE  
QUAD. 3600mm X 3600mm X 61.0m R.C. BOX CULVERT  
SPAN = 15.550m  
RETAIN



STA. 106+21.000 BEGIN  
JOB 030035 = END  
TXDOT JOB HP 735(1)

STA. 133+81.759 (METRIC) END  
JOB 030035 = STA. 228+00.00 (ENGLISH)  
JOB R30092

NOTE: LENGTH IS COMPUTED ALONG Q. MEDIAN.

GROSS LENGTH OF PROJECT	2760.759	METERS OR	2.761 KILOMETERS
NET " " ROADWAY	2335.112	" "	2.335 "
NET " " BRIDGES	136.818	" "	0.137 "
NET " " PROJECT	2471.93	" "	2.472 "

MID POINT OF PROJECT  
LATITUDE 95° 06' 30" N  
LONGITUDE 33° 23' 34" W

P.E. JOB 3604  
NON-PART.

## DESIGN TRAFFIC DATA

DESIGN YEAR	2020
2000 ADT	21300
2020 ADT	34600
2020 DHV	3806
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	10%
DESIGN SPEED	100 KPH

RECOMMENDED FOR APPROVAL

BRIDGE DESIGN ENGINEER

ROADWAY DESIGN ENGINEER

DISTRICT ENGINEER

APPROVED

CHIEF ENGINEER

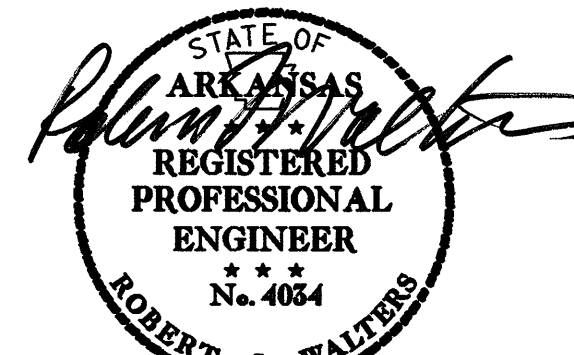
U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
RECOMMENDED FOR APPROVAL

APPROVED

DIVISION ENGINEER

DATE

DATE



8-17-2000



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.		030035	24	109

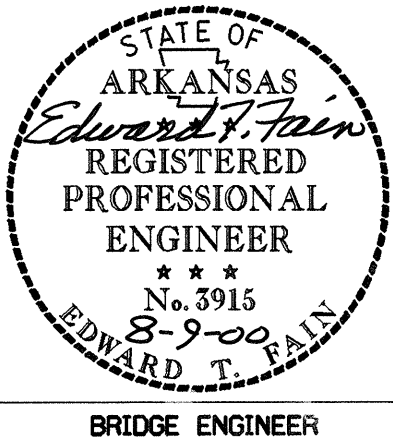
① A&B6816, A&B6817 QUANTITIES 41510

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 030035

BRIDGE NUMBER	CODE NUMBER	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NUMBER	801	SS, SP & 802	SS, SP & 802	803	SP & 804	SP & 804	805	805	805	SS, SP & 807	SS, SP & 807	SP & 808	809	812	816
				ITEM	UNCLASSIFIED EXCAVATION FOR STRUCTURES - BRIDGE	CLASS S CONCRETE - BRIDGE	CLASS S (AE) CONCRETE - BRIDGE	CLASS I PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL - BRIDGE ( GRADE 420 )	EPOXY COATED REINFORCING STEEL ( GR. 420 )	* STEEL PILING ( HP 310 X 79 )	CONCRETE PILING ( 405 mm SQUARE )	TEST PILE ( 405 mm SQUARE )	STRUCTURAL STEEL IN BEAM SPANS ( M 270, GR. 345W )	STRUCTURAL STEEL IN PLATE GIRDER SPANS ( M 270, GR. 345W )	ELASTOMERIC BEARINGS	PREFORMED JOINT SEAL	BRIDGE NAME PLATE ( TYPE C )	CONCRETE RIPRAP
					UNIT	CUBIC METER	CUBIC METER	CUBIC METER	LITER	KILOGRAM	KILOGRAM	METER	METER	METER	KILOGRAM	KILOGRAM	CU. CENTIMETER	LINEAR METER	EACH
A6816	X271	LINE FERRY RD.																	
			END BENT NOS. 1 AND 4	44	39.60		2	3087		160.0			760					1	138
			INT. BENT NOS. 2 AND 3	113	88.60			6748		210.0									
			55 METER CONT. W-BEAM UNIT			171.00	71		22 195				69 850		105 600	25.6			
			TOTALS FOR BRIDGE NO. A6816	157	128.2	171.0	73	9835	22 195	370.0	—	—	70 610	—	105 600	25.6	1	138	
B6816	X271	LINE FERRY RD.																	
			END BENT NOS. 1 AND 4	58	48.12		2	3347		217.0			990					1	170
			INT. BENT NOS. 2 AND 3	142	116.88			9308		306.0									
			55 METER CONT. W-BEAM UNIT			211.10	89		26 375				86 880		123 200	32.8			
			TOTALS FOR BRIDGE NO. B6816	200	165.0	211.1	91	12 655	26 375	523.0	—	—	87 870	—	123 200	32.8	1	170	
A6817	X271	HWY. 71																	
			END BENT NOS. 1 AND 4	111	83.16		3	6514			260.0	19.5		1093				1	149
			INT. BENT NOS. 2 AND 3	208	143.54			10 926			386.0	11.5							
			80.5 METER CONT. PLATE GIRDER UNIT			333.90	130		42 690					155 847	156 300	32.8			
			TOTALS FOR BRIDGE NO. A6817	319	226.7	333.9	133	17 440	42 690	—	—	646.0	31.0	—	156 940	156 300	32.8	1	149
B6817	X271	HWY. 71																	
			END BENT NOS. 1 AND 4	128	94.20		4	7325			330.0	17.5		1345				1	161
			INT. BENT NOS. 2 AND 3	326	199.20			13 035			516.0	9.5							
			80.5 METER CONT. PLATE GIRDER UNIT			397.80	156		52 655					183 295	182 300	40.0			
			TOTALS FOR BRIDGE NO. B6817	454	293.4	397.8	160	20 360	52 655	—	—	846.0	27.0	—	184 640	182 300	40.0	1	161
TOTALS FOR JOB NO. 030035				1130	813.3	1113.8	457	60 290	143 915	893.0	1492.0	58.0	158 480	341 580	567 400	131.2	4	618	

\* THESE STEEL PILES ARE REQUIRED TO HAVE SPECIAL TIPS WHICH WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO THE ITEM "STEEL PILING (HP 310X79)".

JIM TRIBO  
DESIGN SECTION SUPERVISOR



SCHEDULE OF BRIDGE QUANTITIES  
STATE LINE INTERCHANGE - HWY. 71 (F)  
MILLER COUNTY

ROUTE 245 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: A.M.S. DATE: 07/27/00 FILENAME: B030035.Q1  
CHECKED BY: JGT DATE: 8-4-00 SCALE: NONE  
DESIGNED BY: DATE:  
BRIDGE NO. A&B6816, A&B6817 DRAWING NO. 41510





DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
8-29-2000				6	ARK.			
11-28-2000	1-24-01				JOB NO.	030035	37	109
①				A&B6816 LAYOUT		41511		

GENERAL NOTES

All dimensions are in meters unless otherwise noted.

BENCH MARK: CPS in root 1.27 m Red Oak, 92.16 m Lt. of Sta. 113+33.128, Elev. 84.533

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (1996 edition), with applicable supplemental specifications and special provisions.

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

LIVE LOADING: MS18 and Alternate Military Load      METHOD OF DESIGN: Load Factor  
SEISMIC PERFORMANCE CATEGORY: A

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure)

Class S Concrete (substructure)

Reinforcing Steel (ASTM A615/A615M-96a)

Structural Steel (AASHTO M 270, Gr. 345W)

Structural Steel (AASHTO M 270, Gr. 250)

**READING LOGS.** Reading logs may be obtained

**BORING LOGS:** Boring logs may be obtained from the Programs and Contr

STEEL PILING: All piling shall be HP310X79 and shall be driven to a minimum safe bearing capacity of 530 kN per pile. Piling in End Bents 1 and 4 shall be driven to a minimum penetration of 10 meters below the bottom of the cap. Piling in Bents 2 and 3 shall be driven to a minimum penetration of 6 meters below the bottom of the footings. All piling shall be driven with an approved air, steam, or diesel hammer. Lengths of piling shown are assumed for estimating quantities only. Actual lengths shall be determined in the field. No additional 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). On all piles the Contractor shall use approved steel H-pile driving points.

FOOTINGS: The top of the footings in Bent Nos. 2 and 3 shall be set a minimum of 0.6 m below natural ground. Foundations for footings shall be prepared in accordance with Section 801.04 of Standard Specifications.

**FINISHING CONCRETE SURFACES:** The Bridges shall be given a Class 3 Textured Coating Finish in accordance with subsection 802.19 and Special Provision Job 030035.

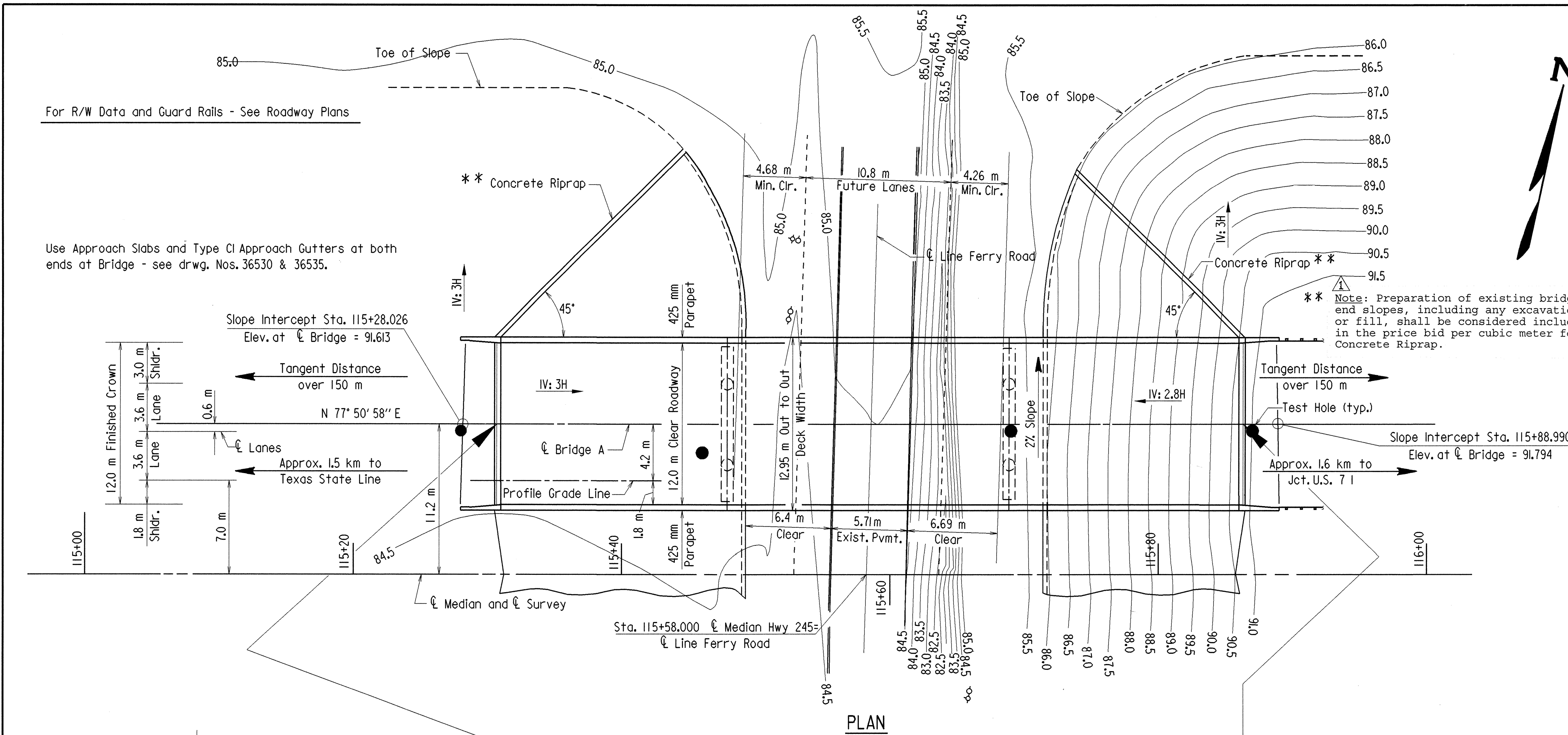
BRIDGE DECK: The concrete bridge deck shall be given a tined finish as specified for final finishing in subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

DETAIL DRAWINGS:

DRAWING NO.

	<u>Bridge A</u>	<u>Bridge B</u>
End Bents	41514-41516	41524-41526
Intermediate Bents	41517	41527
55 m Continuous W-Beam Units	41518-41522	41528-41532
Steel Piling		36505
Elastomeric Bearings		41523

NOTE: The embankment at the beginning of the bridges was constructed as part of Job No. 030199. The contours shown will not be representative of the existing topography at the time of construction.

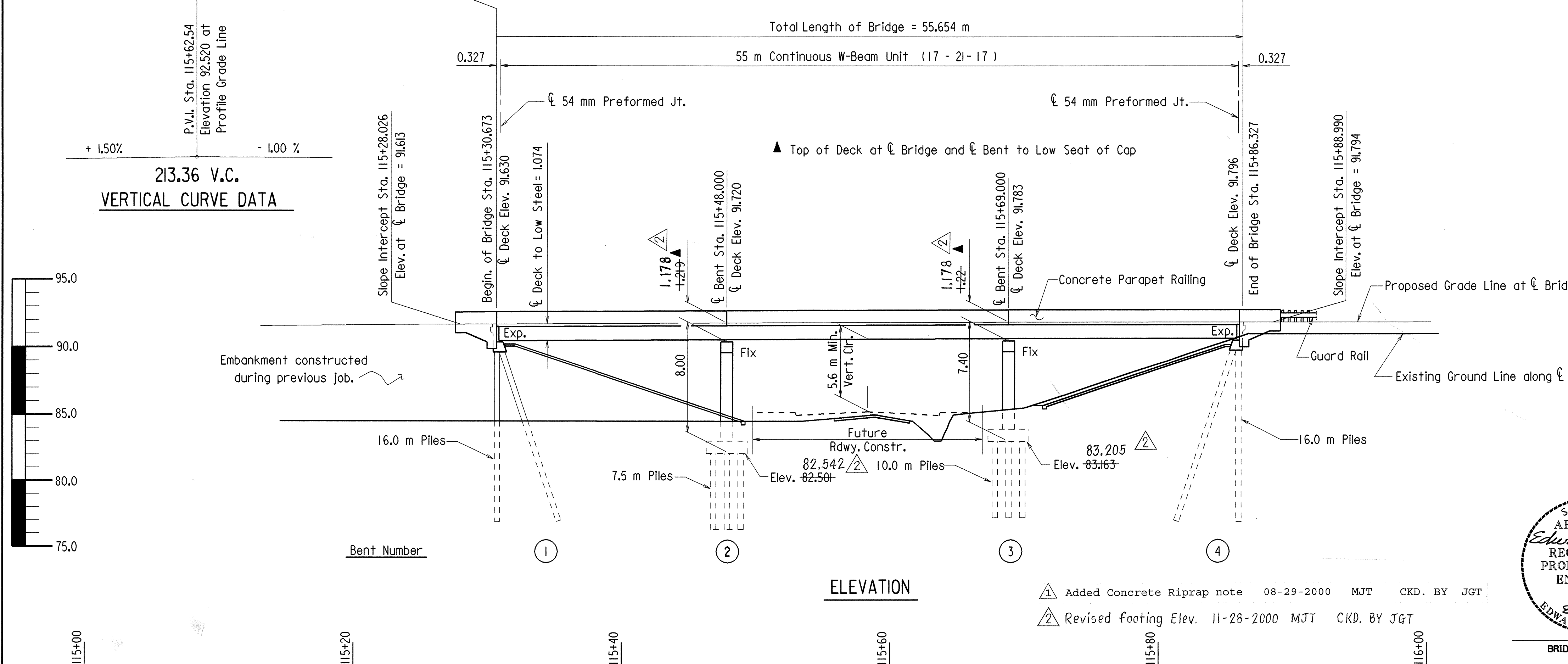


P.V. Sta. 115+62.54  
Elevation 92.520 at  
Profile Grade Line

+ 1.50%                      - 1.00 %

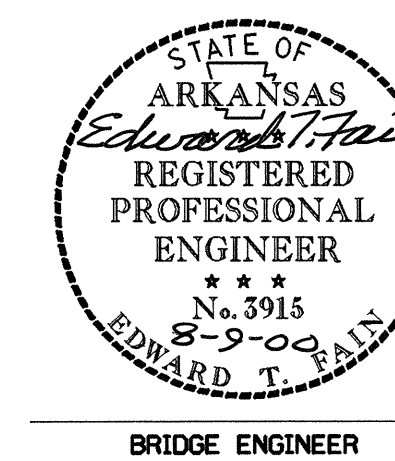
213.36 V.C.

VERTICAL CURVE DATA



1 Added Concrete Riprap note 08-29-2000 MJT CKD. BY JGT

2 Revised footing Elev. 11-28-2000 MJT CKD. BY JGT



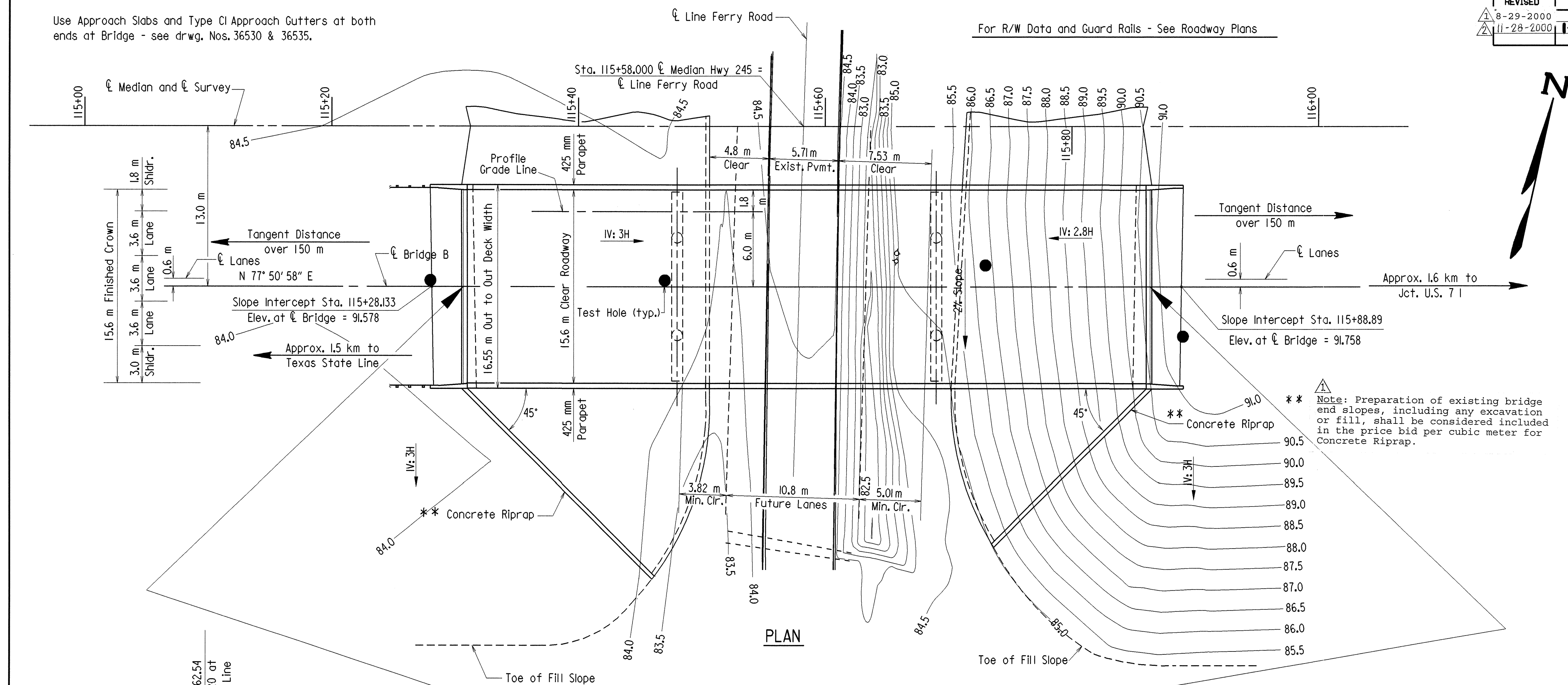
BRIDGE ENGINEER

(SHEET 1 OF 3)  
LAYOUT OF BRIDGES OVER  
LINE FERRY ROAD  
STATE LINE INTERCHANGE- HWY. 71(F)  
MILLER COUNTY  
ROUTE 245 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 2/00 FILENAME: B030035X1.LI  
 CHECKED BY: CES DATE: 8/9/00 SCALE: 1:200  
 DESIGNED BY: JWB DATE: 1/00  
 BRIDGE NO. A&B6816 DRAWING NO. 41511



For R/W Data and Guard Rails - See Roadway Plans

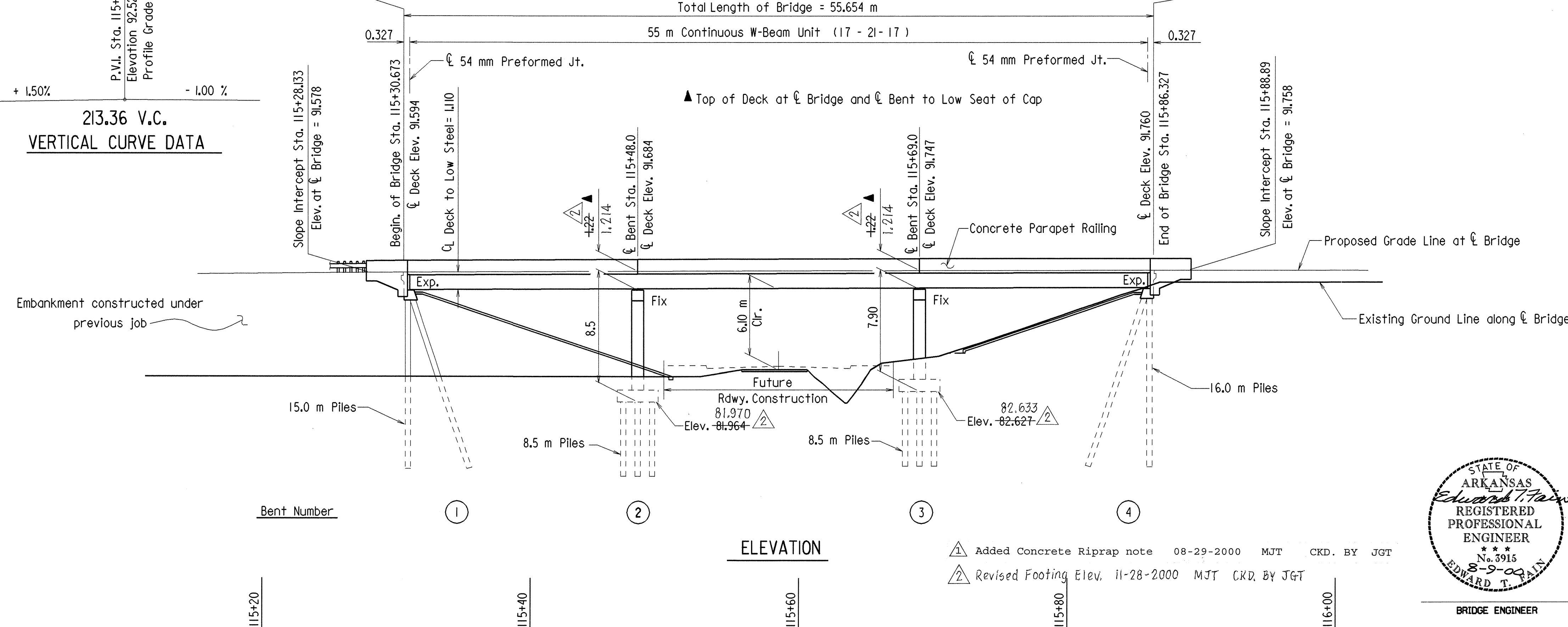


P.V. Sta. 115+62.54  
Elevation 92.520 at  
Profile Grade Line

+ 1.50%      - 1.00 %

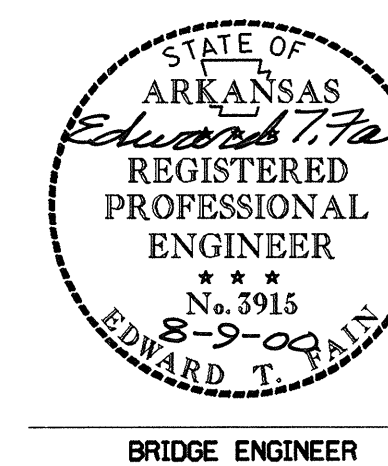
213.36 V.C.

VERTICAL CURVE DATA



(SHEET 2 OF 3)  
LAYOUT OF BRIDGES OVER  
LINE FERRY ROAD  
STATE LINE INTERCHANGE- HWY. 71 (F)  
MILLER COUNTY  
ROUTE 245 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 2/00 FILENAME: B030035X1411  
CHECKED BY: CES DATE: 8/9/00 SCALE: 1:200  
DESIGNED BY: JWB DATE: 1/00  
BRIDGE NO. A&B6816 DRAWING NO. 41512



1 Added Concrete Riprap note 08-29-2000 MJT CKD. BY JGT  
2 Revised Footing Elev. 11-28-2000 MJT CKD. BY JGT

BRIDGE ENGINEER



MICROFILMED  
SEP 08 2000



①	A&B6816	LAYOUT	41 51 3
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### BORING LEGEND

1.5- 1.8, N=40	11.0-11.3, N=66
3.0- 3.3, N=37	12.5-12.8, N=52
4.4- 4.7, N=34	14.0-14.3, N=59
6.3- 6.6, N=26	15.5-15.8, N=66
7.8- 8.1, N=43	17.03-17.3, N=90(0.27)
9.5- 9.8, N=43	18.6-18.9, N=89

1.5- 1.8, N=32	11.0-11.3, N=46
3.0- 3.3, N=42	12.5-12.8, N=54
4.4- 4.7, N=27	14.0-14.3, N=62
6.4- 6.7, N=32	15.5-15.8, N=72
7.9- 8.2, N=36	17.1-17.4, N=87
9.5- 9.8, N=46	18.6-18.9, N=88

1.38- 1.5, N=60( 0.12)	10.8-11.1, N=54
2.9- 3.2, N=46	12.3-12.6, N=60
4.7- 5.0, N=21	13.85-14.0, N=34
6.3- 6.6, N=27	15.4-15.7, N=84
7.8- 8.1, N=41	18.46-18.7, N=98( 0.24)
9.3- 9.6, N=43	

1.4- 1.7, N=23	10.8-11.1, N=64
2.9- 3.2, N=40	12.3-12.6, N=63
4.5- 4.8, N=29	13.9-14.2, N=76
6.3- 6.6, N=30	15.43-15.7, N=92( 0.27)
7.8- 8.1, N=53	16.81-16.9, N=60( 0.09)
9.3- 9.6, N=58	18.43-18.7, N=92( 0.27)

1.4- 1.7, N=63	10.8-11.1, N=40
3.2- 3.5, N=51	12.3-12.6, N=62
4.7- 5.0, N=20	13.9-14.2, N=56
6.3- 6.6, N=29	15.4-15.7, N=68
7.8- 8.1, N=24	16.9-17.2, N=72
9.3- 9.6, N=45	18.43-18.7, N=86(0.27)

1.5- 1.8, N=49	10.8-11.1, N=52
3.0- 3.3, N=27	12.3-12.6, N=60
4.7- 5.0, N=30	13.9-14.2, N=60
6.3- 6.6, N=35	15.4-15.7, N=70
7.8- 8.1, N=48	16.93-17.2, N=93(0.27)
9.3- 9.6, N=49	18.43-18.7, N=89(0.27)

1.4- 1.7, N=68	10.8-11.1, N=60
2.9- 3.2, N=43	12.3-12.6, N=57
4.4- 4.7, N=28	13.9-14.2, N=87
6.3- 6.6, N=34	15.4-15.7, N=91
7.8- 8.1, N=41	16.93-17.2, N=94(0.27)
9.3- 9.6, N=47	18.43-18.7, N=89(0.27)

1.4- 1.7, N=41	10.8-11.1, N=50
2.9- 3.2, N=20	12.3-12.6, N=60
4.4- 4.7, N=15	13.9-14.2, N=71
6.3- 6.6, N=26	15.4-15.7, N=75
7.8- 8.1, N=37	16.9-17.2, N=71
9.3- 9.6, N=57	18.43-18.7, N=102(0.27)



Figure 1 displays four cross-sections of the proposed road and existing ground surface, showing elevations and stationing. The vertical axis represents elevation in meters, ranging from 75.0 to 95.0. The horizontal axis represents stationing and right-of-way (Rt.) information.

The cross-sections are labeled as follows:

- Sta. 115+28 - 10.7 m Rt. of Survey:** Shows a cross-section with layers H, J, K, L, E, F, G, and I. Elevations are marked at 84.8, 85.0, and 80.0.
- Sta. 115+47 - 10.7 m Rt. of Survey:** Shows a cross-section with layers H, J, K, L, E, F, G, and I. Elevations are marked at 84.7, 85.0, and 80.0.
- Sta. 115+73 - 9.5 m Rt. of Survey:** Shows a cross-section with layers H, J, K, L, E, F, G, and I. Elevations are marked at 84.7, 85.0, and 80.0.
- Sta. 115+89 - 15.2 m Rt. of Survey:** Shows a cross-section with layers H, J, K, L, E, F, G, and I. Elevations are marked at 84.8, 85.0, and 80.0.

The ground surface is indicated by a solid line, and the proposed road is indicated by a dashed line. The cross-sections show the vertical alignment and the proposed road structure relative to the existing ground surface.

A circular professional seal for Edward T. Fain, a Registered Professional Engineer in the State of Arkansas. The seal features the text "STATE OF ARKANSAS" at the top, "Edward T. Fain" in a cursive script across the middle, "REGISTERED PROFESSIONAL ENGINEER" below the name, and "No. 3915" and "8-9-00" at the bottom. The name "EDWARD T. FAIN" is also written in a semi-circle along the bottom edge of the seal.

ROUTE 245 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

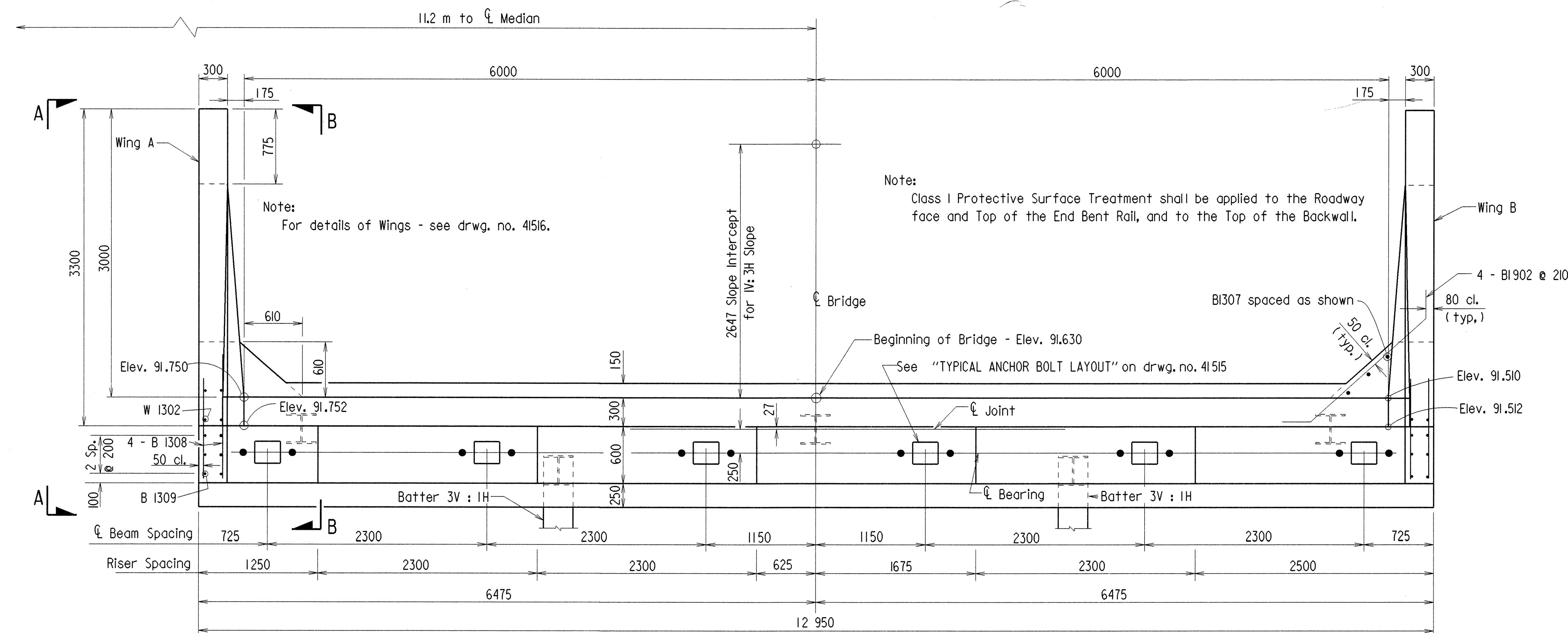
115+00

115+20

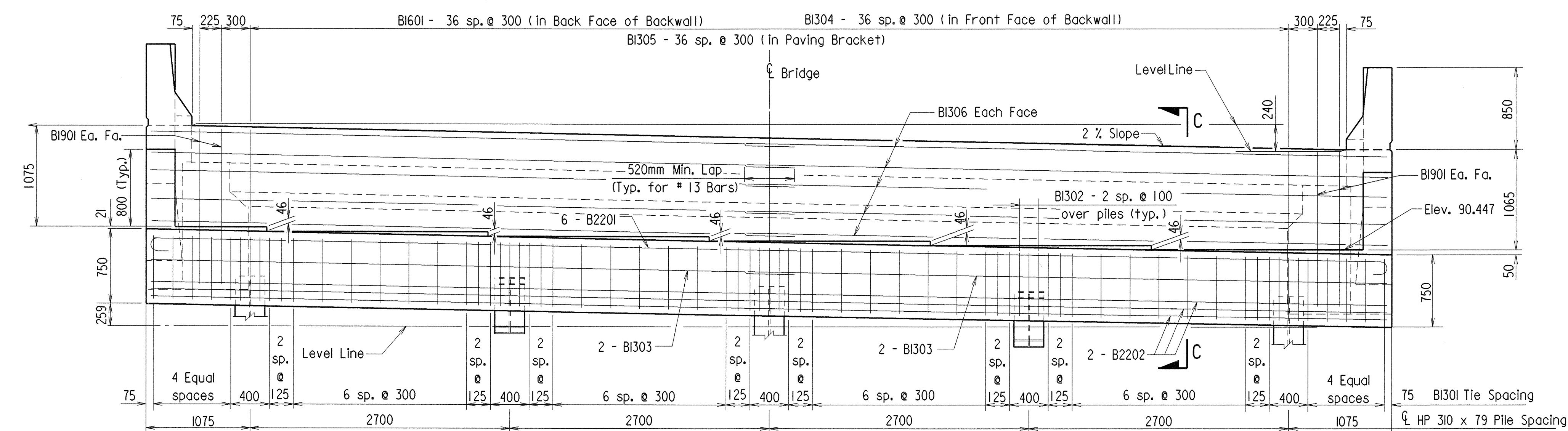
$$\underline{115+40}$$
$$\underline{115+60}$$
$$\underline{115+80}$$

116+00

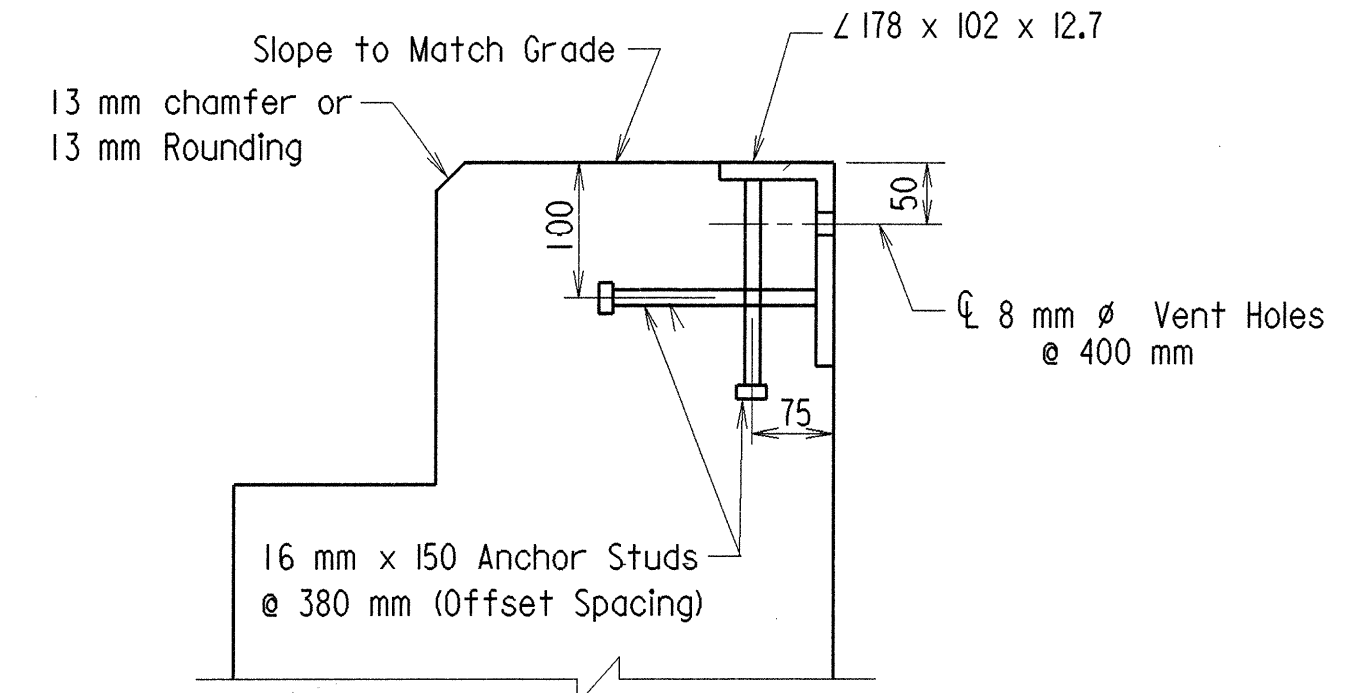
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				6	ARK.			
				JOB NO.		030035	40	109
				A6816		BENT DETAILS	41514	



PLAN OF END BENT NO. 1

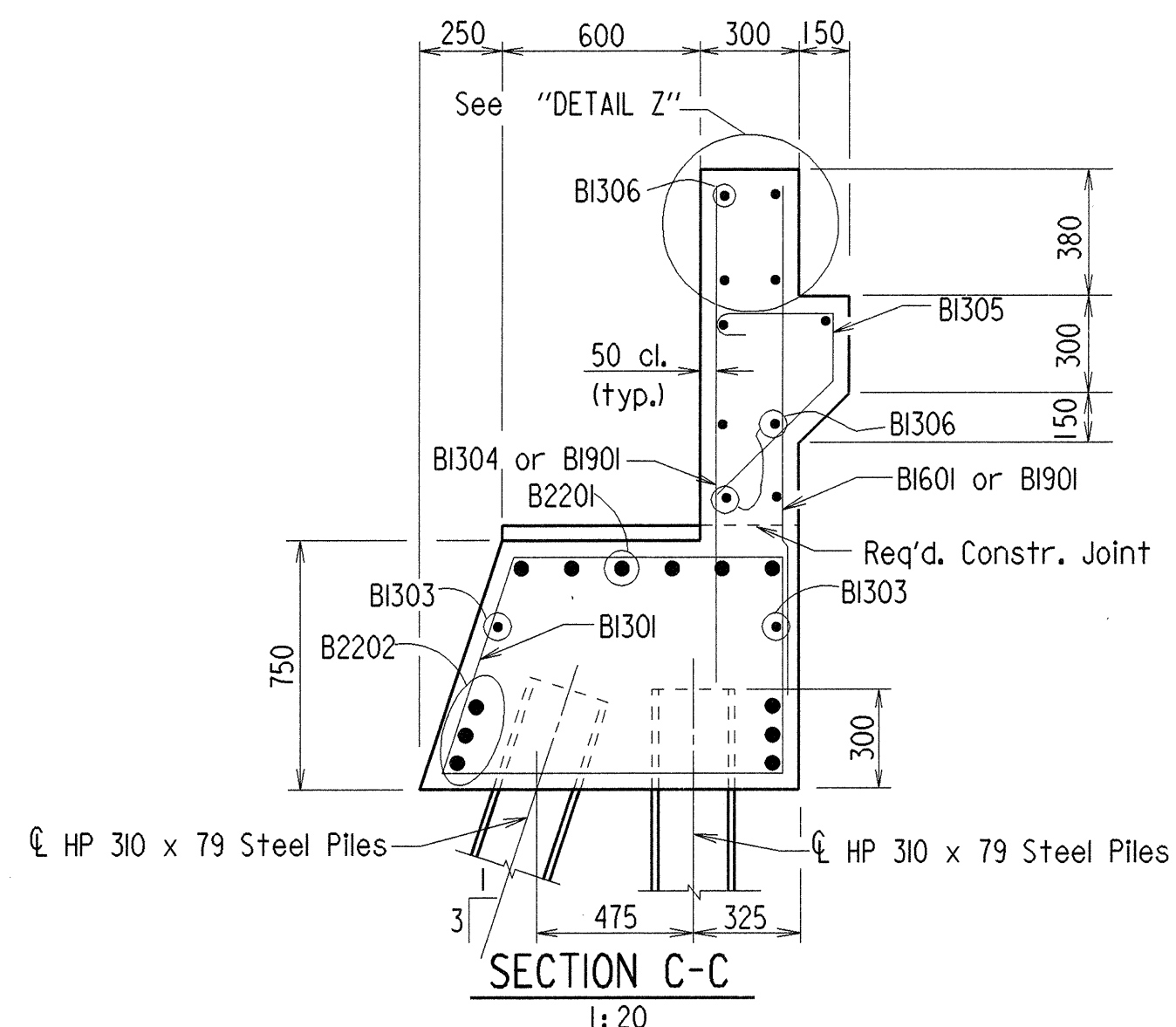


ELEVATION OF END BENT NO. 1 (LOOKING BACK)



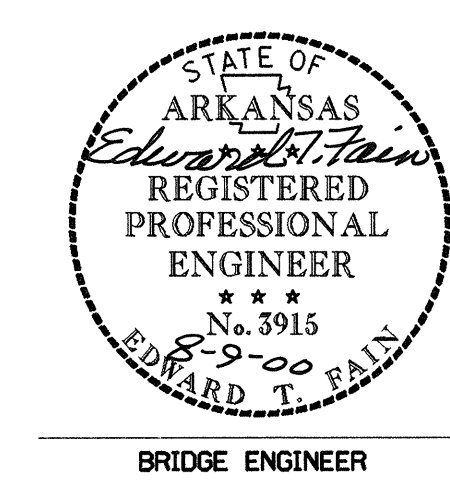
Note: For Joint Details, See drwg. no. 41519.

DETAIL Z  
N.T.S.



SECTION C-C  
1:20

MICROFILMED  
SEP 08 2000



SHEET 1 OF 3  
DETAILS OF END BENTS - BRIDGE A  
LINE FERRY ROAD

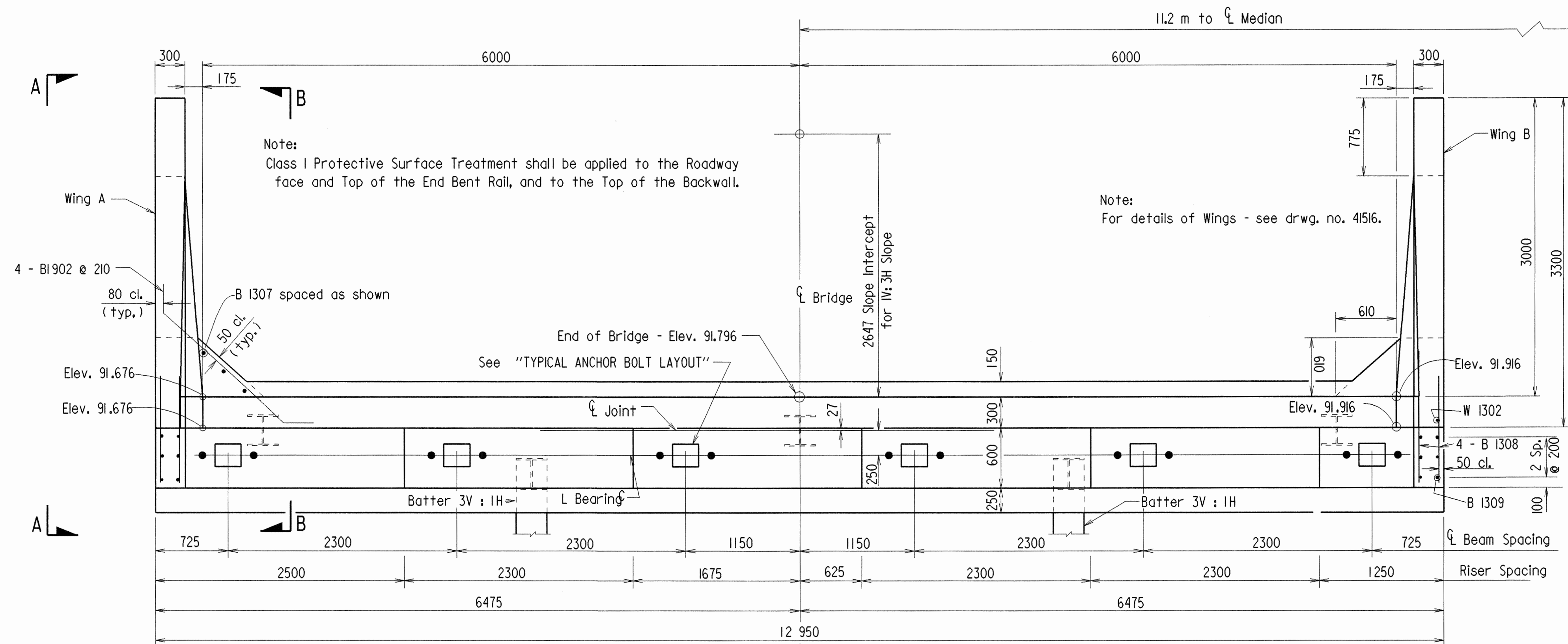
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ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

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CHECKED BY: CES DATE: 8/9/00 SCALE: 1:30 or  
DESIGNED BY: JWB DATE: 6/00 As Noted  
BRIDGE NO. A6816 DRAWING NO. 41514

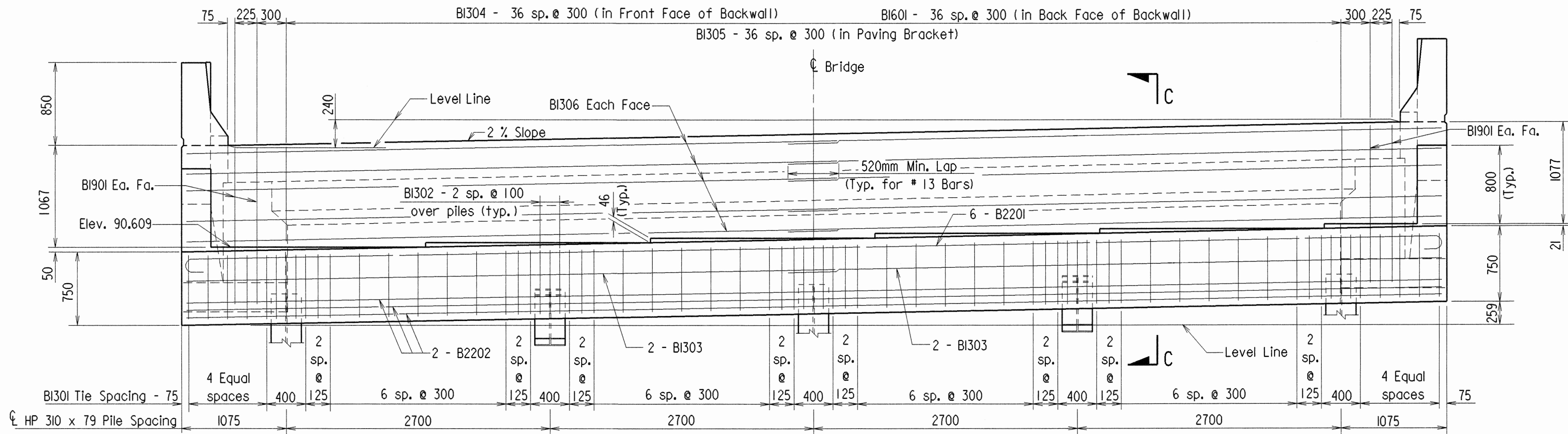




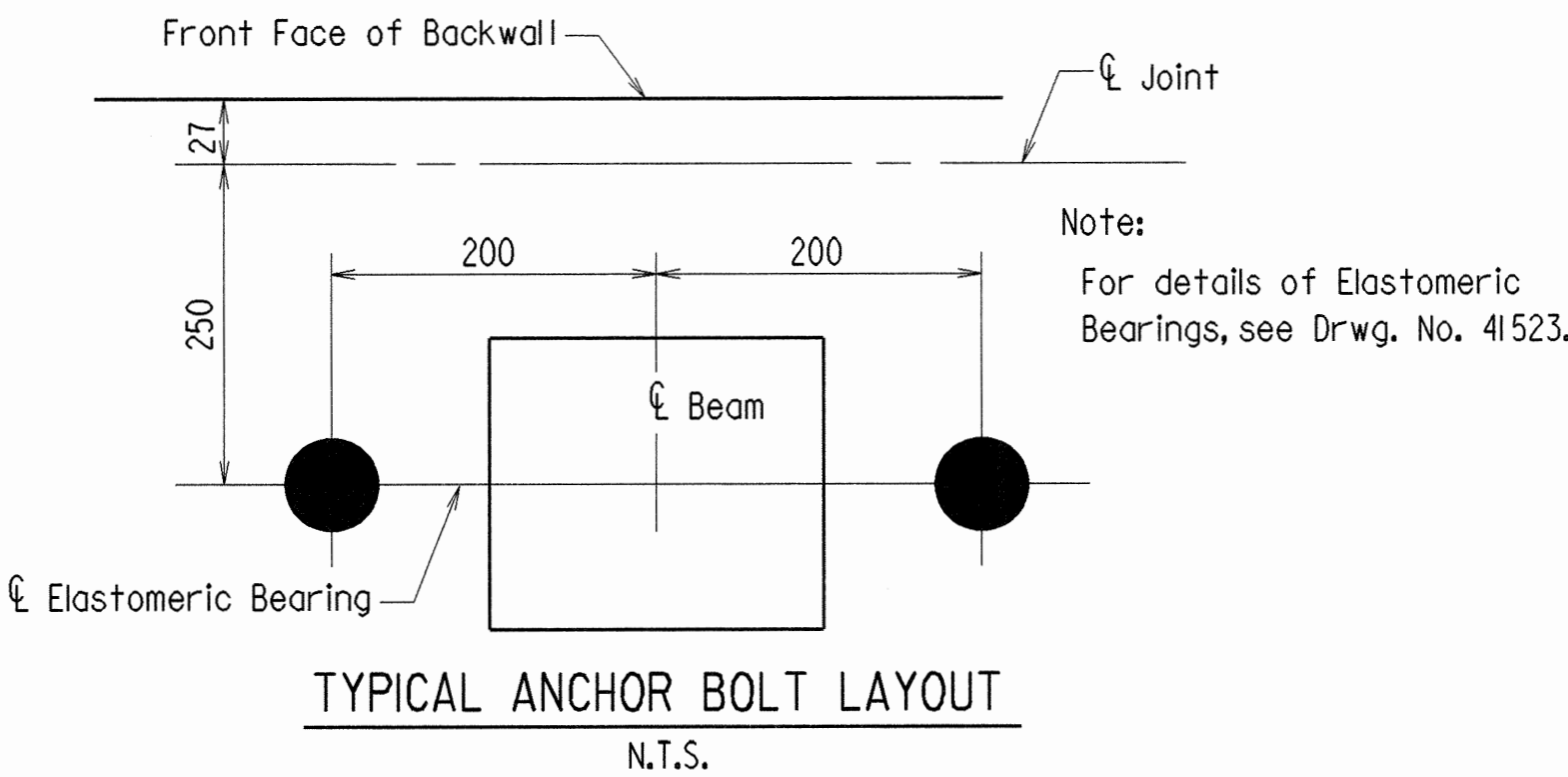
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030035	41	109
				A6816		BENT DETAILS		41515



PLAN OF END BENT NO. 4



ELEVATION OF END BENT NO. 4 (LOOKING AHEAD )



#### GENERAL NOTES

Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.

All concrete shall be Class "S" with a minimum 28 day compressive strength  $f'_c = 24.0$  MPa, and shall be poured in the dry. All exposed corners to be chamfered 20 mm unless otherwise noted.

All reinforcing steel shall conform to ASTM A 615/A 615M-96a, Grade 420 (yield strength = 420 MPa.)

Backwall shall not be poured before beams are in place, and concrete deck is poured.

Structural steel in end bents shall be AASHTO M270, Gr. 345W and shall be paid for as "STRUCTURAL STEEL IN BEAM SPANS (M270, Gr. 345W)".

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage. For "Anchor Bolt Detail", see Drwg. No. 41523.

For additional information, see layout.

MICROFILMED  
SEP 08 2000



BRIDGE ENGINEER

#### SHEET 2 OF 3 DETAILS OF END BENTS - BRIDGE A LINE FERRY ROAD

ROUTE 245 SEC. I  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 06/00/00 FILENAME: B030035A1.BI  
CHECKED BY: CES DATE: 01/9/00 SCALE: 1:30 or As Noted  
DESIGNED BY: JWB DATE: 9/00  
BRIDGE NO. A6816 DRAWING NO. 41515



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.		030035	42	109
				① A6816		BENT DETAILS		4156

BENT NO.	WING	ELEV. "R"	"K"
I	A	91.731	279
I	B	91.491	279
4	A	91.674	298
4	B	91.914	298


## BAR LIST - PER BENT

MARK	NUMBER REQUIRED		LENGTH	PIN DIA.	BENDING DIAGRAMS
	Bt. 1	Bt. 4			
BI301	54	54	3290	50	
BI302	15	15	2100	50	
BI303	4	4	6690	Str.	
BI304	37	37	1450	Str.	
BI305	37	37	1200	50	
BI306	20	20	6690	Str.	
BI307	6	6	1210	Str.	
BI308	16	16	900	Str.	
BI309	12	12	1100	Str.	
BI601	37	37	1520	Str.	
BI901	8	8	1550	Str.	
BI902	8	8	2180	114	
B2201	6	6	13 350	133	
B2202	6	6	12 850	Str.	
RI301	10	10	1170	50	
RI302	8	8	1190	50	
RI303	12	12	3200	Str.	
RI901	16	16	1350	Str.	
RI902	6	6	1410	Str.	
WI301	6	6	2090	76	
WI302	6	6	2440	Str.	
WI303 TO WI308	2 EACH	2 EACH	1010 TO 1760	76	
WI309 TO WI314	2 EACH	2 EACH	1370 TO 2110	Str.	
WI315	2	2	2460	50	
W2201	12	12	3200	Str.	
W2202	4	4	2100	Str.	
W2203	4	4	1710	Str.	
W2204	4	4	1300	Str.	
W2205	4	4	3060	133	

Dimensions are out to out of bars.

SHEET 3 OF 3  
DETAILS OF END BENTS - BRIDGE A  
LINE FERRY ROAD  
ROUTE 245 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

LITTLE ROCK, ARK.

DRAWN BY: <u>TEB</u>	DATE: <u>06/00/00</u>	FILENAME: <u>B030035A1.B1</u>
CHECKED BY: <u>CES</u>	DATE: <u>8/9/00</u>	SCALE: <u>1:30 or</u>
DESIGNED BY: <u>JWB</u>	DATE: <u>6/00</u>	<u>As Noted</u>
BRIDGE NO. <u>A6816</u>	DRAWING NO. <u>41516</u>	

STATE OF  
ARKANSAS  
*Edward T. Fain*  
REGISTERED  
PROFESSIONAL  
ENGINEER  
\*\*\*  
No. 3915  
*8-9-00*  
EDWARD T. FAIN

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BRIDGE ENGINEER

BRIDGE ENGINEER



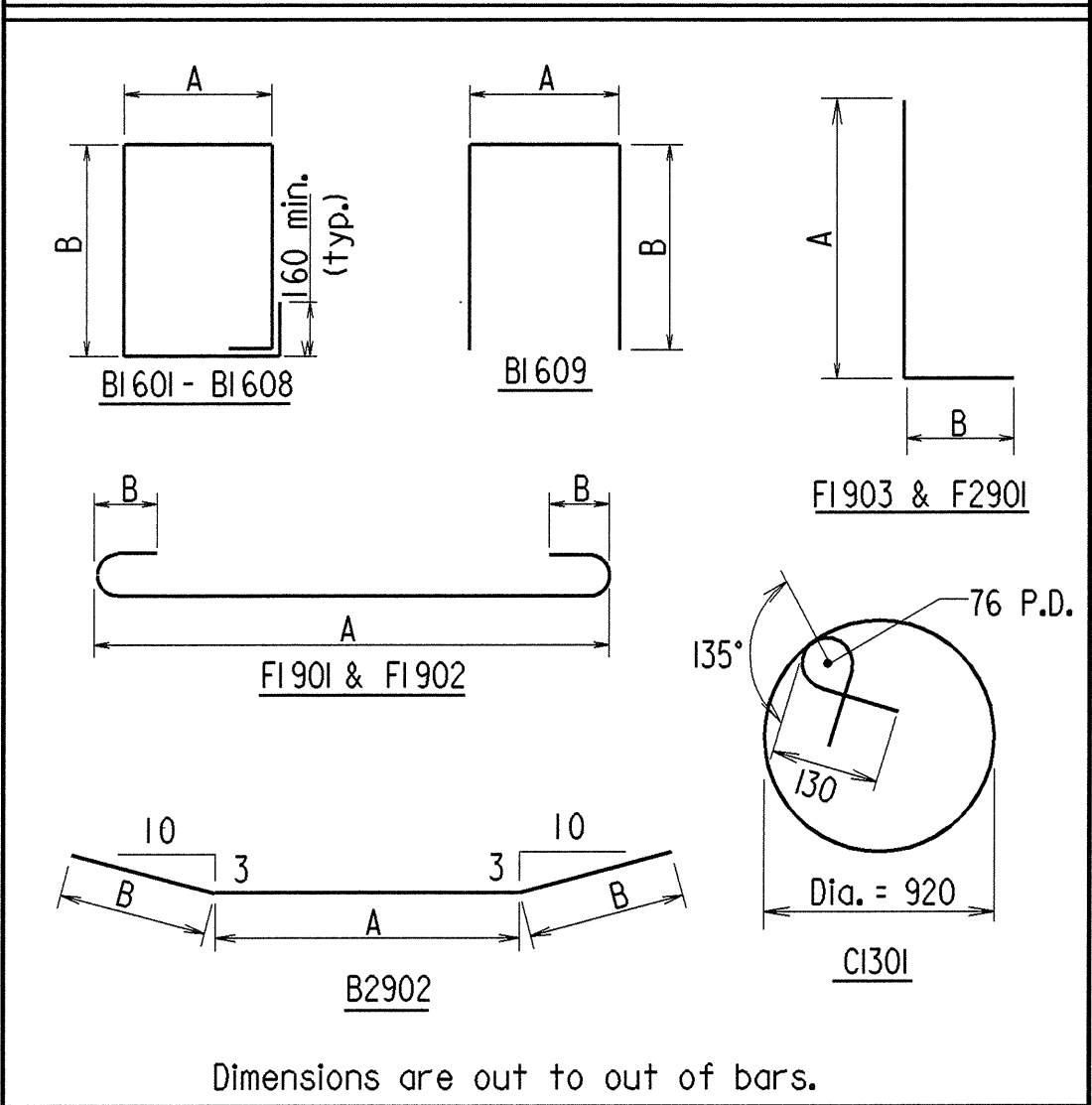
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BAR LIST PER BENT

MARK	NUMBER REQUIRED	LENGTH	A	B	PIN. DIA.
BI 301	8	6410	-	-	Str.
BI 302	4	6200	-	-	Str.
BI 303	4	5340	-	-	Str.
BI 601 thru BI 607	2 Ea.	3700 to 4790	950	820 to 1365	63
BI 608	23	4860	950	1400	63
BI 609	8	3680	950	1400	63
B2901	6	12300	-	-	Str.
B2902	6	12400	8450	1975	228
CI 301	"C"	3220	-	-	76
C2901	32	"D"	-	-	Str.
FI 901	42	2980	2550	160	114
FI 902	42	3280	2850	160	114
FI 903	8	1450	750	750	114
F2901	32	2480	2070	490	228

### BENDING DIAGRAMS



### GENERAL NOTES

Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.

All Concrete shall be Class "S" and shall be poured in the dry.  
All exposed corners to be chamfered 20 mm unless otherwise noted.

All Reinforcing Steel shall conform to ASTM A615/A615M-96a, Grade 420 ( $f_y = 420$  MPa.)

If Anchor Bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage. See "Anchor Bolt Detail", Drwg. No. 40465.

For additional information, see Layout.

DETAILS OF INTERMEDIATE  
BENTS 2 & 3 - BRIDGE A  
LINE FERRY

ROUTE 245 SEC.1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

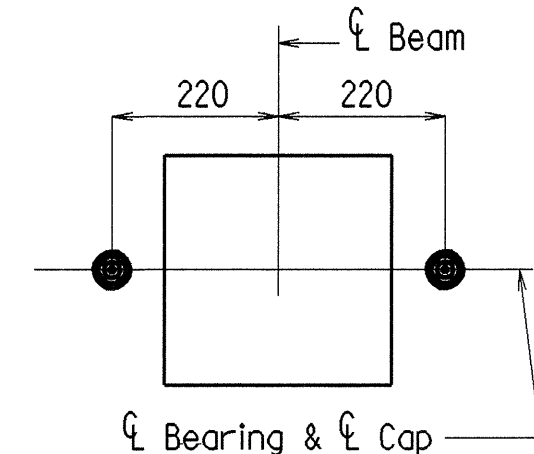
DRAWN BY: CH DATE: 7/26/00 FILENAME: B030035A1.B2

CHECKED BY: JWB DATE: 7/31/00 SCALE: 1:30

DESIGNED BY: JWB DATE: 7-100 OR AS NOTED  
BRIDGE NO. A6316 DRAWING NO. 41513

BRIDGE NO. A6816

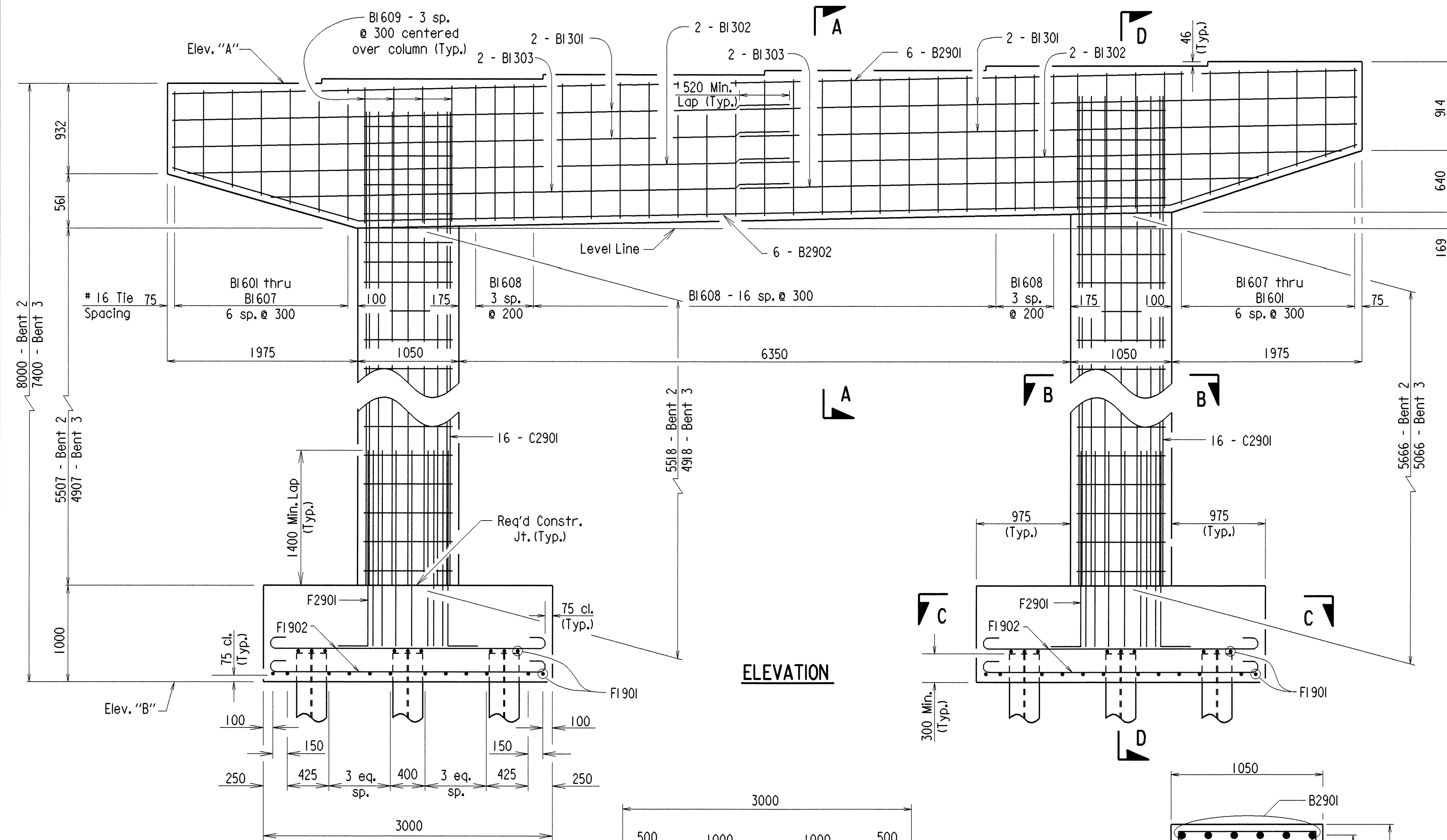
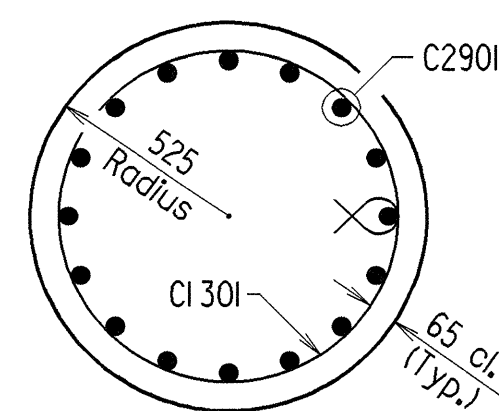
DRAWING NO. 41 51 7



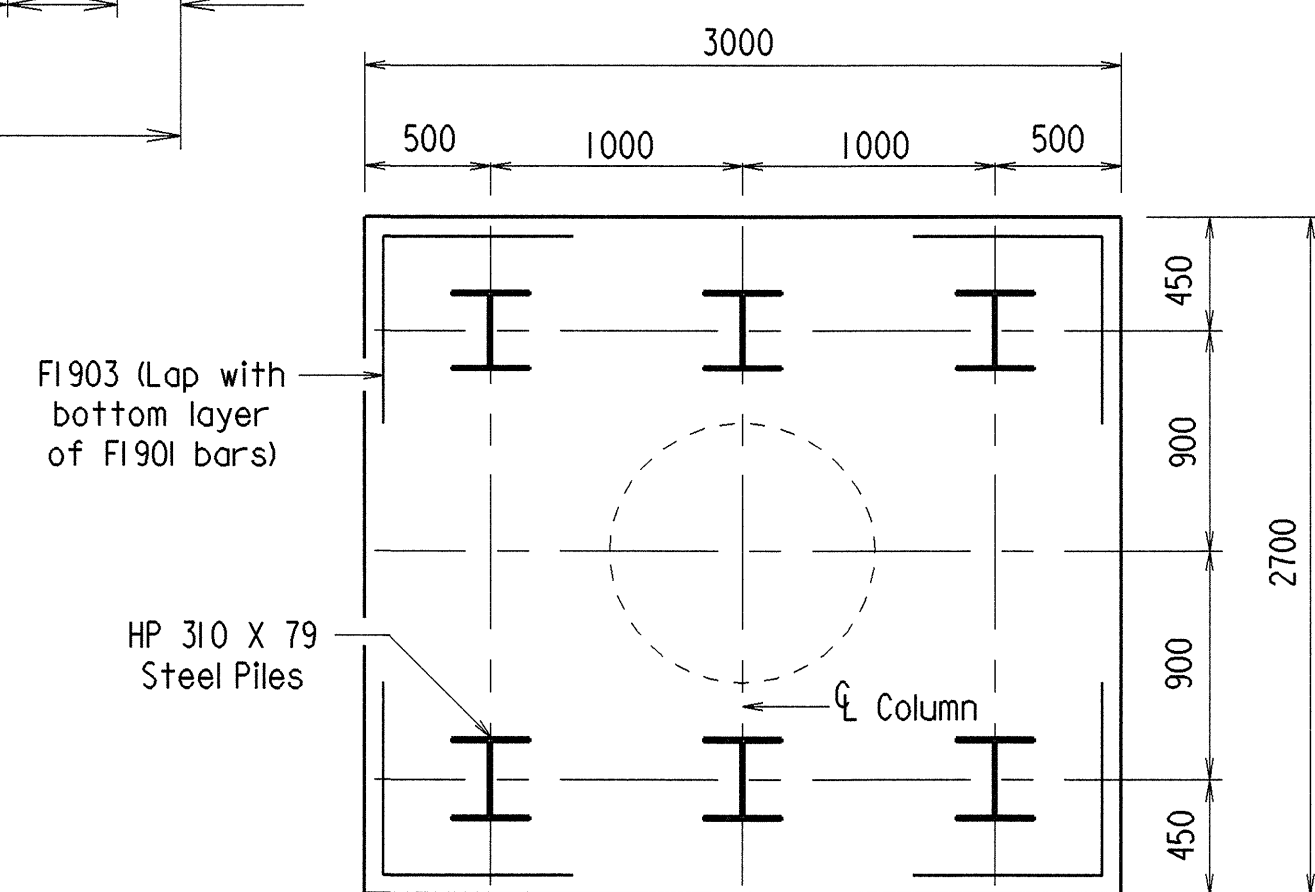
### TYPICAL ANCHOR BOLT LAYOUT

Note: For details of Elastomeric Bearings  
see Dwg. No. 41523.

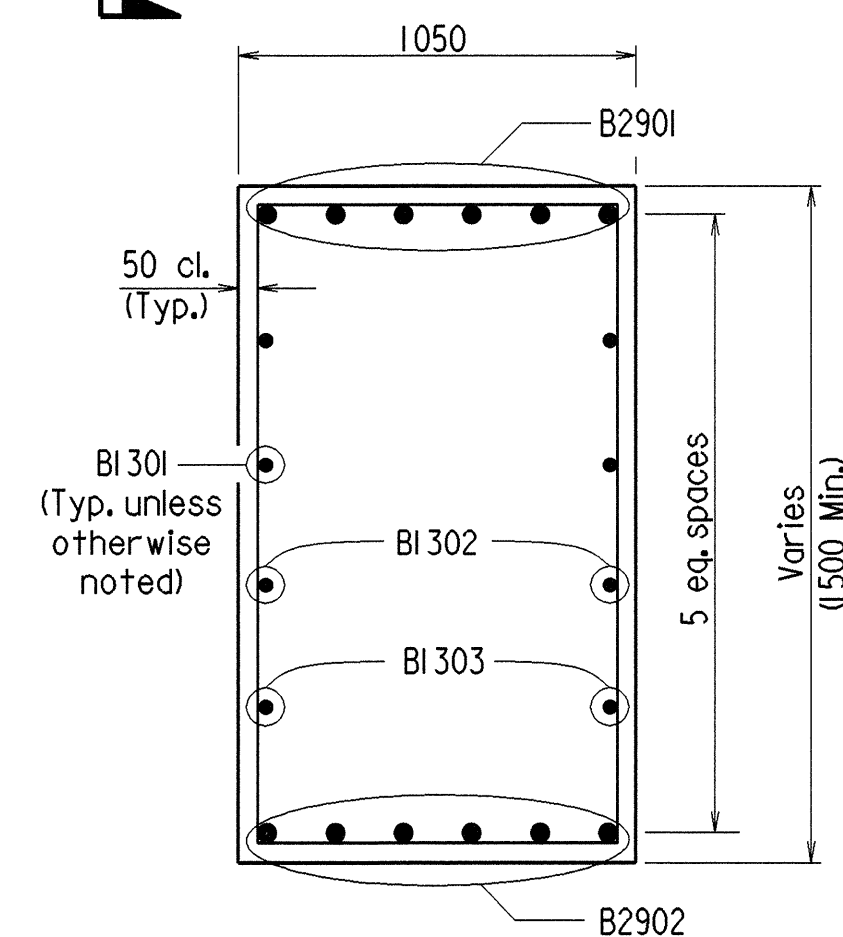
### PLAN

ELEVATION

SECTION B-B  
1:20



SECTION C-C



SECTION A-A  
1:20

### Table of Variables

Bent	Elev. "A"	Elev. "B"	"C"	"D"
2	<del>90.542</del> <del>90.501</del>	<del>82.542</del> <del>82.501</del>	46	685
3	<del>90.605</del> <del>90.563</del>	<del>83.205</del> <del>83.163</del>	42	625

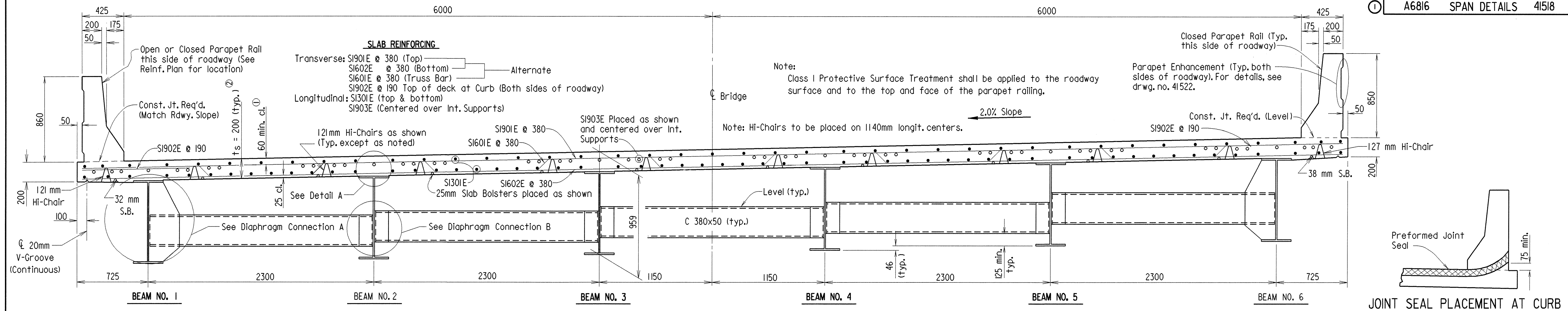


BRIDGE ENGINEER

1 Revised Footing Elevations 11-28-2000 MJT Ckd by JGT

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SEP 08 2000

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.		030035	44-109	
				A6816	SPAN DETAILS		4158	



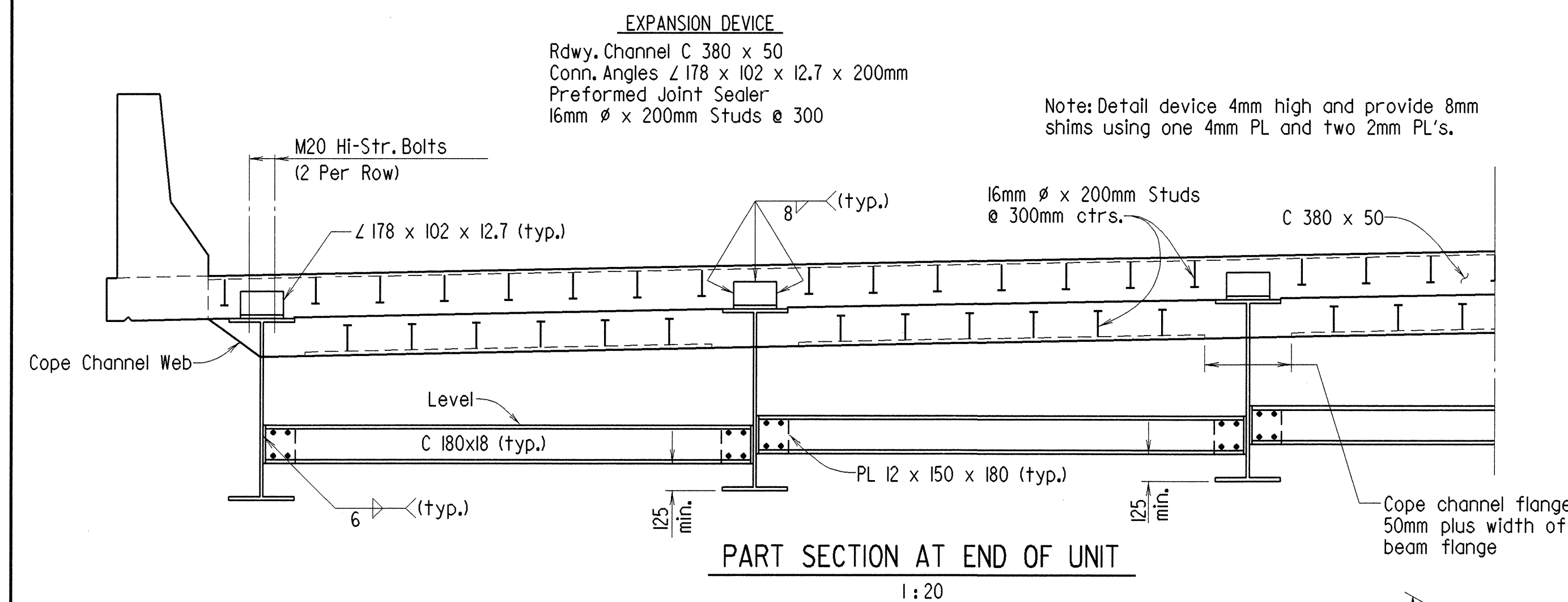
- ① Tolerance: Minus = 6mm  
Plus: Equal to amount of slab thickening used to meet slab thickness tolerance (See Detail A)
- ② See "Detail A"

TYPICAL ROADWAY SECTION (LOOKING AHEAD)  
1:20

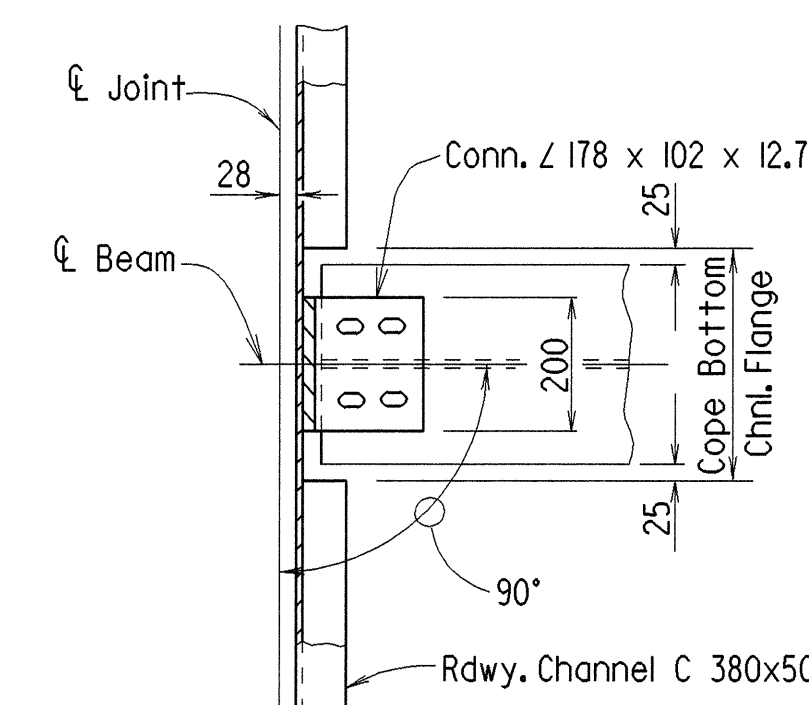
BAR LIST (UNIT TOTAL)

Note: All Bars designated with an "E" suffix are to be Epoxy Coated.

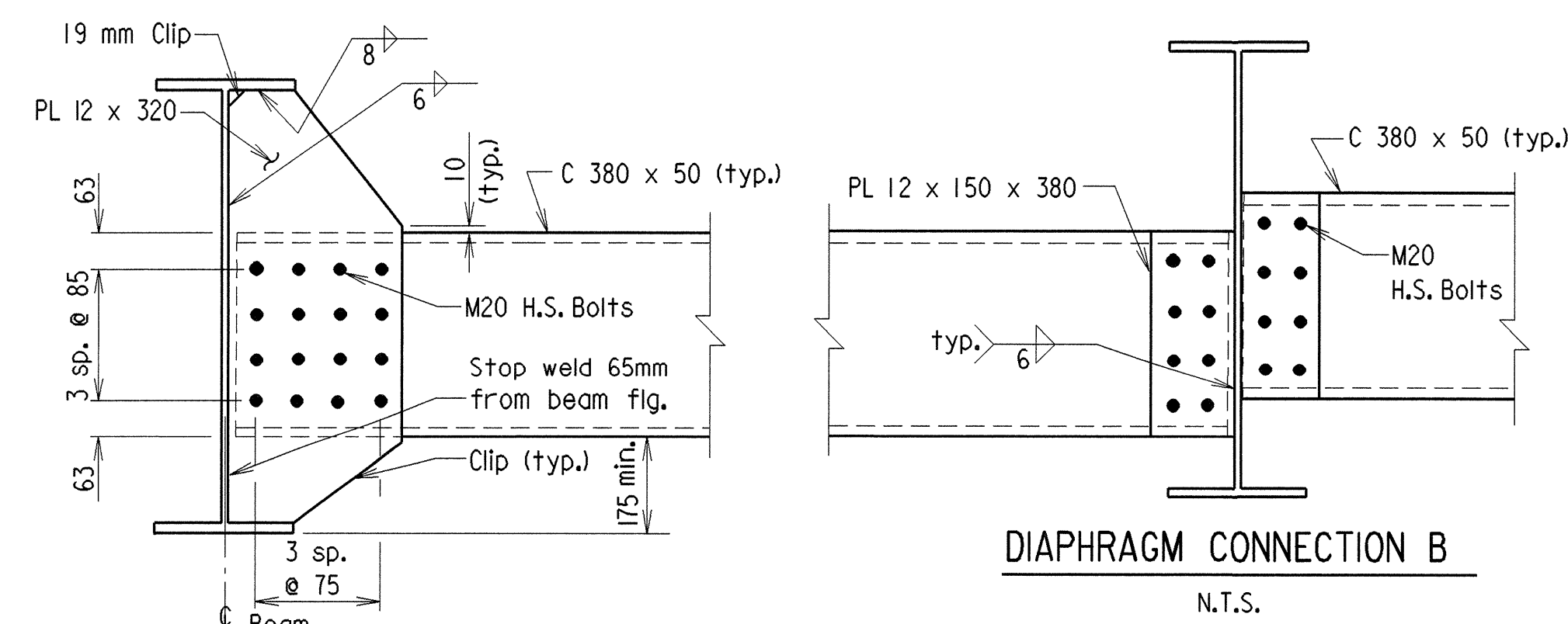
MARK	NUMBER REQUIRED	LENGTH	PIN. DIA.	BENDING DIAGRAMS
SI301E	485	11 500	Str.	
SI601E	144	13 200	76	
SI602E	145	12 850	Str.	
SI901E	145	12 850	Str.	
SI902E	576	1440	Str.	
SI903E	104	10 240	Str.	
PI301E	380	1950	50	
PI302E	380	1700	50	
PI303E	72	1375	Str.	
PI304E	110	2675	Str.	
PI305E	72	2875	Str.	
PI306E	50	1800	Str.	
PI307E	50	950	50	
PI901E	50	2675	Str.	
SI601E				



PART SECTION AT END OF UNIT  
1:20



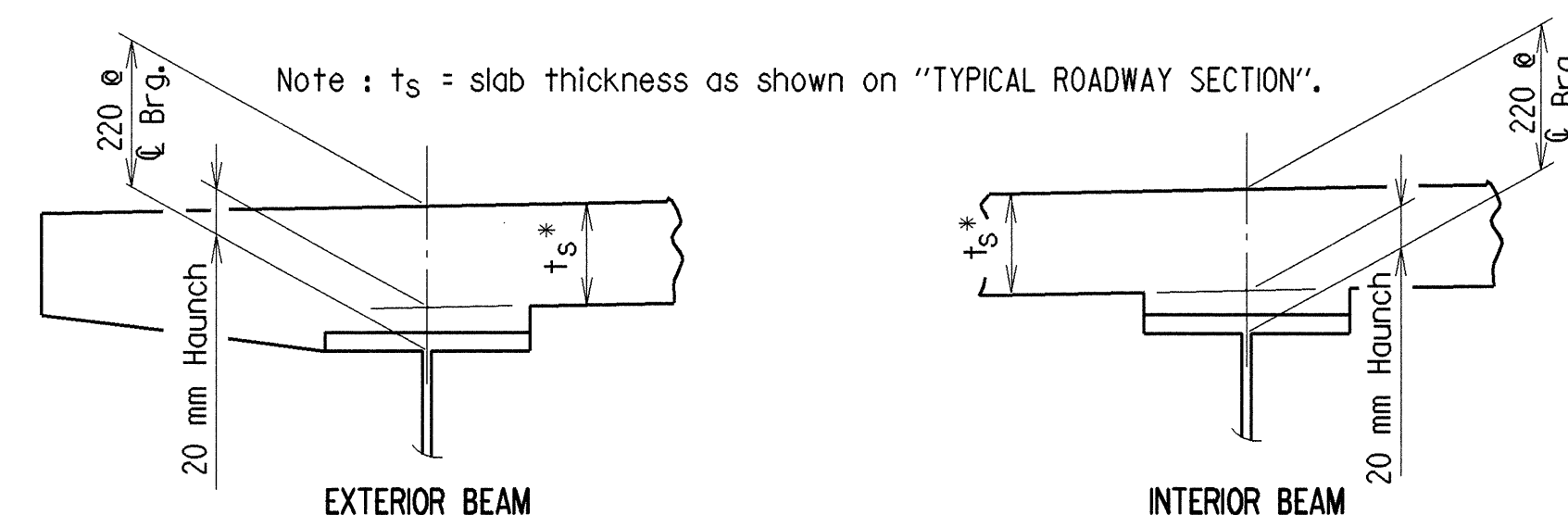
TYPICAL CHANNEL CONNECTION DETAIL  
N.T.S.



DIAPHRAGM CONNECTION A  
N.T.S.

DIAPHRAGM CONNECTION B  
N.T.S.

Note: Bolts in Diaphragm Connections shall be properly installed and tightened in accordance with subsection 807.71 of the standard specifications.



EXTERIOR BEAM

INTERIOR BEAM

\*Tolerance when removable deck forming is used is (+)12mm and (-)6mm. Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

Haunch dimension may vary within the following limits to maintain grade and slab thickness tolerance: Minimum - occurs when top flange contacts bottom reinforcing steel; Maximum - top flange thickness plus 44mm. No increase in concrete and structural steel quantities will be made to maintain tolerance.

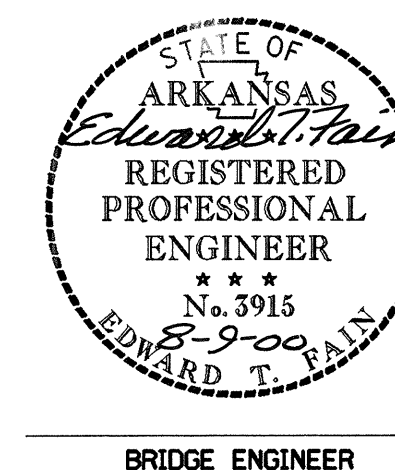
DETAIL A  
No Scale

Note: Tolerances shown are applicable only when removable deck forming is used. See Std. Drwg. 36515 for tolerance when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

All dimensions are in millimeters (mm) unless otherwise noted.

SHEET 1 OF 5  
DETAILS OF 55 m CONTINUOUS  
W-BEAM UNIT - BRIDGE A  
LINE FERRY ROAD  
ROUTE 245 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 24 JUL 00 FILENAME: B030035A1.SA  
CHECKED BY: CES DATE: 8/9/00 SCALE: As Shown  
DESIGNED BY: JWB DATE: 9/00  
BRIDGE NO. A6816 DRAWING NO. 41518



BRIDGE ENGINEER



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SEP 08 2000



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.		030035	45	109
				A6816		SPAN DETAILS	41519	

①

#### SUPERSTRUCTURE GENERAL NOTES

Flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed 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 Engineer for approval. All welding shall conform to subsection 807.26.

Field connections shall be bolted with high-strength bolts and shall be M20 bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior beam webs and on the bottom of the beam flanges. Holes for M20 high-strength bolts may be 24 mm diameter if a washer is supplied for use under both the nut and head of the bolt.

Diaphragms shall be installed as beams are erected. All bolts in diaphragms and field splices shall be installed and tightened in accordance with subsection 807.71 prior to pouring the concrete deck.

Bearings shall be seated in accordance with subsection 808.08. This work and material are to be considered as subsidiary to the item "ELASTOMERIC BEARINGS" and will not be paid for directly.

#### Load Distribution to Beams:

	INTERIOR BEAM	EXTERIOR BEAM
<u>Dead Load:</u>		
To W-Beam	10.84 kN/m + 1.3(wt./m of W-Bm.)	9.10 kN/m + 1.3(wt./m of W-Bm.)
To Composite Beam	4.17 kN/m *	4.17 kN/m *
	* Includes 2.30 kN/m Future Wearing Surface	

#### Live Load:

To each Composite Beam	INTERIOR BEAM = 1,372 wheels (+) impact EXTERIOR BEAM = 1,282 wheels (+) impact
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#### CONSTRUCTION SPECIFICATIONS:

Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (1996 edition ) with applicable supplemental specifications and special provisions.

#### DESIGN SPECIFICATIONS:

AASHTO Standard Specifications for Highway Bridges (1996 edition ) with current interim specifications.

LIVE LOADING: MS18 and Alternate Military Load

METHOD OF DESIGN: Load Factor

#### MATERIALS AND STRENGTHS:

Class S(AE) Concrete	f'c = 28.0 MPa
Reinforcing Steel (ASTM A615/A615M-96a)	Fy = 420 MPa
Structural Steel (M 270, Gr. 345W)	Fy = 345 MPa
Structural Steel (M 270, Gr. 250)	Fy = 250 MPa

#### CONCRETE:

Concrete shall be poured in the dry and all exposed corners to be chamfered 20 mm unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 28.0 MPa.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 36515 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a fine finish in accordance with subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the beam. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the rolling. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

#### REINFORCING STEEL:

All reinforcing steel shall conform to ASTM A 615/A 615M-96a, Grade 420. The reinforcing steels 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 "REINFORCING STEEL- BRIDGE".

#### STRUCTURAL STEEL:

All structural steel shall be AASHTO M 270, Grade 345W unless otherwise noted and shall be paid for as "STRUCTURAL STEEL IN BEAM SPANS (M 270, Gr. 345W)". Grade 345W steel shall not be painted. All exposed surfaces shall be cleaned in accordance with subsection 807.84(e). Structural steel completely embedded in concrete may be AASHTO M 270, Grade 250 unless otherwise noted.

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.

Structural steel shapes of equal or greater strength may be substituted for shapes shown if prior approval is obtained from the Bridge Engineer. Payment will be made on the basis of shapes shown.

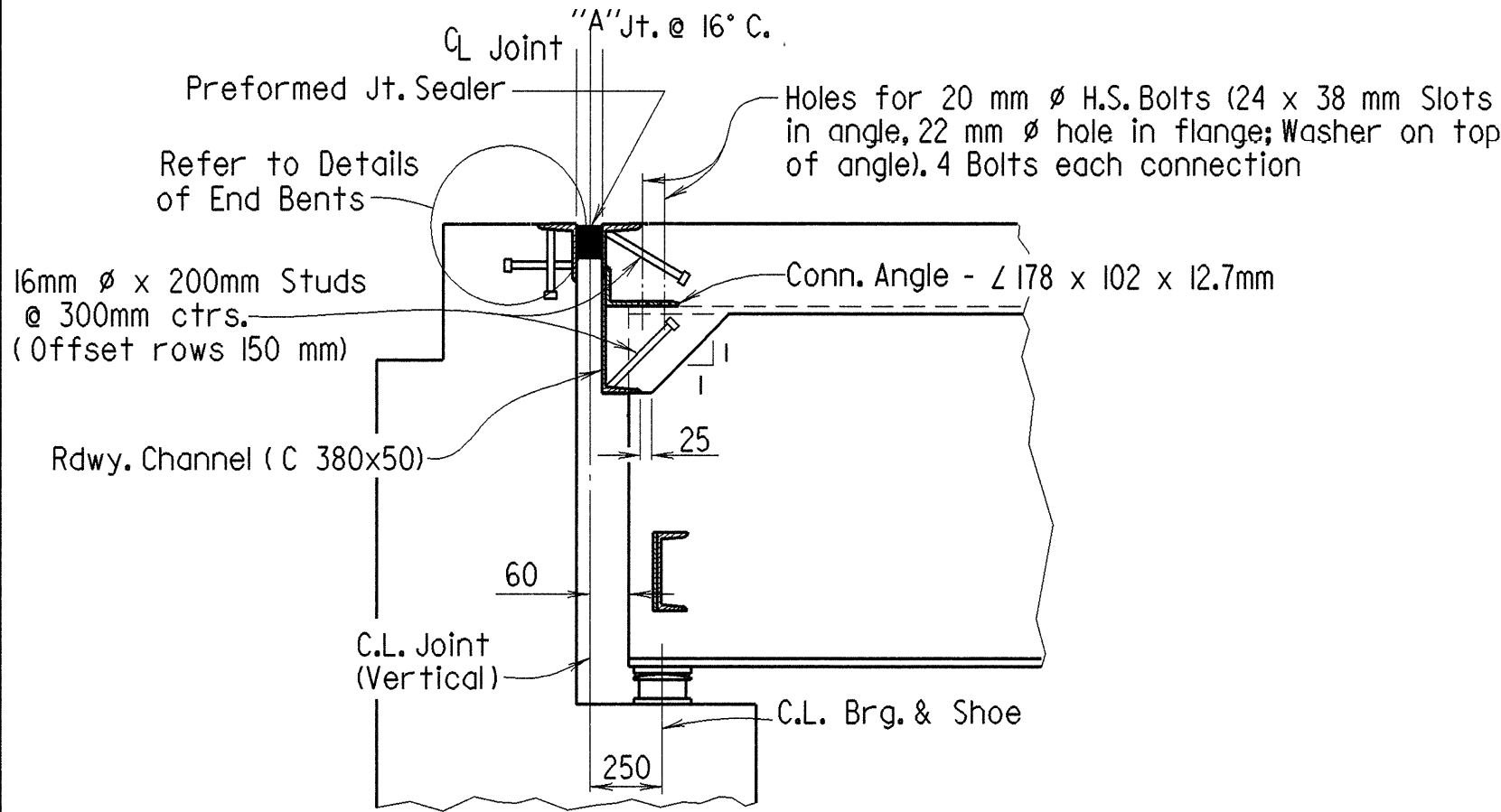
Beams are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in subsection 807.05. The Charpy V-Notch test will not be required on field splice plates.

All beams shall be blocked in their true position in the shop with the webs horizontal. The camber, length of sections, distance between bearings and openings of joints shall be measured with the beams in their true position and this information shall become part of the permanent records for this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All beam dimensions are based on a temperature of 16 degrees C. A tolerance of 6 mm +/- is allowed for camber.

#### PREFORMED JOINT SEAL DATA

Bridge No.	Bent No(s).	"A" Width Perpendicular to Joint at 24 Hour Average Temperature ** of :			Uncompressed Joint Seal Width	Bumper Plate Size
		28° C	16° C	4° C		
A6816	I AND 4	50	54	58	89 mm	25 x 18 mm

\*\* The temperature used to set the joint opening shall be the approximate average air temperature during the preceding 24 hour period. The Engineer shall establish the temperature.

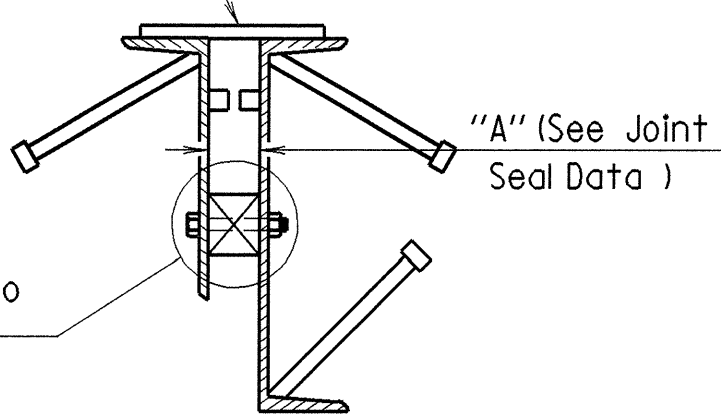


#### SECTION THRU JOINT AT END BENTS

No Scale

For Transverse Strike-Off:  
Plate, Angle, or other shapes, attached to Channels (or Angles) for Blocking

Note: One of two different blocking systems is required depending on the type of span finishing machine that is used.

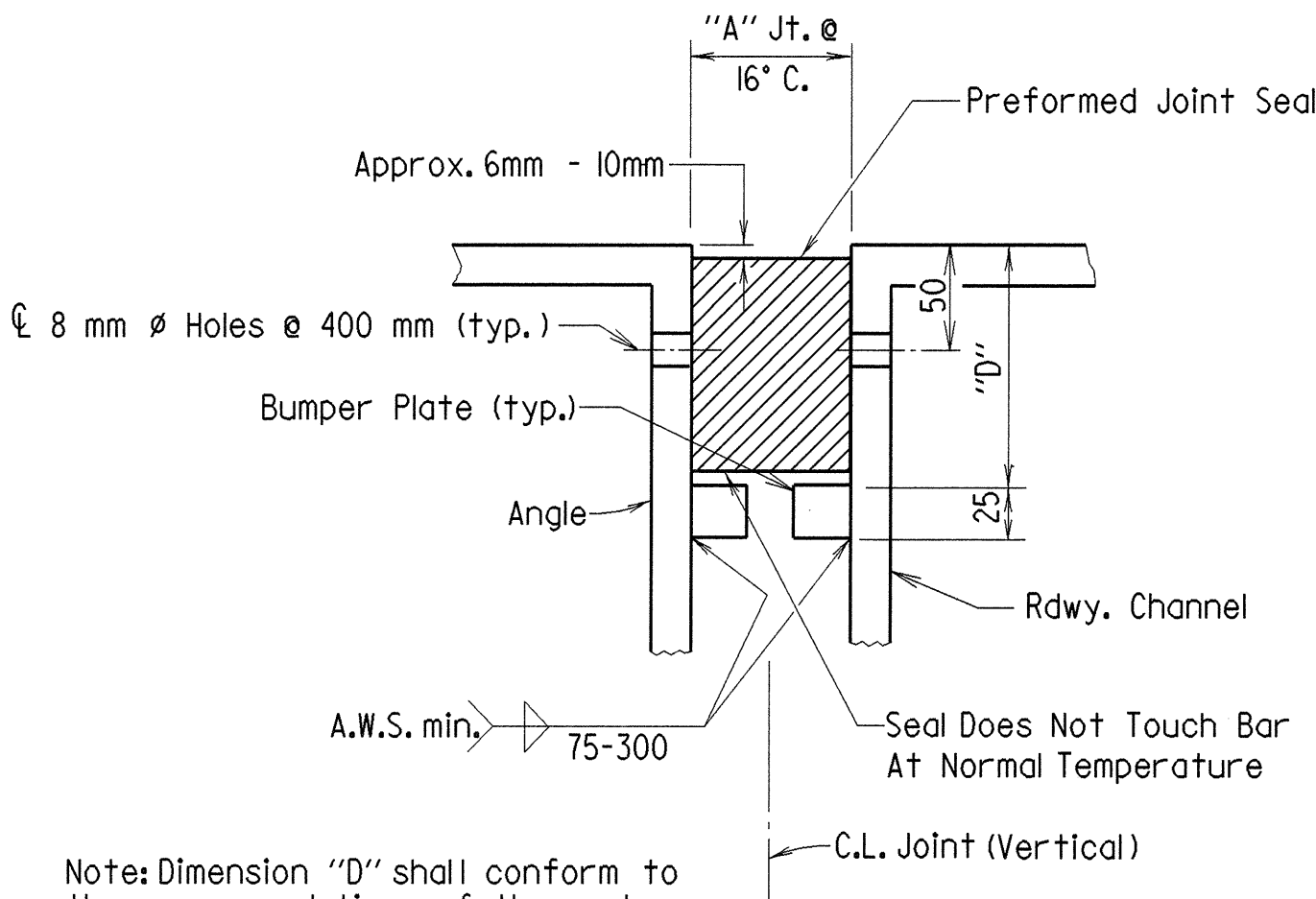


#### DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

No Scale

#### EXPANSION DEVICE INSTALLATION AT END BENTS:

The concrete span pour shall be placed before the end bent backwall concrete is placed. After beams or girders are erected the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature and grade, and the backwall constructed.



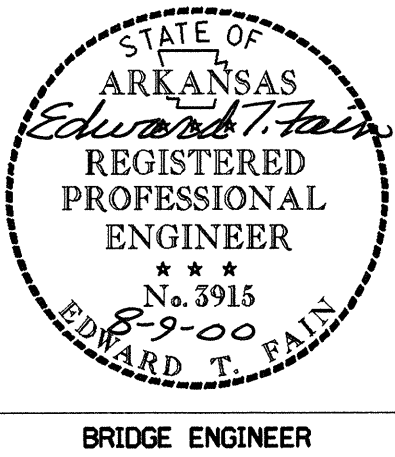
Note: Dimension "D" shall conform to the recommendations of the seal manufacturer as approved by the Bridge Engineer.

#### DETAIL OF JOINT SEAL & SUPPORT

No Scale

Note: The Seal shall be in one piece (without splices) for the full length of the joint, except that lengths 17 meters and longer may have a factory made splice. Splices, when required, shall be shown on the Shop Drawings and shall be placed near the high ends of the Roadway. Separation of the Splice during installation shall be cause for rejection of the Seal.

All dimensions are in millimeters (mm) unless otherwise noted.



#### SHEET 2 OF 5 DETAILS OF 55 m CONTINUOUS W-BEAM UNIT - BRIDGE A LINE FERRY ROAD

ROUTE 245 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 24 JUL 00 FILENAME: B030035A1.SA

CHECKED BY: CES DATE: 8/9/00 SCALE: As Shown

DESIGNED BY: JWB DATE: 9/00

BRIDGE NO. A6816

DRAWING NO. 41519



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.		030035	46	109
A6816 SPAN DETAILS								41520

TABLE FOR WELD

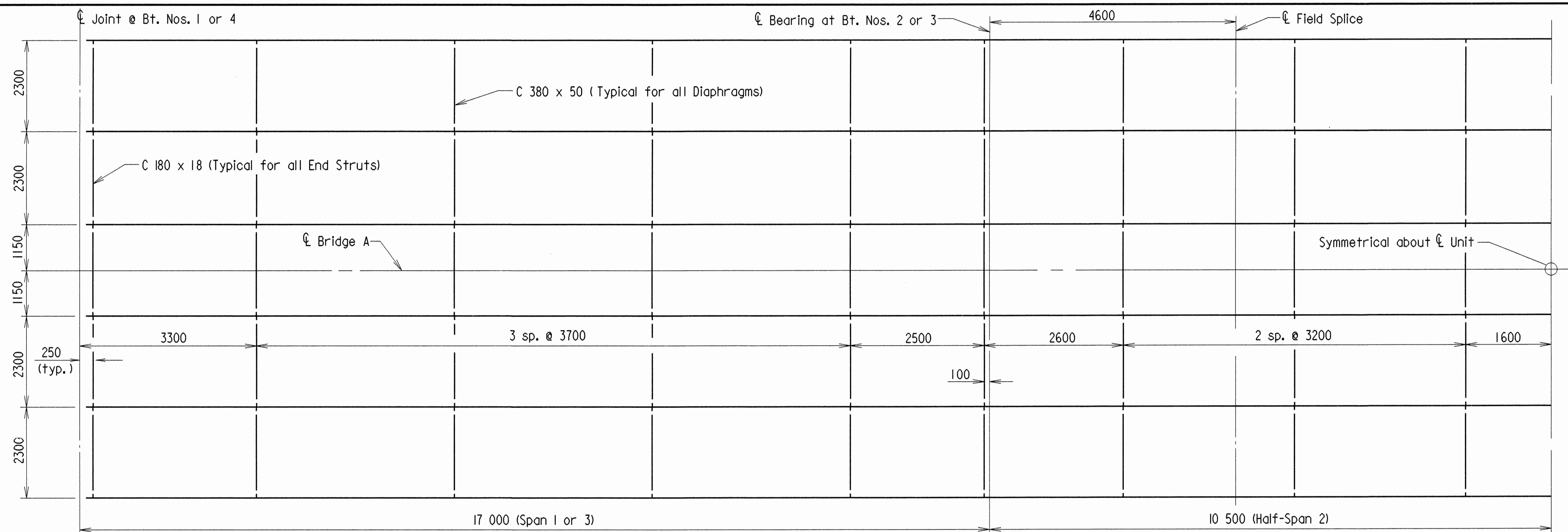
Material Thickness of Thicker Part Joined (Inches)	Minimum Size of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To 20mm Inclusive	6mm	Must Be Used
Over 20mm	8mm	

NOTE: When a fillet weld size, as shown on the plans, is larger than the minimum, the first pass shall be that specified for minimum size of fillet weld.

TABLE OF DEFLECTIONS (mm)

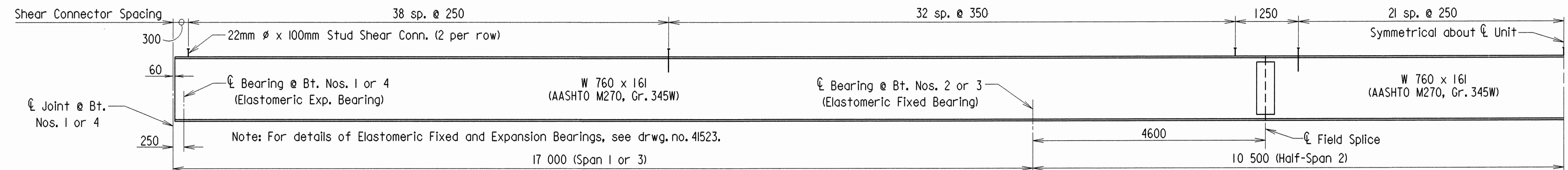
Camber for Dead Load Deflection plus Vertical curve  $\pm 6$ mm tolerance. Negative sign (-) indicates upward deflection. Deflections shown are from a chord from centerline bearing to centerline bearing. Change in deflections due to transition caused by Horizontal Curve not included.

Span	Point of Deflection	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Parapet	
		Ext. Bm.	Int. Bm.	Ext. Bm.	Int. Bm.	Ext. Bm.	Int. Bm.
Span 1	1.0	0	0	0	0	0	0
	1.1	1	1	5	5	5	6
	1.2	1	1	8	10	9	11
	1.3	2	2	11	13	12	14
	1.4	2	2	12	14	13	15
	1.5	2	2	12	14	13	15
	1.6	2	2	10	11	11	12
	1.7	1	1	7	8	7	9
	1.8	1	1	4	1	4	5
	1.9	0	0	1	1	1	1
Half-Span 2	2.0	0	0	0	0	0	0
	2.1	0	0	2	3	2	3
	2.2	1	1	7	8	7	9
	2.3	2	2	11	13	12	14
	2.4	2	3	15	17	16	19
	2.5	3	3	16	19	17	20

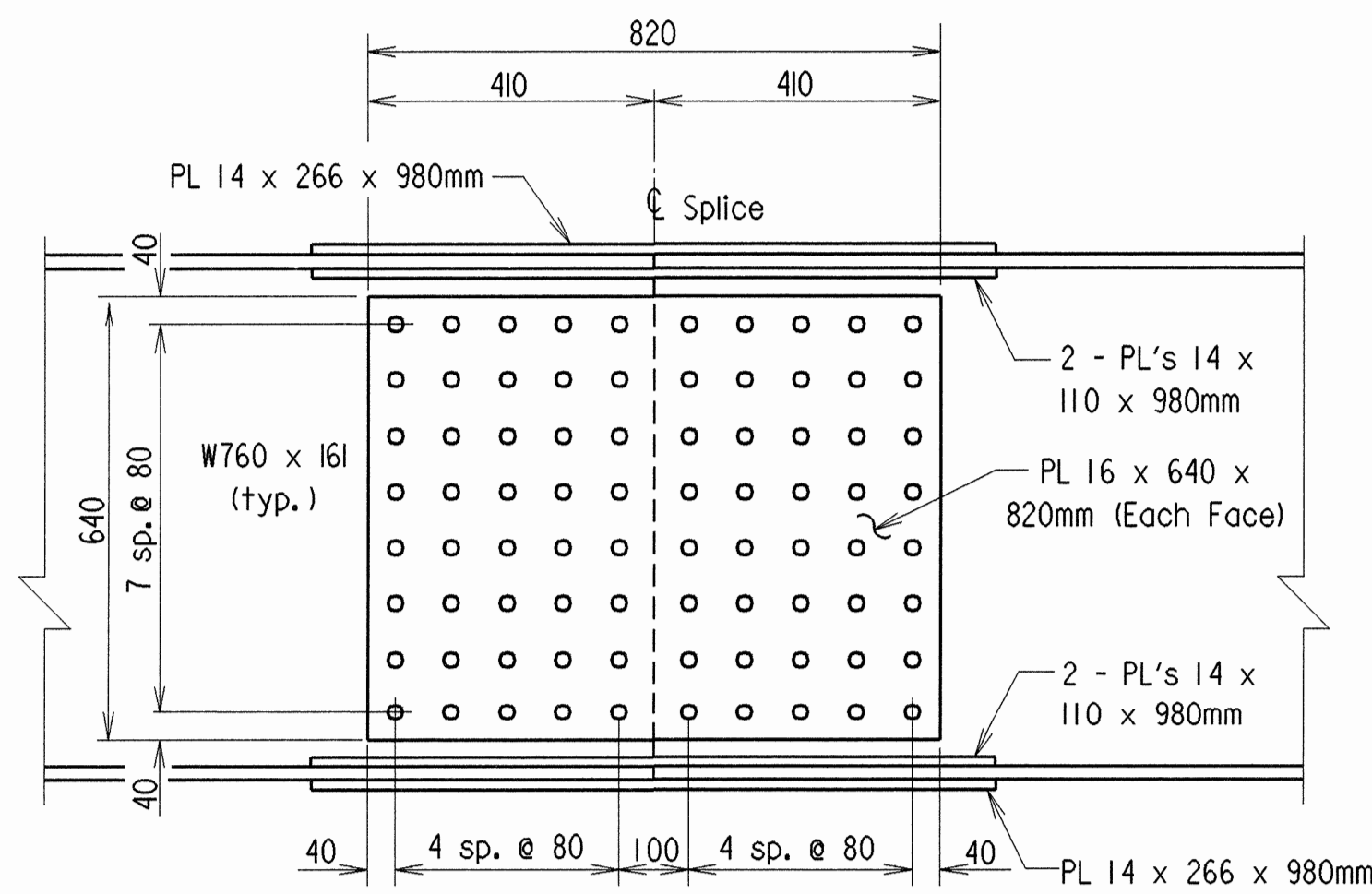


FRAMING PLAN  
N.T.S.

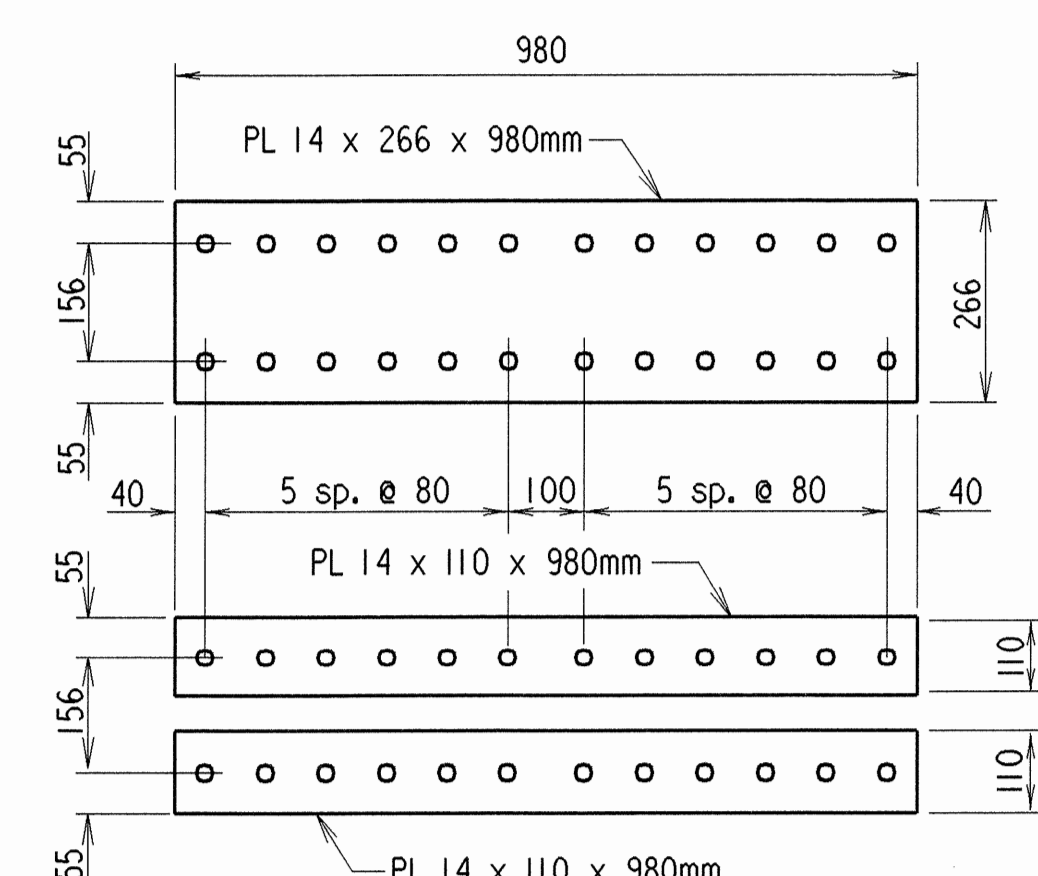
Note:  
Bolted Field Splices may be eliminated and shop welded splices may be substituted with approval of the Bridge Engineer.  
See Shop Drawings for final beam configuration. Payment will be made on the basis of the bolted splices shown.



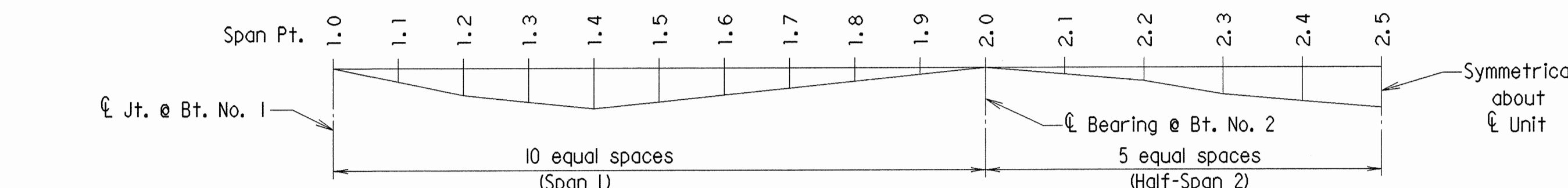
TYPICAL BEAM ELEVATION  
N.T.S.



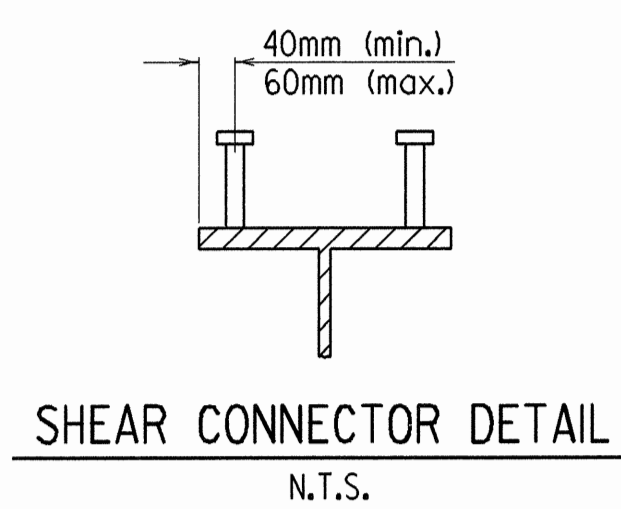
Notes:  
1. All Field Splice Bolts to be M22 Ø H.S. Bolts.  
2. All Field Splice plates to be AASHTO M270, Gr. 345W steel.  
TYPICAL FIELD SPICE DETAILS  
N.T.S.



FLANGE SPICE

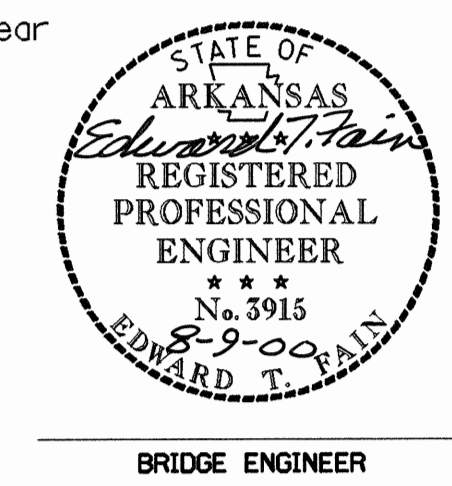


DEAD LOAD DEFLECTION DIAGRAM  
N.T.S.



Stud Shear Connectors shall be 22mm Ø x 100mm long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer. 20mm Ø studs may be used in place of the 22mm Ø studs shown, at the ratio of 1.361 - 20mm Ø studs in place of one 22mm Ø stud. 22mm Ø studs will be used as basis for measurement of structural steel in shear connectors. Maximum stud spacing = 600mm.

All dimensions are in millimeters (mm) unless otherwise noted.



SHEET 3 OF 5  
DETAILS OF 55 m CONTINUOUS  
W-BEAM UNIT - BRIDGE A  
LINE FERRY ROAD  
ROUTE 245 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: TEB DATE: 24 JUL 00 FILENAME: B030035A1.SA  
CHECKED BY: CES DATE: 8/2/00 SCALE: As Shown  
DESIGNED BY: JWB DATE: 6/00  
BRIDGE NO. A6816 DRAWING NO. 41520

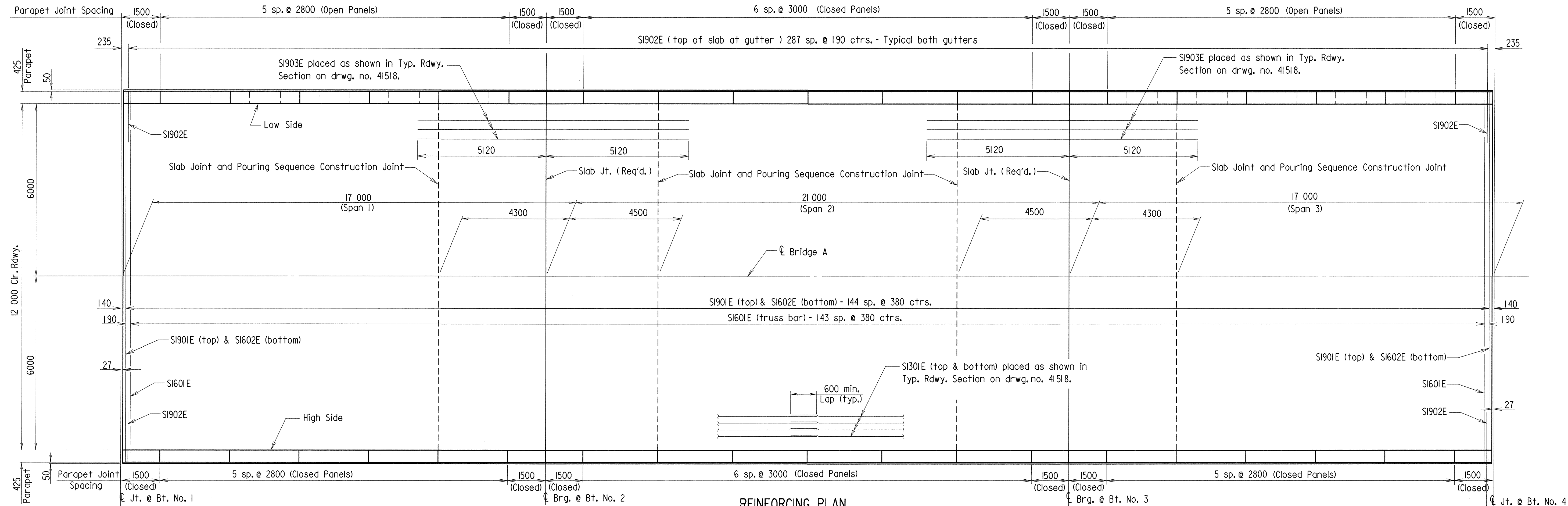
MICROFILMED  
SEP 08 2000



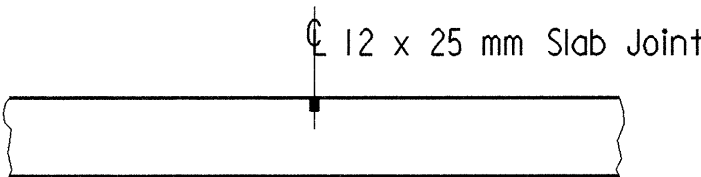
Note: Required slab joints & Pouring Sequence joints shall align with the Parapet Open Joint at the Gutterline.

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.		030035	47	109
						A6816	SPAN DETAILS	41521

①



REINFORCING PLAN  
N.T.S.



SLAB JOINT DETAIL  
N.T.S.

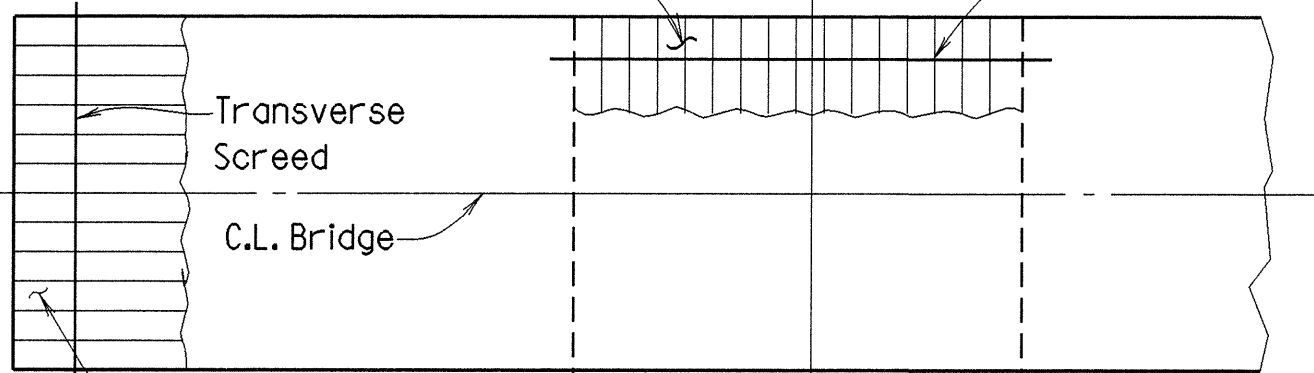
Use Type 6 Joint Sealer. See subsections 501.02(h) and 501.05(j). Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab Joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed before any vehicular traffic is allowed on the unit. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations.

All dimensions are in millimeters (mm) unless otherwise noted.

Note:

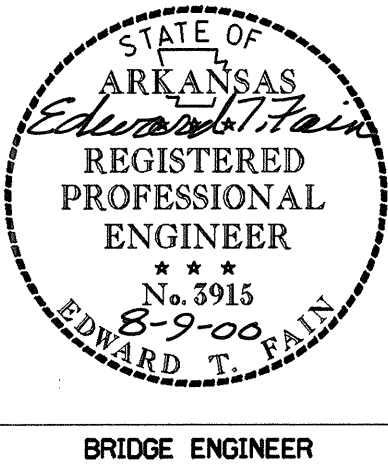
Pours with the same number may be poured simultaneously or separately. All pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse between pours and 72 hours shall elapse between adjacent pours. Any railing pours made before the entire slab unit has been placed must be approved by the Bridge Engineer. Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent. The Contractor must obtain approval from the Bridge Engineer for deviations from the pouring sequence shown.

Place Concrete to Approx. Slab Thickness for Full Length of Pour as shown when using Longitudinal Screed



CONCRETE PLACEMENT PROCEDURE  
N.T.S.

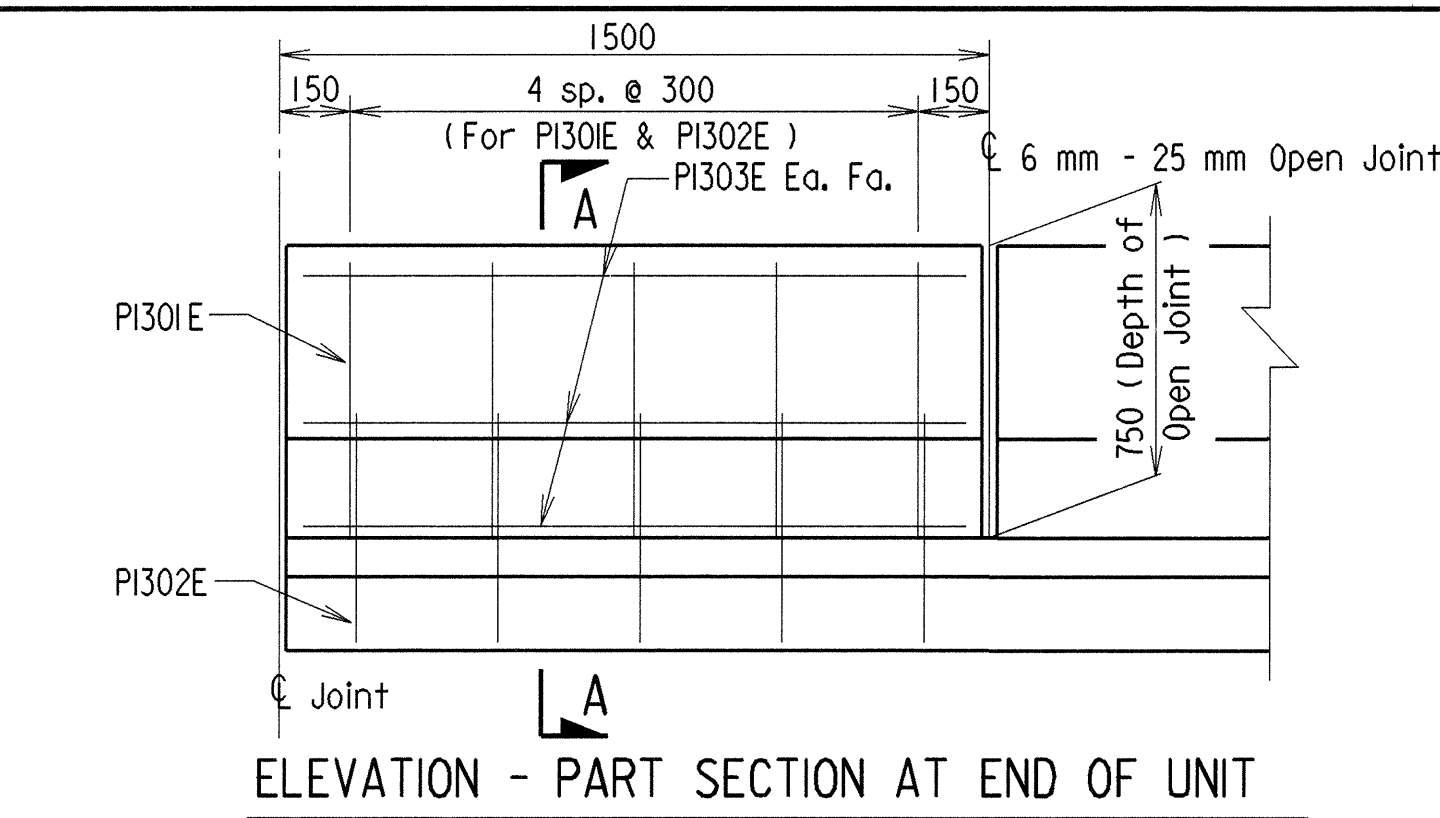
MICROFILMED  
SEP 08 2000



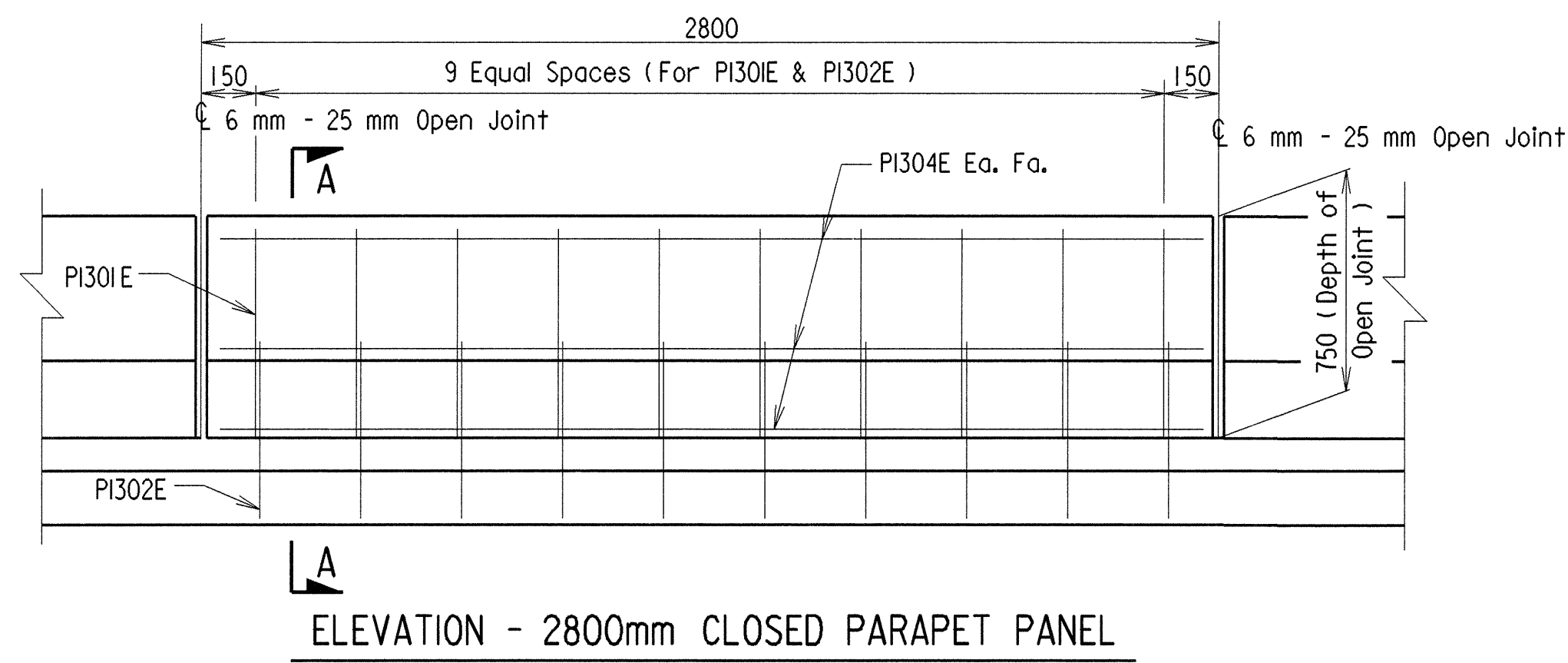
SHEET 4 OF 5  
DETAILS OF 55 m CONTINUOUS  
W-BEAM UNIT - BRIDGE A  
LINE FERRY ROAD  
ROUTE 245 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: TEB DATE: 24 JUL 00 FILENAME: B030035A1.SA  
CHECKED BY: CES DATE: 8/9/00 SCALE: As Shown  
DESIGNED BY: JWB DATE: 9/00  
BRIDGE NO. A6816 DRAWING NO. 41521



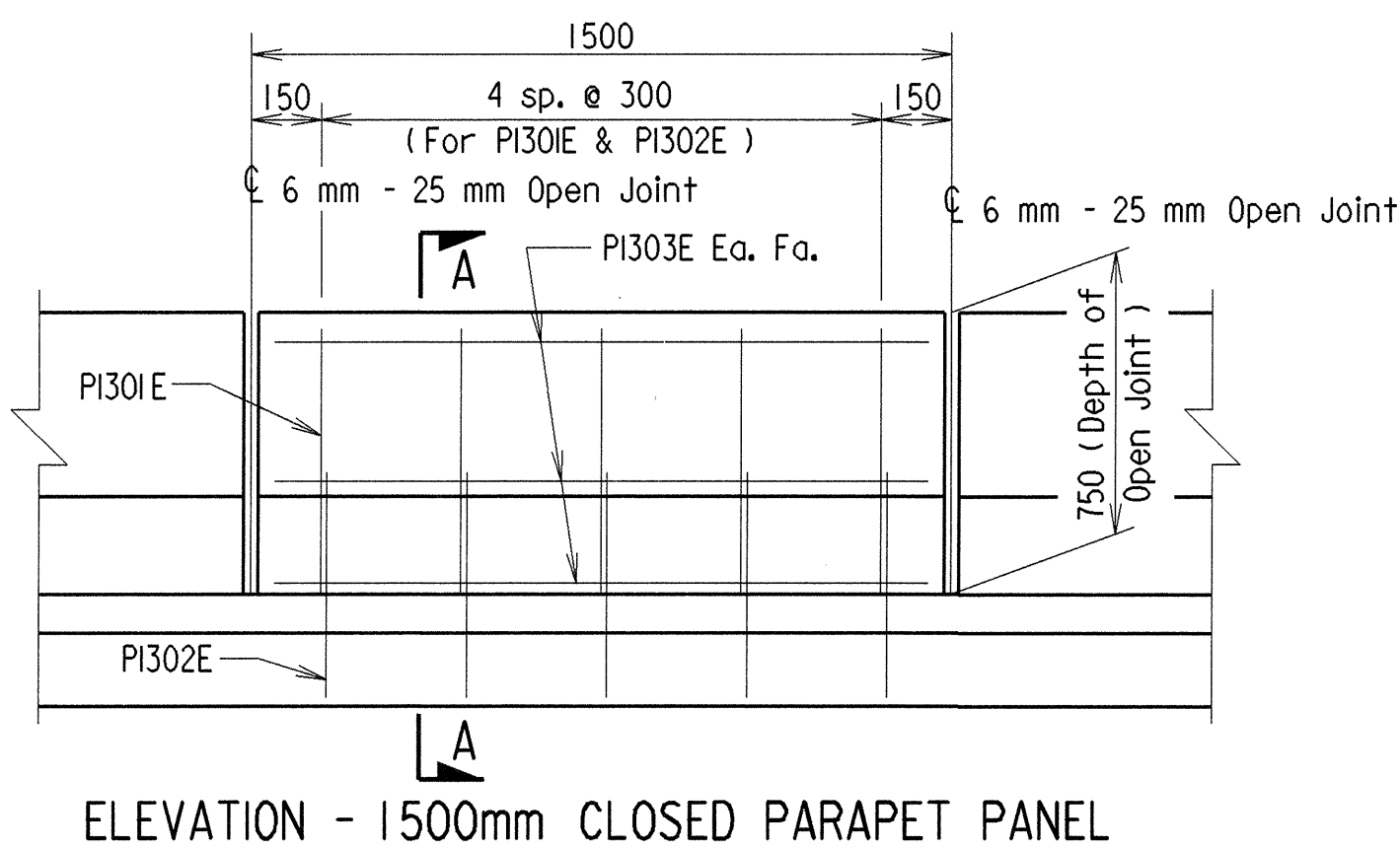
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030035	48	109
				A6816		SPAN DETAILS	41522	



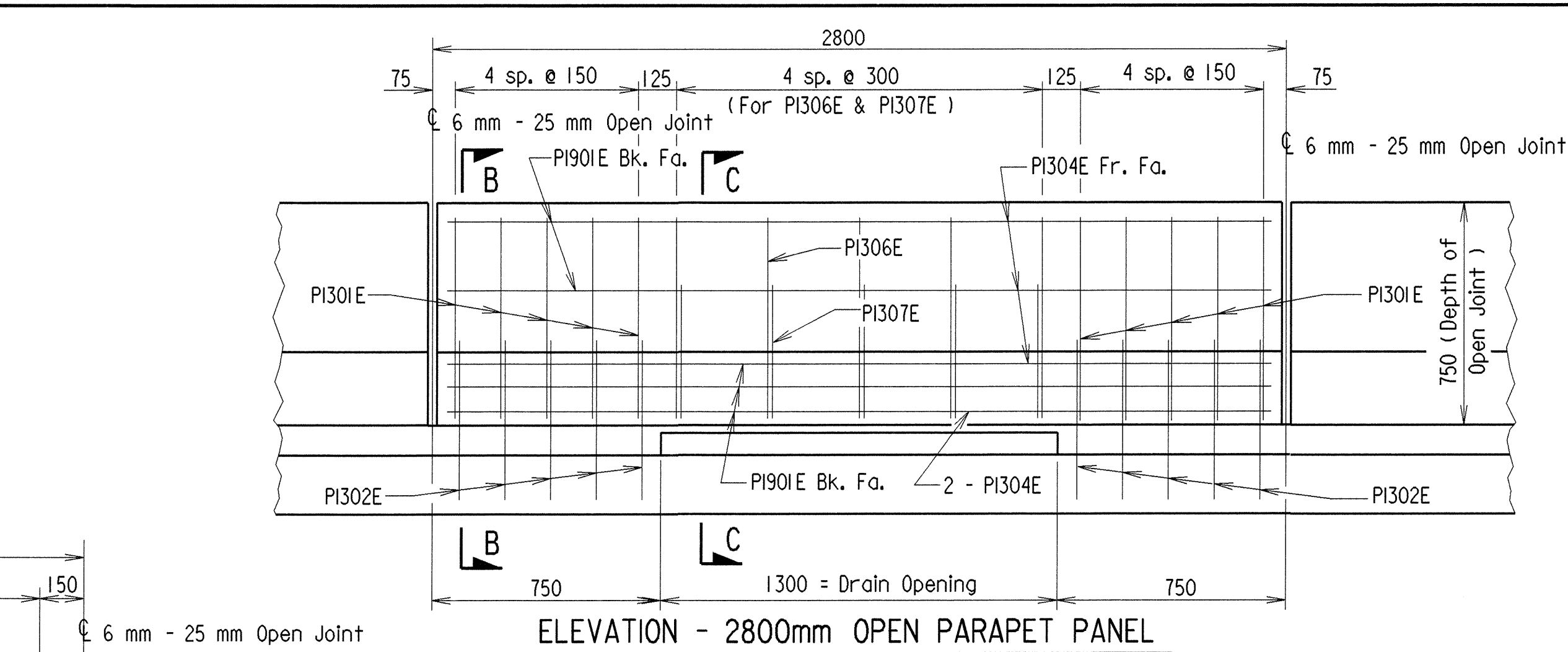
ELEVATION - PART SECTION AT END OF UNIT



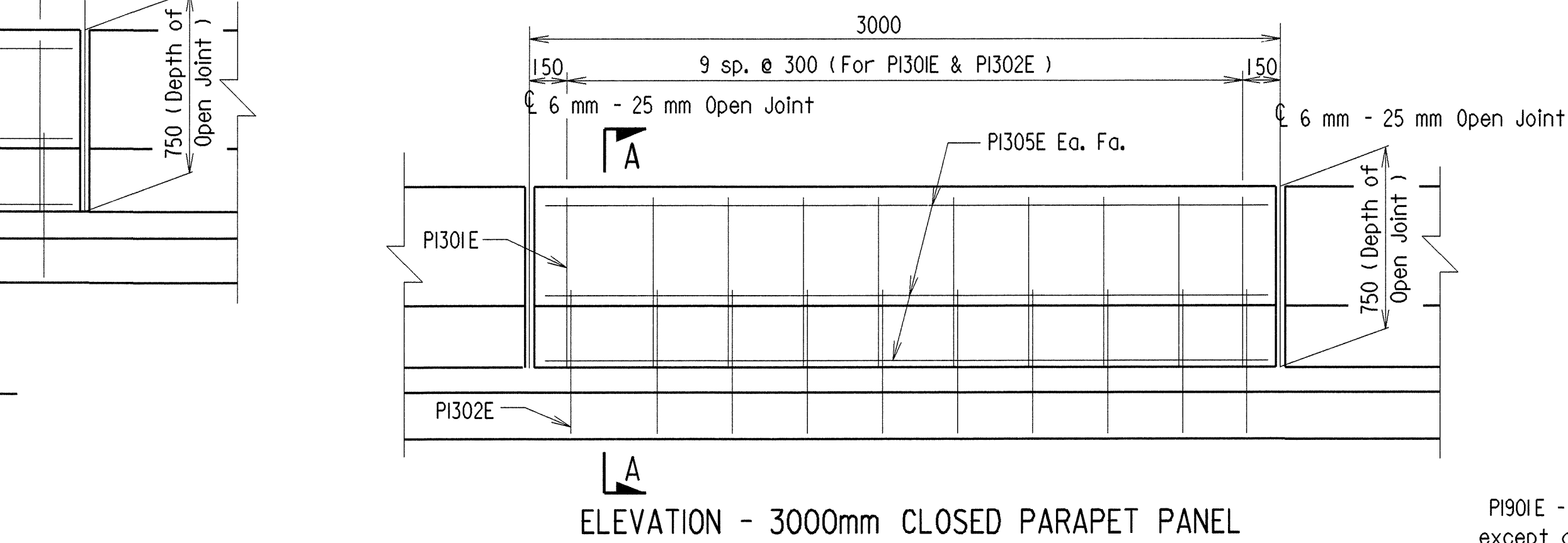
ELEVATION - 2800mm CLOSED PARAPET PANEL



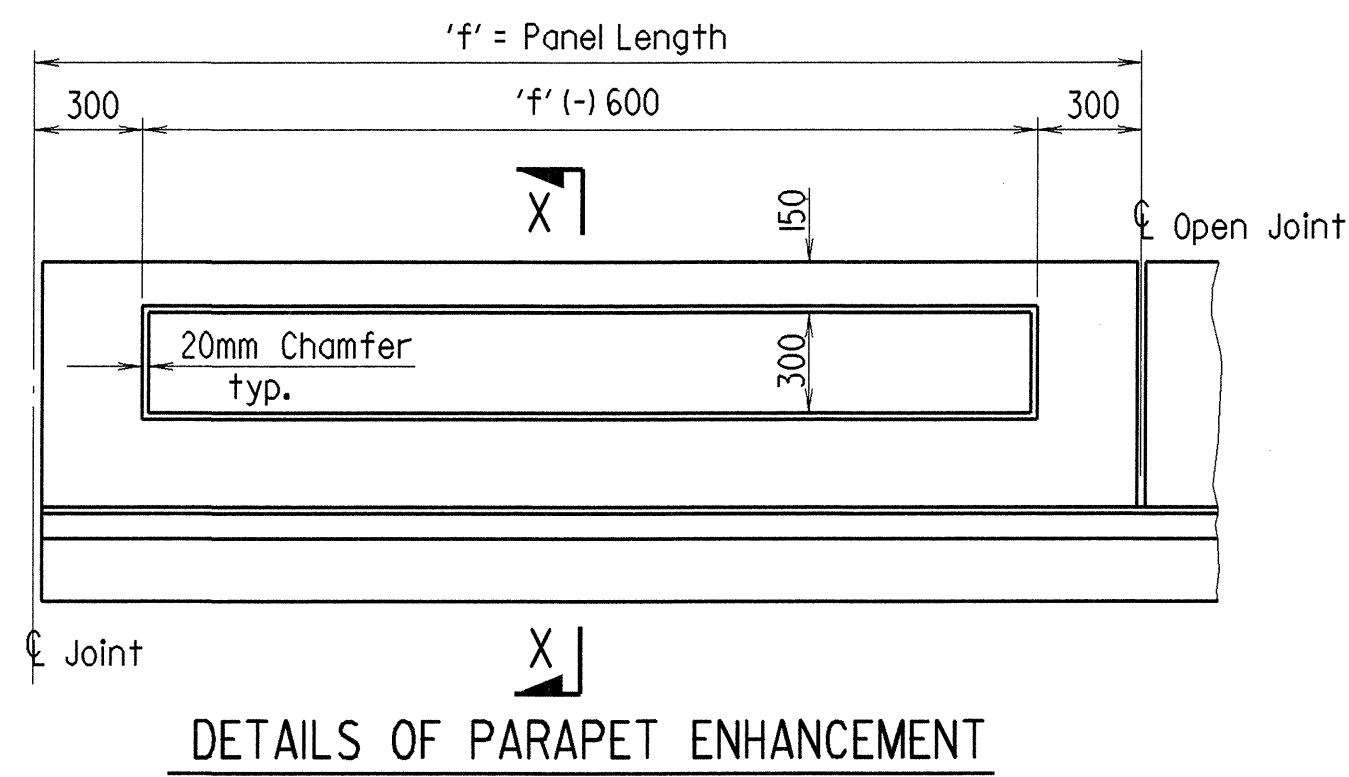
ELEVATION - 1500mm CLOSED PARAPET PANEL



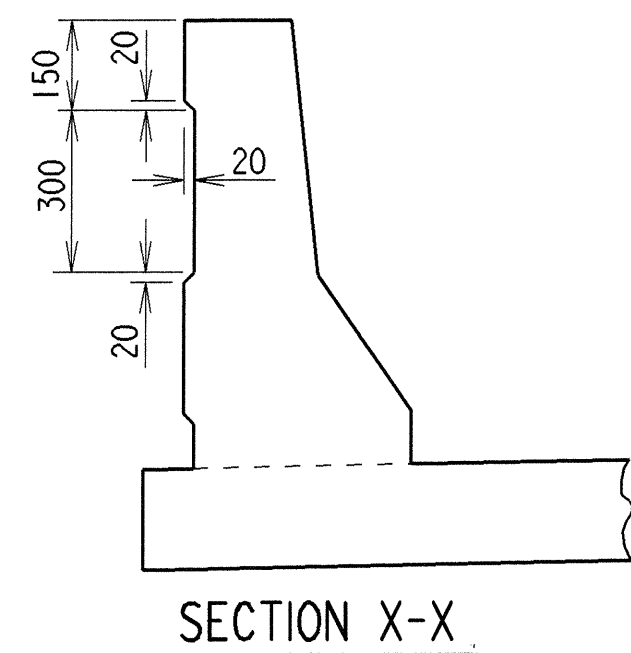
ELEVATION - 2800mm OPEN PARAPET PANEL



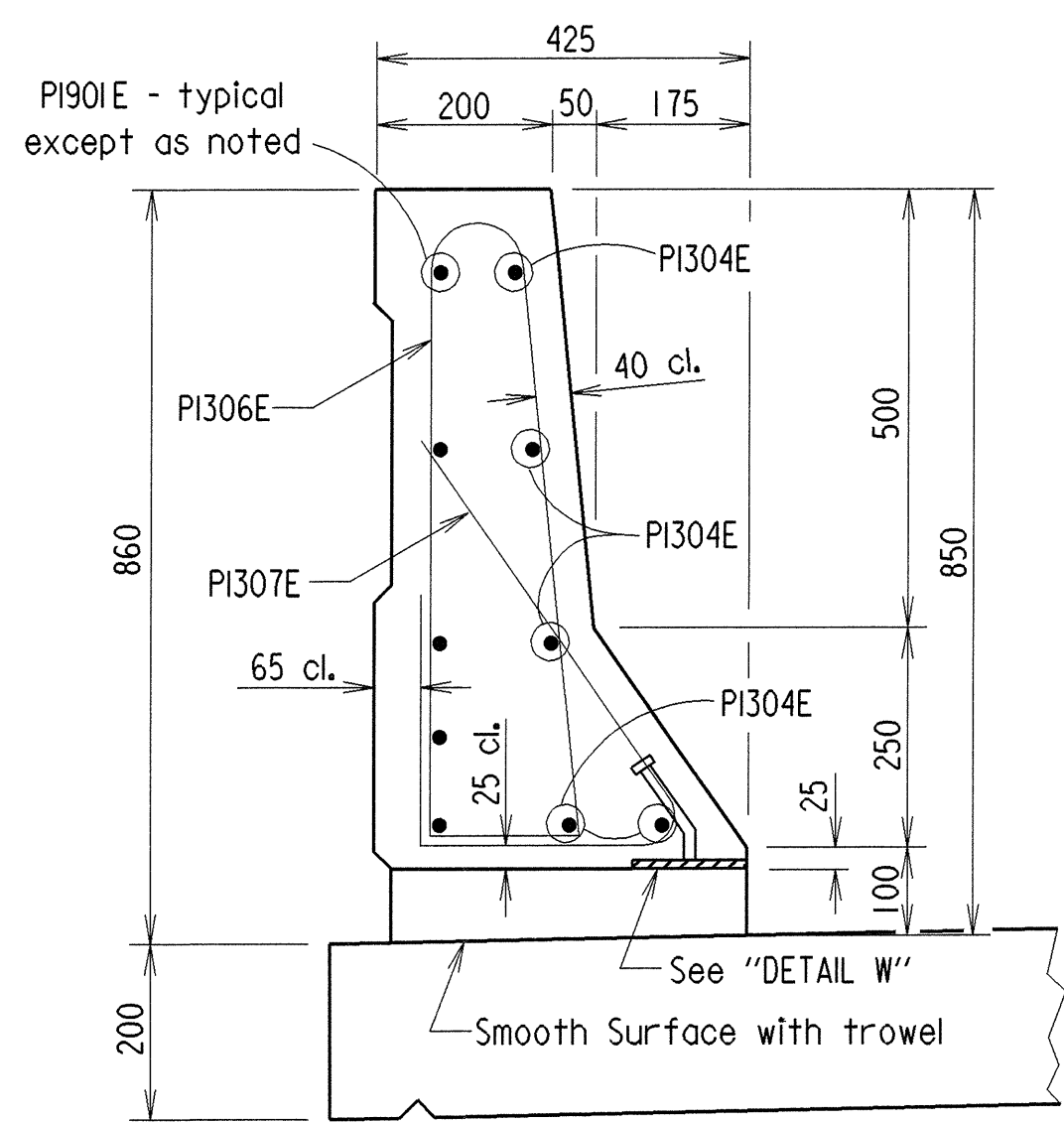
ELEVATION - 3000mm CLOSED PARAPET PANEL



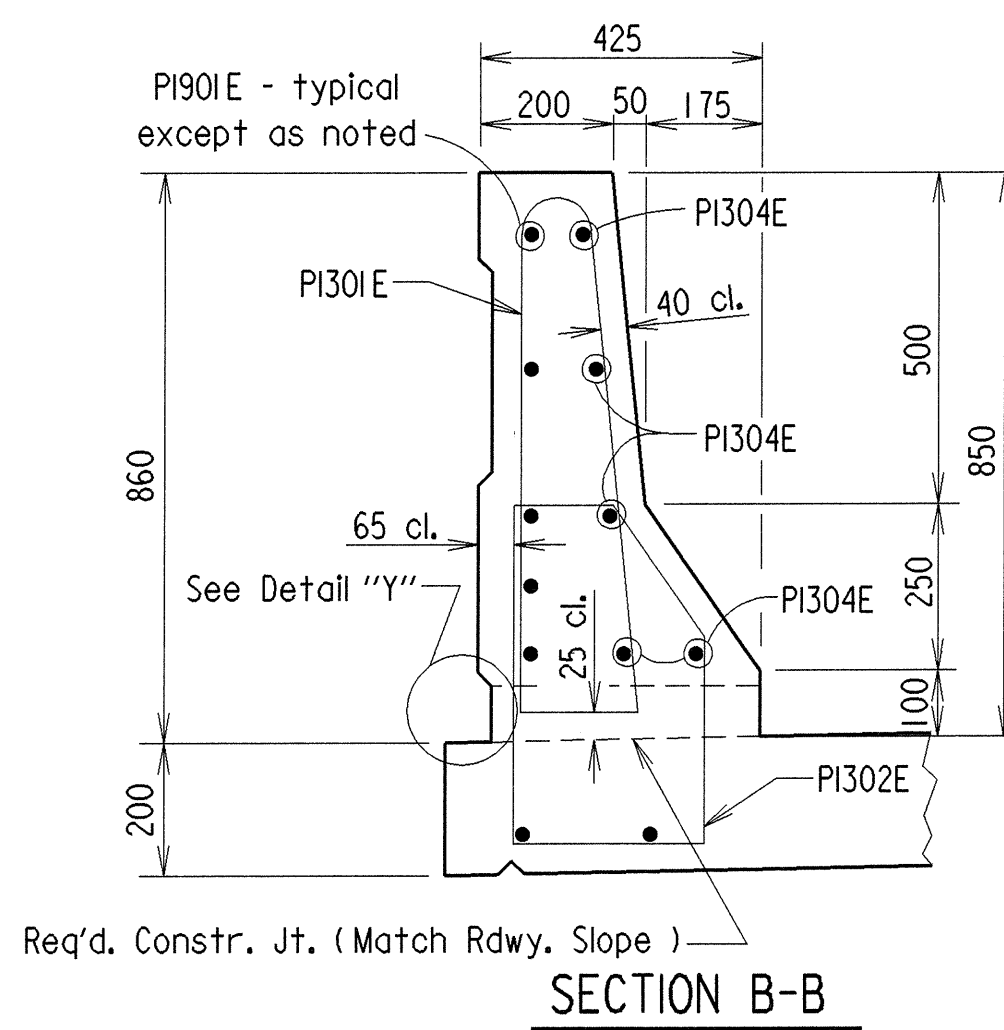
DETAILS OF PARAPET ENHANCEMENT



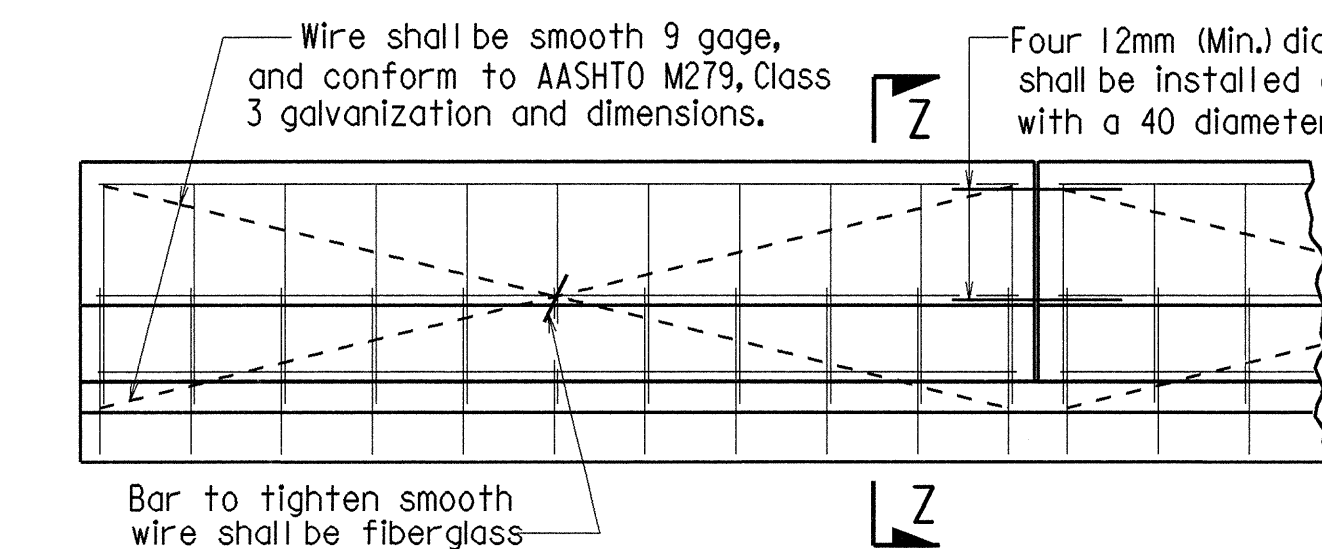
SECTION X-X



SECTION C-C



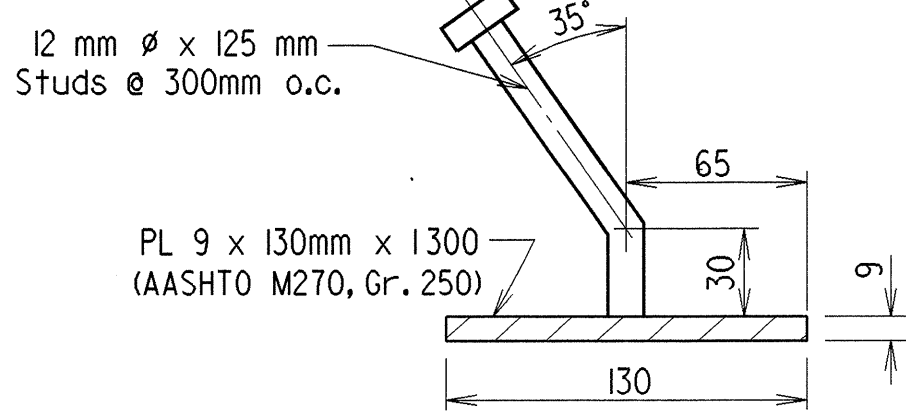
SECTION B-B



DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

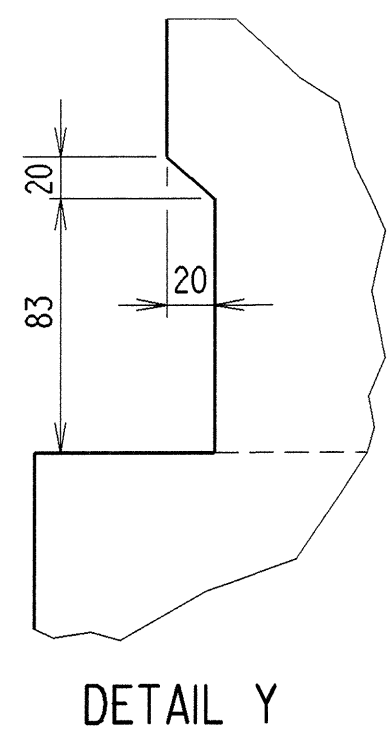
The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Exposed surfaces shall be given a Class 3, Sprayed Finish.

Note: Studs and Plates shall be measured and paid for as "Structural Steel in Beam Spans (M270, Gr. 345W)."



DETAIL W

Note:  
The surfaces of the 9mm Plates which will not be in contact with concrete shall be painted in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Beam Spans (M270, Gr. 345W)."



DETAIL Y

All dimensions are in millimeters (mm) unless otherwise noted.

SHEET 5 OF 5  
DETAILS OF  
55 m CONTINUOUS  
W-BEAM UNIT - BRIDGE A  
LINE FERRY ROAD  
ROUTE 245 SEC. I  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 24 JUL 00 FILENAME: B030035A1.SA  
CHECKED BY: CES DATE: 8/9/00 SCALE: N.T.S.  
DESIGNED BY: JWB DATE: 6/00  
BRIDGE NO. A6816 DRAWING NO. 41522



BRIDGE ENGINEER

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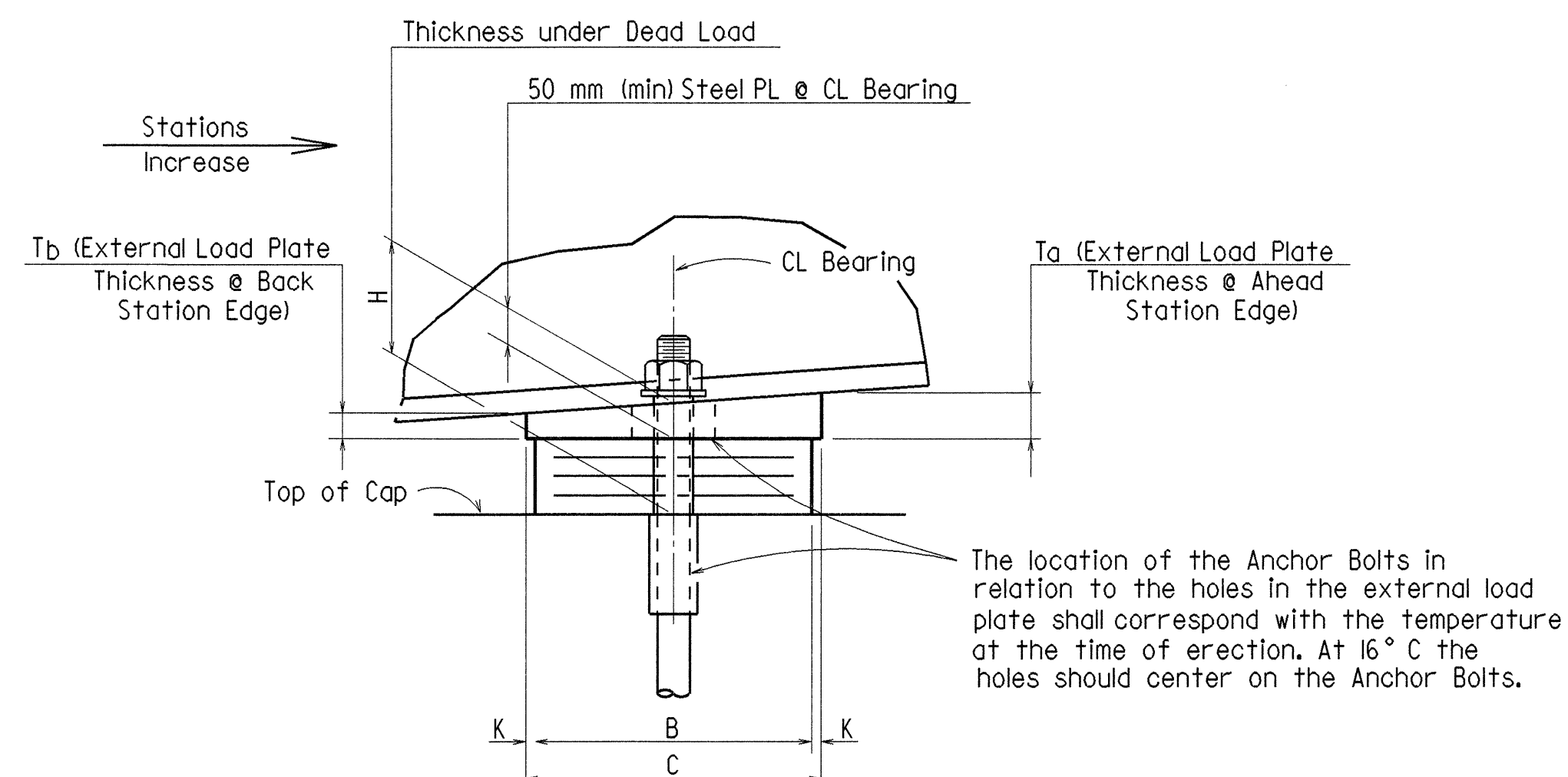


TABLE OF DESIGN VARIABLES (mm)

Technical drawing of a beam-to-column connection. The drawing shows a cross-section of a beam (labeled "Beam or Girder") with a flange resting on an external load plate. The load plate is supported by elastomeric bearings. The connection is secured with heavy hex nuts, steel washers, and pipe sleeves. The drawing includes various dimensions and labels:

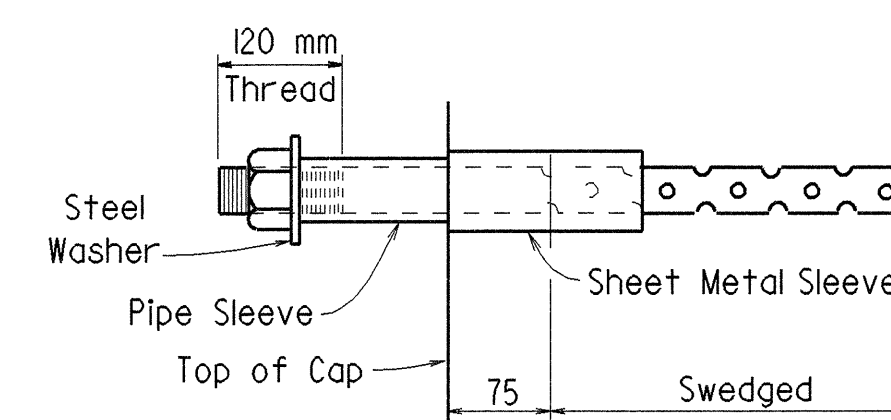
- Dimensions:**
  - $D$ : Total depth of the beam.
  - $M$ : Distance from the centerline of the beam flange to the centerline of the load plate.
  - $A$ : Total width of the load plate.
  - $V$ : Distance from the edge of the beam flange to the centerline of the load plate.
  - $R$ : Distance from the centerline of the beam flange to the centerline of the load plate.
  - $Min.$ : Minimum dimensions for various components.
  - $P$ : Distance from the edge of the load plate to the centerline of the anchor bolt.
  - $W$ : Width of the load plate.
  - $G$ : Thickness of the load plate.
  - $6$ : Thickness of the steel washer.
  - $Min.$ : Minimum dimensions for various components.
  - $P$ : Distance from the edge of the load plate to the centerline of the anchor bolt.
  - $Min.$ : Minimum dimensions for various components.
- Labels:**
  - Beam or Girder
  - Beam Flange
  - Heavy Hex Nut
  - Steel Washer
  - Pipe Sleeve
  - Std. Weight Pipe Sleeve
  - Swedge Anchor Bolt
  - Sheet Metal Sleeve
  - External Load Plate
  - Elastomeric Bearing
  - Top of Cap
- Section Line:** 1-1

① Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.



The diagram illustrates a laminated bearing assembly. It consists of a central stack of horizontal layers. The top and bottom layers are labeled "50 Durometer Elastomer". The layers in between are labeled "Steel Laminae". The total height of the assembly is indicated by a dimension line on the right labeled "T". The thickness of a single elastomeric layer is indicated by a dimension line on the left labeled  $t_e$ . The thickness of a single steel lamina is indicated by a dimension line on the left labeled  $t_s$ . The total number of layers is indicated by a dimension line on the left labeled "Number of layers". The total thickness of the assembly is indicated by a dimension line on the left labeled "thickness =  $t_t$ ".

$t_e$  = thickness of elastomer cover on top and bottom of pad  
 $t_i$  = thickness of elastomer between steel laminae  
 $N$  = number of elastomer layers of thickness  $t_i$



ANCHOR BOLT DETAIL

NOTE: Anchor Bolts may be cast in place or drilled and grouted into place. If Anchor Bolts are to be cast in place, the Galvanized Sheet Metal Sleeves will not be required.

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a OPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Beam Spans, (M 270, Gr. 345W)"

### TABLE OF FABRICATOR VARIABLES

\* Maximum Design Load = Service Load

## GENERAL NOTES

All dimensions are in millimeters (mm) unless otherwise noted.

Elastomeric Bearings shall conform to Special Provision Job No. 030035 "Elastomeric Bearings" and Section 808 of the Standard Specifications. Long-duration testing of random lot samples specified in subsection 808.05 is not required. Bearings shall be paid for at the unit price bid for "Elastomeric Bearings."

External load plates shall conform to AASHTO M 270, Grade 345W. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M 232, Class C or AASHTO M 298, Class 50.

External load plates shall be completely fabricated (including bevel, bolt holes and all shop welding) and shall be blast cleaned to remove rust, loose mill scale, dirt, oil, grease and other foreign substances before vulcanizing to the elastomeric bearing. The surface in contact with the elastomeric bearing shall be blast cleaned to the surface finish specified in subsection 808.04(b). Other surfaces shall be blast cleaned in accordance with subsection 807.84(e) for unpainted Grade 345W steel.

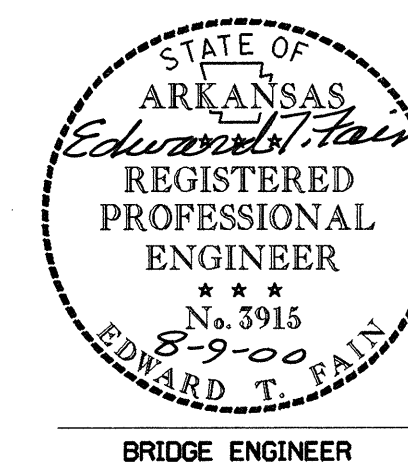
Anchor Bolts, Washers and Nuts shall conform to subsection 807.07 of the Standard Specifications. The anchor bolt grade of steel shall be as specified in the "Table of Fabricator Variables". Indentations shall be circular with rounded bottoms and staggered as shown in the details.

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Beam Spans (M270, Gr. 345W)".

Tabular Data by : A.M.S. Date: 7-26-00

Checked by : CES Date: 8/9/00

Designed by : JWB Date: 6/00



DRAWN BY: CPB DATE: Apr. 30, 97 FILENAME: B030035X1.BRG  
CHECKED BY: AMS DATE: Apr. 30, 97 SCALE: NONE

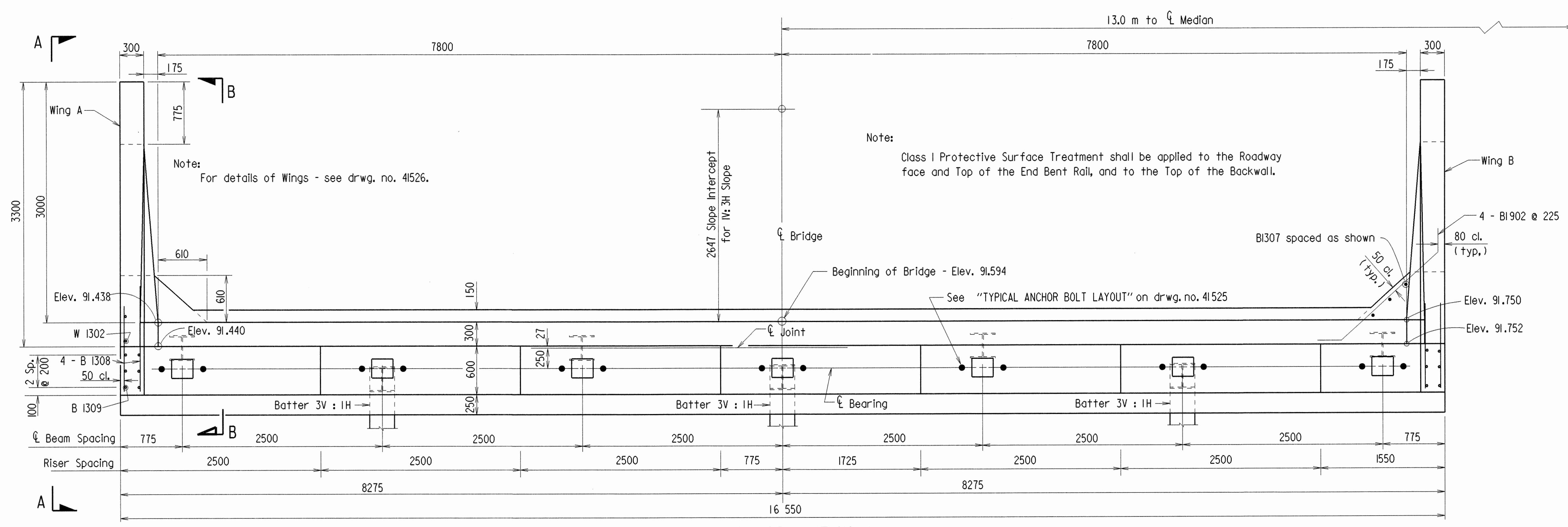
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DESIGNED BY: Std. DATE:             
BRIDGE NO. **A&B6816** DRAWING NO. **41523**

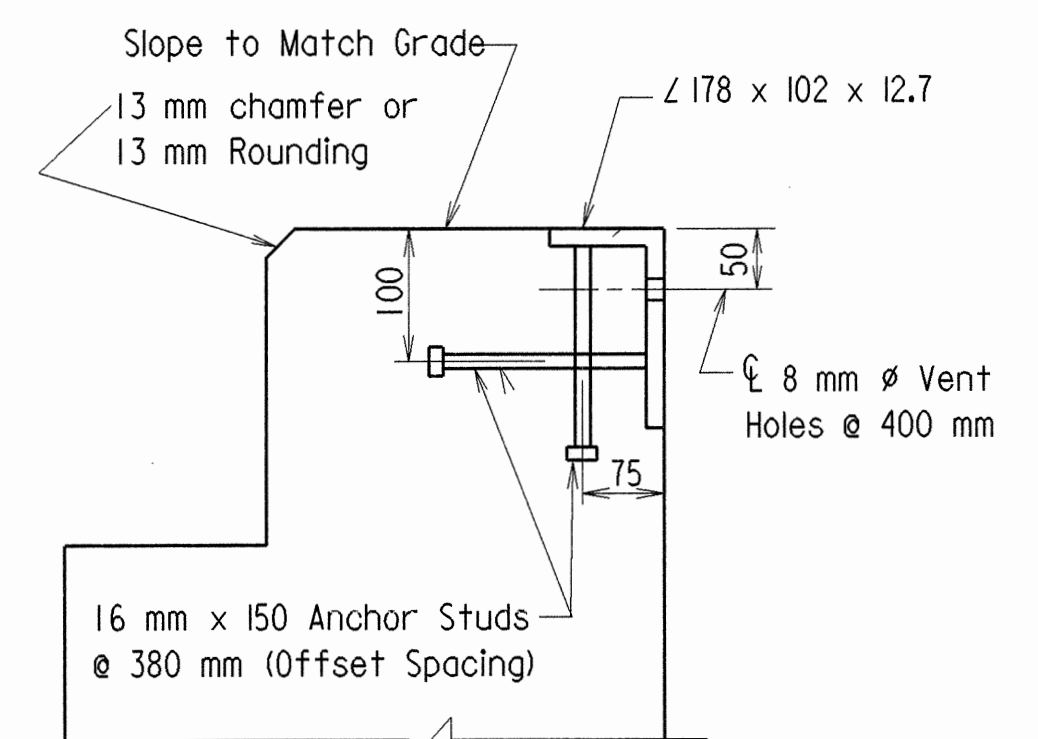
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030035	50	109
				① B6816	BENT DETAILS		41524	

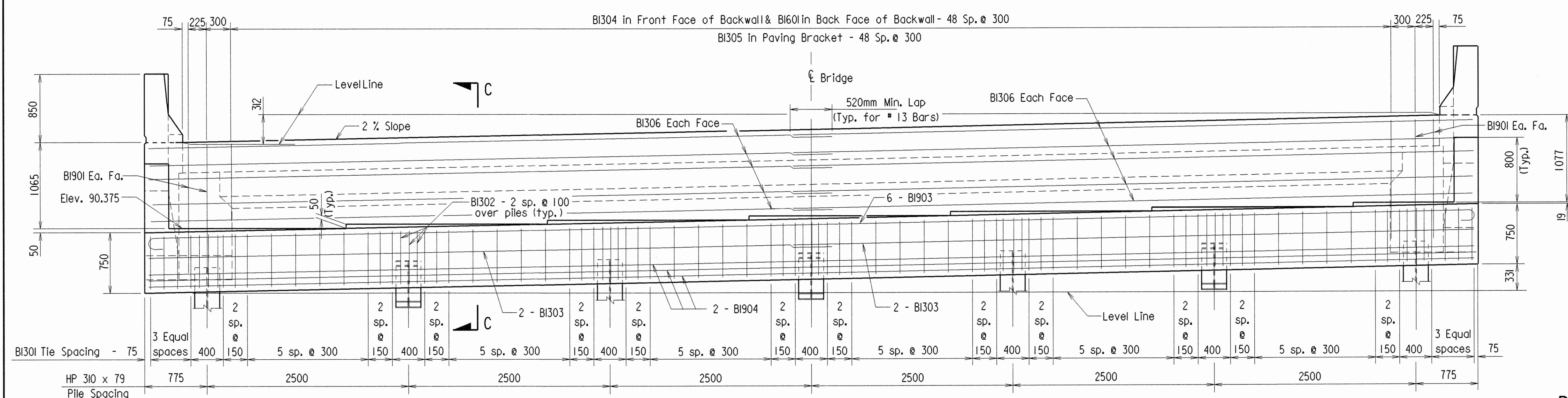


PLAN OF END BENT NO. 1

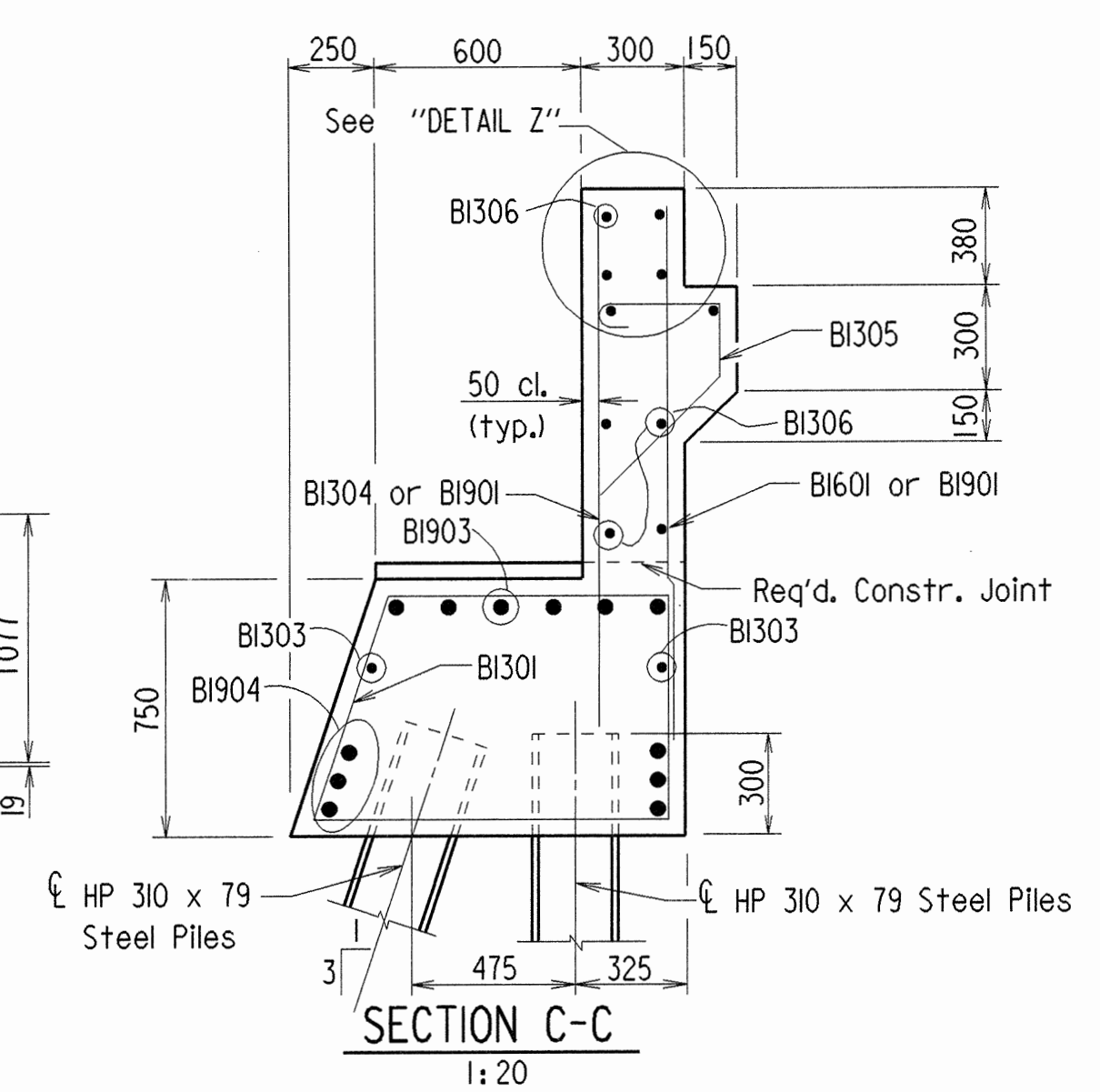


Note: For Joint Details, See drwg. no. 41529.

DETAIL Z  
N.T.S.



ELEVATION OF END BENT NO. 1 (LOOKING BACK)



SHEET 1 OF 3  
DETAILS OF END BENTS - BRIDGE B  
LINE FERRY ROAD

ROUTE 245 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: TEB & CES DATE: 08/01/00 FILENAME: B030035BI.BI  
CHECKED BY: CES DATE: 8/19/00 SCALE: 1:30 or  
DESIGNED BY: JWB DATE: 6/00 As Noted  
BRIDGE NO. B6816 DRAWING NO. 41524

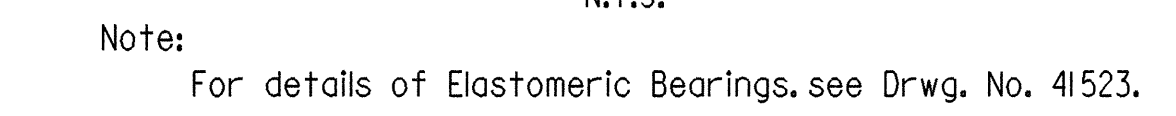


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SEP 08 2000



Diagram illustrating the dimensions and components of a beam support system:

- Front Face of Backwall:** The top horizontal line.
- Joint:** Indicated by a dashed line and an arrow pointing to the right.
- Dimensions:**
  - Vertical distance from the front face of the backwall to the center of the beam: 27.
  - Vertical distance from the front face of the backwall to the center of the beam: 250.
  - Horizontal distance from the front face of the backwall to the center of the beam: 200.
  - Horizontal distance from the center of the beam to the joint: 200.
- Components:**
  - Beam:** The central horizontal line.
  - Elastomeric Bearing:** Two circular supports at the ends of the beam.



Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.

All concrete shall be Class "S" with a minimum 28 day compressive strength  $f'_c = 24.0$  MPa, and shall be poured in the dry. All exposed corners to be chamfered 20 mm unless otherwise noted.

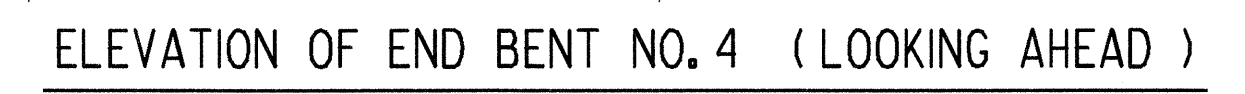
All reinforcing steel shall conform to ASTM A 615/A 615M-96a, Grade 420 (yield strength = 420 MPa.)

Backwall shall not be poured before beams are in place, and concrete deck is poured.

Structural steel in end bents shall be AASHTO M270, Gr. 345W shall be paid for as "STRUCTURAL STEEL IN BEAM SPANS, (M270, Gr. 345W)".

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage. For "Anchor Bolt Detail," see Drwg. No. 40481.

For additional information, see layout.



STATE OF  
ARKANSAS  
*Edward T. Train*  
REGISTERED  
PROFESSIONAL  
ENGINEER  
No. 3915  
8-9-00  
EDWARD T. TRAIN  
BRIDGE ENGINEER

ROUTE 245 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

LITTLE ROCK, ARK.

DRAWN BY: <u>TEB &amp; CES</u>	DATE: <u>08/01/00</u>	FILENAME: <u>B030035BI.BI</u>
CHECKED BY: <u>CES</u>	DATE: <u>8/9/00</u>	SCALE: <u>1:30 or</u>
DESIGNED BY: <u>JWB</u>	DATE: <u>9/00</u>	As Noted
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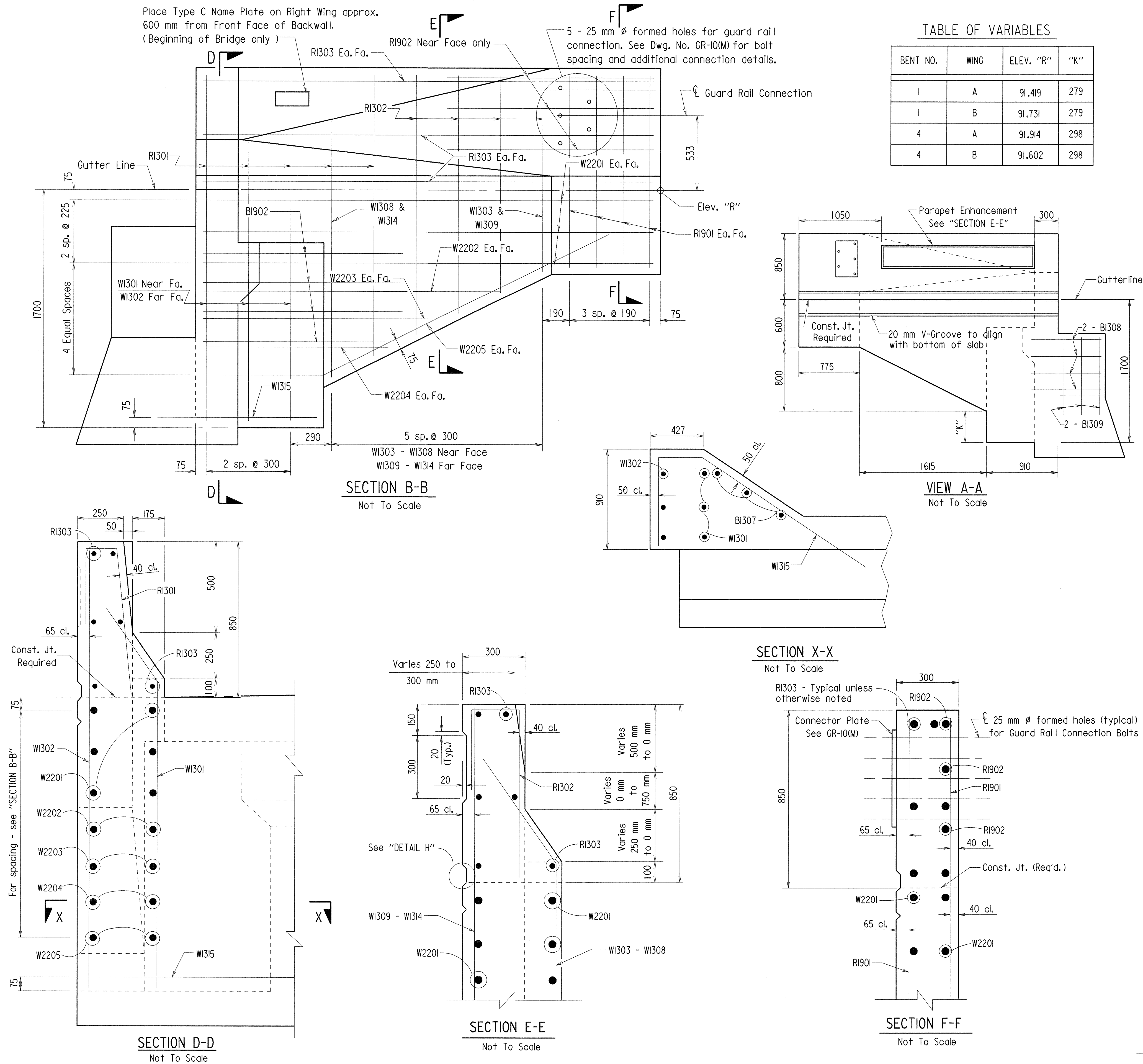
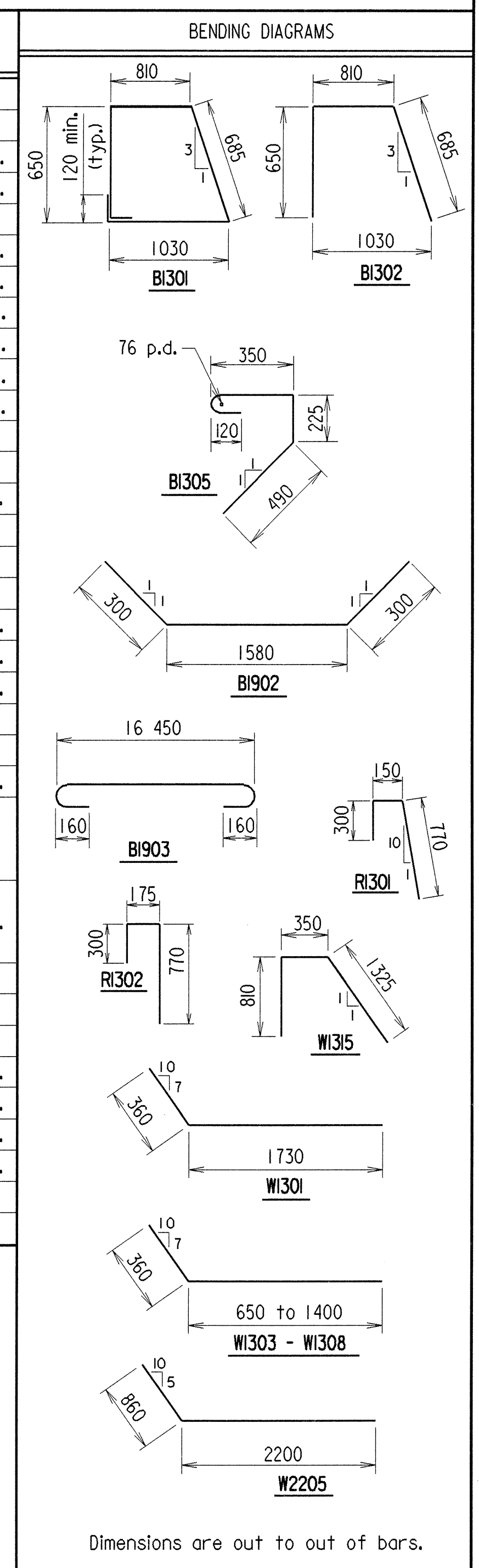


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030035	52	109
			①	B6816	BENT DETAILS			41526

BENT NO.	WING	ELEV. "R"	"K"
I	A	91.419	279
I	B	91.731	279
4	A	91.914	298
4	B	91.602	298

BAR LIST - PER BENT

MARK	NUMBER REQUIRED		LENGTH	PIN. DIA.
	Bt. 1	Bt. 4		
BI301	68	68	3290	50
BI302	21	21	2100	50
BI303	4	4	8490	Str
BI304	49	49	1450	Str
BI305	49	49	1200	50
BI306	20	20	8490	Str
BI307	6	6	1210	Str
BI308	16	16	900	Str
BI309	12	12	1100	Str
BI601	49	49	1520	Str
BI901	8	8	1550	Str
BI902	8	8	2180	114
BI903	6	6	16 890	114
BI904	6	6	16 450	Str
RI301	10	10	1170	50
RI302	8	8	1190	50
RI303	12	12	3200	Str
RI901	16	16	1350	Str
RI902	6	6	1410	Str
WI301	6	6	2090	76
WI302	6	6	2440	Str
WI303 TO WI308	2 EACH	2 EACH	1010 TO 1760	76
WI309 TO WI314	2 EACH	2 EACH	1370 TO 2110	Str
WI315	2	2	2460	50
W2201	12	12	3200	Str
W2202	4	4	2100	Str
W2203	4	4	1710	Str
W2204	4	4	1300	Str
W2205	4	4	3060	133



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SEP 08 2000

STATE OF  
ARKANSAS  
*Edward T. Fain*  
REGISTERED  
PROFESSIONAL  
ENGINEER  
\*\*\*  
No. 3915  
8-9-00  
EDWARD T. FAIN

**BRIDGE ENGINEER**

SHEET 3 OF 3  
DETAILS OF END BENTS - BRIDGE B  
LINE FERRY ROAD  
ROUTE 245 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

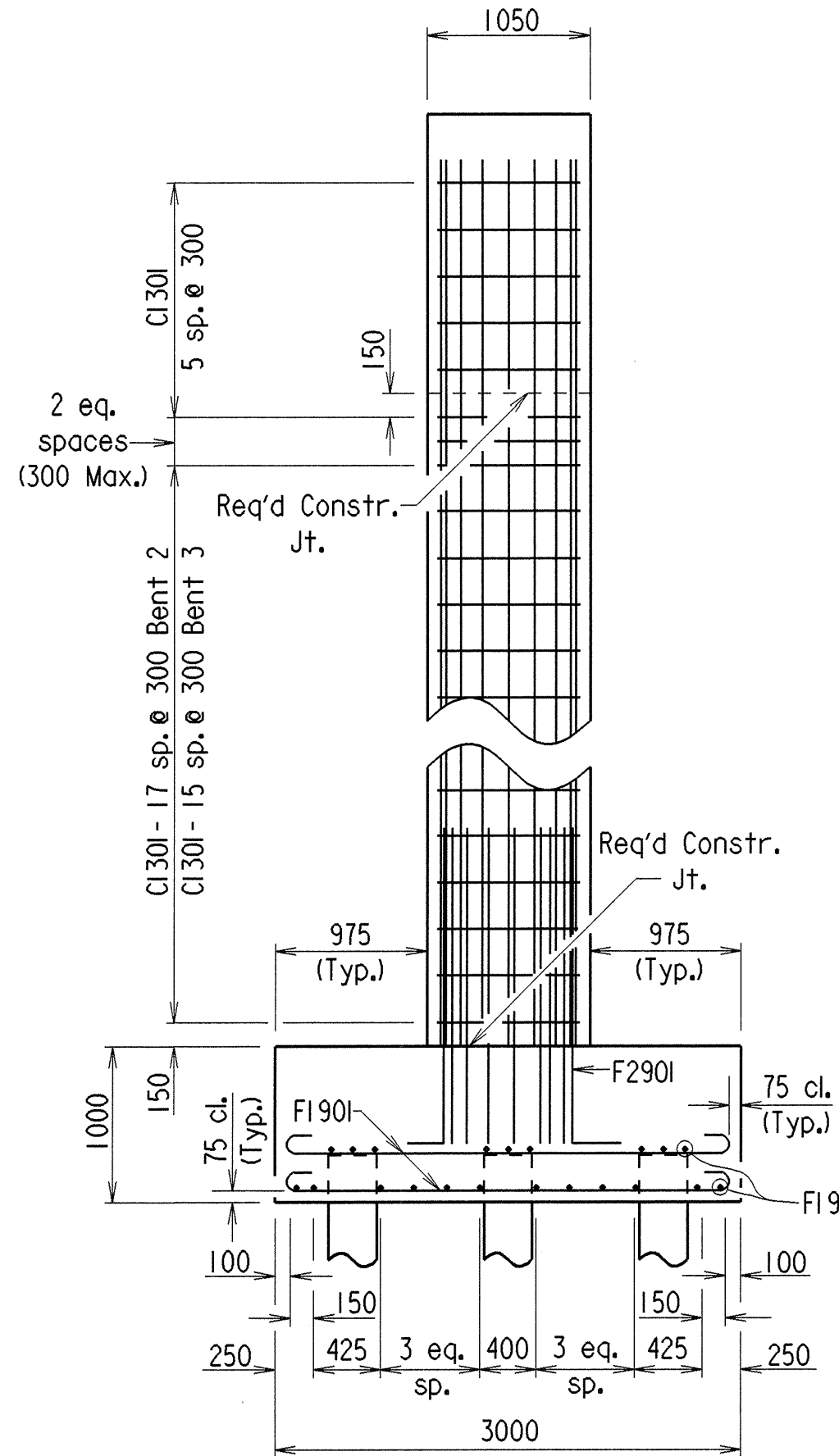
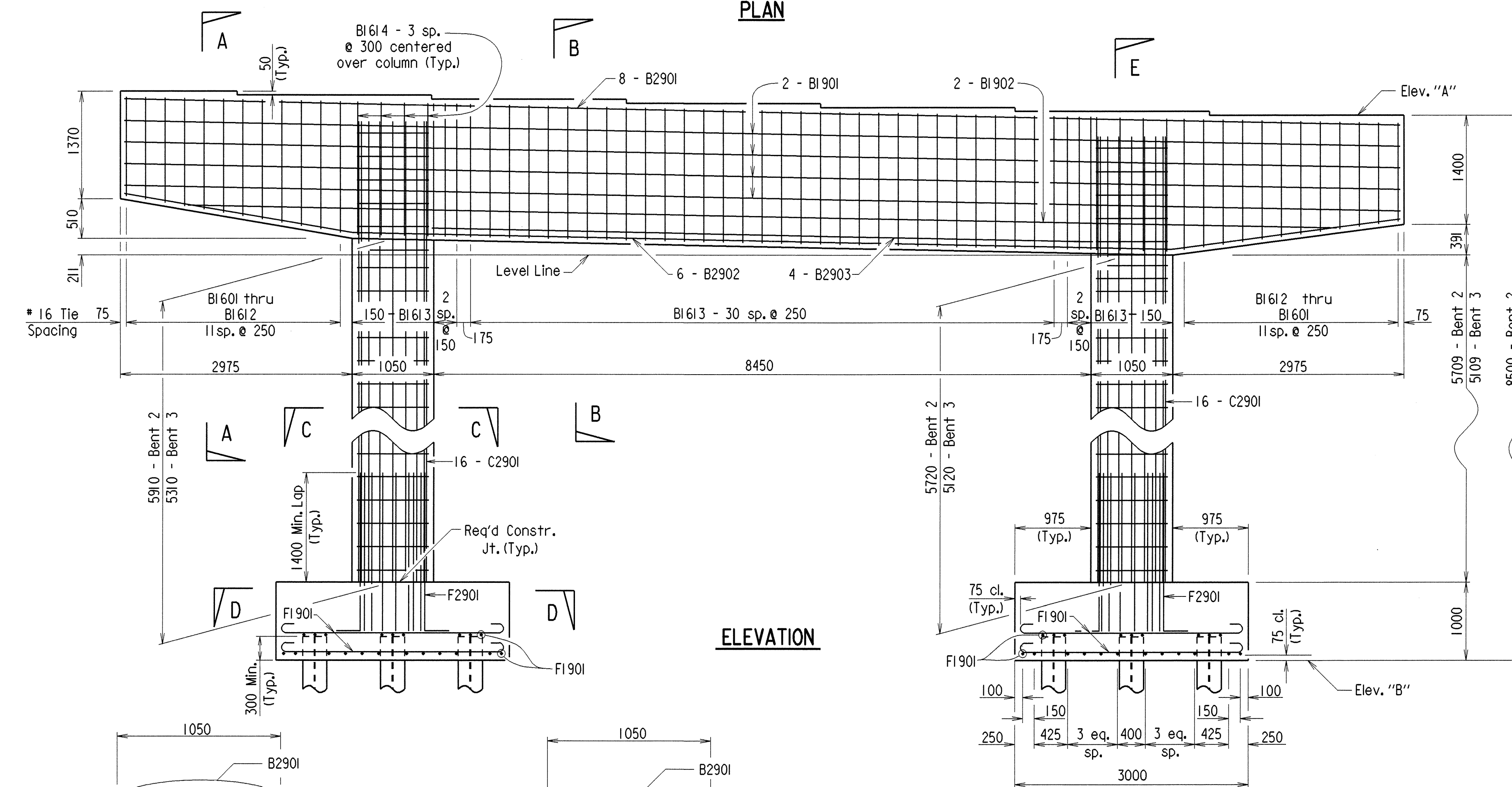
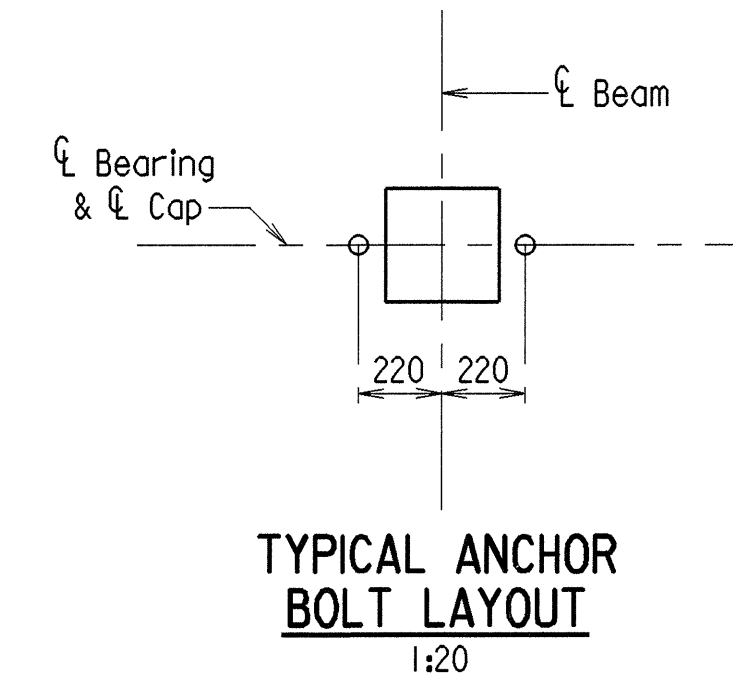
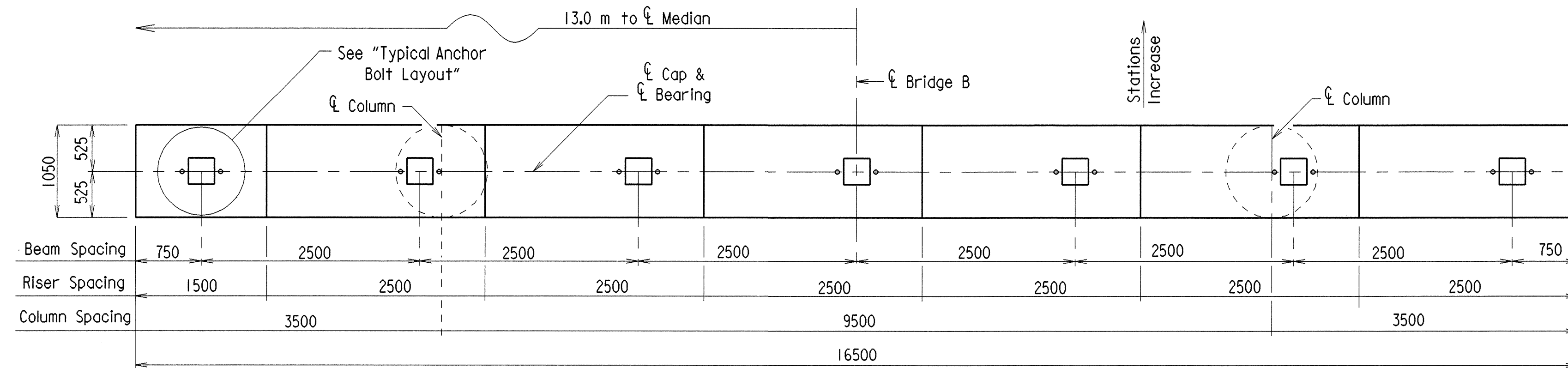
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 BRIDGE NO. A6816 DRAWING NO. 41526

**A  
H  
ETRIC  
D**



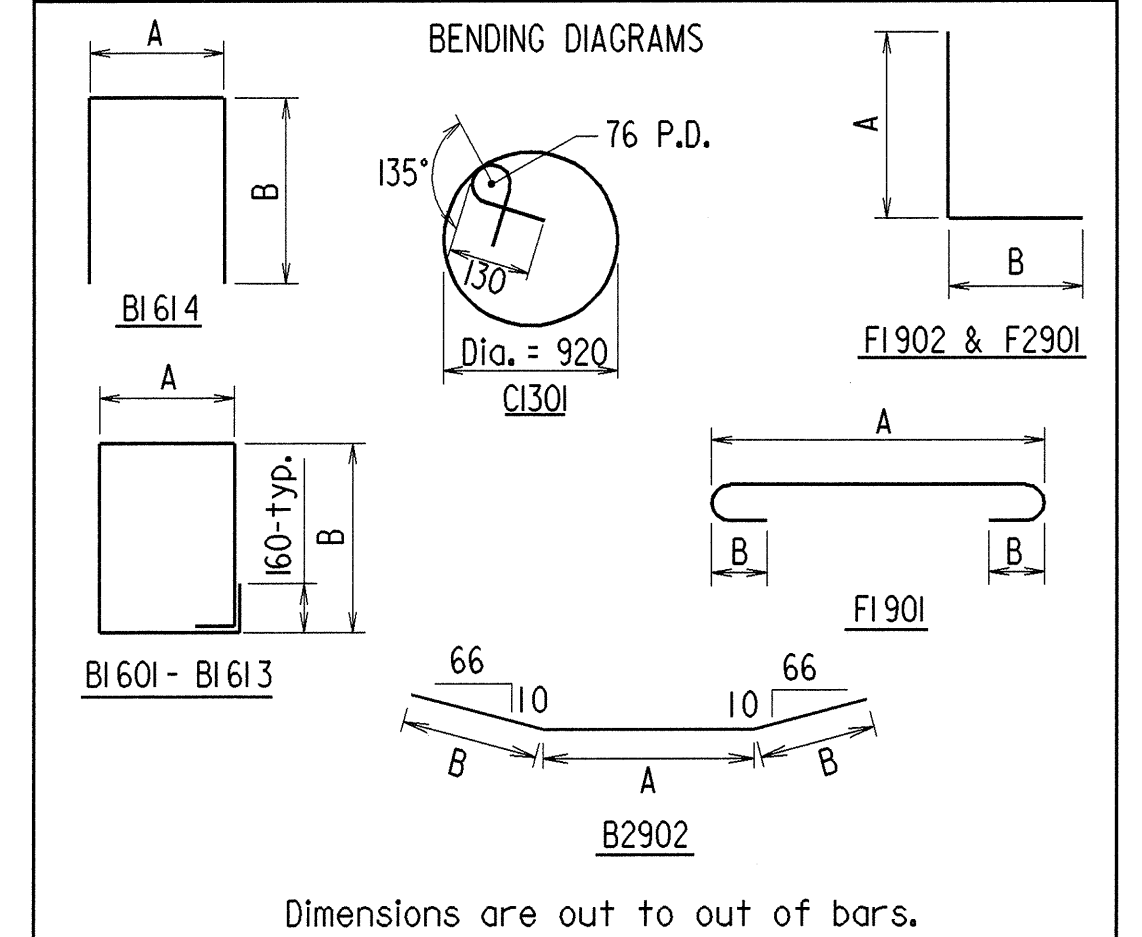
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11-28-2000	1-24-01			6	ARK.		53	109
				JOB NO.		030035		
				B6816		Int. Bent		41527

Note: For Details of Elastomeric Bearings, see Drwg. No. 41523



BAR LIST-PER BENT

MARK	NO. REQ'D.	LENGTH	'A'	'B'	P.D.
BI 601 thru BI 612	2 Ea.	4560 to 5460	950	1250 to 1700	63
BI 613	37	5460	950	1700	63
BI 614	8	4280	950	1700	63
BI 901	8	16400	-	-	Str.
BI 902	2	14770	-	-	Str.
B2901	8	16400	-	-	Str.
B2902	6	16400	10550	2925	228
B2903	4	8450	-	-	Str.
CI 301	"C"	3220	-	-	76
C2901	32	"D"	-	-	Str.
FI 901	84	3330	2900	160	114
FI 902	8	1450	750	750	114
F2901	32	2800	2400	490	228



#### GENERAL NOTES

Stations and elevations are in meters. All other dimensions are in millimeters unless otherwise noted.

All Concrete shall be Class "S" and shall be poured in the dry. All exposed corners to be chamfered 20 mm unless otherwise noted.

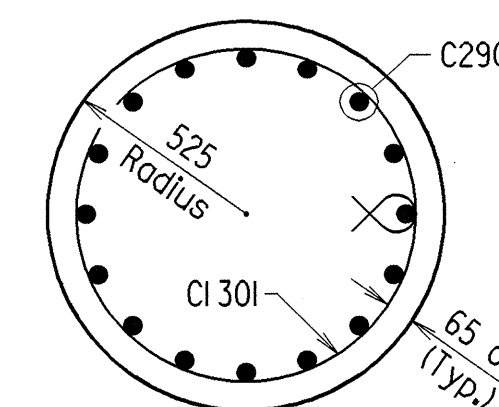
All Reinforcing Steel shall conform to ASTM A615/A615M-96a, Grade 420 (fy=420 MPa).

If Anchor Bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information, see Layout.

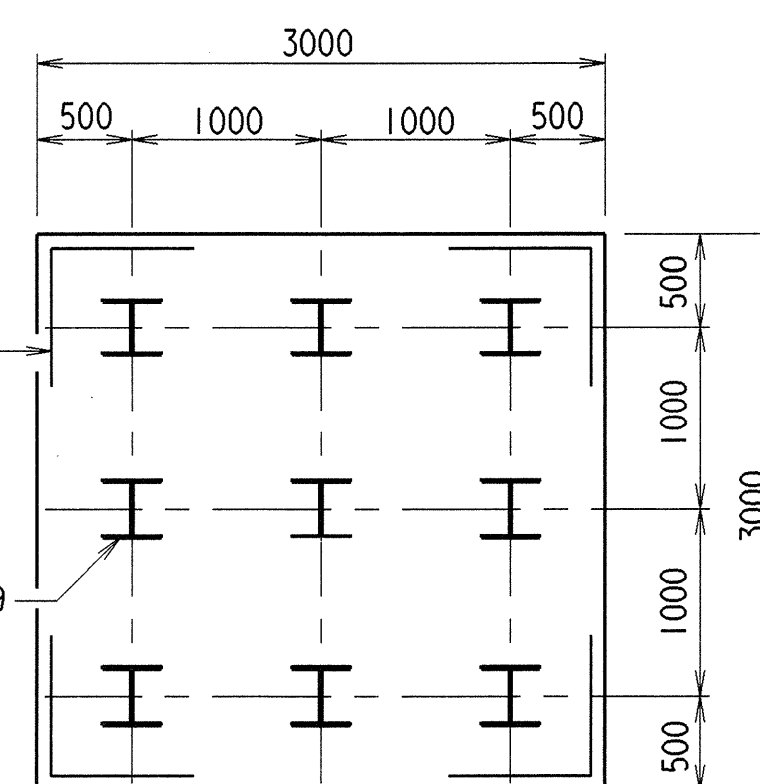
#### Table of Variables

Bent	Elev. "A"	Elev. "B"	"C"	"D"
2	80.470 80.464	81.970 81.964	50	7400
3	80.533 80.527	82.633 82.627	46	6800



#### SECTION C-C

1:20



#### SECTION D-D

1:20

#### SECTION A-A

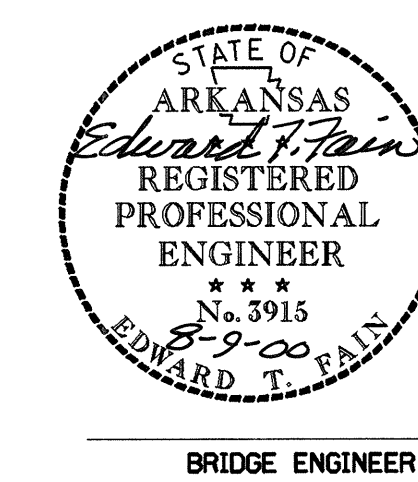
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#### SECTION B-B

1:20

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SEP 08 2000

Revised Footing Elevations 11-28-2000 MJT Ckd. by J&T



BRIDGE ENGINEER

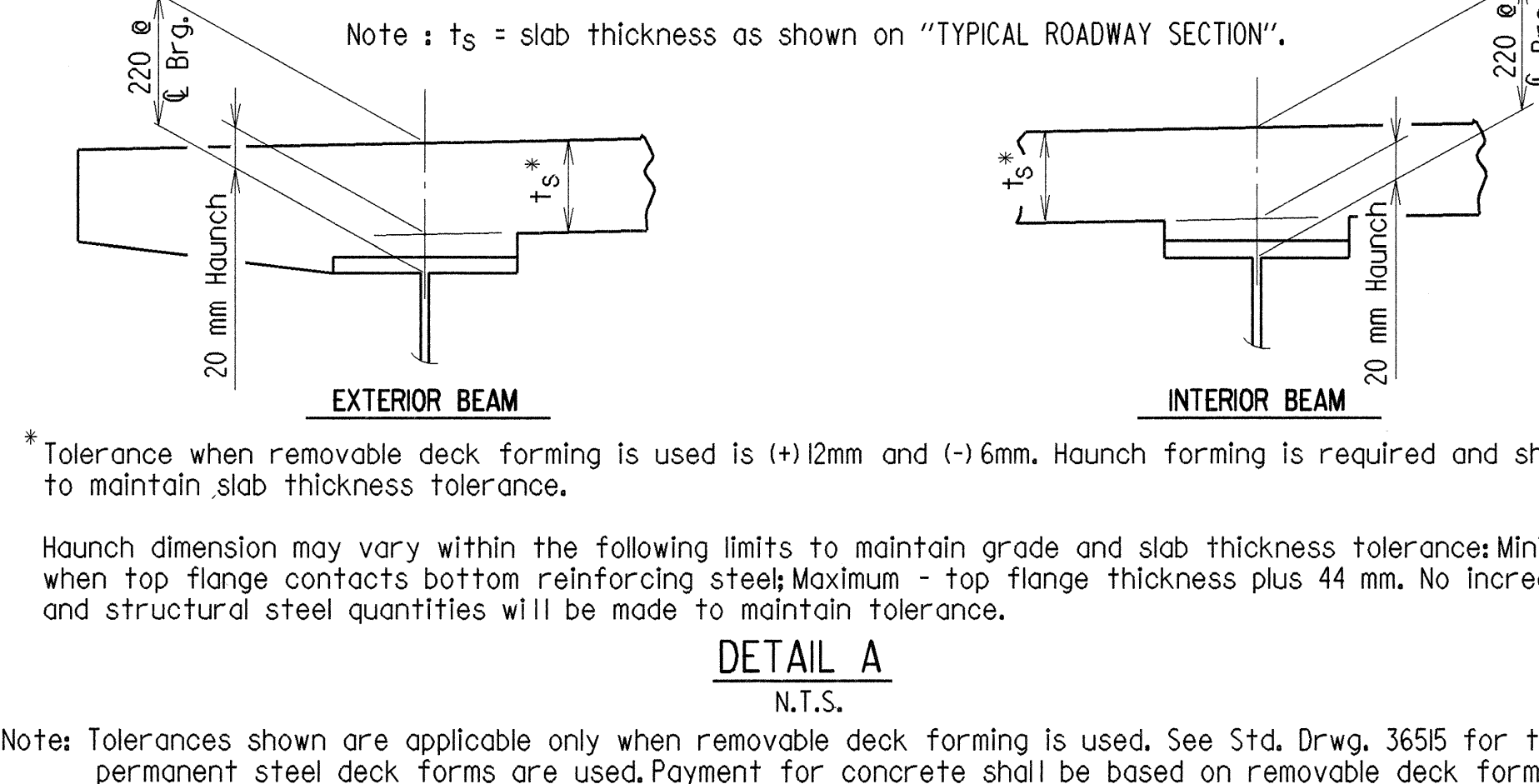
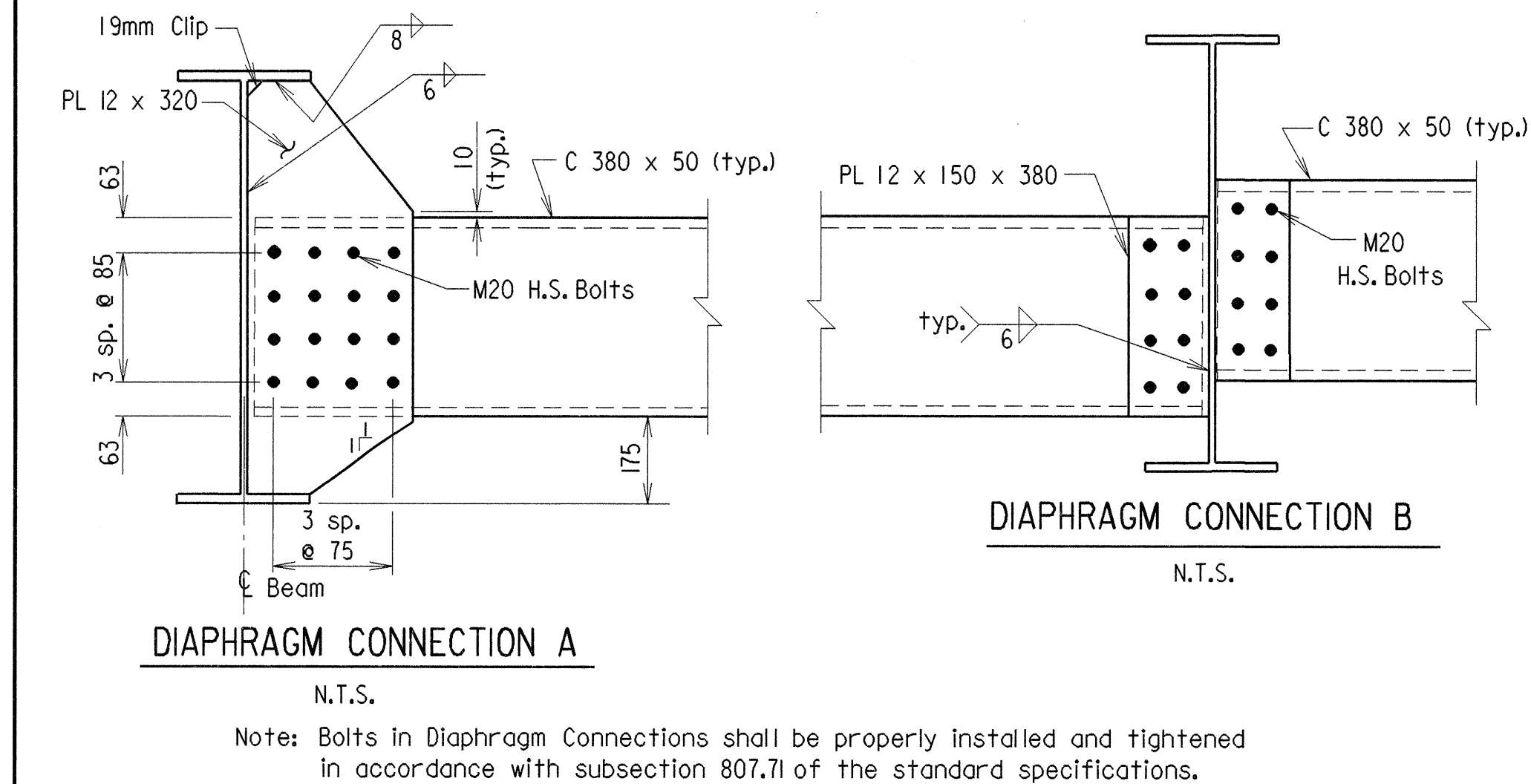
DETAILS OF INTERMEDIATE  
BENTS NO. 2 & 3 - BRIDGE B  
LINE FERRY ROAD

ROUTE 245 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: CH DATE: 7/26/00 FILENAME: B030035BI.B2  
CHECKED BY: JWB DATE: 7/31/00 SCALE: 1:40  
DESIGNED BY: JWB DATE: 6/00 or as noted

BRIDGE NO. B6816 DRAWING NO. 41527

STATE OF  
ARKANSAS  
*Edward T. Pain*  
REGISTERED  
PROFESSIONAL  
ENGINEER  
\*\*\*  
No. 3915  
8-9-00  
EDWARD T. PAIN  
BRIDGE ENGINEER



All dimensions are in millimeters (mm) unless otherwise noted.

DRAWN BY: TEB DATE: 24 JUL 00 FILENAME: B030035B1.SB  
 CHECKED BY: CES DATE: 8/9/00 SCALE: As Shown  
 DESIGNED BY: JWB DATE: 6/00  
 BRIDGE NO. B6816 DRAWING NO. 41528 METRIC

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SEP 08 2000



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.		030035	55	109
				B6816		SPAN DETAILS	41529	

①

SUPERSTRUCTURE GENERAL NOTES

Flange field splice plates shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile and/or compressive stresses.

All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed 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 Engineer for approval. All welding shall conform to subsection 807.26.

Field connections shall be bolted with high-strength bolts and shall be M20 bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior beam webs and on the bottom of the beam flanges. Holes for M20 high-strength bolts may be 24 mm diameter if a washer is supplied for use under both the nut and head of the bolt.

Diaphragms shall be installed as beams are erected. All bolts in diaphragms and field splices shall be installed and tightened in accordance with subsection 807.71 prior to pouring the concrete deck.

Bearings shall be seated in accordance with subsection 808.08. This work and material are to be considered as subsidiary to the item "ELASTOMERIC BEARINGS" and will not be paid for directly.

Load Distribution to Beams:

	INTERIOR BEAM	EXTERIOR BEAM
<u>Dead Load:</u>		
To W-Beam	11.78 kN/m + 1.3(wt./m of W-Bm.)	9.69 kN/m + 1.3(wt./m of W-Bm.)
To Composite Beam	4.17 kN/m *	4.17 kN/m *
* Includes 2.56 kN/m Future Wearing Surface		

Live Load:

To each Composite Beam	INTERIOR BEAM = 1.491 wheels (+) Impact EXTERIOR BEAM = 1.356 wheels (+) Impact
------------------------	--

CONSTRUCTION SPECIFICATIONS:

Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (1996 edition ) with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS:

AASHTO Standard Specifications for Highway Bridges (1996 edition ) with current interim specifications.

LIVE LOADING: MS18 and Alternate Military Load

METHOD OF DESIGN: Load Factor

MATERIALS AND STRENGTHS:

Class S(AE) Concrete	f'c = 28.0 MPa
Reinforcing Steel (ASTM A615/A615M-96a)	Fy = 420 MPa
Structural Steel (M 270, Gr. 345W)	Fy = 345 MPa
Structural Steel (M 270, Gr. 250)	Fy = 250 MPa

CONCRETE:

Concrete shall be poured in the dry and all exposed corners to be chamfered 20 mm unless otherwise noted. All concrete shall be Class S(AE) with a minimum 28 day compressive strength f'c = 28.0 MPa.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 36515 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

The concrete deck shall be given a tine finish in accordance with subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish. Movement of the finishing machine across new concrete shall be on planks placed on the surface and shall be prohibited for 72 hours after finishing the pour. Sufficient concrete must be placed ahead of the strike-off to fully load the beam. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

REINFORCING STEEL:

All reinforcing steel shall conform to ASTM A 615/A 615M-96a, Grade 420. 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 "REINFORCING STEEL- BRIDGE".

STRUCTURAL STEEL:

All structural steel shall be AASHTO M 270, Grade 345W unless otherwise noted and shall be paid for as "STRUCTURAL STEEL IN BEAM SPANS (M 270, Gr. 345W)". Grade 345W steel shall not be painted. All exposed surfaces shall be cleaned in accordance with subsection 807.84(e). Structural steel completely embedded in concrete may be AASHTO M 270, Grade 250 unless otherwise noted.

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.

Structural steel shapes of equal or greater strength may be substituted for shapes shown if prior approval is obtained from the Bridge Engineer. Payment will be made on the basis of shapes shown.

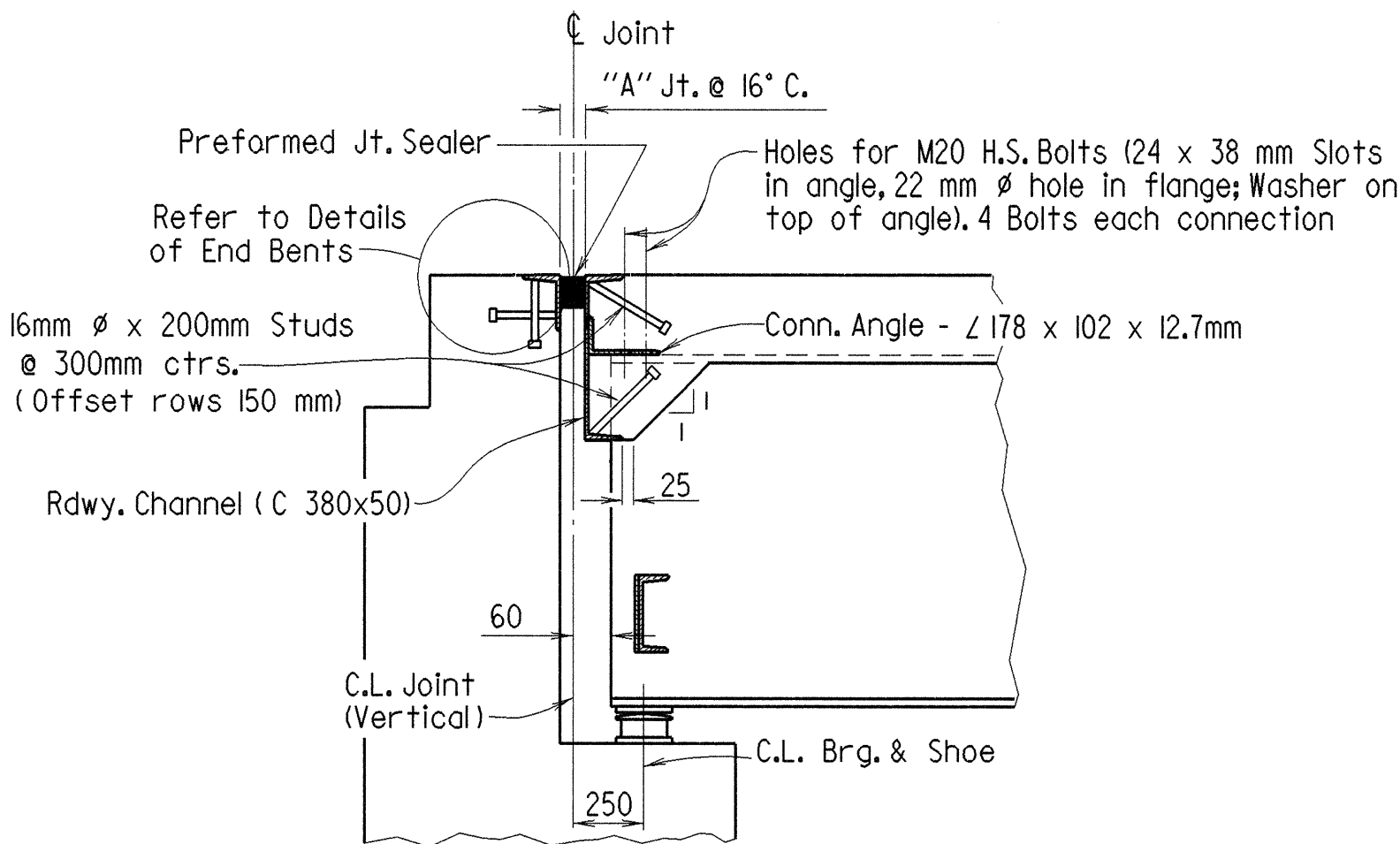
Beams are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in subsection 807.05. The Charpy V-Notch test will not be required on field splice plates.

All beams shall be blocked in their true position in the shop with the webs horizontal. The camber, length of sections, distance between bearings and openings of joints shall be measured with the beams in their true position and this information shall become part of the permanent records for this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All beam dimensions are based on a temperature of 16 degrees C. A tolerance of 6 mm +/- is allowed for camber.

PREFORMED JOINT SEAL DATA

Bridge No.	Bent No(s).	"A" Width Perpendicular to Joint at 24 Hour Average Temperature ** of :			Uncompressed Joint Seal Width	Bumper Plate Size
		28° C	16° C	4° C		
B6816	I AND 4	50	54	58	89 mm	25 x 18 mm

\*\*The temperature used to set the joint opening shall be the approximate average air temperature during the preceding 24 hour period. The Engineer shall establish the temperature.



SECTION THRU JOINT AT END BENTS  
N.T.S.

Note:

One of two different blocking systems is required depending depending on the type of span finishing machine that is used.

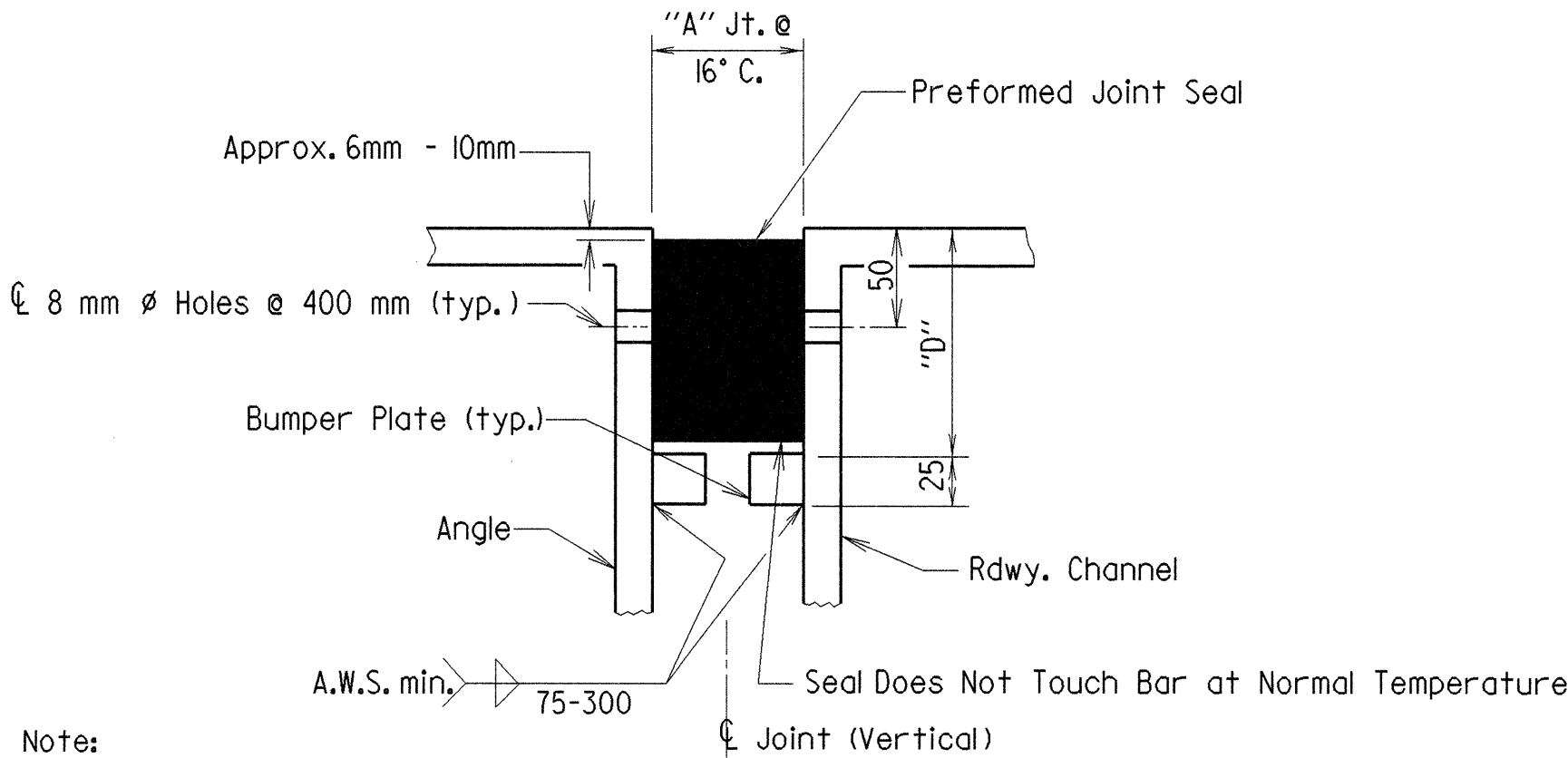
For Transverse Strike-Off: Plate, Angle, or other shapes, attached to to Channels (or Angles) for Blocking

For Longitudinal Strike-Off: Bolt and spacer attached to channel for blocking

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE  
N.T.S.

EXPANSION DEVICE INSTALLATION AT END BENTS:

The concrete span pour shall be placed before the end bent backwall concrete is placed. After beams or girders are erected the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature and grade, and the backwall constructed.



Note:

Dimension "D" shall conform to the recommendations of the manufacturer as approved by the Bridge Engineer.

DETAIL OF JOINT SEAL & SUPPORT  
N.T.S.

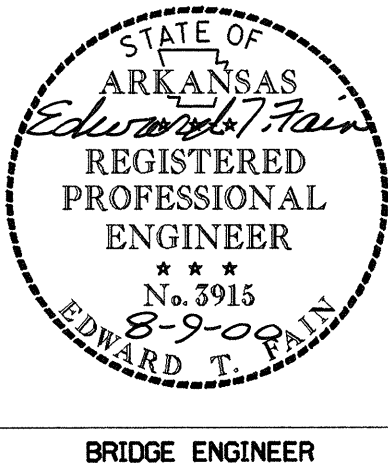
Note:

The Seal shall be in one piece (without splices) for the full length of the Joint, expect that lengths 17 meters and longer may have a factory made splice. Splices, when required, shall be shown on the Shop Drawings and shall be placed near the high ends of the Roadway. Separation of the Splice during installation shall be cause for rejection of the Seal.

All dimensions are in millimeters (mm) unless otherwise noted.

SHEET 2 OF 5  
DETAILS OF 55 m CONTINUOUS  
W-BEAM UNIT - BRIDGE B  
LINE FERRY ROAD  
ROUTE 245 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 24 JUL 00 FILENAME: B030035B1.SB  
CHECKED BY: CES DATE: 8/9/00 SCALE: As Shown  
DESIGNED BY: TwB DATE: 9/00  
BRIDGE NO. B6816 DRAWING NO. 41529



BRIDGE ENGINEER





1140

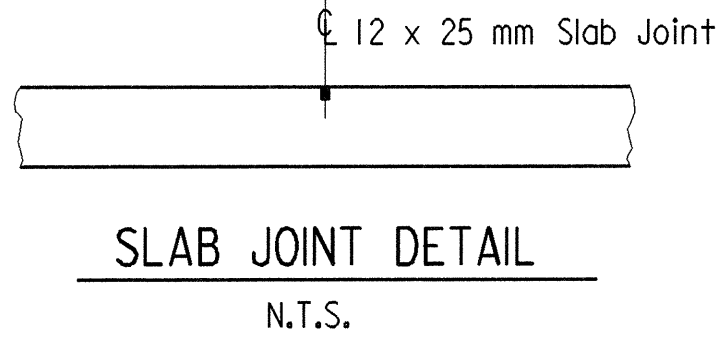
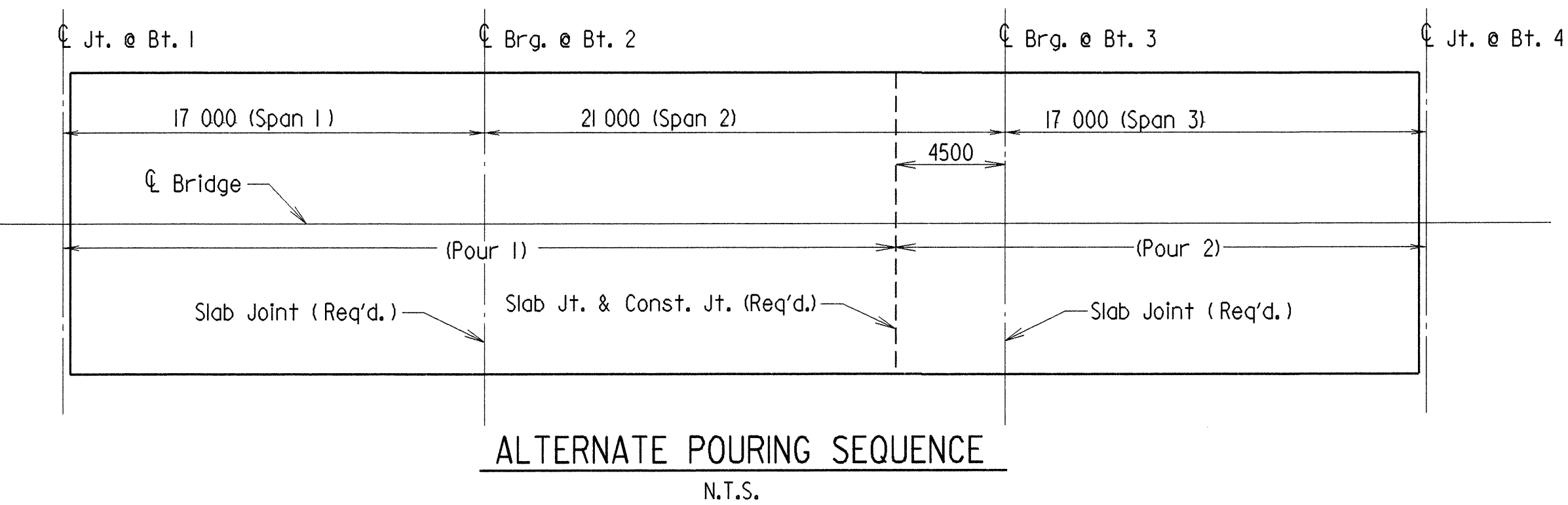
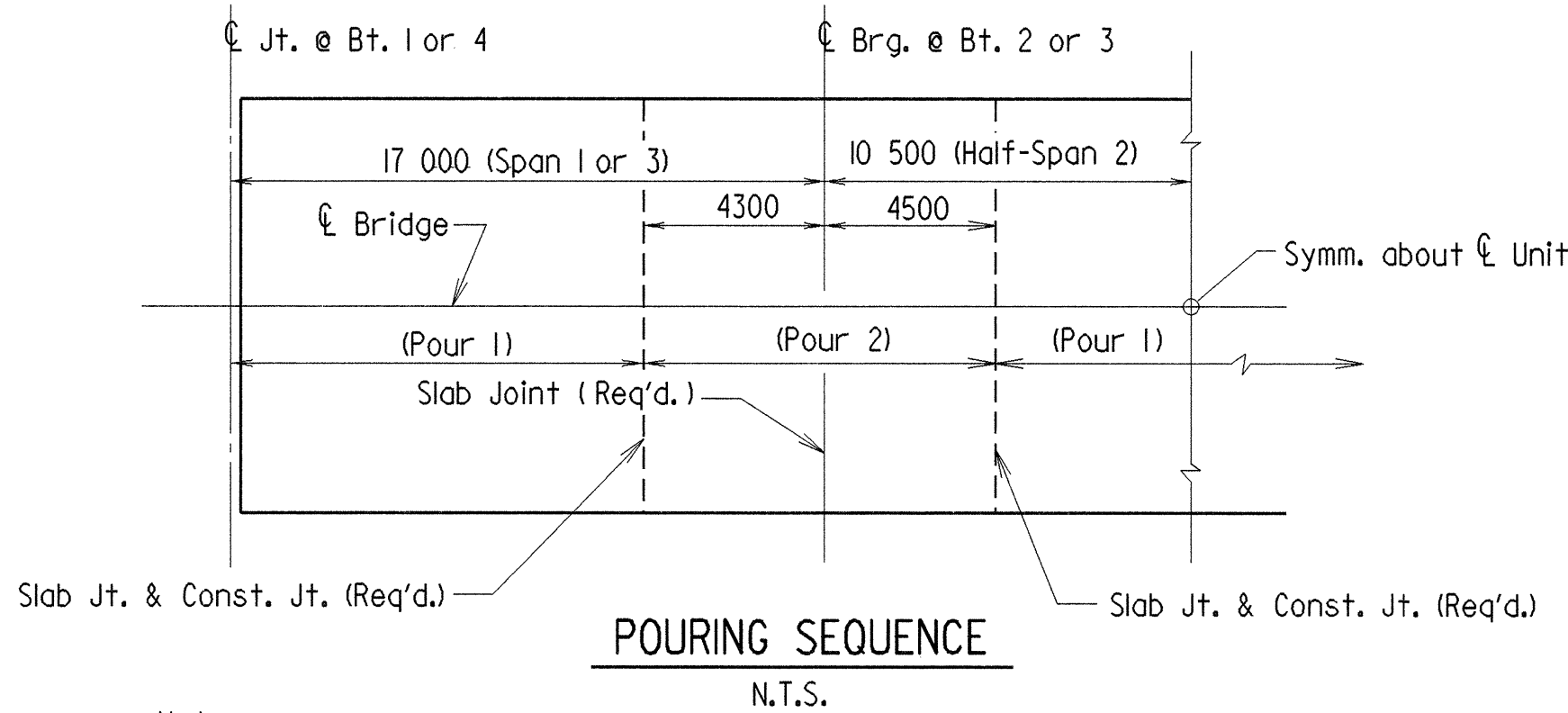
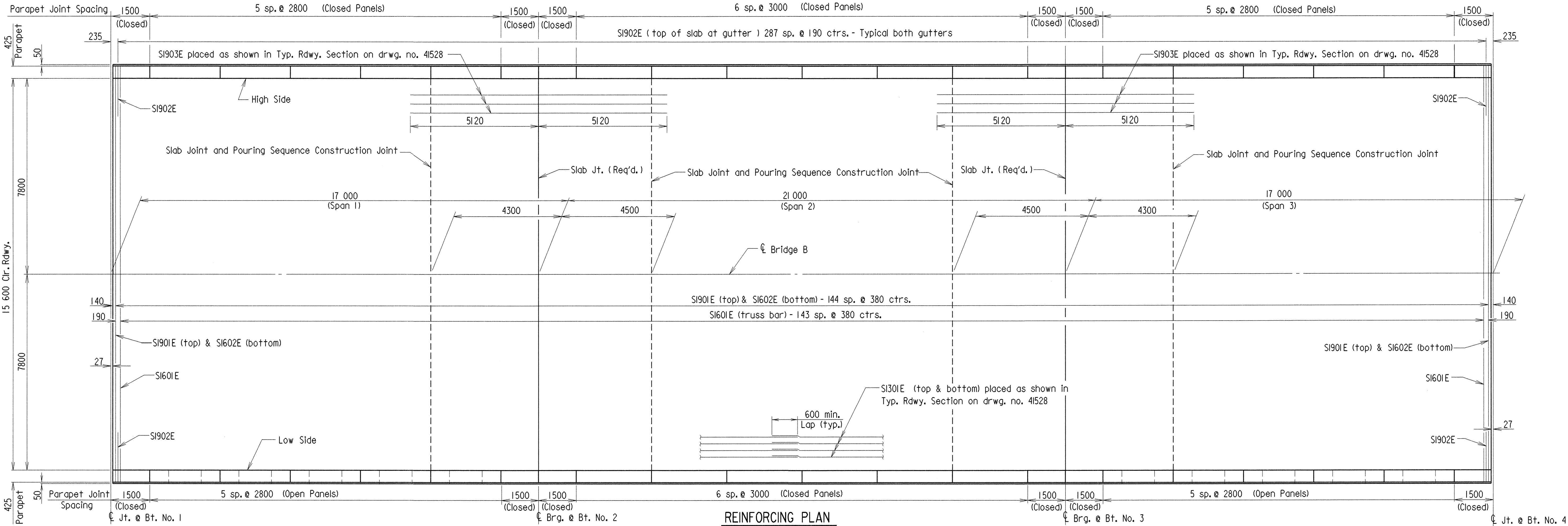


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SEP 08 2000



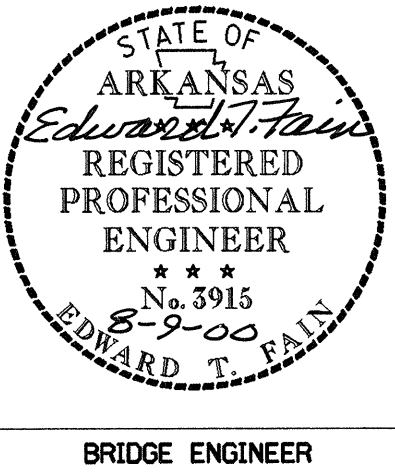
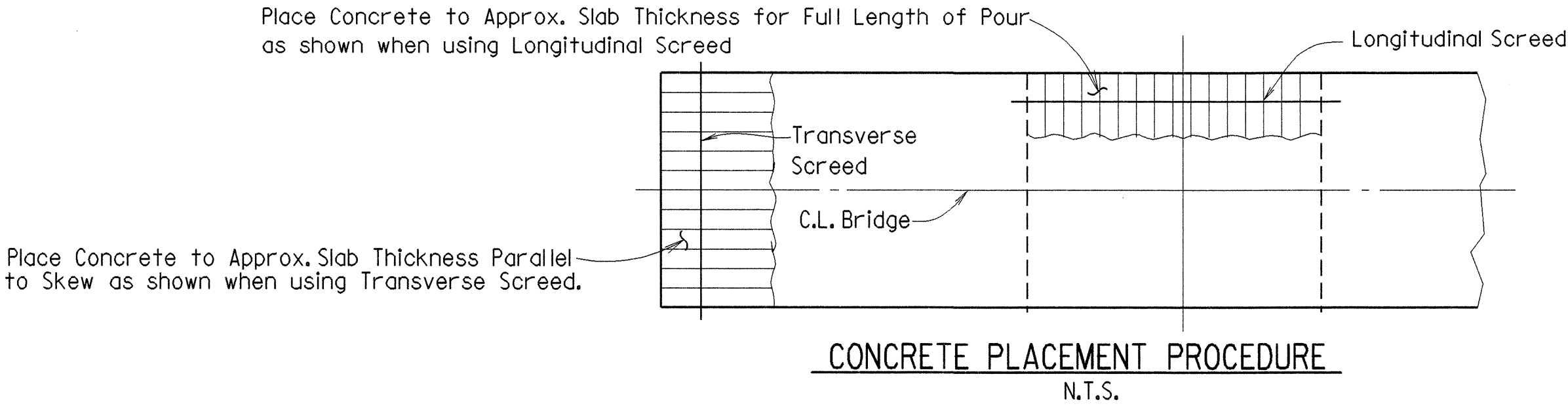
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				6	ARK.			
				JOB NO.		030035	57	109
				B6816 SPAN DETAILS 41531				

Note:  
Required Slab Joints and Pouring Sequence Joints shall align with the Parapet Open Joint at the Gutterline.



Use Type 6 Joint Sealer. See subsections 501.02(h) and 501.05(j). Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab Joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed before any vehicular traffic is allowed on the unit. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations.

Note:  
Pours with the same number may be poured simultaneously or separately. All pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse between pours and 72 hours shall elapse between adjacent pours. Any railing pours made before the entire slab unit has been placed must be approved by the Bridge Engineer. Concrete in bridge superstructure shall be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent. The Contractor must obtain approval from the Bridge Engineer for deviations from the pouring sequence shown.



All dimensions are in millimeters (mm) unless otherwise noted.

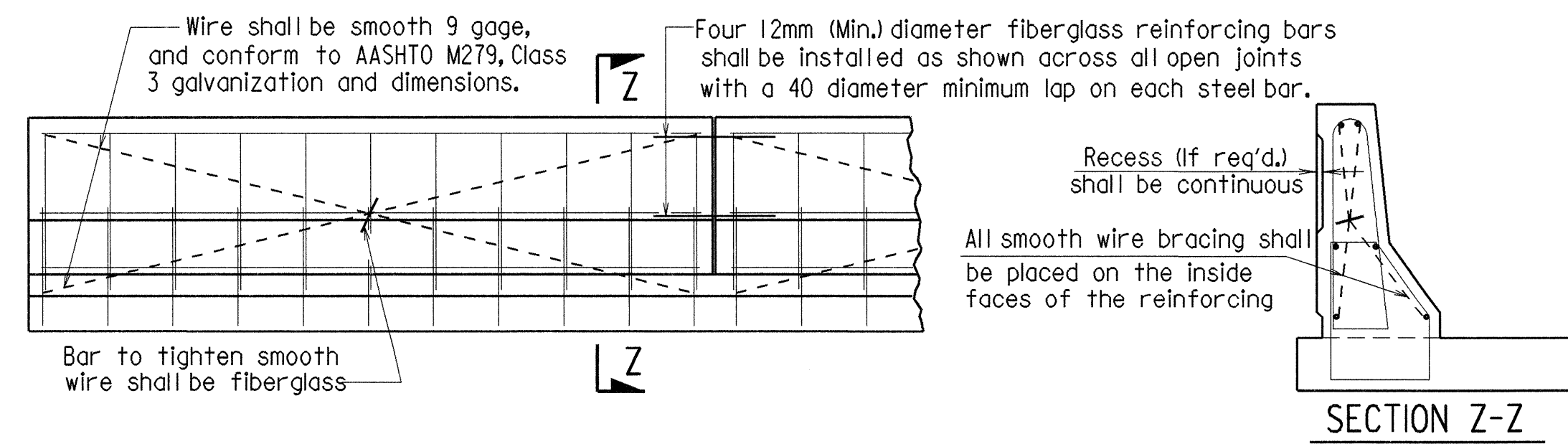
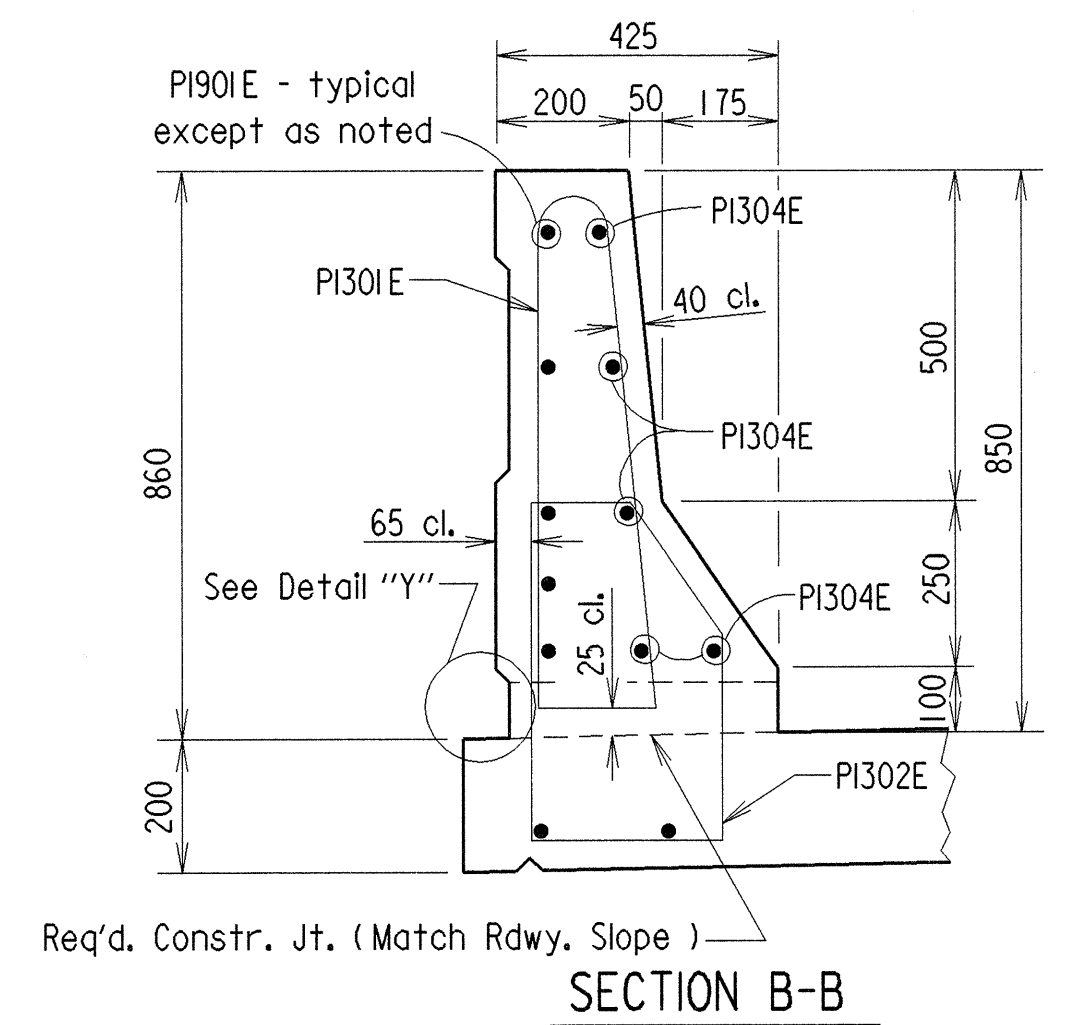
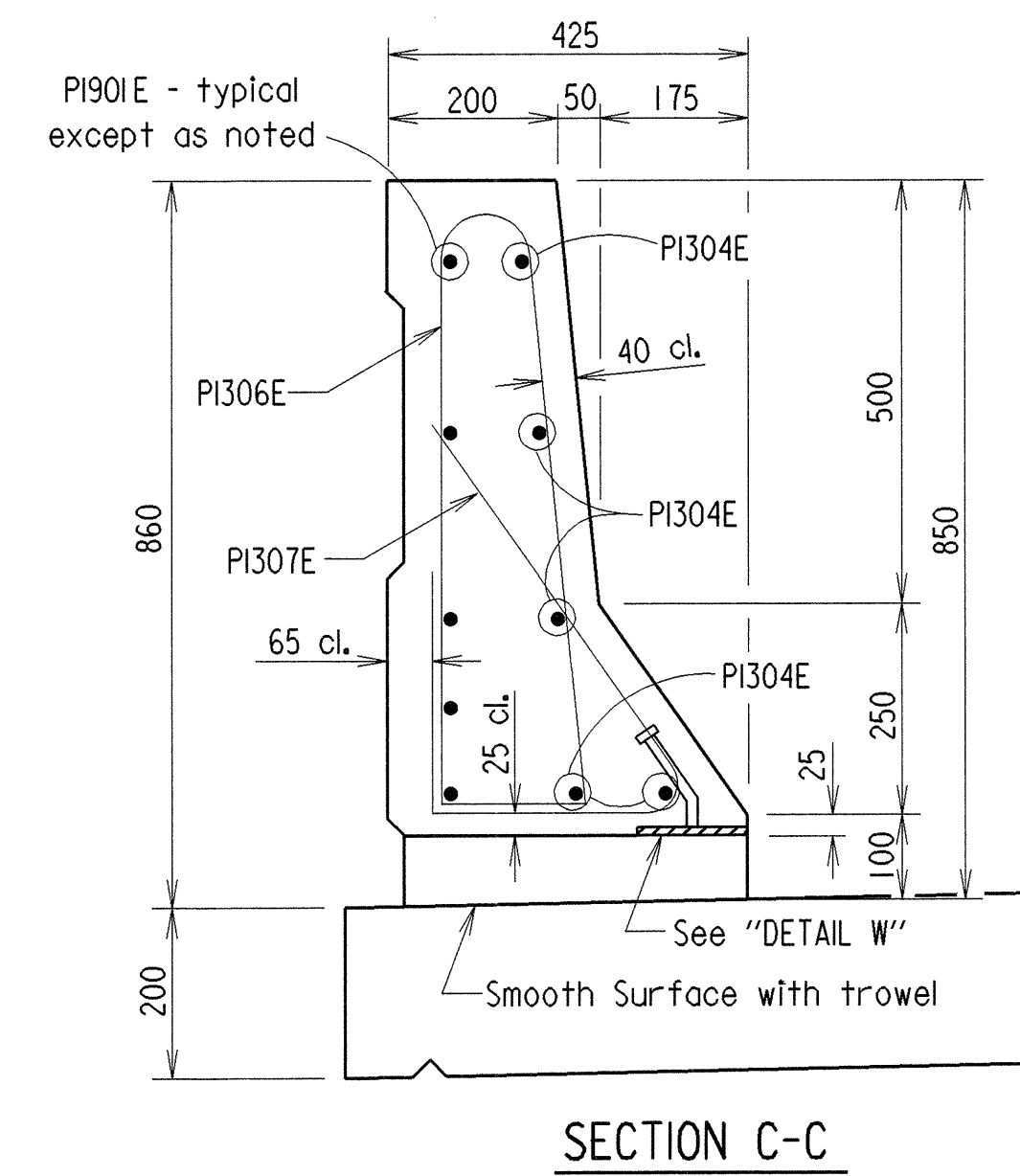
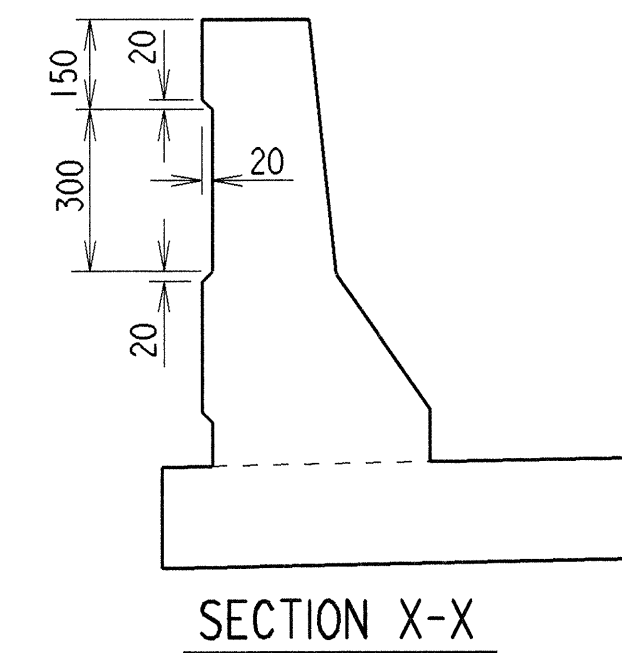
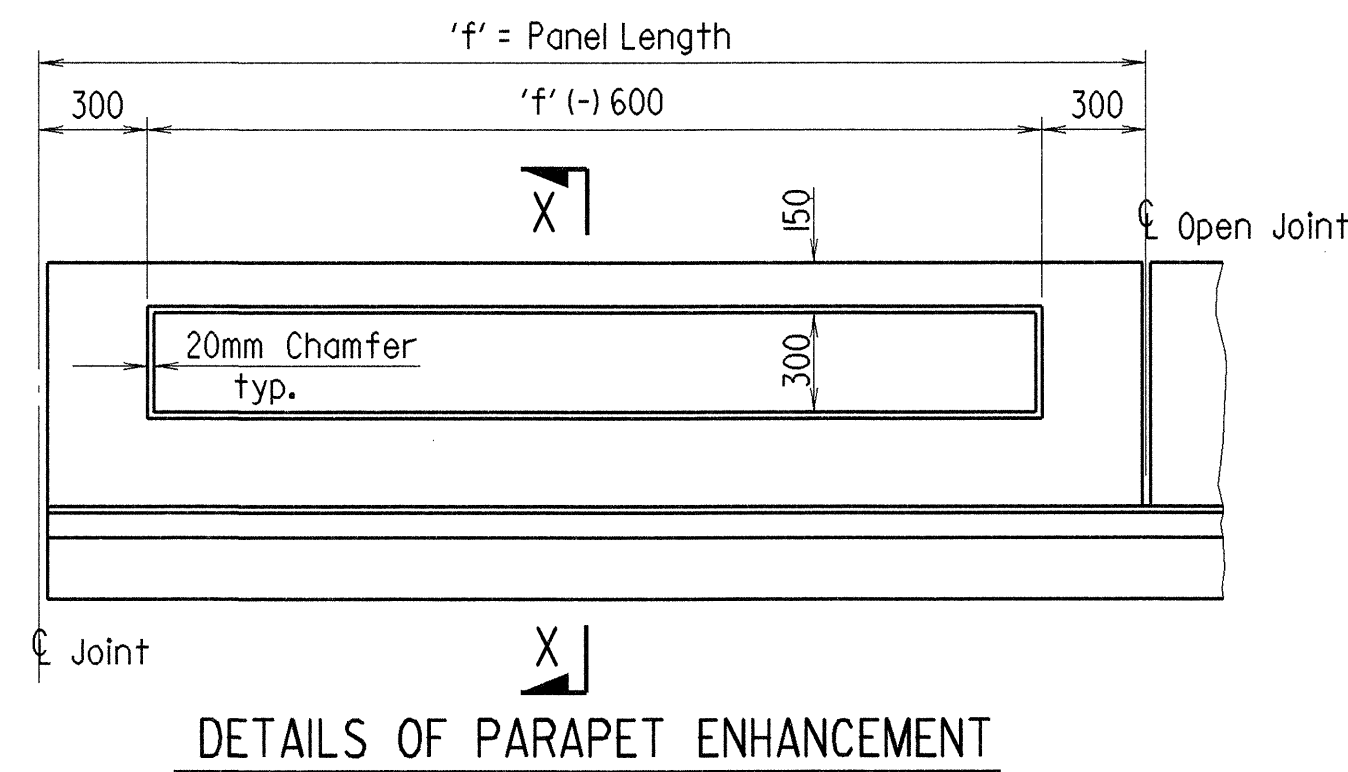
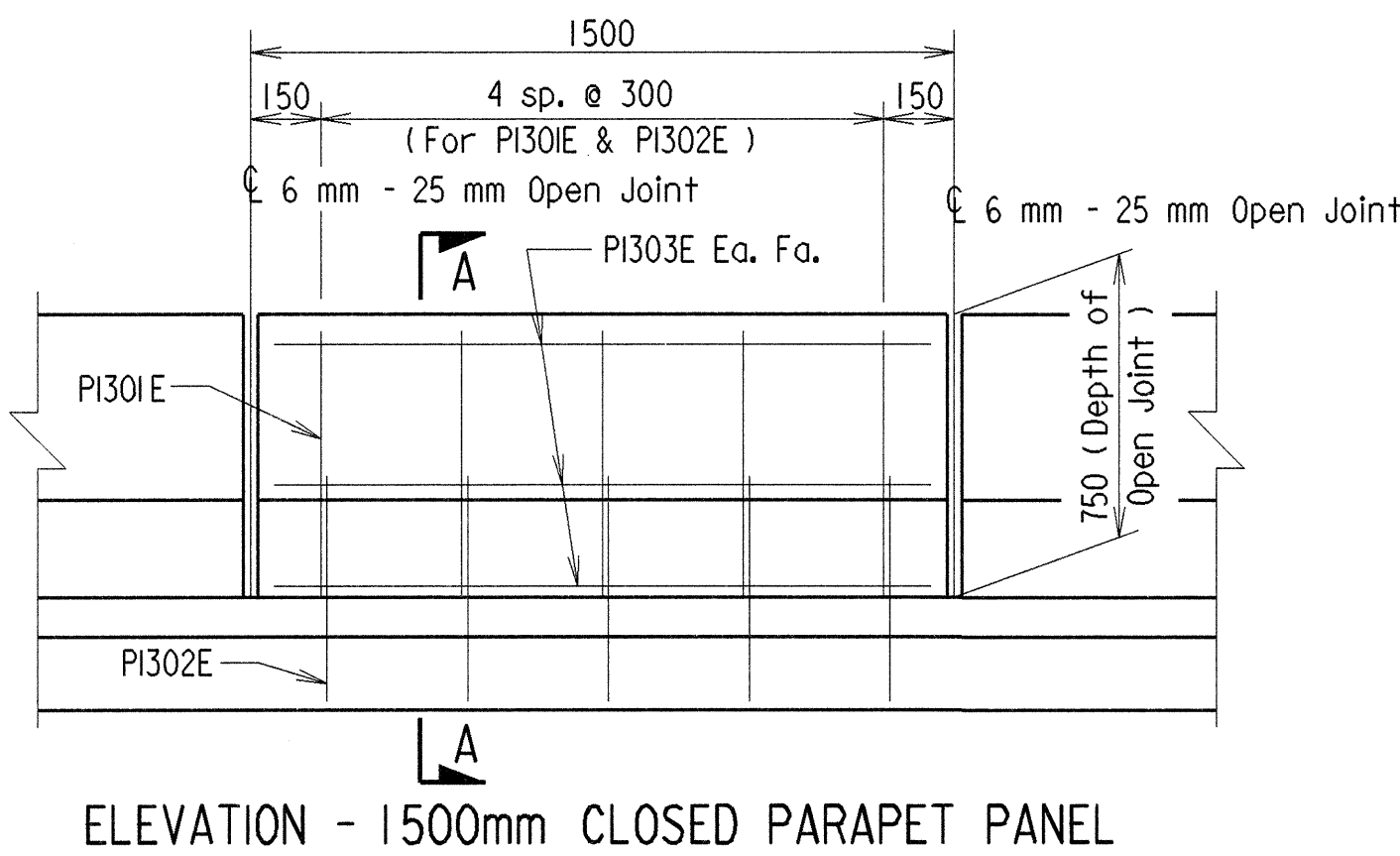
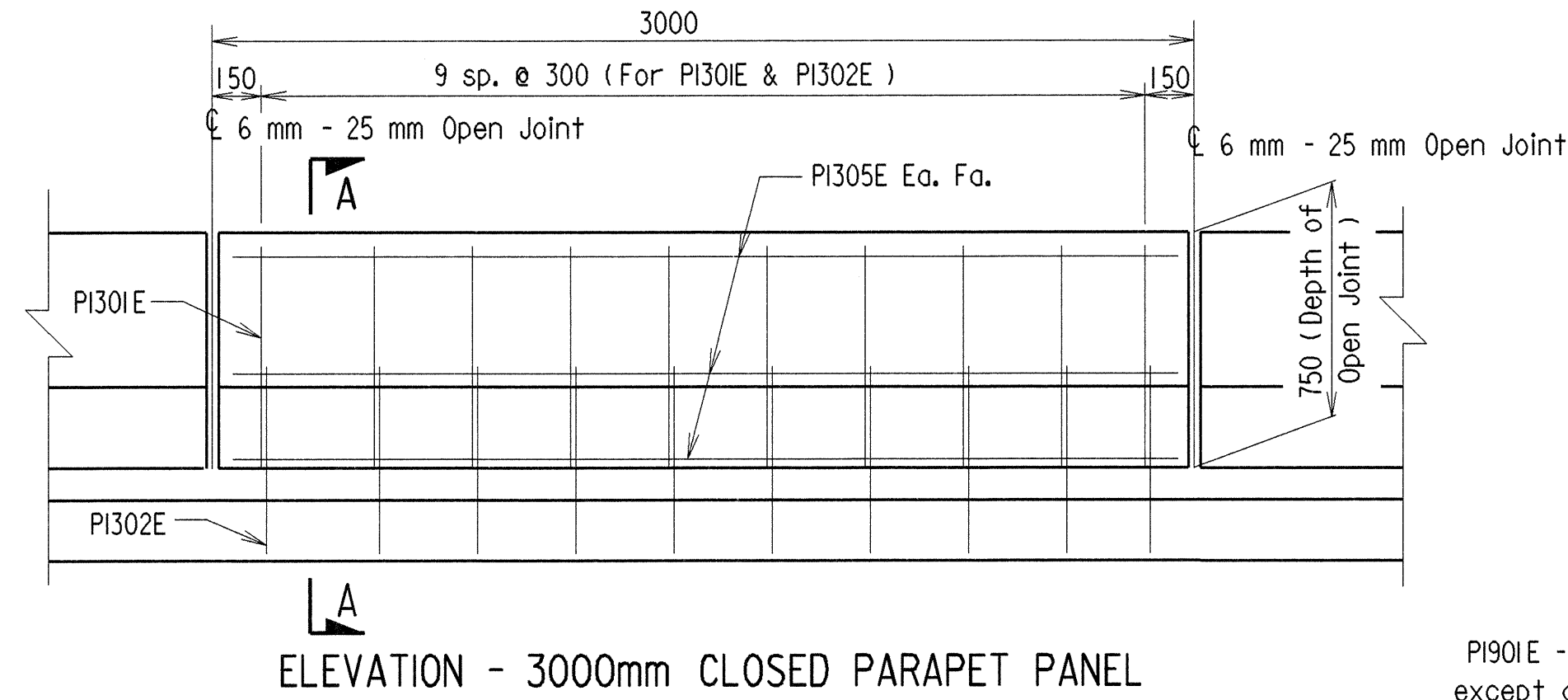
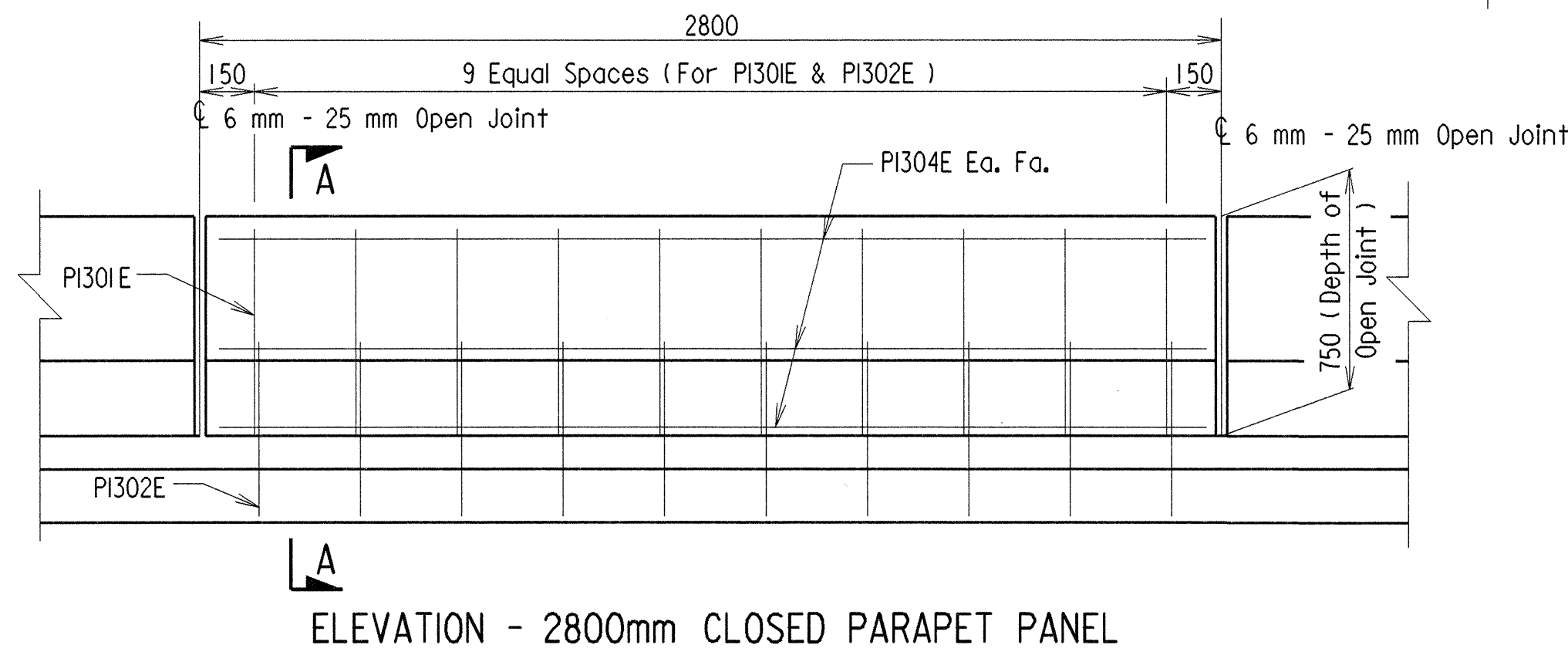
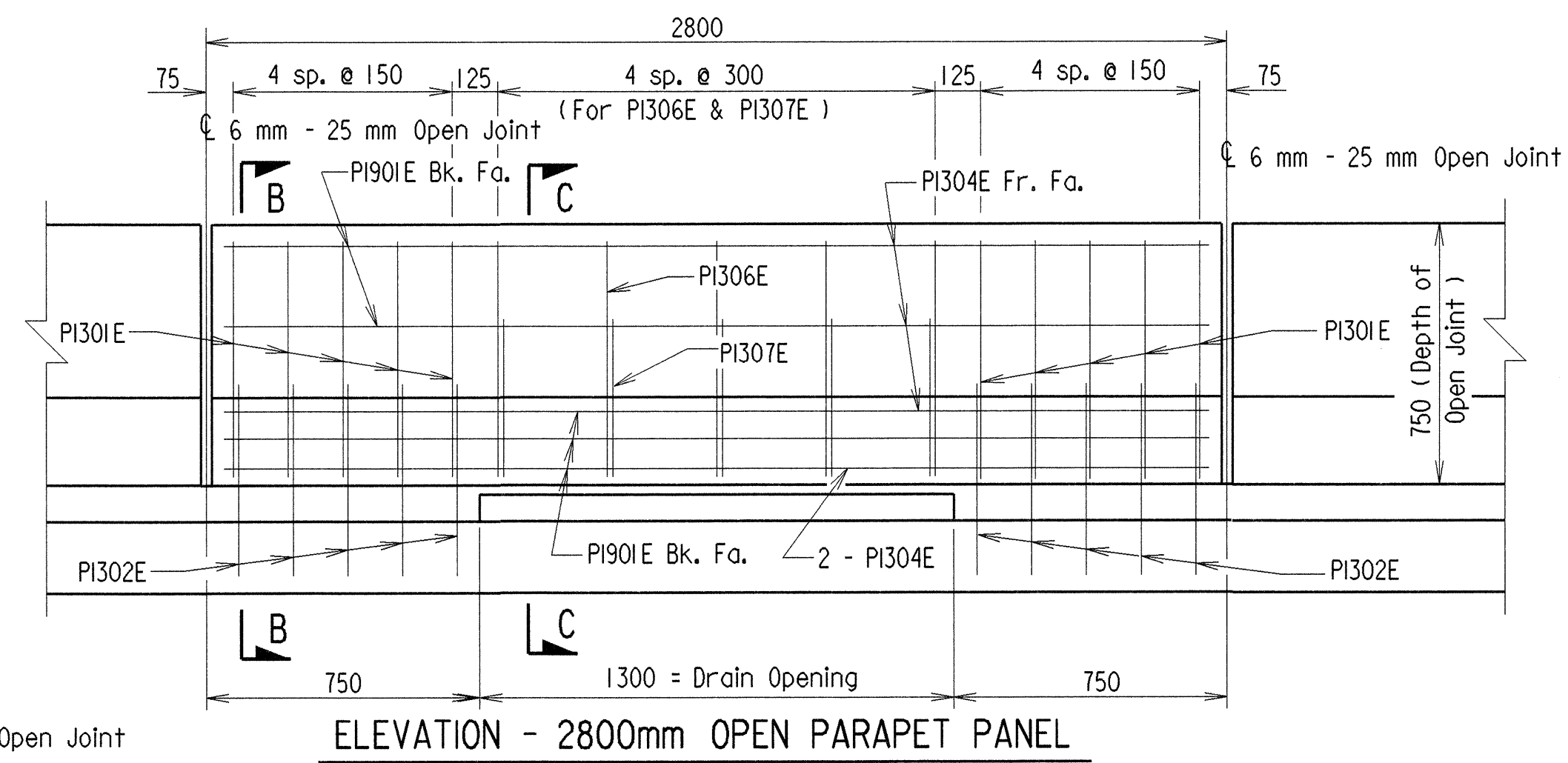
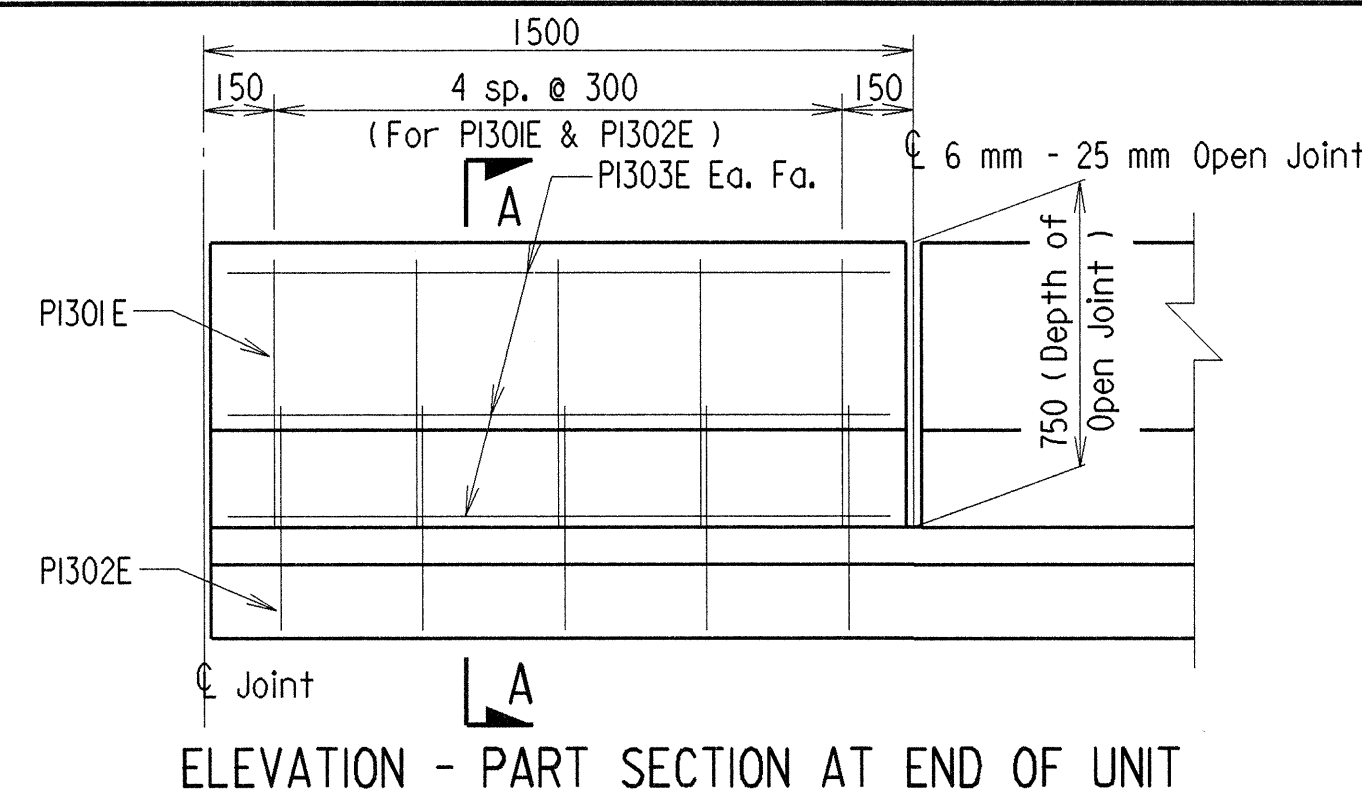
SHEET 4 OF 5  
DETAILS OF 55 m CONTINUOUS  
W-BEAM UNIT - BRIDGE B  
LINE FERRY ROAD

ROUTE 245 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

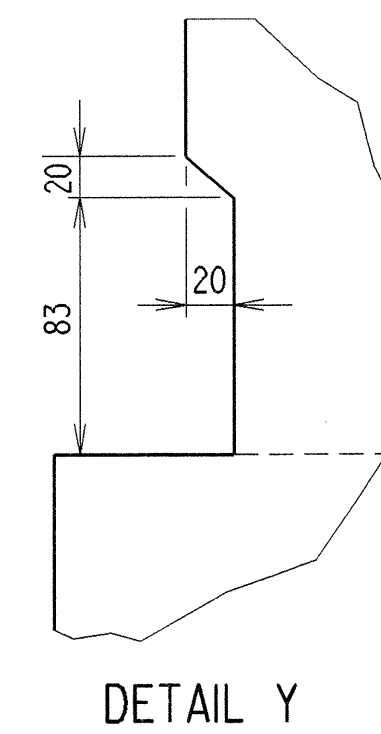
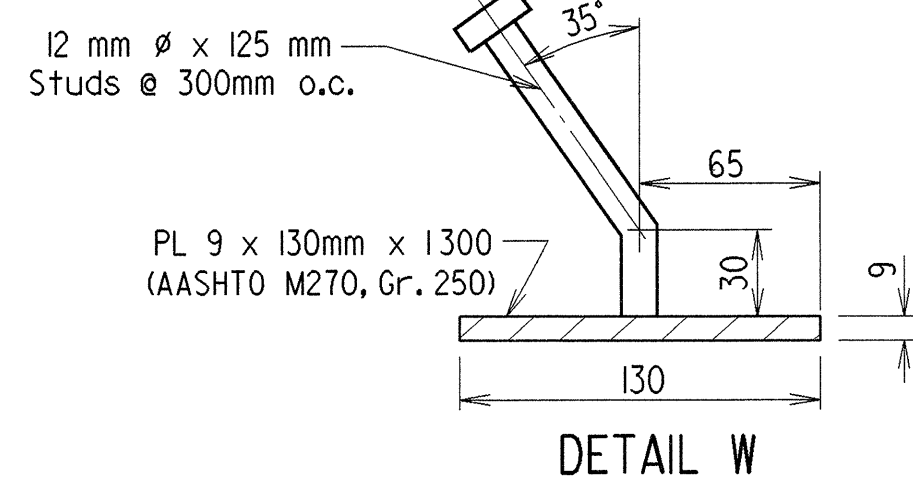
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DESIGNED BY: JWB DATE: 6/00  
BRIDGE NO. B6816 DRAWING NO. 41531



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.		030035	58	109
				B6816	SPAN DETAILS		41532	

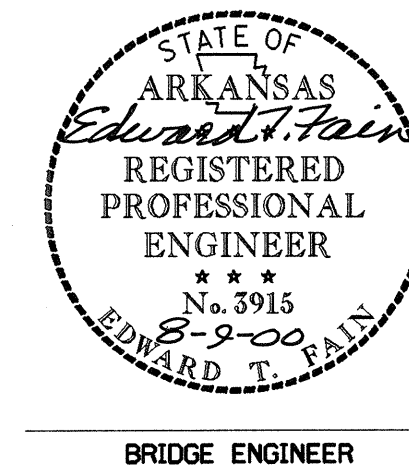


Note: Studs and Plates shall be measured and paid for as "Structural Steel in Beam Spans (M270, Gr. 345W)."



All dimensions are in millimeters (mm) unless otherwise noted.

SHEET 5 OF 5  
 DETAILS OF  
 55 m CONTINUOUS  
 W-BEAM UNIT - BRIDGE B  
 LINE FERRY ROAD  
 ROUTE 245 SEC. I  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.  
 DRAWN BY: TEB DATE: 24 JUL 00 FILENAME: B030035B1.SB  
 CHECKED BY: CES DATE: 8/9/00 SCALE: N.T.S.  
 DESIGNED BY: JWB DATE: 9/00  
 BRIDGE NO. B6816 DRAWING NO. 41532



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 SEP 08 2000

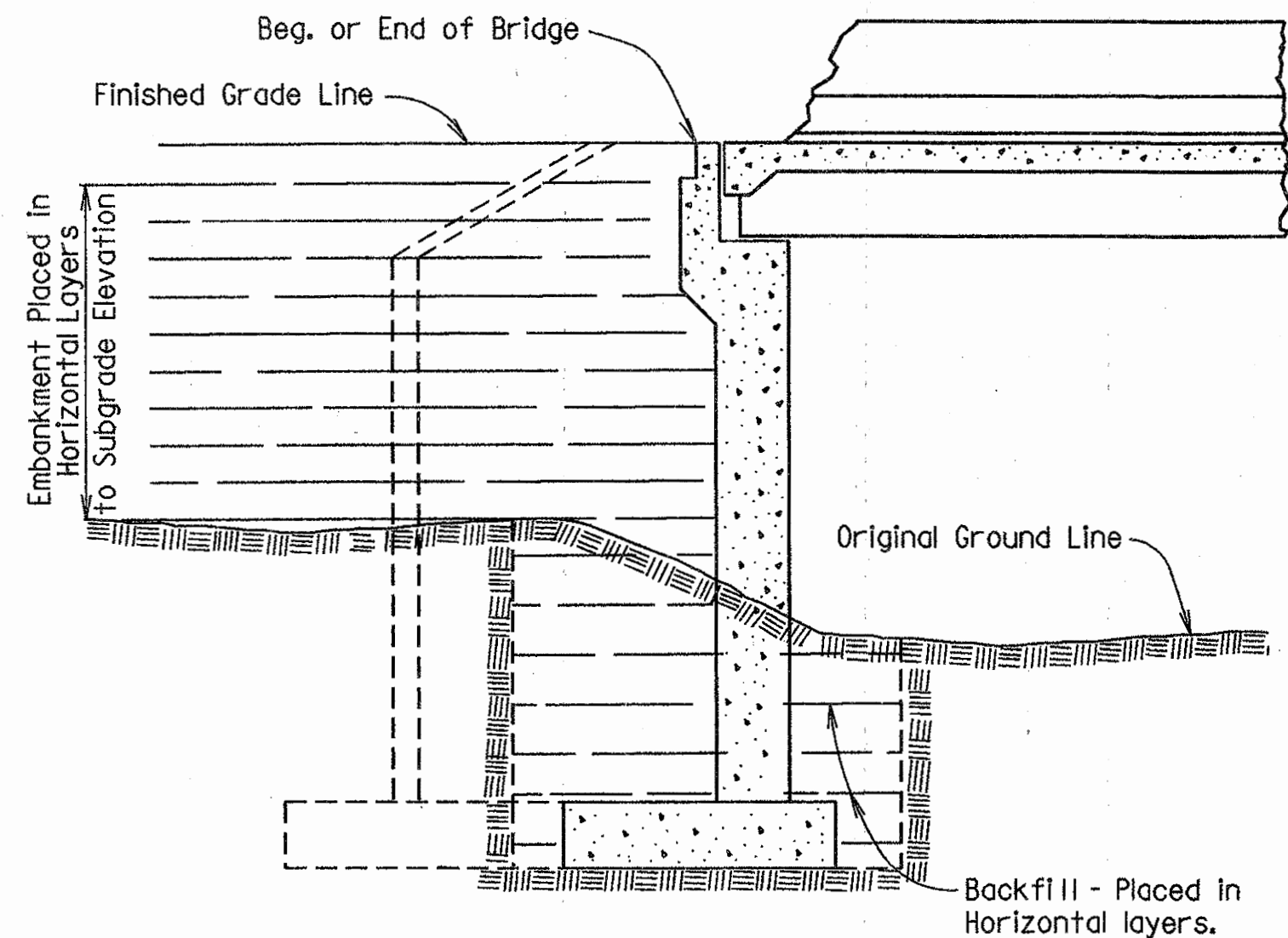
All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 6 mm. To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Exposed surfaces shall be given a Class 3, Sprayed Finish.

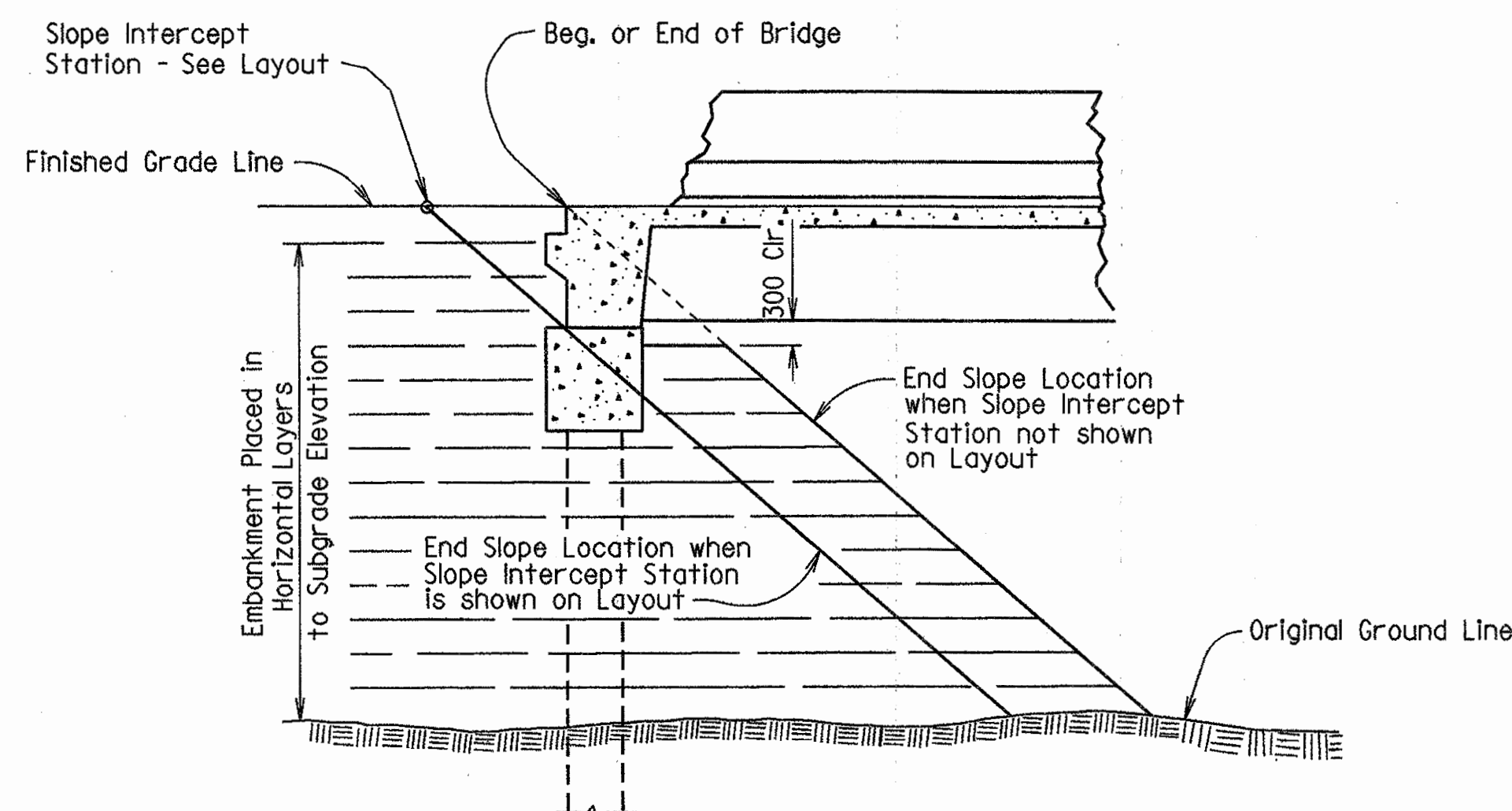
Note:  
 The surfaces of the 9mm Plates which will not be in contact with concrete shall be painted in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Beam Spans (M270, Gr. 345W)."



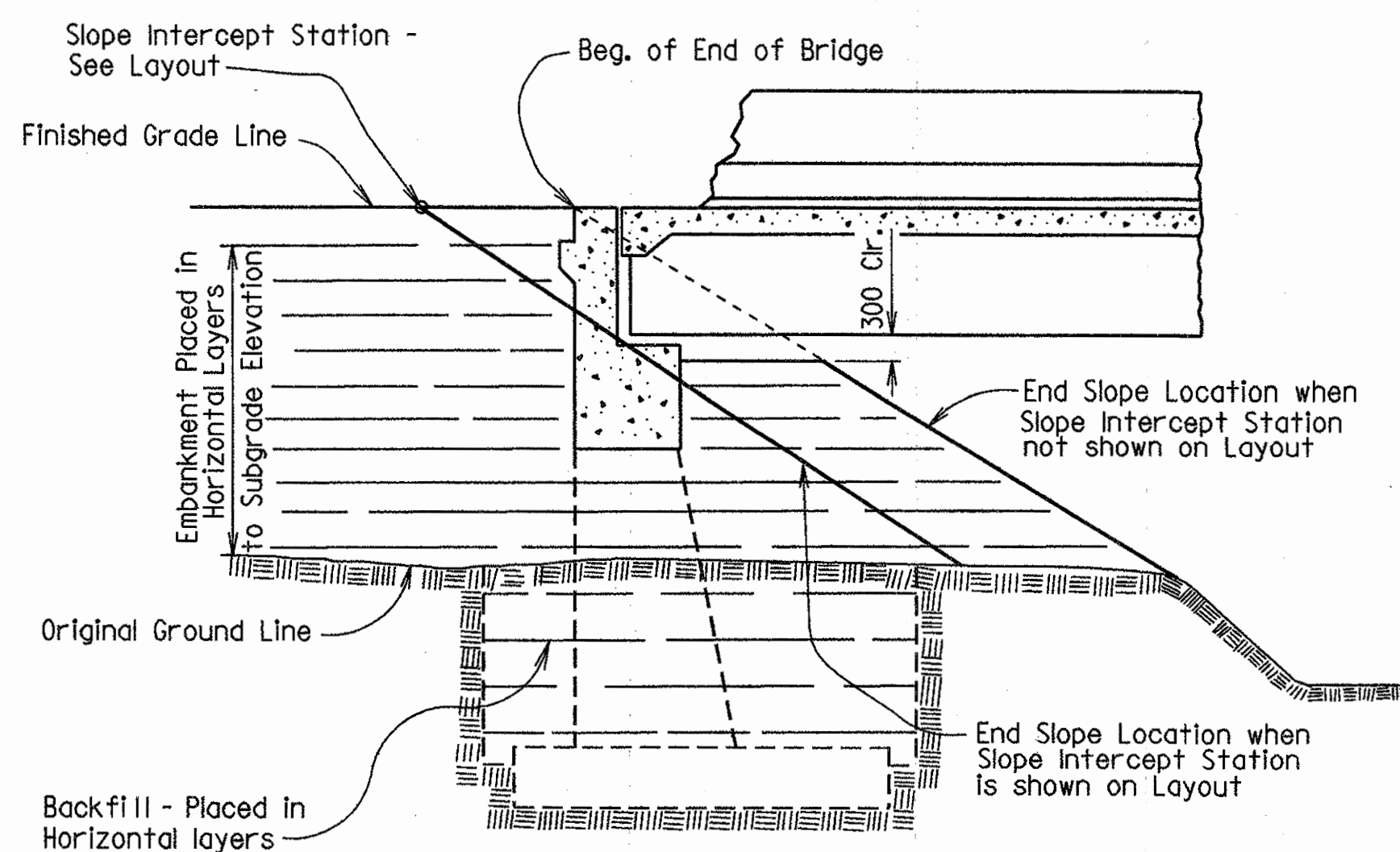
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JOB NO.								
EMBANKMENT & BACKFILL								36500



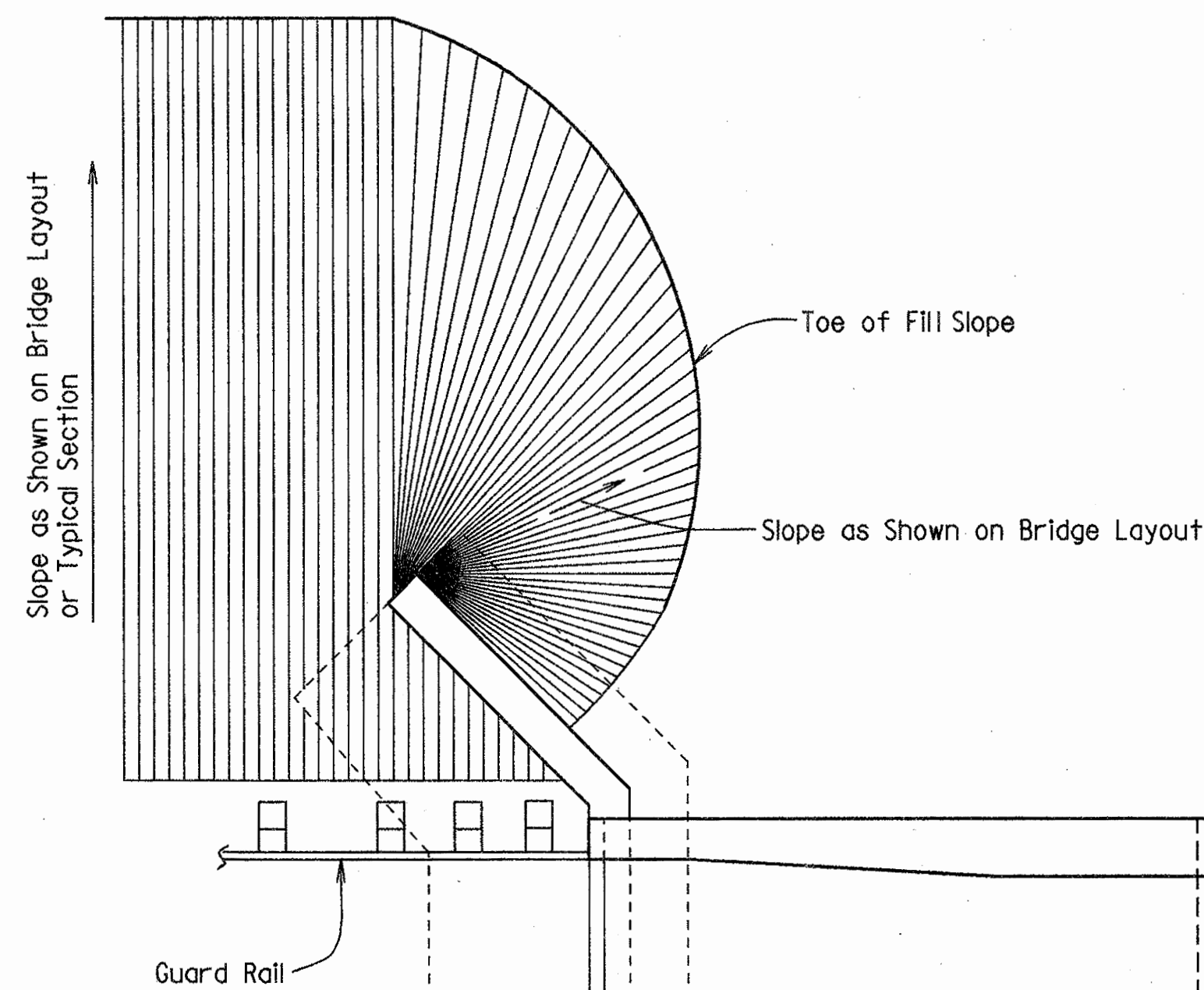
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



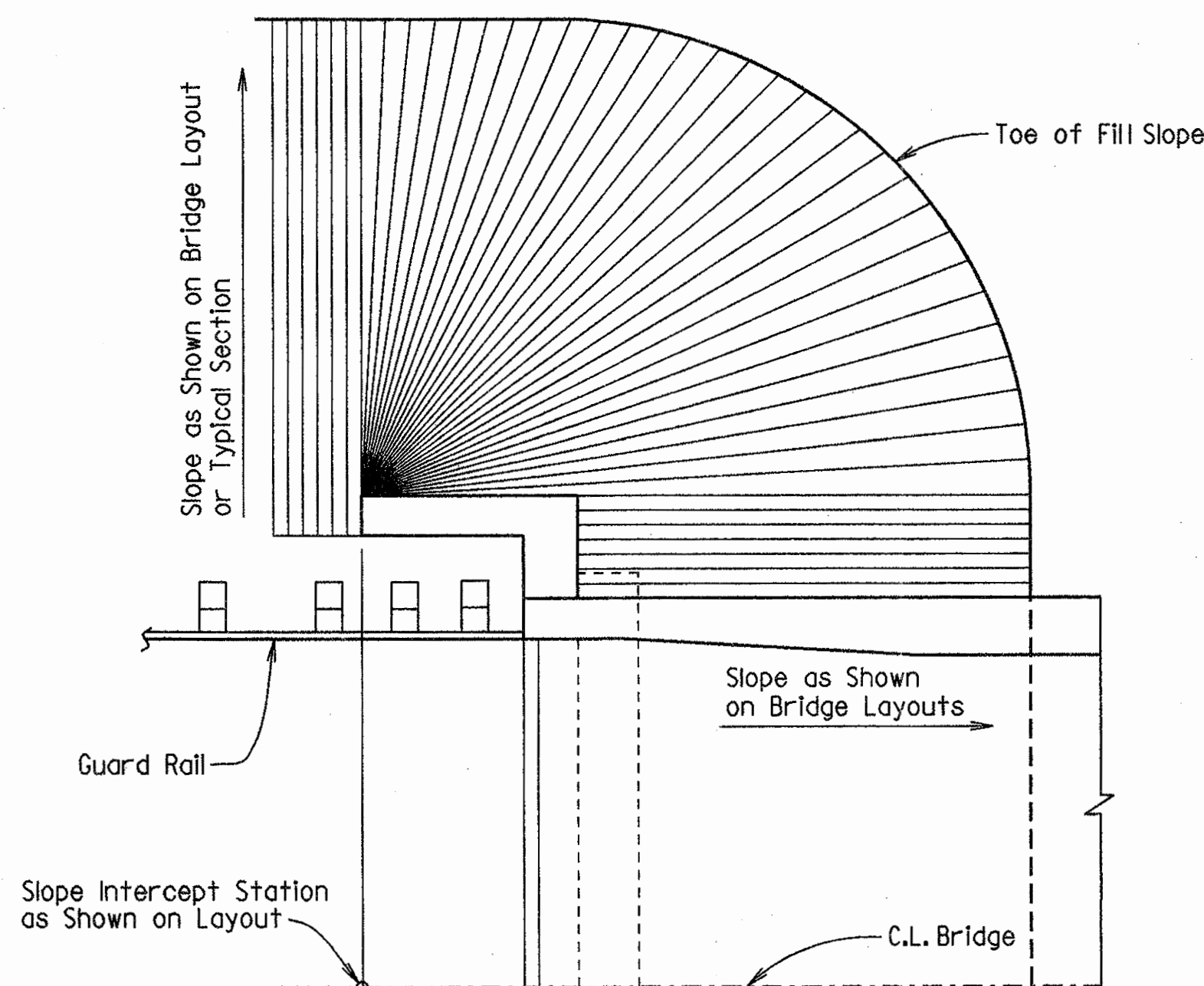
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



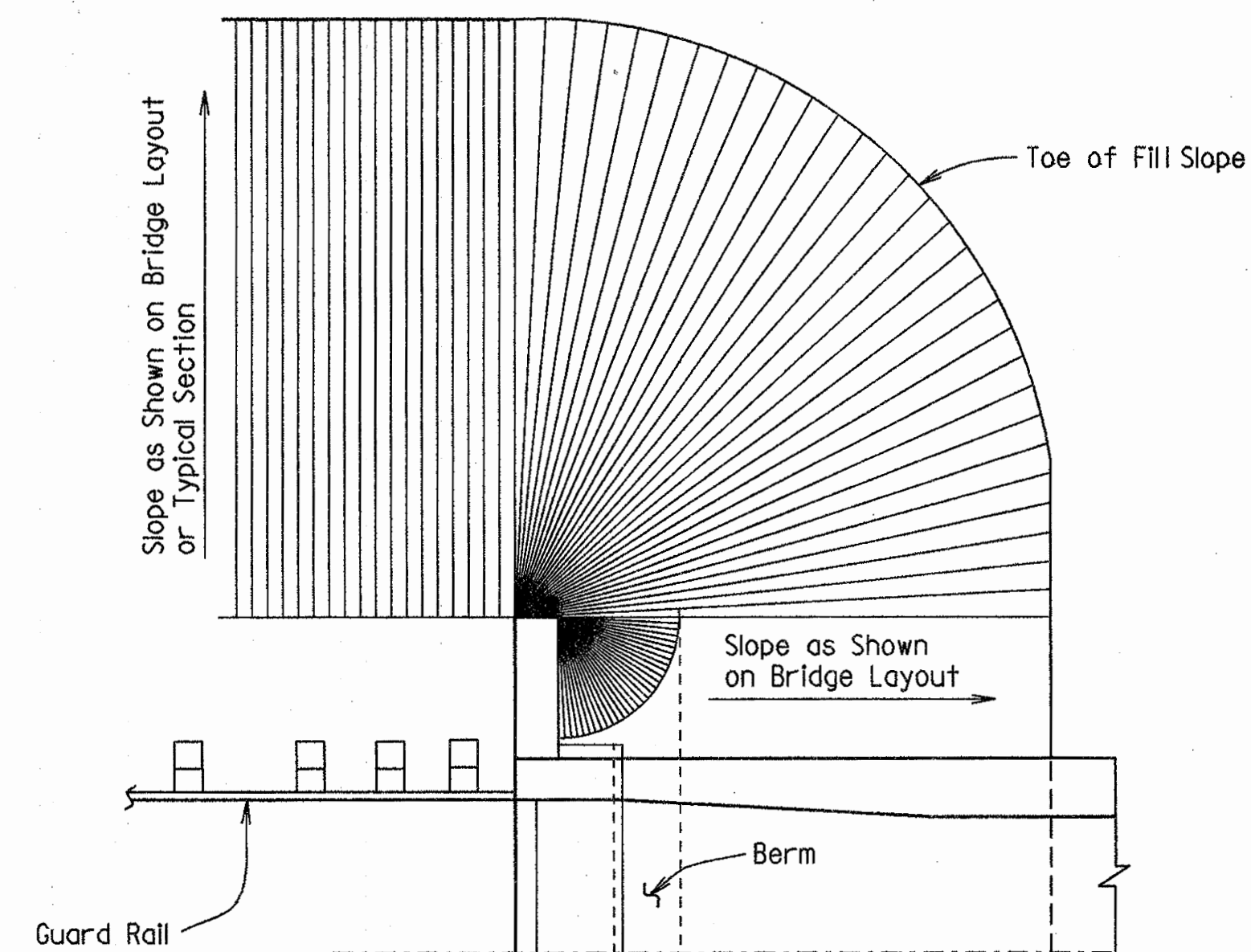
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



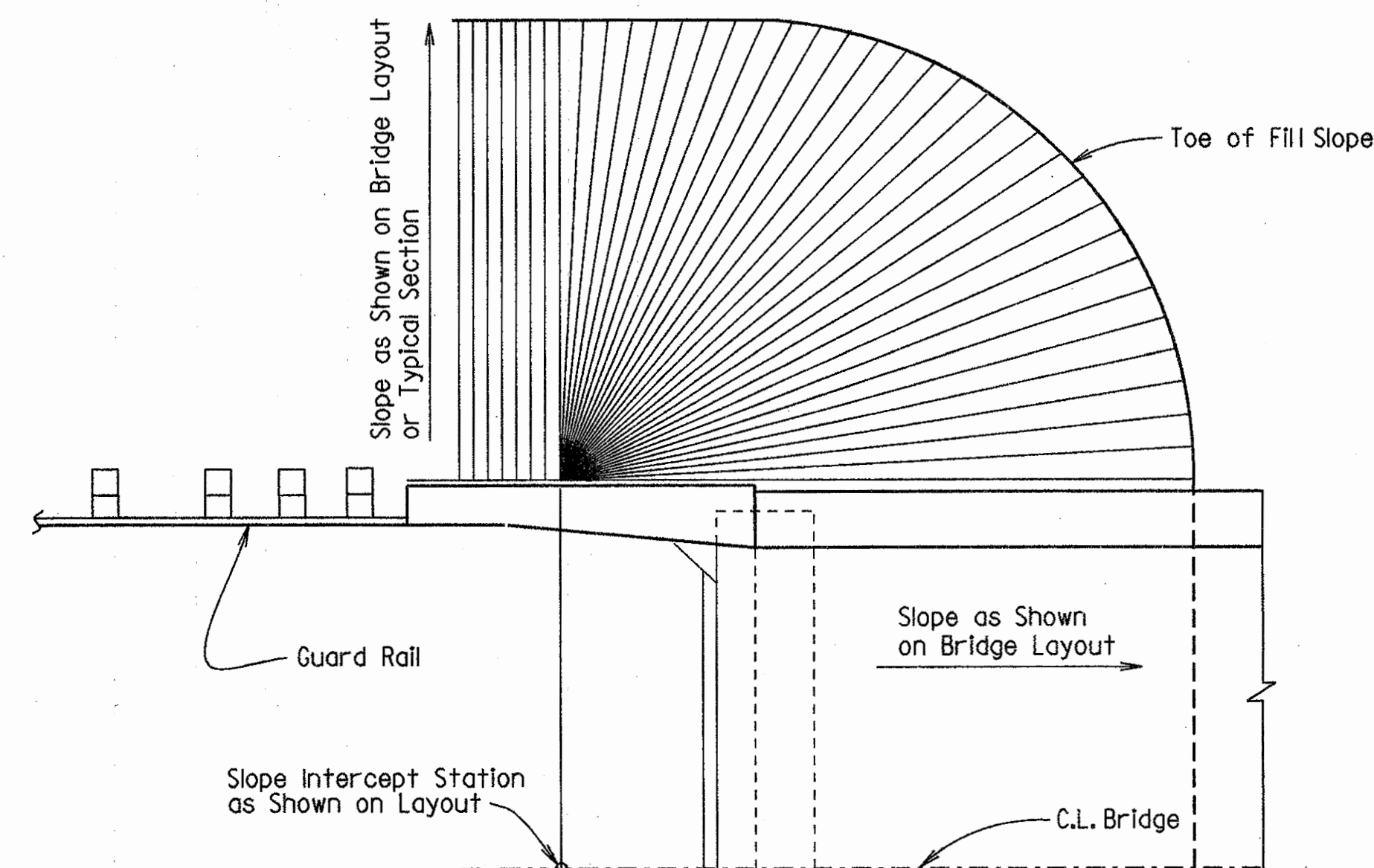
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

# METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

## GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 6.0 m long adjacent to the bridge end, together with the side slopes and slopes under the bridge end including around the end of wingwalls. Embankment adjacent to structures shall be constructed in 100 mm horizontal layers (loose measure) and compacted by the use of mechanical equipment to the satisfaction of the Engineer. Refer to subsections 210.09, 210.10 and 801.08 of the Specifications for construction requirements.

Added DFL P.E.  
Seal; Changed Title;  
by J.P.S.;  
3-14-96



BRIDGE ENGINEER

All dimensions are in millimeters unless otherwise noted.

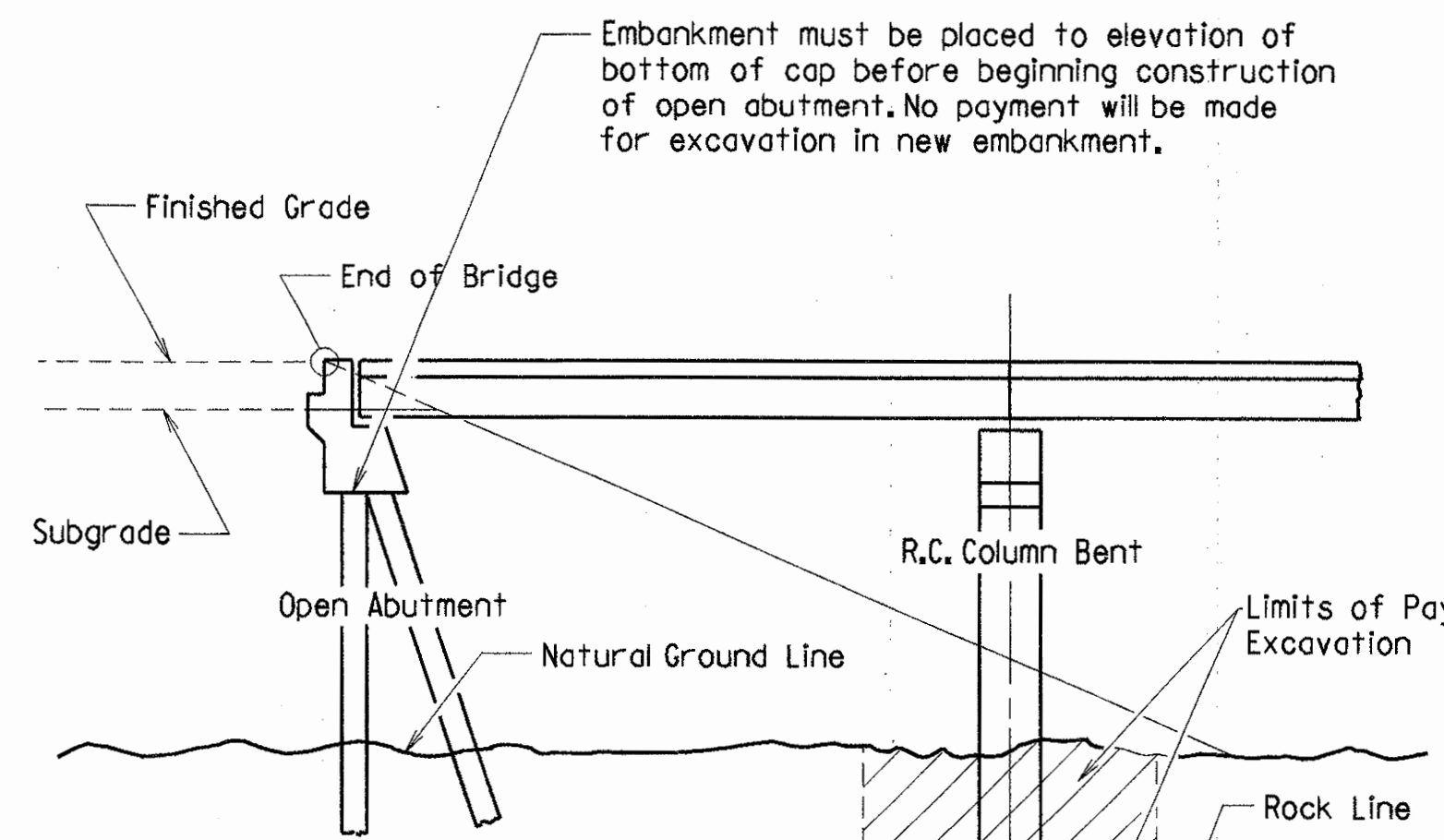
EMBANKMENT CONSTRUCTION AND  
BACKFILL AT BRIDGE ENDS  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: LDF DATE: 8-31-95  
CHECKED BY: DHP DATE: 8-31-95 SCALE: NO SCALE  
DESIGNED BY: STD. DATE: BRIDGE NO. DRAWING NO. 36500

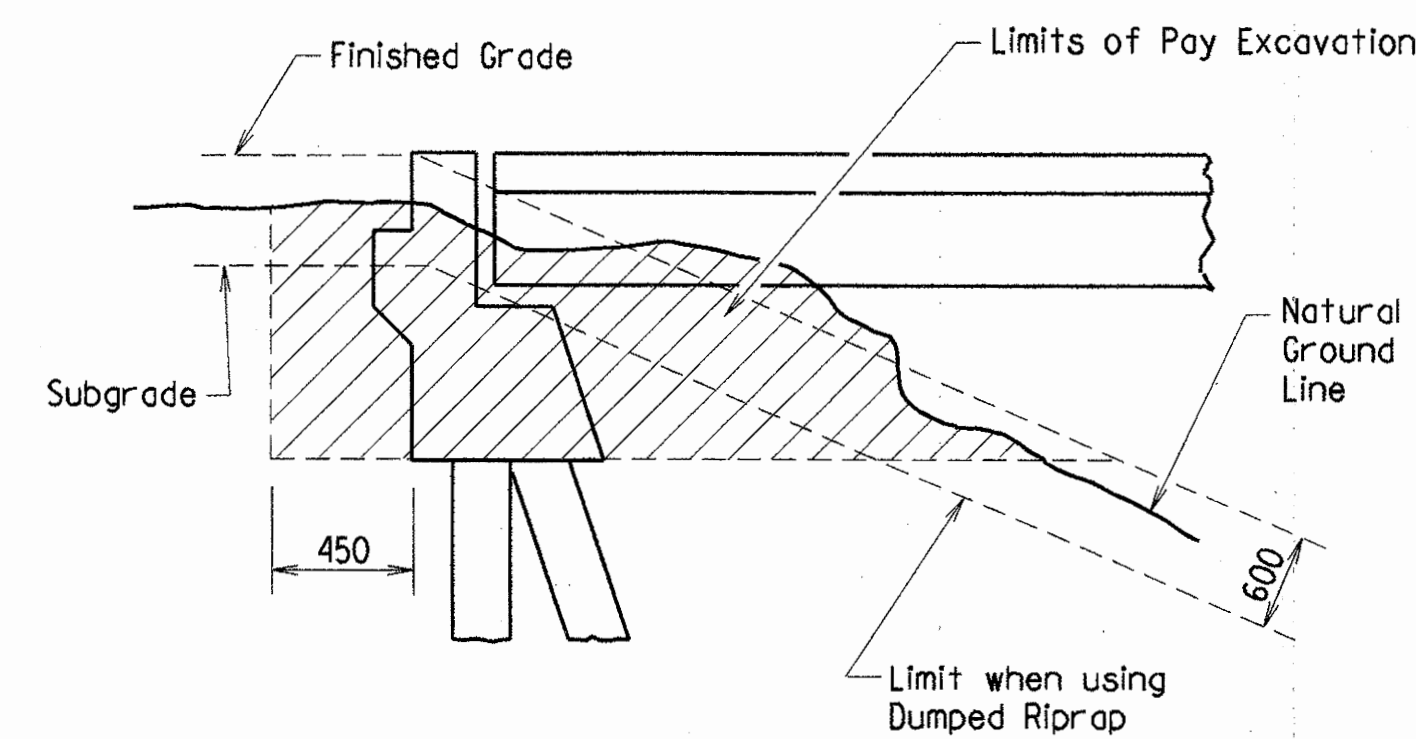




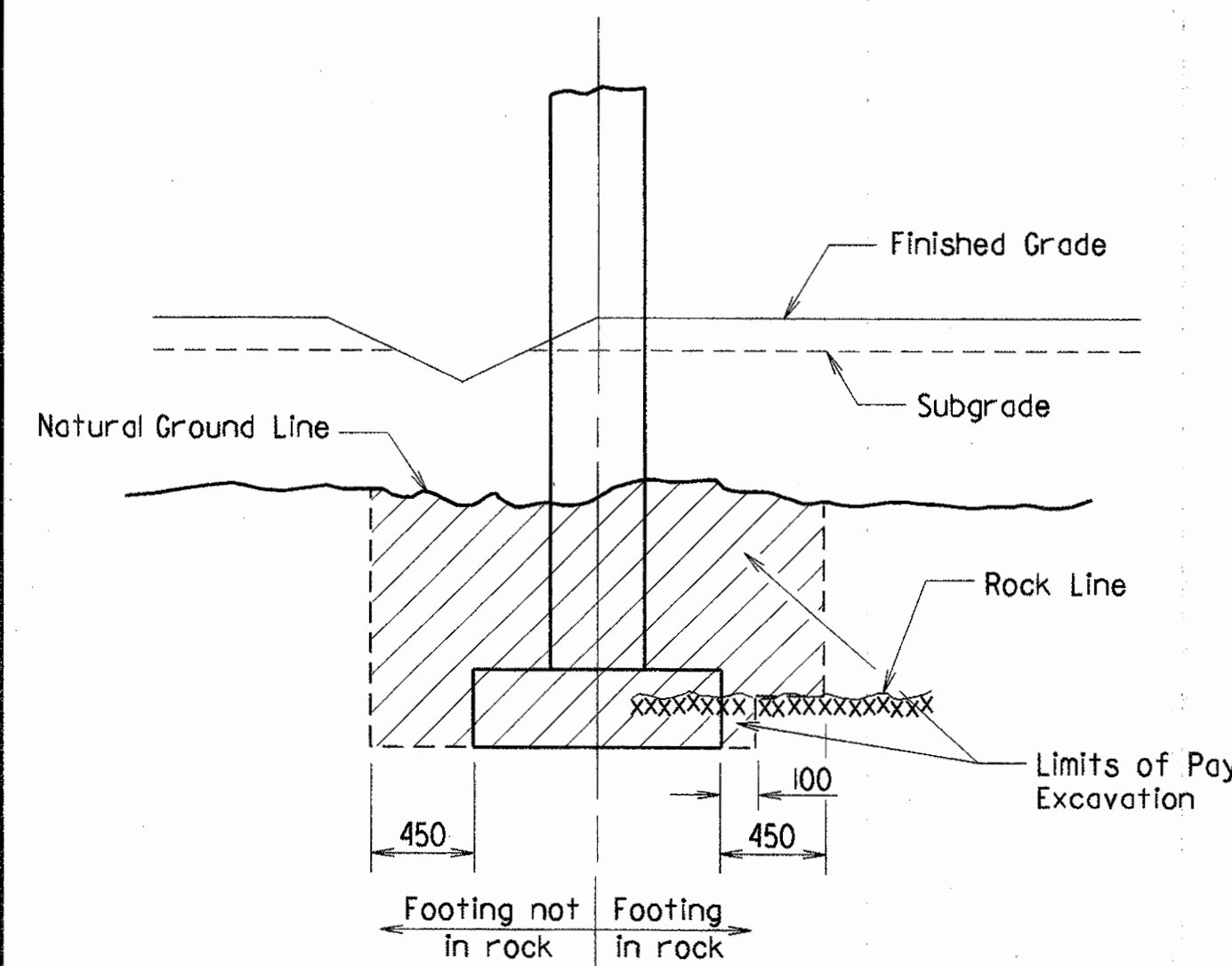
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JOB NO. 3650I								
RIP. & EXCAV.								



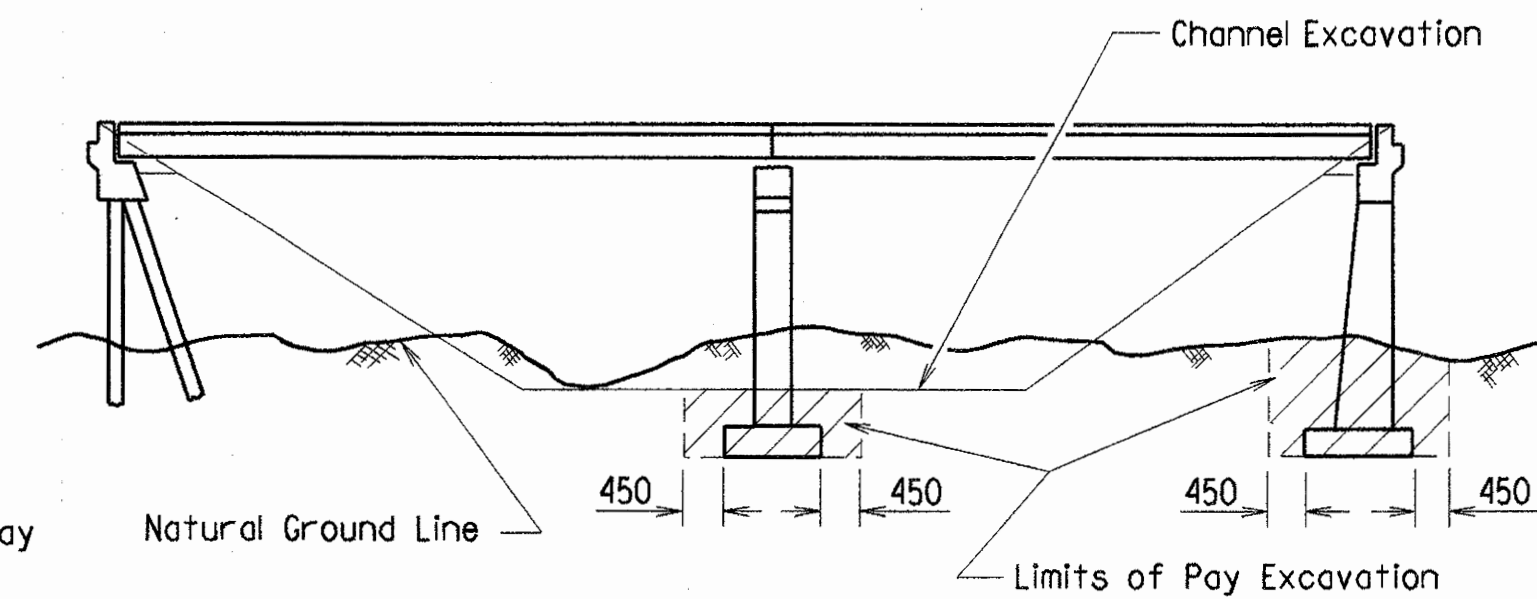
**ABUTMENT IN NEW EMBANKMENT  
INTERIOR BENT IN NEW  
EMBANKMENT AND  
NATURAL GROUND**



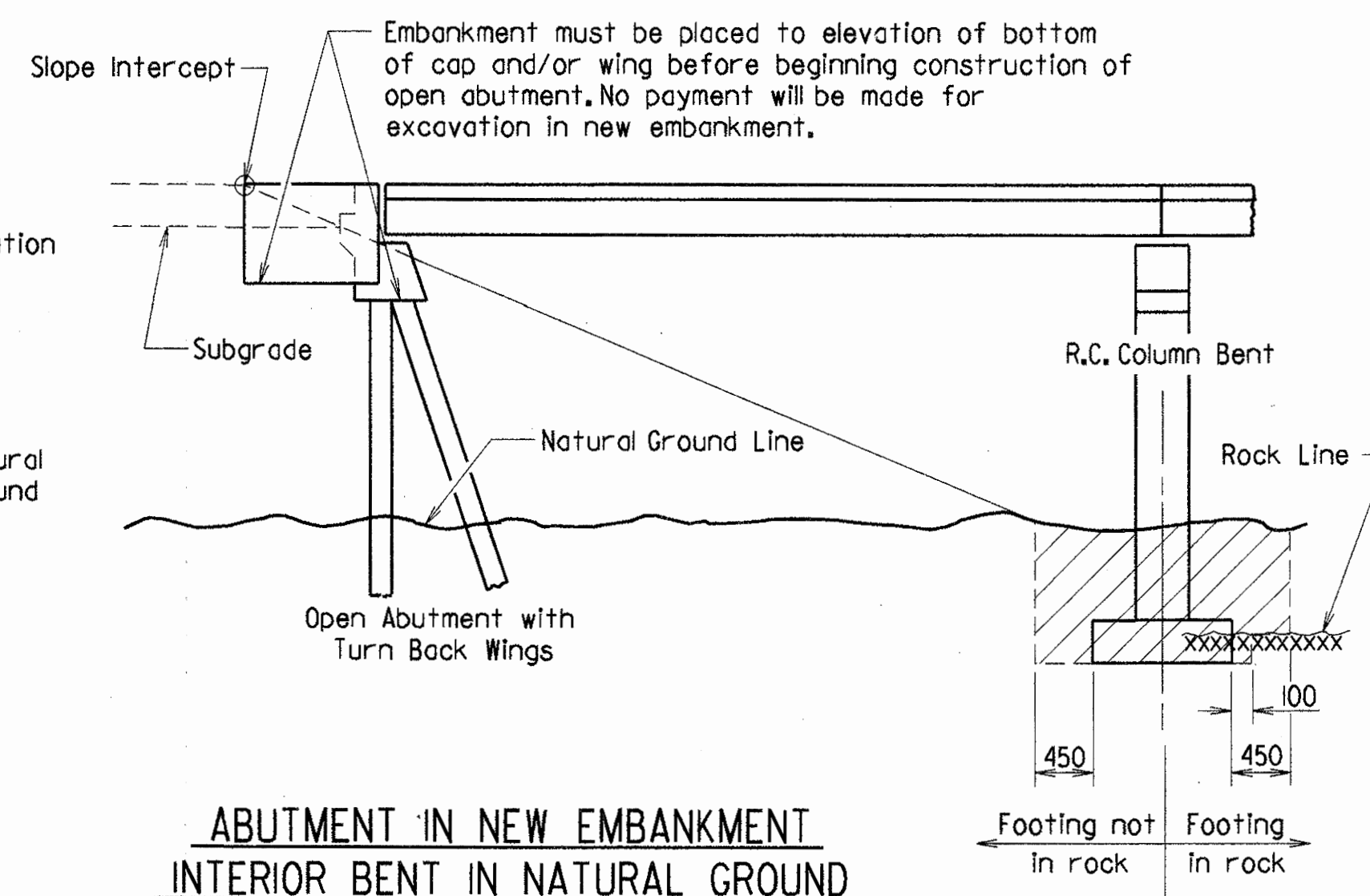
**ABUTMENT IN NATURAL GROUND**



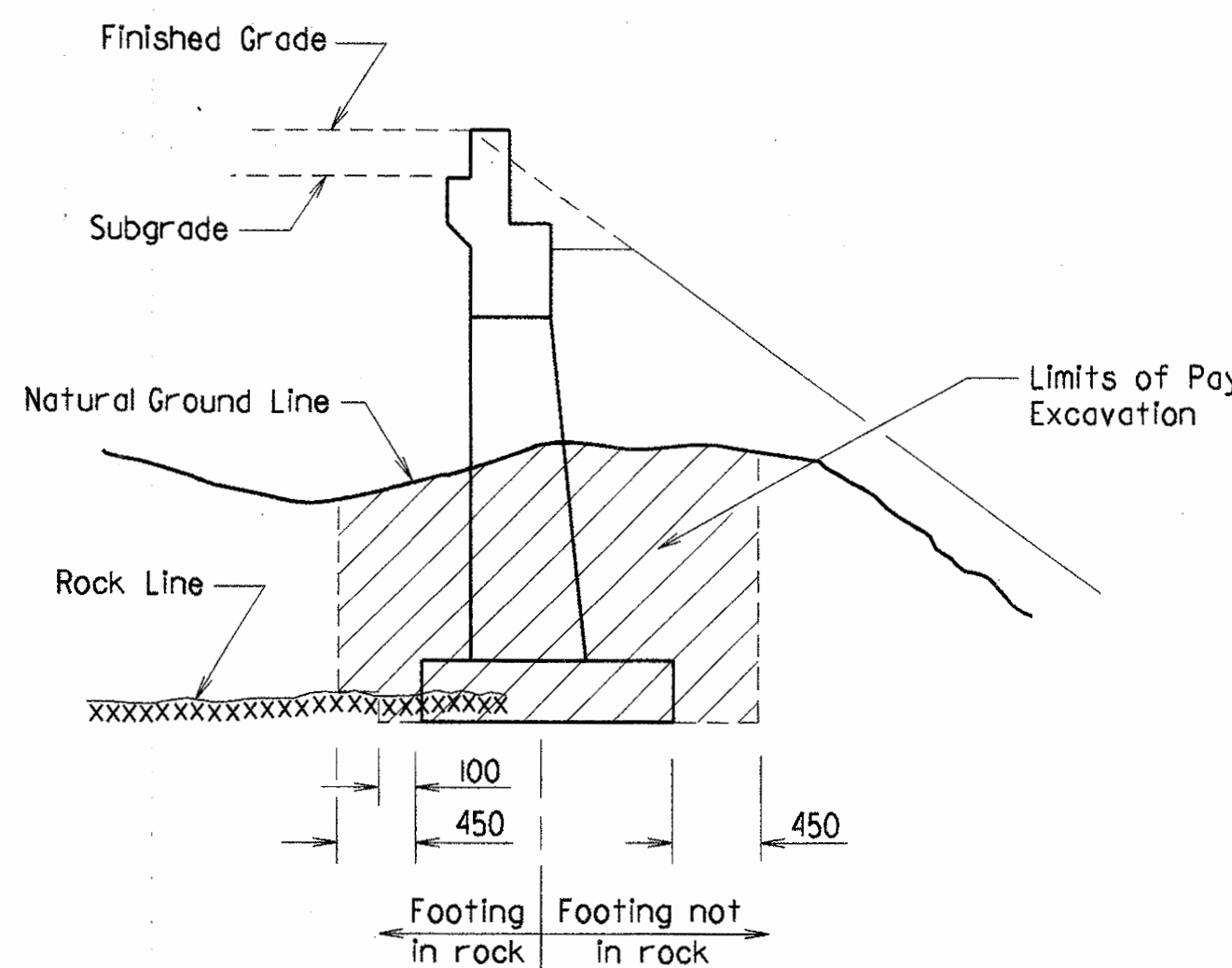
**BENT IN ROADWAY FILL SECTION  
AND NATURAL GROUND**



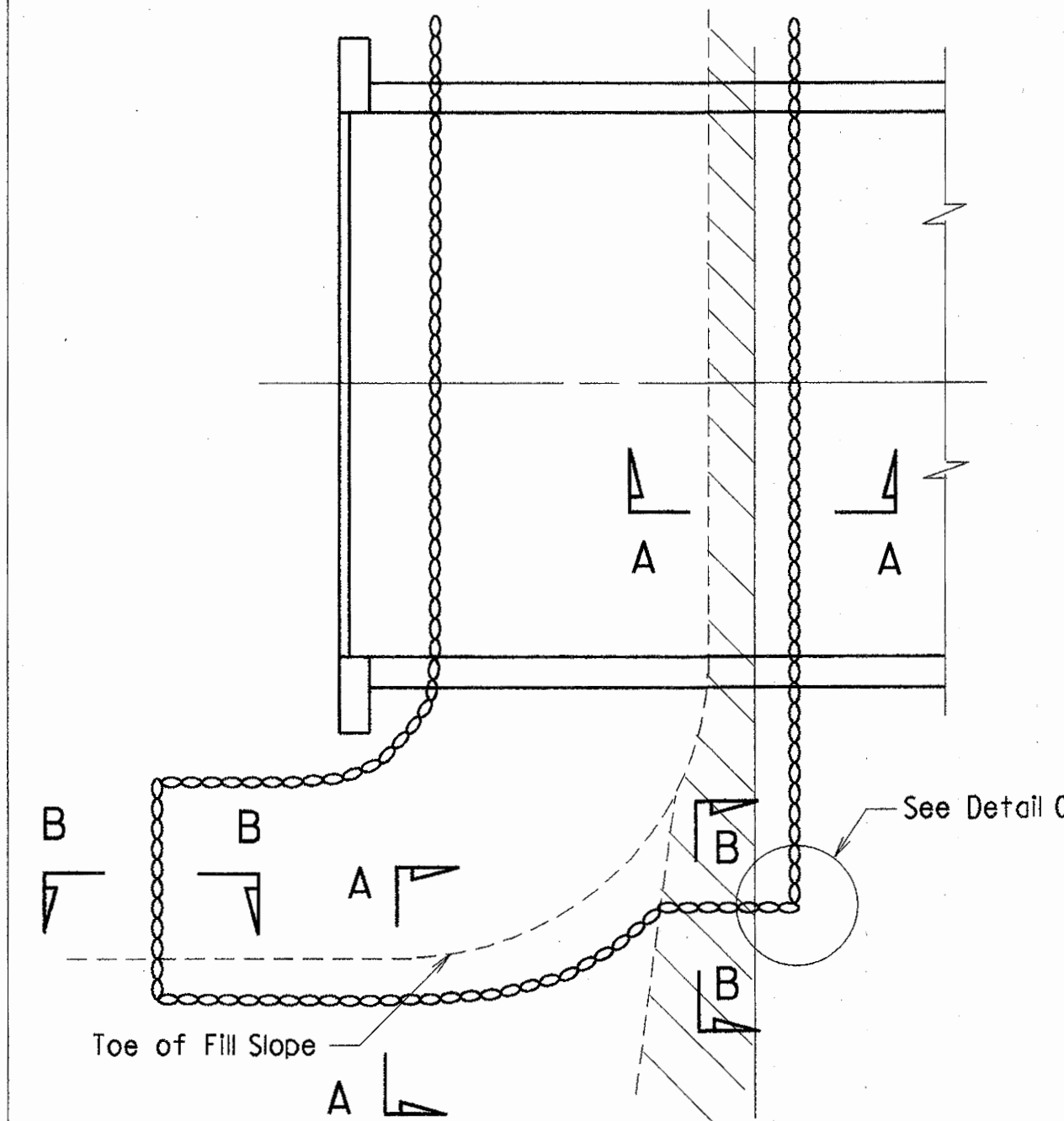
**BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE**



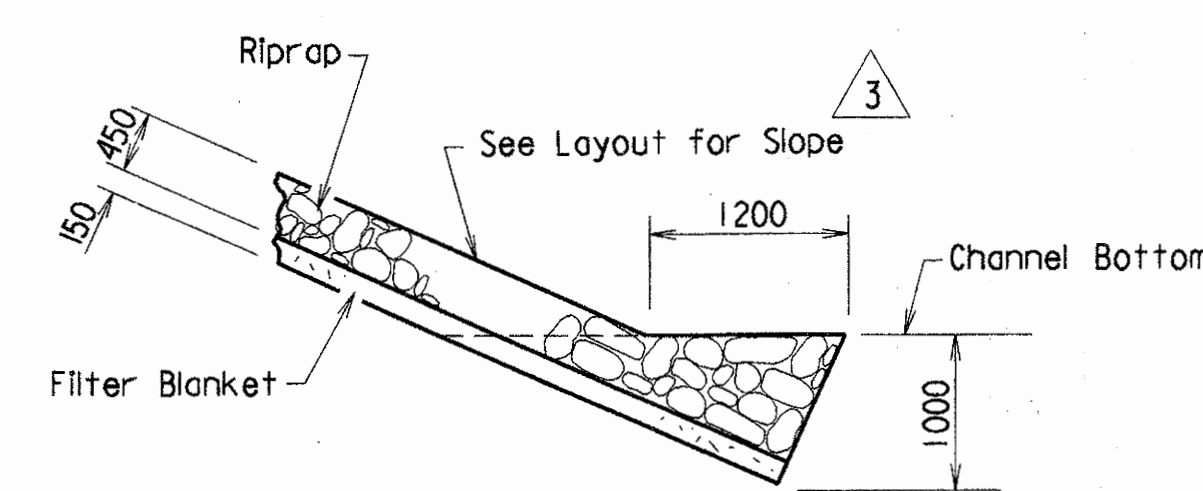
**ABUTMENT IN NEW EMBANKMENT  
INTERIOR BENT IN NATURAL GROUND**



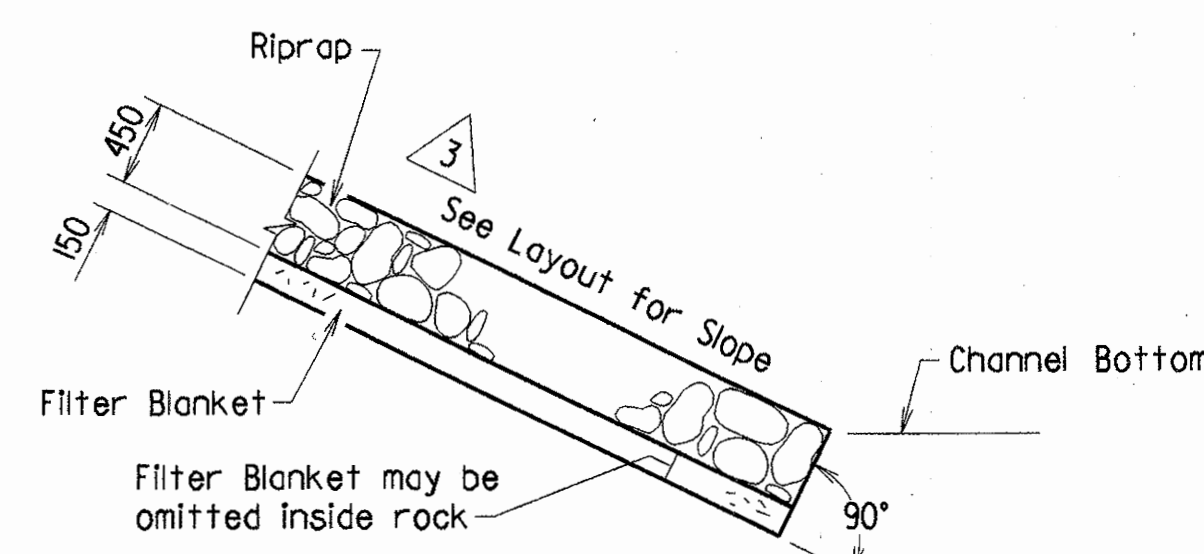
**ABUTMENT IN NATURAL GROUND  
AND NEW EMBANKMENT**



**PLAN OF DUMPED RIPRAP**

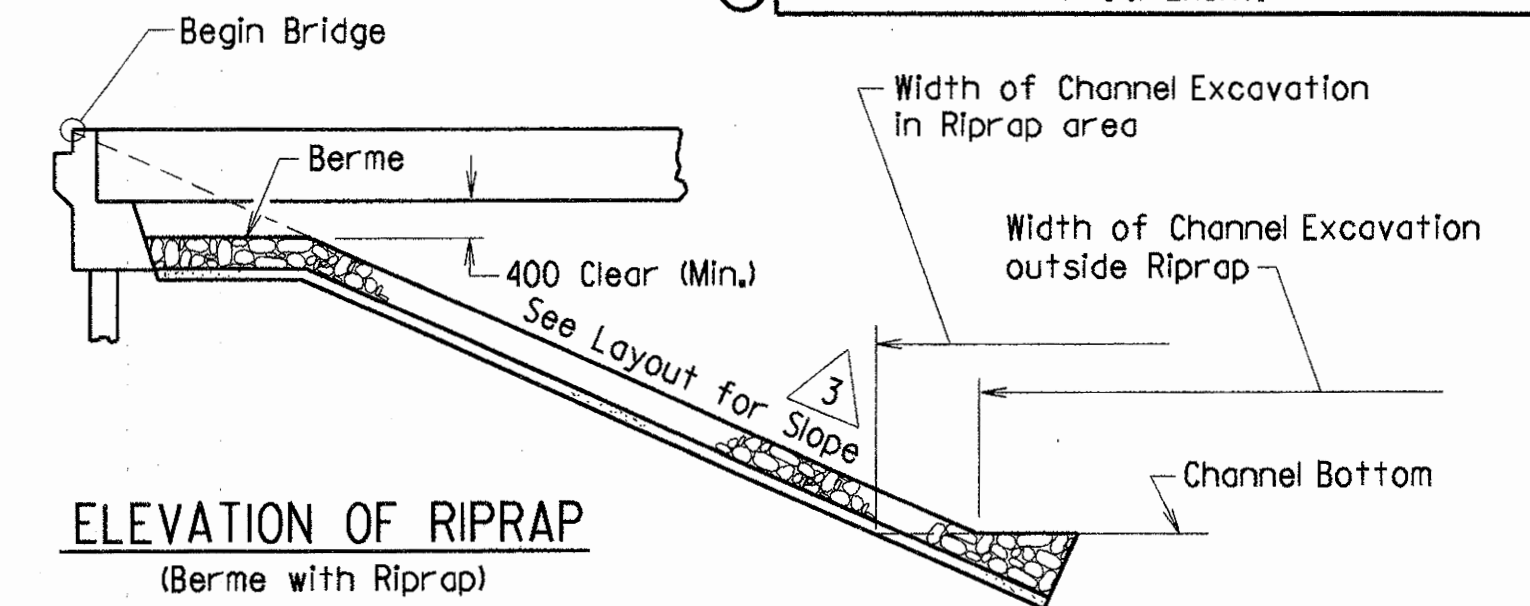


**SECTION A-A  
(Toe Excavation in Soil)**

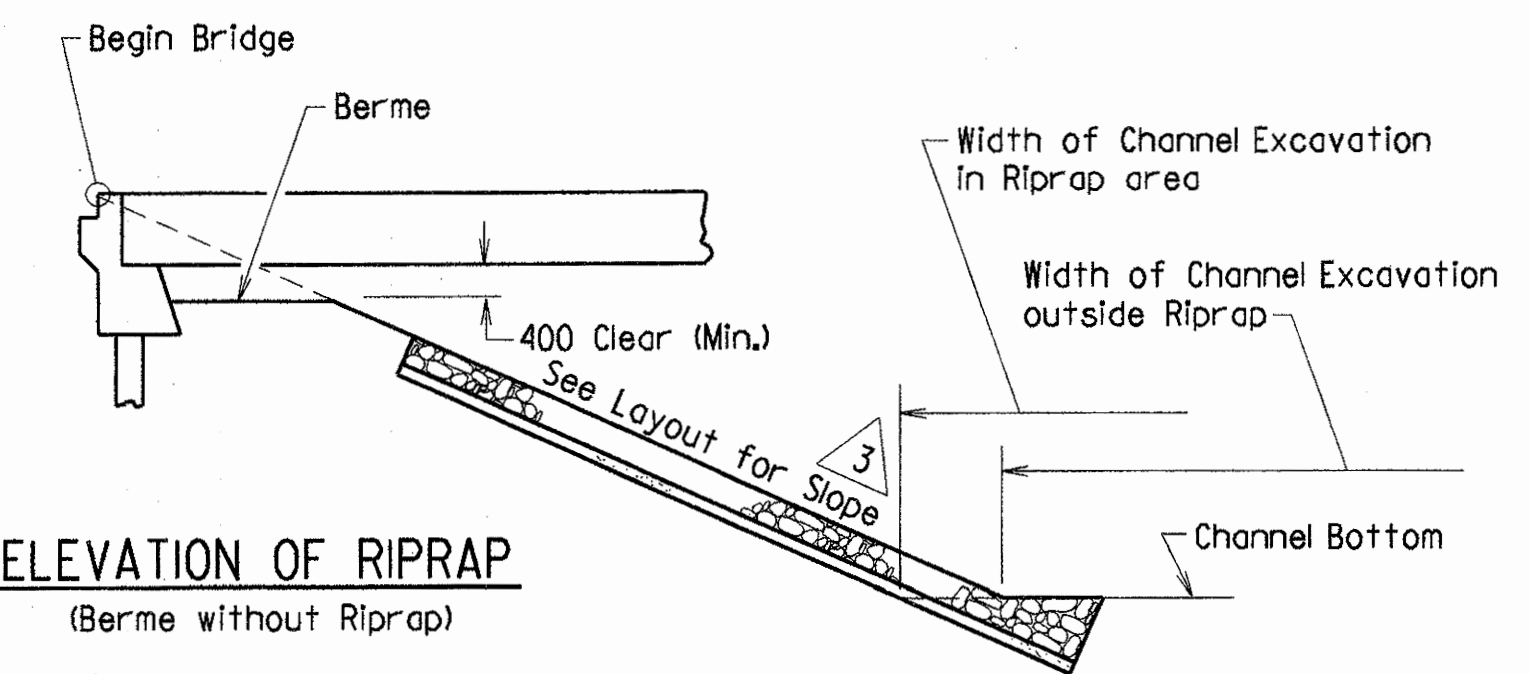


**SECTION A-A  
(Toe Excavation in Rock)**  
Use this type of Toe when rock which is  
in a stable condition is encountered.

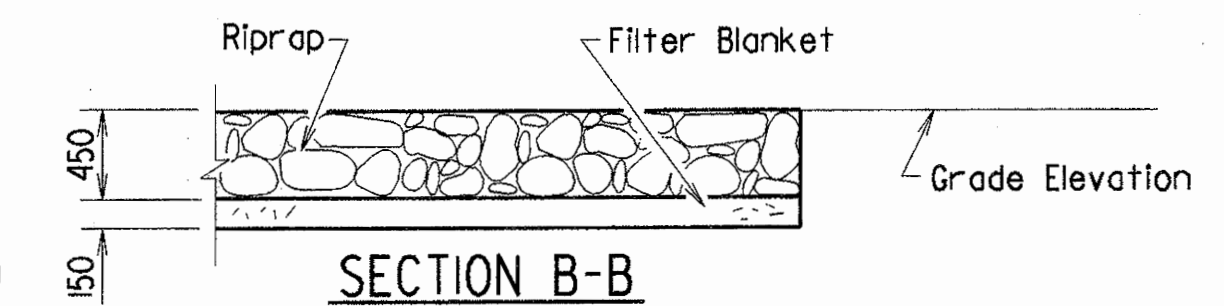
**DUMPED RIPRAP AND FILTER BLANKET**



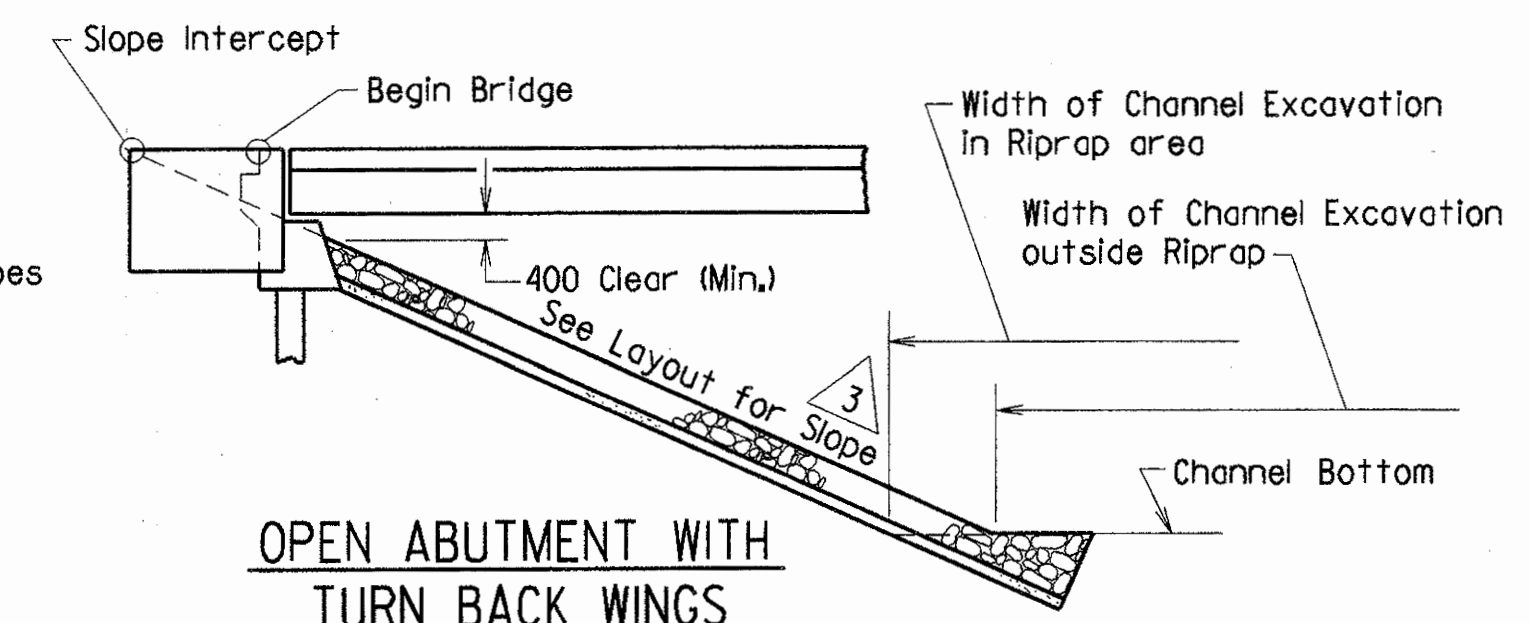
**ELEVATION OF RIPRAP  
(Berm with Riprap)**



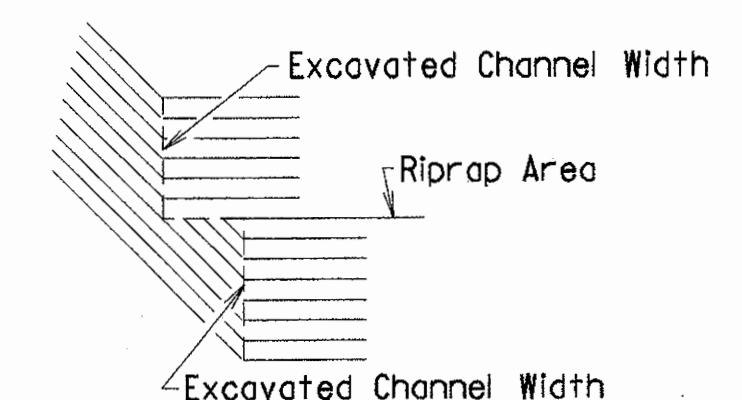
**ELEVATION OF RIPRAP  
(Berm without Riprap)**



**SECTION B-B**



**OPEN ABUTMENT WITH  
TURN BACK WINGS**



**DETAIL C**

**DETAILS FOR DUMPED RIPRAP  
AND FILTER BLANKET AND  
DETAILS FOR COMPUTING  
EXCAVATION FOR STRUCTURES**  
ROUTE SEC.  
**ARKANSAS STATE HIGHWAY COMMISSION**  
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 12-06-93  
CHECKED BY: CPB DATE: 4-10-95  
DESIGNED BY: DATE:  
BRIDGE NO. DRAWING NO. 3650I



BRIDGE ENGINEER

**GENERAL NOTES**

All dimensions are in millimeters (mm) unless otherwise noted.  
In lieu of a Granular Filter Blanket, a synthetic fiber geotextile fabric complying with the requirements of subsection 816.02(e) may be used.

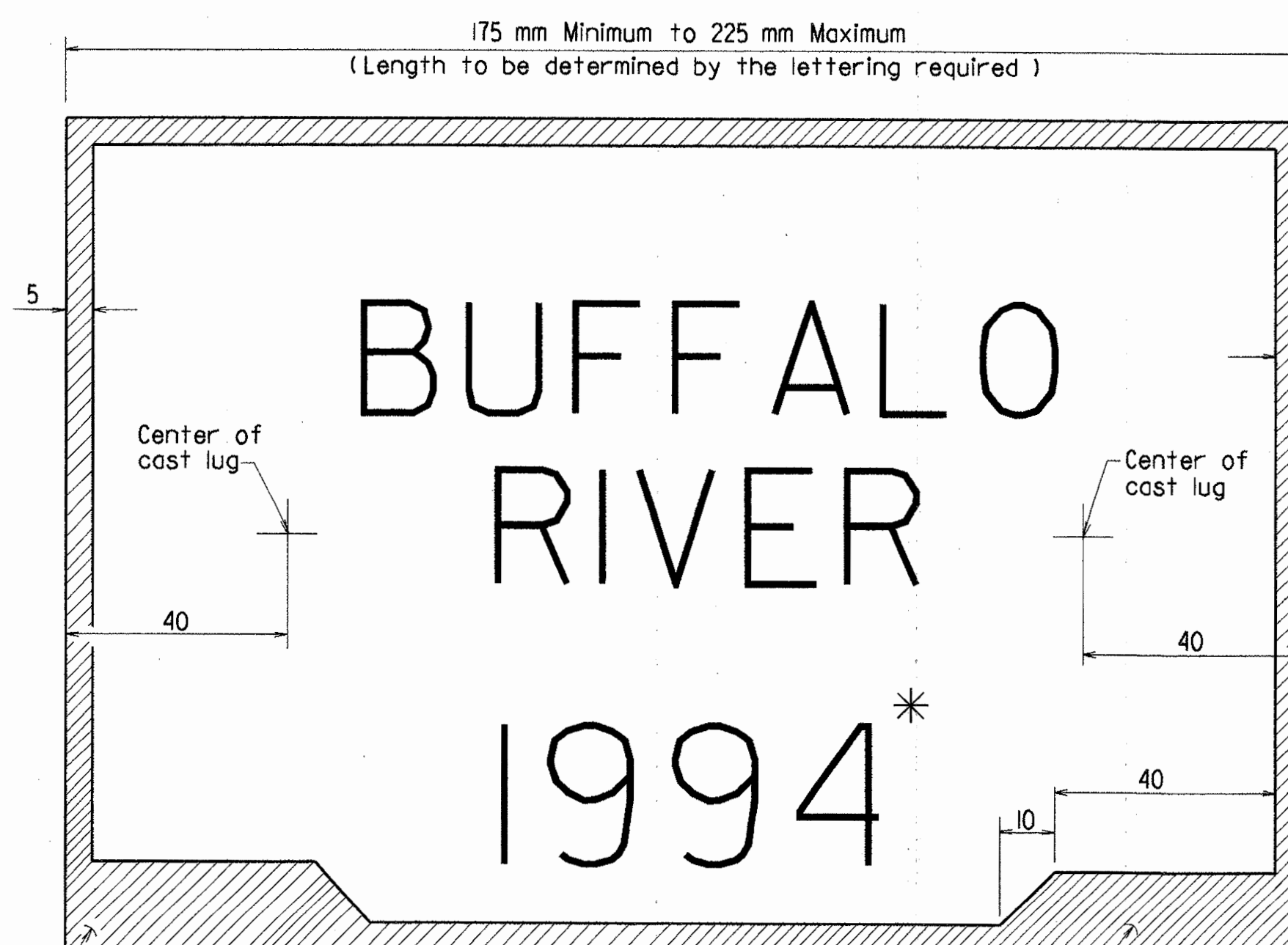
Details for computing Excavation for Structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.

- 3 Revised for 1996 Specs. by A.M.S. 07-18-96, C.P.B.
- 2 Added DFL P.E. Seal by J.P.S. 3-14-96
- 1 Added Metric Logo

**EXCAVATION FOR STRUCTURES**



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6-8-95	6-8-95			6	ARK.		85	
3-14-96	3-14-96							
7-18-96	7-18-96							
				JOB NO.			NAME PLATES	36502

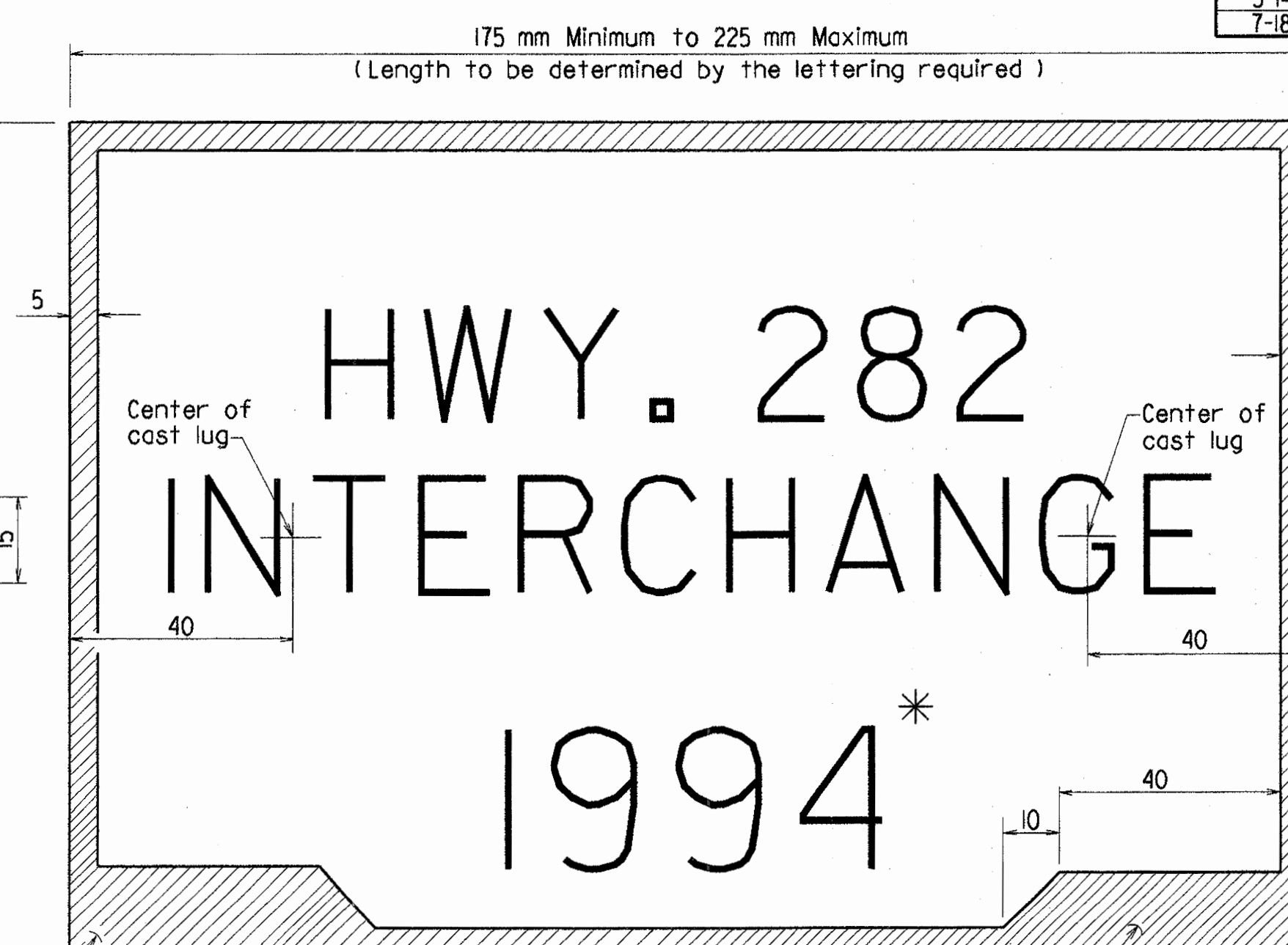


Stamp the design loading here with letters and numerals 10 mm high. Example: MS18

Stamp the bridge number here with numerals 10 mm high. Example: 06275

TYPICAL BRIDGE NAME PLATE - STYLE 1  
STREAM CROSSINGS

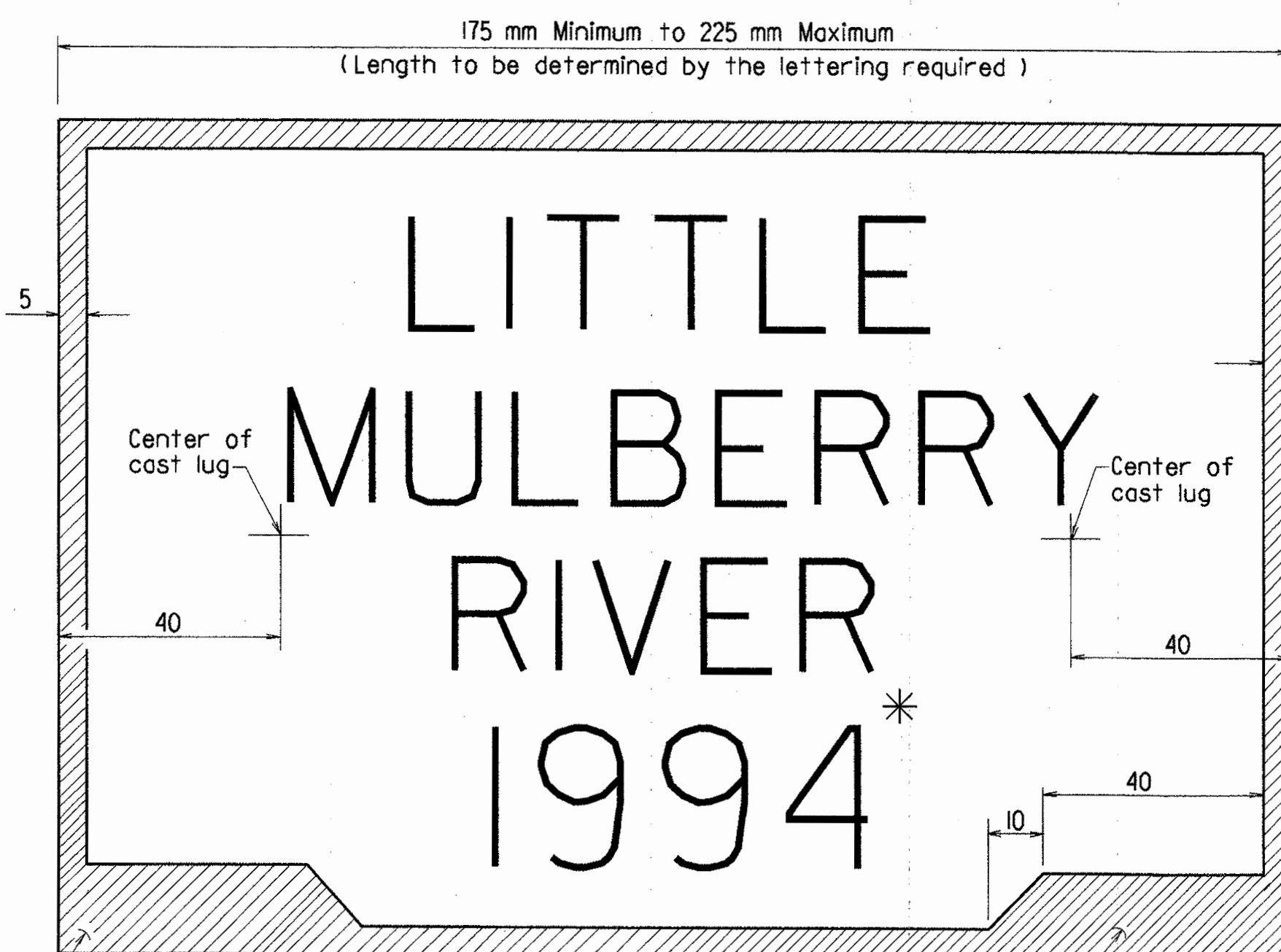
Note: Alternate attachments may be used provided such attachments are submitted and approval secured before fabrication is begun.



Stamp the design loading here with letters and numerals 10 mm high. Example: MS18

Stamp the bridge number here with numerals 10 mm high. Example: A6275

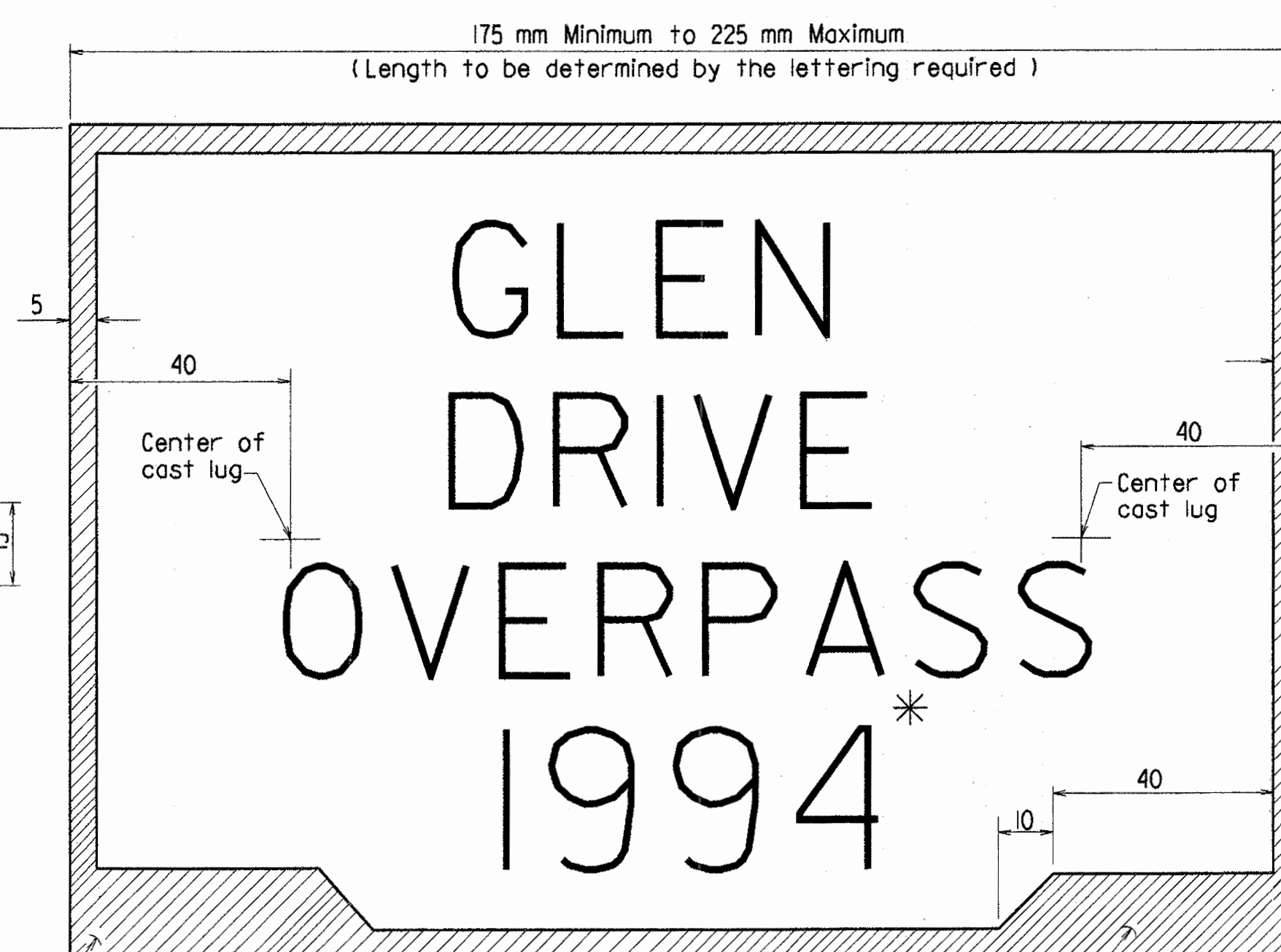
TYPICAL BRIDGE NAME PLATE - STYLE 3  
GRADE SEPARATION STRUCTURES



Stamp the design loading here with letters and numerals 10 mm high. Example: MS18

Stamp the bridge number here with numerals 10 mm high. Example: 06275

TYPICAL BRIDGE NAME PLATE - STYLE 2  
STREAM CROSSINGS



Stamp the design loading here with letters and numerals 10 mm high. Example: MS18

Stamp the bridge number here with numerals 10 mm high. Example: A6275

TYPICAL BRIDGE NAME PLATE - STYLE 4  
GRADE SEPARATION STRUCTURES

#### GENERAL NOTES

All dimensions are in millimeters unless otherwise noted.

Name plates shall be either cast aluminum or bronze and shall meet the material requirements as specified in Section 812 of the Standard Specifications.

Body of plate shall be 5 mm thick and shall include two tapering cone lugs 10 mm to 15 mm x 50 mm long. The border and all lettering shall be raised 3 mm above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered.

The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 1996 Edition, with applicable Supplemental Specifications and Special Provisions.

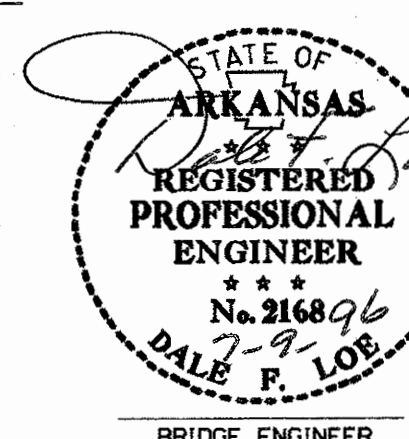
\* Year in which contract is awarded.

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3 Revised for 1996 Specs. by A.M.S. 07/18/96, Ckd. by C.P.B.

2 Added DFL P.E. Seal; 3-14-96 by J.P.S.;

1 Added Metric Logo



#### DETAILS OF STANDARD TYPE C BRIDGE NAME PLATES

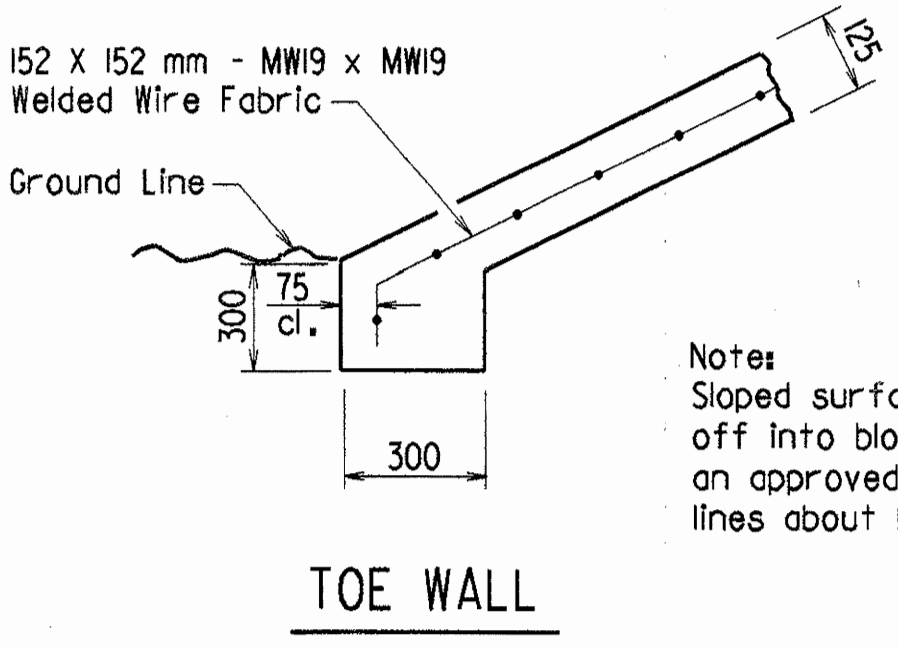
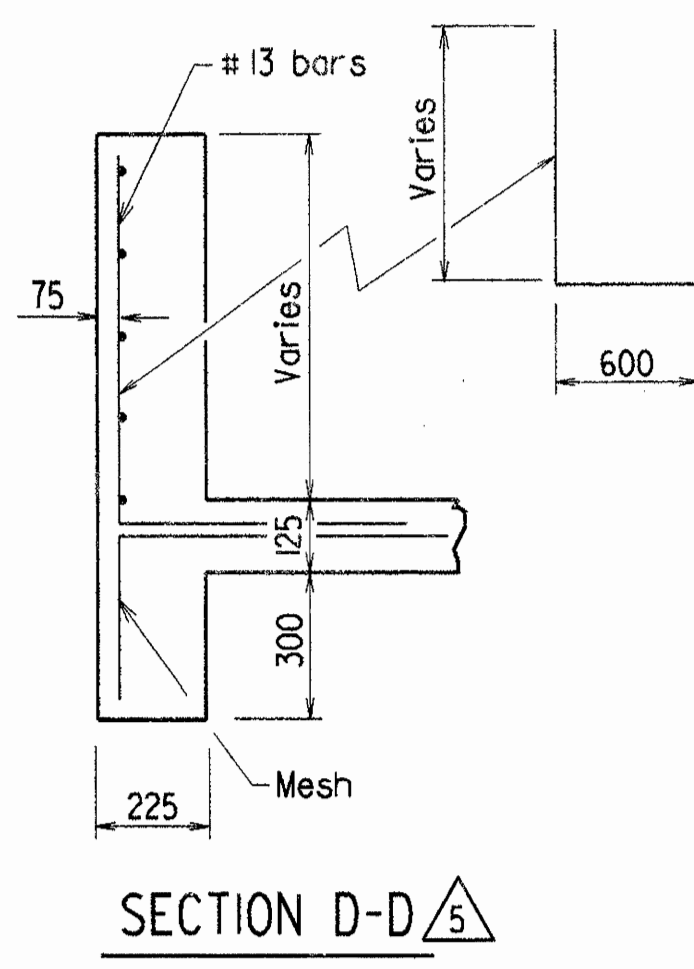
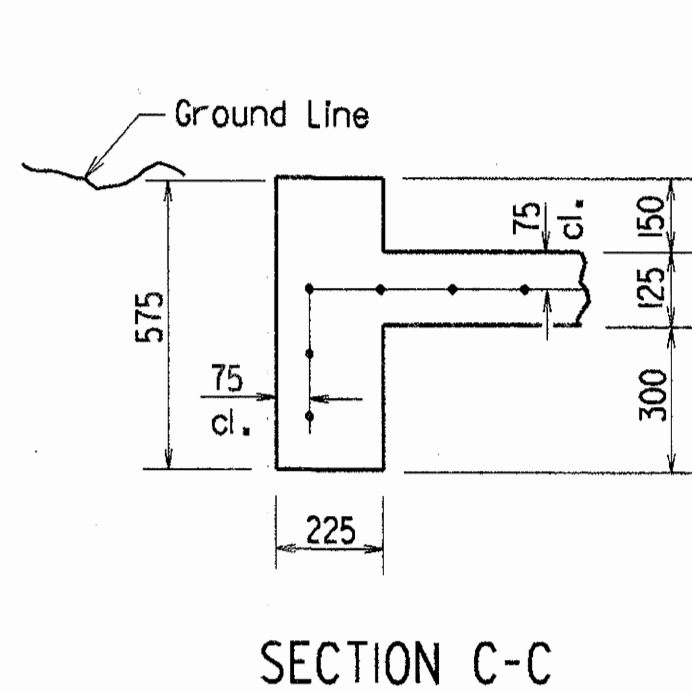
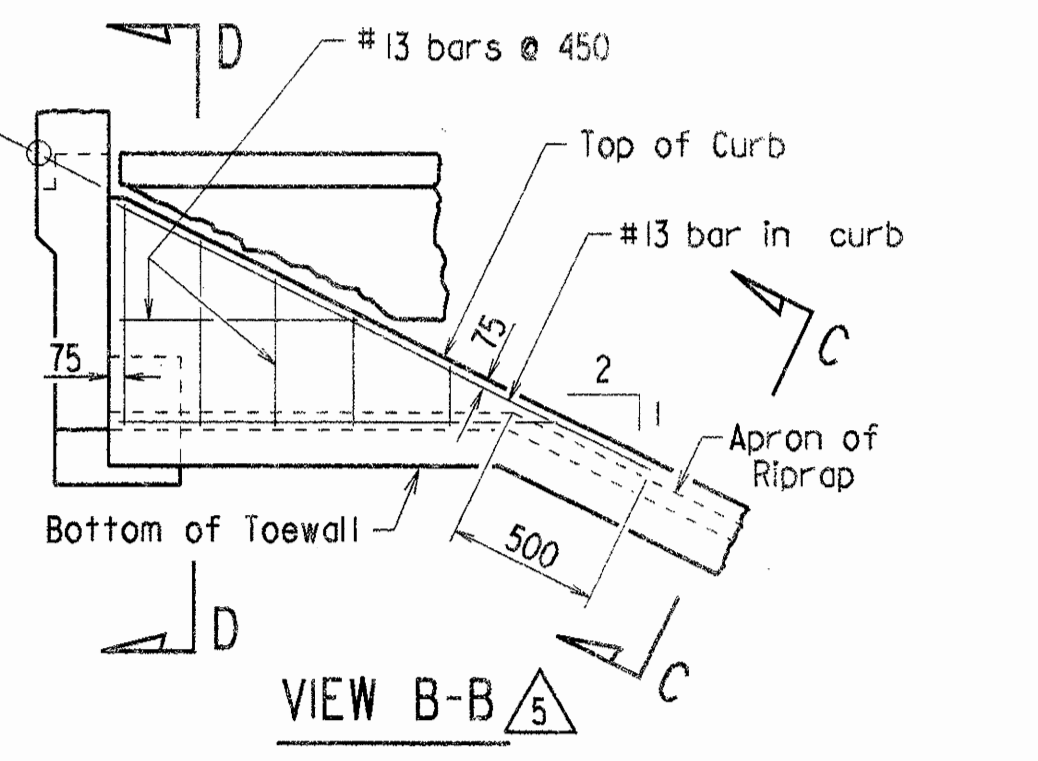
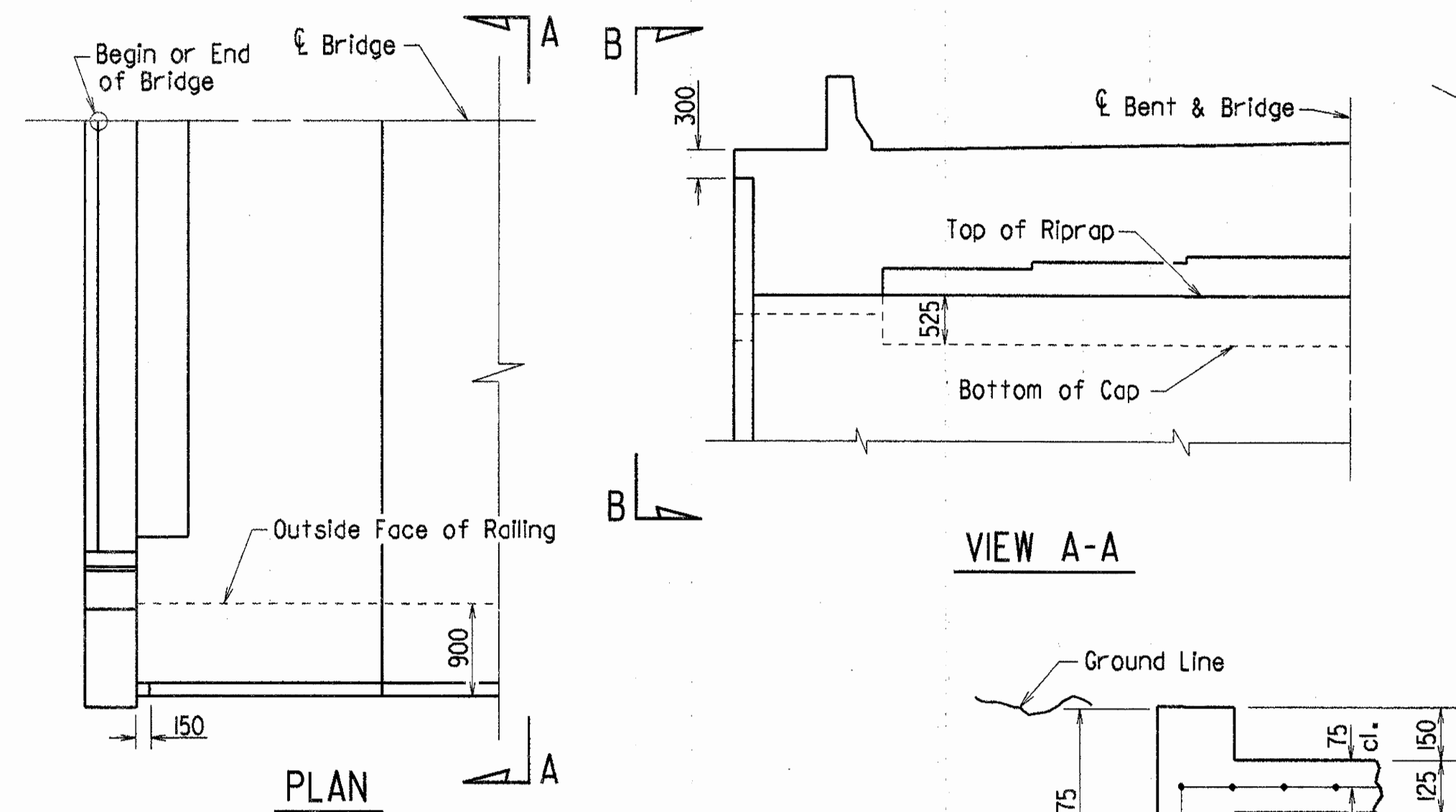
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: AMS DATE: 11-23-93  
CHECKED BY: CPB DATE: 4-10-95  
DESIGNED BY: DATE:  
BRIDGE NO. DRAWING NO. 36502

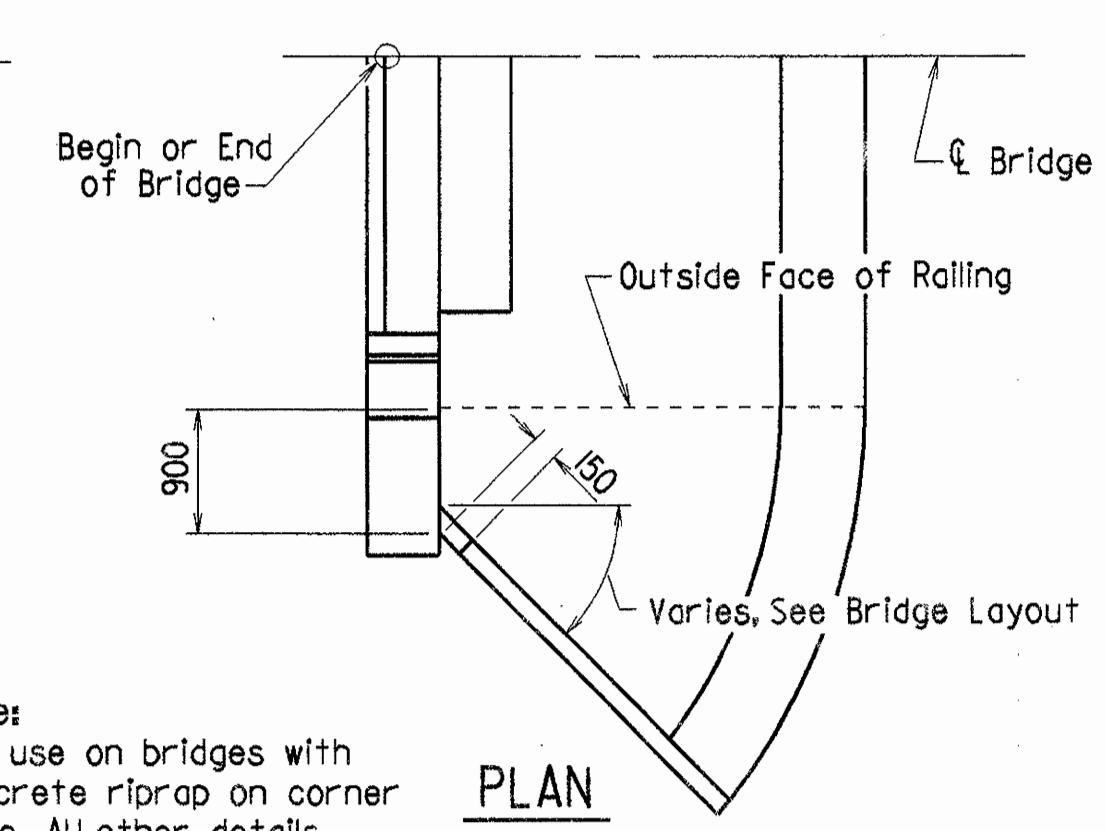
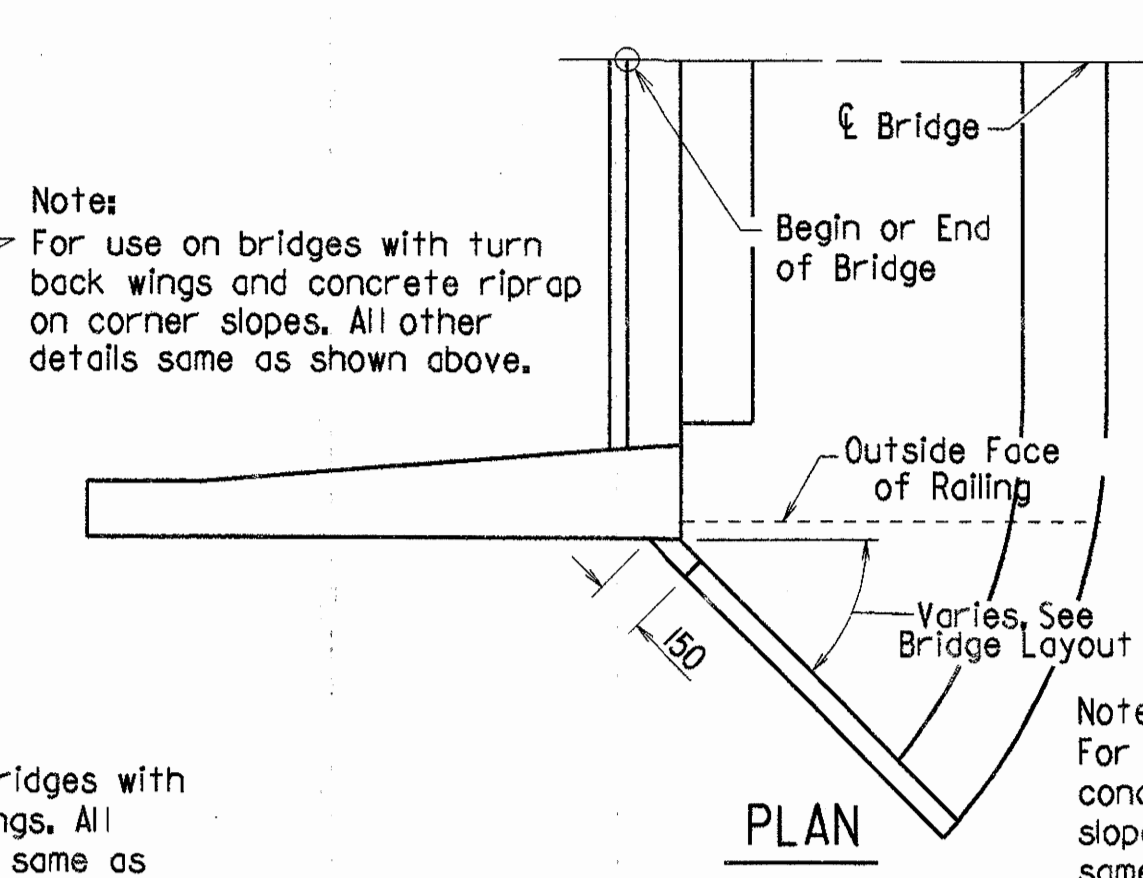
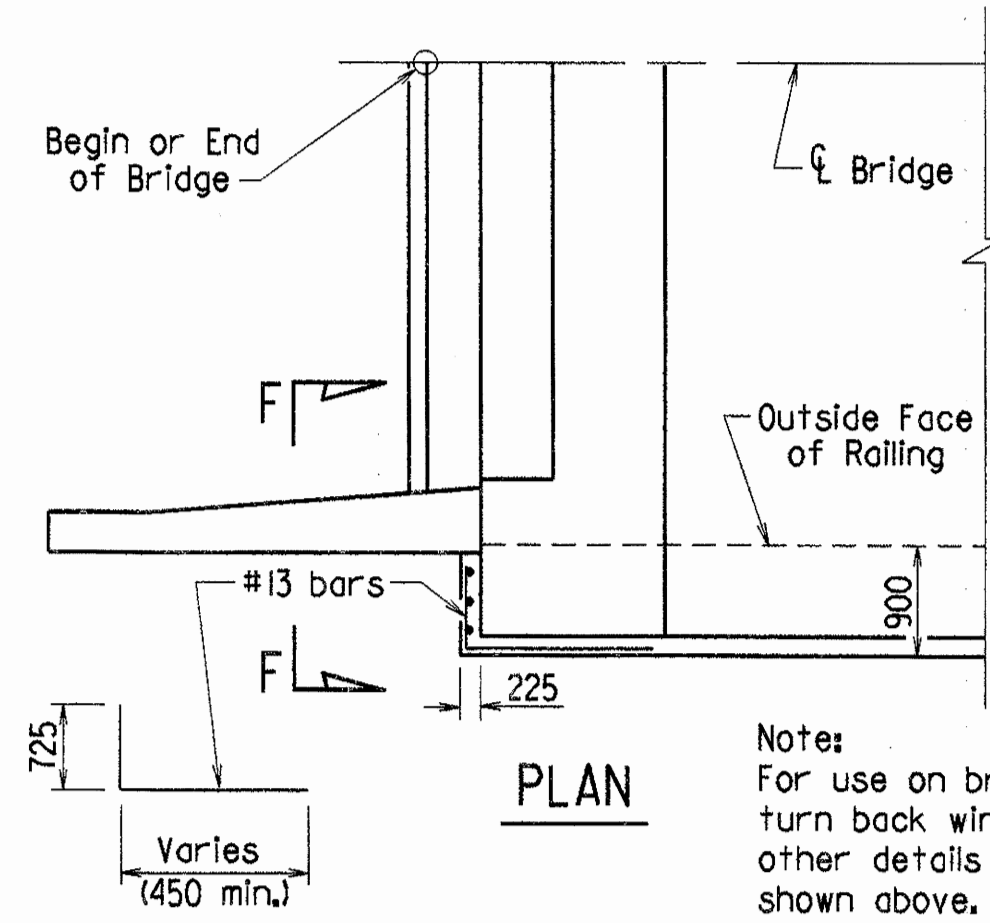




DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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6-8-95	6-8-95	4-3-97	4-3-97					
3-14-96	3-14-96							
JOB NO.							RIPRAP & PILE	36505

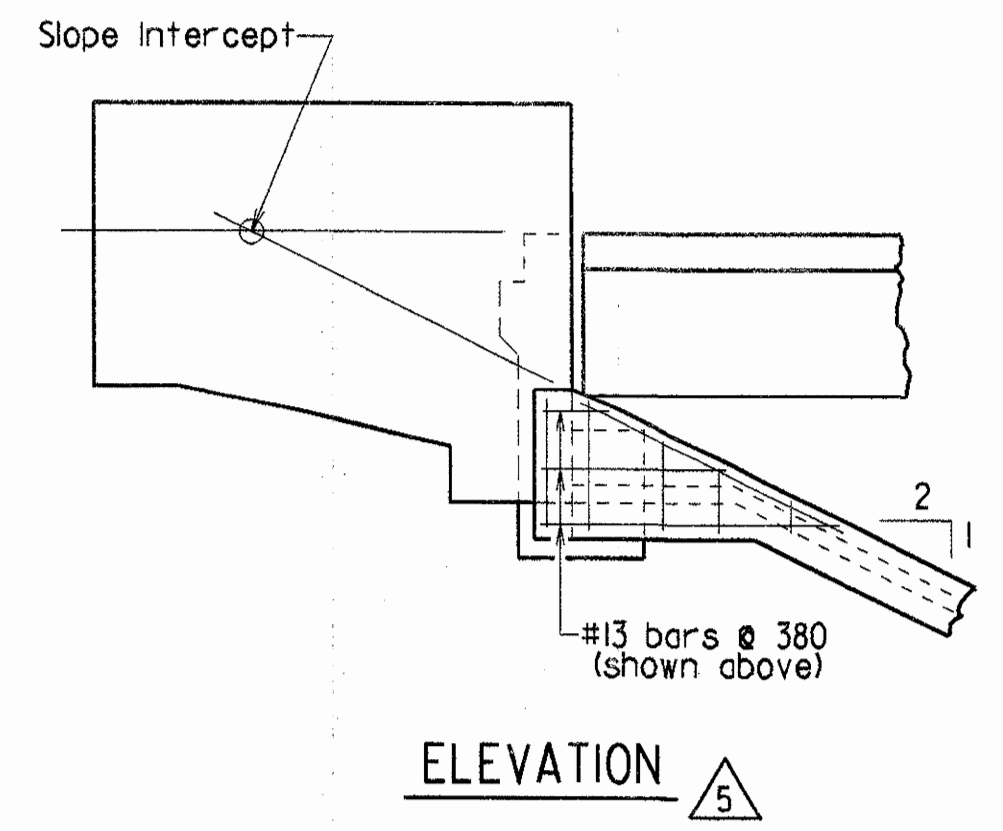
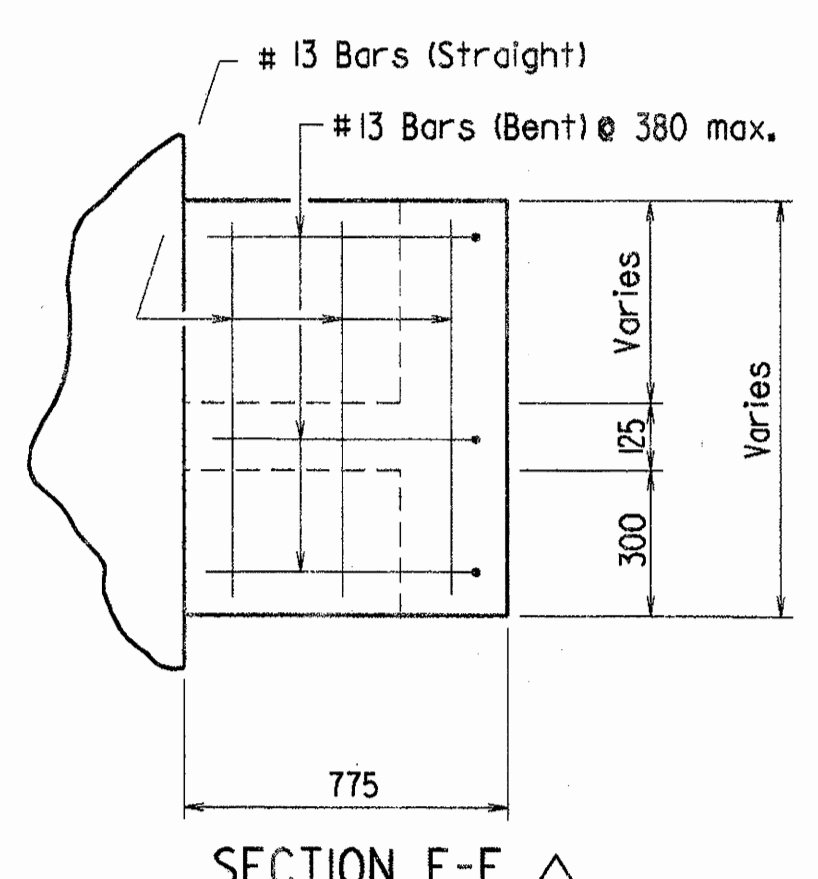


Notes:  
Sloped surfaces of concrete riprap to be marked off into blocks (construction joints optional) with an approved grooving tool, spacing the grooved lines about 1.5 m apart.



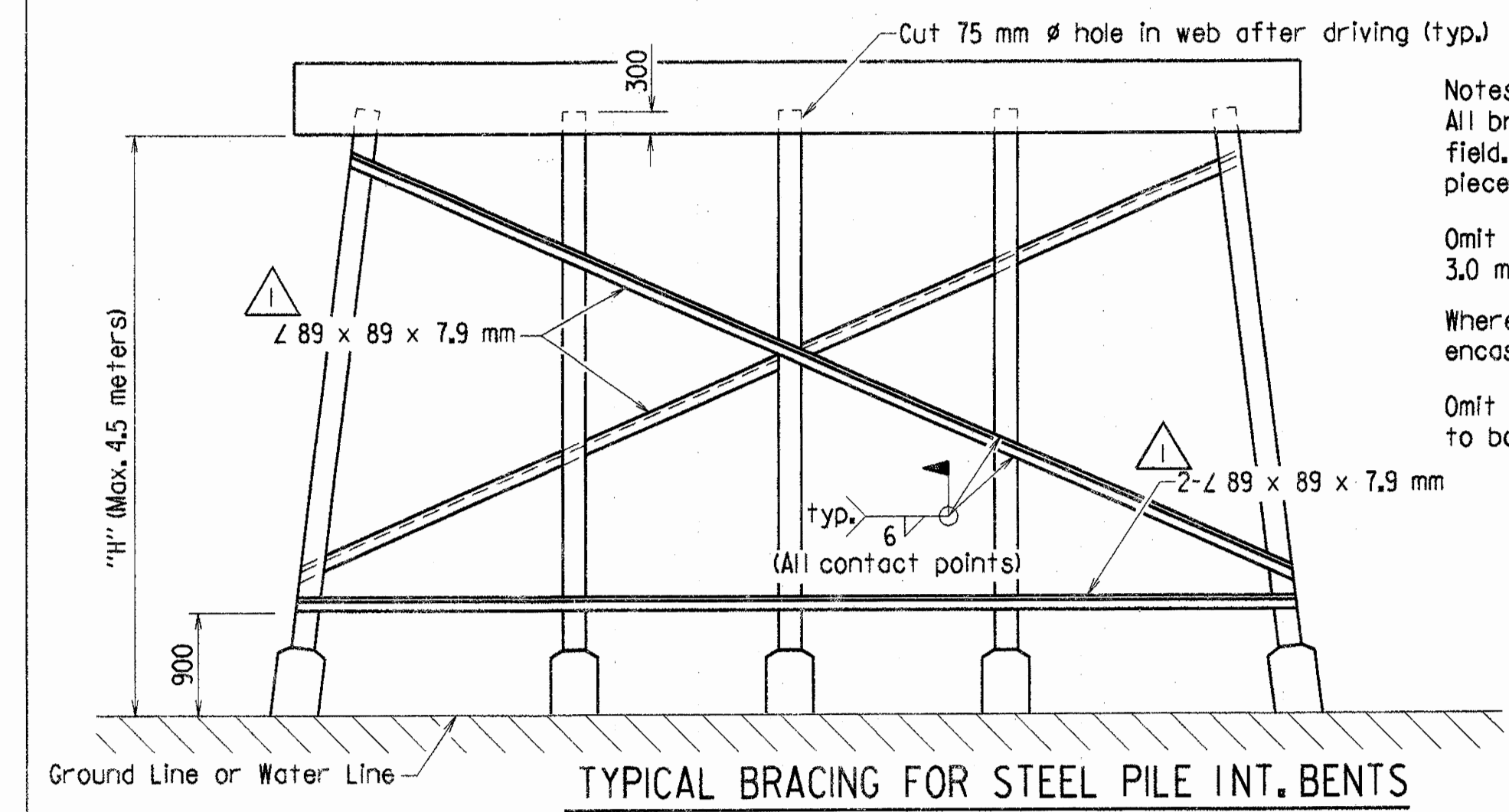
Notes:  
For use on bridges with turn back wings and concrete riprap on corner slopes. All other details same as shown above.

Notes:  
For use on bridges with concrete riprap on corner slopes. All other details same as shown above.



# DETAILS OF CONCRETE RIPRAP

General Note: All dimensions are in millimeters (mm) unless otherwise noted.

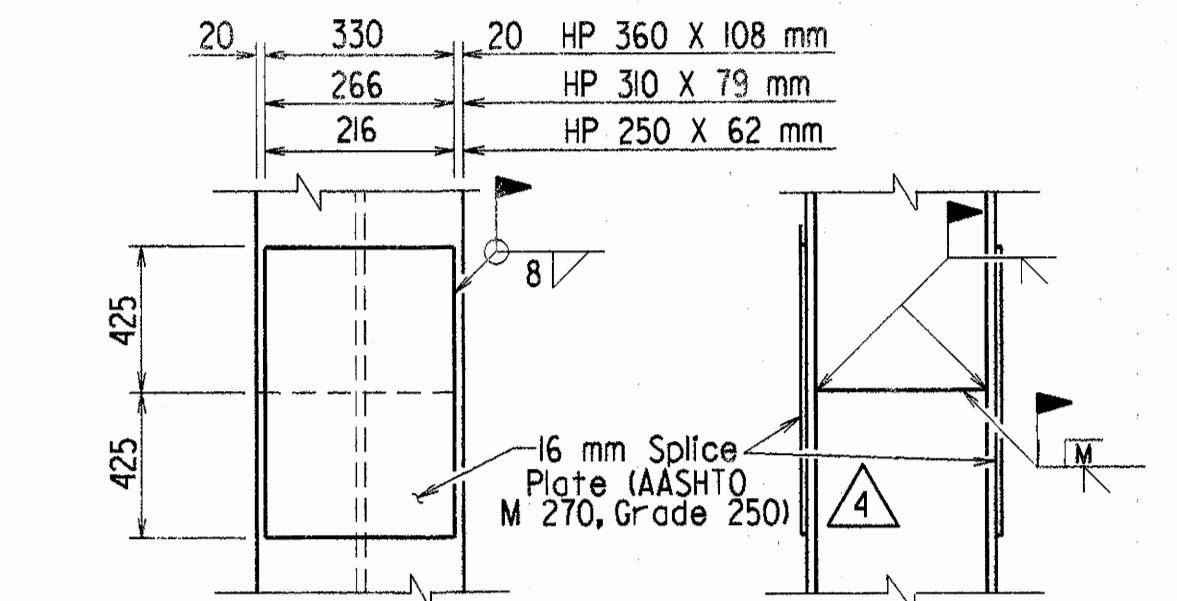


Notes:  
All bracing shall be cut and welded in the field. Each brace shall be furnished in one piece. Payment shall be made under item 807.

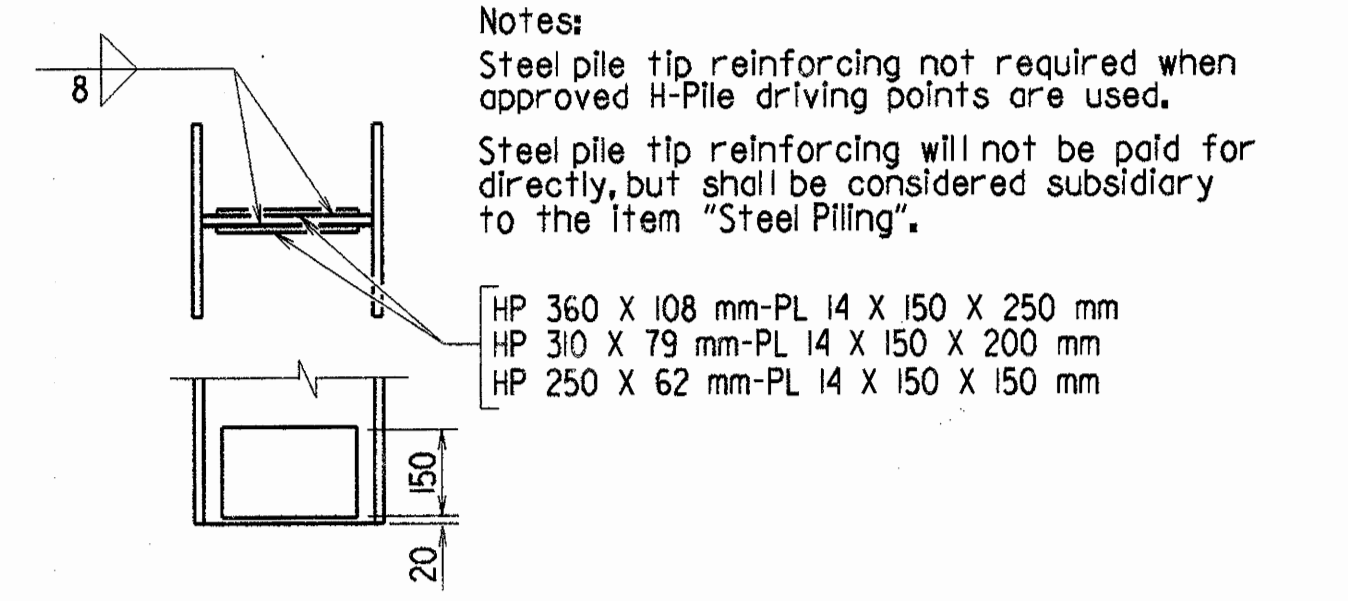
Omit bottom bracing where "H" is less than 3.0 m. Omit all bracing where "H" is less than 1.5 m.

Where required by the bridge layout sheet, pile encasements shall be constructed.

Omit bracing where pile encasement is extended to bottom of bent cap.

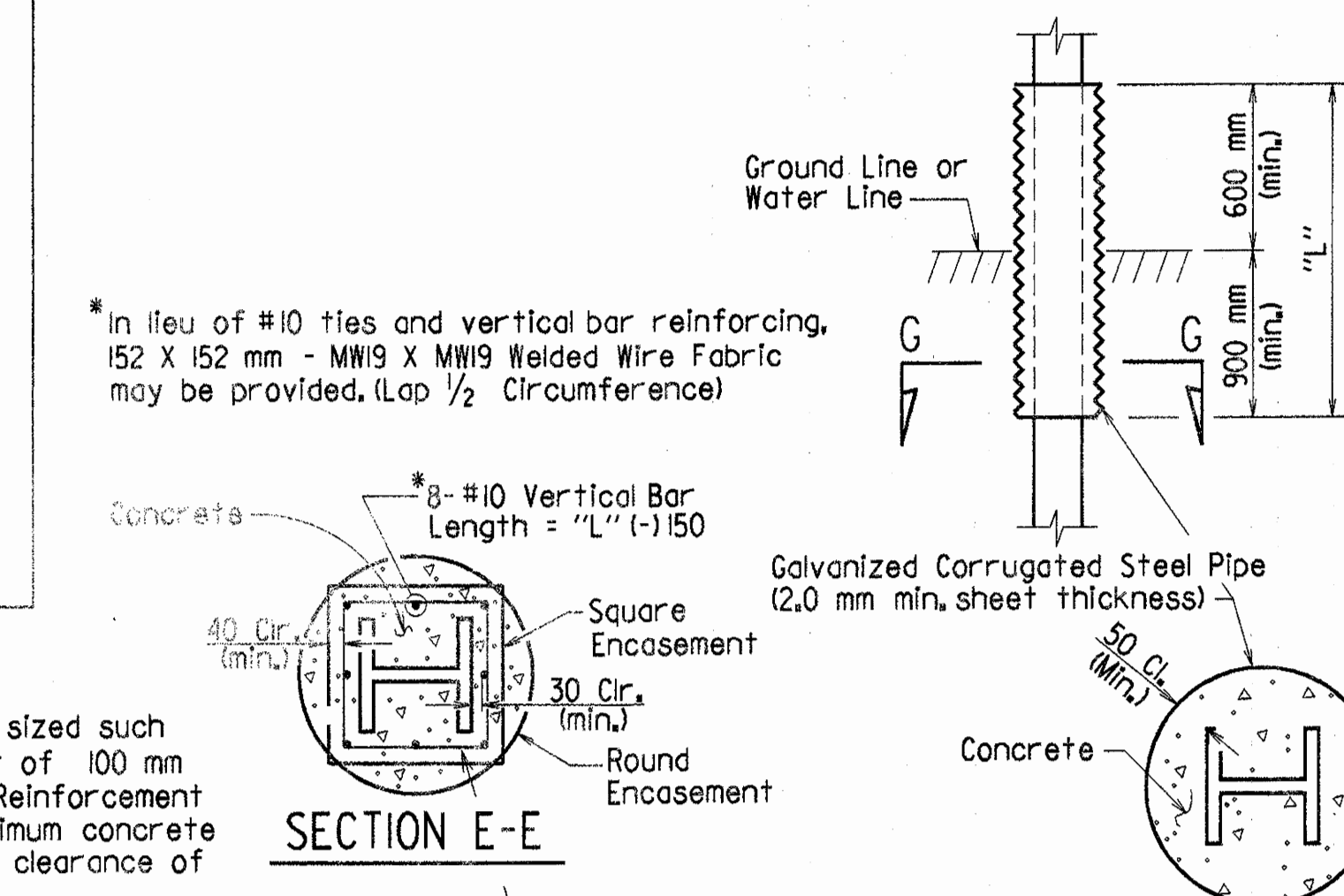


Notes: The contractor may for his own convenience and at his own expense provide as many as three splices per pile for steel bearing piling. Minimum spacing between splices shall be 1.5 m.



# REINFORCING DETAIL FOR STEEL PILE TIP

Scale 1:10



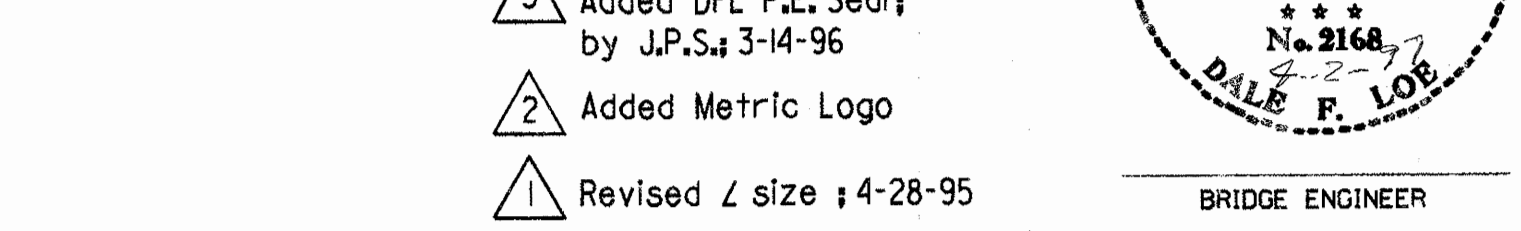
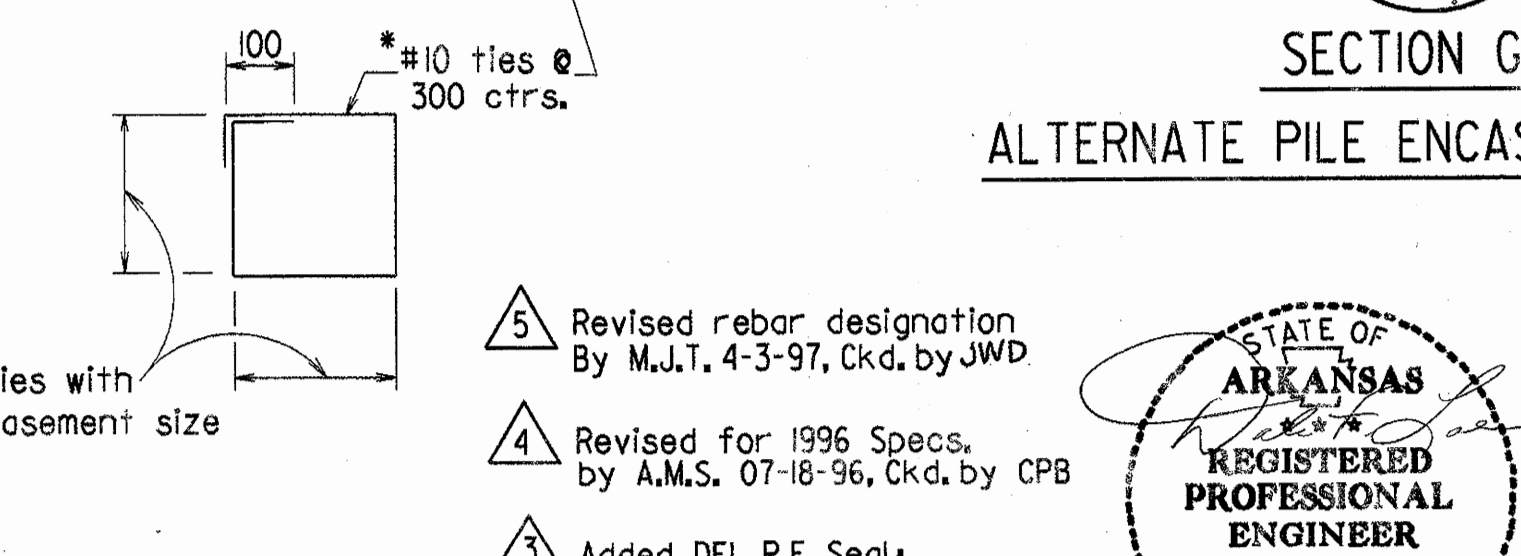
Pile Encasement Notes:  
Extend encasement to bottom of cap when noted on bridge layout.

All Concrete shall be Class S, if concrete cannot be placed in the dry, seal concrete may be deposited under water.

All Reinforcing Steel shall conform to ASTM A 615/A 615M-96a, Grade 420.

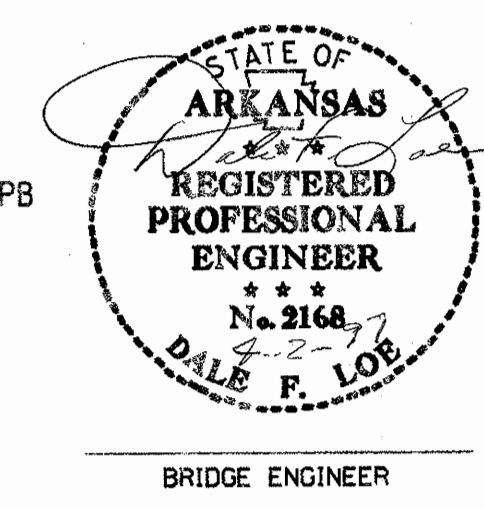
Welded Wire Fabric shall conform to AASHTO M 55 or M 225. Galvanized Corrugated Steel Pipe shall conform to AASHTO M 36 and M 218.

Concrete, reinforcing steel, welded wire fabric, and galvanized corrugated steel pipe will not be paid for separately, but will be considered included in the contract unit price bid for "Pile Encasement".



# ALTERNATE PILE ENCASEMENT DETAILS

- 5 Revised rebar designation By M.J.T. 4-3-97, Ckd. by JWD
- 4 Revised for 1996 Specs. by A.M.S. 07-18-96, Ckd. by CPB
- 3 Added DFL P.E. Seal by J.P.S. 3-14-96
- 2 Added Metric Logo
- 1 Revised L size 4-28-95



DETAILS OF CONCRETE RIPRAP AND MISC. DETAILS OF STEEL PILING  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

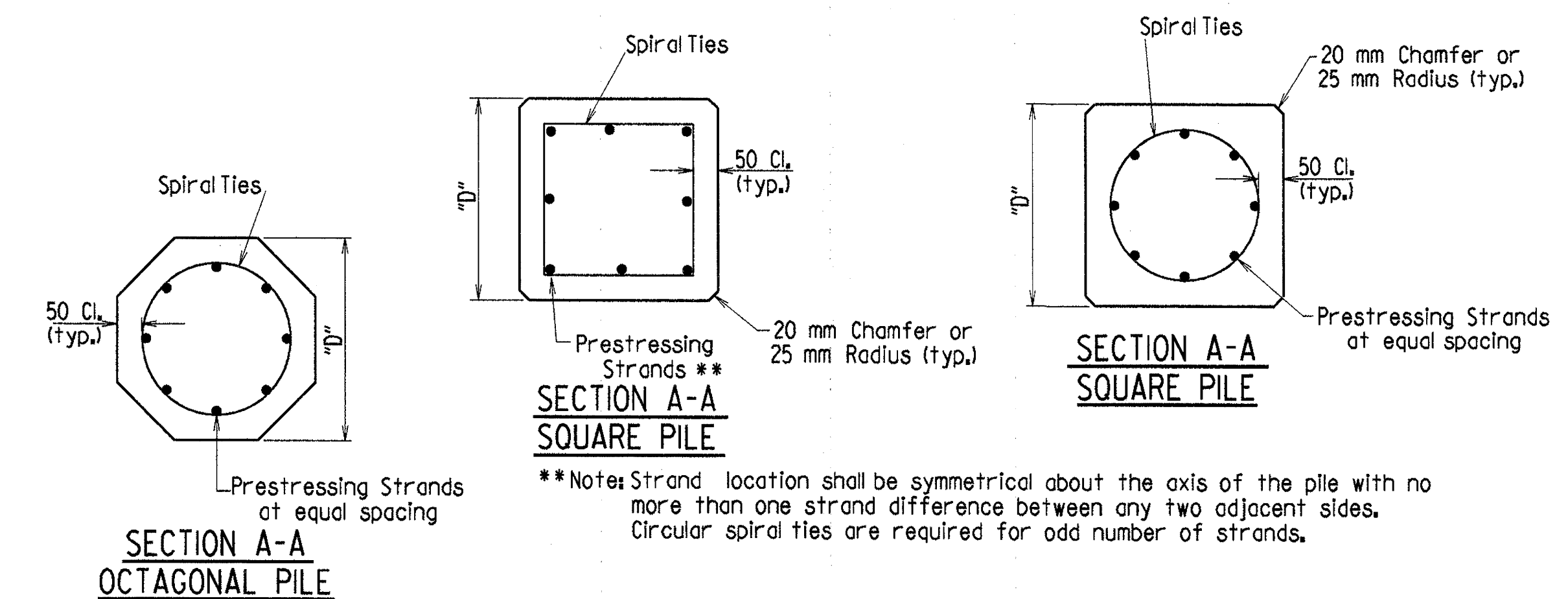
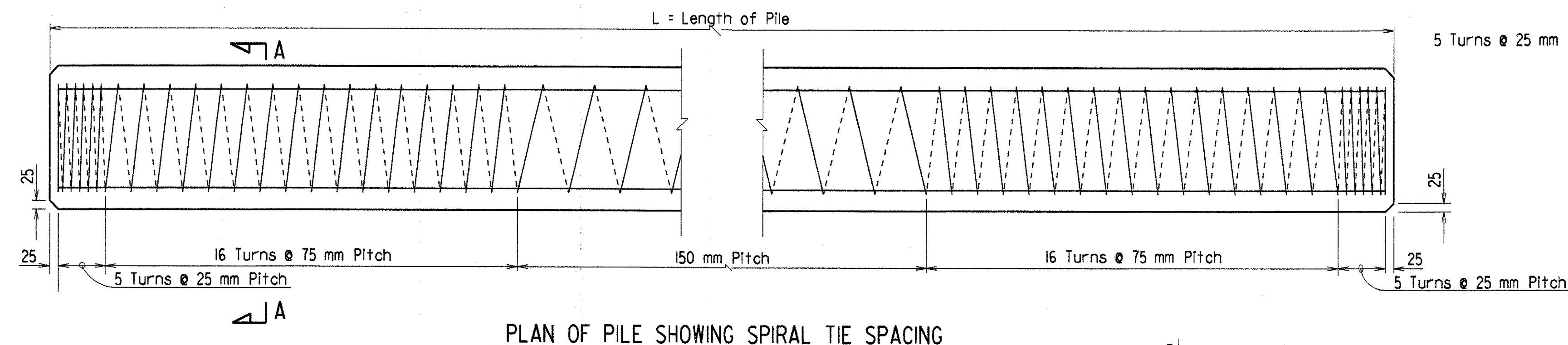
DRAWN BY: M.J.T. DATE: 12-17-93  
CHECKED BY: CPB DATE: 4-10-95  
DESIGNED BY: DATE: 4-10-95  
BRIDGE NO. DRAWING NO. 36505



B36505.STD

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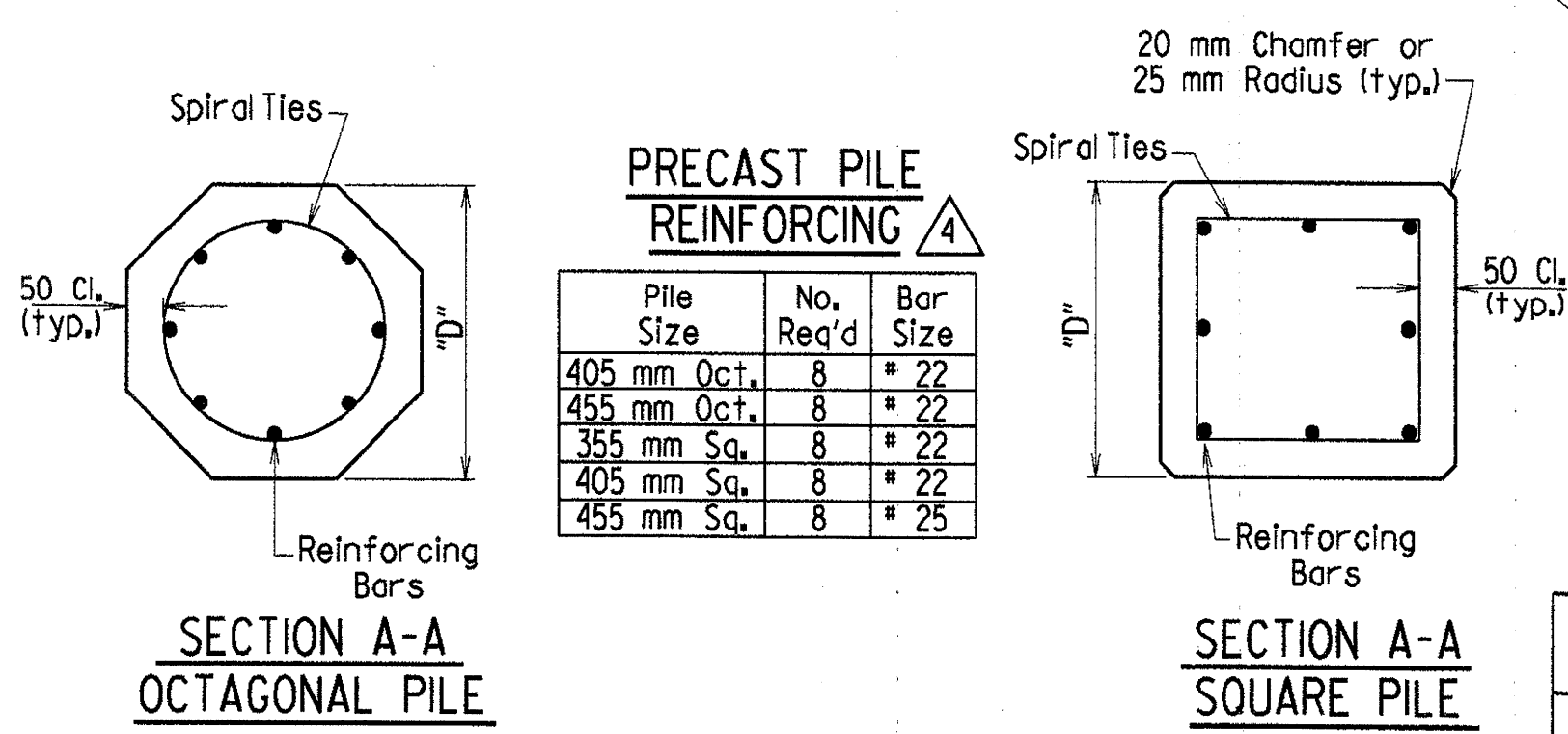


**PRESTRESSED PILE PROPERTIES**

Stress	Grade	Strand Diameter (mm)	*Number of Strands per Size "D"						Minimum Ultimate Tensile Strength Per Strand (kN)	Initial Prestressing Force Per Strand (kN)
			Oct.			Sq.				
			405 mm	455 mm	355 mm	405 mm	455 mm	355 mm		
Low Relaxation	250	11,11	8	10	8	10	12	16	120	84
		12,70	8	10	8	10	12	16	160	112
	270	11,11	9	11	8	12	14	18	138	97
		12,70	7	9	6	8	10	12	184	129
Stress Relieved	250	11,11	9	11	8	11	13	17	120	90
		12,70	7	8	6	8	10	12	160	120
	270	11,11	8	10	7	9	11	13	138	103
		12,70	6	7	5	7	9	11	184	138

\* Number based on initial prestress force of "B" x Ultimate Tensile Stress, Prestress Losses, and 4.8 MPa minimum Unit Prestress on concrete after Losses.

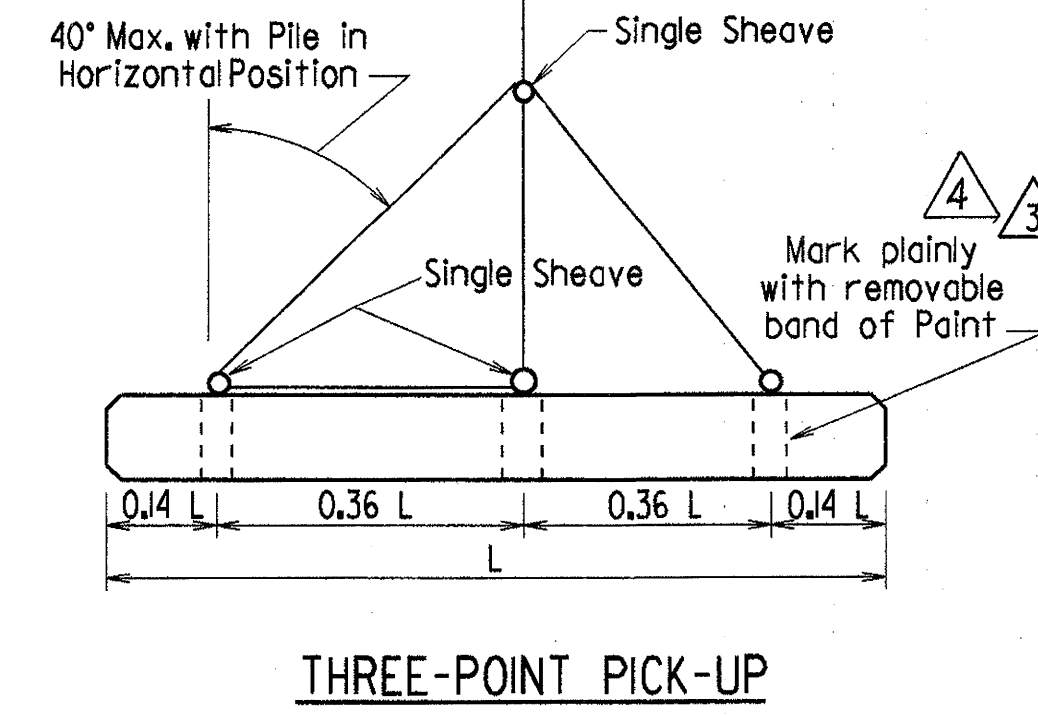
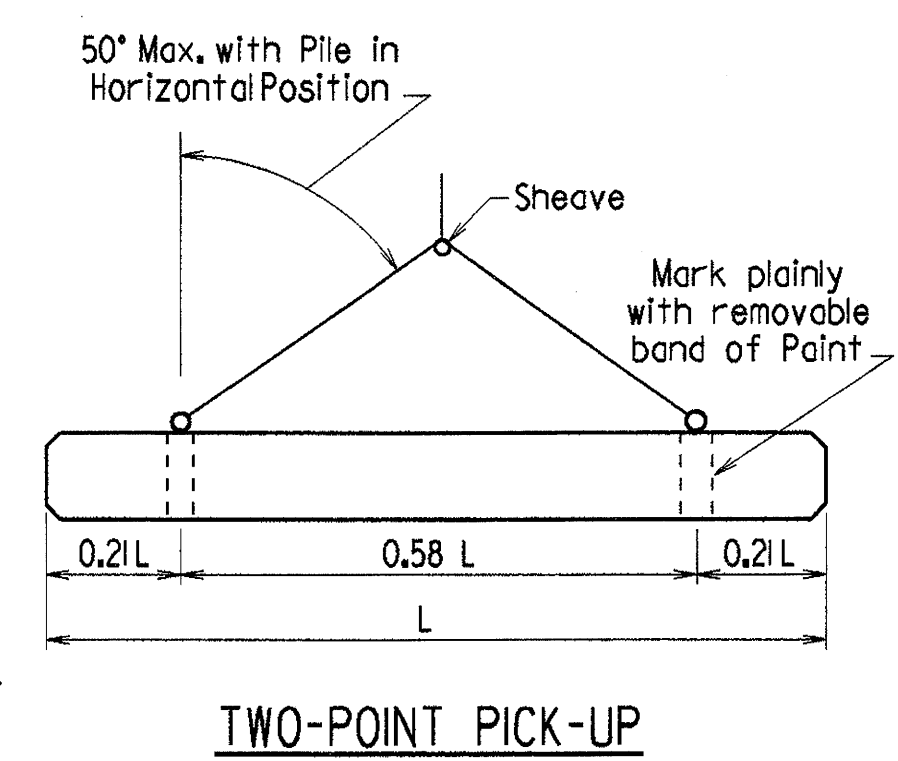
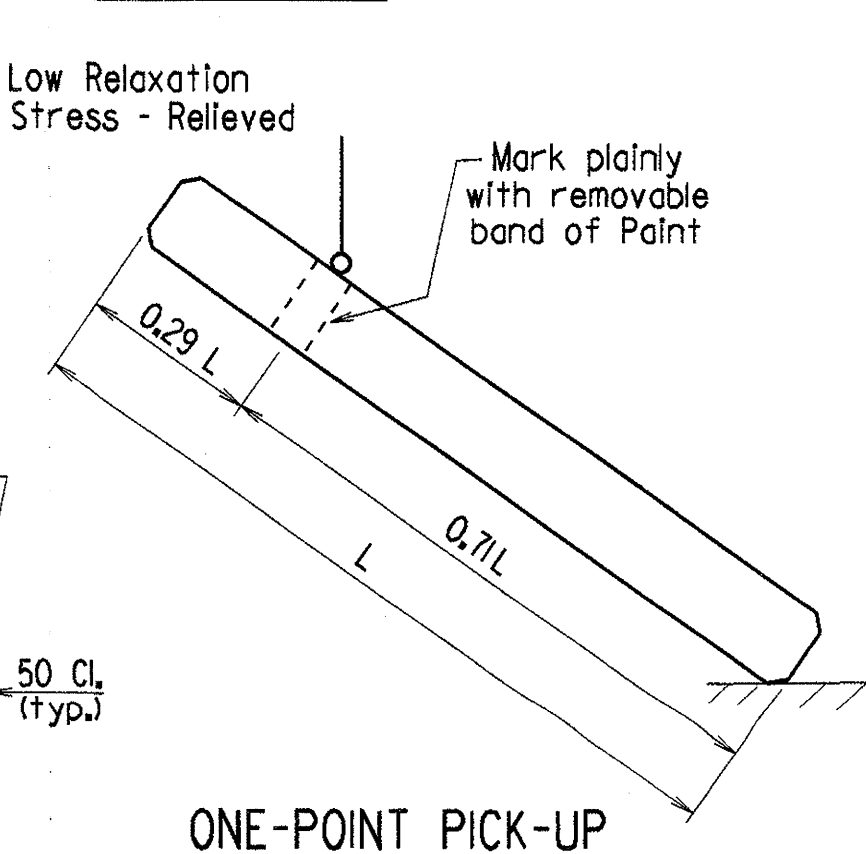
**PRESTRESSED CONCRETE PILES**



**PRECAST PILE REINFORCING**

Pile Size	No. Req'd	Bar Size
405 mm Oct.	8	# 22
455 mm Oct.	8	# 22
355 mm Sq.	8	# 22
405 mm Sq.	8	# 22
455 mm Sq.	8	# 25

**PRECAST CONCRETE PILES**



**MAXIMUM PICK-UP LENGTHS L (meters)**

Type of Pick-up	Prestressed					Precast				
	355 Sq.	405 Sq.	455 Sq.	405 Oct.	455 Oct.	355 Sq.	405 Sq.	455 Sq.	405 Oct.	455 Oct.
One-Point	16.5	17.5	18.5	15.5	16.5	18	18	17	16.5	16.5
Two-Point	23	25	26.5	22	23.5	25.5	25.5	24.5	23	23.5
Three-Point	32.5	34.5	37	31	33	35.5	35.5	34	32	32.5

Note: The pick-up lengths above are applicable only after the concrete has reached its 28-day compressive strength of 35 MPa (Prestressed Piles) or 28 MPa (Precast Piles).

**GENERAL NOTES**

All dimensions are in millimeters (mm) unless otherwise noted.

Construction Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 1996 Edition, with applicable Supplemental Specifications and Special Provisions.

Design Specifications: AASHTO Standard Specifications for Highway Bridges, 1996 edition, with current interim specifications.

Seismic Performance Category: A

Spiral Reinforcing: Spiral Reinforcing shall be steel wire meeting the requirements of AASHTO M32 or M225 with a minimum diameter of 5.08 mm or shall be plain round steel bars meeting the requirements of ASTM A 615/A 615M-96a, Grade 420, with a minimum diameter of 6.35 mm.

The contractor may use prestressed piles or precast piles. Either type will be paid for at the contract unit price bid per linear meter for "Concrete Piling".

See Section 802 "Concrete for Structures" and Section 805 "Piling" of the Standard Specifications for manufacture, transportation, storage and installation of piles.

Tolerances: Pile ends shall be plane surfaces and shall be perpendicular to the axis of the pile with a maximum tolerance of 1 percent transversely. The maximum sweep (deviation from straightness measured along two perpendicular faces of the pile, while not subject to bending forces) shall not exceed 3 millimeters in 3 meters of length.

Shipment of piles from the plant site or driving of piles will not be permitted until the required minimum 28 day Compressive strength is reached, and in no case less than 10 days after pouring the concrete. Prestressed piles may be removed from the casting bed to nearby storage any time after the transfer of stress.

Build-up of Piles: To provide for build-ups where authorized by the Engineer, concrete at the end of the pile shall be cut back to expose a sufficient length of reinforcing steel strands or bars to provide a lap of 40 diameters of the largest bar in the pile or the extension. Reinforcing of build-ups shall have a minimum area equal to 1 1/2 percent of the gross section of the pile. Placement of bars shall be in a symmetrical pattern of not less than four bars. See subsection 805.11(b) of the Standard Specifications.

**NOTES FOR PRESTRESSED PILES**

Concrete: Concrete in prestressed piles shall be Class (S/AE) and shall have a Minimum Compressive Strength (f'c) of 35 MPa at 28 days. Compressive strength at transfer of the prestressing force shall not be less than 28 MPa. Concrete in build-ups shall have a Minimum Compressive Strength of 28 MPa at 28 days.

Prestressing Reinforcement: Reinforcement shall be seven-wire stress relieved or low relaxation wire meeting the requirements of AASHTO M 203. Broken wires within individual strands will be permitted up to 2 percent of the total number of wires in each pile, provided not more than one wire in any strand is broken. Two or more broken wires in any strand will be cause for replacement of that strand, even though the two broken wires are within the two percent limitation.

Forms: The use of steel forms on concrete-founded casting beds is required for forming the exterior of piles, unless otherwise approved by the Engineer. Side forms may have a maximum drift on each side not exceeding two percent.

**NOTES FOR PRECAST PILES**

Concrete: All Concrete in piles and pile build-ups shall be Class (S/AE) and shall have a Minimum Compressive Strength (f'c) of 28 MPa at 28 days.

Reinforcing Steel: All longitudinal reinforcing bars shall be deformed bars meeting the requirements of ASTM A 615/A 615M-96a, Grade 420.

**DETAILS OF STANDARD CONCRETE PILES**

ROUTE SEC.

**ARKANSAS STATE HIGHWAY COMMISSION**

LITTLE ROCK, ARK.

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CHECKED BY: CES	DATE: 4-10-95
DESIGNED BY: CES	DATE: 6-94

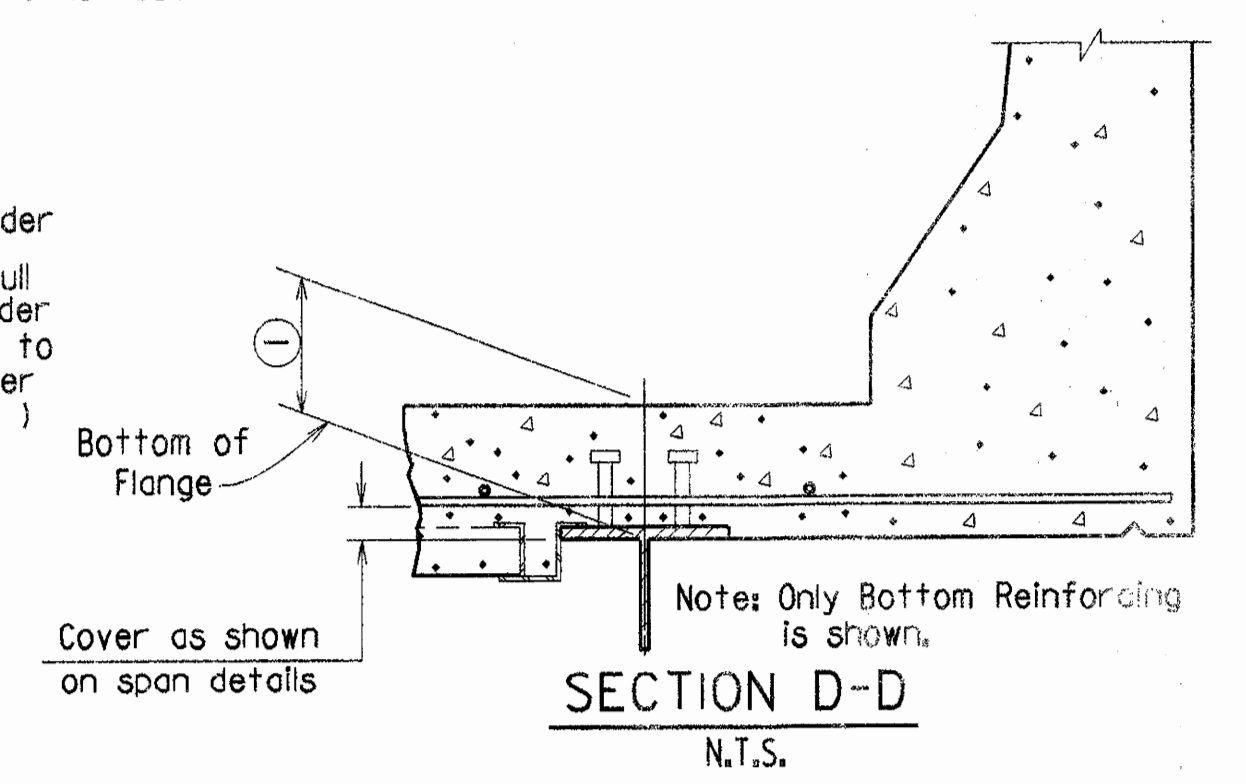
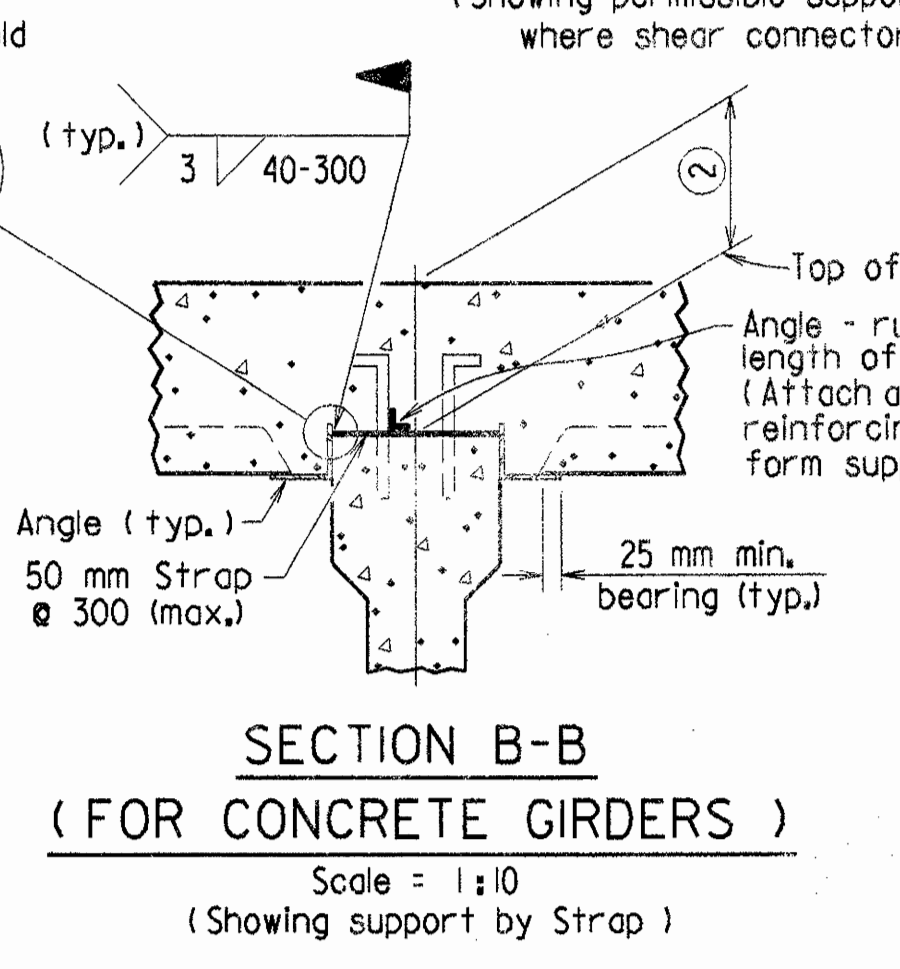
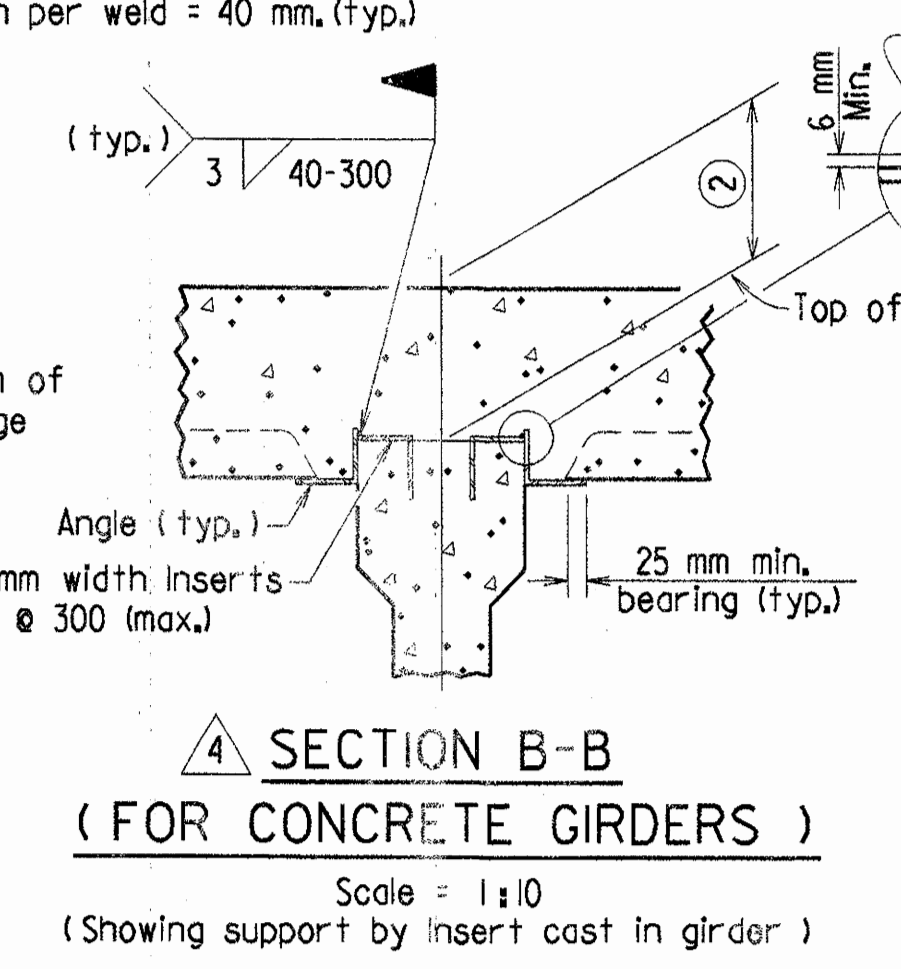
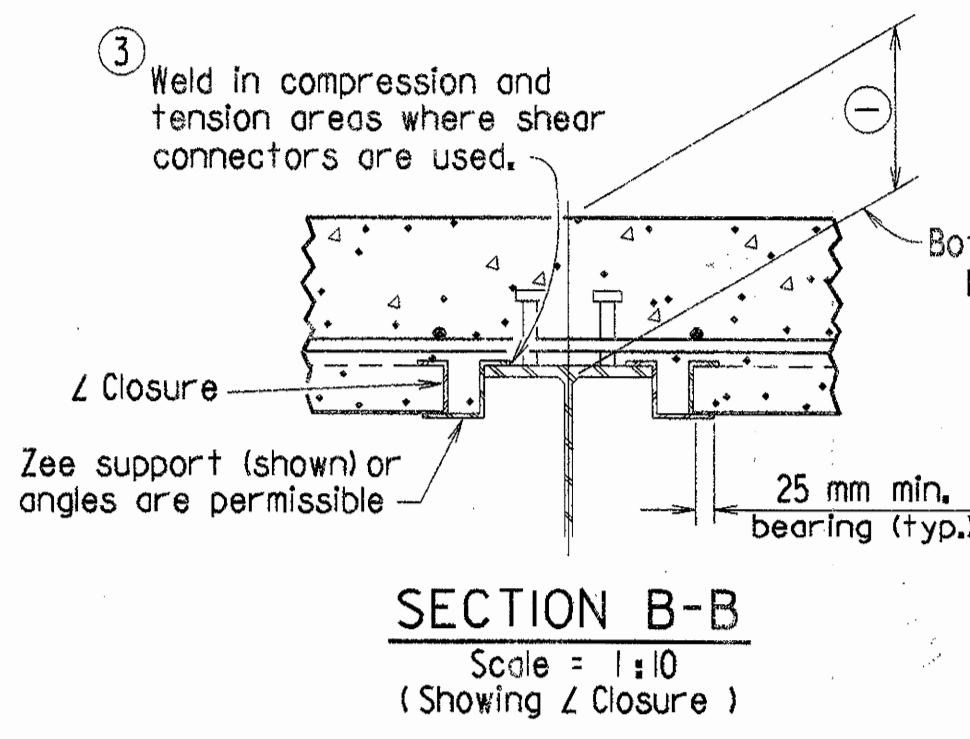
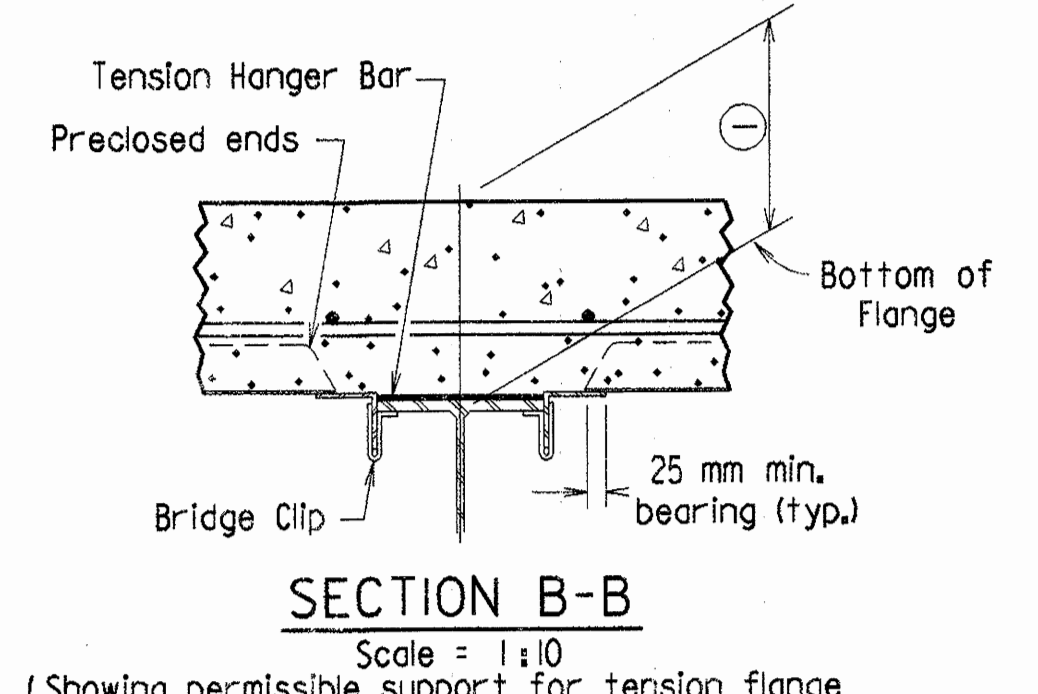
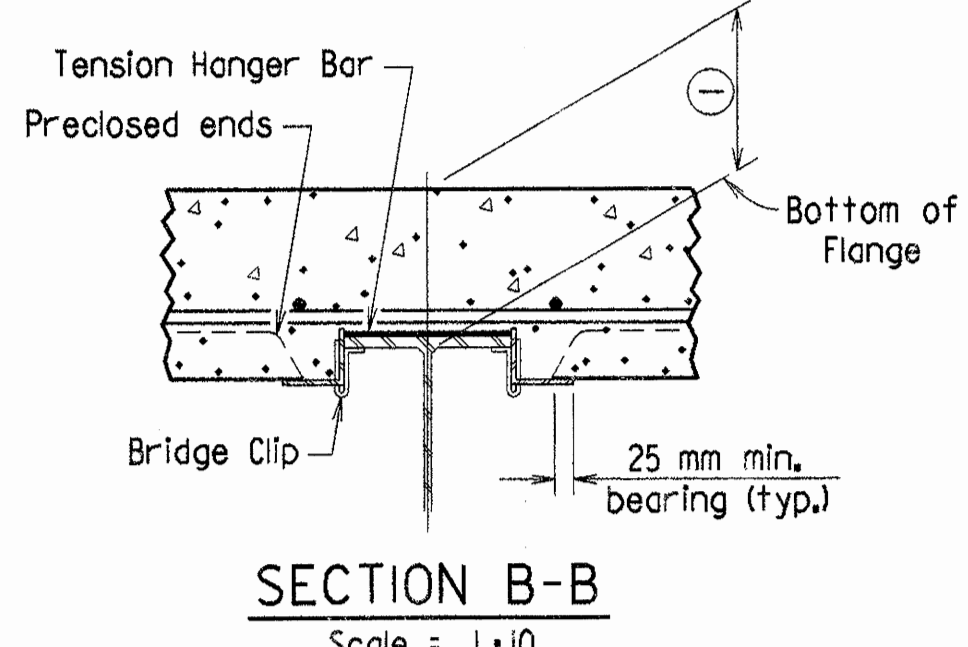
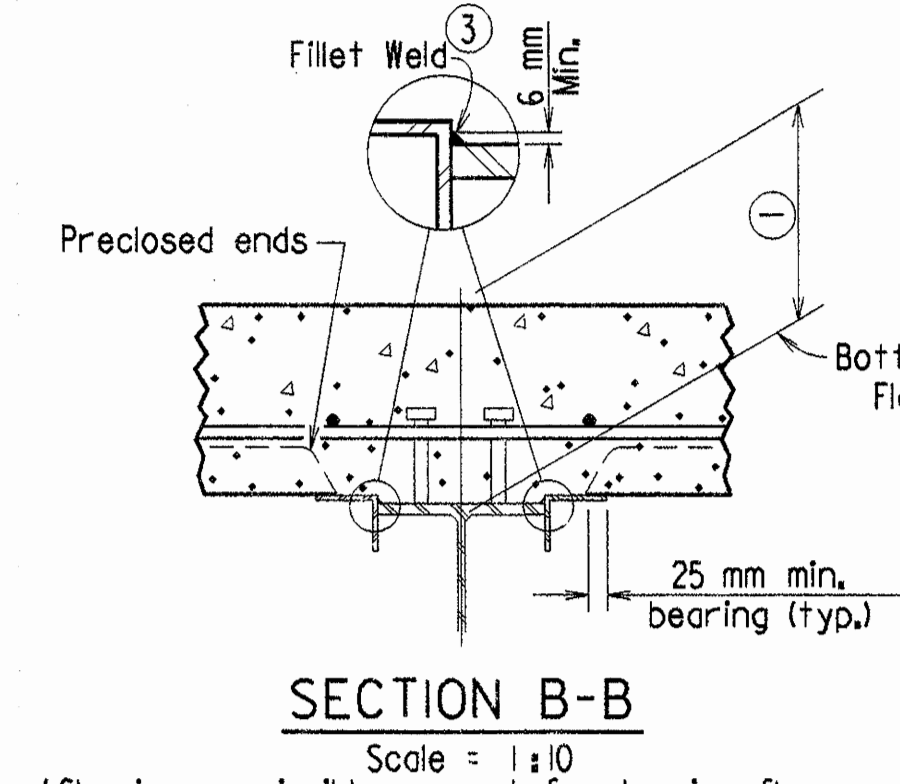
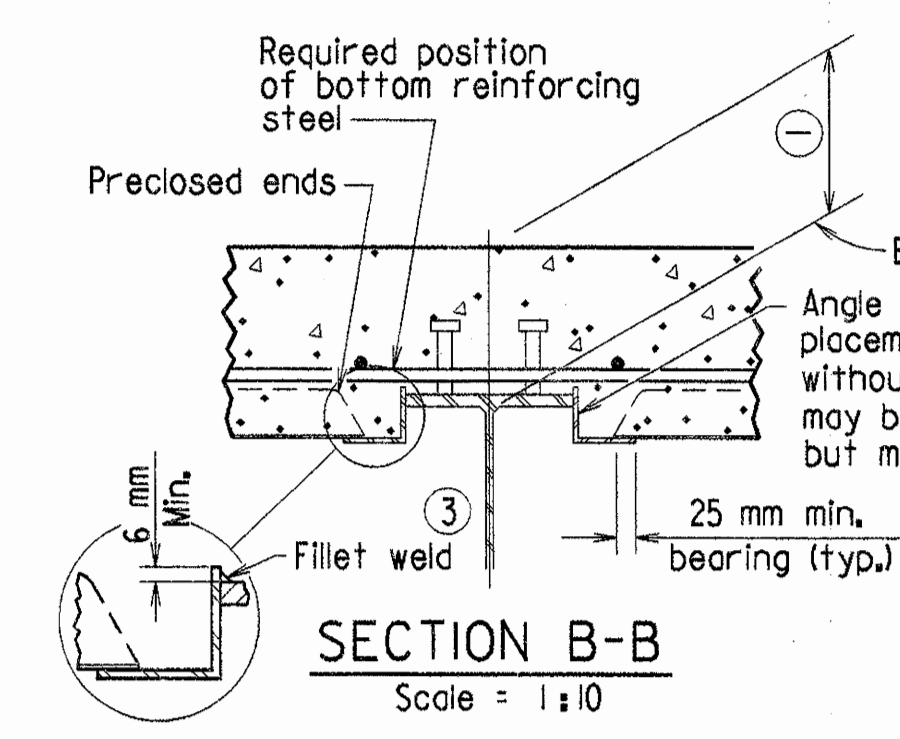
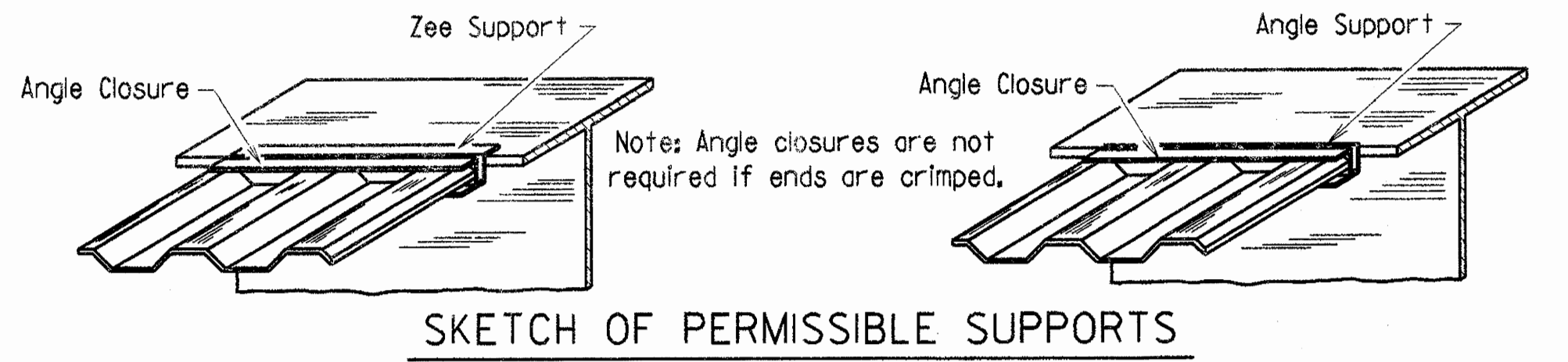
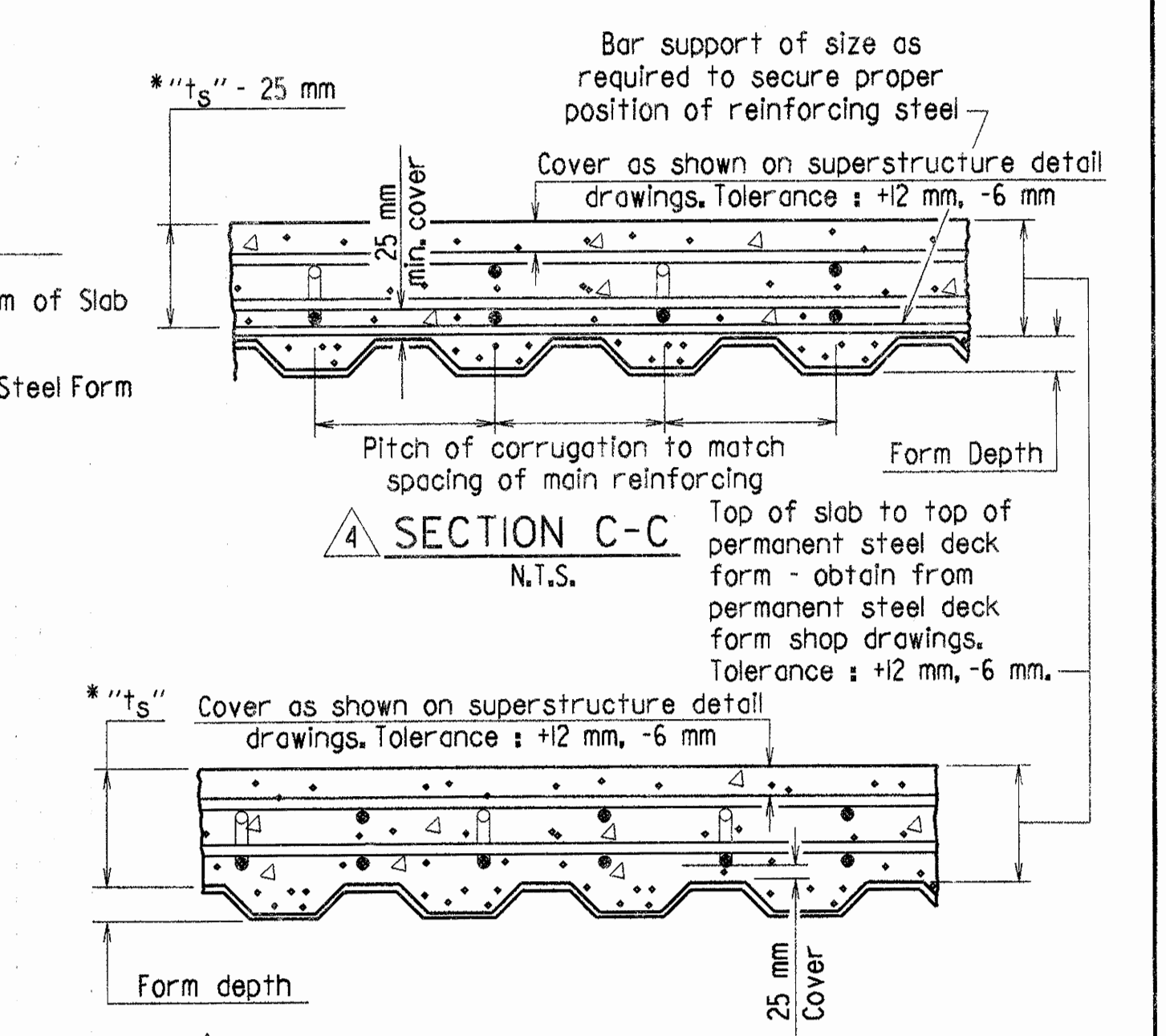
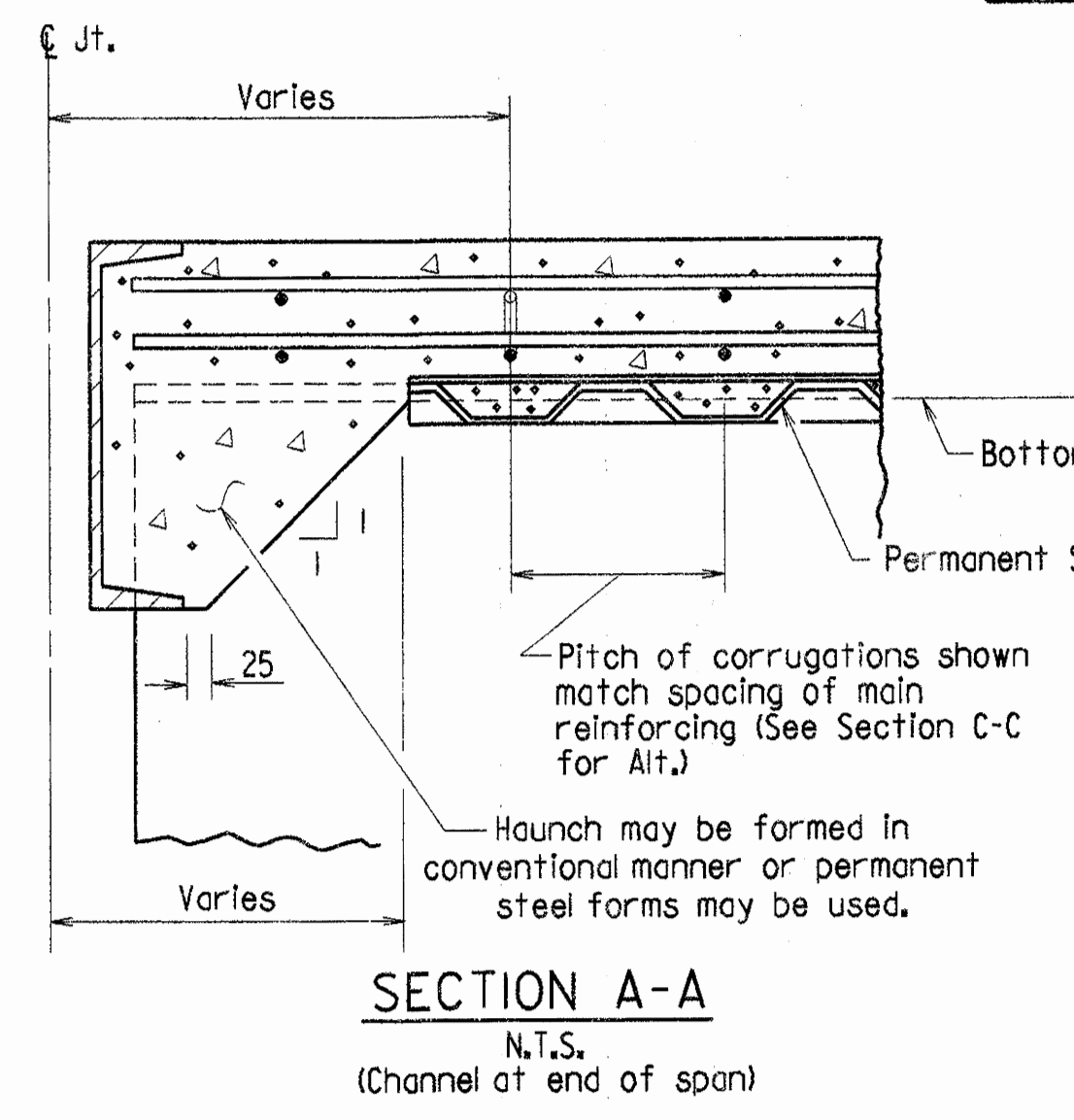
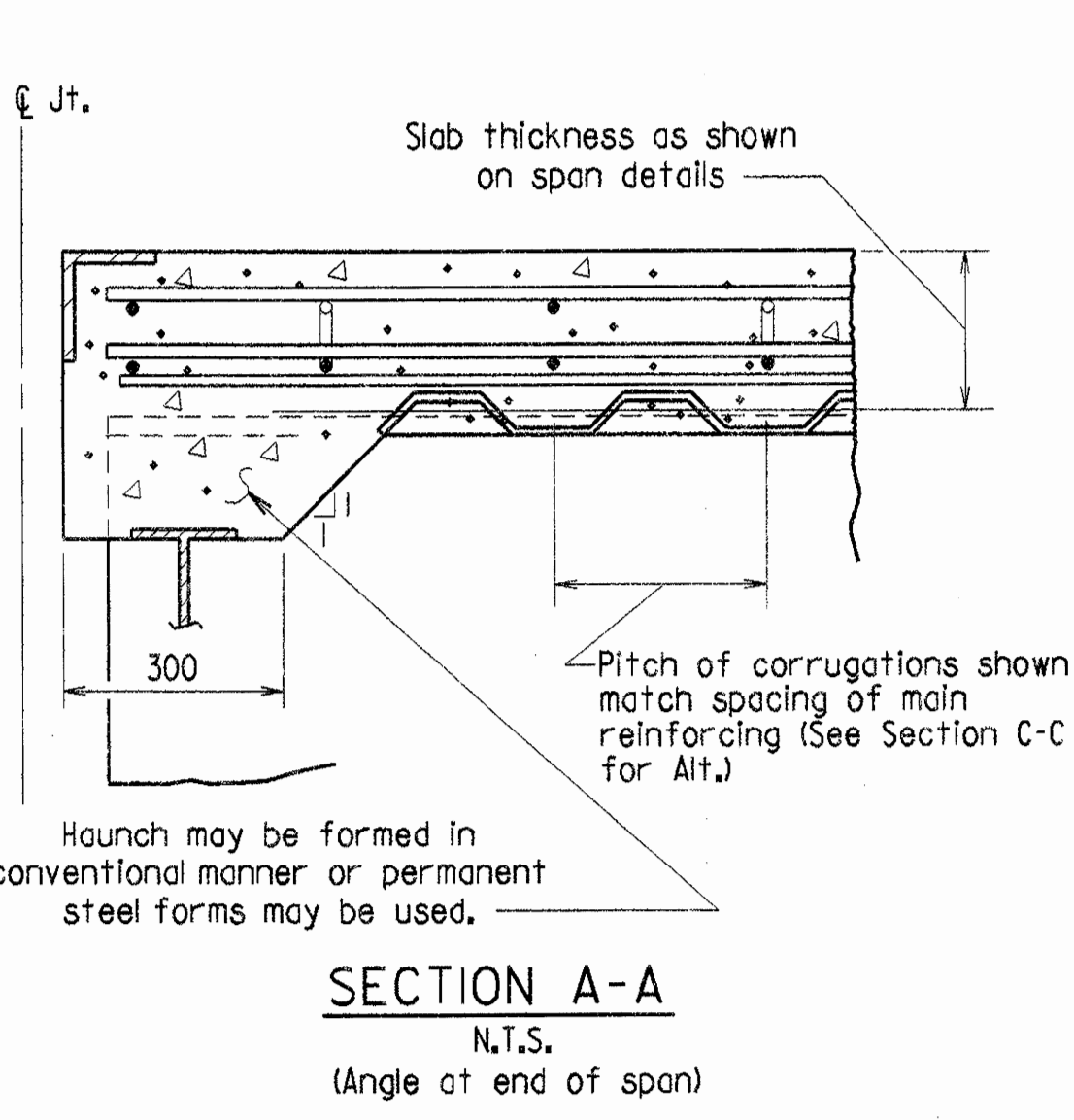
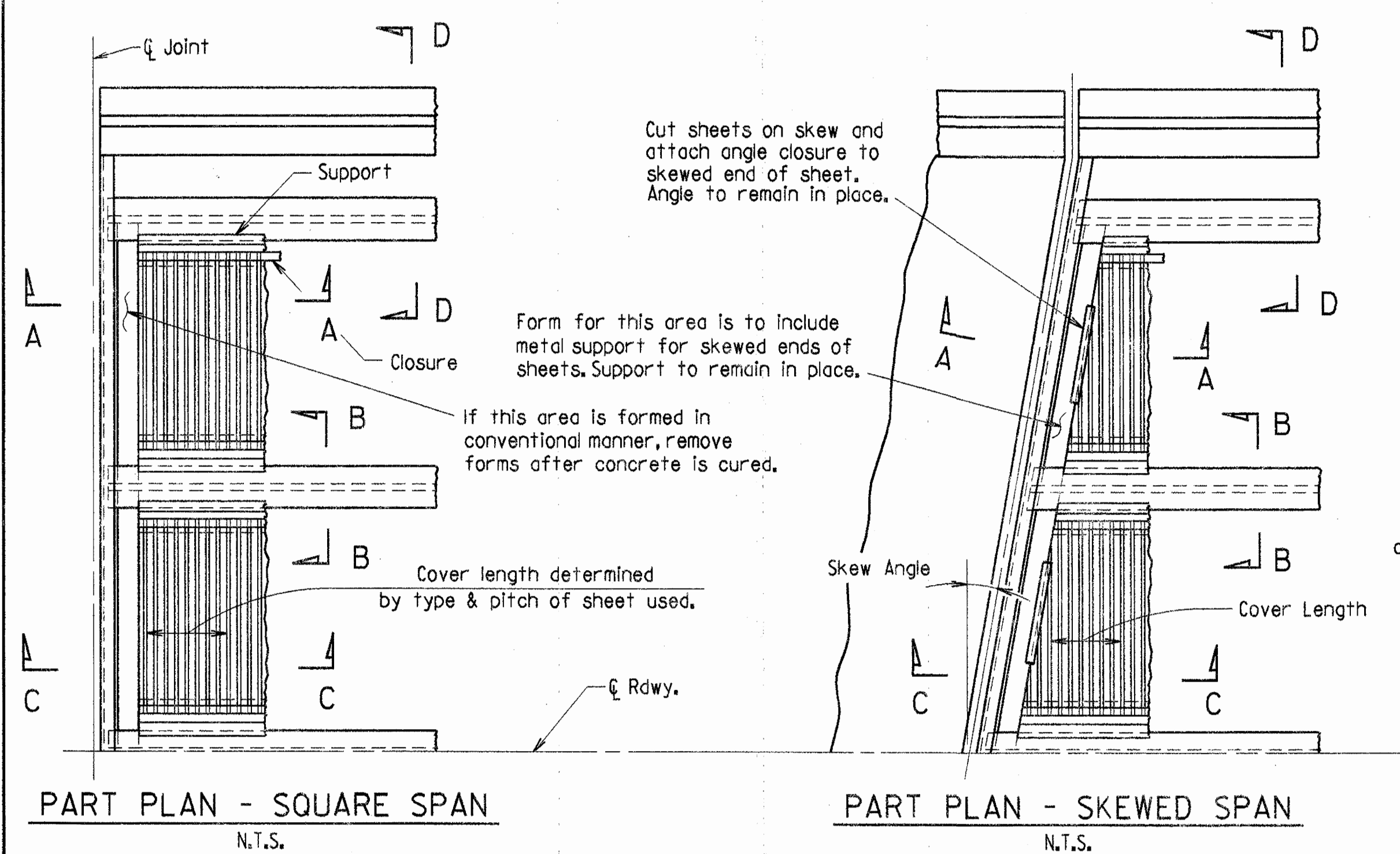
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DRAWING NO. 36506

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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6-8-95	6-8-95	11-27-96	11-27-96	8	ARK.		88	
3-14-96	3-14-96							
7-18-96	7-18-96							
JOB NO.							BR. DECK FORMS	36515



**GENERAL NOTES**

1. All dimensions are in millimeters unless otherwise noted.

2. Permanent steel deck forms may be used at the Contractor's option and shall be at no additional cost to the Department. Such use may result in changes to the dead load deflection of the girder. Any cost for adjustments due to a change in dead load deflection will be borne by the Contractor. Payment for deck concrete and structural steel will not be increased due to use of permanent steel deck forms.

3. Permanent steel deck forms shall conform to subsection 802.14(b) of the Standard Specifications. Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Bridge Engineer before work of forming the bridge deck is started.

4. Welding of form supports to the tension flange of steel girders will be permitted only in areas where shear connectors are used. When welding is not allowed, the method of fastening Z or L supports to the flange must be approved by the Bridge Engineer.

5. Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Bridge Engineer.

6. When the pitch of form corrugations match the reinforcing spacing, transversely align form sheets across the bridge to maintain the correct orientation of continuous reinforcing bars in the corrugations.

7. Bar support rods, when used, shall be sized and spaced to adequately support the bottom reinforcing mat at the required position.

8. High chairs shall be sized to support the top mat of reinforcing at the proper position. High chairs shall be placed at locations shown on the detail drawings.

9. Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 1996 Edition with applicable supplemental specifications and special provisions.

**DETAILS OF PERMISSIBLE TYPE PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS**

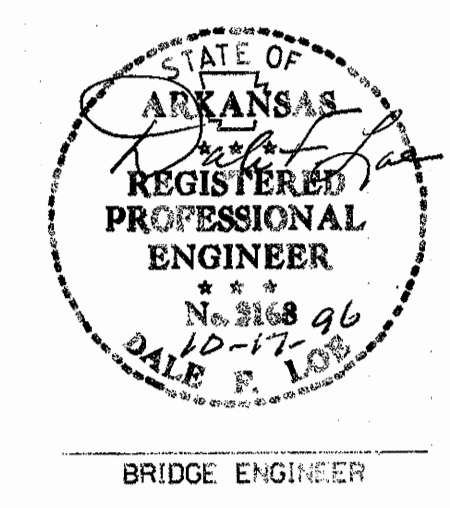
ROUTE SEC.

**ARKANSAS STATE HIGHWAY COMMISSION**

LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 11-16-93  
 CHECKED BY: CPB DATE: 4-10-95  
 DESIGNED BY: DATE:  
 BRIDGE NO. DRAWING NO. 36515

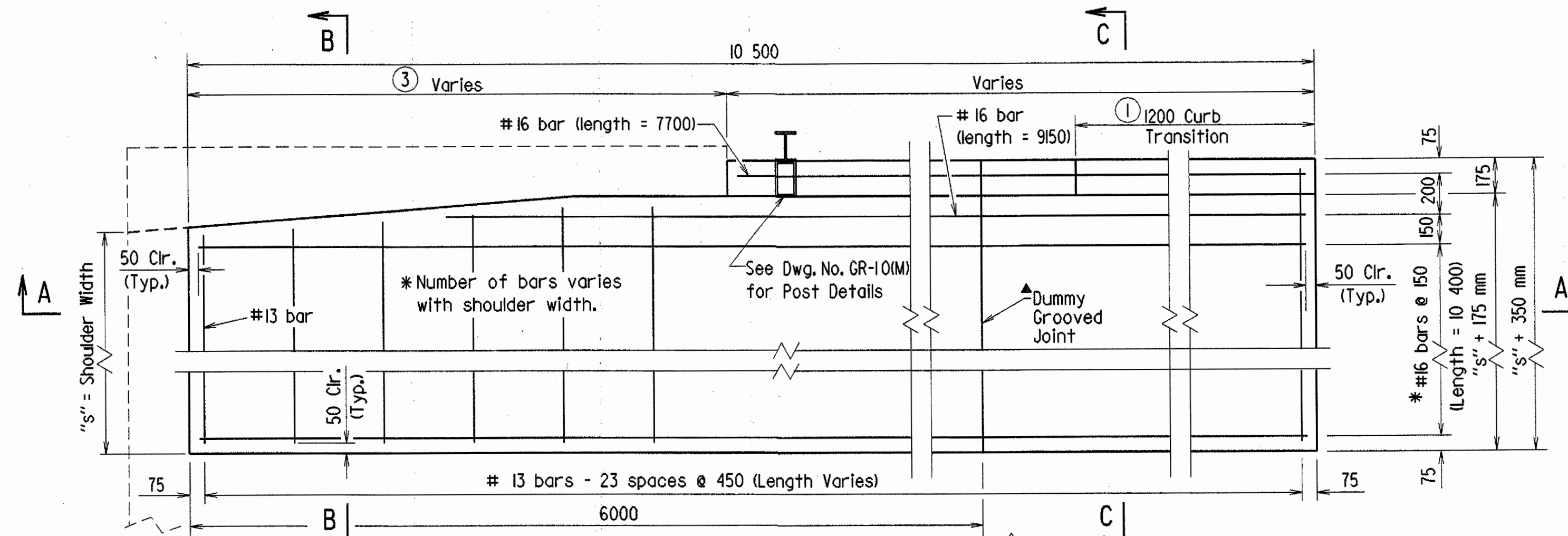
- 4 Revised Gen. Notes & Added Slab & Haunch Tolerances. By MJT 11/27/96, Ckd. By C.P.B.
- 3 Revised for 1996 Specs. by A.M.S. 07-18-96, Ckd. by CPB
- 2 Added DFL P.E. Seal; by J.P.S. 3-14-96
- 1 Added Metric Logo



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SEP 08 2000

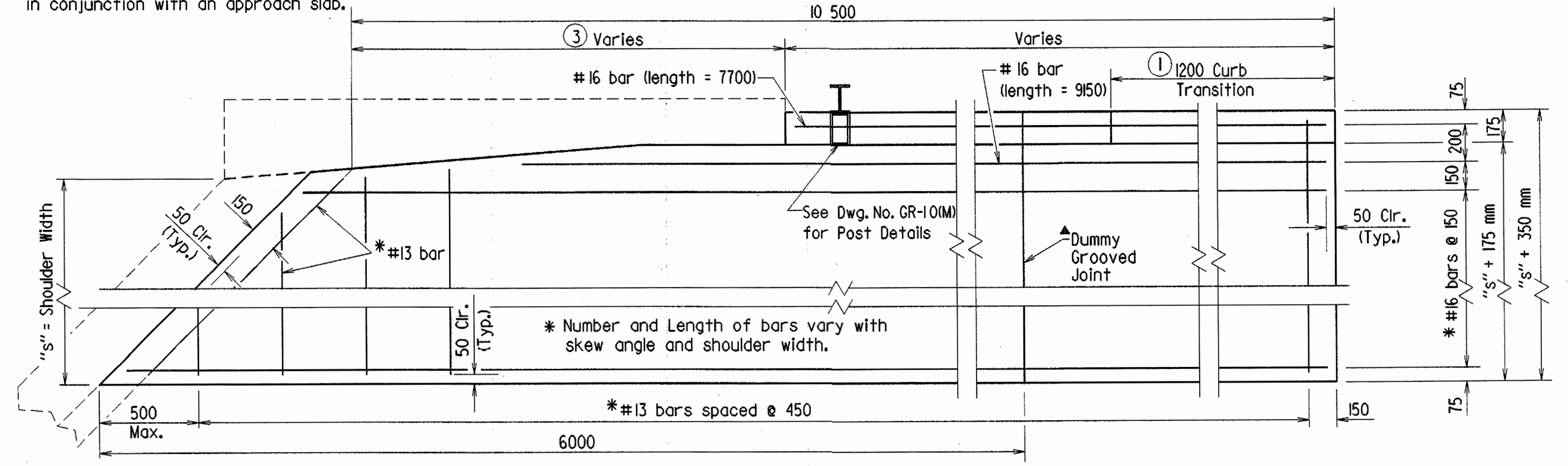


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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3-14-96	3-14-96	6-29-00						
7-18-96	7-18-96							
				JOB NO.		TYPE CI APPROACH GUTTERS		36530

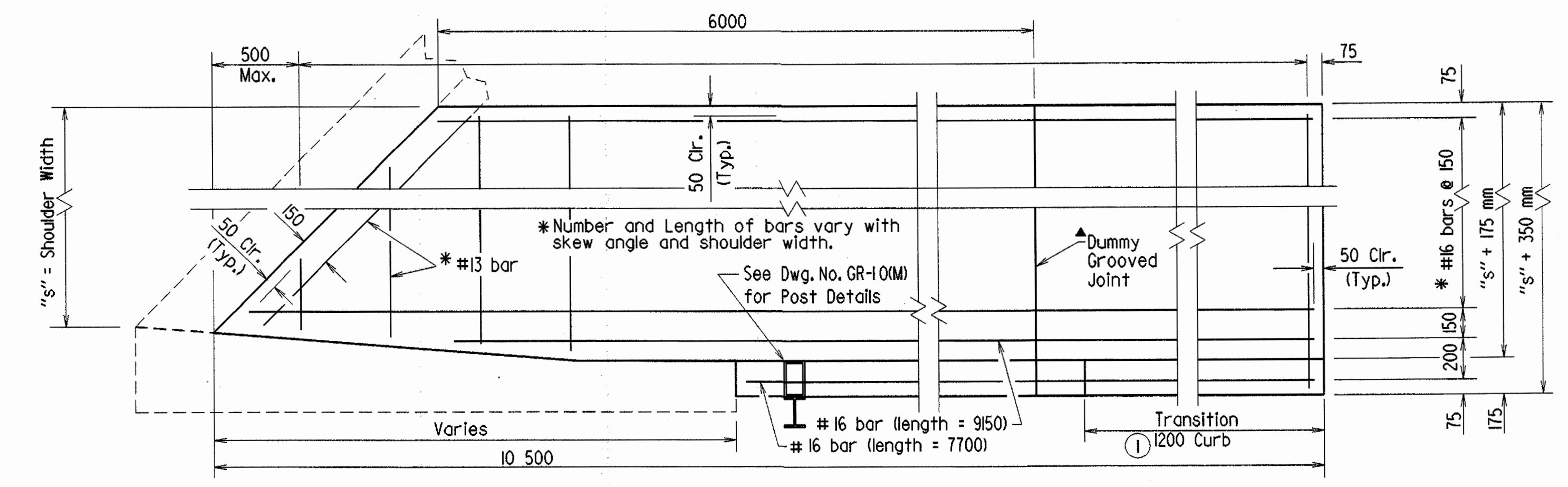


PLAN (FOR SQUARE BRIDGES)

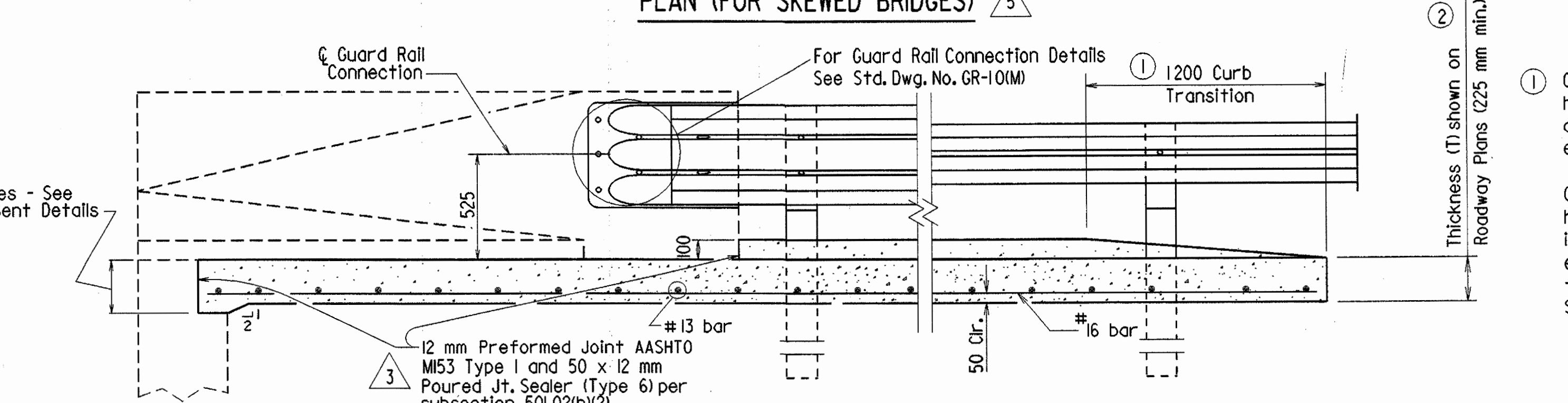
▲ Dummy Grooved Joint required only if gutters used in conjunction with an approach slab.



PLAN (FOR SKEWED BRIDGES)

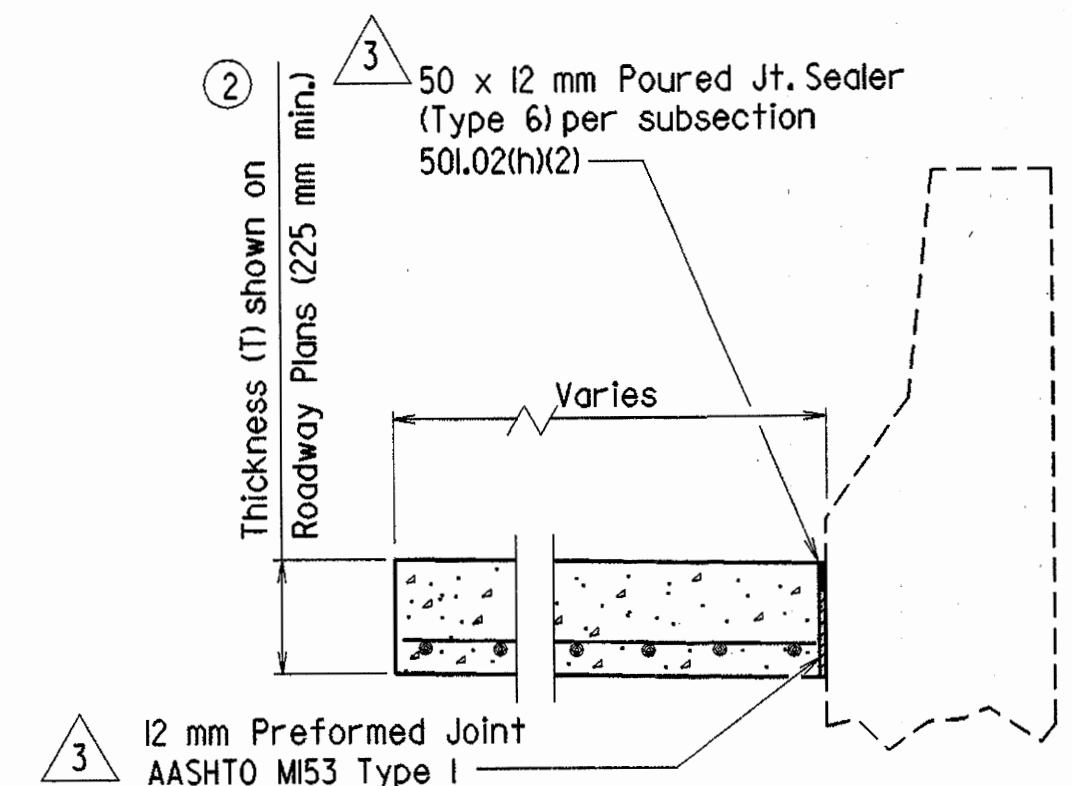


SECTION A - A

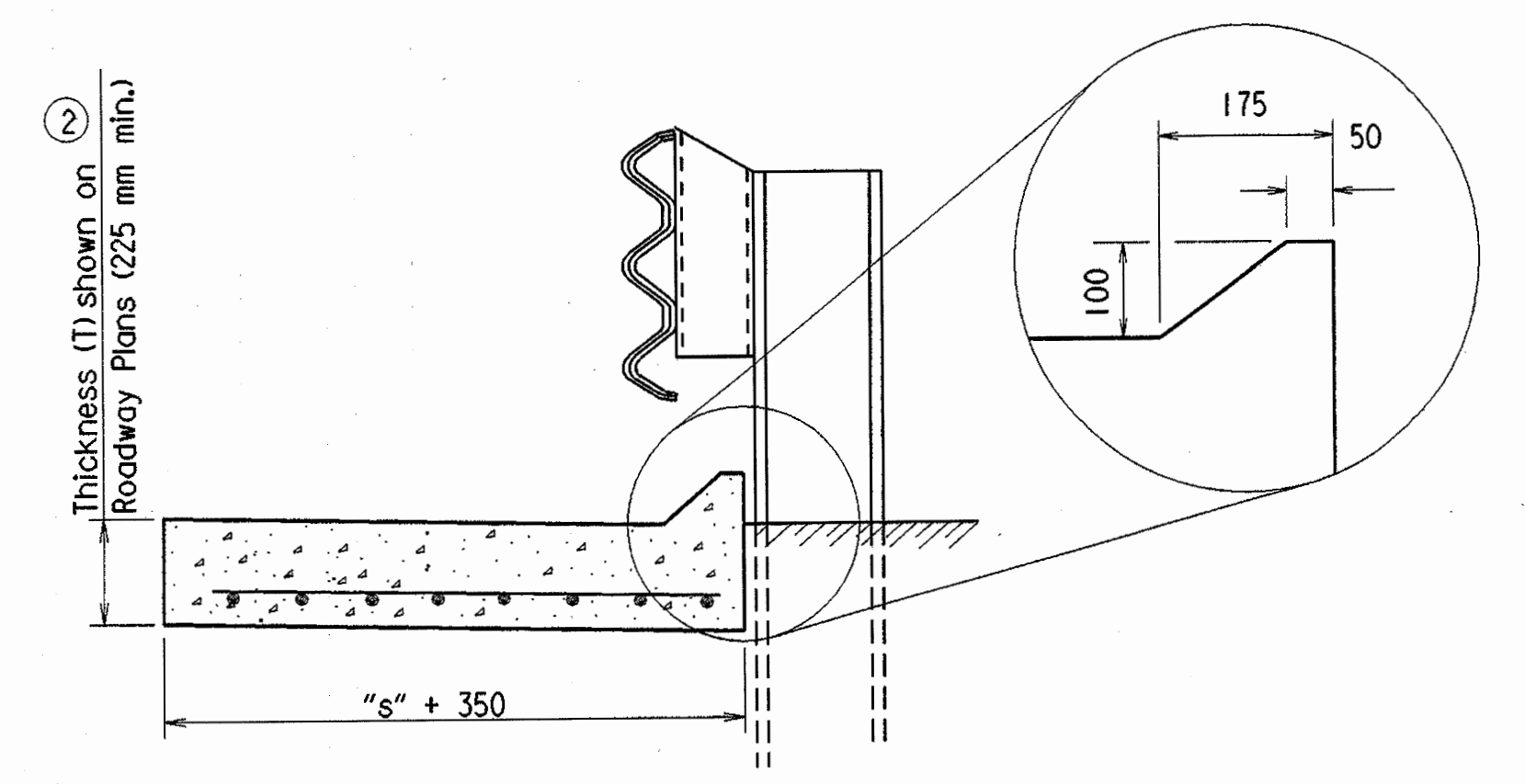


③ Length Varies. See End Bent Details for actual length. Quantities and bar lengths shown are for a 3000 mm Transition Rail.

② Thickness shall match Approach Slab Thickness. Thickness shall be 225 mm if Approach Slab is not used.



SECTION B - B  
N.T.S.



SECTION C - C  
N.T.S.

GENERAL NOTES

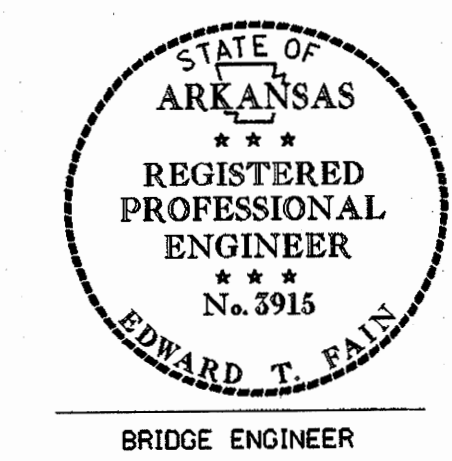
- All dimensions are in millimeters unless otherwise noted.
- Concrete shall be Class S or Class S (AE) or mixture used for Portland Cement Concrete Pavement.
- Reinforcement Steel shall conform to ASTM A 615/A 615M-96a, Grade 420. Fabricate bar lengths to provide 50 mm cover at each end.
- Approach Gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.

③ QUANTITIES FOR ONE SQUARE APPROACH GUTTER

Shoulder Width(s), meters	Reinforcing Steel, kg	Concrete, m <sup>3</sup>				
		T = 225	T = 250	T = 275	T = 300	T = 370
1.2	189	3.61	4.00	4.39	4.79	5.88
1.8	267	5.03	5.58	6.13	6.68	8.21
2.4	346	6.45	7.15	7.86	8.57	10.54
3.0	425	7.86	8.73	9.59	10.46	12.87

- ⑤ Revised for New Guard Rail Details & changed to E.T.F. P.E. seal by MAH 6-29-2000, Ckd. by JWD
- ④ Revised rebar designation by M.J.T. 4-3-97, Ckd. by JWD
- ③ Revised for 1996 Specs. by A.M.S. 07-18-96, Ckd. by CPB
- ② Added DFL P.E. Seal; by J.P.S. 3-14-96
- ① Added Metric Logo

- ① Construct gutter curb with height-transition as shown if drop inlet is placed at end of gutter.
- Construct gutter curb full height (no height-transition) if drop inlet is placed at end of gutter. Curb height transition placed on drop inlet. See drop inlet details.



DETAILS OF STANDARD  
TYPE CI APPROACH GUTTERS  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: MJT DATE: 11-03-93  
CHECKED BY: AMS DATE: 4-07-95  
DESIGNED BY: CPB DATE: 10-29-93  
BRIDGE NO. DRAWING NO. 36530

MICROFILMED  
SEP 08 2000

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6-29-00				6	ARK.		90	
				JOB NO.	APPROACH SLAB 36535			

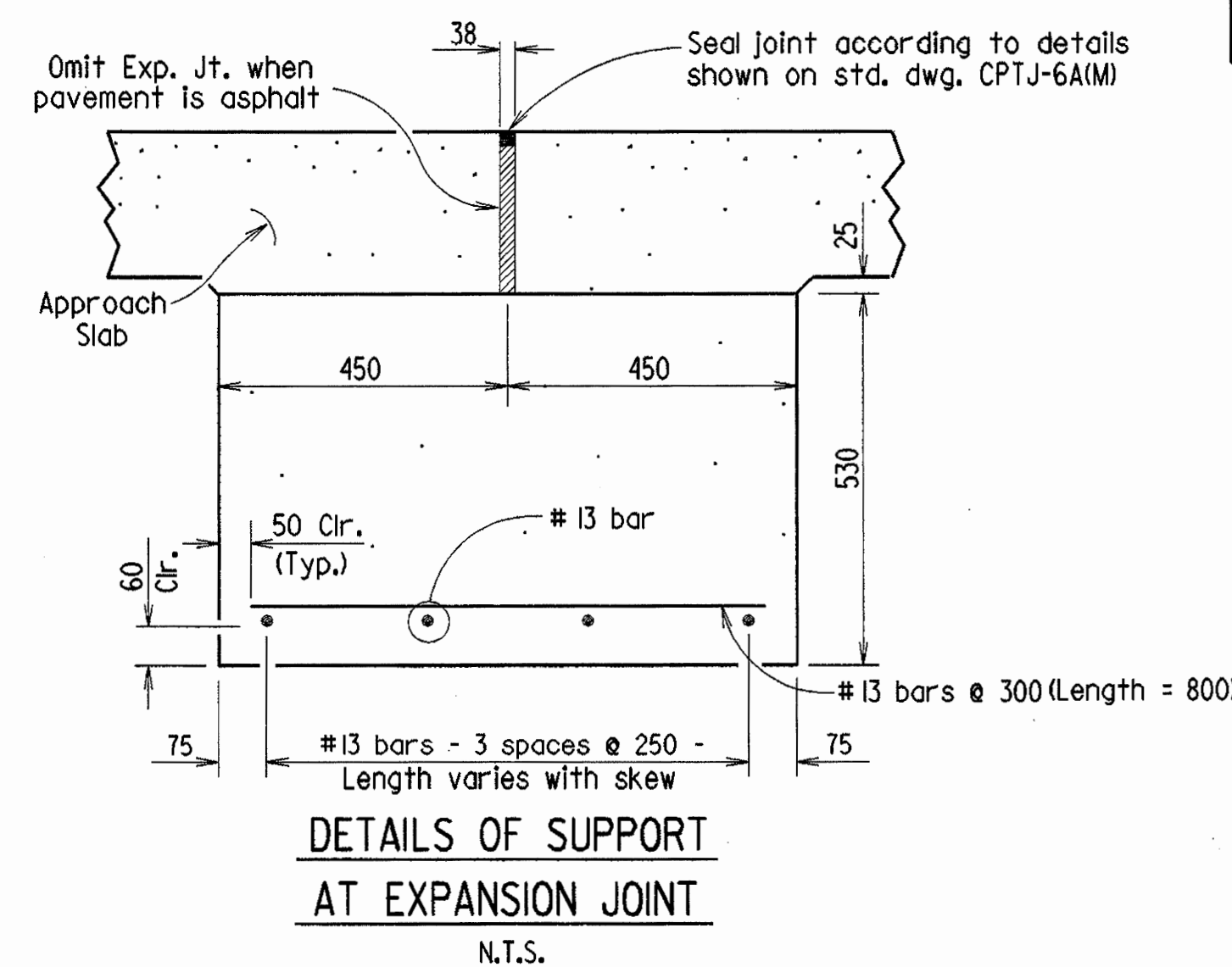
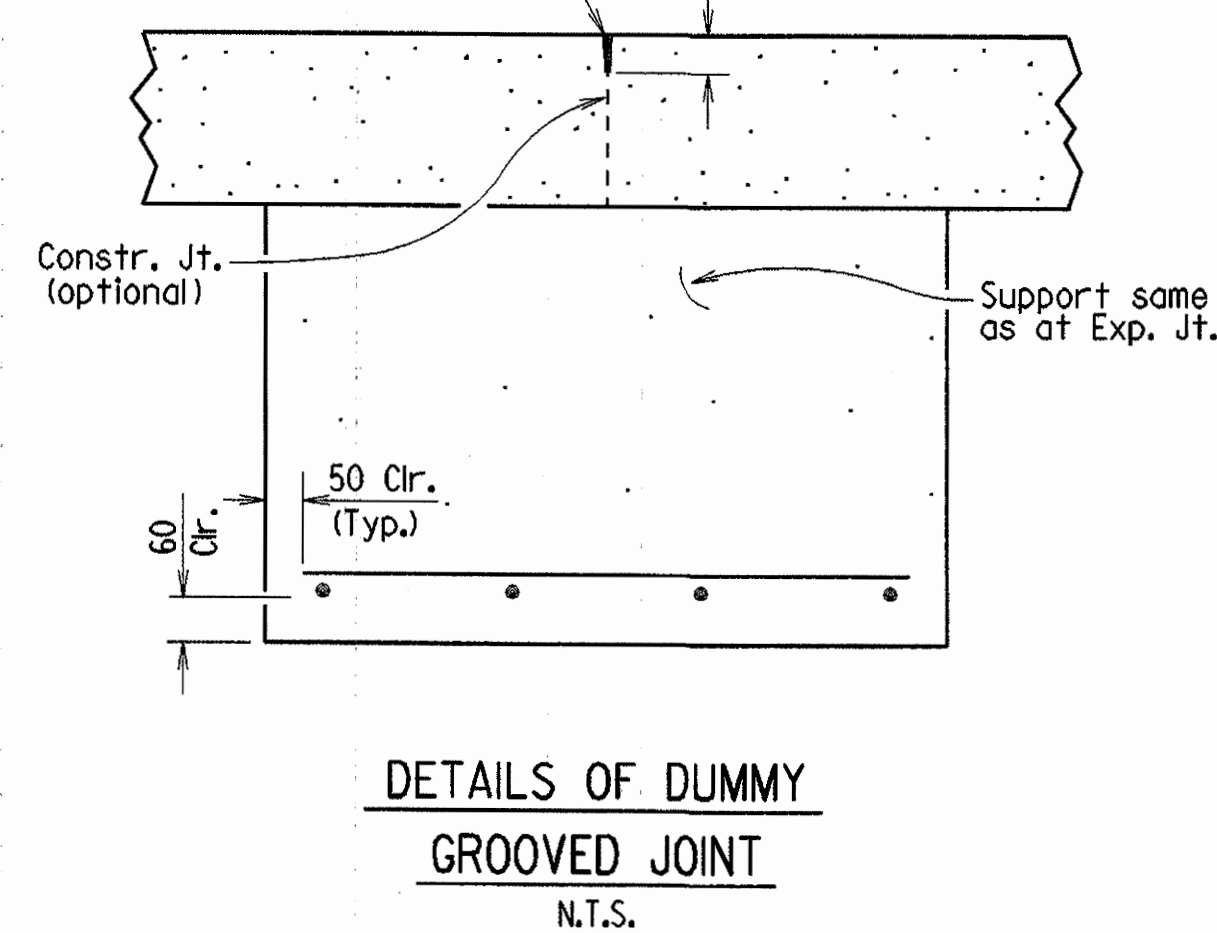
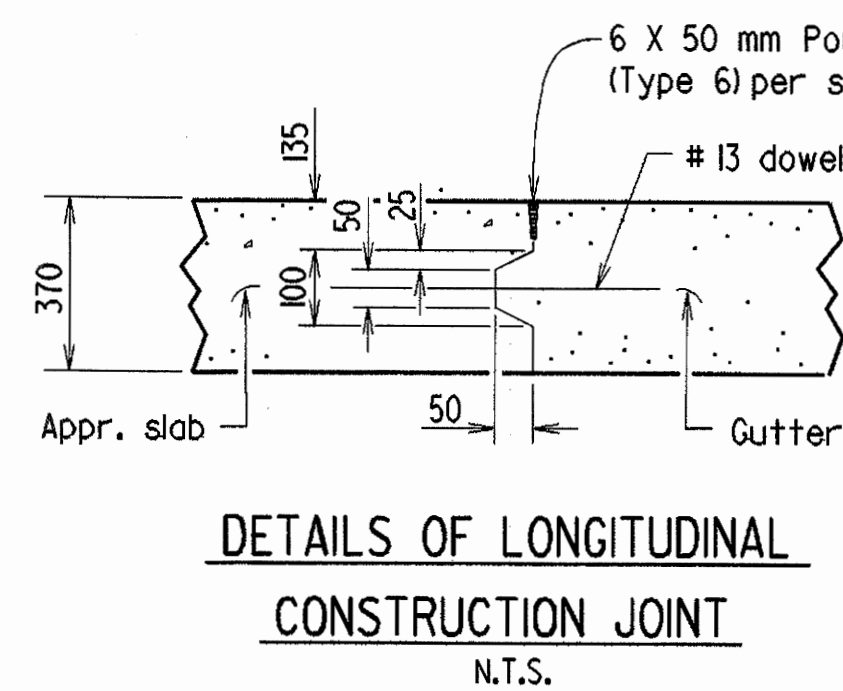
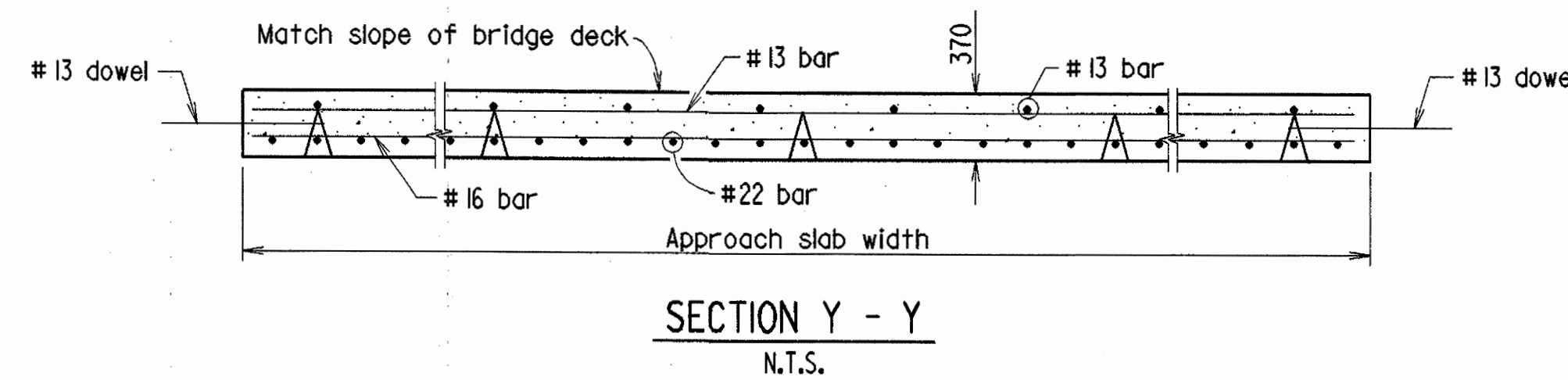
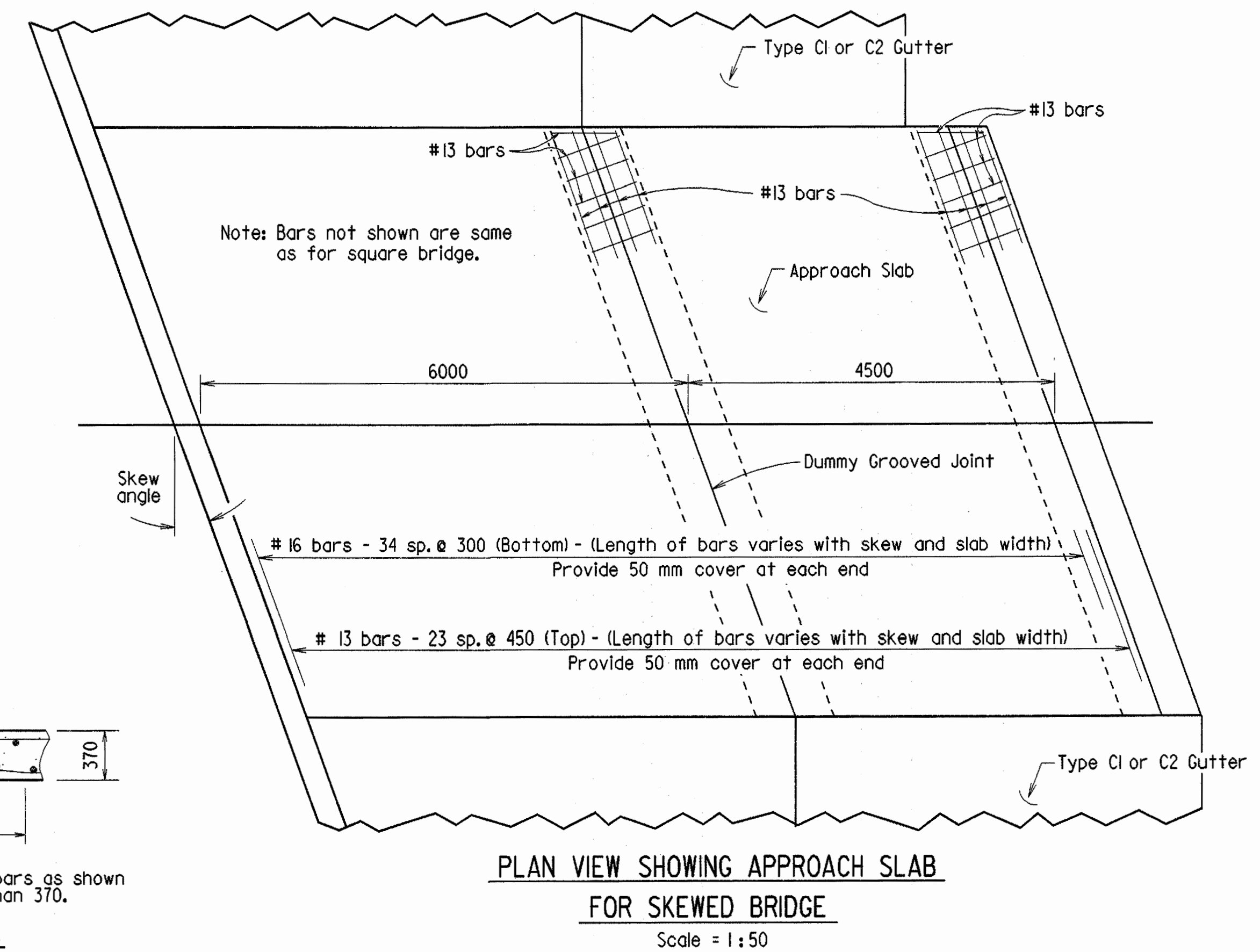
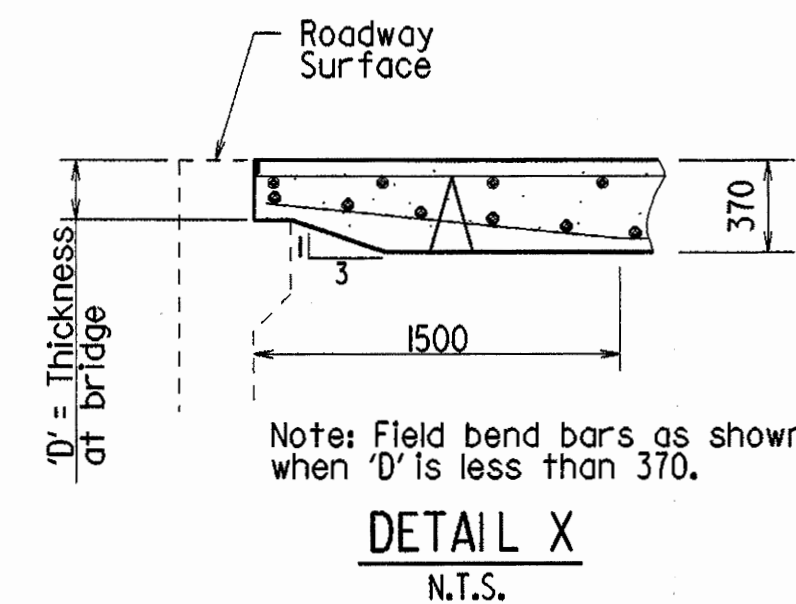
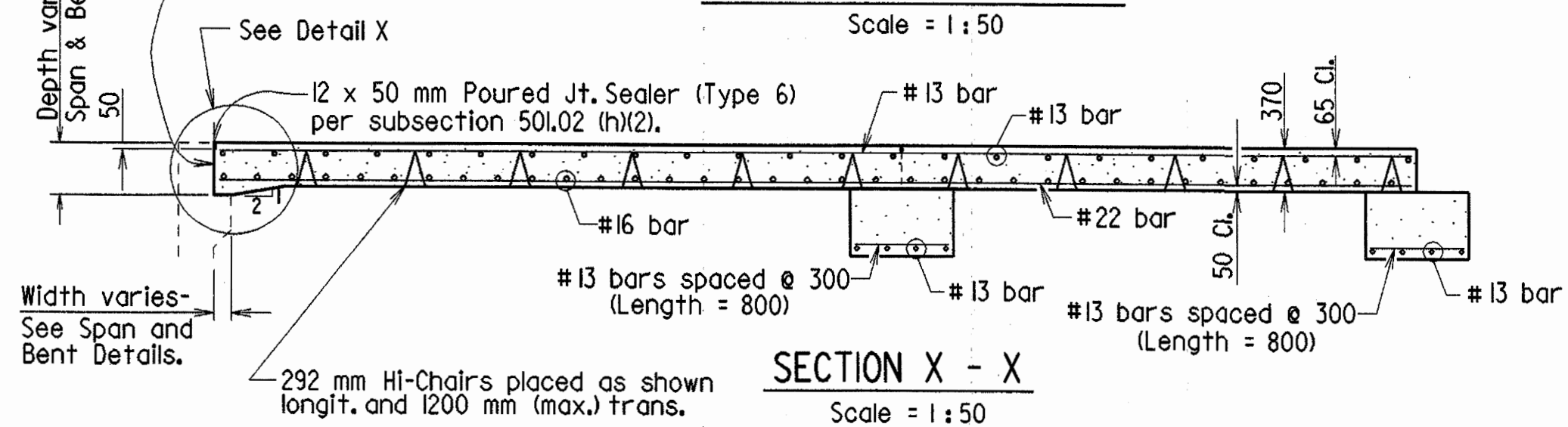
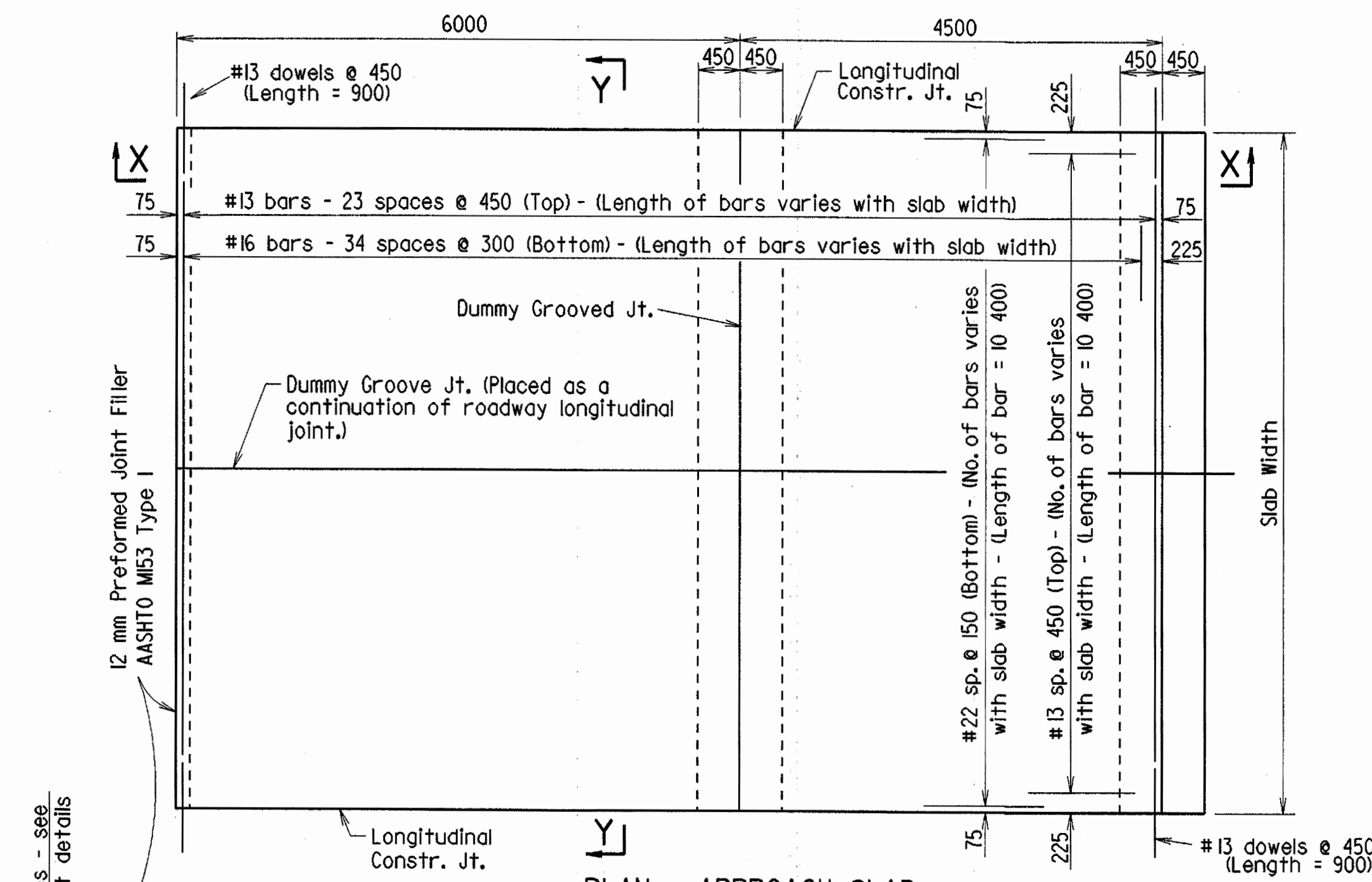


TABLE OF QUANTITIES FOR ONE SQUARE APPROACH SLAB

Slab Width, m	Reinforcing Steel, kg	Concrete (m <sup>3</sup> )
4.5	1498	21.98
7.2	2377	35.17
10.8	3548	52.76

GENERAL NOTES

- All dimensions are in millimeters unless otherwise noted.
- Concrete shall be Class S (AE) (f'c = 28.0 MPa)
- Reinforcement Steel shall conform to ASTM A 615/A 615M-96a, Grade 420. Fabricate bar lengths to provide 50 mm cover at each end.
- Approach Slabs will be measured and paid for in accordance with Section 504 of the Standard Specifications.
- This drawing to be used with Standard Dwg. 36530 and 36531.
- Redrawn and Revised 6-29-2000. By MAH Ck. by JGT.

DETAILS OF APPROACH SLAB

ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: MAH DATE: 6-29-00 FILENAME: B36535.std  
CHECKED BY: JGT DATE: 6-29-00 SCALE: As Shown  
DESIGNED BY: Std. DATE: BRIDGE NO. DRAWING NO. 36535

