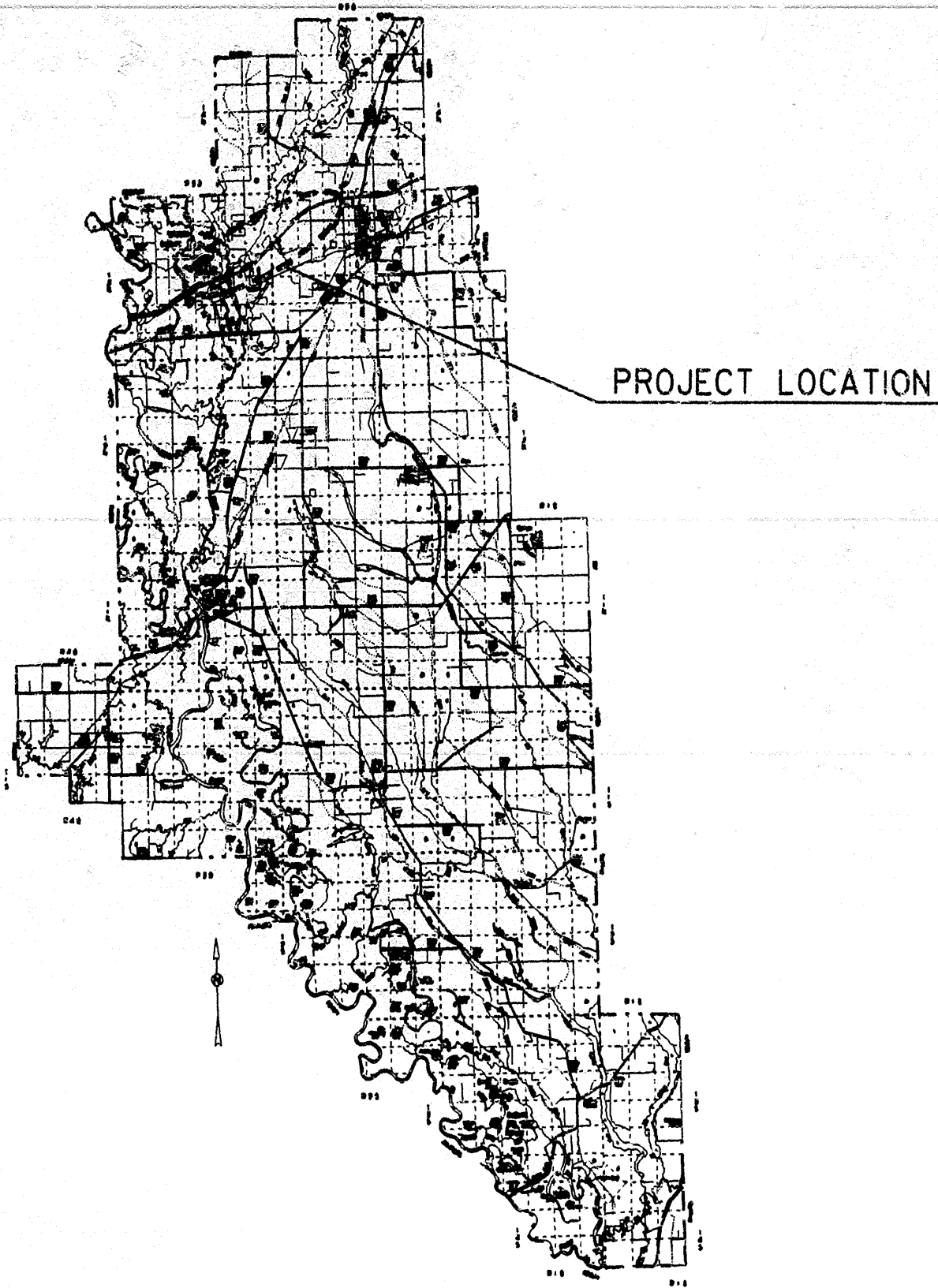


"A FULLY CONTROLLED ACCESS FACILITY"  
ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
CONSTRUCTION PLANS FOR STATE HIGHWAY

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	R10055		1	116
(2) BAYOU DeVIEW-BRINKLEY (F)								



BAYOU DeVIEW - BRINKLEY (F)

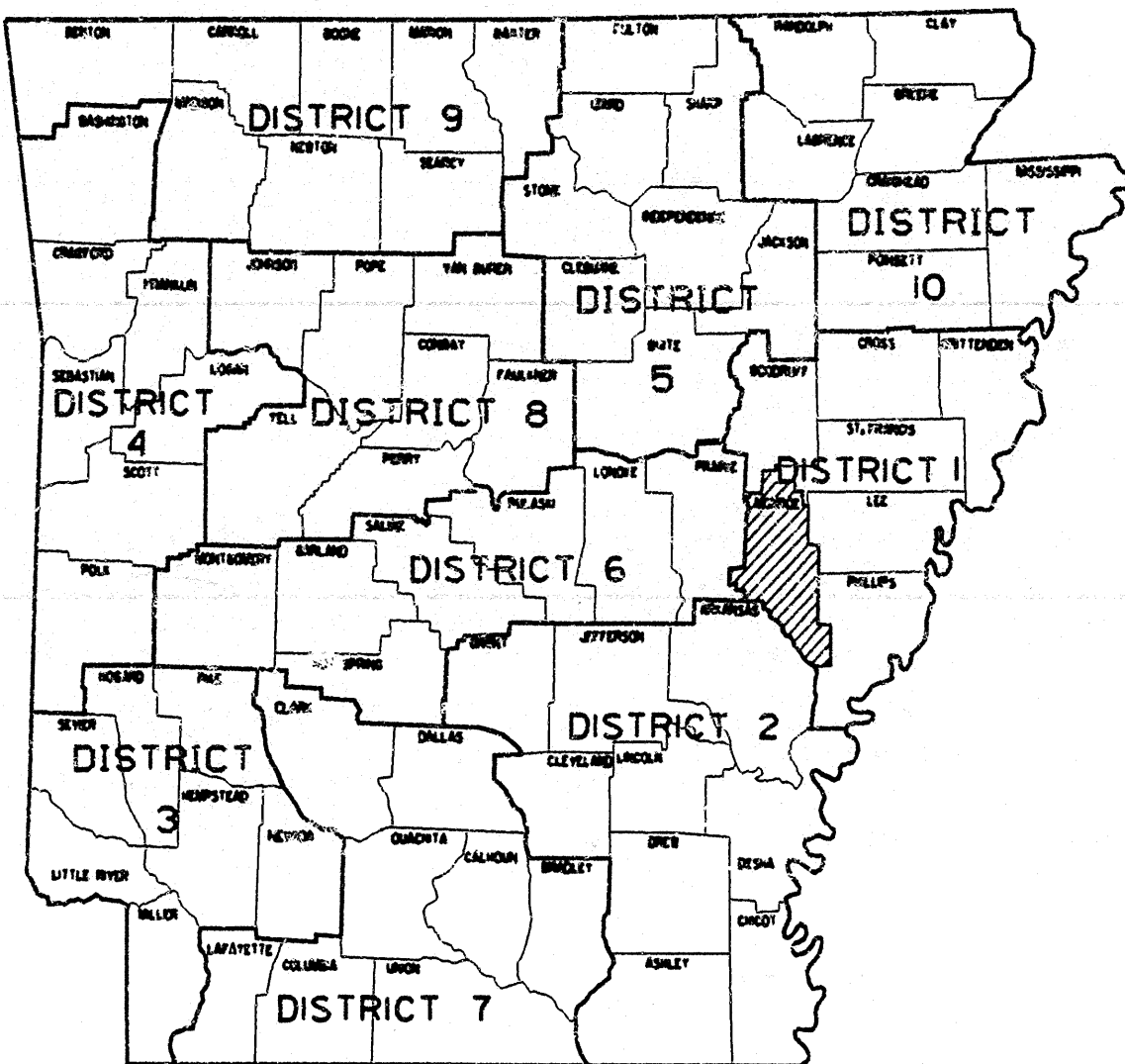
MONROE COUNTY

ROUTE 40 SECTION 43

FEDERAL AID PROJECT IM-40-4(58)209

JOB R10055

SCALE: 1" = 1/2 MILE



ARK. HWY. DIST. NO. 1

MONROE COUNTY

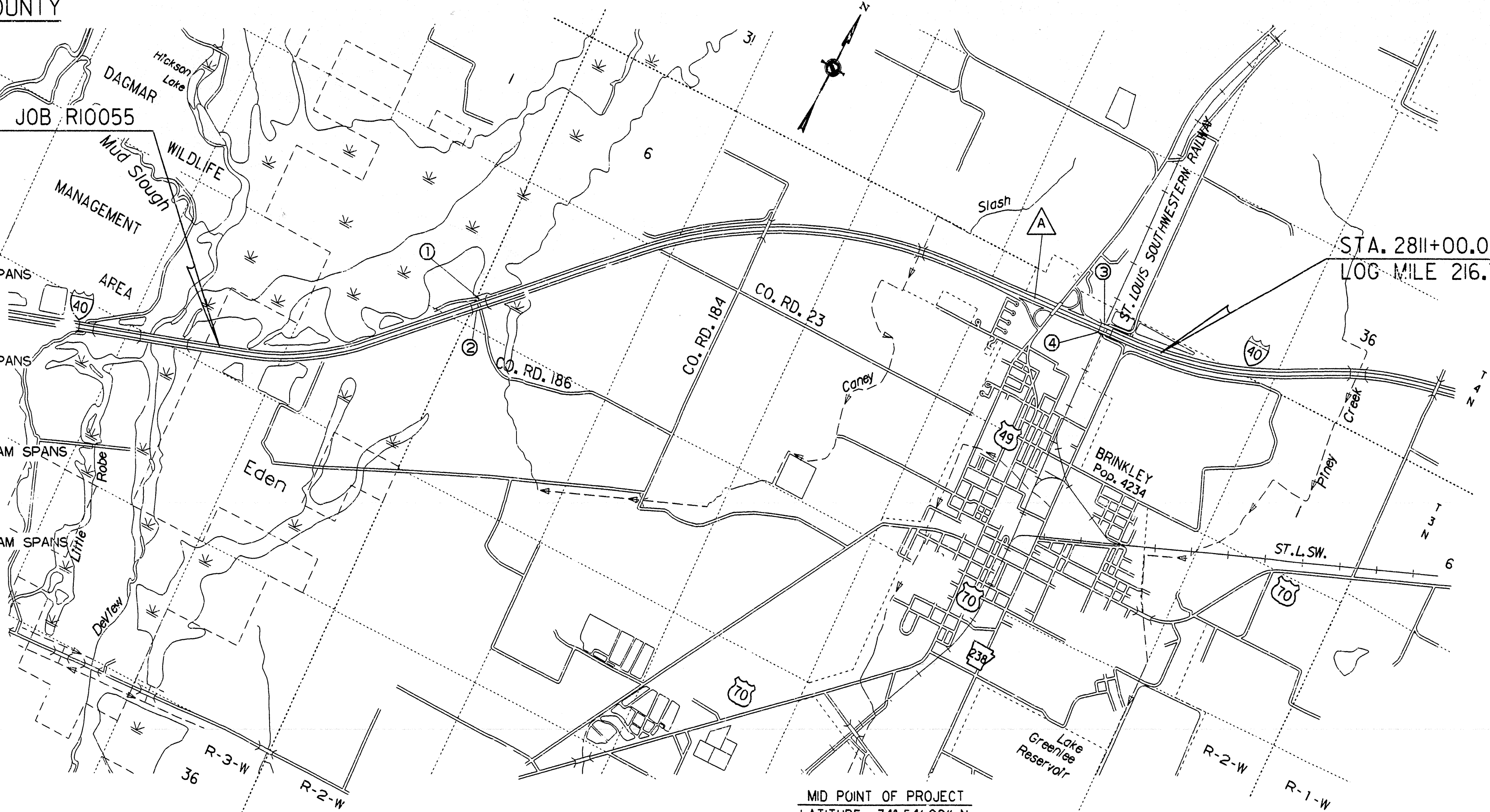
STA. 2421+46.10 BEGIN JOB R10055  
LOG MILE 209.67

BRIDGE DATA

- ① STA. 2527+39.92 BR. END A  
134'-2" CONT. COMP. W-BEAM SPANS  
BR. NO. A3727  
40'-0" CLEAR ROADWAY  
STA. 2528+74.08 BR. END A
- ② STA. 2527+39.92 BR. END B  
134'-2" CONT. COMP. W-BEAM SPANS  
BR. NO. B3727  
40'-0" CLEAR ROADWAY  
STA. 2528+74.08 BR. END B
- ③ STA. 2774+69.07 BR. END A  
260'-2 3/8" CONT. COMP. W-BEAM SPANS  
BR. NO. A3731  
40'-0" CLEAR ROADWAY  
STA. 2777+29.27 BR. END A
- ④ STA. 2774+64.17 BR. END B  
260'-2 3/8" CONT. COMP. W-BEAM SPANS  
BR. NO. B3731  
40'-0" CLEAR ROADWAY  
STA. 2777+24.37 BR. END B

Q MEDIAN  
EQUATIONS:

- △ STA. 2732+56.60 BK. =  
STA. 2748+43.60 AHD.



MID POINT OF PROJECT  
LATITUDE 34° 54' 00" N  
LONGITUDE 91° 14' 15" W

NOTE: LENGTH IS COMPUTED ALONG Q MEDIAN & IS SHOWN FOR INFORMATION ONLY.

GROSS LENGTH OF PROJECT	37366.90	FEET OR	7.077 MILES
NET " " ROADWAY	36972.54	" "	7.002 "
NET " " BRIDGES	394.36	" "	0.075 "
NET " " PROJECT	37366.90	" "	7.077 "

DESIGN TRAFFIC DATA

DESIGN YEAR ----- 2017  
1997 ADT ----- 28395  
2017 ADT ----- 54807  
2017 DHV ----- 6029  
DIRECTIONAL DISTRIBUTION ----- 0.60  
TRUCKS ----- 48%  
DESIGN SPEED ----- 70 MPH

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



P.E. JOB 001726  
NON-PART.

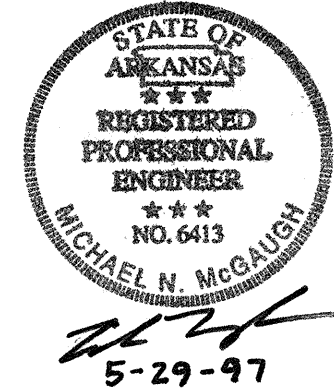


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK			
				JOB NO.	R10055	41	116	

① A&B 3727 & A&B 3731 QUANT 37966

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. R10055																			
BRIDGE NO.	CODE NO.	NAME PLATE	ITEM NO.	801	SS # 802	SS # 802	803	804	804	805	805	807	SP & 808	810	812	816	816	816	821
			UNIT OF STRUCTURE \ ITEM	UNCLASSIFIED EXCAVATION FOR STRUCTURES - BRIDGE	CLASS S CONCRETE -BRIDGE	CLASS S(AE) CONCRETE -BRIDGE	CLASS 1 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL -BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	CONCRETE PILING (16" OCT. OR 14" Sq.)	TEST PILE (16" OCT. OR 14" Sq.)	STRUCTURAL STEEL IN BEAM SPANS (AASHTO M270, GR.50W)	ELASTOMERIC BEARINGS	CLOSED CELL JOINT FILLER	BRIDGE NAME PLATE (TYPE C)	FILTER BLANKET	DUMPED RIPRAP	CONCRETE RIPRAP	MODIFICATION OF EXISTING BRIDGE STRUCTURES
			UNIT	CU.YDS.	CU.YDS.	CU.YDS.	GAL.	LB.	LB.	LIN.FT.	LIN.FT.	LB.	CU.IN.	LIN.FT.	EACH	SQ.YDS.	CU.YDS.	CU.YDS.	LUMP SUM
A & B 3727 X271 COUNTY ROAD "T"	BRIDGE A	END BENT 1		111	32.60		0.3	4,278	470			1,311		42.83		43	22		
		BENT 2		80	40.12			6,439				206							
		BENT 3		80	40.12			6,439				206							
		END BENT 4		111	32.60		0.3	4,278	470			1,311		42.83	1	43	22		
		SUPERSTRUCTURE				160.21	13.8		35,079			85,511	9,180.0						
		TOTAL BRIDGE A		382	145.44	160.21	14.4	21,434	36,019			88,545	9,180.0	85.67	1	86	44		1.0
	BRIDGE B	END BENT 1		111	32.60		0.3	4,278	470			1,311		42.83	1	43	22		
		BENT 2		80	40.12			6,439				206							
		BENT 3		80	40.12			6,439				206							
		END BENT 4		111	32.60		0.3	4,278	470			1,311		42.83		43	22		
		SUPERSTRUCTURE				160.21	13.8		35,079			85,511	9,180.0						
		TOTAL BRIDGE B		382	145.44	160.21	14.4	21,434	36,019			88,545	9,180.0	85.67	1	86	44		1.0
A & B 3731 X171 ST. LOUIS - SOUTHWESTERN RAILWAY	BRIDGE A	END BENT 1		119	36.18		0.3	4,529	470	160 Δ	45	1,325		42.83		10	5	22	
		BENT 2		152	169.43			19,832		1,104		227							
		BENT 3		153	169.50			19,832		1,058Δ	51	227							
		END BENT 4		119	36.22		0.3	4,529	470	200		1,325		42.83	1	10	5	22	
		SUPERSTRUCTURE				312.56	27.1		66,099			323,143	18,768.0						
		TOTAL BRIDGE A		543	411.33	312.56	27.7	48,722	67,039	2,522	96	326,247	18,768.0	85.67	1	20	10	44	1.0
	BRIDGE B	END BENT 1		119	36.18		0.3	4,529	470	200		1,325		42.83	1	10	5	22	
		BENT 2		152	169.43			19,832		1,058Δ	51	227							
		BENT 3		153	169.52			19,832		1,104		227							
		END BENT 4		119	36.24		0.3	4,529	470	160 Δ	45	1,325		42.83		10	5	22	
		SUPERSTRUCTURE				312.56	27.1		66,099			323,143	18,768.0						
		TOTAL BRIDGE B		543	411.37	312.56	27.7	48,722	67,039	2,522	96	326,247	18,768.0	85.67	1	20	10	44	1.0
TOTAL JOB NO. R10055				1,850	1,113.58	945.54	84.2	140,312	206,116	5,044	192	829,584	55,896.0	342.68	4	212	108	88	

- Δ Permanent Pile Quantity Adjusted For Deletion Of  
One Permanent Pile To Be Included As Permanent  
Test Pile As Per Article 805.09.
- ✕ Includes 6,547 Lbs. Of AASHTO M270, GR.36 Structural Steel
- Ø Includes 6,467 Lbs. Of AASHTO M270, GR.36 Structural Steel

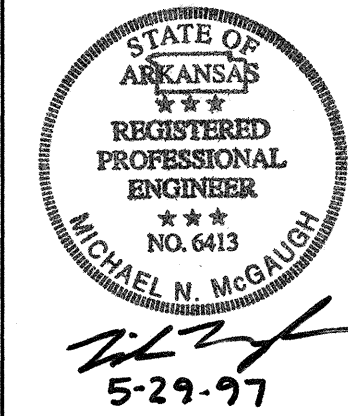


ABMB ENGINEERS, INC.

ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS	
SCHEDULE OF BRIDGE QUANTITIES ALT. A. BRIDGE A&B 3727 BRIDGE A&B 3731	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.	
DRAWN BY: DHH DATE: 11/96 CHECKED BY: AD/SM DATE: 1/97 DESIGNED BY: GPS/AD DATE: 9/94	SCALE: No Scale
BRIDGE NO. A & B 3727 A & B 3731	DRAWING NO. 37966

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. R10055																				
BRIDGE NO.	CODE NO.	NAME PLATE	UNIT OF STRUCTURE	ITEM	801	SS 802	SS 802	803	804	804	805	807	SP & 808	810	812	816	816	816	821	
					UNCLASSIFIED EXCAVATION FOR STRUCTURES - BRIDGE	CLASS S CONCRETE -BRIDGE	CLASS S(AE) CONCRETE -BRIDGE	CLASS 1 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL -BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	STEEL SHELL PILING (14" DIA.) V	STRUCTURAL STEEL IN BEAM SPANS (AASHTO M270, GR.50W)	ELASTOMERIC BEARINGS	CLOSED CELL JOINT FILLER	BRIDGE NAME PLATE (TYPE C)	FILTER BLANKET	DUMPED RIPRAP	CONCRETE RIPRAP	MODIFICATION OF EXISTING BRIDGE STRUCTURES	
					CU.YDS.	CU.YDS.	CU.YDS.	GAL.	LB.	LB.	LIN.FT.	LB.	CU.IN.	LIN.FT.	EACH	SQ.YDS.	CU.YDS.	CU.YDS.	LUMP SUM	
A & B 3727 X271 COUNTY ROAD "T"	BRIDGE A	END BENT 1	111	32.60		0.3	4,278	470		1,311		42.83		43	22					
		BENT 2	80	40.12			6,439			206										
		BENT 3	80	40.12			6,439			206										
		END BENT 4	111	32.60		0.3	4,278	470		1,311		42.83	1	43	22					
		SUPERSTRUCTURE			160.21	13.8		35,079		85,511	9,180.0									
		TOTAL BRIDGE A	382	145.44	160.21	14.4	21,434	36,019		88,545	9,180.0	85.67	1	86	44		1.0			
		BRIDGE B	END BENT 1	111	32.60		0.3	4,278	470		1,311		42.83	1	43	22				
			BENT 2	80	40.12			6,439			206									
			BENT 3	80	40.12			6,439			206									
			END BENT 4	111	32.60		0.3	4,278	470		1,311		42.83		43	22				
			SUPERSTRUCTURE			160.21	13.8		35,079		85,511	9,180.0								
			TOTAL BRIDGE B	382	145.44	160.21	14.4	21,434	36,019		88,545	9,180.0	85.67	1	86	44		1.0		
			A & B 3731 X171 ST. LOUIS - SOUTHWESTERN RAILWAY	BRIDGE A	END BENT 1	119	36.18		0.3	4,529	470	256	1,325		42.83		10	5	22	
		BENT 2			152	169.43			19,832		1,413	227								
BENT 3	153	169.50					19,832		1,413	227										
END BENT 4	119	36.22				0.3	4,529	470	256	1,325		42.83	1	10	5	22				
SUPERSTRUCTURE					312.56	27.1		66,099		323,143	18,768.0									
TOTAL BRIDGE A	543	411.33			312.56	27.7	48,722	67,039	3,338	326,247	18,768.0	85.67	1	20	10	44	1.0			
BRIDGE B	END BENT 1	119			36.18		0.3	4,529	470	256	1,325		42.83	1	10	5	22			
	BENT 2	152		169.43			19,832		1,413	227										
	BENT 3	153		169.52			19,832		1,413	227										
	END BENT 4	119		36.24		0.3	4,529	470	256	1,325		42.83		10	5	22				
	SUPERSTRUCTURE				312.56	27.1		66,099		323,143	18,768.0									
	TOTAL BRIDGE B	543		411.37	312.56	27.7	48,722	67,039	3,338	326,247	18,768.0	85.67	1	20	10	44	1.0			
	TOTAL JOB NO. R10055			1,850	1,113.58	945.54	84.2	140,312	206,116	6,676	829,584	55,896.0	342.68	4	212	108	88			

∇ Nominal Wall Thickness = 0.50"  
⊗ Includes 6,547 Lbs. Of AASHTO M270, GR.36 Structural Steel  
⊙ Includes 6,467 Lbs. Of AASHTO M270, GR.36 Structural Steel



ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS	
SCHEDULE OF BRIDGE QUANTITIES ALT. B. BRIDGE A&B 3727 BRIDGE A&B 3731	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.	
DRAWN BY: DHH DATE: 11/96 CHECKED BY: AD/SM DATE: 1/97 DESIGNED BY: GPS/AD DATE: 9/94	SCALE: No Scale
BRIDGE NO. A & B 3727 A & B 3731	DRAWING NO. 37967

ABMB ENGINEERS, INC.



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	R10055		52	116
① A&B 3727, A&B 3731 NOTES								37968

# BRIDGE GENERAL NOTES

The proposed work consists of: Raising and widening the existing bridges; removing and replacing the existing bridge decks, existing diaphragms and struts and expansion devices; removing and replacing all existing beams; removing and replacing shoes with bearings as shown on plans; constructing pedestals and repairing existing bents; constructing new bent additions; reconstructing or replacing end bents as shown on plans; and constructing new footings, and piles as shown on plans.

**BENCH MARKS:**

Bridge 3727 – Chiseled square southwest wing wall beginning of Bridge 3727B elevation 191.75.

Bridge 3731 – Chiseled "X" on the southwest corner of beginning of Bridge 3731B elevation 230.10.

**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 with current interim specifications.

**LIVE LOADING:** HS20 and Military (AASHTO 3.7.4)

**METHOD OF DESIGN:** Load Factor

**SEISMIC PERFORMANCE CATEGORY:** A—Bridges A & B 3727  
B—Bridges A & B 3731

**MATERIALS AND STRENGTHS:**

Class S(AE) Concrete (superstructure)----- f'c = 4,000 psi  
Class S Concrete (substructure)----- f'c = 3,500 psi  
Reinforcing Steel (AASHTO M31 OR M53, GR 60)----- Fy = 60,000 psi  
Structural Steel (AASHTO M270, GR.36)----- Fy = 36,000 psi  
Structural Steel (AASHTO M270, GR.50W, unpainted)--- Fy = 50,000 psi  
Bolts (AASHTO M164, Type 3)

**LOAD DISTRIBUTION:**

	Interior Beam	Exterior Beam
<b>Dead Load:</b>		
To Beam:	758 plf + 1.15(Wt. of Beam)	651 plf + 1.08(Wt. of Beam)
To Composite Beam:	263 plf*	263 plf*

\*Includes 133 plf future wearing surface.

**Live Load:**

To composite Beam: 1.379 Wheels + Impact      1.286 Wheels + Impact

**BORING LOGS:** Boring logs may be obtained from the Programs and Contracts Division.

**ALTERNATE A CONCRETE PILING:** Piling shall be 14" square or 16" octagonal and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 44 tons per pile and to a minimum penetration of 20'. Piling in end bents shall be driven after embankment is in place. Lengths of piling shown are assumed for estimating quantities only. Actual lengths to be determined in the field. At minimum piles shall be driven to the existing pile tip elevation. No Additional Payment Will Be Made For Cut-Off And Build-Up. All Piling On Bridge A & B 3731 Shall Conform To Standard Drawing 2383 B.

**ALTERNATE B CONCRETE FILLED STEEL SHELL PILING:** Ref. Drawing No. 37999. Piling shall be 14" diameter concrete filled steel shell piling and shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 44 tons per pile and to a minimum penetration of 20 feet below natural ground. Piling in end bents shall be driven after embankment is in place. Lengths of piling shown are based upon Concrete Piling. To obtain steel shell pile lengths, multiply lengths shown by 1.28. Lengths shown are for estimating quantities only. Actual lengths to be determined in the field. At minimum piles shall be driven to the existing pile tip elevations.

**TEST PILES:** Contractor shall furnish and install test piles at locations indicated on plans in accordance with Standard Specifications Section 805.09(a) Method A Empirical Pile Formulas. Test piles shall be made a part of the completed work and shall be cut off or built up to grade elevations as necessary.

**CONCRETE:** All concrete shall be Class S, or Class S(AE) with a minimum 28 day compressive strength as specified in MATERIALS AND STRENGTHS table above. Concrete shall be poured in the dry and all exposed corners shall be chamfered 3/4" unless otherwise noted.

**STRUCTURAL STEEL:** 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.

Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Bridge Engineer. Payment will be made on the basis of the bolted splice shown.

All beams shall be blocked in their true position with webs horizontal in the shop, in groups of a minimum of 3 sections as specified in Section 807.54(b)(2). The camber, length of sections, distance between bearings and opening of joints shall be measured with the beams in this position and this information shall become part of the permanent record of 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 60° F. A tolerance of ±1/4" is allowed for camber.

Flange splice plates for main members 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 of the Arkansas State Highway and Transportation Department for approval. All welding shall conform to Subsection 807.26.

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

**CLASS 1 PROTECTIVE SURFACE TREATMENT:** Treatment shall be applied to the roadway surface and to the face and top of the concrete parapet rail.

**CHARPY V-NOTCH TEST:** All beams and cover plates are considered main load carrying members and shall meet the longitudinal Charpy v-notch test specified in Subsection 807.05.

**VERIFICATION:** Components of these existing bridges are to be retained and joined to the proposed work. The Contractor is to strictly adhere to the requirements for verification of the geometry of the existing bridges and its relationship to the proposed work described in Article 821.02 of the Standard Specification.

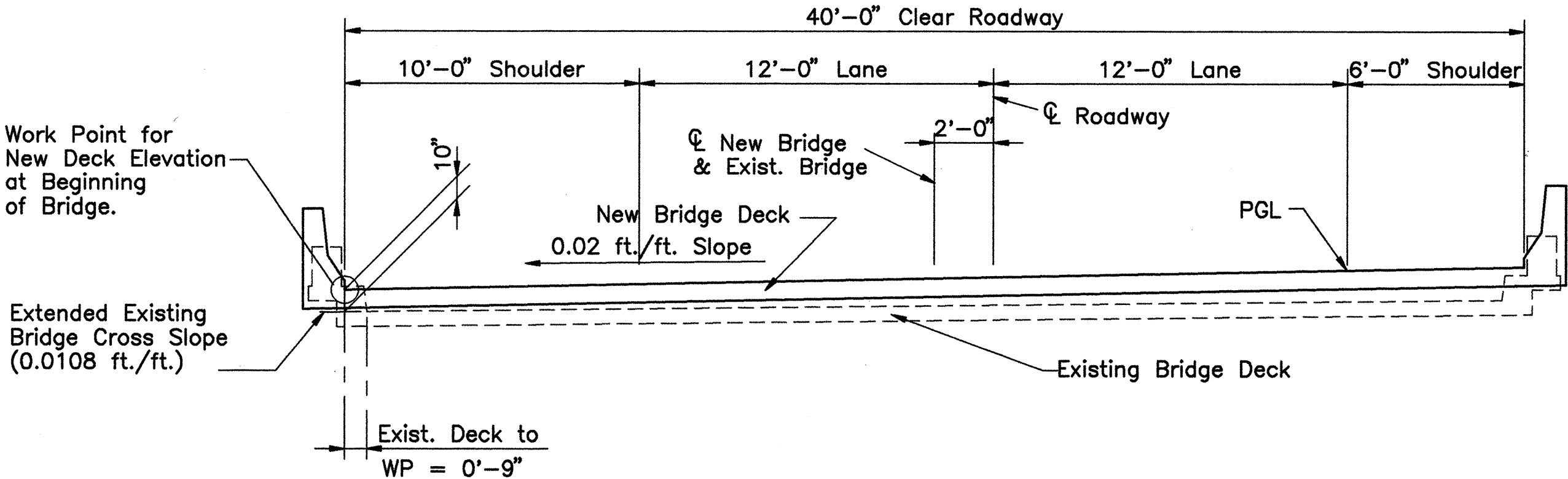
**MAINTENANCE OF TRAFFIC:** See Roadway Plans.

**REMOVAL AND SALVAGE:** All material shown to be removed from the existing bridges shall become the property of the contractor.

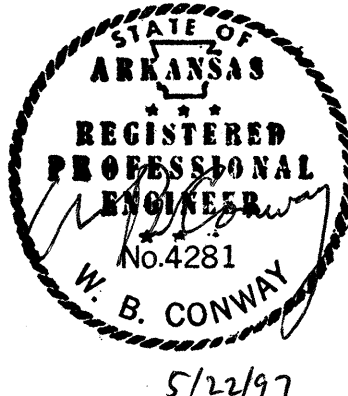
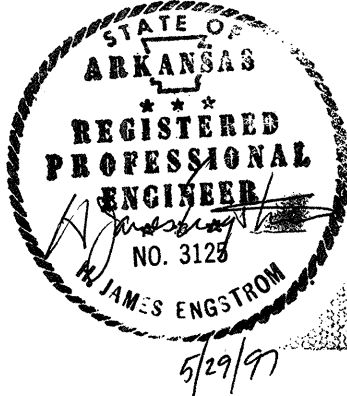
**METHOD OF ESTABLISHING NEW BRIDGE DECK ELEVATIONS:**

**BRIDGE 3731 –** The new bridge elevations were set to allow a min. 23'-0" clearance above the existing tracks. The track elevations were established for a distance of 600 ft. each side of the C of I-40. See drawing No. 37991.

**BRIDGE 3727 –** The following sketch shows the AHTD method for establishing the geometry of the new bridges relative to the existing bridges. Contractor shall verify the elevations shown on the drawings with this method as well as with the existing bridge geometry in accordance with Section 821 of the Standard Specifications.



**BRIDGE DIAGRAM – BRIDGE A & B 3727**  
(A SHOWN – B OPP. HAND)



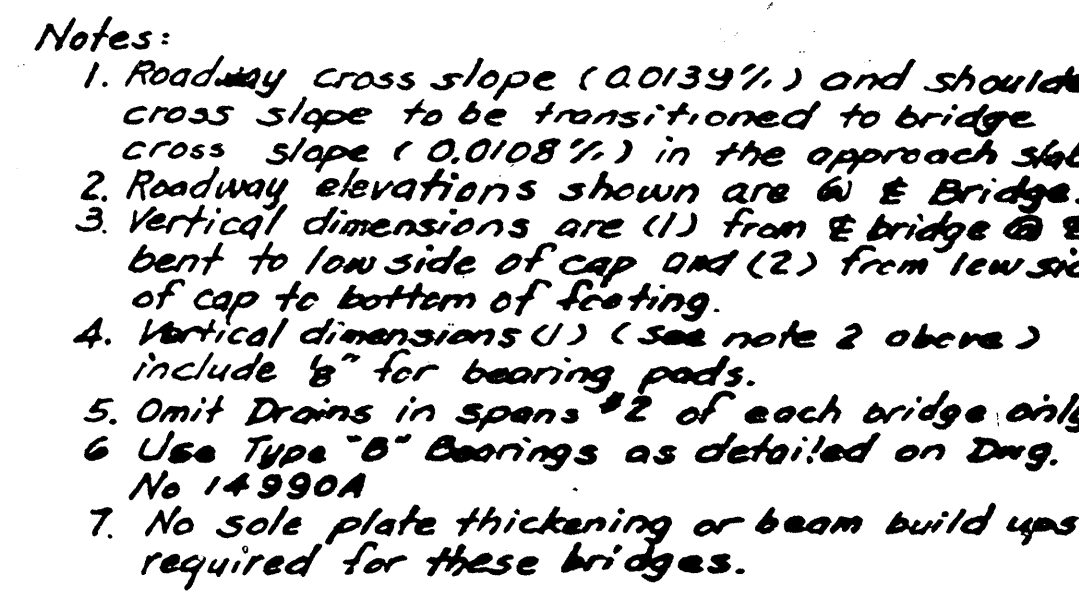
ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS	
<b>GENERAL NOTES</b> <b>BRIDGE A &amp; B 3727</b> <b>AND BRIDGE A &amp; B 3731</b>	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 <b>ARKANSAS STATE HIGHWAY COMMISSION</b> LITTLE ROCK, ARK.	
DRAWN BY: JHS CHECKED BY: CDE DESIGNED BY: CDE	DATE: 3/96 DATE: 5/97 DATE: 9/94
BRIDGE NO. A & B 3727 A & B 3731	SCALE: None DRAWING NO. 37968

96 design spec.



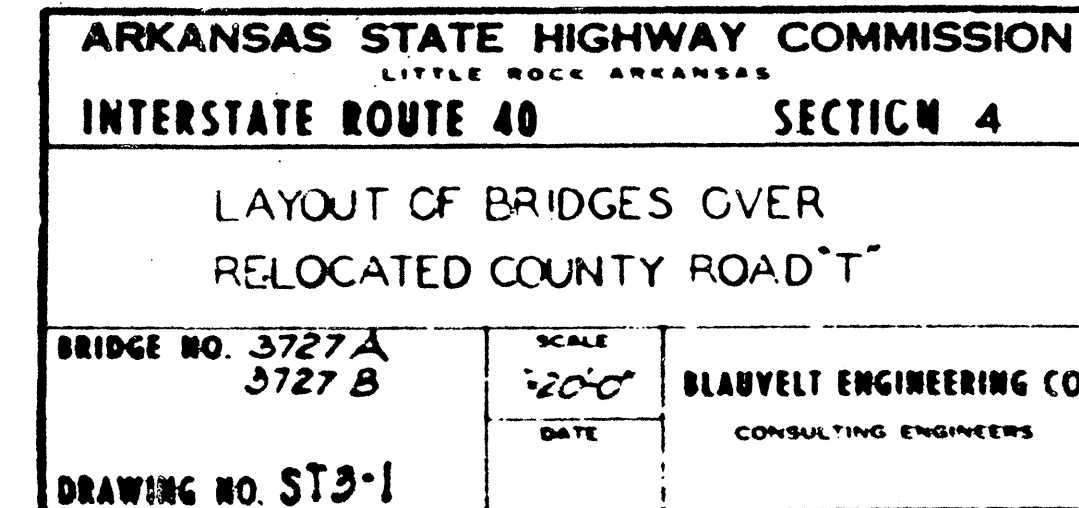
⊕ Denotes Boring Location

Note: Use Type "Z" Bridge Approach Slab  
#Gutters. Quantities included in  
Highway Portion. For Details see  
Dwg. No 1098 B



Specifications:  
Arkansas State Highway Commission Standard Specifications  
for Highway Construction adopted Dec. 9, 1959.  
Design Loading:  
HS20 A.A.S.H.O 1961 & Special Interstate Loading:  
2-24,000 lbs. Axles @ 4'-0" Ctrs.  
Allowable Stresses:  
Class A Concrete ( $n=15$ ) 840 psi.  
Class S Concrete ( $n=10$ ) 1,200 psi.  
Reinforcing Steel 20,000 per.  
Structural Steel (A-36) 20,000 psi.  
All Blast to be 10% above the Permitted General Allow.

For Superstructure details see Dwg's 1403 14050 & 14990A  
For End bent details see Dwg. No. 15051  
For Intermediate bent details see Dwg. No. 52A-2  
For precast concrete pile details see Dwg. No. 2382  
For Details of Stone riprap see "Summary of Bridge  
Quantities" Sheet U-8  
For Right of Way see Roadway Plan.



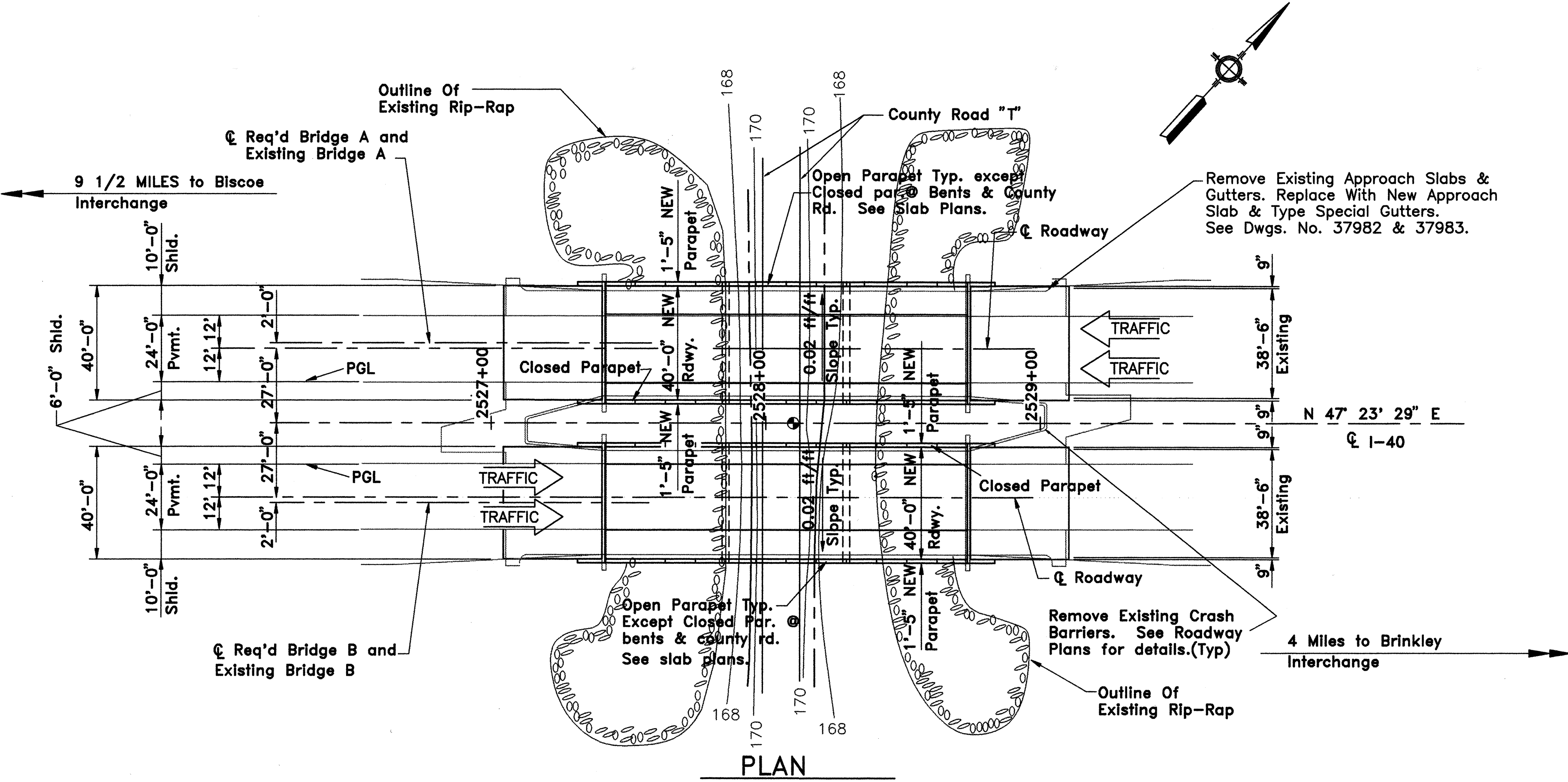
AHTD 37969

**MICROFILMED**  
**OCT 15 1998**

In Charge of C. H. E.  
Made By L. B.  
Traced By \_\_\_\_\_  
Checked By J. H.



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		R10055	54	116
1 A & B 3727 LAYOUT								37970

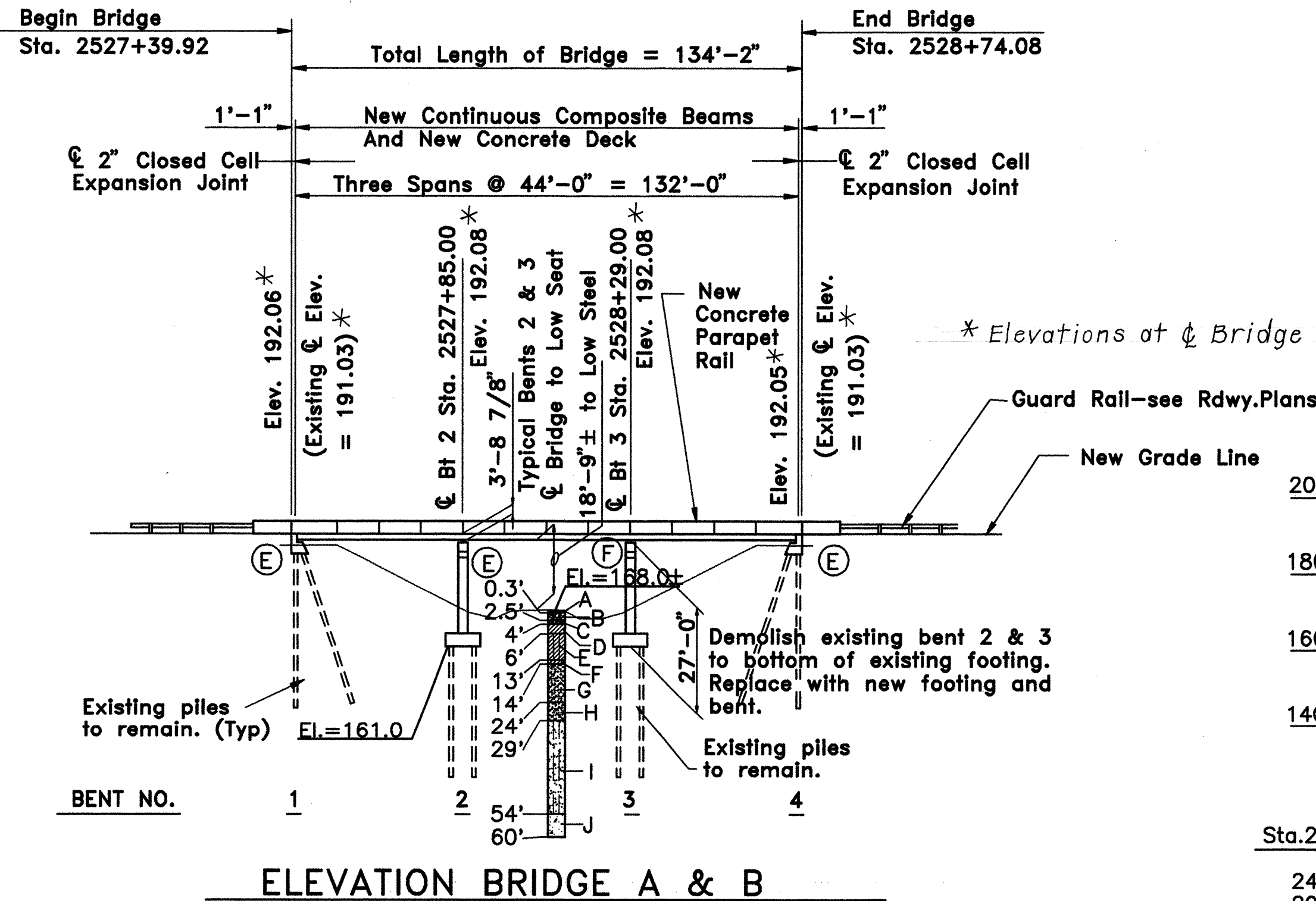


PLAN

PVI Sta. 2528+00  
Elev. = 193.16 at PGL  
V.C. = 800'

+0.40%      -0.40%

⊙ Denotes Boring Locations



Sta. 2528+10 @ I-40

24'-25'-N=33  
29-30-N=43  
34-35-N=28  
39-40-N=38  
44-45-N=26  
49-50-N=52 (10\"/>

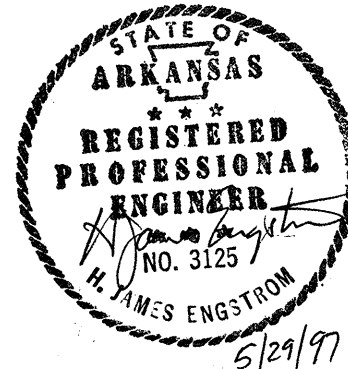
BORING LOG

Sta. 2528+10 @ I-40

A-Asphalt  
B-Tan & gray silty clay, sand & gravel (fill)  
C-Very stiff brown sandy clay with ferrous stains  
D-Firm gray silty clay with ferrous stains & occasional calcareous nodules  
E-Stiff, with sand pockets below 6 ft.  
F-Soft gray clay with roots  
G-Medium-dense gray fine sand  
H-Dense below 24 ft.  
I-Dense to medium-dense gray fine to medium sand, slightly silty  
J-Dense to medium-dense gray coarse sand with fine gravel

- NOTES:
- Station & Dimensions Based Upon Existing Plans.
  - ⊙ Indicates Expansion Bearing.  
⊕ Indicates Fixed Bearing.
  - Bridge A & B Are The Same Except As Noted.
  - Roadway Elevations Shown Are At @ of New Bridge.
  - Vertical Dimensions are from @ New Bridge to top of Low Riser.
  - For General Notes See Dwg. No. 37968.

30 20 10 0 30 60  
SCALE IN FEET



ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS	
STRUCTURE PLAN AND ELEVATION BRIDGE A & B 3727 OVER COUNTY ROAD "T"	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.	
DRAWN BY: JHS CHECKED BY: CDE DESIGNED BY: CDE	DATE: 3/98 DATE: 5/97 DATE: 9-94
BRIDGE NO. A & B 3727	DRAWING NO. 37970

ACAD SCALE: 1"=30'

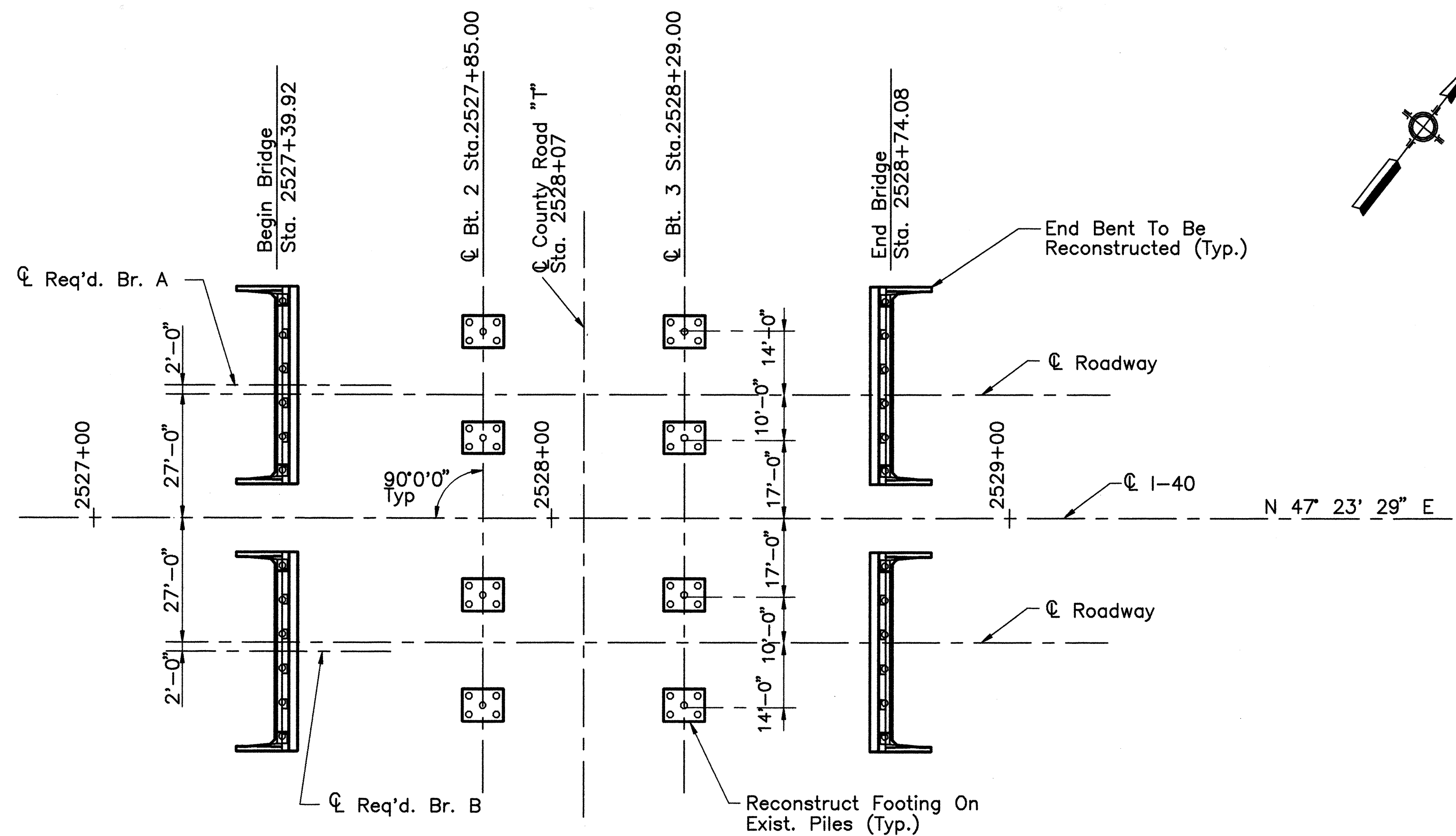
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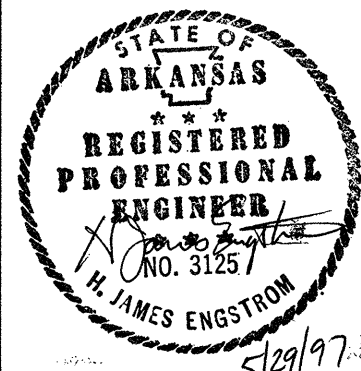
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		R10055	55	116

① A & B 3727 Ftg. Plan 37971



PLAN

**Notes:**  
Restoration Of Riprap Protection At End Bents  
Required After End Bent Construction.  
For Details, See Drawing No. 37972.



ENGSTROM/MODJESKI AND MASTERS  
CONSULTING ENGINEERS

**FOOTING PLAN  
BRIDGE A & B 3727  
OVER COUNTY ROAD "T"**

MONROE COUNTY  
INTERSTATE ROUTE 40 SEC. 43  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: JHS DATE: 3/96  
CHECKED BY: CDE DATE: 5/97  
DESIGNED BY: CDE DATE: 9/94

SCALE: 1" = 20'-0"

BRIDGE NO. A & B 3727

DRAWING NO. 37971

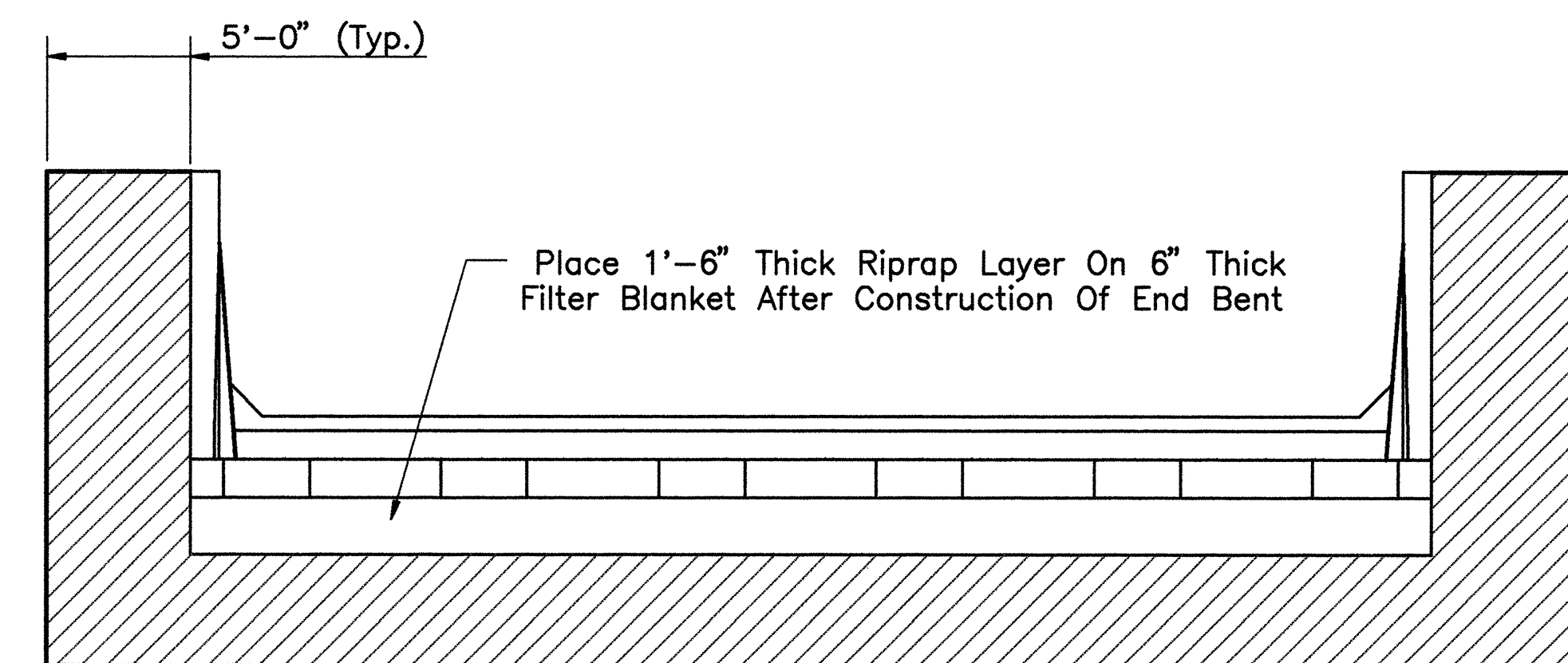
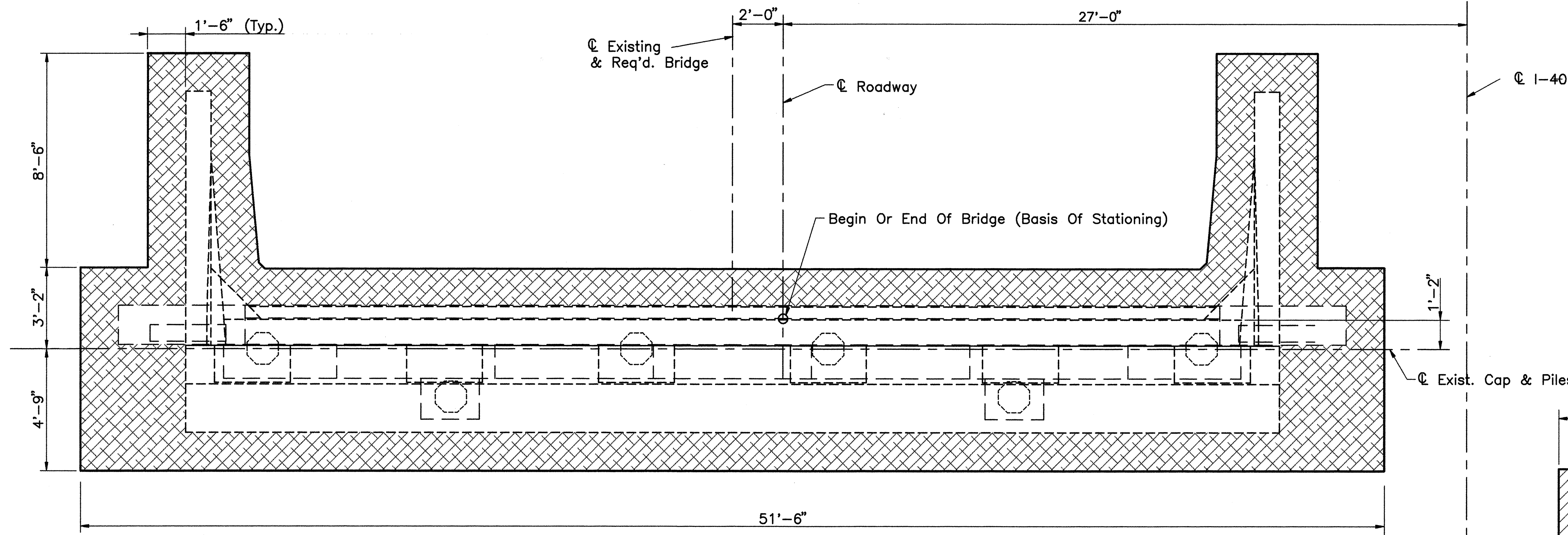
ACAD SCALE: 1" = 20'

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OCT 15 1997

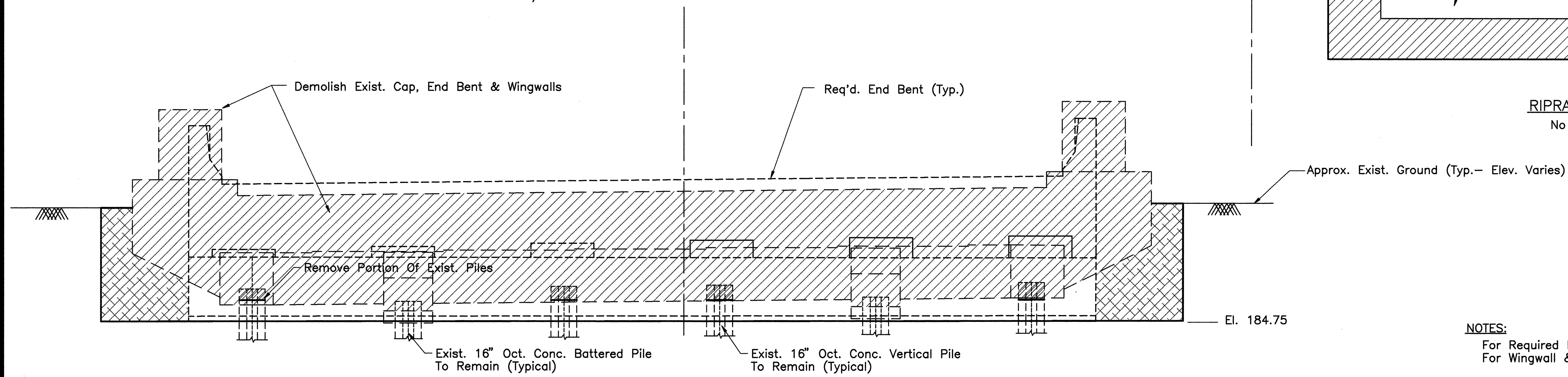


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	R10055		56	116
① A & B 3727 BENT								37972



**LIMITS OF EXCAVATION FOR END BENT**  
Scale: 3/8" = 1'-0"

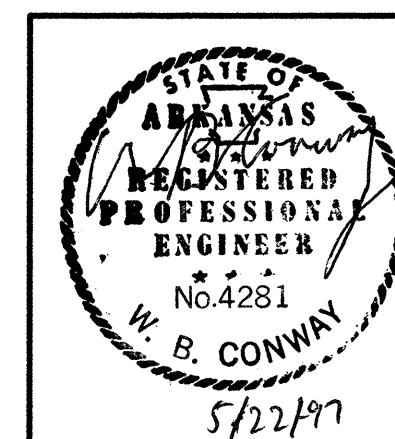
**RIPRAP DETAIL**  
No Scale



**ELEVATION**  
Scale: 3/8" = 1'-0"

**EXISTING BENT MODIFICATIONS**  
Demolish Existing Cap. All Existing 16" Oct. Concrete Piles To Remain. Care Shall Be Taken To Avoid Damage To Top Of Existing Piles To Remain.

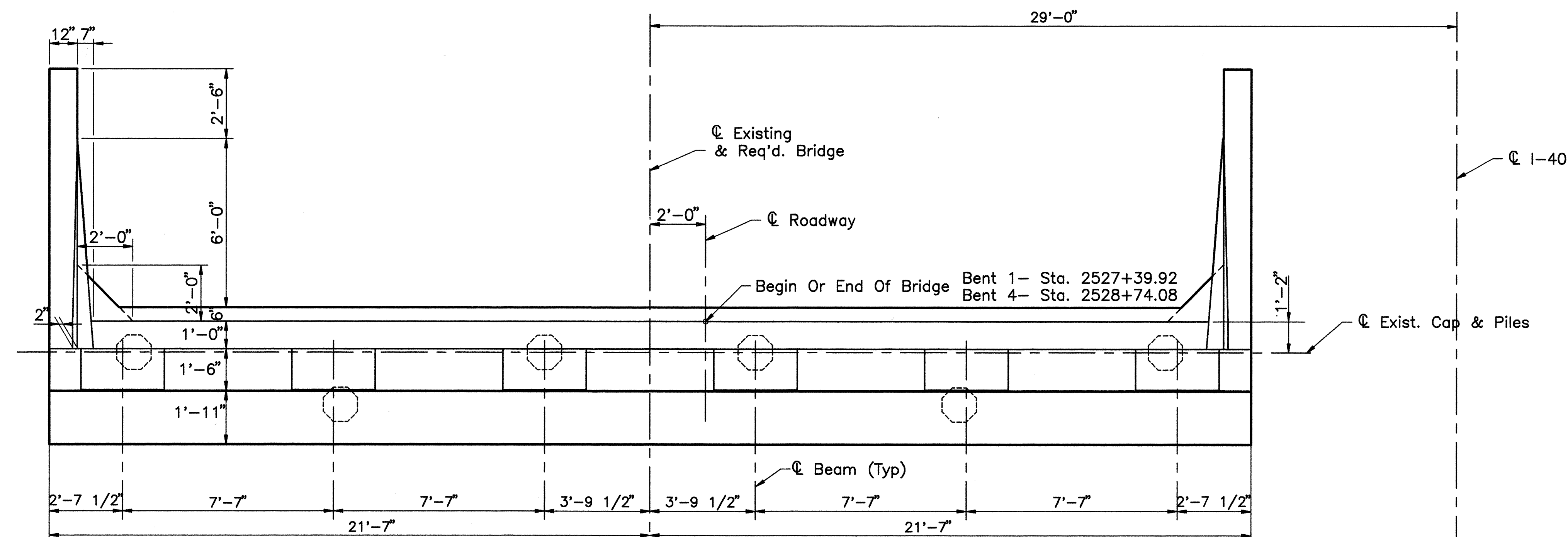
**NOTES:**  
For Required End Bent, See Dwg. No. 37973.  
For Wingwall & Parapet Details, See Dwg. No. 37974.



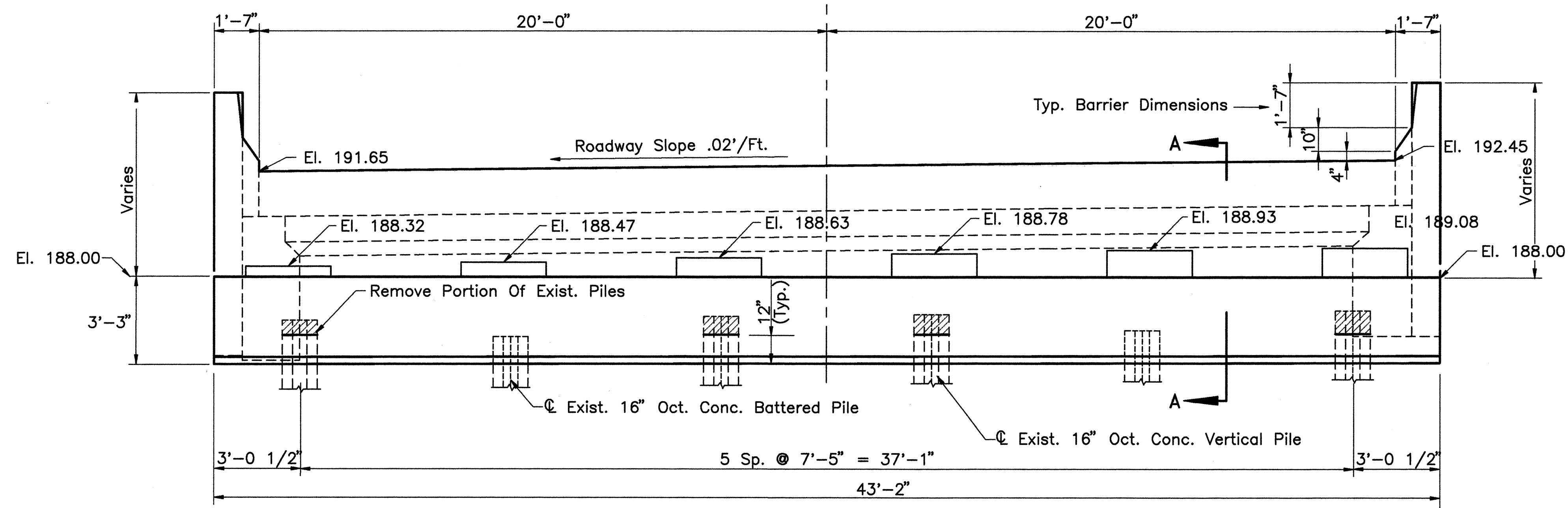
ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS	
<b>LIMITS OF EXCAVATION FOR ENDBENTS 1 &amp; 4 - BRIDGE A &amp; B 3727 OVER COUNTY ROAD "T"</b>	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.	
DRAWN BY: JHS DATE: 3/96 CHECKED BY: CDE DATE: 5/97 DESIGNED BY: FS DATE: 9/94	SCALE: 3/8" = 1'-0"
BRIDGE NO. A & B 3727	DRAWING NO. 37972



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		R10055	57	116
				① A & B 3727	BENT	37973		



PLAN

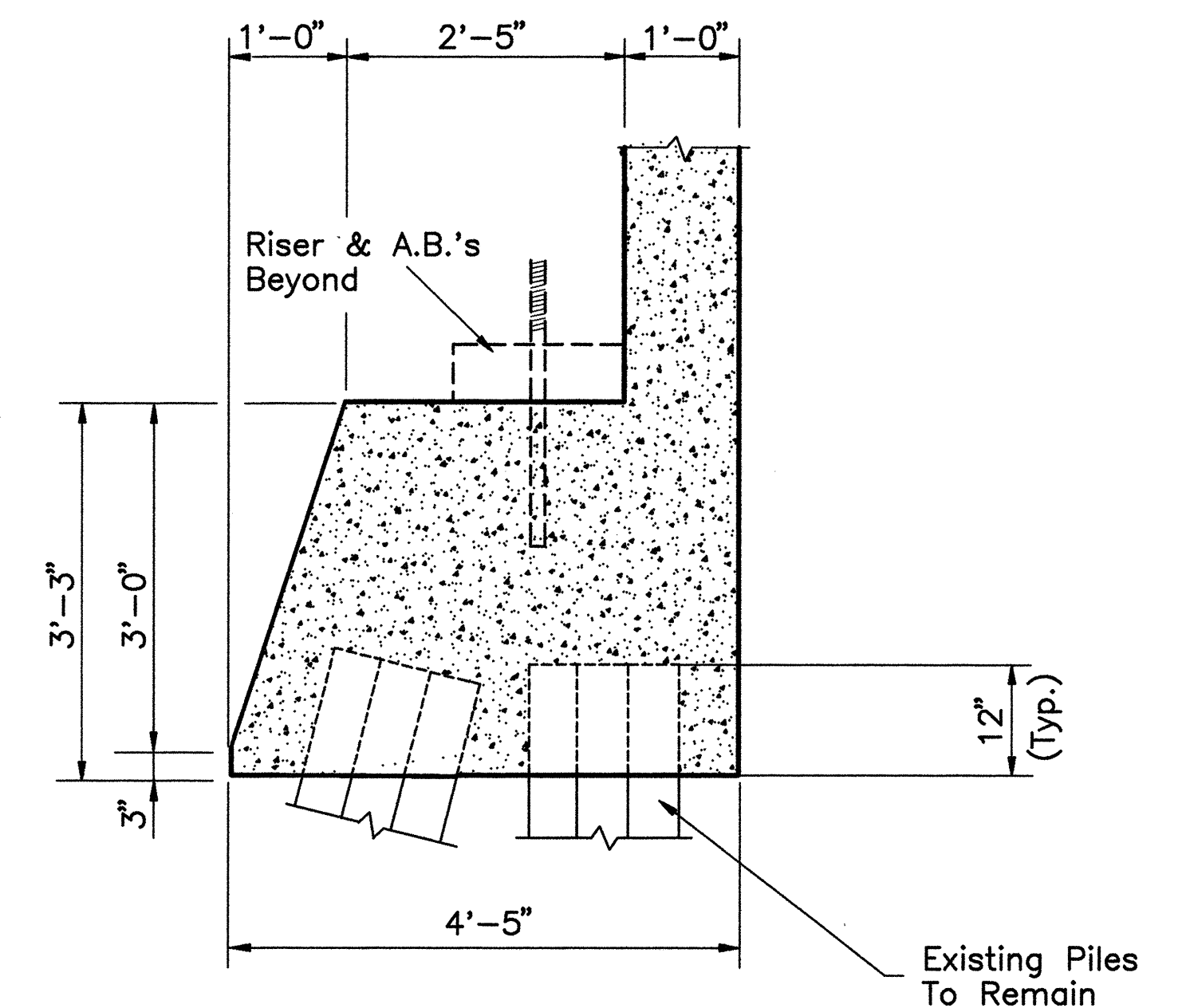
ELEVATION

Scale:  $3/8" = 1'-0"$

(Bent 1 Bridge B3727 & Bent 4 Bridge A3727 Shown  
Bent 1 Bridge A3727 & Bent 4 Bridge B3727 Opposite Hand)

### EXISTING BENT MODIFICATIONS

Demolish Existing Cap And Wingwalls.  
All Existing 16" Oct. Concrete Piles To  
Remain. Care Shall Be Taken To Avoid  
Damage To Top Of Existing Piles To Remain.



SECTION A-A  
Scale:  $3/4" = 1'-0"$

NOTES:

For Treatment Of Existing End Bent, See Dwg. No. 37972.  
For Wingwall & Parapet Details, See Dwg. No. 37974.  
For Details Of Risers And Anchor Bolts, See Dwg. No. 37976.

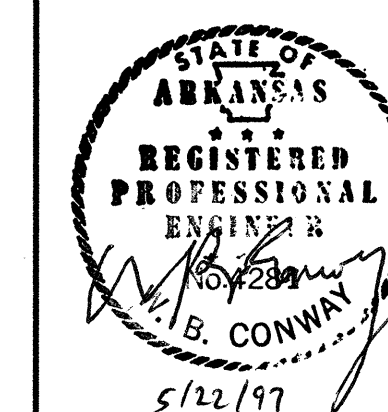
ENGSTROM/MODJESKI AND MASTERS  
CONSULTING ENGINEERS

EXISTING BENT MODIFICATIONS  
DETAILS OF ENDBENTS 1 & 4 BRIDGE  
A & B 3727 OVER COUNTY ROAD "T"

MONROE COUNTY  
INTERSTATE ROUTE 40 SEC. 43  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: JHS DATE: 3/96  
CHECKED BY: CDE DATE: 5/97  
DESIGNED BY: FS DATE: 9/94 SCALE: 3/8" = 1'-0"

BRIDGE NO. A & B 3727	DRAWING NO. 37973
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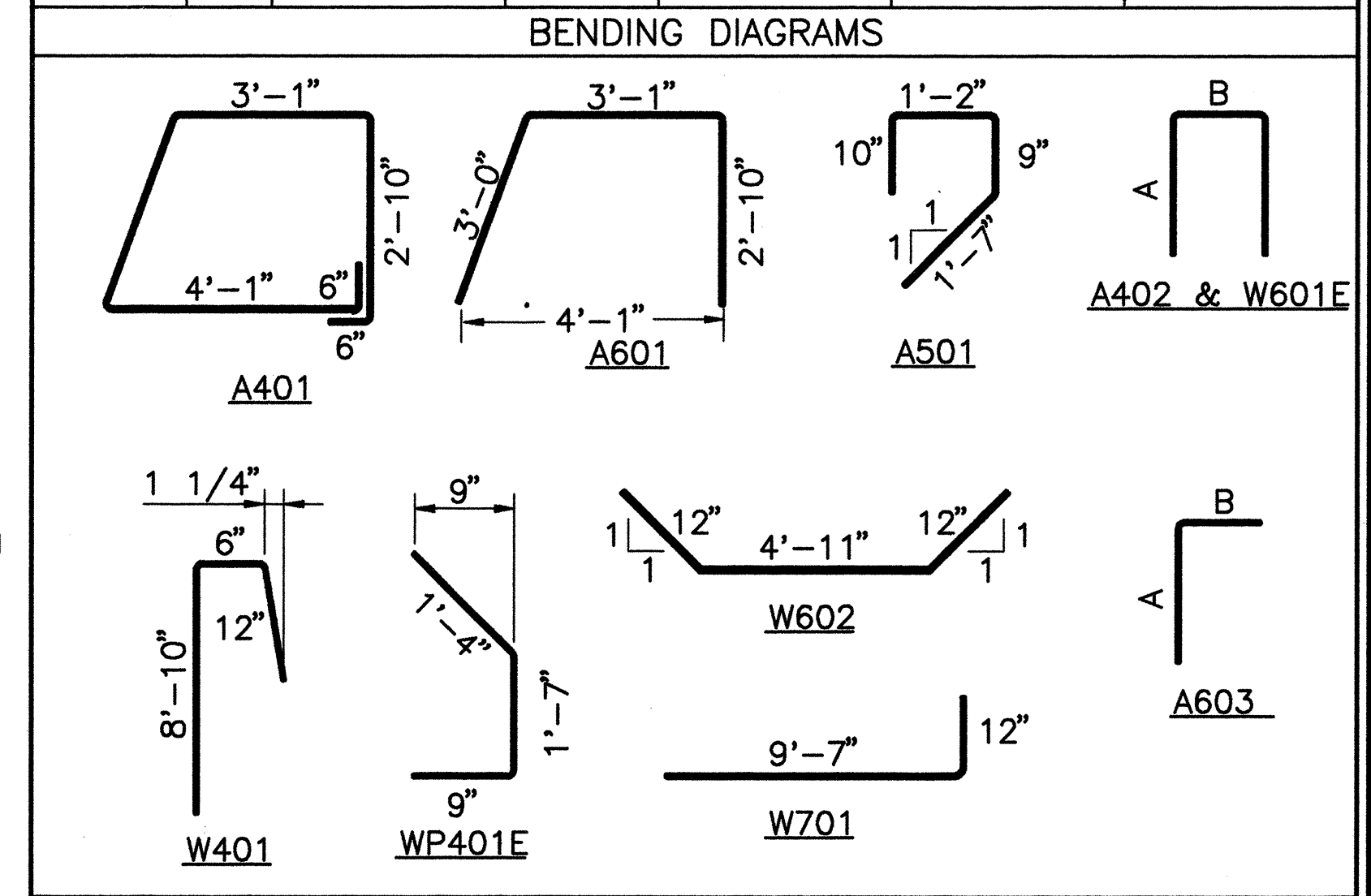
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OCT 15 1998

ACAD SCALE: 3/8"=1'-0"

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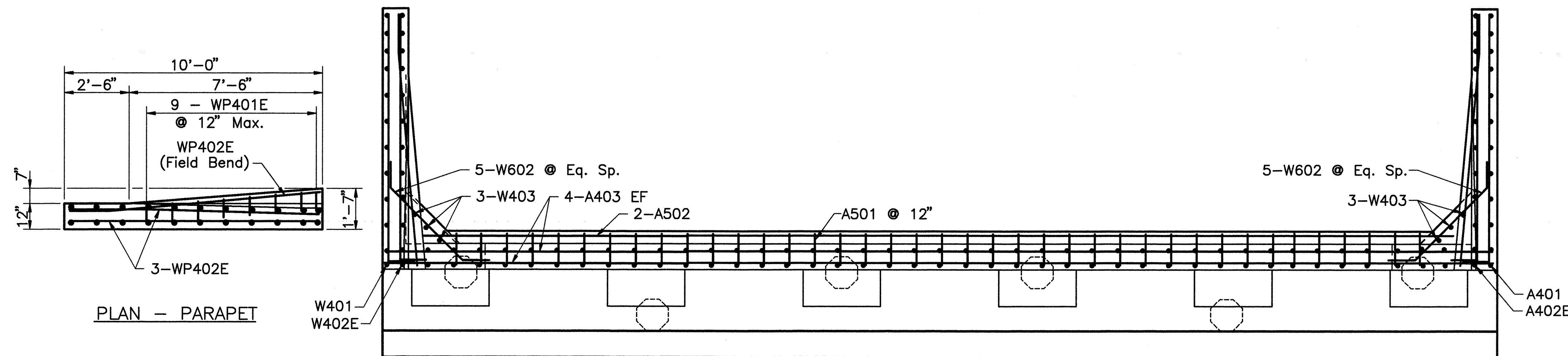
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		R10055	58	116
1 A & B 3727 BENT								37974

REINFORCEMENT SCHEDULE						
MARK	NO.	LENGTH	PIN DIA.	A	B	C
A401	113	14'-0"	2"			
A402	41	12'-2"	2"	5'-9"	8"	
A403	10	42'-10"	Str.			
A501	39	4'-4"	2 1/2"			
A502	2	39'-8"	Str.			
A601	18	8'-11"	4 1/2"			
A602	7	42'-8"	Str.			
A603	24	4'-11"	4 1/2"	2'-5"	2'-6"	
A604	24	1'-0"	Str.			
A801	6	42'-8"	Str.			
W401	16	10'-4"	2"			
W402E	16	8'-10"	Str.			
W403E	6	5'-3"	Str.			
W601E	8	18'-4"	4 1/2"	8'-10"	8"	
W602	10	6'-11"	4 1/2"			
W701	28	10'-7"	5 1/4"			
WP401E	18	3'-8"	2"			
WP402E	14	9'-8"	Str.			



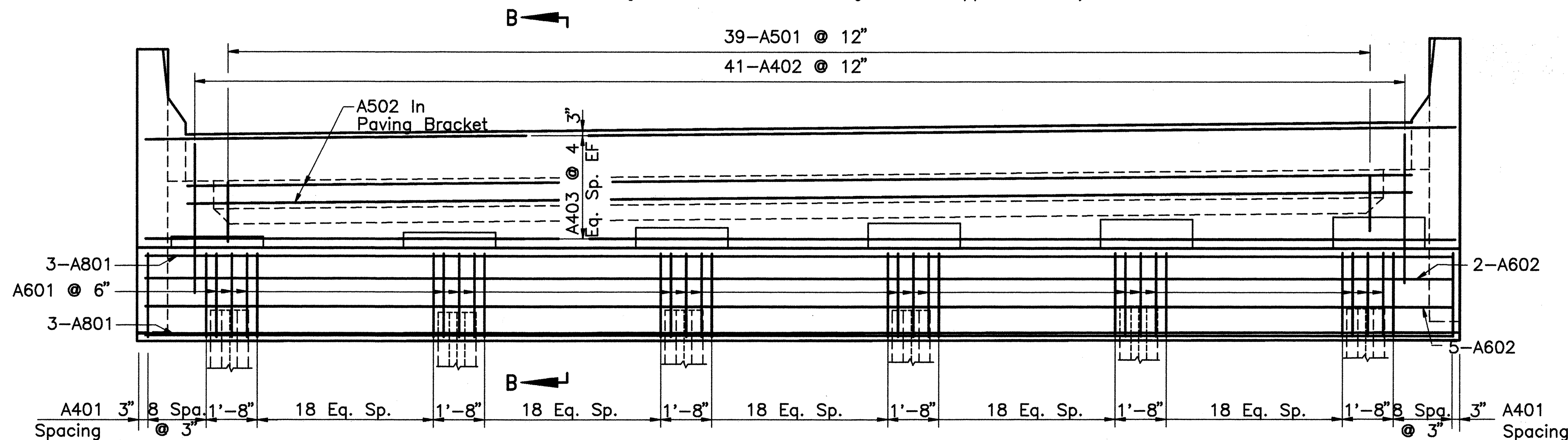
- NOTES:
1. Dimension Of Bars In Bending Diagram Are Out-Out.
  2. Bar designations Ending With "E" Indicate Epoxy Coated Bars.
  3. Reinforcement Schedule Is For One End Bent, One Bridge Only.

ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS	
EXISTING BENT MODIFICATIONS WINGWALL/ENDBENT REINF. - BRIDGE A & B 3727 OVER COUNTY ROAD "T"	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.	
DRAWN BY: JHS CHECKED BY: CDE DESIGNED BY: FS	DATE: 3/96 DATE: 5/97 DATE: 9/94
BRIDGE NO. A & B 3727	DRAWING NO. 37974



PLAN - BACKWALL

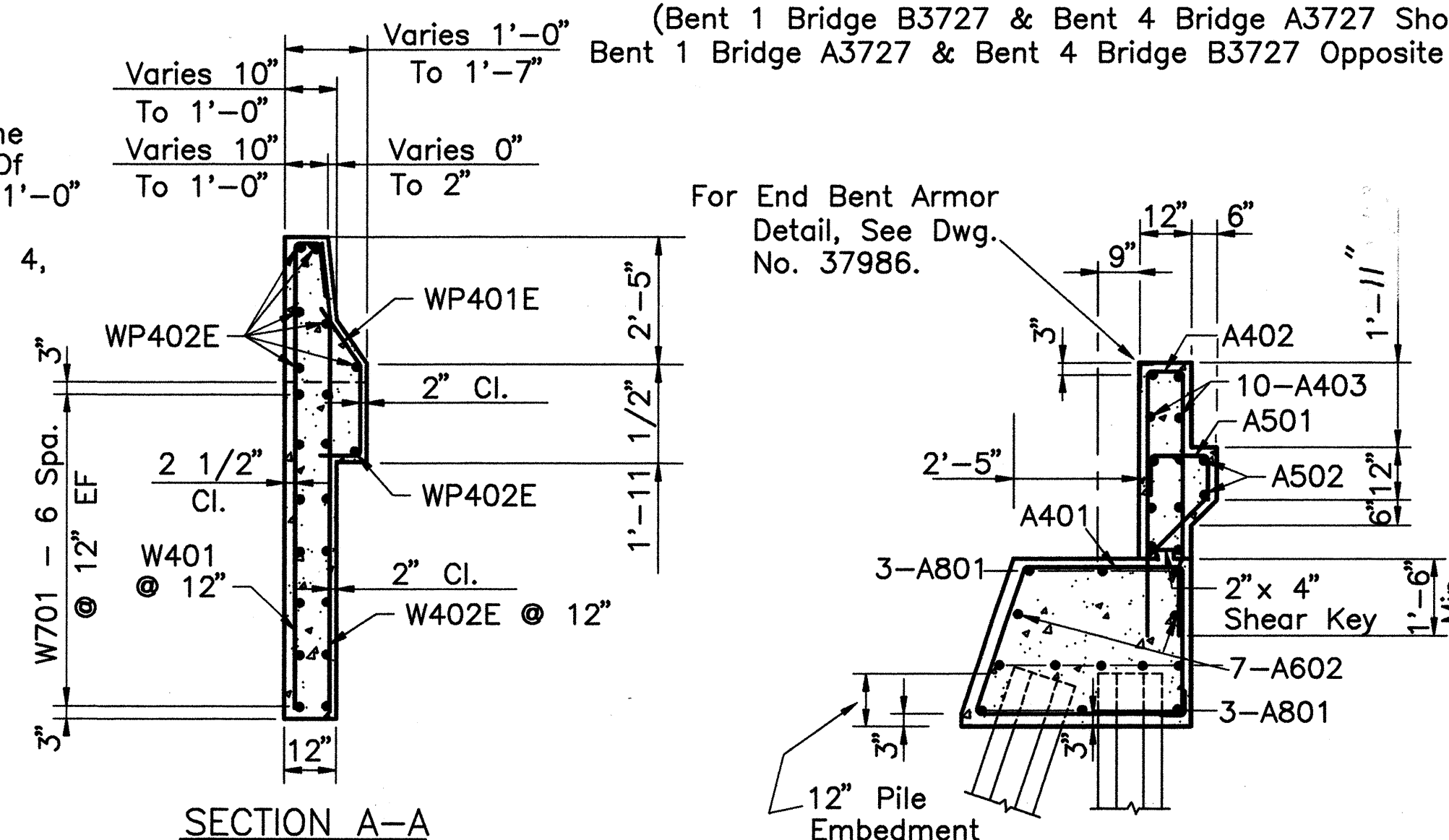
(Bent 1 Bridge B3727 & Bent 4 Bridge A3727 Shown  
Bent 1 Bridge A3727 & Bent 4 Bridge B3727 Opposite Hand)



ELEVATION - BACKWALL

Scale: 3/8" = 1'-0"

(Bent 1 Bridge B3727 & Bent 4 Bridge A3727 Shown  
Bent 1 Bridge A3727 & Bent 4 Bridge B3727 Opposite Hand)



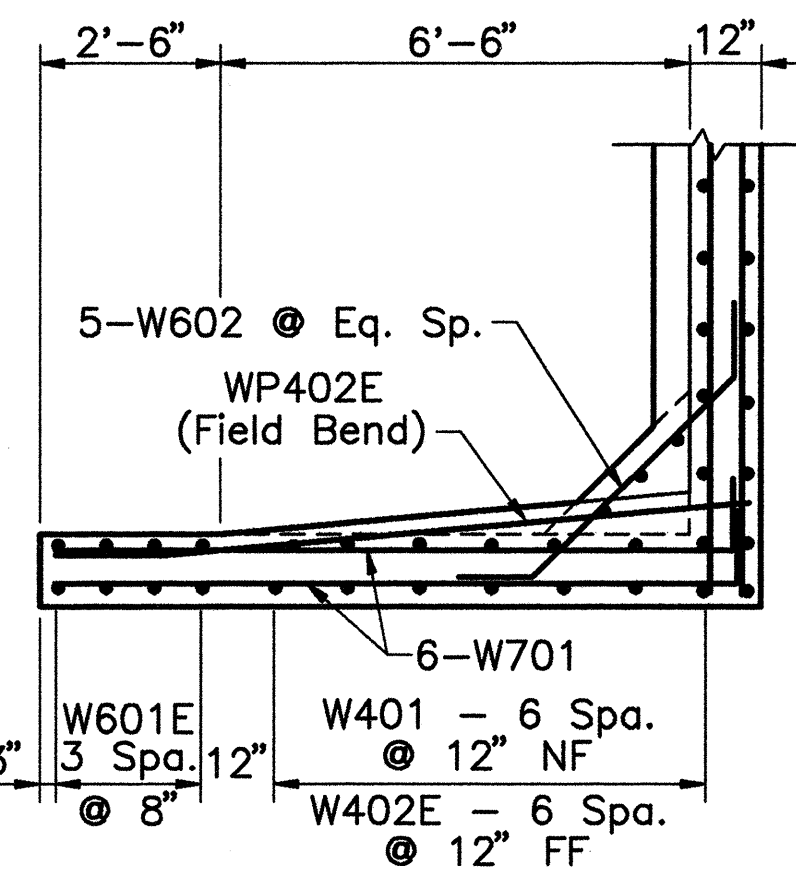
SECTION A-A

Scale: 3/8" = 1'-0"

SECTION B-B

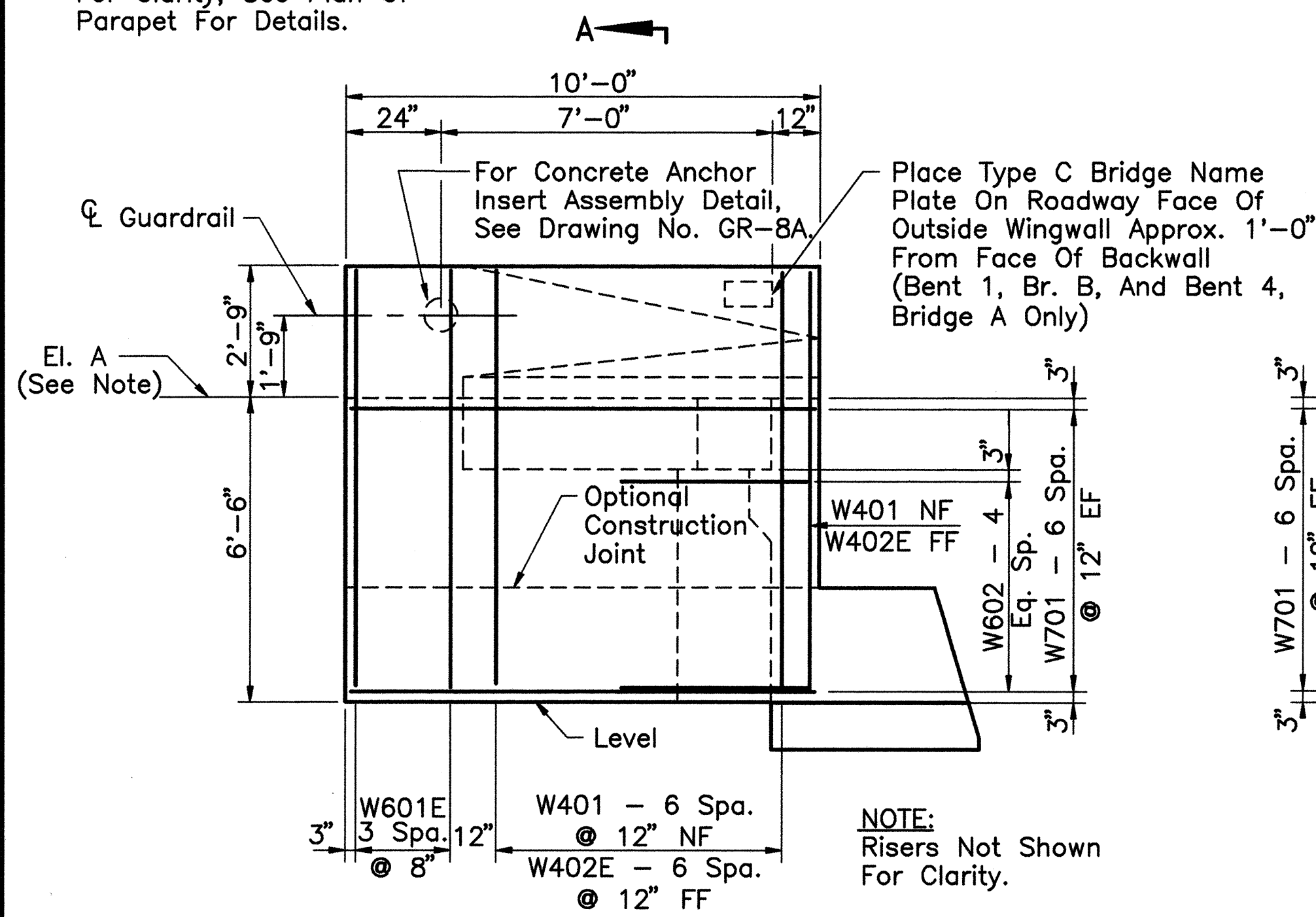
Scale: 3/8" = 1'-0"

- NOTES:
- For Treatment Of Existing EndBent, See Dwg. No. 37973.



PLAN - WINGWALL

NOTE:  
Parapet Not Shown  
For Clarity, See Plan Of  
Parapet For Details.



ELEVATION - WINGWALL

Scale: 3/8" = 1'-0"

NOTE:  
Risers Not Shown  
For Clarity.

NOTE:  
Elevation A Is El. 191.65 (Low Side) And El. 192.45  
(High Side) For All End Bents (Bridges A & B).

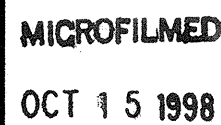
If Anchor Bolts Are To Be Drilled  
Into Place, The Contractor Shall  
Carefully Place Bars To Avoid  
Interference With Drilling For  
Placement Of Anchor Bolts. For  
Anchor Bolt Details, See Dwg.  
No. 37976.

ACAD SCALE: 3/8" = 1'-0"

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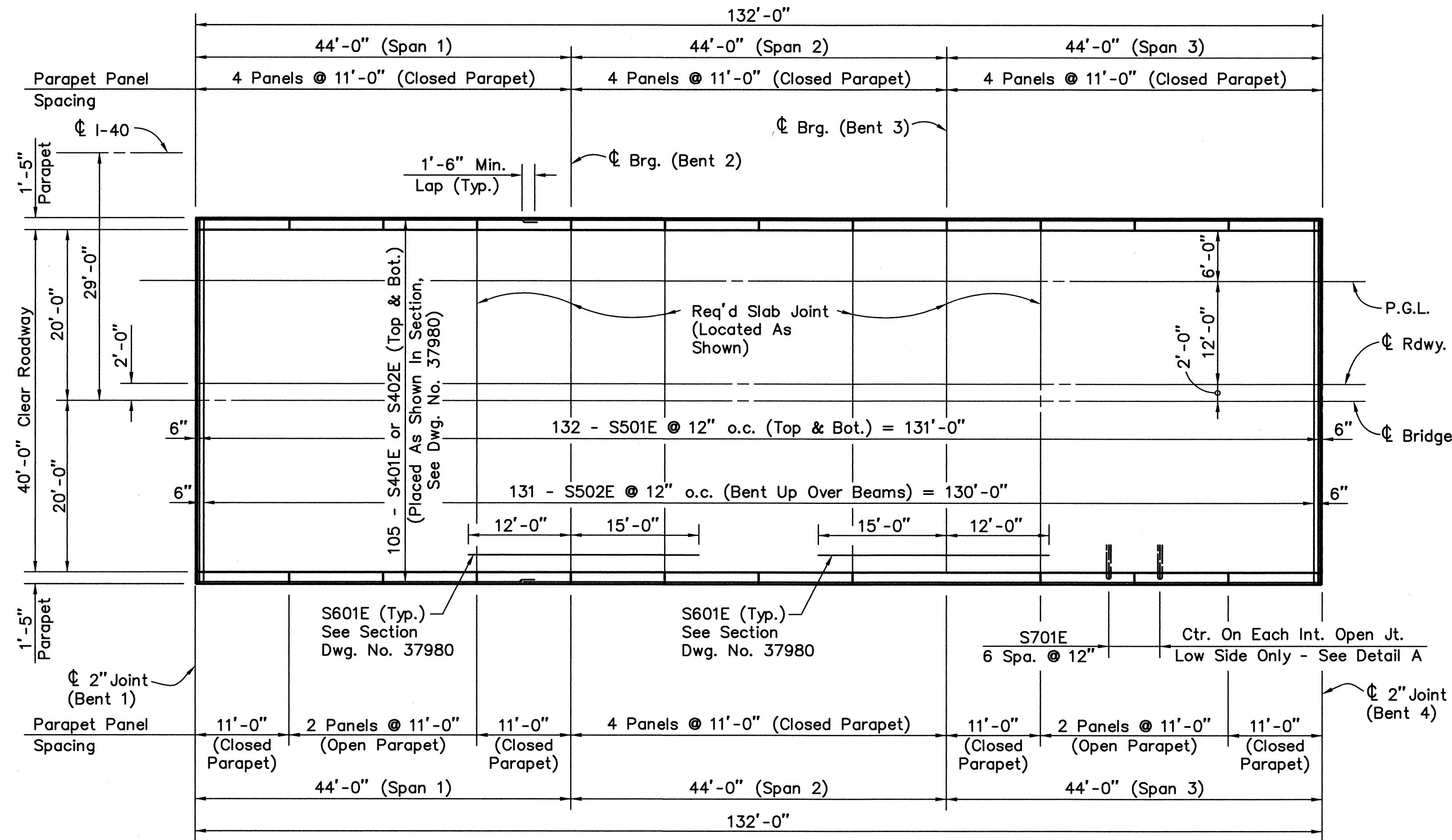
## BENDING DIAGRAMS



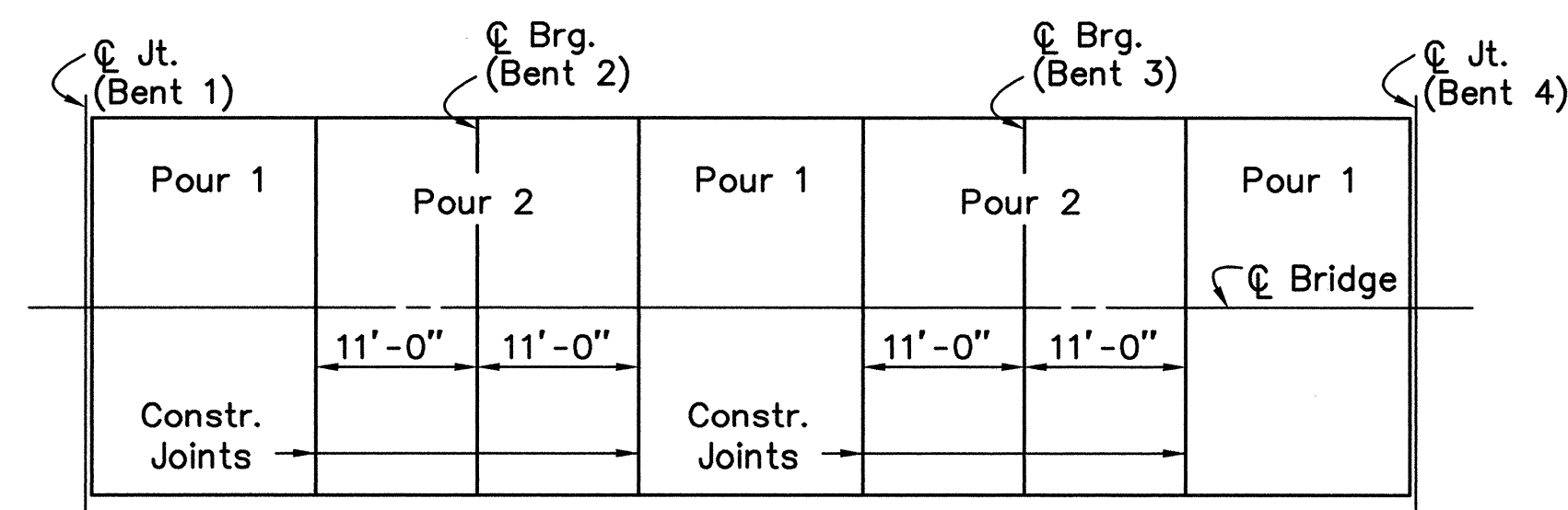
1. Dimension Of Bars In Bending Diagram Are Out-Out.
2. Reinforcement Schedule Is For One Bent, One Bridge Only.

ENGSTROM/ODJESKI AND MASTERS CONSULTING ENGINEERS	
EXISTING BENT MODIFICATIONS DETAILS OF BENTS 2 & 3 - BRIDGE A & B 3727 OVER COUNTY ROAD "T"	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.	
DRAWN BY: JHS CHECKED BY: CDE DESIGNED BY: CDE	DATE: 3/96 DATE: 5/96 DATE: 9/94  SCALE: $3/8" = 1'-0"$
BRIDGE NO. A & B 3727	DRAWING NO. 37975

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK			
				JOB NO.		R10055	61	116
				1 A & B 3727 SPAN			37977	

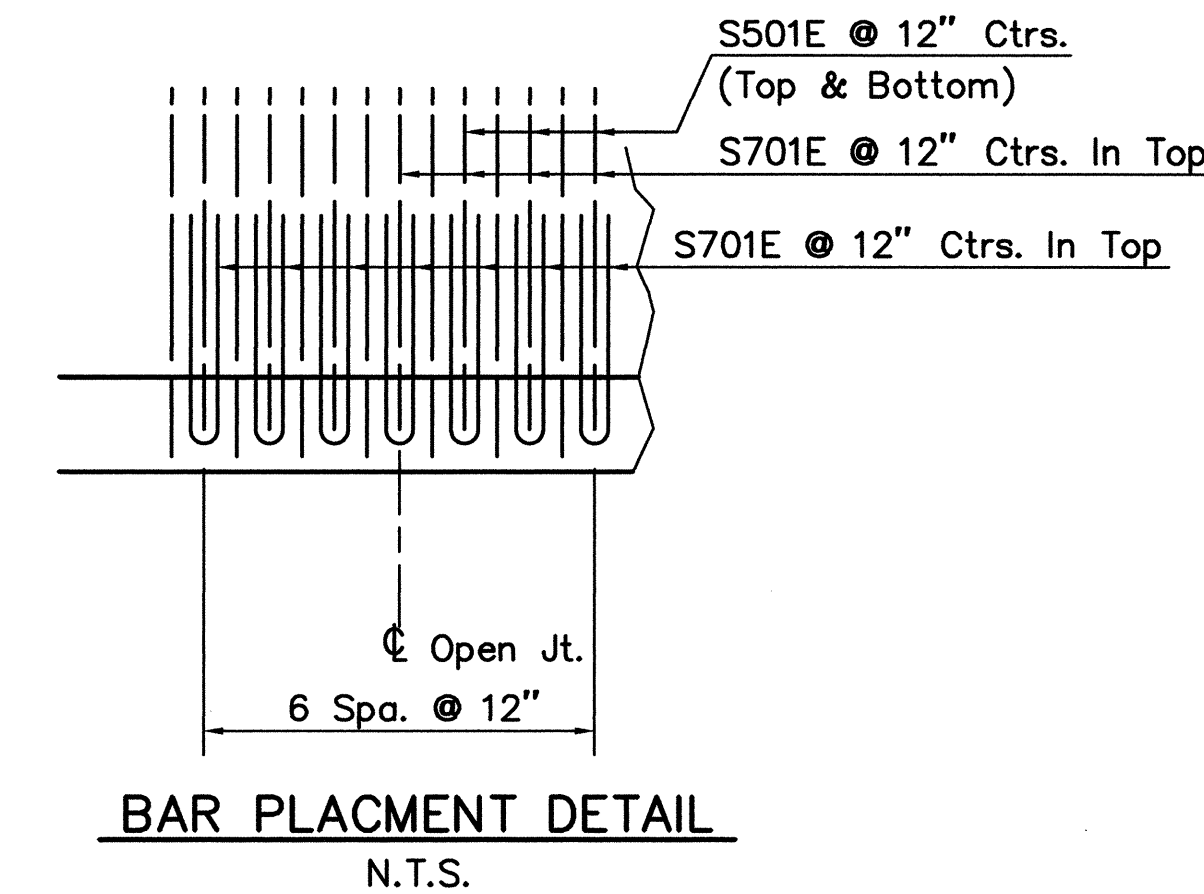


SLAB PLAN FOR BRIDGE B  
Scale: 1"=10'  
(Bridge A Sym. About C I-40)

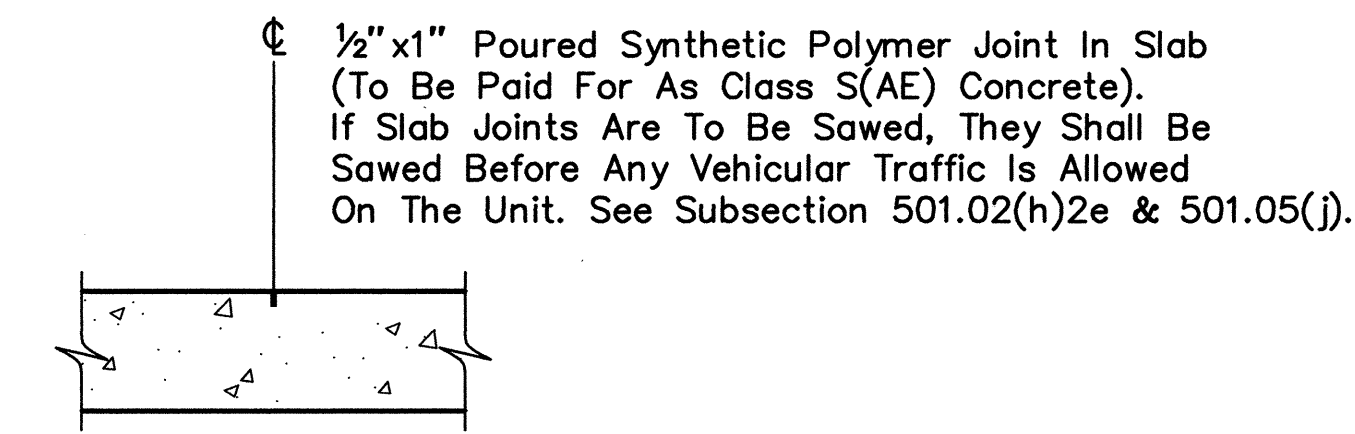


SLAB POURING SEQUENCE  
N.T.S.

Note:  
Pours With The Same Number May Be Placed 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 Entire Slab Unit Has Been Placed Must Be Approved By The Bridge Engineer. All Concrete In Bridge Superstructure Shall Be Placed, Consolidated And Screed 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 Finished In Accordance With Section 802.19 Class 5 Of The Standard Specifications. 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.

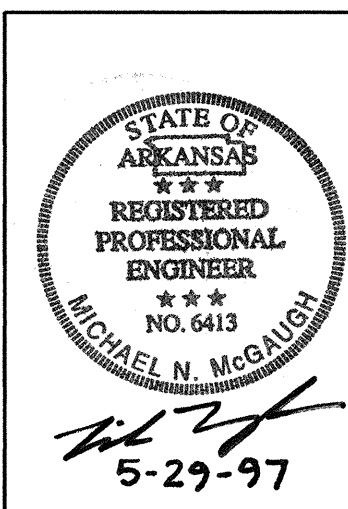


BAR PLACEMENT DETAIL  
N.T.S.



SLAB JOINT DETAIL  
N.T.S.

ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS	
<b>SLAB PLAN</b> <b>BRIDGE A &amp; B 3727</b> <b>OVER COUNTY ROAD "I"</b>	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 <b>ARKANSAS STATE HIGHWAY COMMISSION</b> LITTLE ROCK, ARK.	
DRAWN BY: DHH DATE: 11/96 CHECKED BY: MNM/GPS DATE: 1/97 DESIGNED BY: GPS DATE: 9/94	SCALE: 1" = 10'
BRIDGE NO. A & B 3727	DRAWING NO. 37977



ABMB ENGINEERS, INC.

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 OCT 1998  
 Q:\ACAD\01069\CNTY-RD\SLB-1A ACAD SCALE: 1"=10'

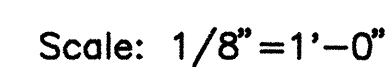




TABLE OF DEFLECTIONS—INCHES							
DEAD LOAD DEFLECTION							
Span	Point of Deflection	Structural Steel		Structural	Steel+Slab	Str. Steel+Slab+Rail	
		Interior	Exterior	Interior	Exterior	Interior	Exterior
1	0	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.019	0.019	0.161	0.137	0.170	0.155
	0.2	0.036	0.036	0.299	0.255	0.316	0.289
	0.3	0.047	0.047	0.398	0.339	0.421	0.385
	0.4	0.053	0.053	0.448	0.382	0.475	0.434
	0.5	0.053	0.053	0.447	0.381	0.474	0.434
	0.6	0.047	0.047	0.397	0.339	0.421	0.386
	0.7	0.037	0.037	0.309	0.263	0.328	0.301
	0.8	0.023	0.023	0.197	0.168	0.209	0.193
0.9	0.010	0.010	0.084	0.072	0.090	0.083	
2	0	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	-0.003	-0.003	-0.021	-0.018	-0.020	-0.017
	0.2	-0.001	-0.001	-0.008	-0.007	-0.004	-0.000
	0.3	0.002	0.002	0.018	0.014	0.024	0.027
	0.4	0.005	0.005	0.039	0.033	0.048	0.049
	0.5	0.006	0.006	0.047	0.040	0.057	0.058
	0.6	0.005	0.005	0.039	0.033	0.048	0.049
	0.7	0.002	0.002	0.018	0.014	0.024	0.027
	0.8	-0.001	-0.001	-0.008	-0.007	-0.004	-0.000
0.9	-0.003	-0.003	-0.021	-0.018	-0.020	-0.017	
3	0	0.000	0.000	0.000	0.000	0.000	0.000
	0.1	0.010	0.010	0.084	0.072	0.090	0.083
	0.2	0.023	0.023	0.197	0.168	0.209	0.193
	0.3	0.037	0.037	0.309	0.263	0.328	0.301
	0.4	0.047	0.047	0.397	0.339	0.421	0.386
	0.5	0.053	0.053	0.447	0.381	0.474	0.434
	0.6	0.053	0.053	0.448	0.382	0.475	0.434
	0.7	0.047	0.047	0.398	0.339	0.421	0.385
	0.8	0.036	0.036	0.299	0.255	0.316	0.289
0.9	0.019	0.019	0.161	0.137	0.170	0.155	
0	0.000	0.000	0.000	0.000	0.000	0.000	

**Notes**

1. All steel to be AASHTO M270, GR.50W.
2. See Dwg. No. 37968 for General Notes.
3. See Dwg. No. 37984 for Bearing Details.
4. See Dwg. No. 37985 for Splice and Diaphragm Details.
5. See Dwg. No. 37986 for Expansion Joint and Shear Connection Details.
6. Bolted Field Splices shown may be Eliminated or Shop Welded Splices may be Substituted with approval of the Bridge Engineer. Payment will be made on the Basis of the Bolted Splices Shown.



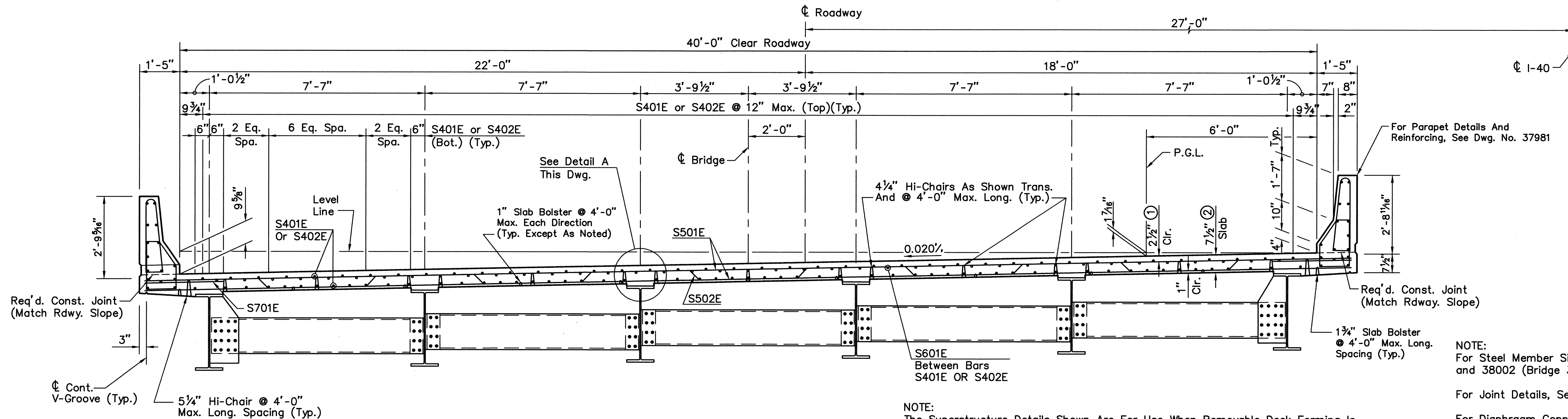
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OCT 10 1998



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK			
				JOB NO.		R10055	64	116

① A&B 3727 & A&B 3731 TYP-SEC. 37980



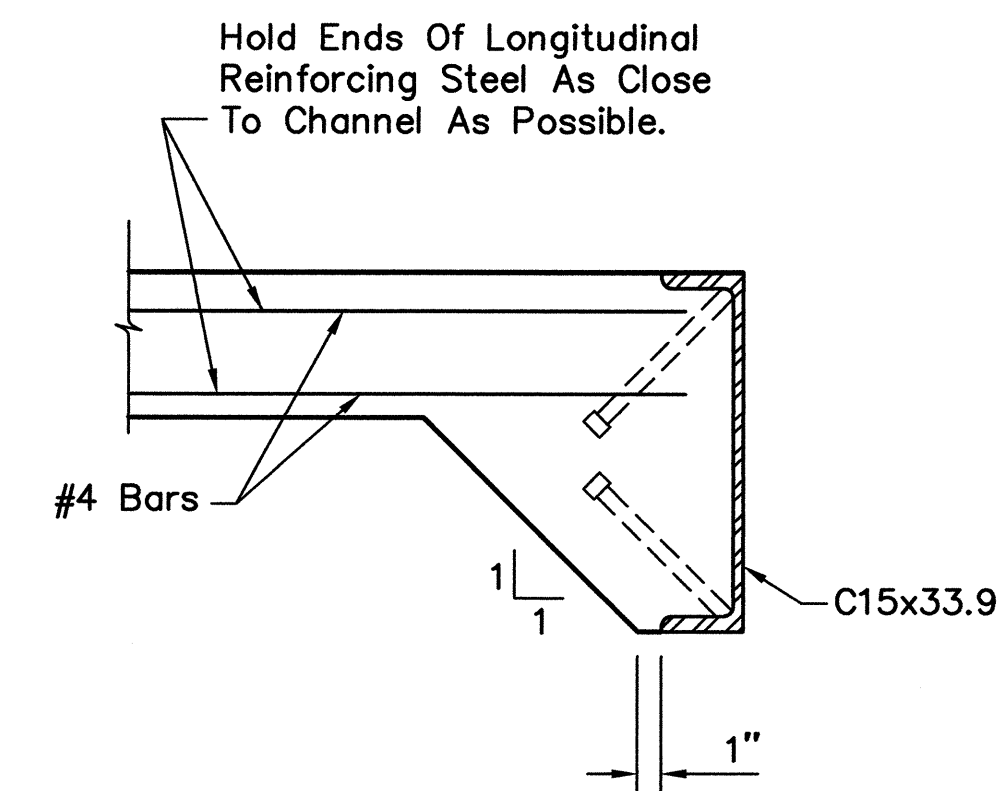
#### SLAB REINFORCING:

TRANSVERSE: S501E @ 12" In Top & Bottom  
S502E @ 12" Bent Up Over Beams  
S701E (See Plan For Placement)  
LONGITUDINAL: S401E & 402E In Top (Placed As Shown - 12" Max. Spa.)  
S401E & 402E In Bottom (Placed As Shown)  
S601E or S602E In Top  
(Placed As Shown - 12" Max. Spa.)(Over Int. Supports)

#### TYPICAL SECTION

Scale: 1/2" = 1'-0"  
Looking Ahead Bridge A  
Bridge B Sym. About C I-40

- NOTE:  
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. 14991 For Allowable Modifications And For Tolerances When Permanent Bridge Deck Forms Are Used.
- Tolerance Minus: 1/4"  
Plus: Equal To Amount Of Slab Thickening Used To Meet Slab Thickness Tolerance - See Typical Haunch Detail.
  - Refer To Typical Haunch Detail



#### SLAB END DETAILS

NOTE: For Anchor Stud Details,  
See Dwg. No. 37986

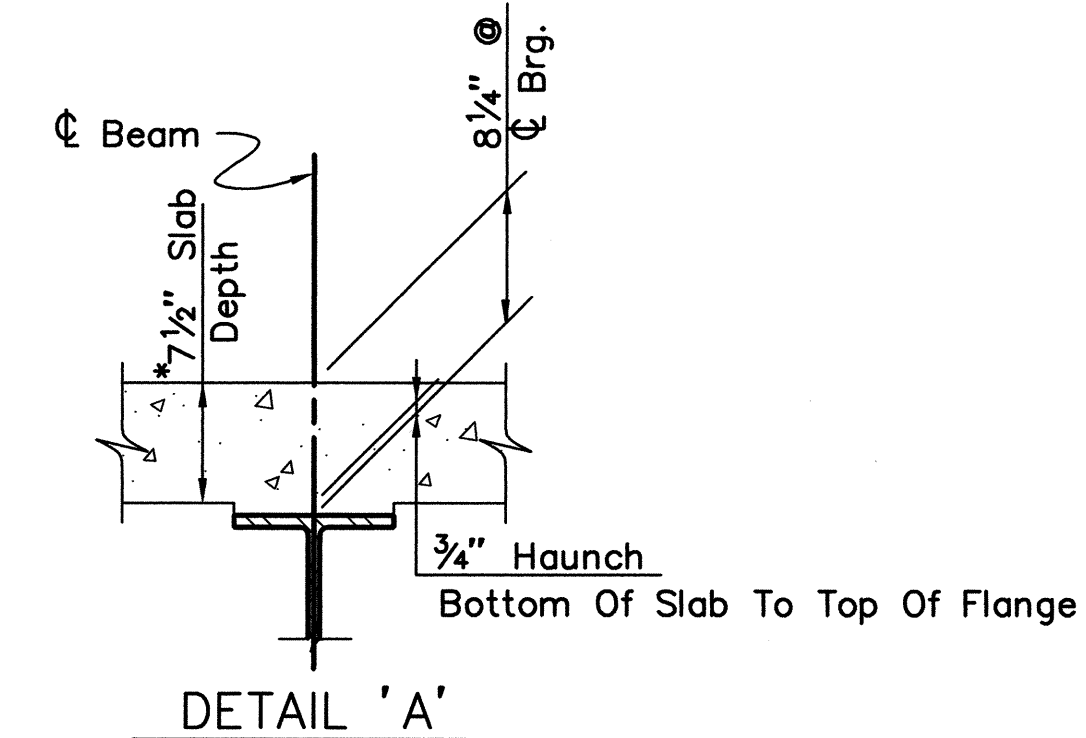
NOTE:  
For Steel Member Sizes, See Dwg. Nos. 37979 (Bridge 3727)  
and 38002 (Bridge 3731).

For Joint Details, See Dwg. No. 37986.

For Diaphragm Connection Details, See Dwg. No. 37985.

Class 1 Protective Surface Treatment Shall Be Applied To The Roadway Surface And To The Face And Top Of Parapet.

At The Contractors Option, In Lieu Of Providing Bars S502E, Two #5 Bars May Be Substituted With The Bars Epoxy Coated. Payment For Reinforcing Will Be Based On The Weight Of Bars S502E.



Haunch Is Required. Slab May Be Thickened And/Or  
The Haunch Thickened To Maintain Slab Tolerance.

\*Thickness As Detailed On Roadway Section. Tolerance  
Is Minus 1/4" And Plus 1/2".

Note: No Increase In Concrete And Structural Steel Quantities  
Will Be Made To Meet Slab Tolerances.

For Drain Details,  
See Dwg. No. 37986

Note: Refer To Dwg. No. 37986  
For Joint Details.

#### SECTION AT C JOINT

Scale: 1/2" = 1'-0"  
Looking Ahead Bridge A  
Bridge B Symmetrical  
About C I-40



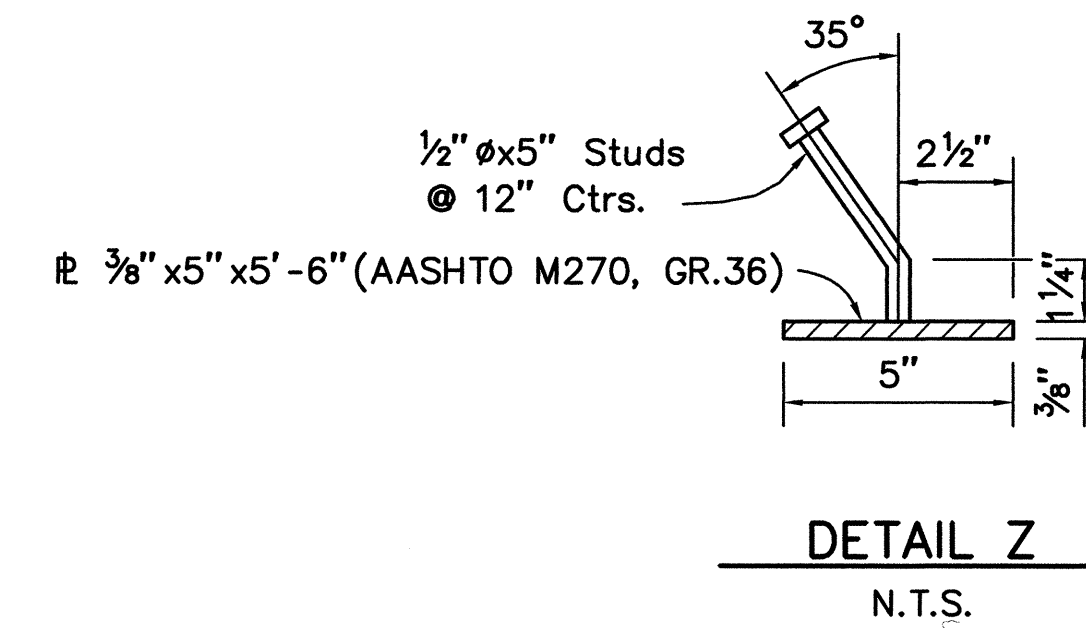
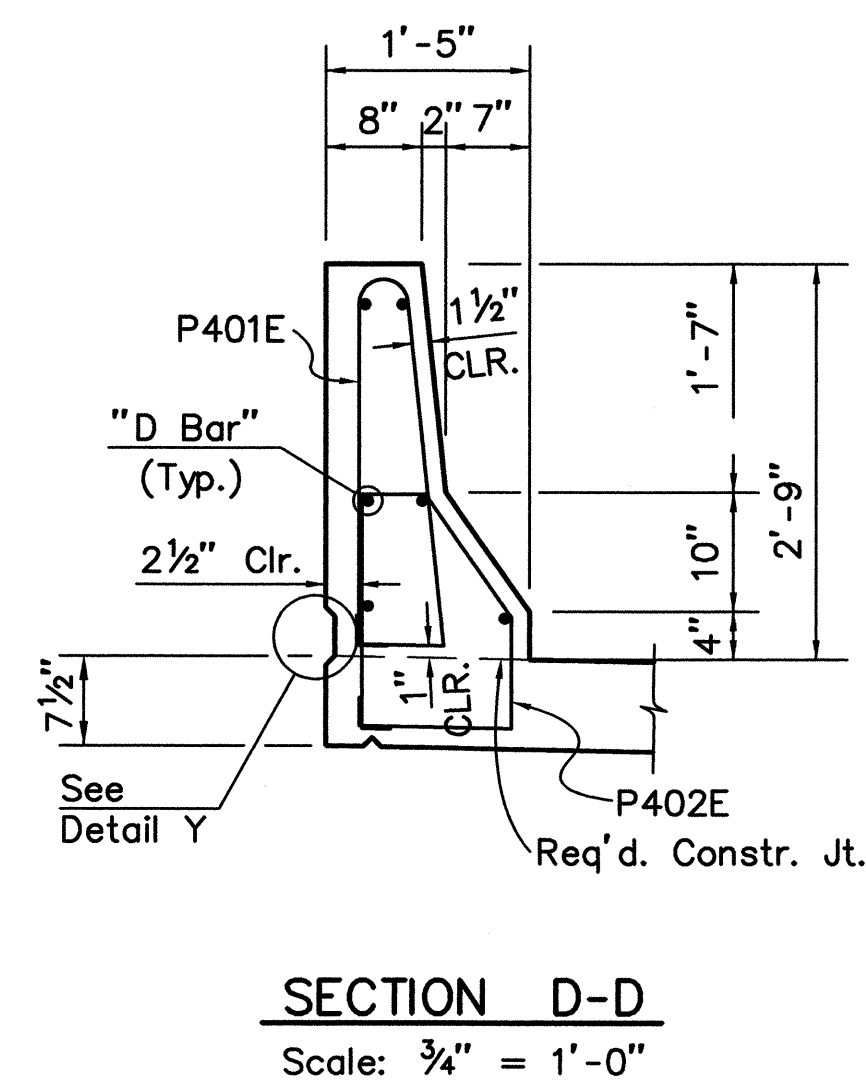
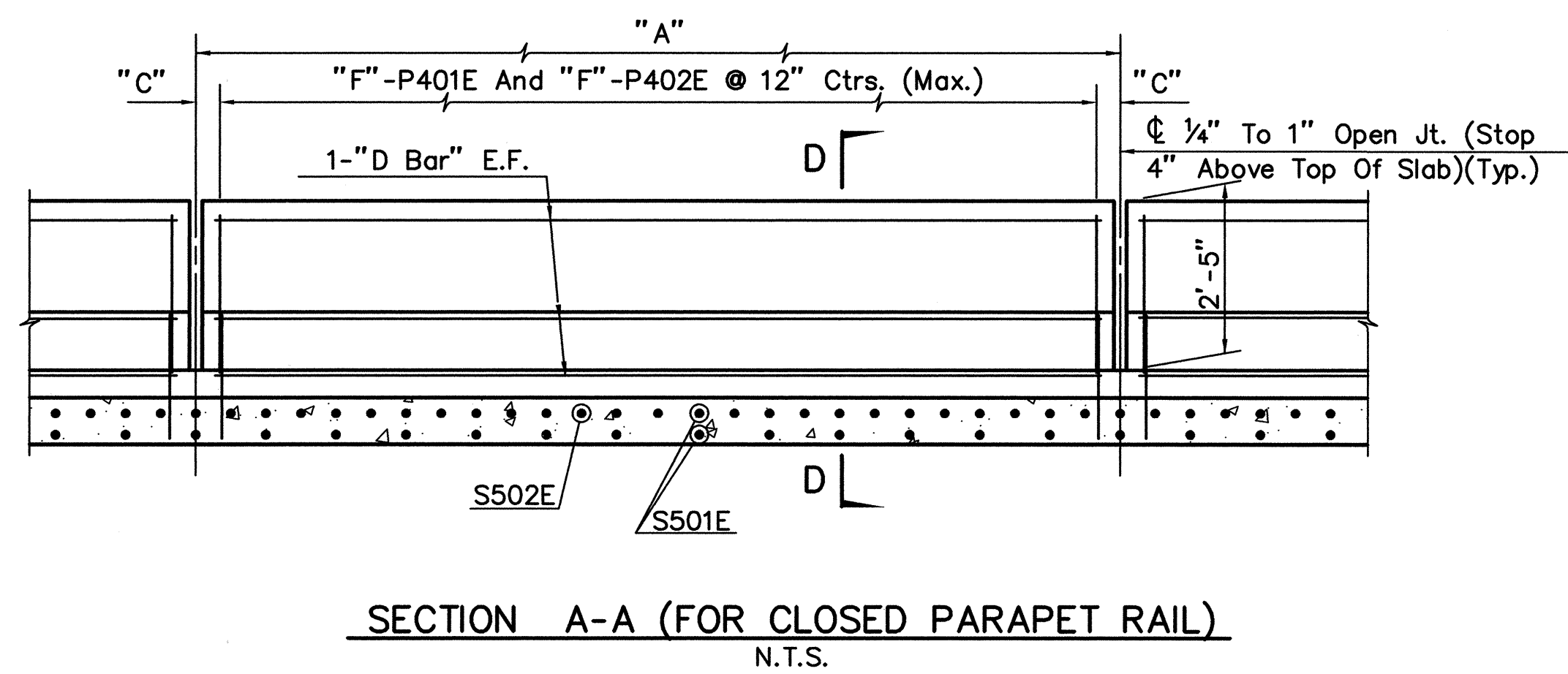
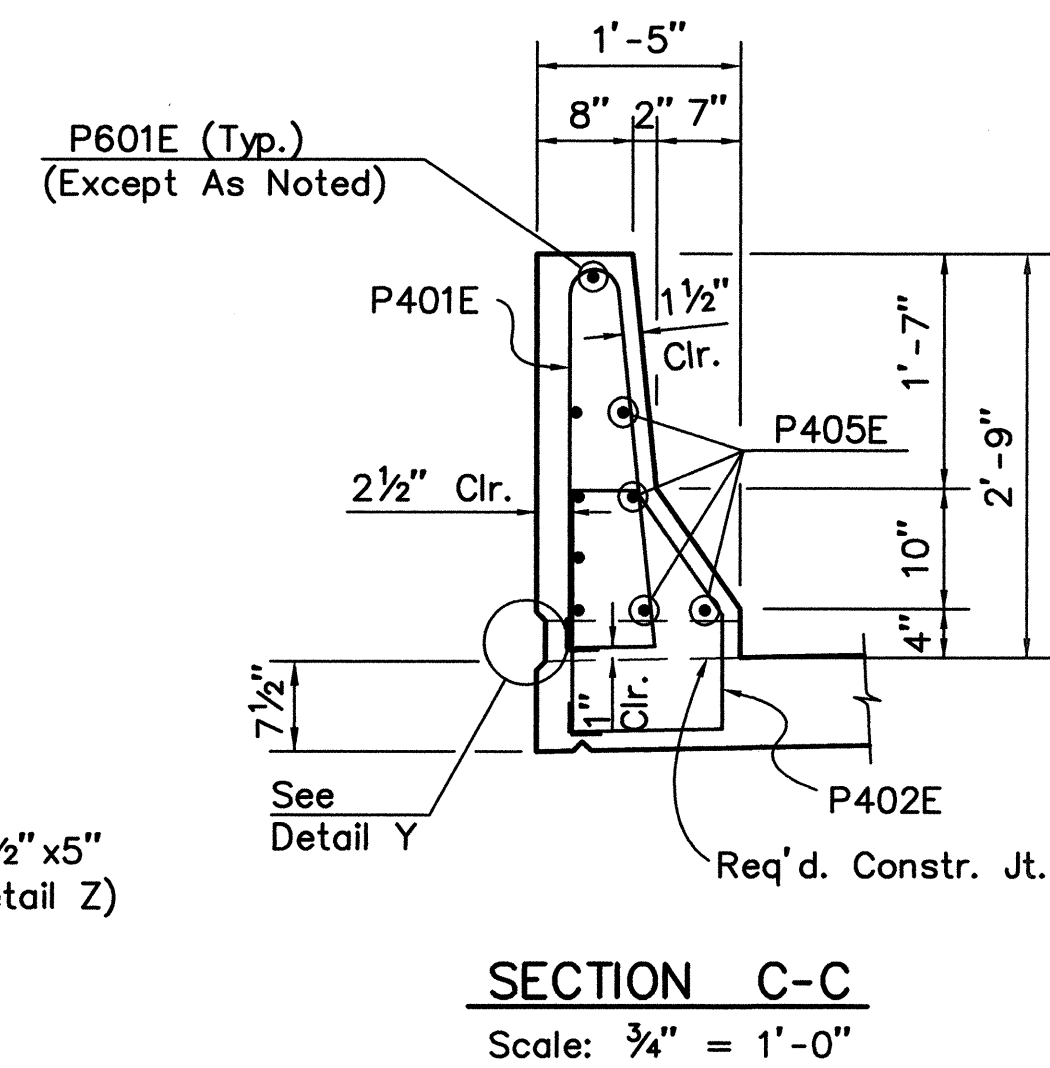
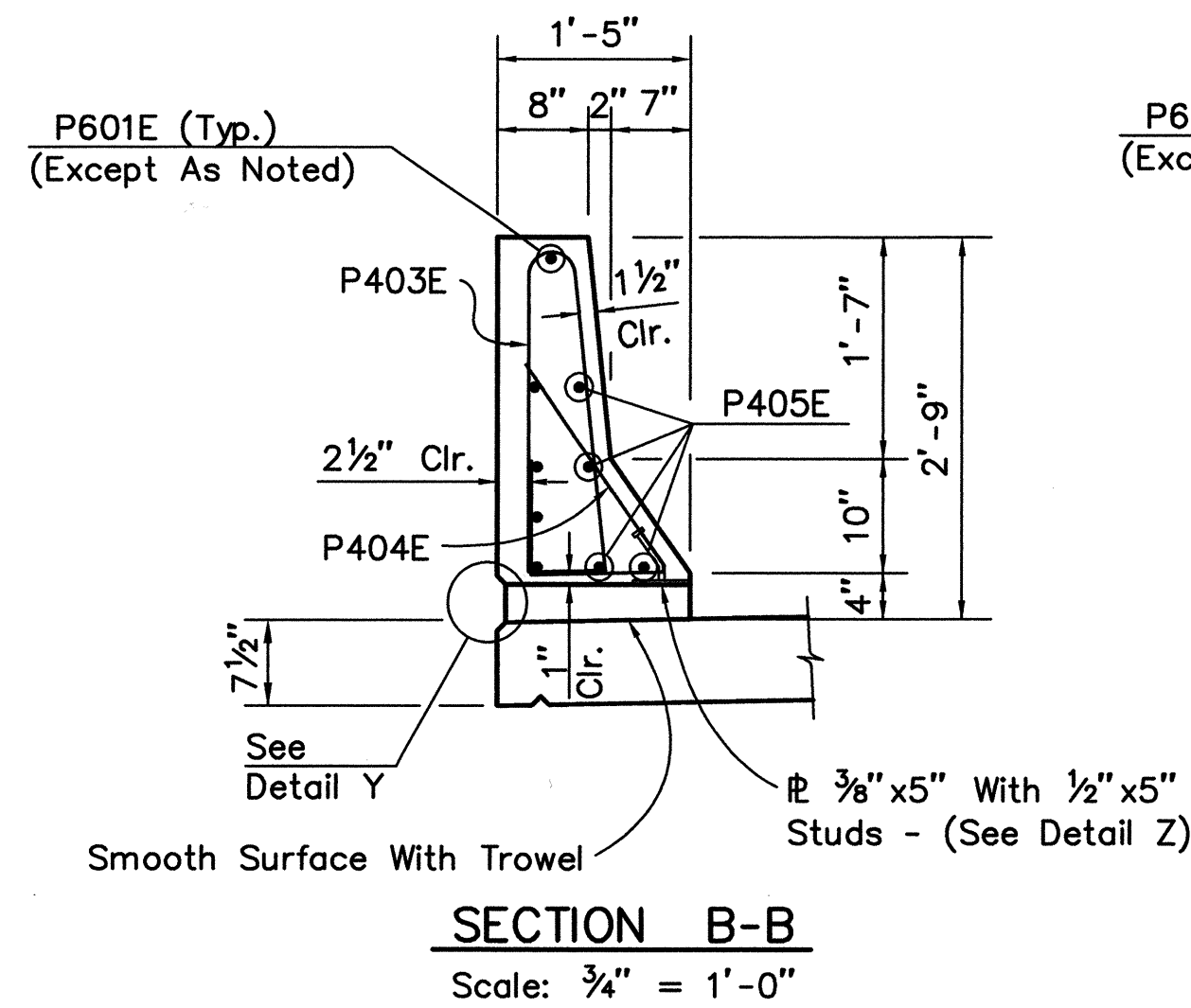
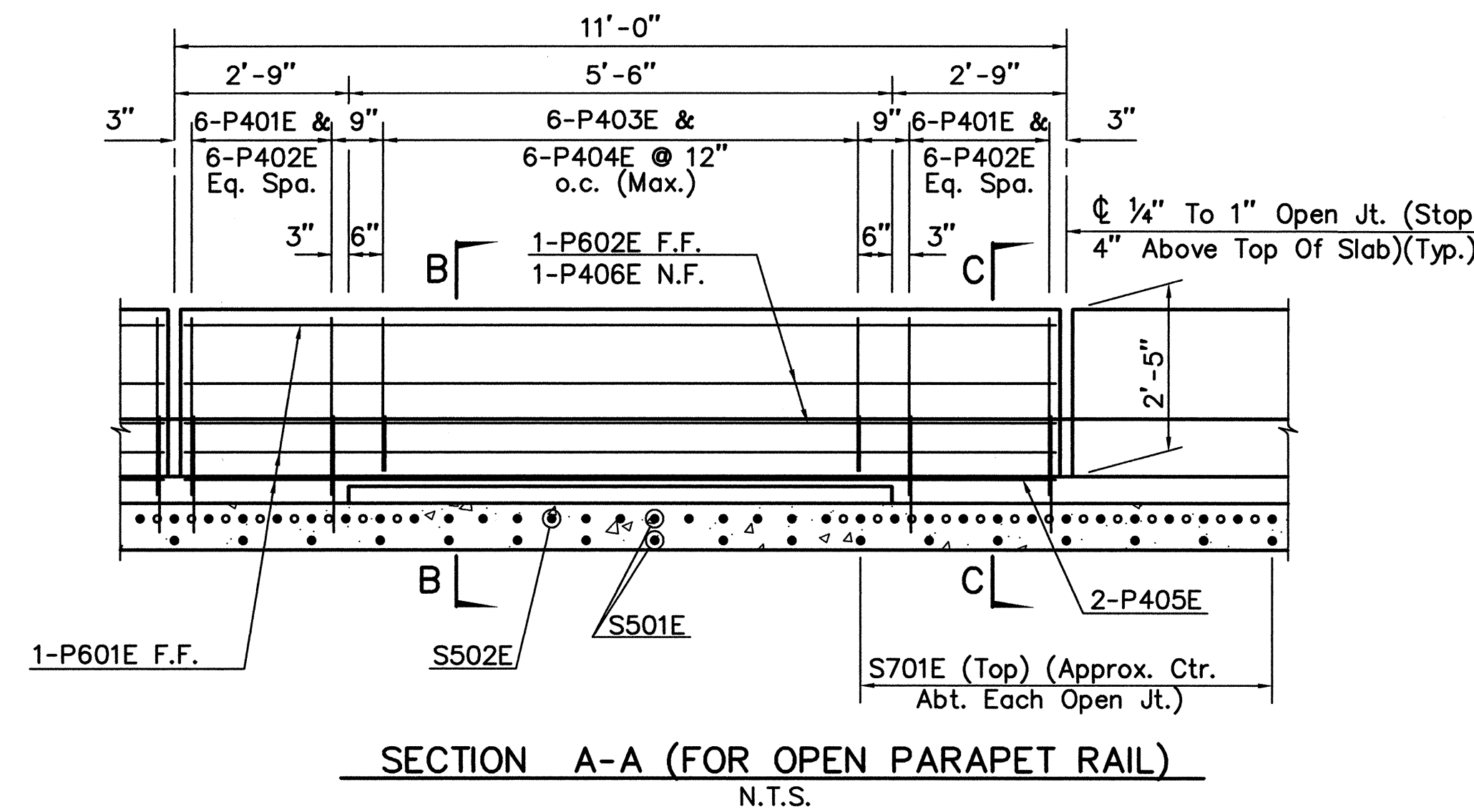
ABMB ENGINEERS, INC.

ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS	
TYPICAL SUPERSTRUCTURE SECTION	
BRIDGE A&B 3727 BRIDGE A&B 3731	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.	
DRAWN BY: DHH DATE: 11/96 CHECKED BY: MNM/GPS DATE: 1/97 DESIGNED BY: GPS DATE: 9/94	SCALE: 1/2" = 1'-0"
BRIDGE NO. A & B 3727 A & B 3731	DRAWING NO. 37980

Q:\ACAD\01069\TYP-SEC ACAD SCALE: 1/2"=1'

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK			
				JOB NO.		R10055	65	116

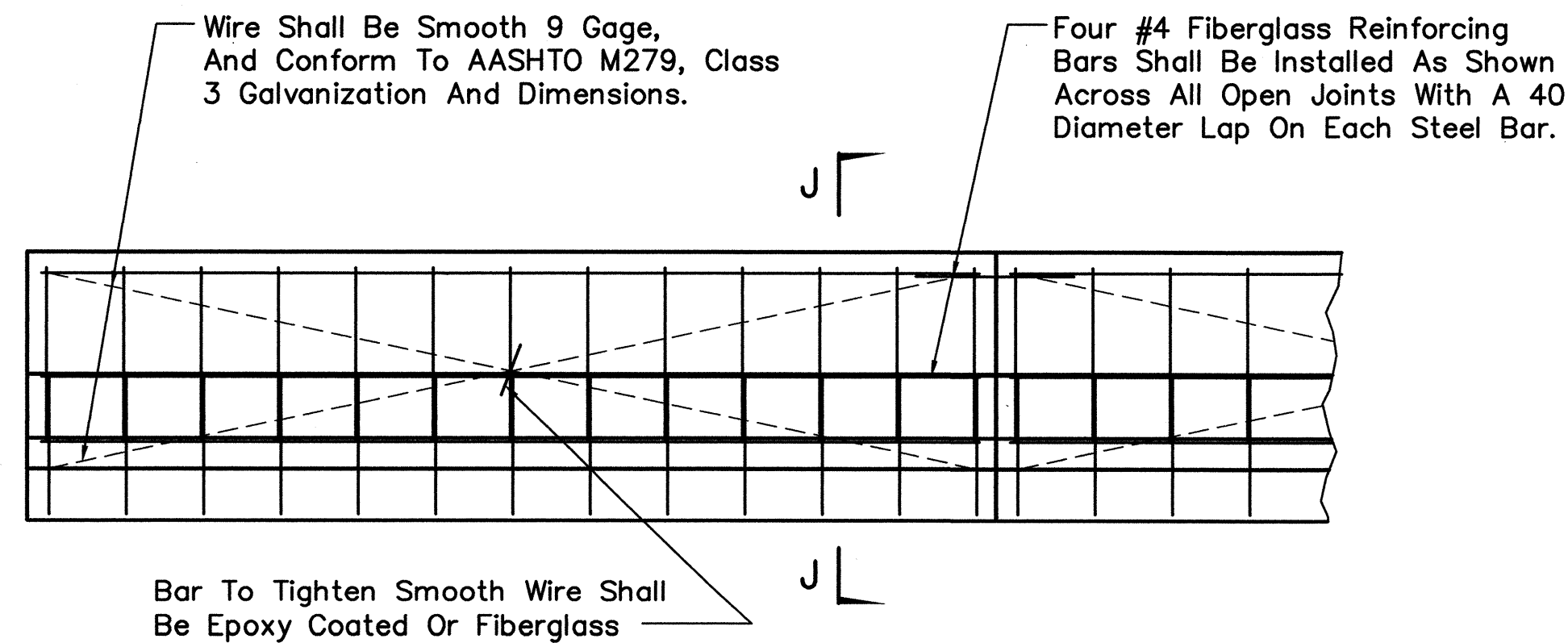
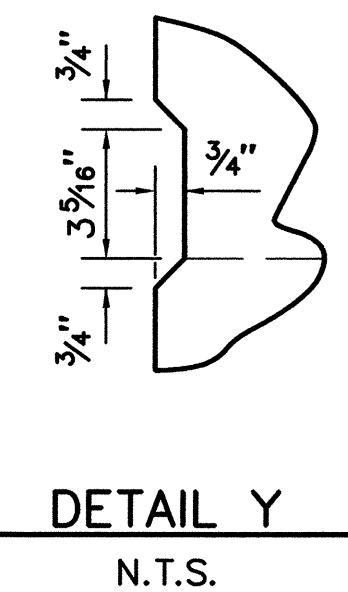
① A&B 3727 & A&B 3731 PARAPET 37981



Notes:  
Parapet Studs Shall Be 5" Long, Granular Flux Filled, Solid Fluxed, Or Equal And Automatically End Welded To The Plate. Studs And Plate Shall Meet The Requirements Of Section 807. Studs And Plates Shall Be Measured And Paid For As "Structural Steel In Beam Spans (AASHTO M270, GR.50W)."

The Surfaces Of The  $\frac{3}{8}"$  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 Prime Coat Is Required Where Multiple Coats Are Specified. All Coats Shall Be Applied In The Fabricator's Shop. Painting Will Not Be Paid For Directly, But Will Be Considered Subsidiary To "Structural Steel In Beam Spans (AASHTO M270, GR.50W)."

VARIABLES FOR CLOSED PARAPET RAIL			
A	C	F	D BARS
11'-0"	6"	11	P405E
12'-8"	4"	13	P407E
12'-8 1/8"	4 1/8"	13	P407E
12'-10 3/16"	5 3/32"	13	P408E
12'-10 3/8"	5 3/16"	13	P408E
13'-1 1/16"	6 7/8"	13	P409E

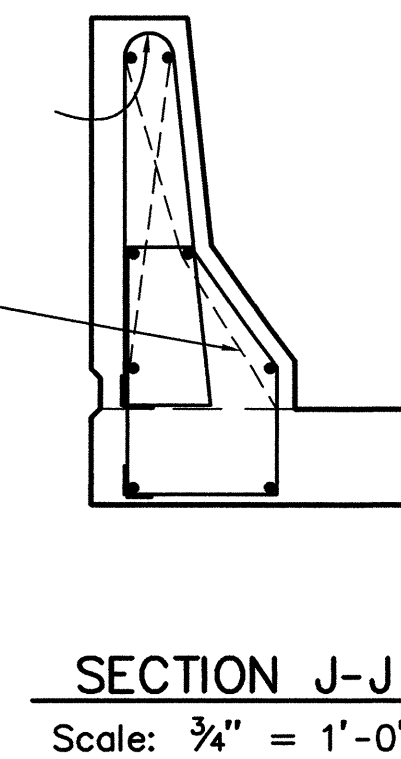


All Panels Shall Be Braced As Shown To Prevent Racking. All Open Joints Shall Be Sawed As Soon As Practical To A Minimum Width Of  $\frac{1}{4}"$ . To Control Cracking Before Sawing, All Joints Must Be Grooved Before The Concrete Is Set. Sawing Of The Joints Must Be Controlled So It Will Follow The Grooved Joint.

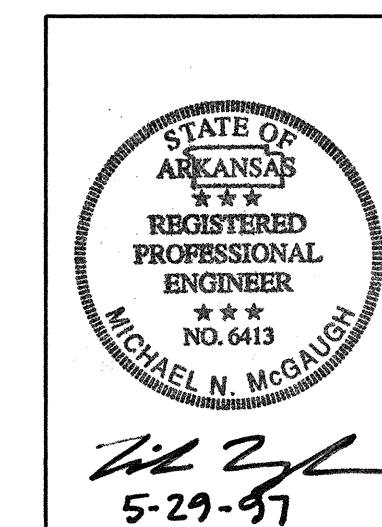
The Extruded Parapet Shall Conform To The Horizontal And Vertical Lines Shown On The Plans Or As Directed By The Engineer And Shall Present A Smooth, Uniform Appearance And Texture.

Vertical Reinforcing Shall Be Closed Loop On Top

All Smooth Wire Bracing Shall Be Placed On The Inside Faces Of The Reinforcing

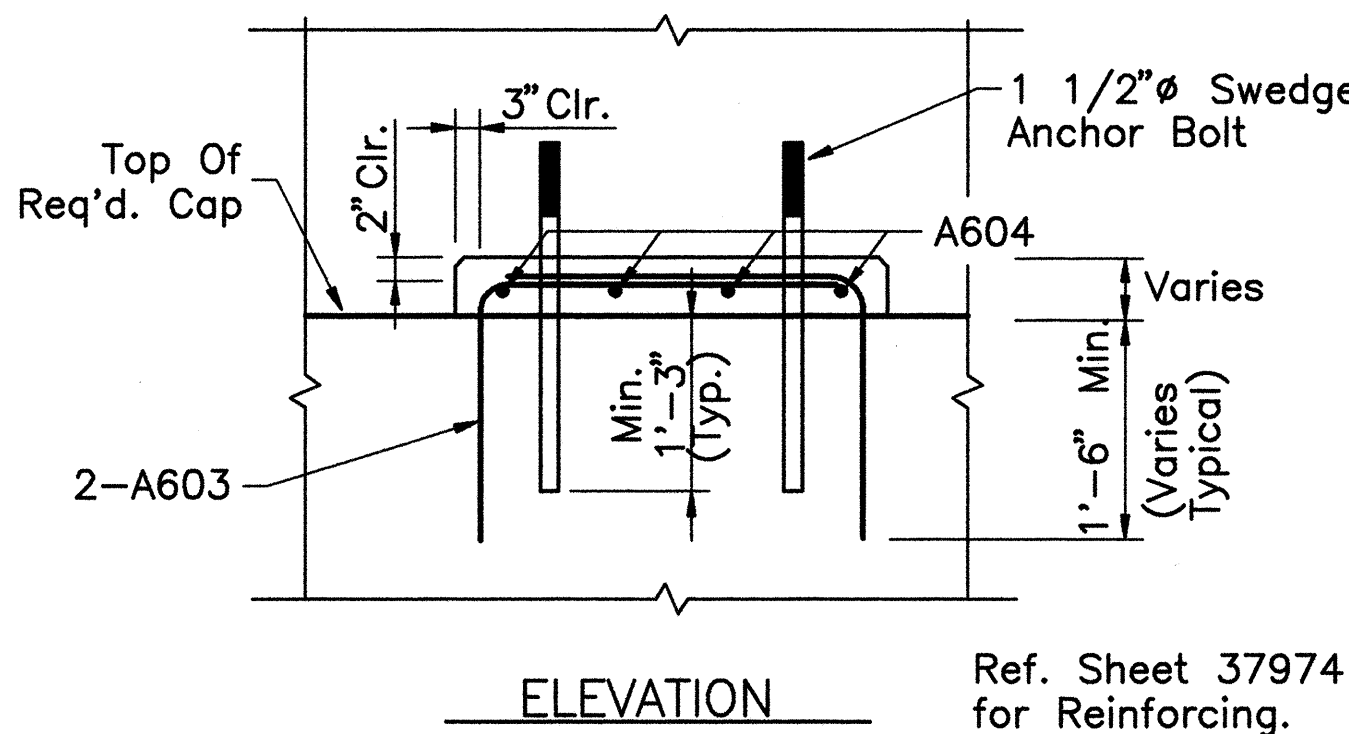
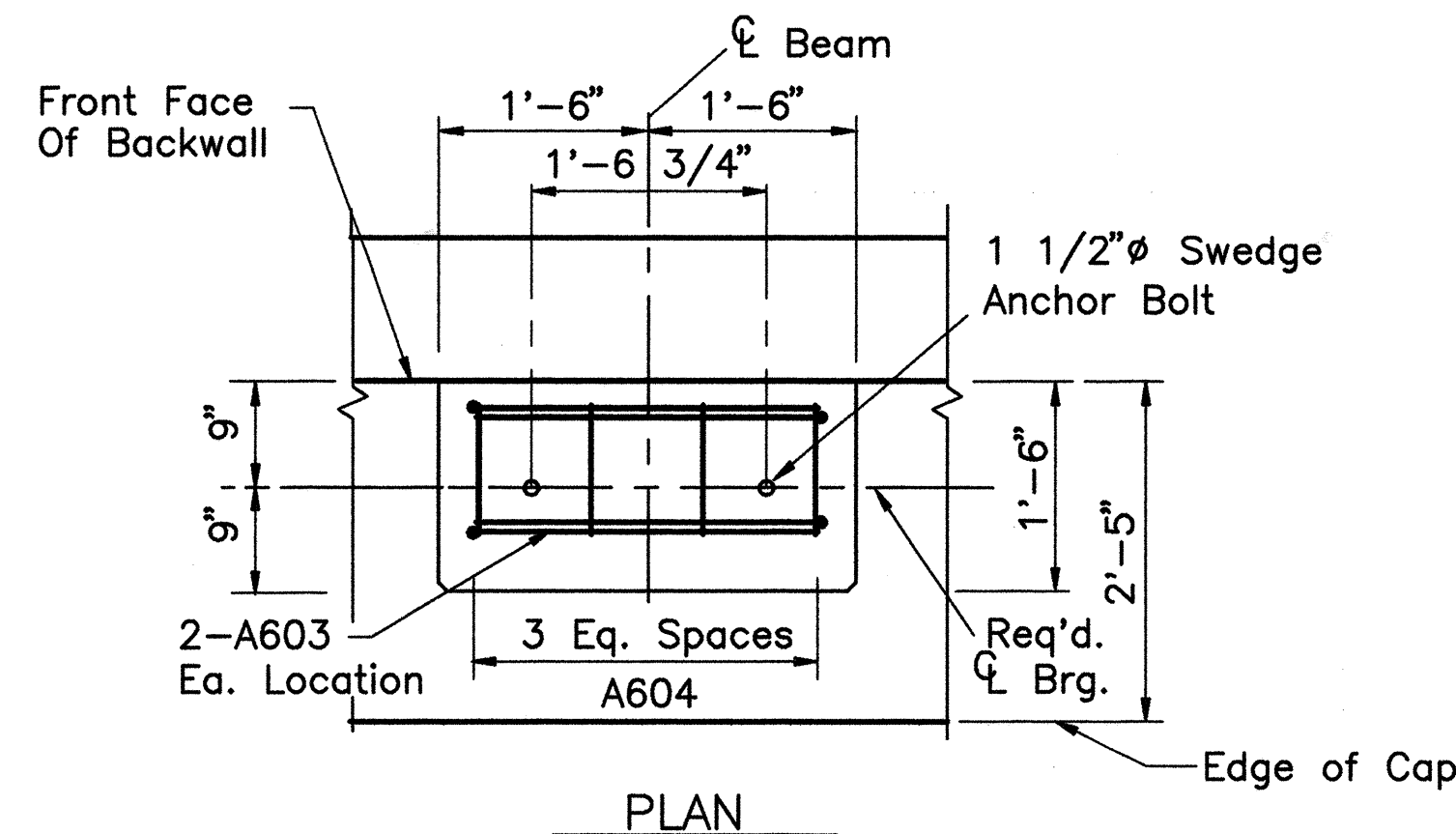


ABMB ENGINEERS, INC.

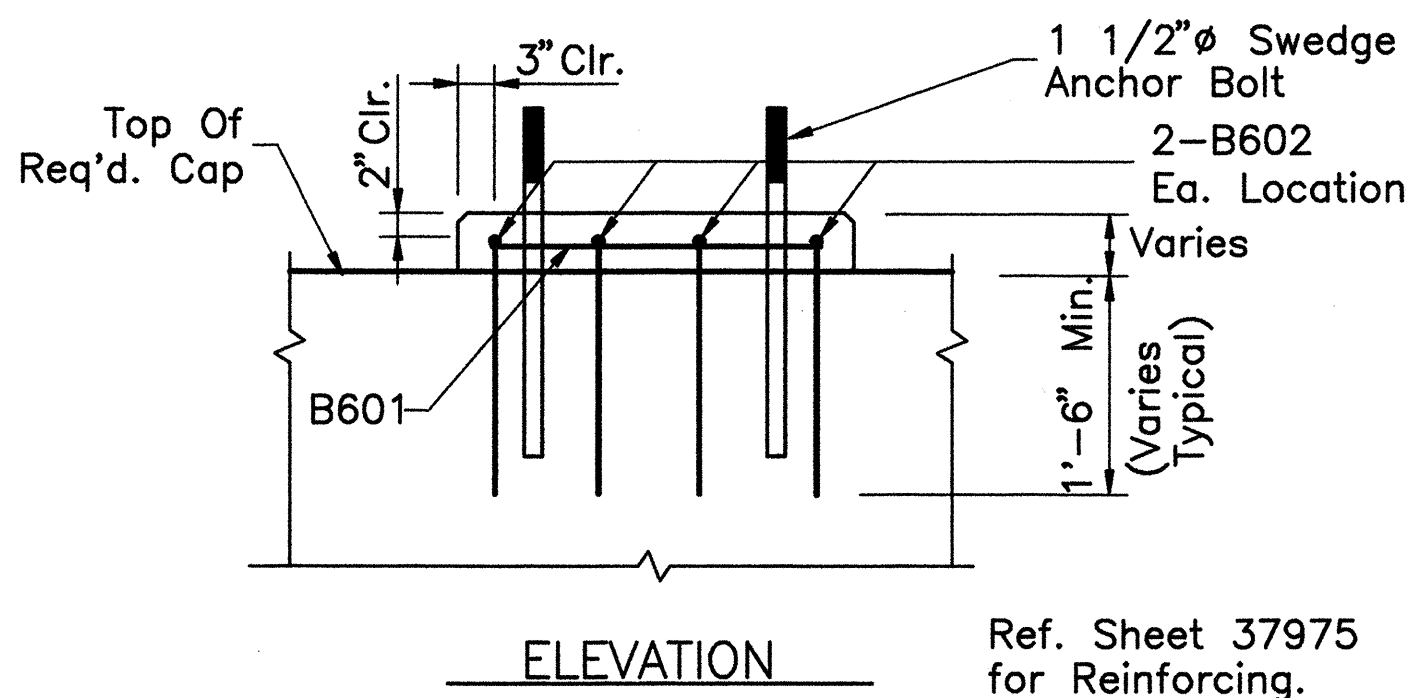
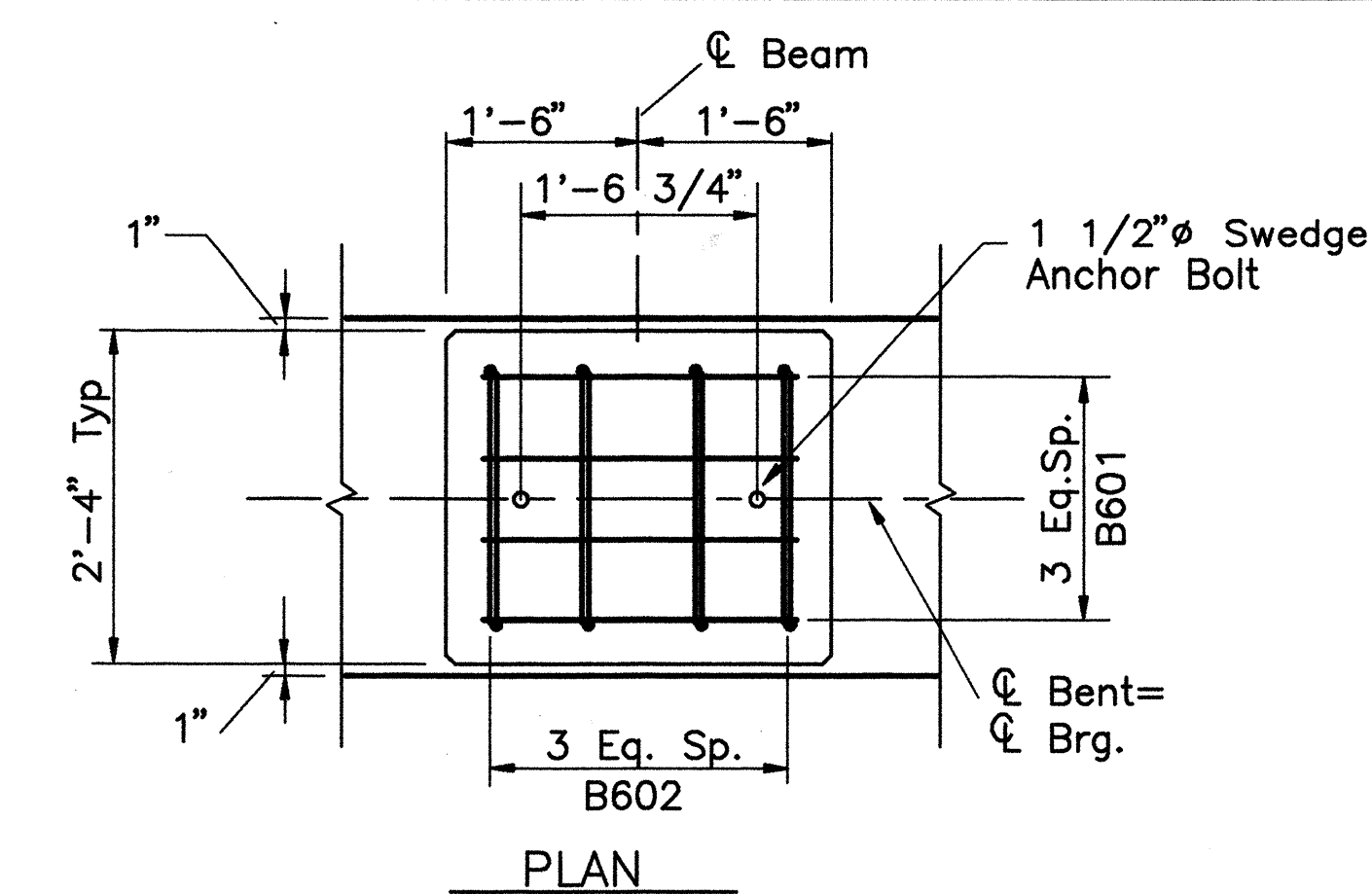


ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS	
<b>PARAPET RAIL DETAILS</b>	
BRIDGE A&B 3727 BRIDGE A&B 3731	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.	
DRAWN BY: DHH DATE: 11/96 CHECKED BY: MNM/GPS DATE: 1/97 DESIGNED BY: GPS DATE: 9/94	SCALE: As Shown
BRIDGE NO. A & B 3727 A & B 3731	DRAWING NO. 37981

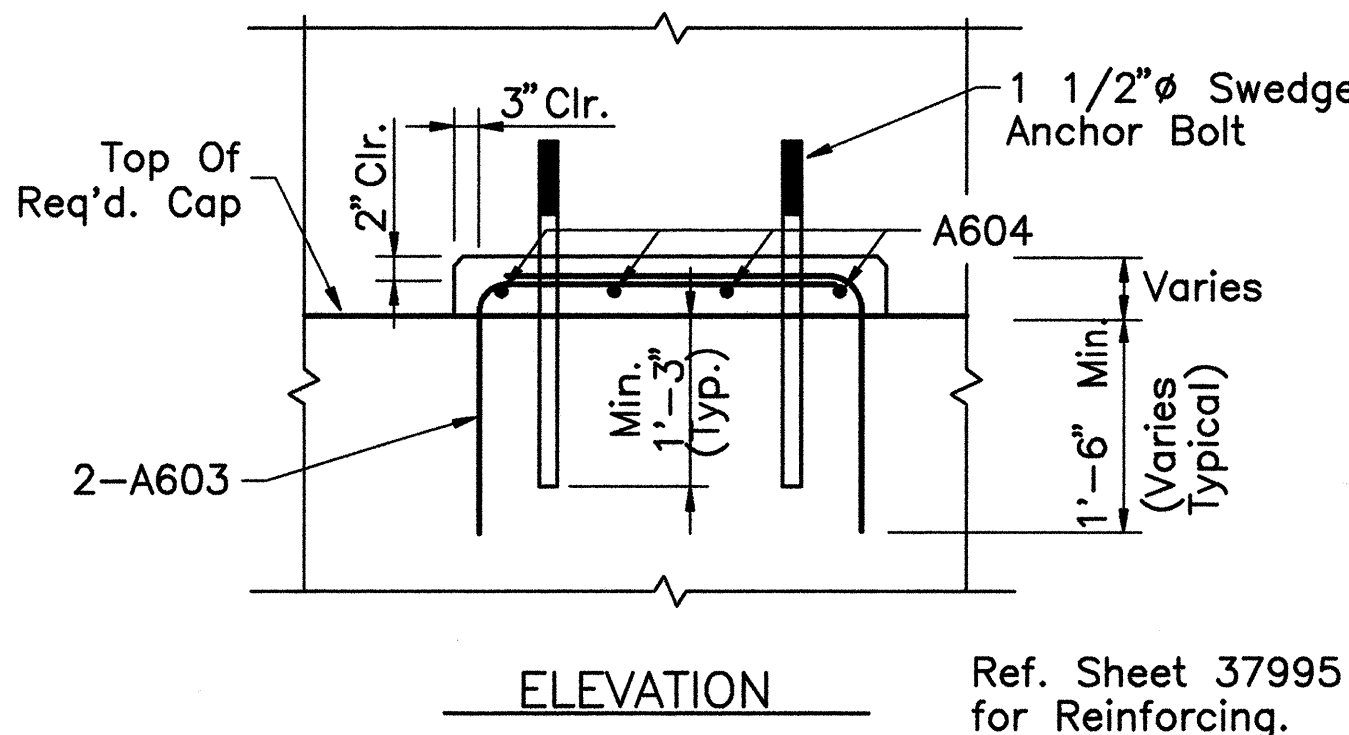
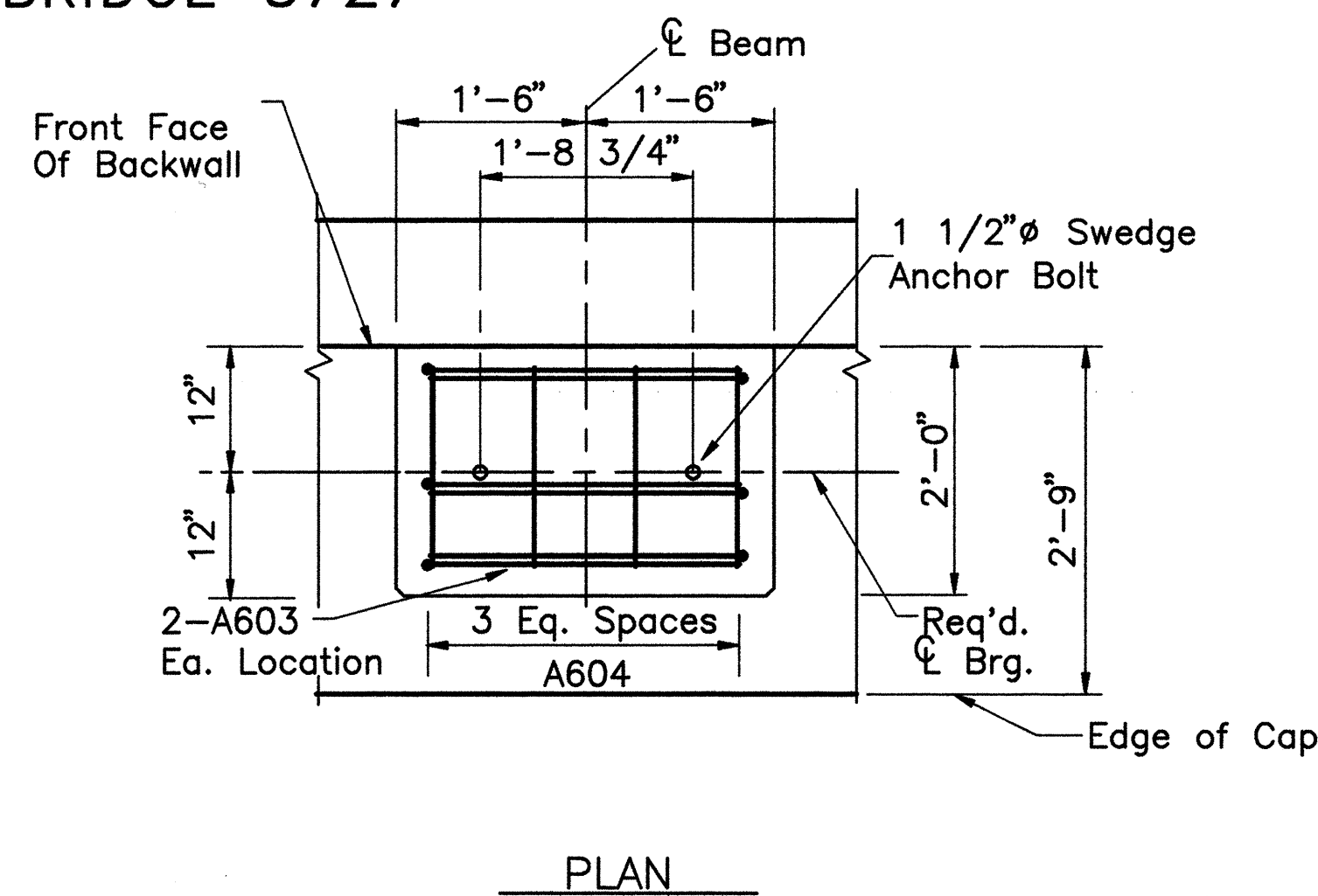




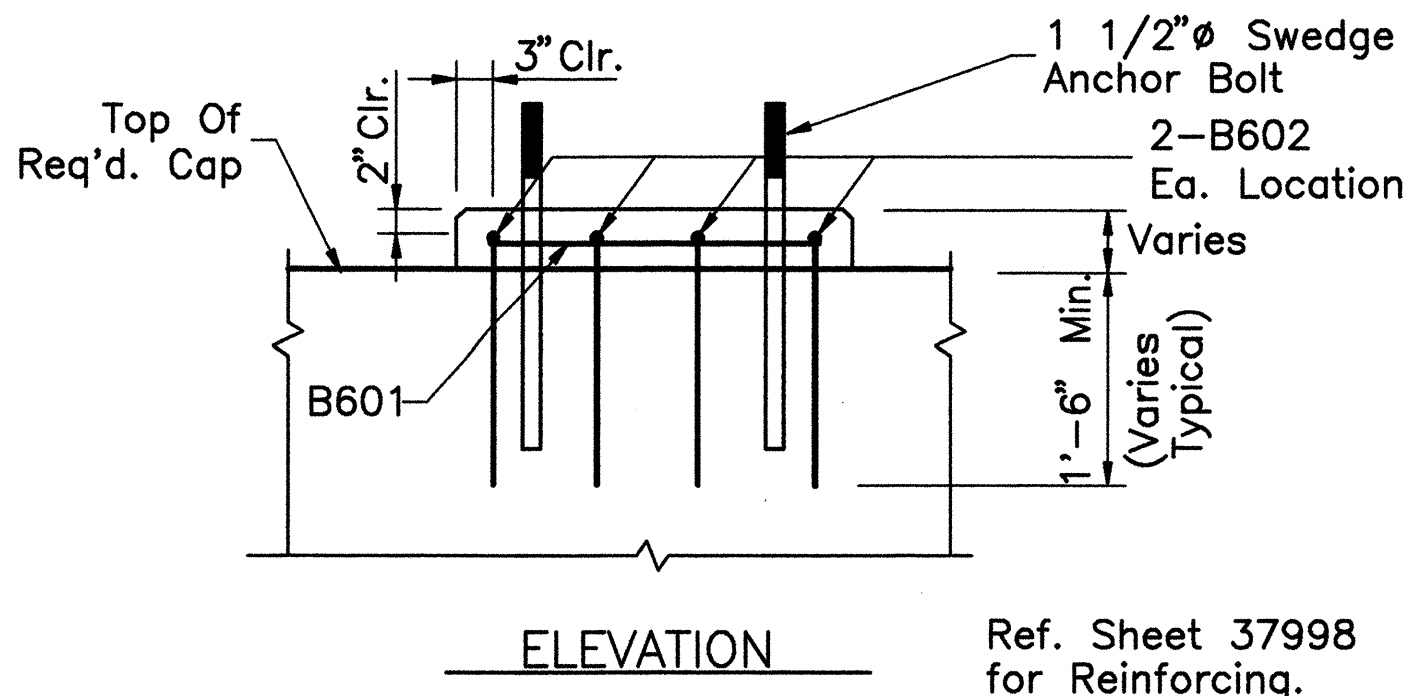
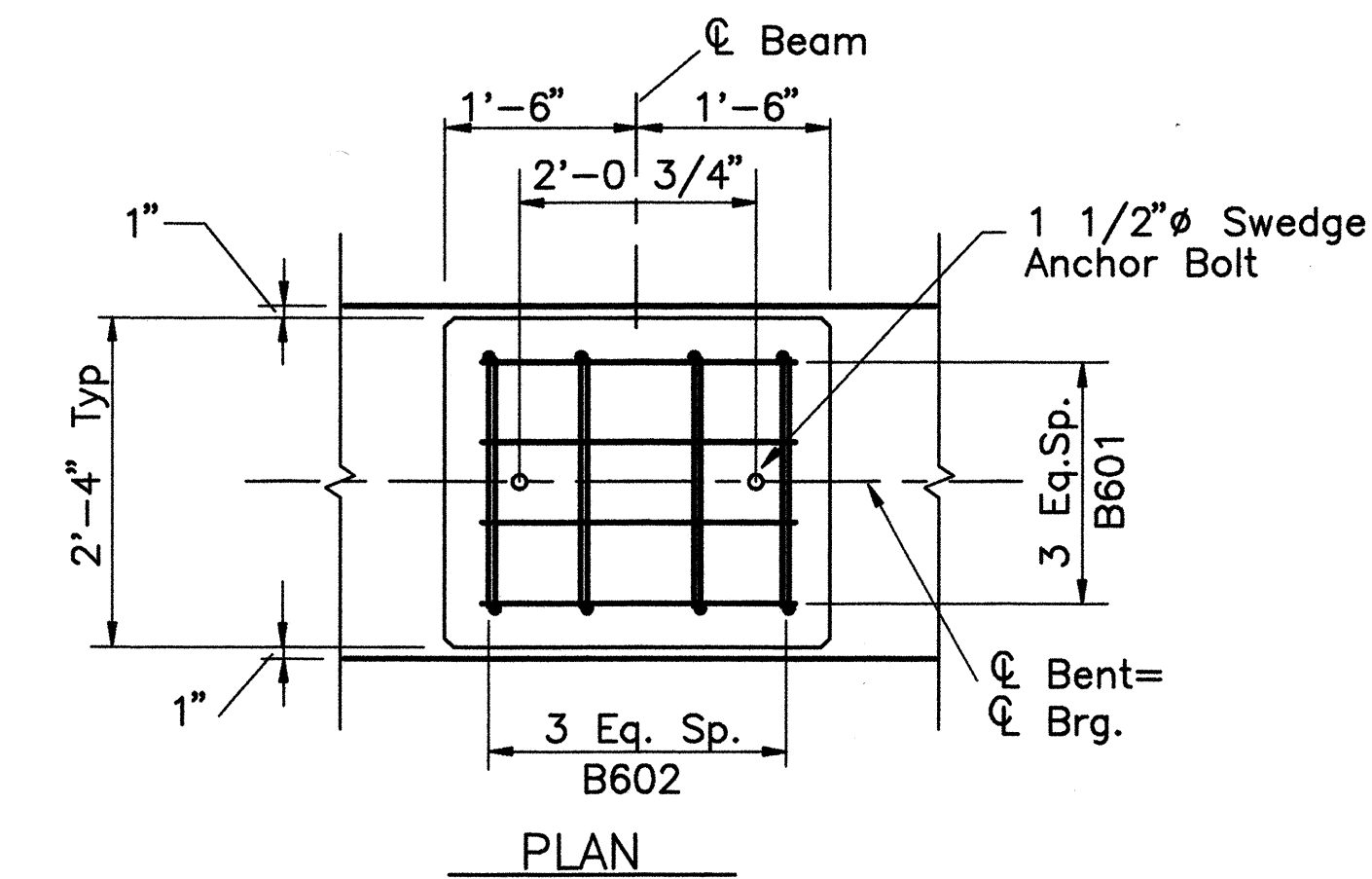
END BENT DETAILS Scale: 3/4" = 1'-0"  
BRIDGE 3727



INTERMEDIATE BENT DETAILS Scale: 3/4" = 1'-0"  
BRIDGE 3727



END BENT DETAILS Scale: 3/4" = 1'-0"  
BRIDGE 3731

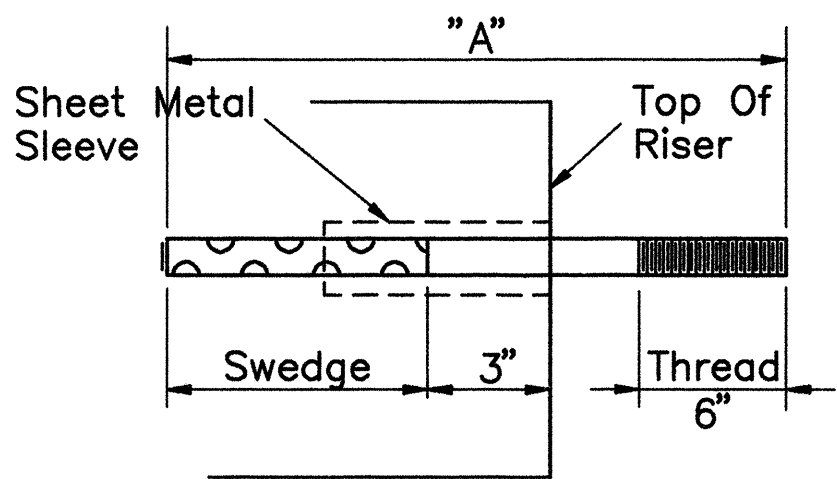


INTERMEDIATE BENT DETAILS Scale: 3/4" = 1'-0"  
BRIDGE 3731

ANCHOR BOLT LENGTHS - END BENTS		
Riser Designation	Bridge 3727 AR & BR	Bridge 3731 AR & BR
b	2'-8"	2'-9"
c	2'-8"	2'-9"
d	2'-8"	2'-9"
e	3'-0"	3'-3"
f	3'-0"	3'-3"
g	3'-0"	3'-3"

ANCHOR BOLT LENGTHS - INTERMEDIATE BENTS		
Riser Designation	Bridge 3727 AR & BR	Bridge 3731 AR & BR
b	2'-8"	2'-11"
c	2'-8"	2'-11"
d	2'-8"	2'-11"
e	3'-0"	3'-4"
f	3'-0"	3'-4"
g	3'-0"	3'-4"

- 1) 2-Anchor Bolts Required At Each Riser.
- 2) Provide Heavy Hex Nut & Washer For Each Anchor Bolt.
- 3) Provide 1 1/2" Standard Pipe Sleeve For Each Anchor Bolt. Sleeves Shall Conform To ASTM A53, Grade B and Galvanizing To Conform To AASHTO M232 Class C, or AASHTO M298, Class 50. See Bearing Details, Drawing No. 37984 For Sleeve Heights.

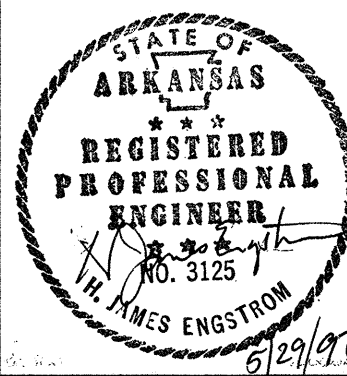


SWEDGE ANCHOR BOLT

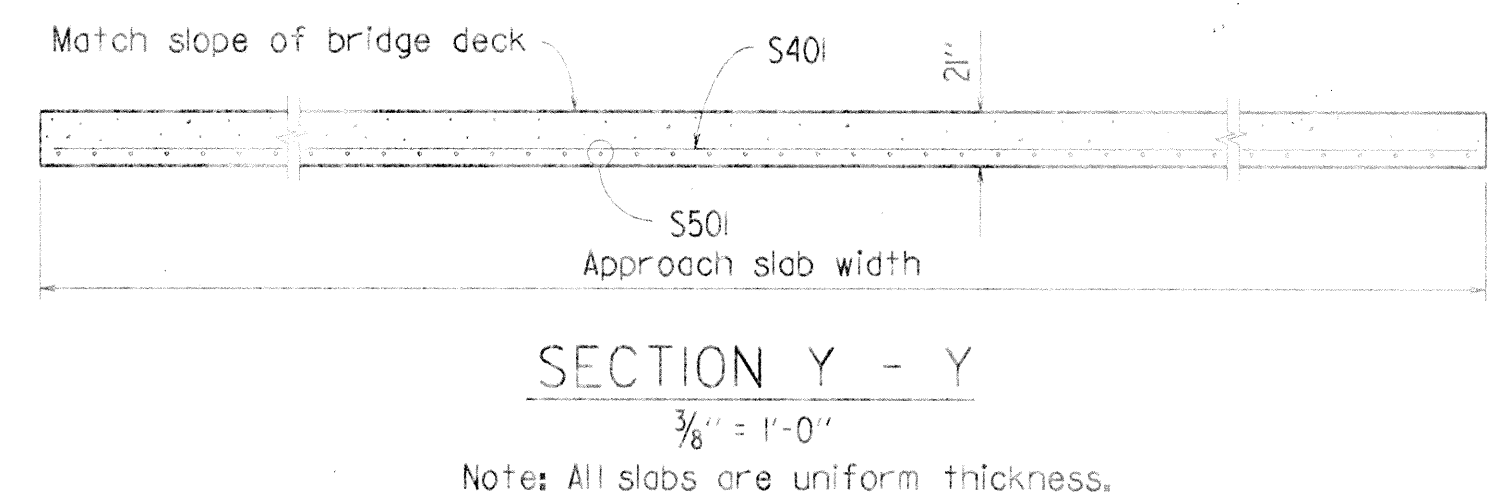
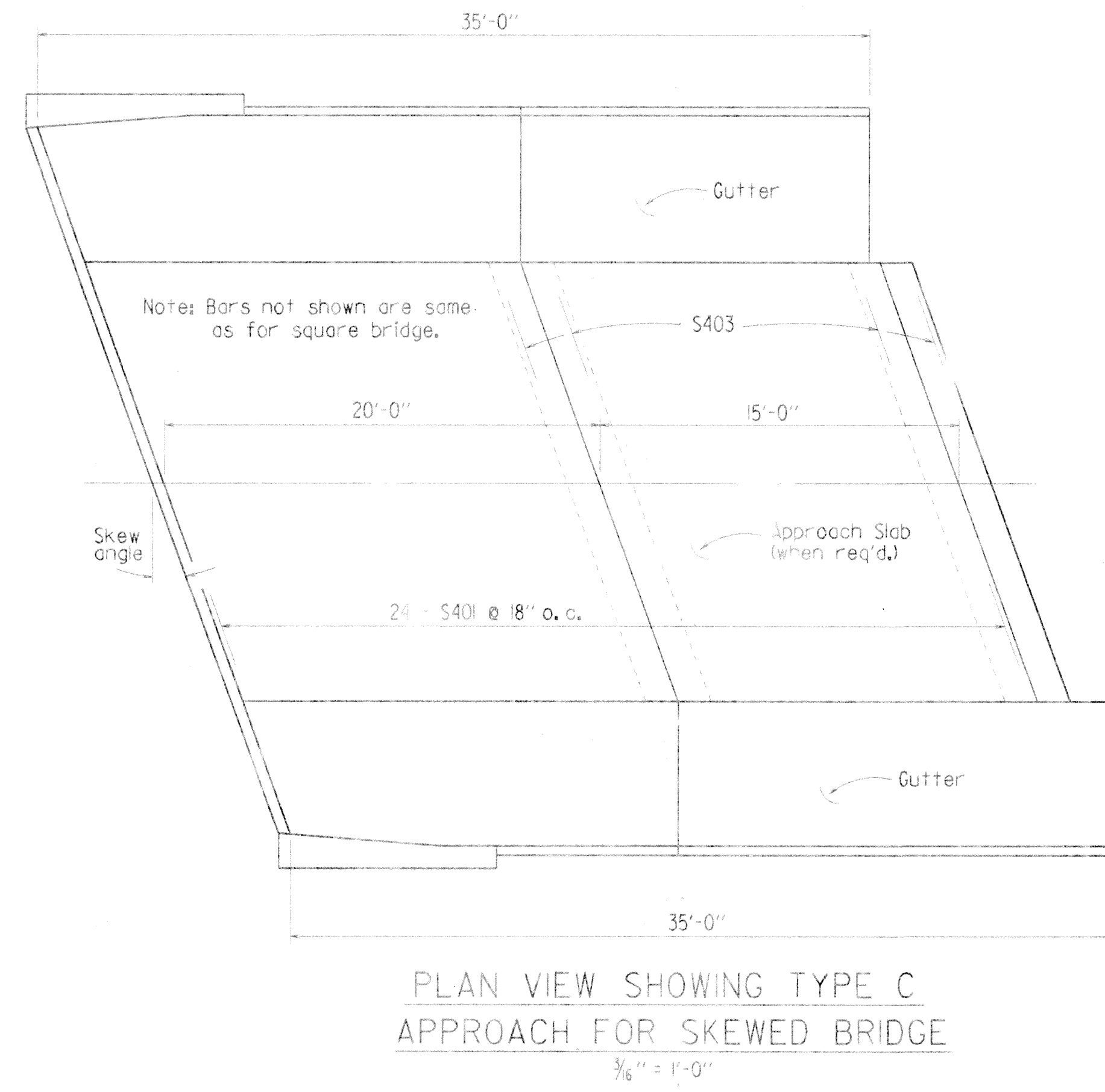
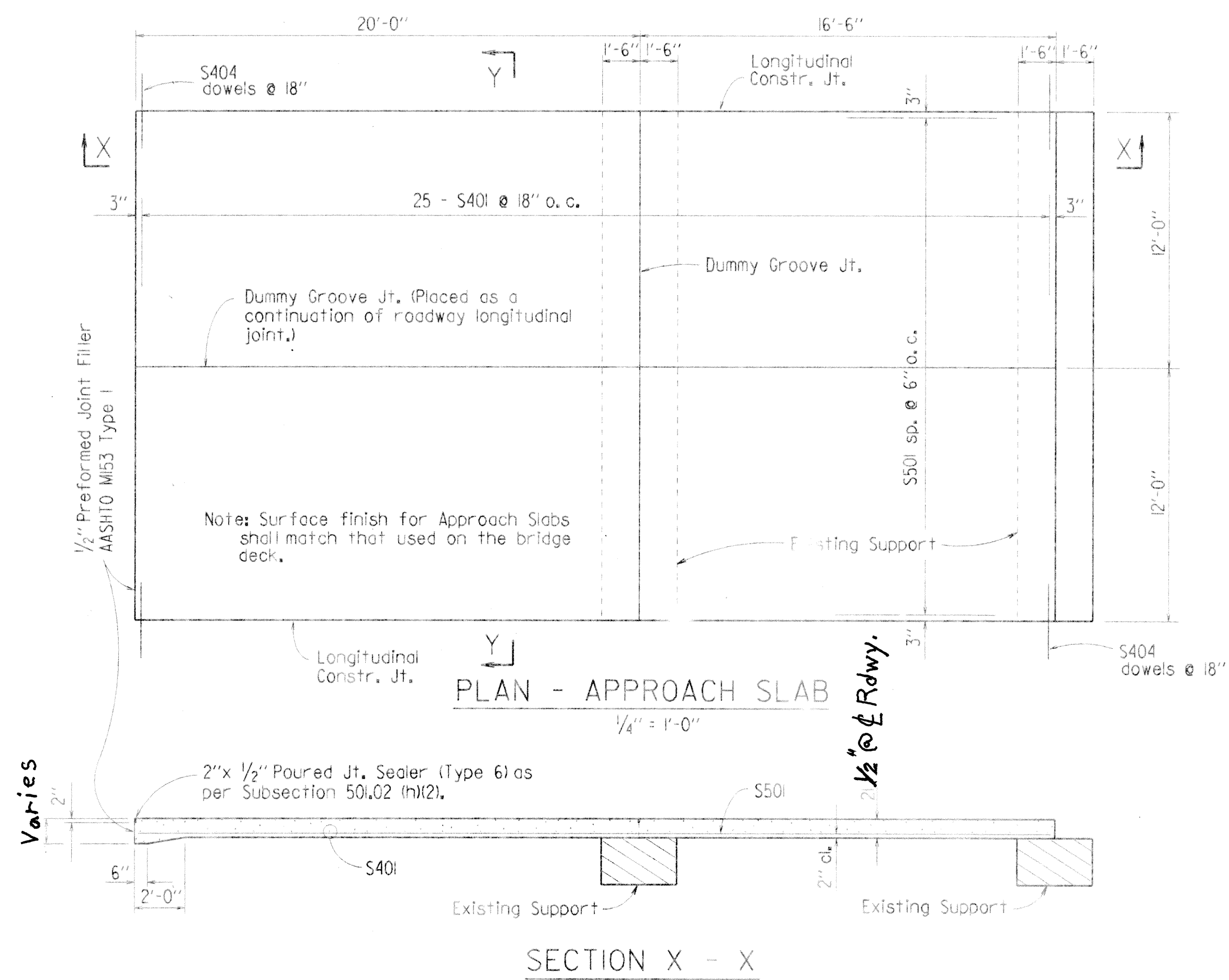
Scale: 1 1/2" = 1'-0"

## NOTES

1. Anchor Bolts, Nuts, Washers And Plates Shall Conform To Standard Specifications Section 807.07 And Shall Be Paid For Under The Item "Structural Steel In Beam Spans (AASHTO M270,GR.50W)". Indentations Shall Be Circular With Rounded Bottoms And Staggered As Shown In Detail.
2. Anchor Bolts May Be Cast In Place Or Drilled And Grouted Into Place. If A.B.'s Are To Be Drilled & Grouted Into Place, A 3"x12" Galvanized Sheet Metal Sleeve Shall Be Cast In Place As Shown. The Sleeve Shall Be Packed With Styrofoam, Utethane Foam Or Approved Equal Prior To Pouring The Concrete. After Pouring Of The Cap And Prior To Erection Of The Structural Steel, The Packing Shall Be Removed And Holes For the Anchor Bolts Shall Be Accurately Drilled Into The concrete. The Bolts shall Then Be Set And Fixed As Specified in Subsection 807.66. The Sheet Metal Sleeves are to be considered Subsidiary To The Item "Structural Steel In Beam Spans (AASHTO M270, GR.50W)".  
  
If A.B.'s Are To Be Cast In Place, The Sheet Metal Sleeve Will Not Be Required.
3. Set All Anchor Bolts Vertical.



ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS	
EXISTING BENT MODIFICATIONS DETAILS OF RISERS BRIDGE A&B 3727 BRIDGE A&B 3731	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.	
DRAWN BY: JHS DATE: 3/96 CHECKED BY: CDE DATE: 5/97 DESIGNED BY: CDE DATE: 9/94	SCALE: 3/8" = 1'-0"
BRIDGE NO. A & B 3727 A & B 3731	DRAWING NO. 37976



BAR LISTS  
(Square & Skewed Slabs)

Mark	No. Req'd.	Length	
		Square	Skewed
S401	24	23'-8"	23'-8" (secant skew angle)
S404	48	3'-0"	
S501	48	34'-8"	

GENERAL NOTES

Concrete shall be Class S or Class S (AE) or mixture used for Portland Cement Concrete Pavement.

Reinforcement Steel shall conform to AASHTO M31 or M53, Grade 60 (fy = 60,000 psi).

Approach Slabs and Approach Gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.

This drawing to be used with dwg. no. **37983**.

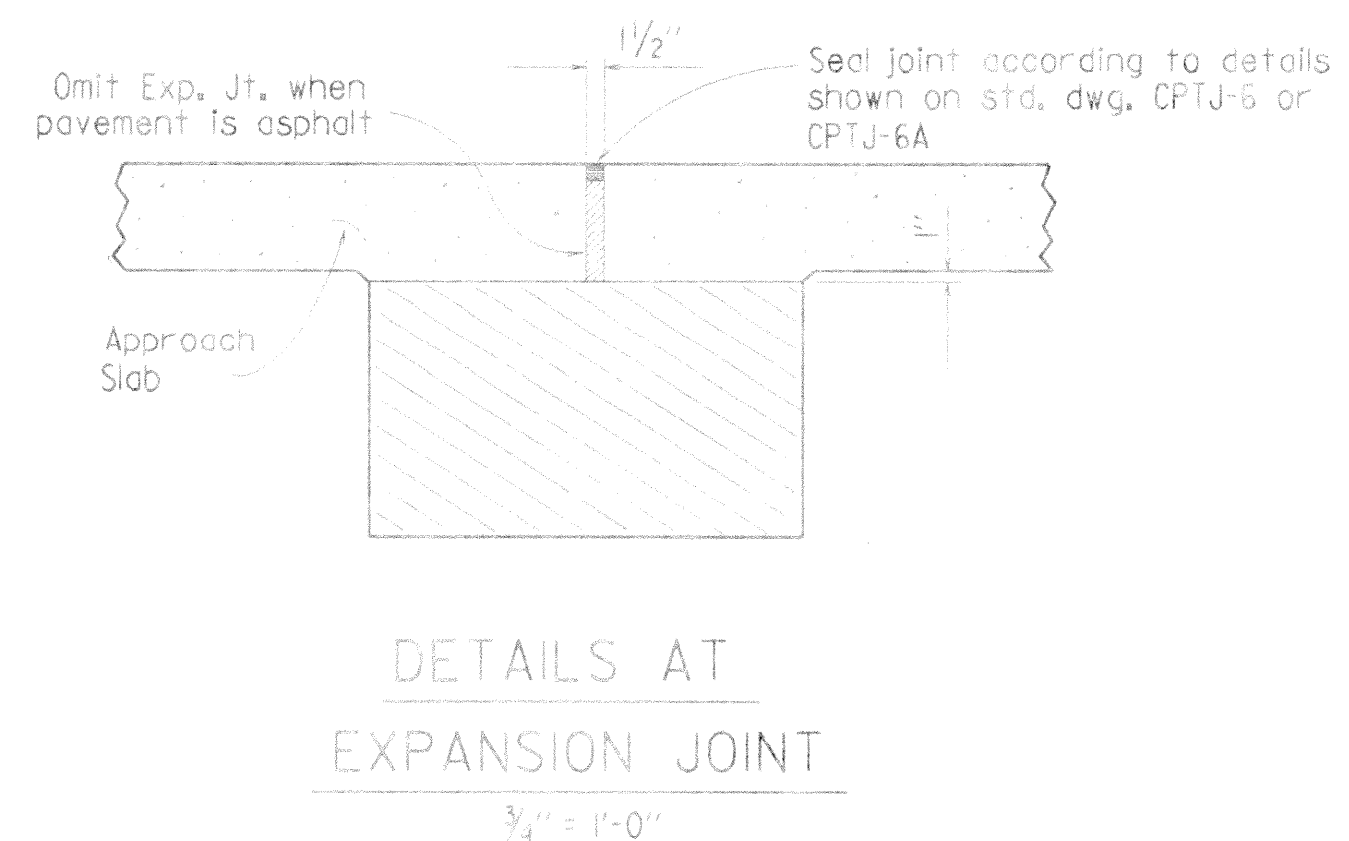
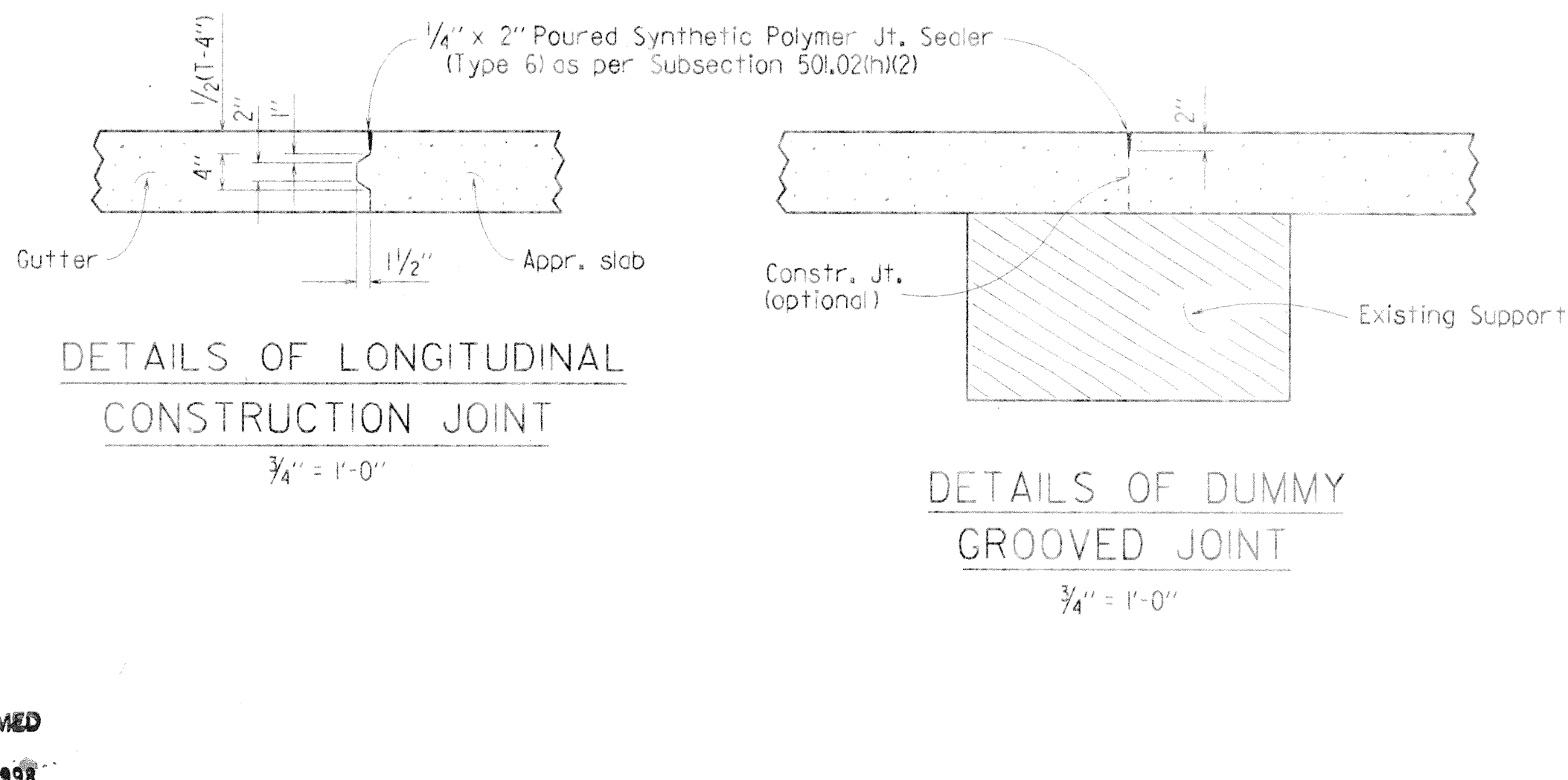


TABLE OF QUANTITIES FOR ONE  
SQUARE APPROACH SLAB

Slab Width	Reinforcing Steel	Concrete (Cu. Yds.)
24'-0"	221 lb.	83

STATE OF  
ARKANSAS  
REGISTERED  
PROFESSIONAL  
ENGINEER  
No. 316  
DATE 11-5-97  
S.A.L. & L.O.

DETAILS OF APPROACH SLAB  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

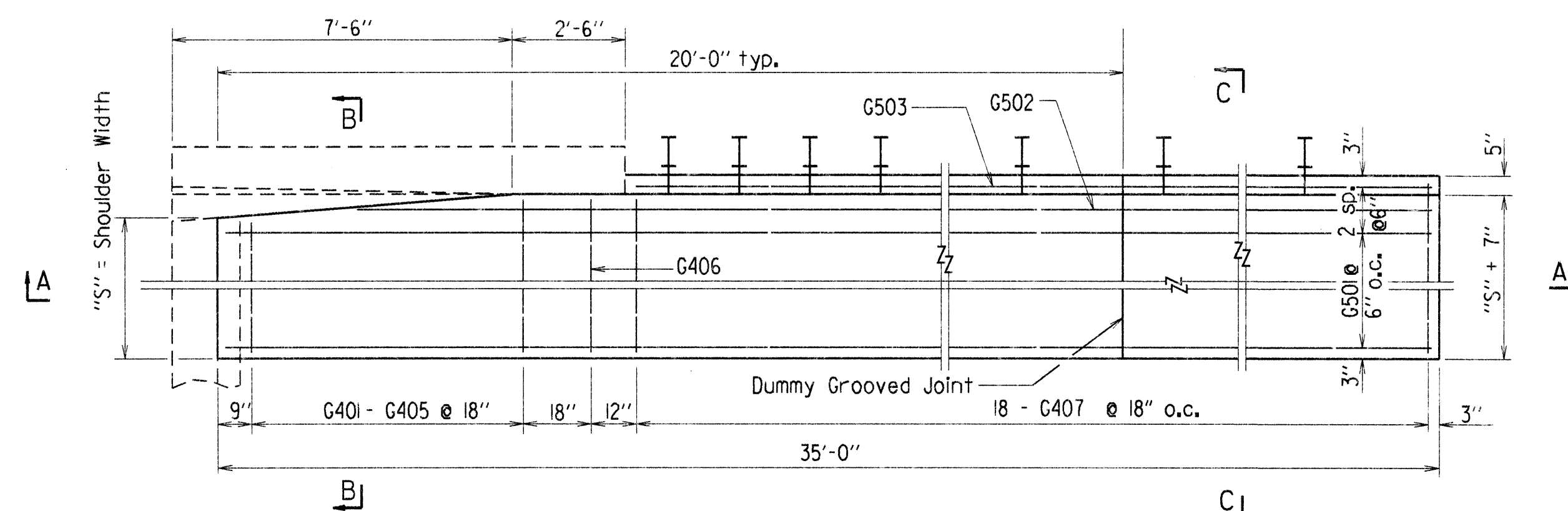
DRAWN BY: W.M.A.L. DATE: 11-4-97  
CHECKED BY: GVA DATE: 11-4-97  
DESIGNED BY: Std. DATE: 11-4-97

BRIDGE ENGINEER  
BRIDGE NO. A&B 3727 DRAWING NO. 37982

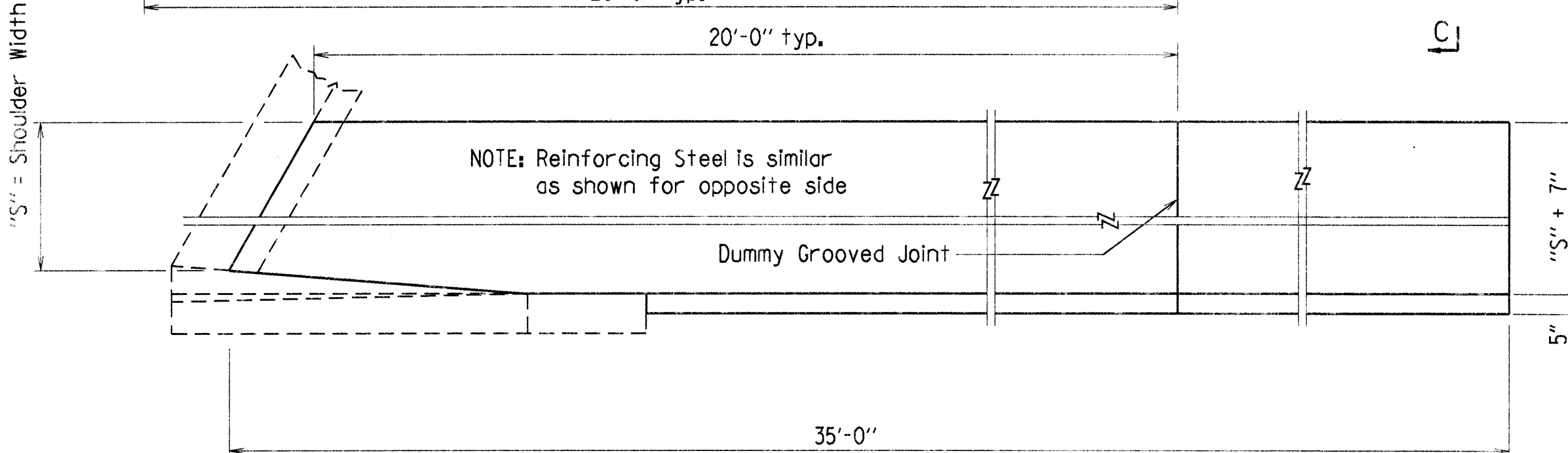
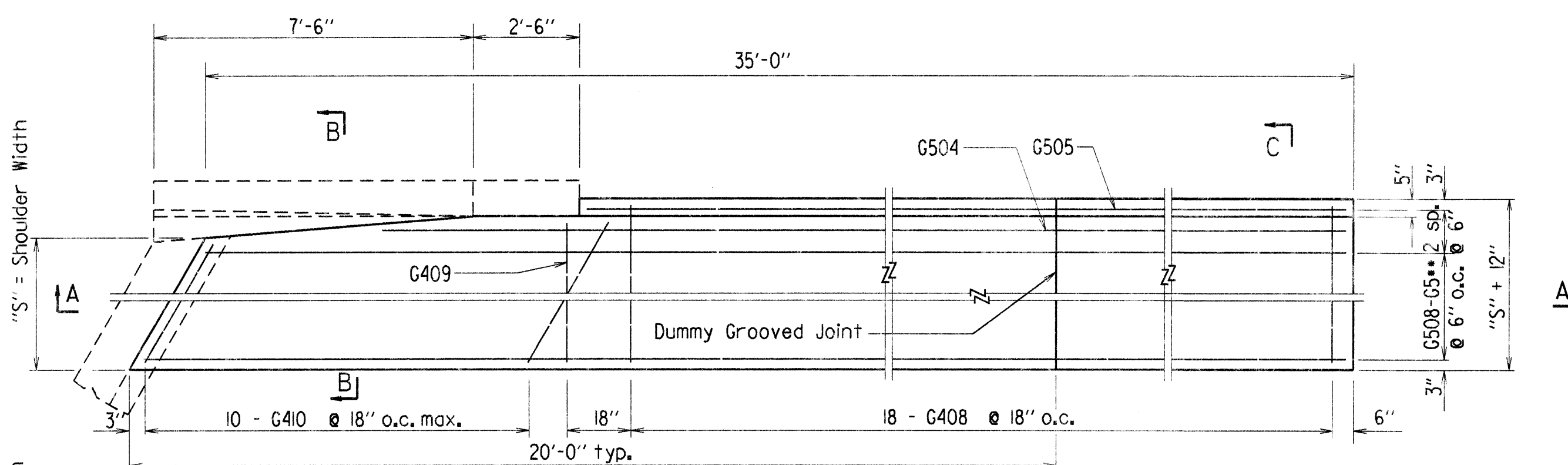
MICROFILMED  
OCT 15 1998



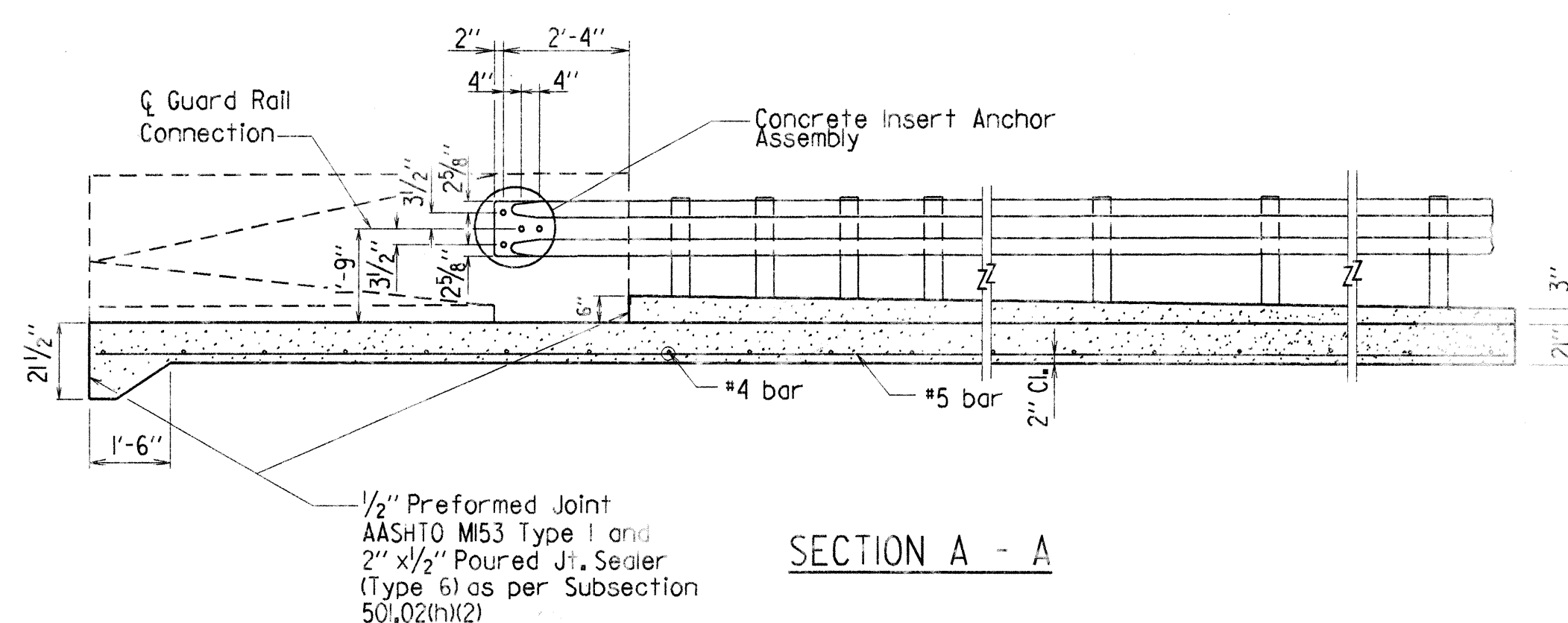
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. INFO DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
					JOB NO.	RI0055	67	116
				①	A&B 3727	GUTTERS		37983



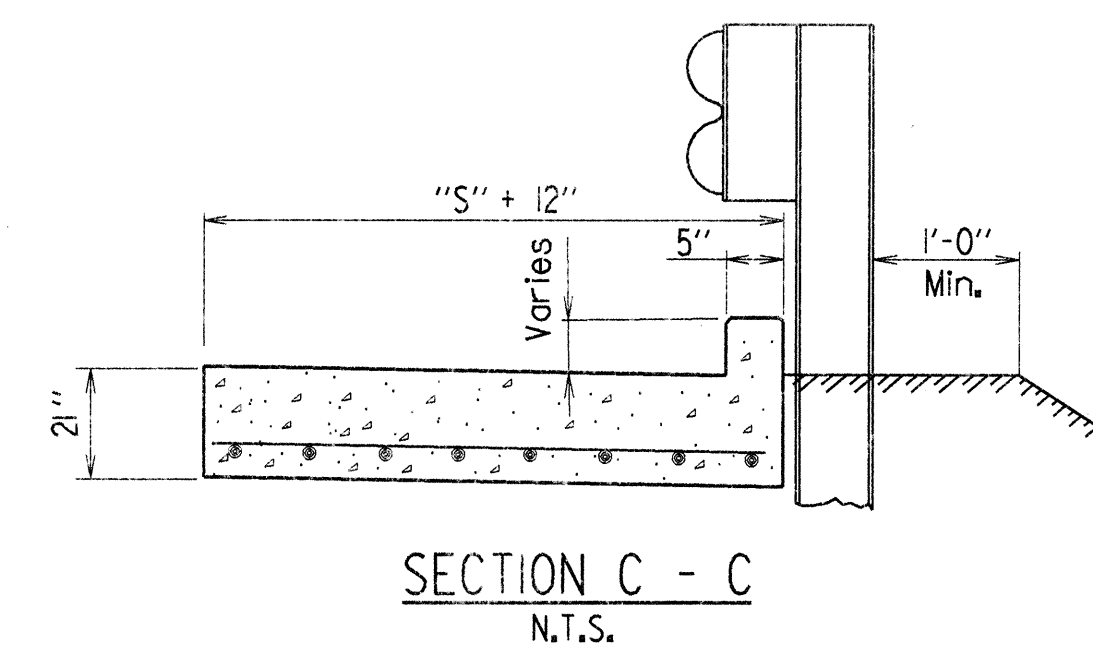
HALF PLAN OF APPROACH GUTTERS FOR SQUARE BRIDGE



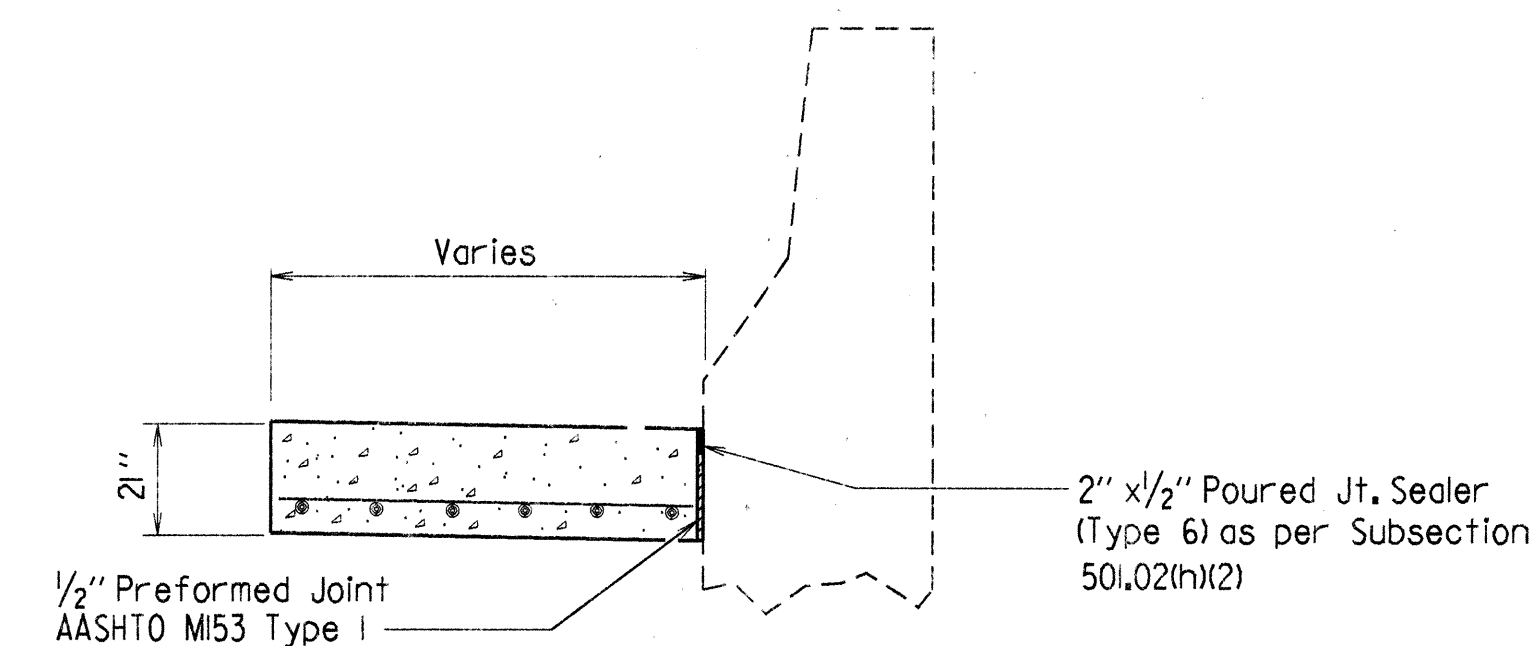
### PLAN OF APPROACH GUTTERS FOR SKEWED BRIDGE



SECTION A - A



SECTION C - C  
N.T.S.



SECTION B - B  
N.T.S.

BAR LIST FOR ONE  
TYPE SPECIAL GUTTER

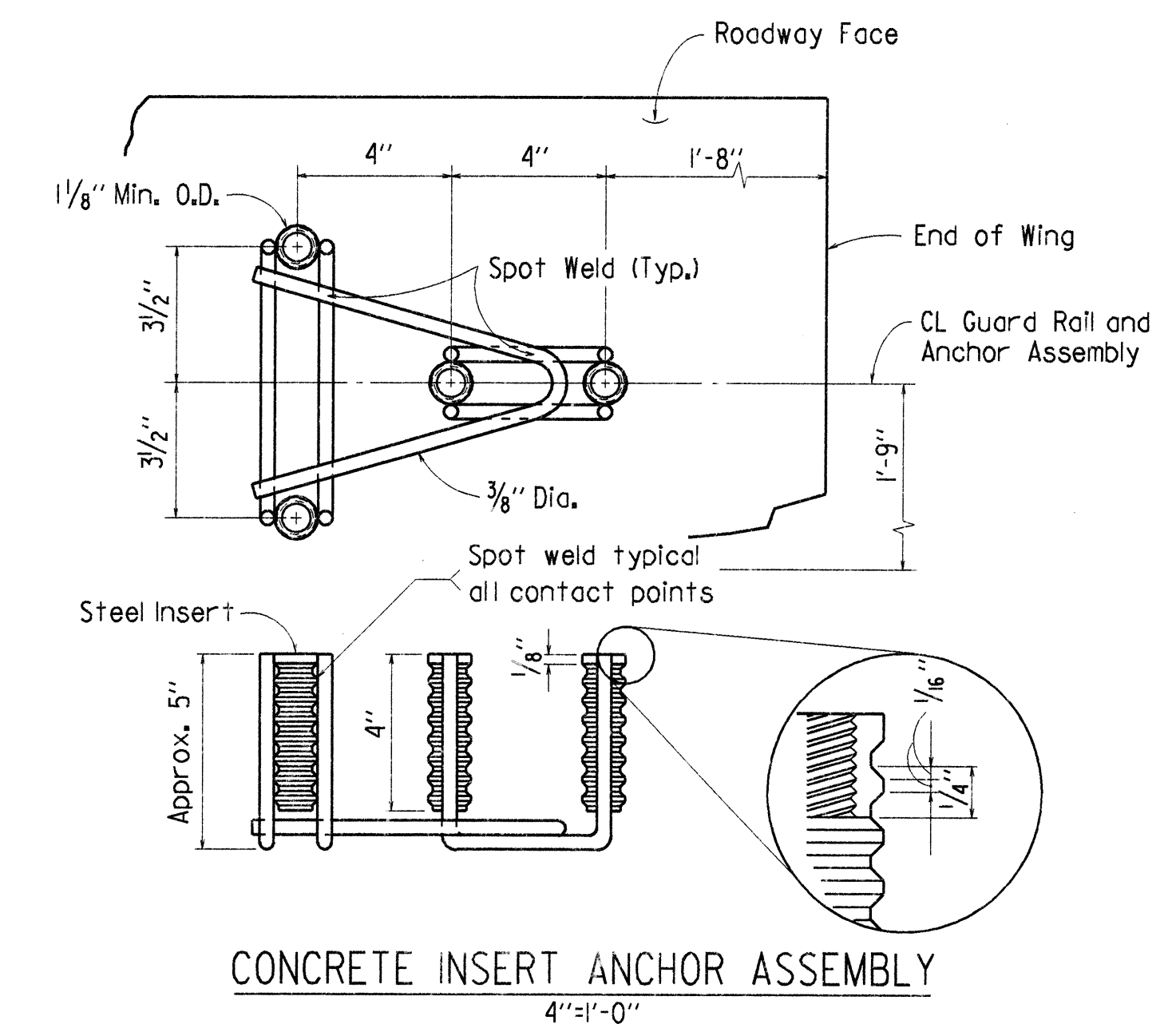
Mark	No. Req'd.		Length	Square or Skewed
	Width			
	6'-0"	10'-0"		
G401 - G405	1 each	1 each	"S"-3" to "S"+3"	Square
G406	1	1	"S"+3"	Square
G407	19	19	"S"+8"	Square
G408	19	19	"S"+8"	Skewed
G409	1	1	"S"+3"	Skewed
G410	10	10	"•"	Skewed
G501	12	20	36'-2"	Square
G502	1	1	3'-8"	Square
G503	1	1	27'-2"	Square
G504	1	1	"•"	Skewed
G505	1	1	"•"	Skewed
G508 - G5...	1 each	1 each	"•"	Skewed

- Bar Lengths vary with Skew, Lengths shown are for Square Bridges.

- \*\* G519 for S = 6'  
G527 for S = 10'

QUANTITIES FOR ONE  
SQUARE APPROACH GUTTER

Shoulder Width (ft.)	Reinforcing Steel (lbs.)	Concrete (cubic yards)
6'-0"	597	15.80
10'-0"		4.30



CONCRETE INSERT ANCHOR ASSEMBLY  
4"=1'-0"

Minimum capacity of guard rail attachment by concrete insert anchor assembly or other means shall be 12,000 lbs, ultimate shear capacity per bolt and insert (48,000 lbs. per assembly). There shall be a minimum of four bolts per attachment located as shown. The contractor may use the insert anchor assembly shown, or one similar which provides the same ferrule depth and thread length. The capacity of the insert anchor assembly shall be certified to the Engineer.

Guard rail attachment using other types of concrete insert will be allowed, provided they meet the minimum capacity specified, the capacity is certified, and approval is obtained from the Engineer before use.

The threaded steel insert shall have a solid bottom, tapped to a minimum threaded depth of 2½". The guard rail shall be connected with ⅜"Ø x 2½" high strength hex bolts and one hardened steel washer. See Section 807 of the Standard Specifications.

Bolts shall conform to the requirements of AASHTO M64 and shall be threaded full length. Bolts and washers shall be galvanized in accordance with AASHTO M232.

Bolts shall be installed in accordance with Subsection 807.71 of the Standard Specifications.

Concrete Insert Anchor Assembly will not be paid for directly, but will be considered subsidiary to the Item of Class S or Class S (AE) Concrete - Bridge.

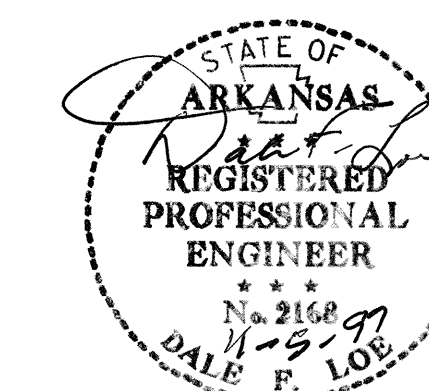
For Details of Guard Rail see dwg. nos. GR-8 & GR-8A.

## GENERAL NOTES

Concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement.

Reinforcement Steel shall conform to AASHTO M31 or M53, Grade 60 ( $f_y = 60,000$  psi).

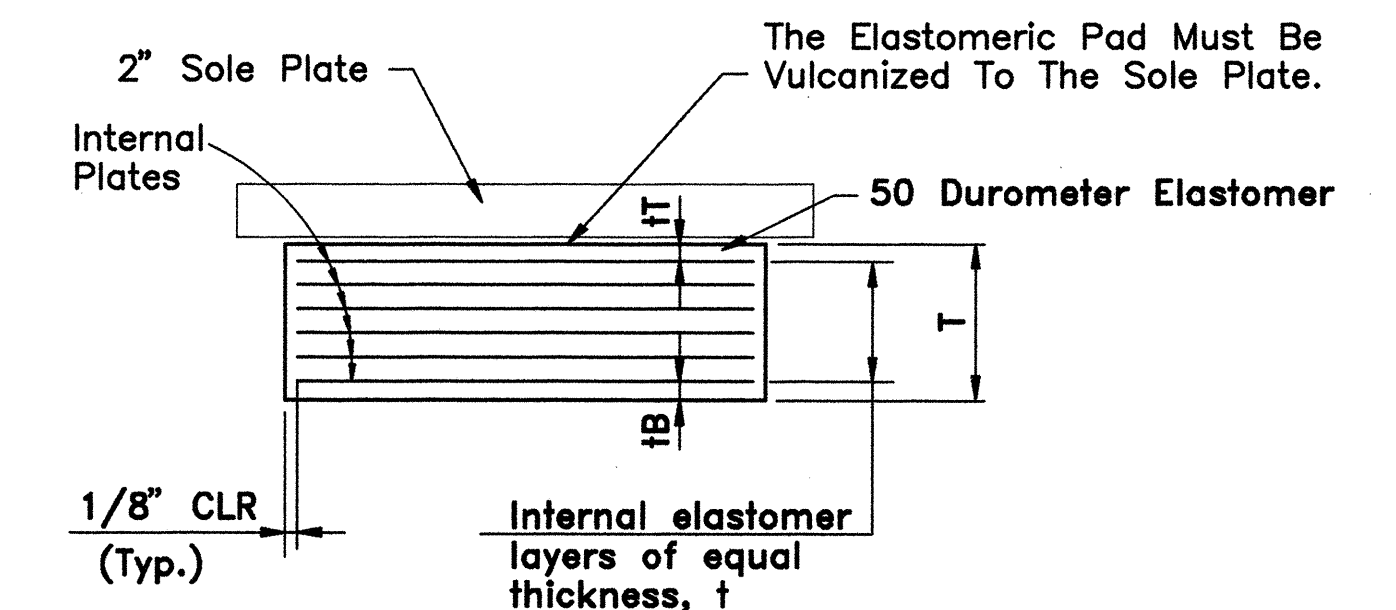
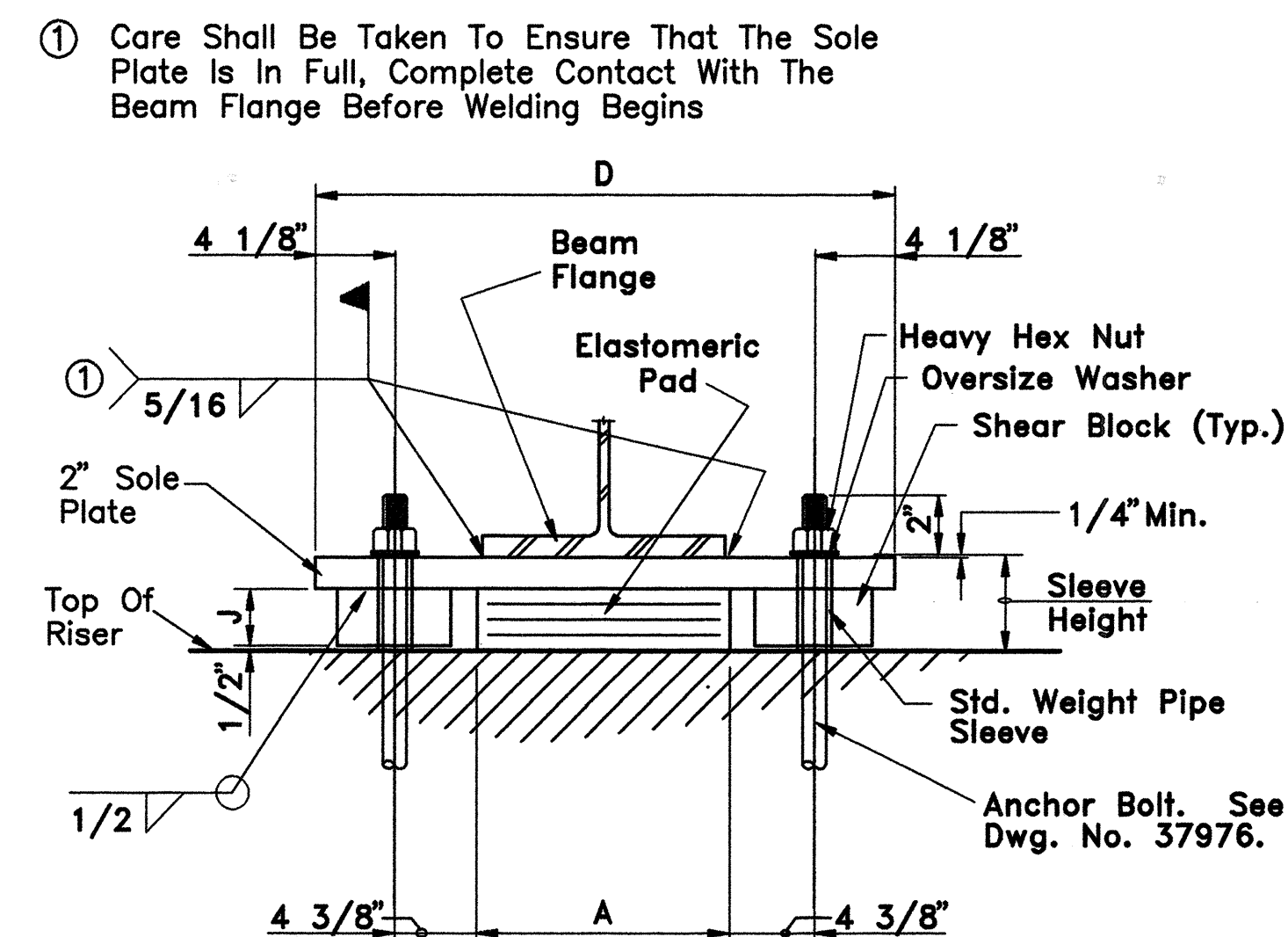
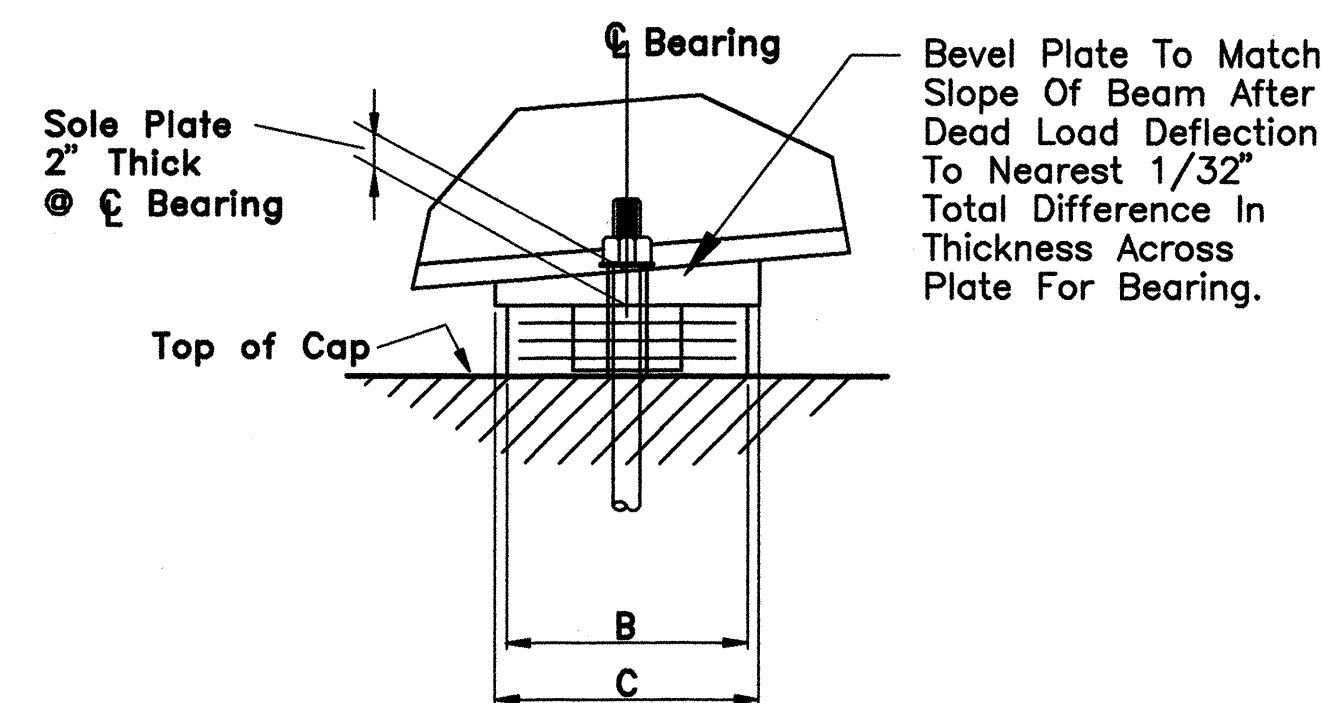
Approach Gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.



DETAILS OF  
TYPE SPECIAL APPROACH GUTTERS  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: W.MAJ. DATE: 11-3-97  
CHECKED BY: GYA DATE: 11-3-97 SCALE:  $\frac{3}{8}'' = 1'-0''$   
DESIGNED BY: SJD DATE: \_\_\_\_\_  
BRIDGE NO. A&B 3727 DRAWING NO. 37983

The Location Of The Anchor Bolts In Relation To The Holes In The Sole Plate Shall Correspond With The Temperature At The Time Of Erection. AT 60° F The Holes Should Center On The Anchor Bolts.



ELASTOMERIC PAD

TABLE OF VARIABLES																	
BRIDGE NO.	UNIT or SPAN	BENT LOCATION	BEARING TYPE	No. OF BEARINGS EA. BENT	A	B	T	tT	tB	No. & THK. FOR (t)	No. & THK. OF INTERNAL PLATE	C	D	E	J	SLEEVE HEIGHT	
3727	132'-0"	Endbent 1	Exp.	6	10"	10"	3 3/16"	1/4"	1/4"	6 @ 3/8"	7 @ 1/16"	11"	27"	4"	2 11/16"	5 7/16"	
		2	Exp.	6	10"	14"	3 3/16"	1/4"	1/4"	6 @ 3/8"	7 @ 1/16"	15"	27"	3 1/4"	2 11/16"	5 7/16"	
		3	Fix	6	10"	14"	3 3/16"	1/4"	1/4"	6 @ 3/8"	7 @ 1/16"	15"	27"	2 1/4"	2 11/16"	5 7/16"	
		Endbent 4	Exp.	6	10"	10"	3 3/16"	1/4"	1/4"	6 @ 3/8"	7 @ 1/16"	11"	27"	3 1/4"	2 11/16"	5 7/16"	
3731	258'-0 3/8"	Endbent 1	Exp.	6	12"	16"	3 5/16"	1/8"	1/8"	8 @ 5/16"	9 @ 1/16"	17"	29"	4 1/2"	2 13/16"	5 9/16"	
		2	Fix	6	16"	16"	3 5/8"	1/4"	1/4"	7 @ 3/8"	8 @ 1/16"	17"	33"	2 1/4"	3 1/8"	5 7/8"	
		3	Fix	6	16"	16"	3 5/8"	1/4"	1/4"	7 @ 3/8"	8 @ 1/16"	17"	33"	2 1/4"	3 1/8"	5 7/8"	
		Endbent 4	Exp.	6	12"	16"	3 5/16"	1/8"	1/8"	8 @ 5/16"	9 @ 1/16"	17"	29"	4 1/2"	2 13/16"	5 9/16"	

Pipe Sleeves Shall Be ASTM A53, Grade B, And Shall Be Galvanized To Conform To AASHTO M232, Class C Or AASHTO M298, Class 50. Sleeves Shall Be Paid For At The Unit Price For "Structural Steel in Beam Spans (AASHTO M270, GR.50W).

Sole Plates And Shear Blocks Shall Be AASHTO M270, GR.50W Steel. Sole Plates And Shear Blocks Will Not Be Paid For Directly, But Will Be Considered As Part Of The Item "Elastomeric Bearings".

Sole Plates And Shear Blocks Shall Not Be Painted. Sole Plates, And Shear Blocks Shall Be Cleaned In Accordance With Subsection 807.84(e).

Sole Plates And Shear Blocks Shall Not Be Painted. Sole Plates, And Shear Blocks Shall Be Cleaned In Accordance With Subsection 807.84(e).

Elastomeric Pads Shall conform To Section 808 Of The Standard Specifications And SP Job R10055 Elastomeric Bearings And Shall Be Paid For At The Unit Price Bid For "Elastomeric Bearings".

For Payment Of Bearings See SP Job R10055 "Elastomeric Bearings".

Each Reinforced Bearing Shall Be Marked In Indelible Ink Or Flexible Paint. The Marking Shall Consist Of The Orientation, The Order Number, Lot Number, Bearing Identification Number, and Elastomeric Type And Grade Number. Unless Otherwise Specified, The Marking Shall Be On A Face That Is Visible After Erection Of The Bridge. This Information Shall Be Clearly Shown On The Shop Drawings.

All Anchor Bolts Shall Be 1 1/2"Ø. See Drawing No. 37976.

ENGSTROM/MODJESKI AND MASTERS  
CONSULTING ENGINEERS

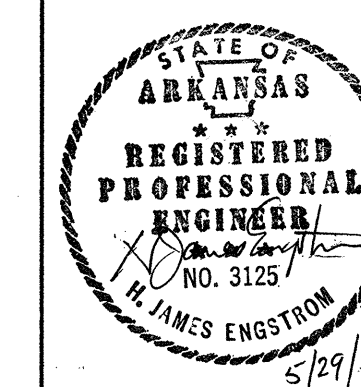
BEARING DETAILS	
BRIDGE A&B 3727	BRIDGE A&B 3731

MONROE COUNTY  
INTERSTATE ROUTE 40 SEC. 43  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: JHS DATE: 3/96  
CHECKED BY: GE DATE: 5/97  
DESIGNED BY: CDE DATE: 9/94

SCALE: As Shown

BRIDGE NO. A & B 3727 A & B 3731	DRAWING NO. 37984
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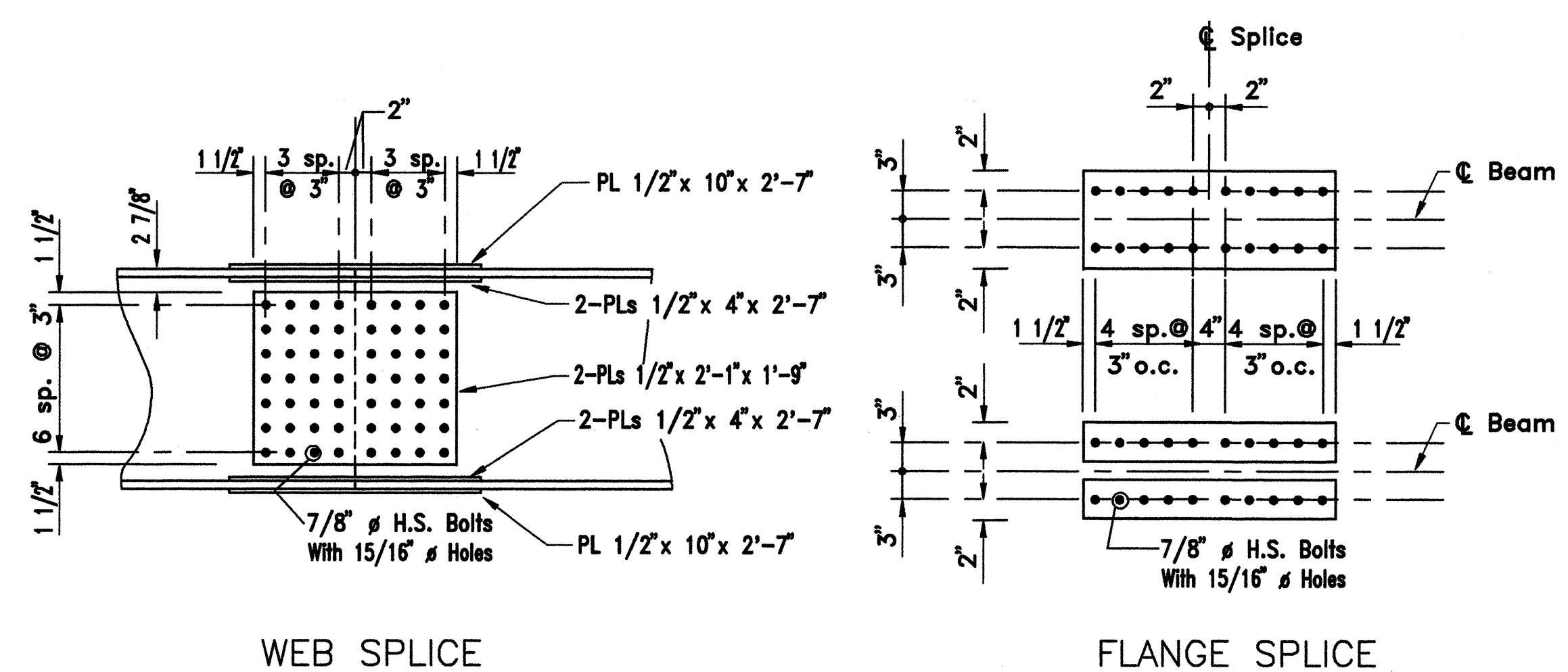


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OCT 15 1998

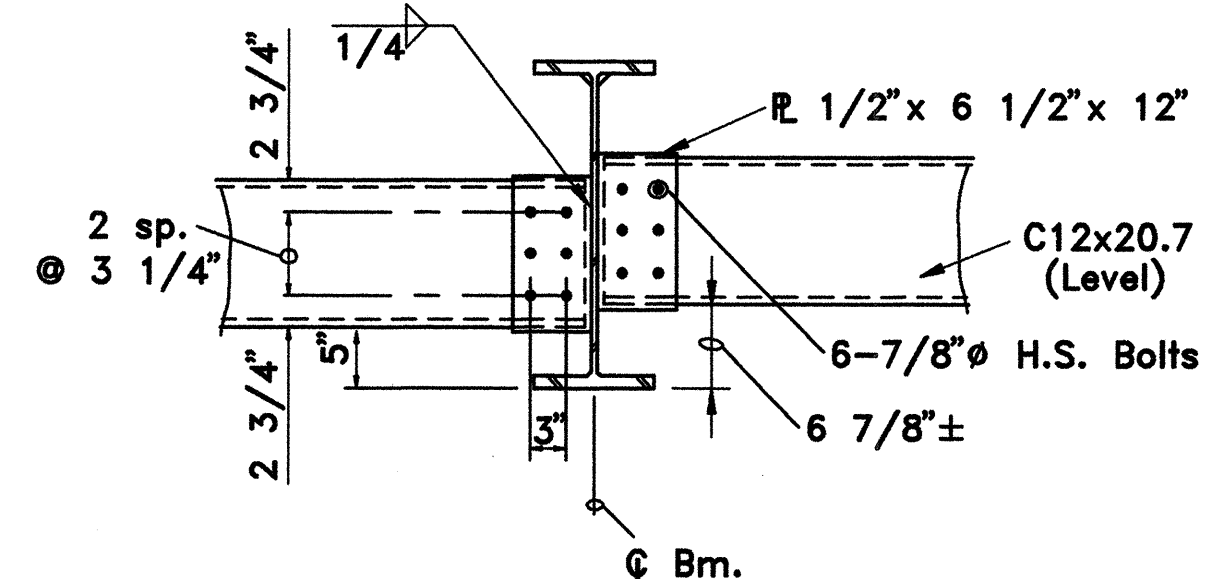
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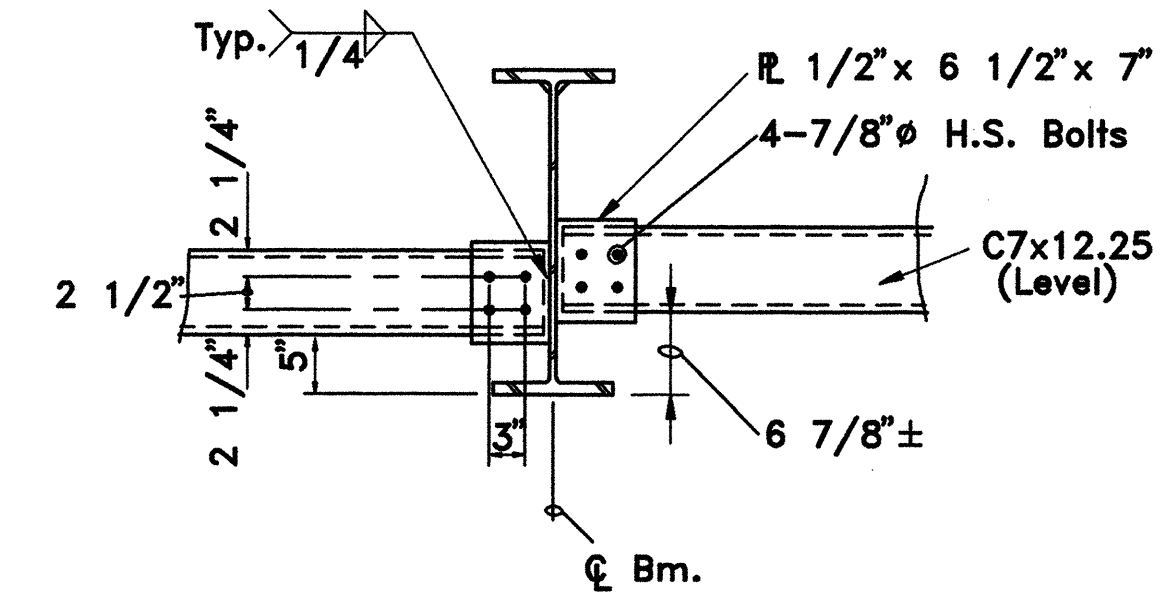
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				6	ARK.			
				JOB NO.		R10055	69	116
① A&B 3727 & A&B 3731 DETAILS 37985								



EXT. DIAPHRAGM CONNECTION



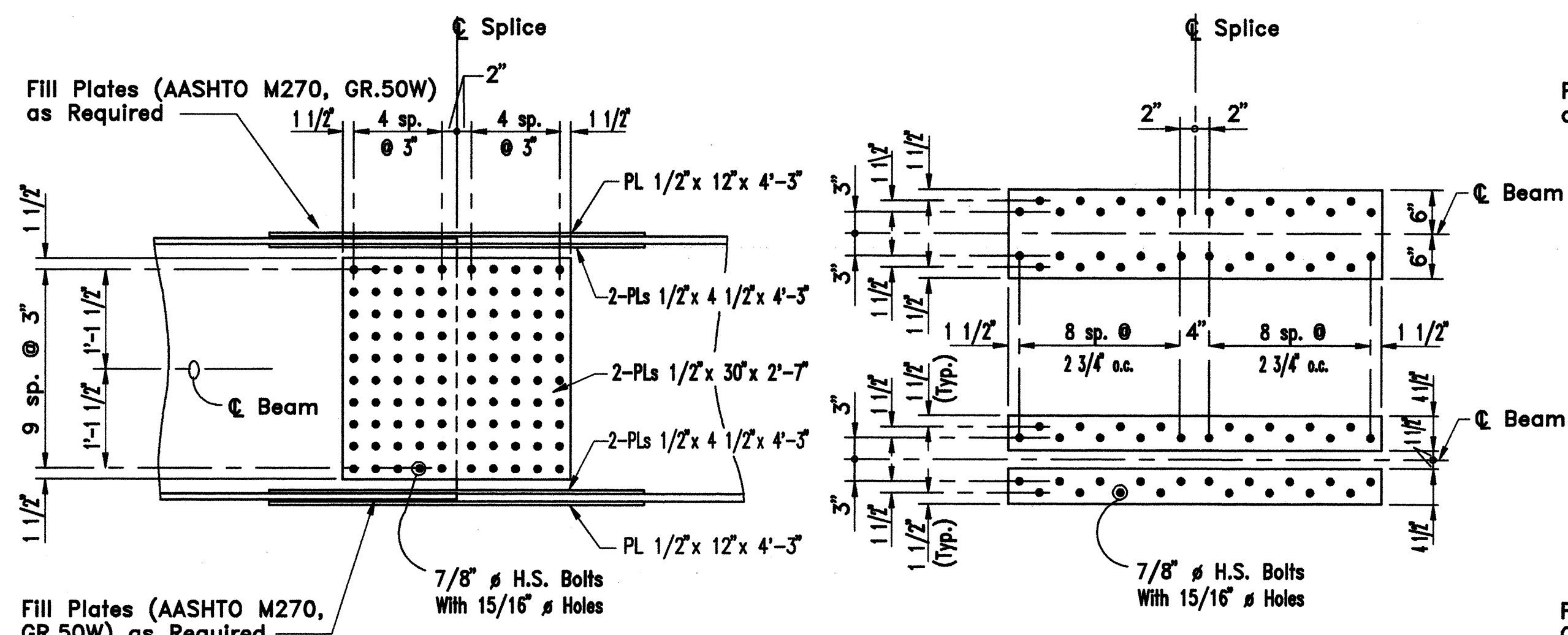
INT. DIAPHRAGM CONNECTION



TYP. END DIAPHRAGM CONNECTION

BRIDGE 3727 DETAILS - W-27 BEAMS

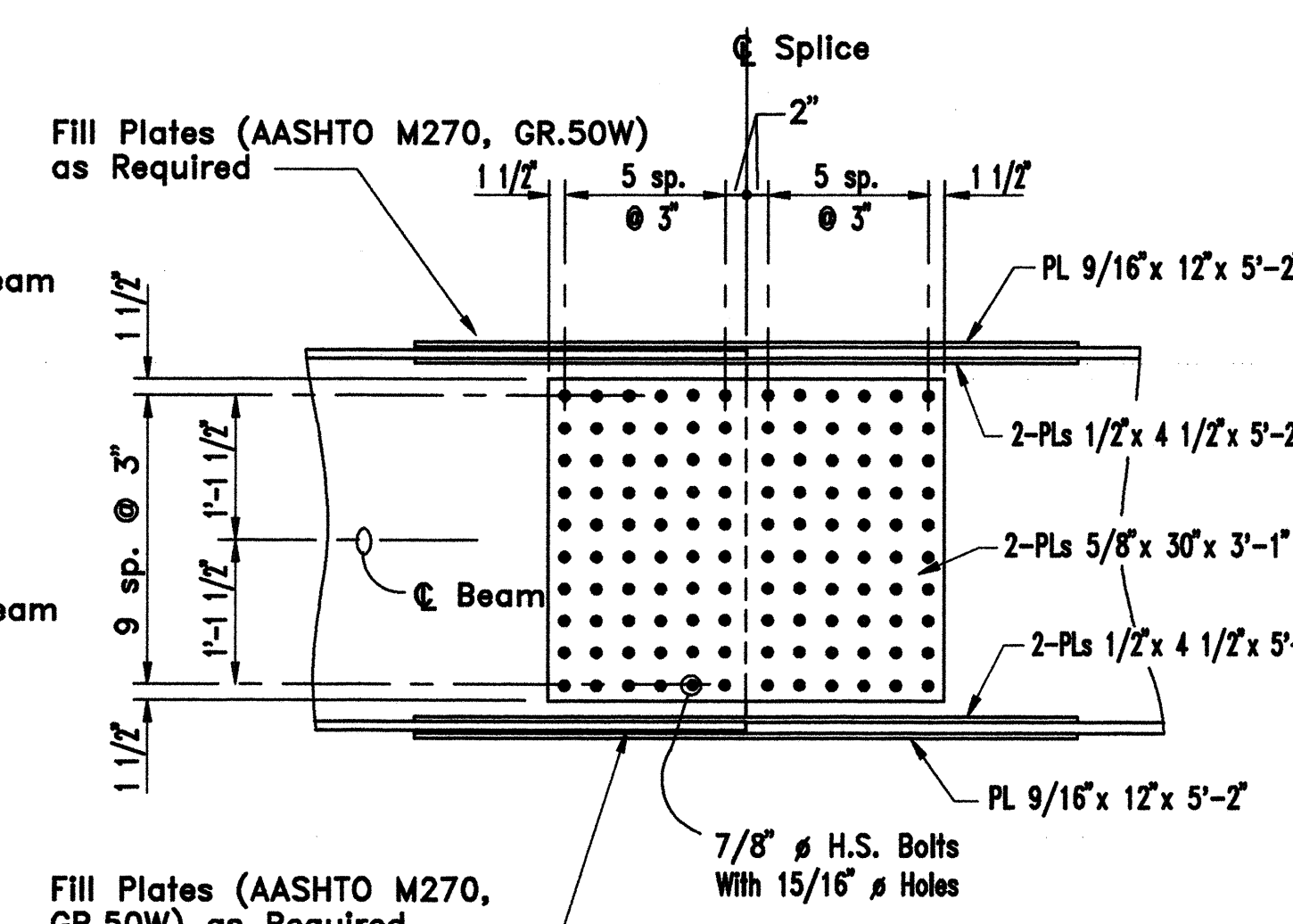
Scale: 3/4"=1'-0"



WEB SPLICE

FLANGE SPLICE

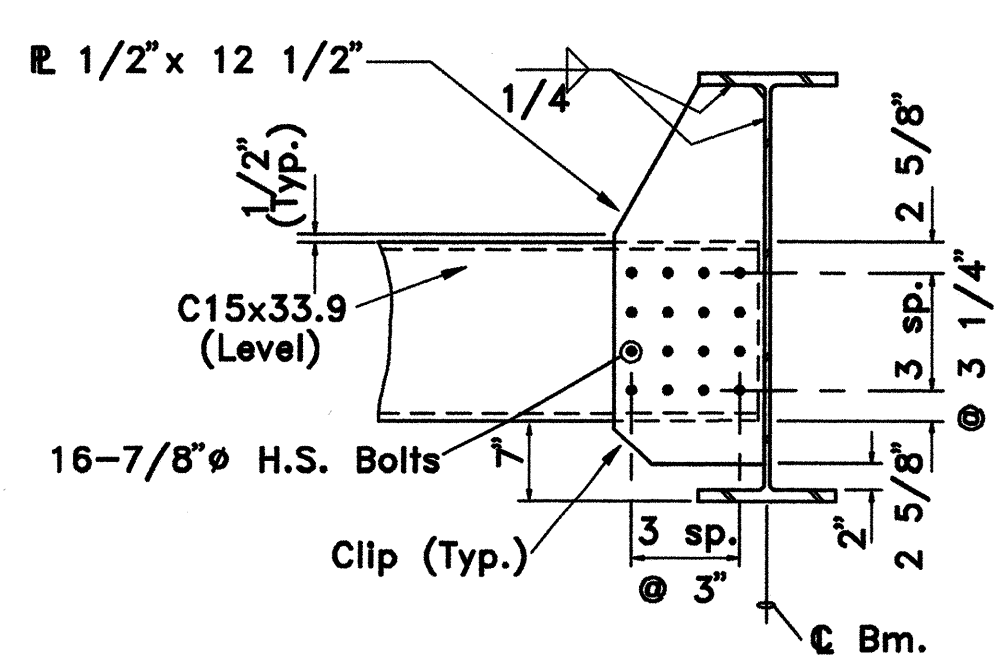
FIELD SPLICE #1, #2, #3



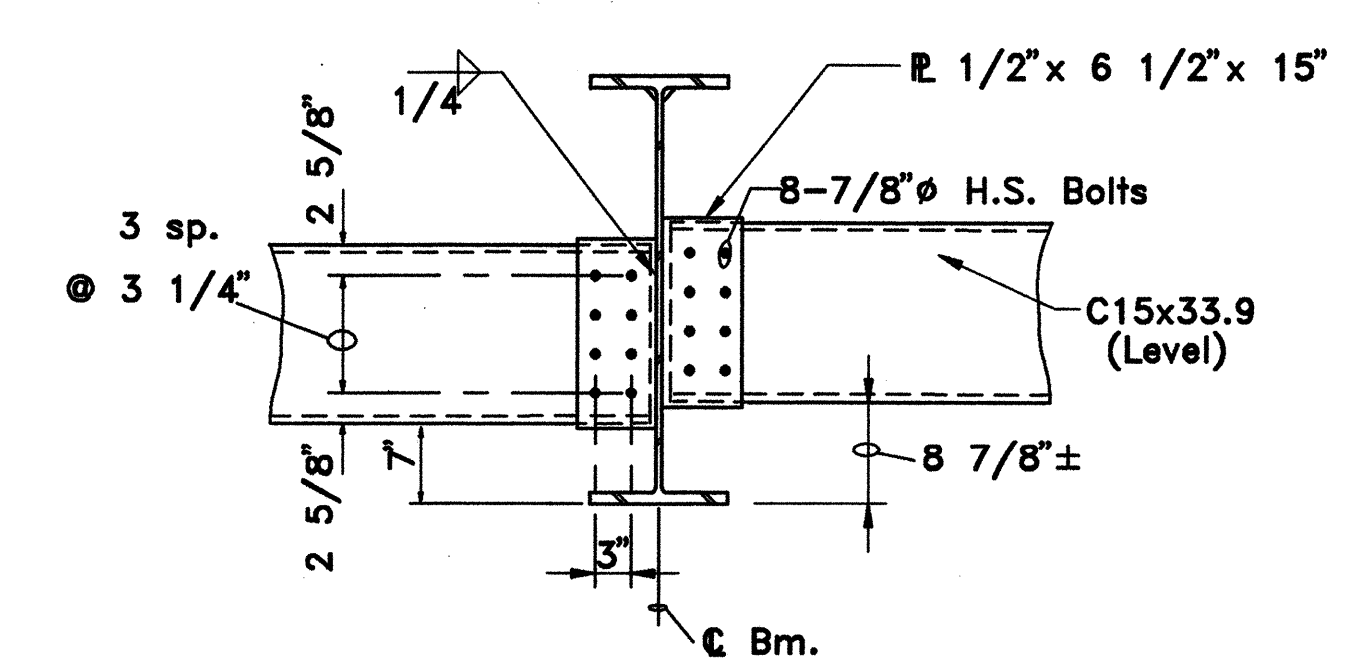
WEB SPLICE

FLANGE SPLICE

FIELD SPLICE #4



EXT. DIAPHRAGM CONNECTION

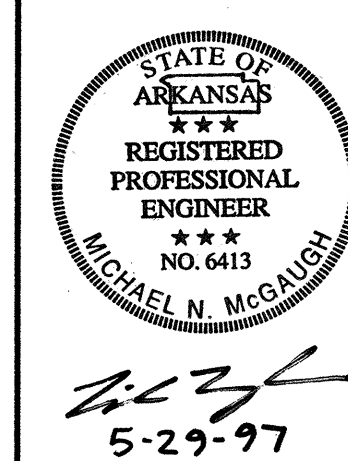


INT. DIAPHRAGM CONNECTION

BRIDGE 3731 DETAILS - W-36 BEAMS

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

- NOTES:
- All splice plates shall be AASHTO M270, GR.50W.
  - Field connections to be made using high strength AASHTO M164 Type 3 Bolts (sizes & spacings as shown on the drawings). Bolts to be placed with the heads on the outside face of the exterior beam and on the bottom of the beam flanges.
  - Diaphragms shall be installed as beams are erected. Bolts in diaphragm and splice connections shall be properly installed and tightened in accordance with subsection 807.71 of the standard specifications prior to pouring of slabs.



ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS	
FRAMING DETAILS 1 OF 2 BRIDGE A&B 3727 BRIDGE A&B 3731	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.	
DRAWN BY: JHS	DATE: 3/98
CHECKED BY: C.D.E.	DATE: 5/97
DESIGNED BY: C.D.E.	DATE: 9/94
SCALE: AS NOTED	
BRIDGE NO. A & B 3727 A & B 3731	DRAWING NO. 37985

ACAD SCALE: 3/4"=1'-0"

C:\PROJ\AHTD\CORD\GRD03

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OCT 15 1998

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		R10055	70	116
1 A&B 3727 A&B 3731 DETAILS 37986								

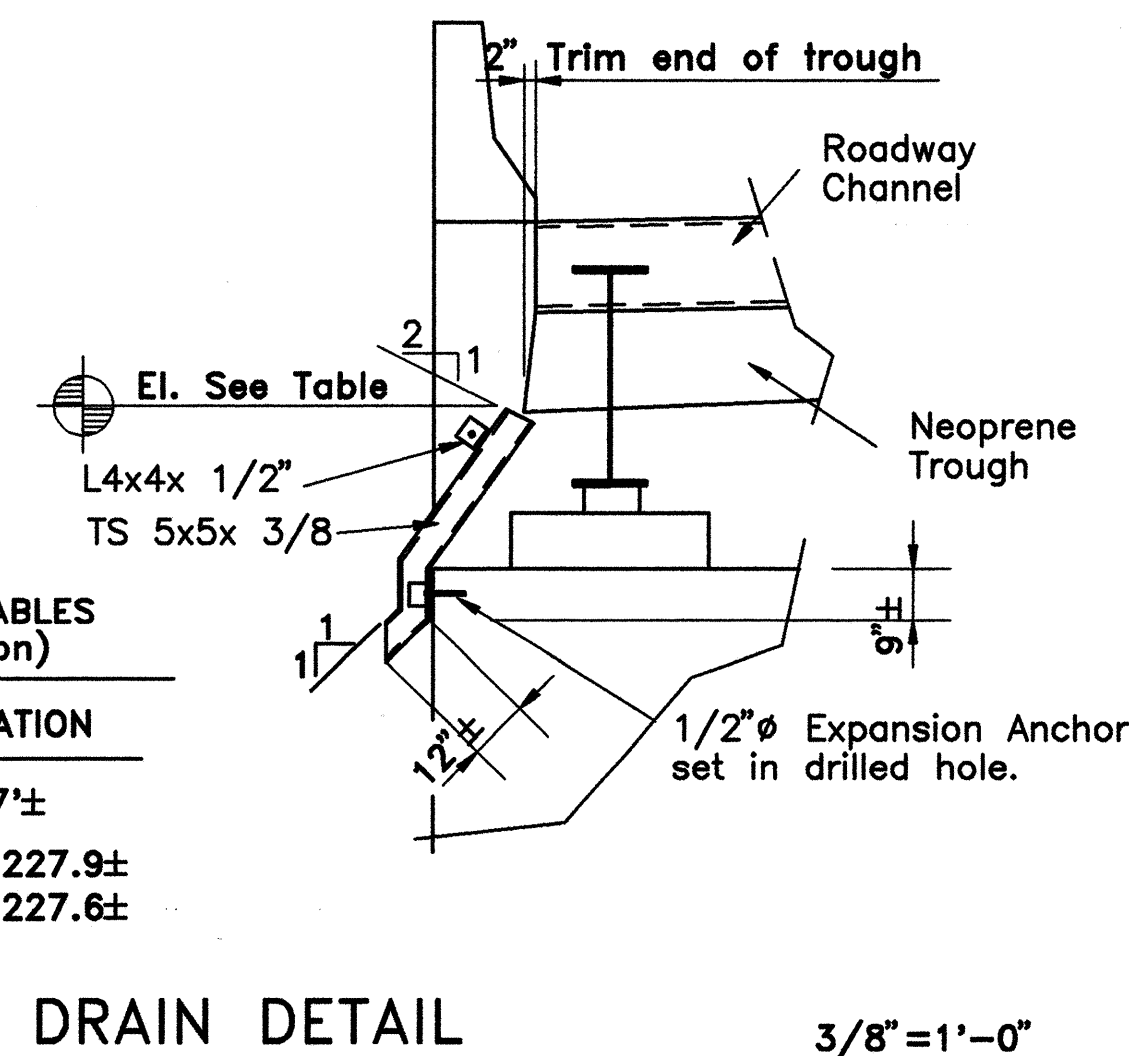
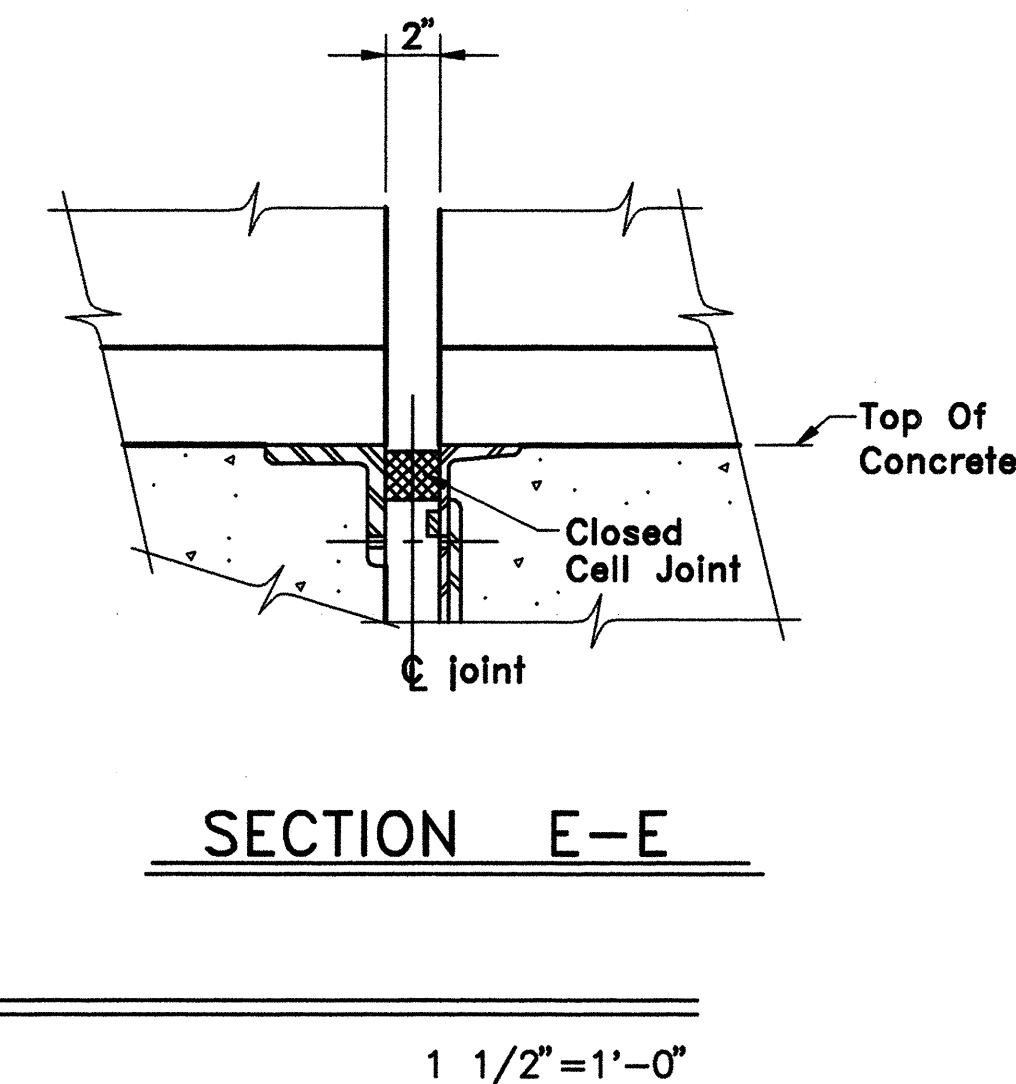
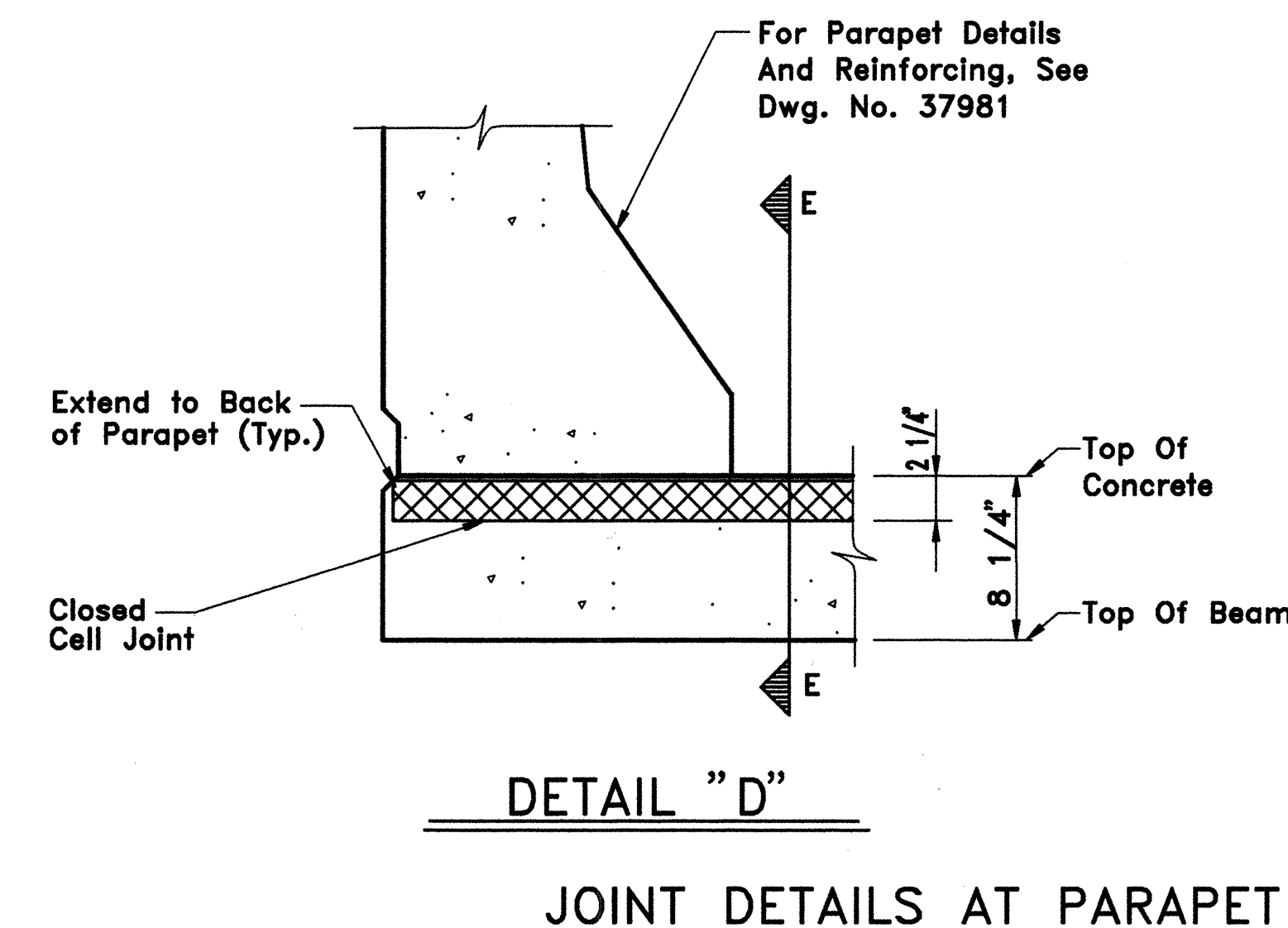
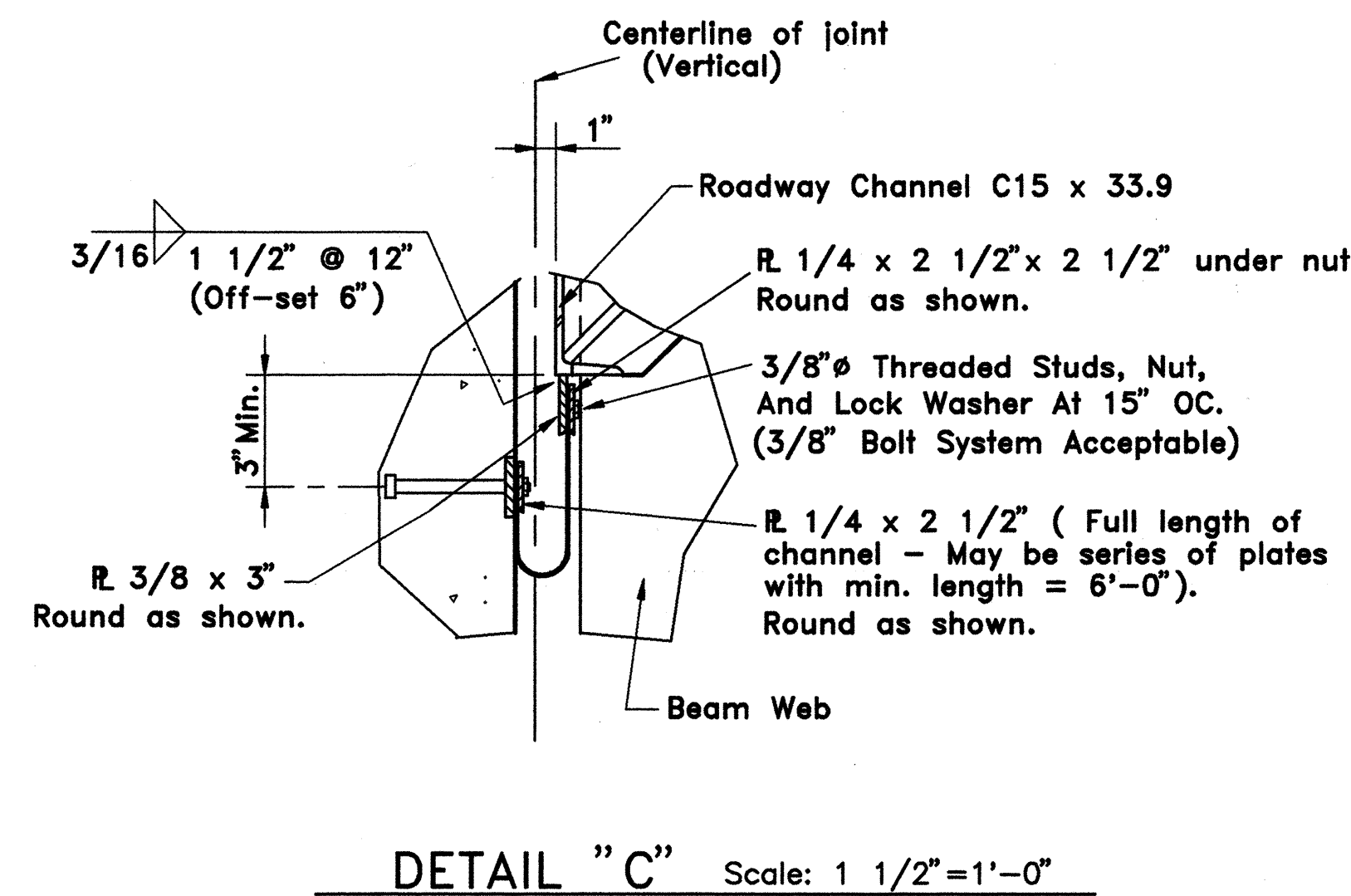
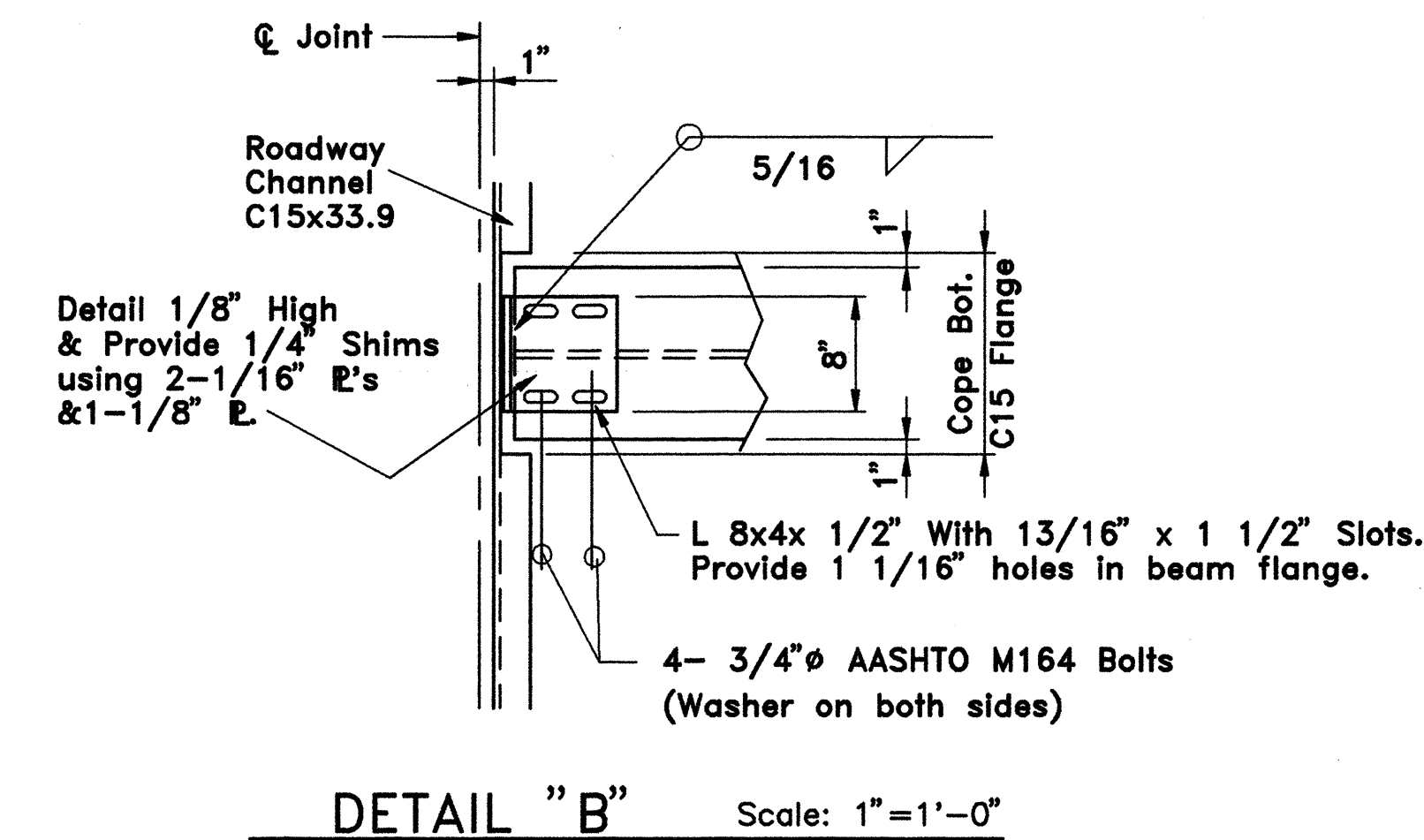
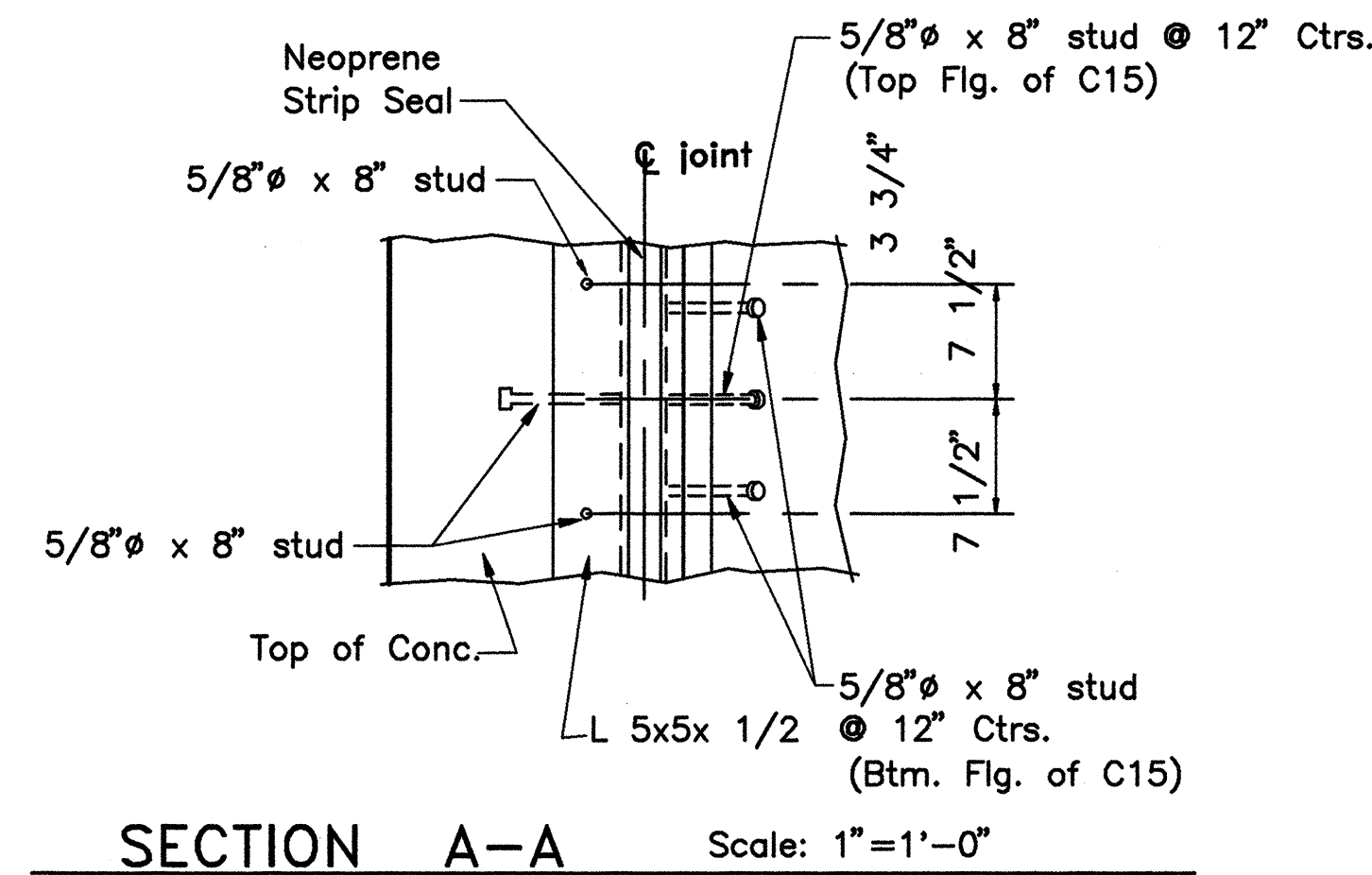
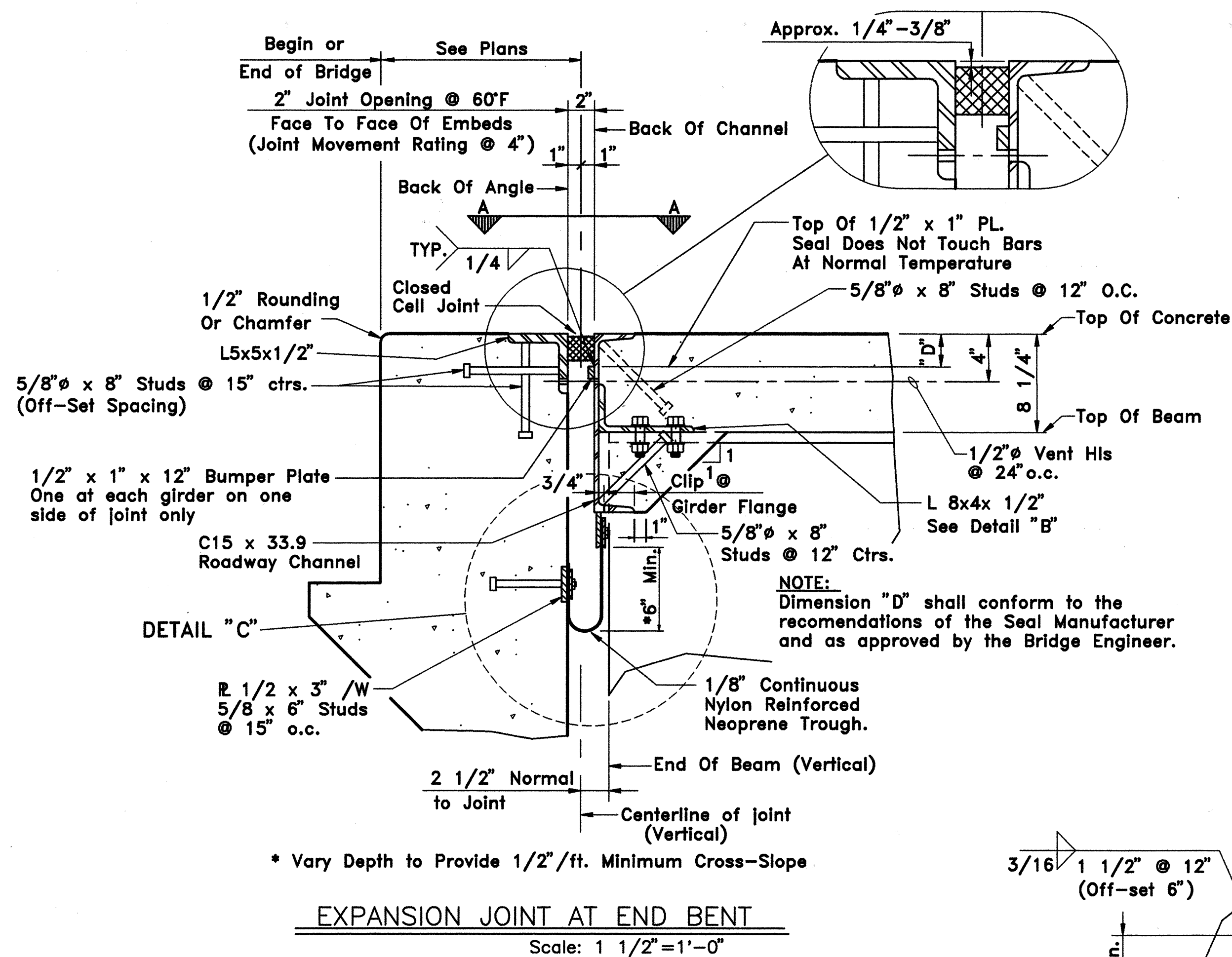
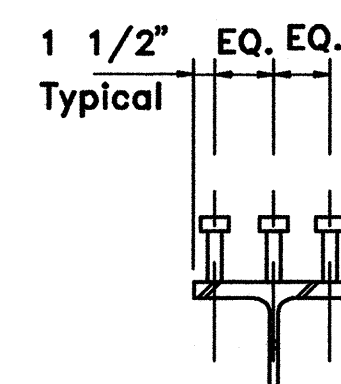


TABLE OF VARIABLES  
(Trough Elevation)

BRIDGE	ELEVATION
3727	188.7±
3731	Bt.1 227.9±
3731	Bt.4 227.6±

TYPICAL DRAIN DETAIL

@ END BENTS

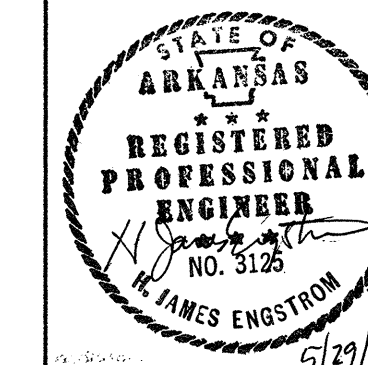


SHEAR CONNECTOR DETAIL

Stud Shear Connectors shown shall be 7/8" x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the beam flange in accordance with the recommendations of the Manufacturer. 3/4" studs may be used in place of the 7/8" studs shown at the ratio of 1.361-3/4" studs in place of one 7/8" stud. 7/8" studs will be used as basis for measurement of structural steel in shear connectors. Maximum stud spacing= 24".

#### NOTES:

- Roadway Channel and Embedded PLs and Angles to be AASHTO M270, GR.36 Material and to be painted. Do not paint areas in contact with or embedded in concrete. Material and painting will not be paid for directly but will be considered subsidiary to the item Structural Steel in Beam Spans (AASHTO M270, GR.50W). Paint According To Section 638.
- 1/8" Continuous Nylon Reinforced Neoprene Trough material to meet subsection 807.20 of the Standard Specifications. Payment will be considered subsidiary to the item of "Structural Steel in Beam Spans (AASHTO M270, GR.50W)".
- Drains may be AASHTO M270, GR.36 Structural Steel and hot-dipped galv. after fabrication in accordance with AASHTO M232, or drains may be AASHTO M270, GR.50W Structural Steel. Measured and paid for as Structural Steel in Beam Spans. Galvanizing and anchor installation will not be paid for directly but will be considered subsidiary to the item of Structural Steel in Beam Spans (AASHTO M270, GR.50W).



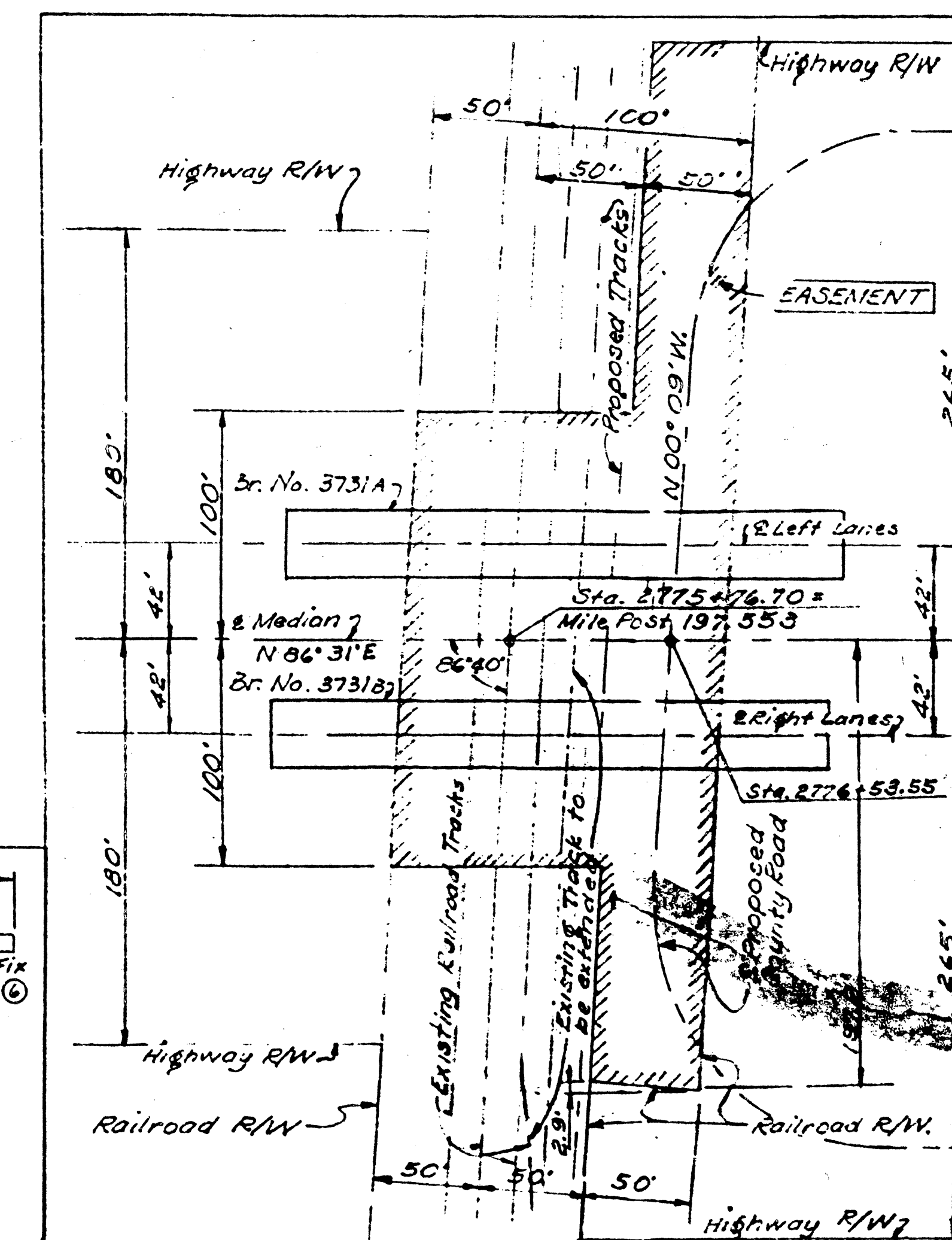
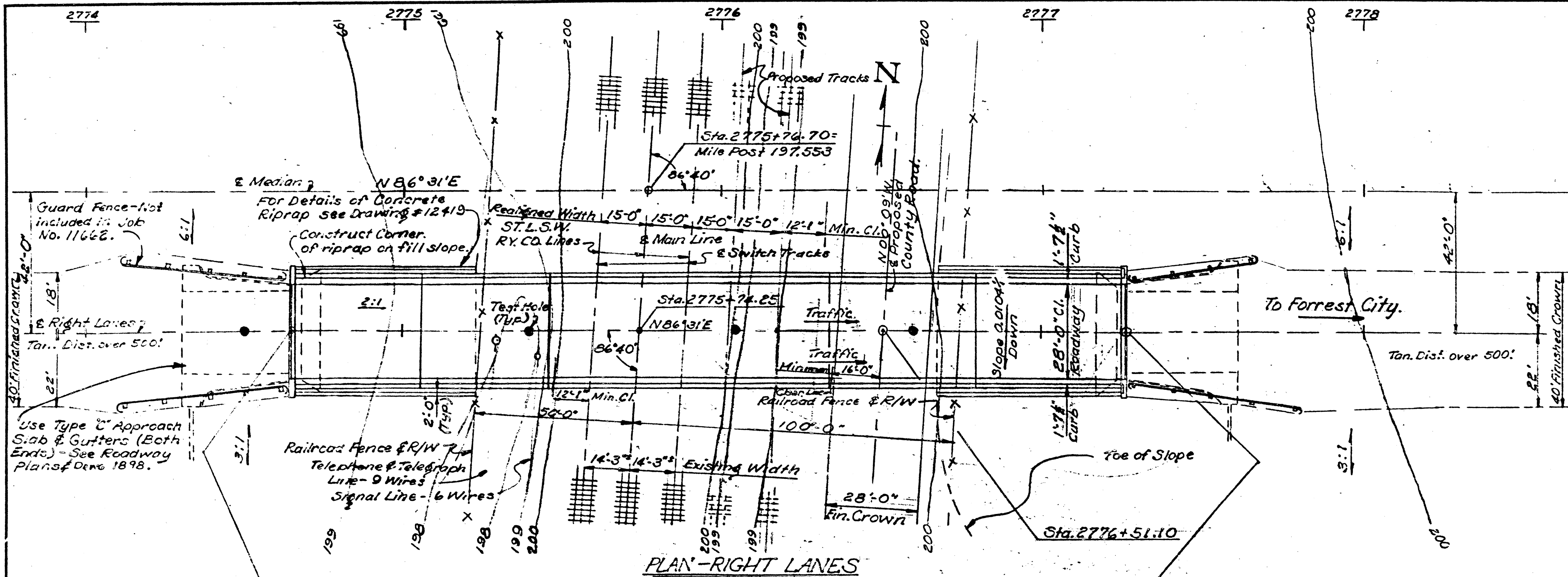
ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS			
FRAMING DETAILS 2 OF 2			
BRIDGE A&B 3727 BRIDGE A&B 3731			
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.			
DRAWN BY: GE	DATE: 3/98	SCALE: As Shown	
CHECKED BY: CDE	DATE: 5/97		
DESIGNED BY: CDE	DATE: 9/94		
BRIDGE NO. A & B 3727 A & B 3731		DRAWING NO. 37986	





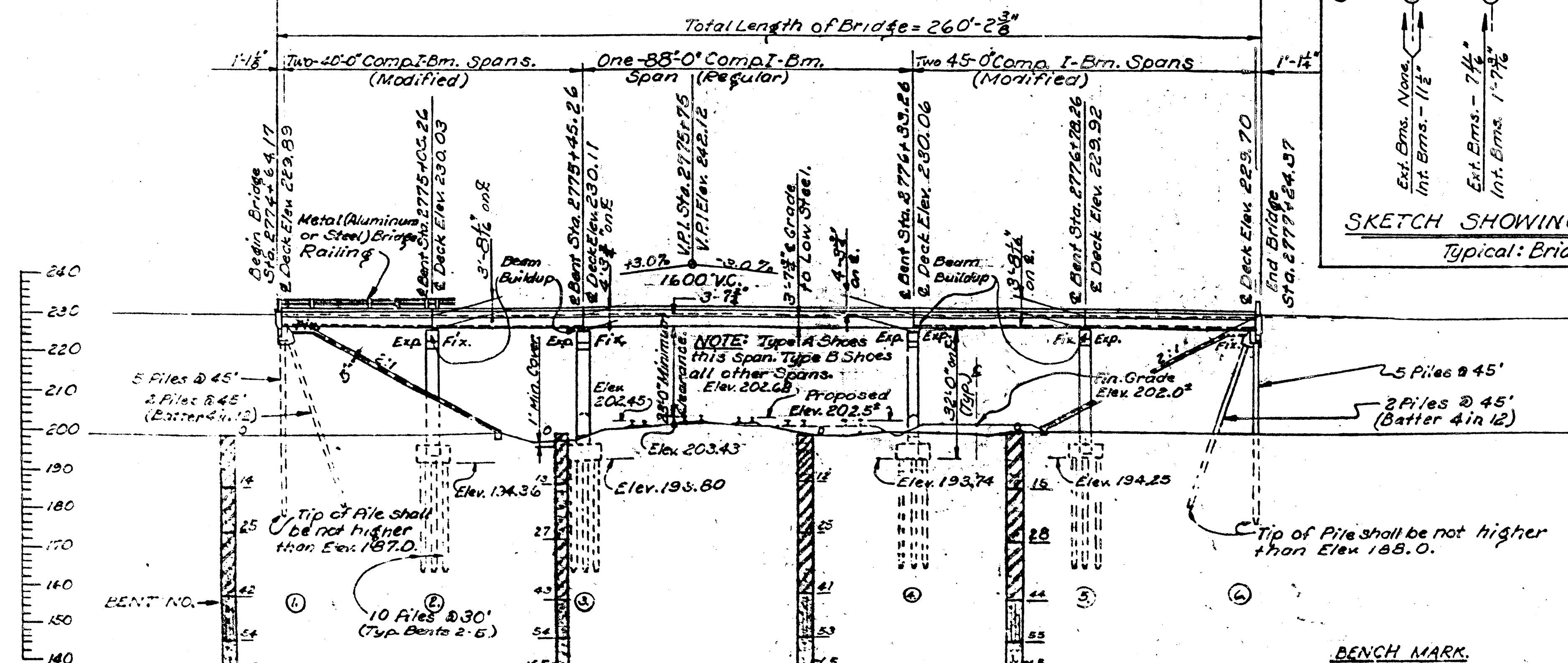


FED. ROAD No.	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET No.	TOTAL SHEETS
6	ARK.			72	116
JOB No.	R10055				



LOCATION MAP  
Scale: 1"=50'

NOTE:  
For General Notes see Drawing No. 12420.



BENCH MARK.

Nail in side Power Pole  
285' Lt. 2 Median Sta. 27.75+60.  
Elev. 200.69.

42' Rt. Med. Sta. 3774+50.  
Top of Hole Elev. 198.60.  
14' Firm Brown Sandy Clay-Md. st.  
11' Firm Brown Sandy Clay-Mostly  
Sand-Dry.  
17' Med. Firm Brown Sandy Clay-Wet.  
12' Firm Gray Silty Sand-Wet.  
11' Comp. Fine Gray Water Sealing Sand.

42 Rt. Med. Sta. 2775 ± 40.  
Top of Hole Elev. 198.7  
13 Firm Brown Sandy Clay-Moist.  
14 Firm Brown Sandy Clay, Mostly  
Sara.  
16 Med. Firm Brown Sandy Clay-Moist.  
17 Firm Gray Silty Sand-Moist.  
18 Comp. Fine Gray Water Bear. Sand.

42 Rt. Med. Sta. 2776 + GS.  
Top of Hole Elev. 198.5  
12 Firm Brown Sandy Clay - Moist.  
13 Firm Br. Sandy Clay, Mostly  
Sand - Dry.  
16 Med. Firm Brown Sandy Clay - Mo.  
12 Firm Fine Gray Silty Sand - Wet.  
10 Comp. Fine Gray Sand - Wet.

42' Rt. Med. Sta. 2776±60.  
Top of Hole Elev. 200.9.  
15' Firm Brown Sandy Clay-Moist.  
13' Firm Brown Sandy Clay Moist.  
Sand-Dry.  
16' Med. Firm Brown Sandy Clay-Wet.  
11' Firm Fine Gray Silty Sand-Wet.  
10' Comp. Fine Gray Sand-Wet.

ELEVATION-RIGHT LANES

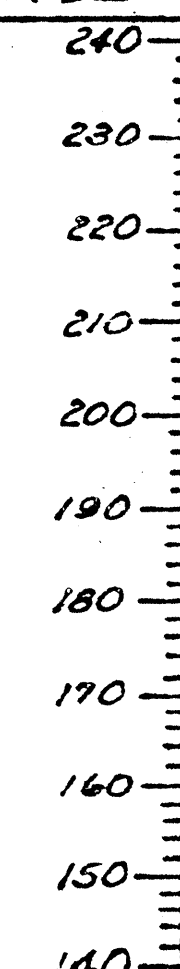


EXHIBIT B  
(RIGHT LANES)

LAYOUT OF OVERPASS OVER  
ST. LOUIS-SOUTHWESTERN RAILWAY  
HWY. 17 INTERCHANGE-ST. FRANCIS CO. LINE

INT ROUTE 40 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION

140- Revised: Note for  
future R.R. tracks on  
location. R.R. tracks 10-63 Deleted 6-24-63  
Revised: R.R. Eastmont  
TR 2-25-63, 8-6-24-63 8-14-63  
Revised: Span Lengths  
TR 11-28-62, 6-24-63 8-14-63  
Trac. Minor V.R. 2-24-63  
Revised: County Road and Track  
Locations. TR 8-14-63.

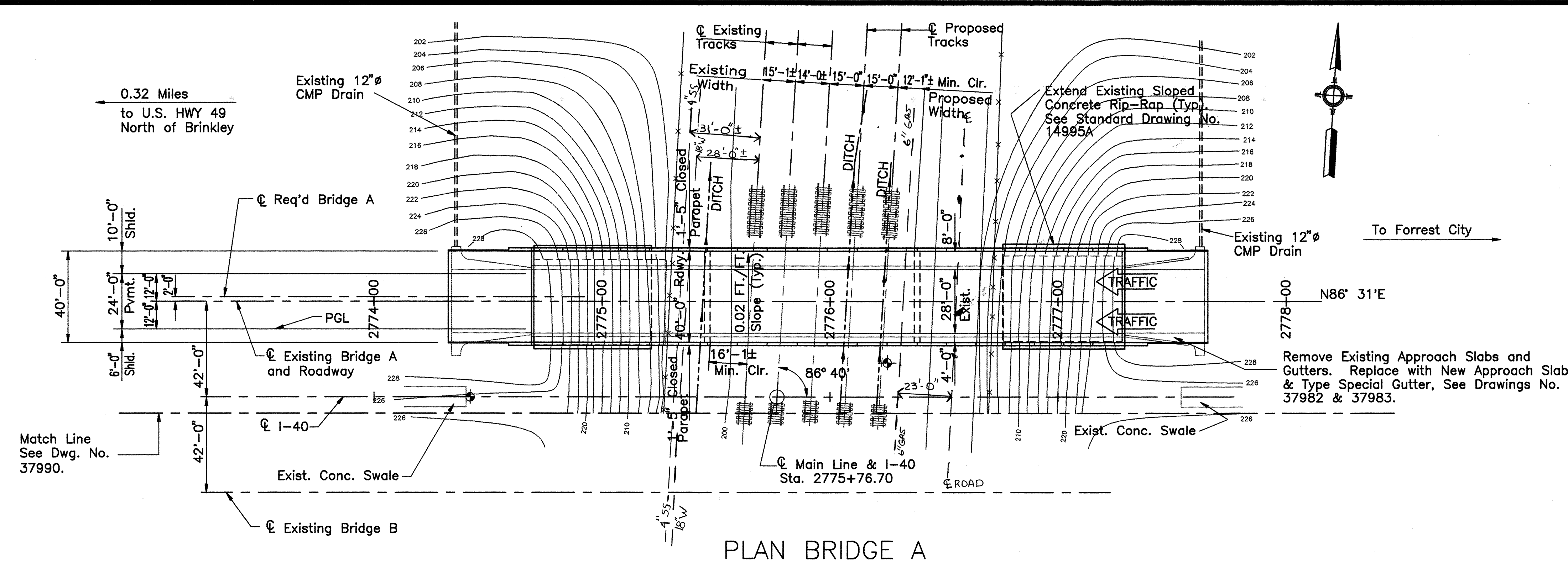
B-74-68] LITTLE ROCK, ARK

ck DRAWN BY: JP DATE: 8-8-62  
TRACED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ SCALE: 1"=20' As Noted.

CHECKED BY gzh DATE 4-30-63 37988  
BRIDGE NO. 373/B DRAWING NO. 1-421



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		R10055	73	116
				① A3731	Layout			37989



Denotes Boring Location

For Repair of Concrete Rip-Rap at Bents and Undermined Locations See Sheet 37993

# BORING LOGS

Sta. 2774+59 @ I-40

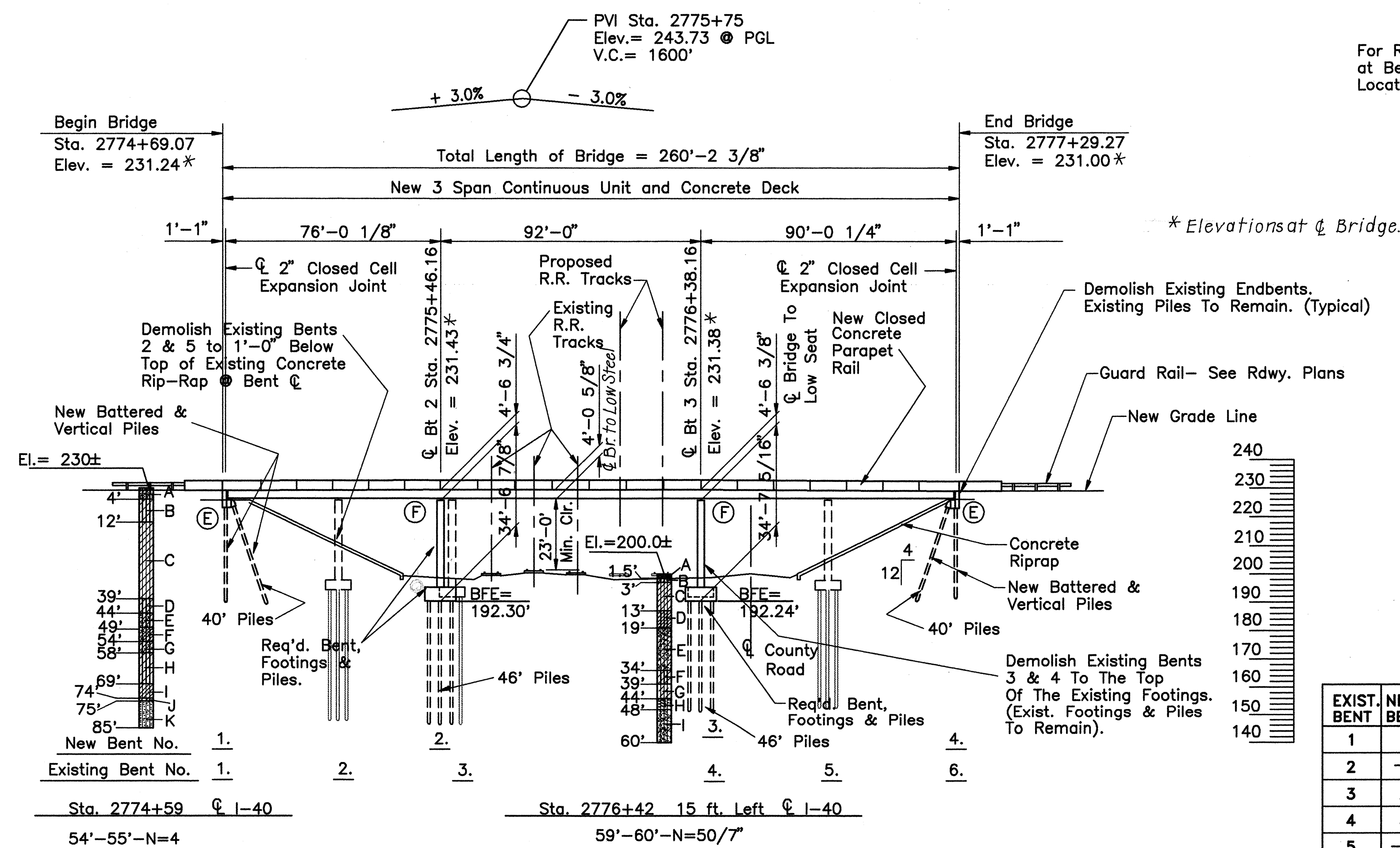
- A-Medium-Dense Tan Sandy Silt With Clay Pockets
- B-Very Stiff Tan & Gray Clayey Silt With Ferrous Nodules & Clay Pockets
- C-Very Stiff Tan & Gray Silty Clay With Ferrous Stains
- D-Stiff Tan Clayey Silt
- E- firm, slightly sandy below 44 ft.
- F- very stiff below 49 ft.
- G-Soft Gray & Tan Clayey Silt
- H- stiff to very stiff below 58 ft.
- I-Very Stiff Gray Silty Clay
- J- stiff below 74 ft.
- K-Dense Gray Silty Fine Sand

Sta. 2776+42 15 ft. Left @ I-40

- A-Dense Reddish Tan Sand With Coarse Gravel (Fill)
- B-Very Stiff Tan Clayey Silt With Ferrous Stains
- C-Very Stiff Tan Silty Clay With Ferrous Stains, Occasional Sand Pockets & Trace Fine Gravel
- stiff, 5.5 to 6.5 ft.
- D-Firm To Stiff Reddish Tan Clayey Silt
- E-Medium-Dense Reddish Tan Silty Fine Sand, Slightly Clayey (Wet)
- F-Firm Brown Clayey Silt
- G-Firm Gray Silty Clay
- H-Medium-Dense Gray Silty Fine Sand
- I-Medium-Dense Gray Fine To Medium Sand, Slightly Silty With Occasional Clay Seams

# NOTES:

- Stations & Dimensions Based Upon Existing Plans
- (E) Indicates Expansion Bearing  
(F) Indicates Fixed Bearing
- Roadway Elevations Shown Are At @ New Bridges.
- Vertical Dimensions Are From @ Bridge To Top Of Low Riser.
- For General Notes See Drawing No. 37968.
- For Additional Notes And Boring Logs, See Drawing No. 37990.
- Temporary Shoring To Be Provided By The Contractor As Req'd. To Maintain The Existing Track And Protect Workers. Shoring Shall Conform To The Requirements Of The Southern Pacific Transportation Co. (SPTCO) Supplemental Specification For Shoring. The Minimum Distance From @ Of Track To The Nearest Face Of Shoring Shall Be 8'-6". Shoring Plan And Construction Sequence Shall Be Approved By The Engineer And SPTCO Prior To Construction.



EXIST. BENT	NEW BENT	EXISTING PILE TIP ELEVATIONS*
1	1	EL. 190.00
2	—	
3	2	EL. 147.00
4	3	EL. 152.00
5	—	
6	4	EL. 192.00

\*Existing pile tip elevations are the lowest average pile tip elevations at the bents. At minimum, required piles shall be driven to the existing pile tip elevation.

ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS	
<b>STRUCTURE PLAN &amp; ELEVATION</b> <b>1 of 2 BRIDGE A3731 OVER</b> <b>ST. LOUIS - SOUTHWESTERN RAILWAY</b>	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.	
DRAWN BY: JHS CHECKED BY: CDE DESIGNED BY: CDE	DATE: 8/94 DATE: 5-97 DATE: 8-94
SCALE: 1" = 30'-0"	
BRIDGE NO. A3731	DRAWING NO. 37989

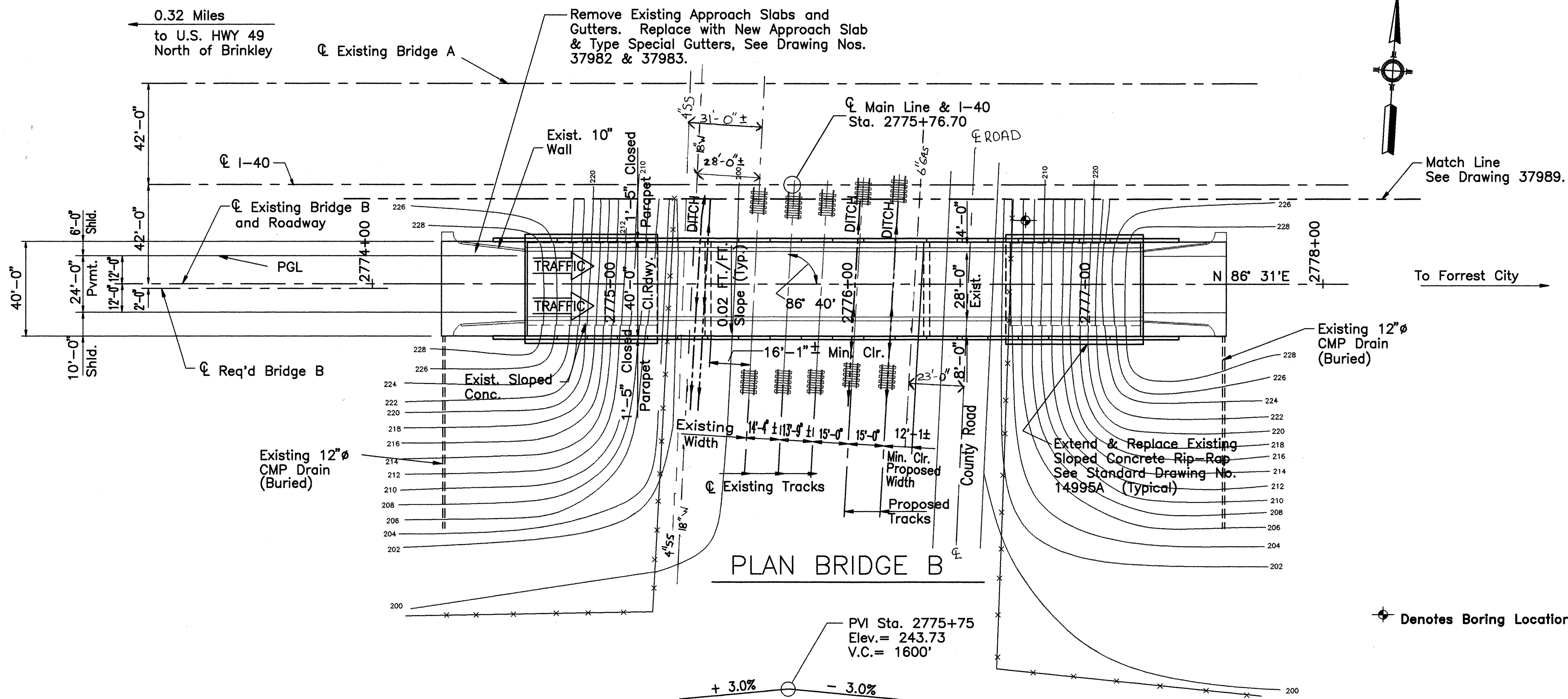
ACAD SCALE: 1"=30'

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MICROFILMED  
OCT 16 1998



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		R10055	74	116
							B3731 Layout	37990



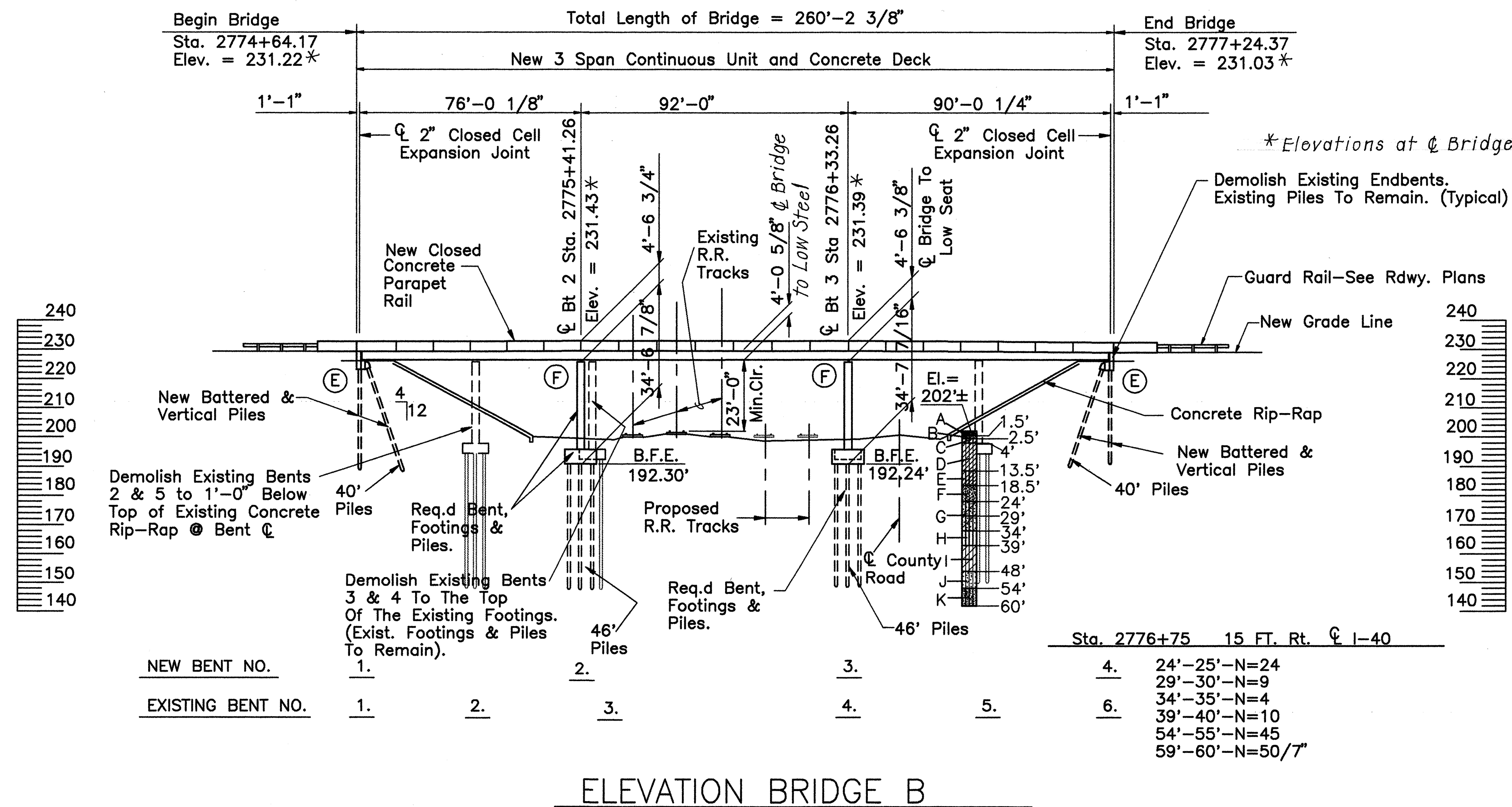
# BORING LOGS

Sta. 2776+75 15 FT. Rt.  $\phi$  I-40

- A-Reddish Tan Sand With Coarse Gravel (Fill)
- B-Stiff Reddish Tan Clayey Silt
- C-Very Stiff Gray Clayey Silt With Clay Pockets and Ferrous Stains
- D-Very Stiff Tan And Gray Silty Clay With Ferrous Nodules And Silt Pockets
- E-Stiff To Firm Reddish Tan Clayey Silt
- F-Loose Tan Silty Fine Sand
- G-Medium-Dense Reddish Tan Sandy Silt, Slightly Clayey - loose below 29 ft.
- H-Loose Brown Silt
- I-Stiff Gray Silty Clay With Silt Partings
- J-Loose To Medium-Dense Gray Sandy Silt
- K-Dense Gray Fine To Medium Sand, Slightly Silty With Trace Fine Gravel

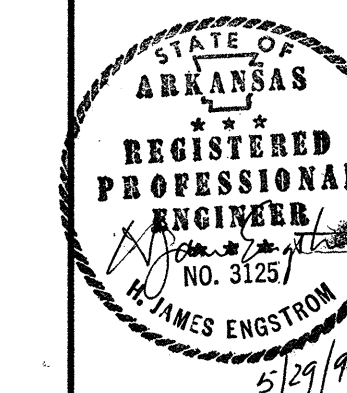
# NOTES:

- Stations & Dimensions Based Upon Existing Plans
- (E) Indicates Expansion Bearing  
(F) Indicates Fixed Bearing
- Roadway Elevations Shown Are At  $\phi$  New Bridges.
- Vertical Dimensions Are From  $\phi$  Bridge To Top Of Low Riser.
- For General Notes See Drawing No. 37968.
- For Additional Notes And Boring Logs See Dwg. No. 37989.
- Temporary Shoring To Be Provided By The Contractor As Req'd. To Maintain The Existing Track And Protect Workers. Shoring Shall Conform To The Requirements Of The Southern Pacific Transportation Co. (SPTCO) Supplemental Specification For Shoring. The Minimum Distance From  $\phi$  Of Track To The Nearest Face Of Shoring Shall Be 8'-6". Shoring Plan And Construction Sequence Shall Be Approved By The Engineer And SPTCO Prior To Construction.



EXIST. BENT	NEW BENT	EXISTING PILE TIP ELEVATIONS*
1	1	EL. 190.00
2	—	—
3	2	EL. 149.00
4	3	EL. 150.00
5	—	—
6	4	EL. 192.00

\*Existing pile tip elevations are the lowest average pile tip elevations at the bents. At minimum, required piles shall be driven to the existing pile tip elevation.



ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS	
STRUCTURE PLAN & ELEVATION 2 of 2 BRIDGE B3731 OVER ST. LOUIS - SOUTHWESTERN RAILWAY	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.	
DRAWN BY: JHS CHECKED BY: CDE DESIGNED BY: CDE	DATE: 8-94 DATE: 5-97 DATE: 8-94
BRIDGE NO. B3731	DRAWING NO. 37990

ACAD SCALE: 1" = 30'

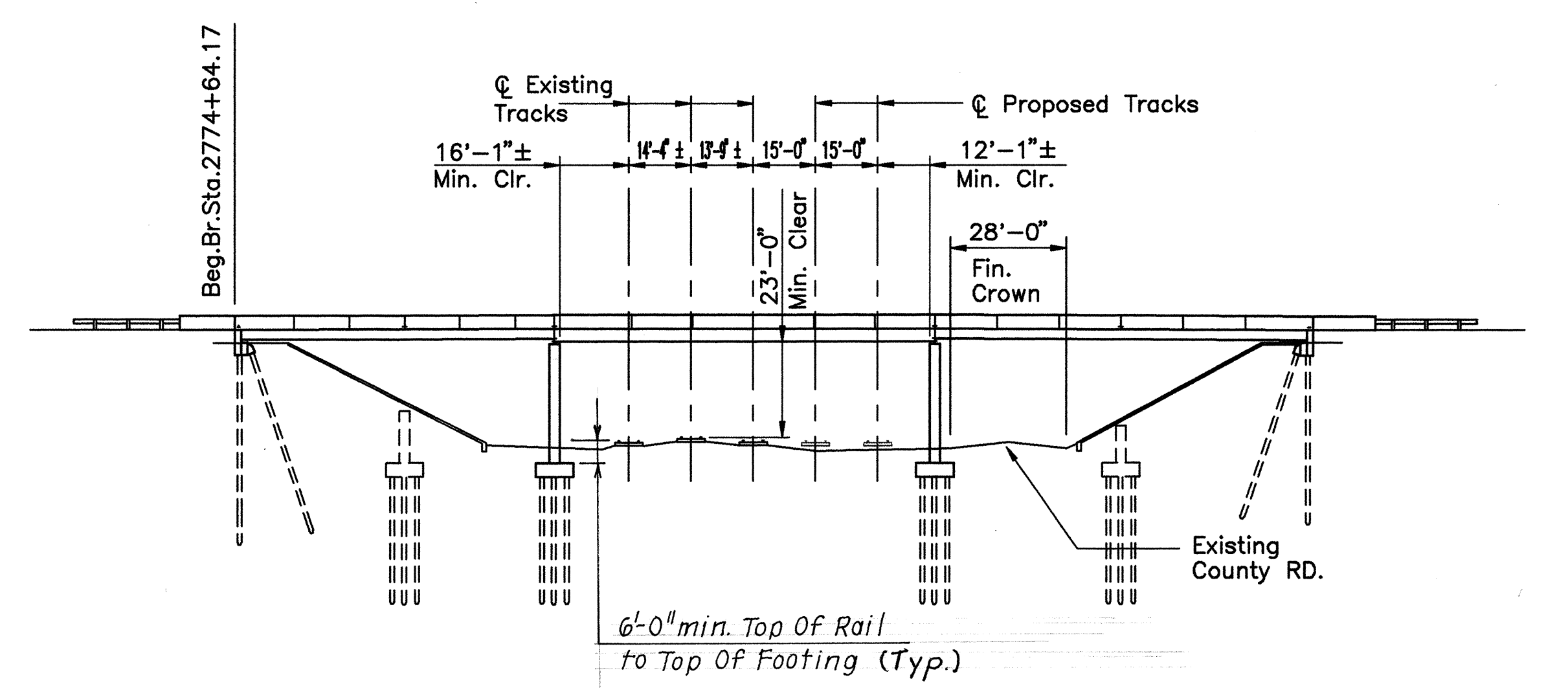
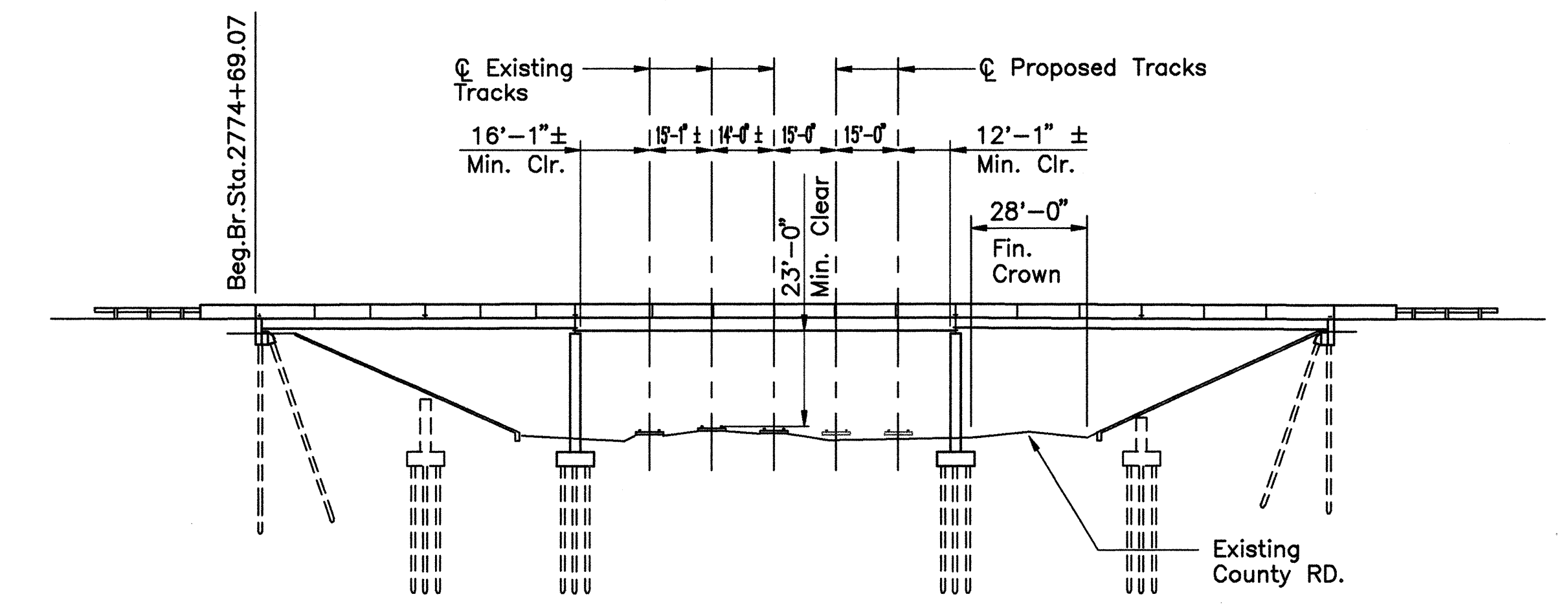
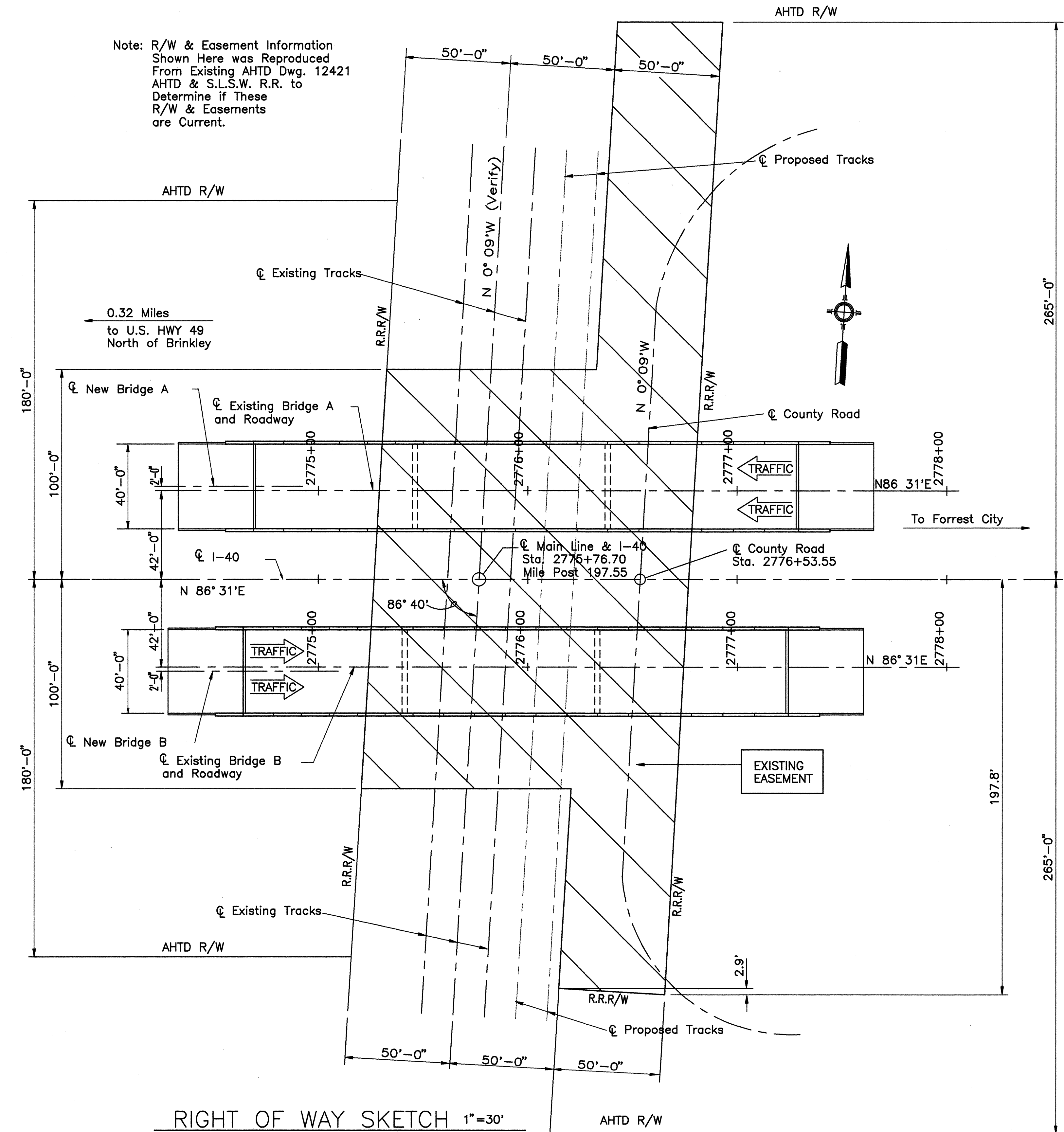
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OCT 16 1998

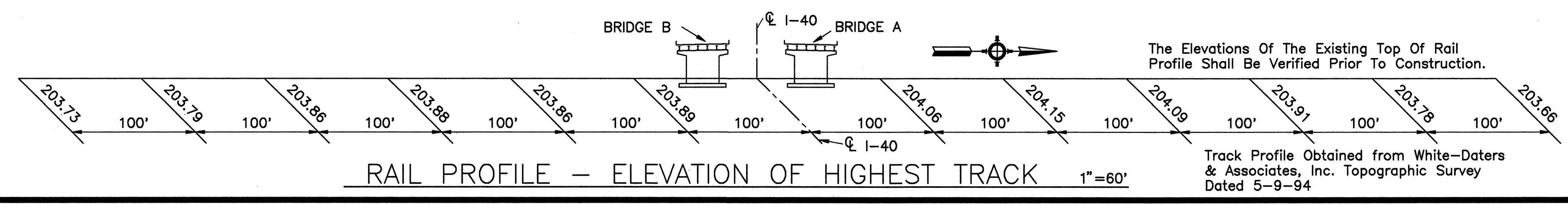


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		R10055	75	116
① A & B 3731 R/W SKETCH								37991

Note: R/W & Easement Information Shown Here was Reproduced From Existing AHTD Dwg. 12421 AHTD & S.L.S.W. R.R. to Determine if These R/W & Easements are Current.



NOTE:  
Right Of Way Sketch Shown For Informational Purposes Only.  
See Drawings Nos. 37989 and 37990 For Bridges Layout.



ENGSTROM/MODJESKI AND MASTERS  
CONSULTING ENGINEERS

**RIGHT OF WAY SKETCH & ELEVATIONS  
BRIDGE A & B 3731 OVER  
ST. LOUIS - SOUTHWESTERN RAILWAY**

MONROE COUNTY  
INTERSTATE ROUTE 40 SEC. 43  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: WRW	DATE: 5/94
CHECKED BY: CDE	DATE: 5/97
DESIGNED BY:	DATE:

BRIDGE NO. A&B 3731

SCALE: AS NOTED

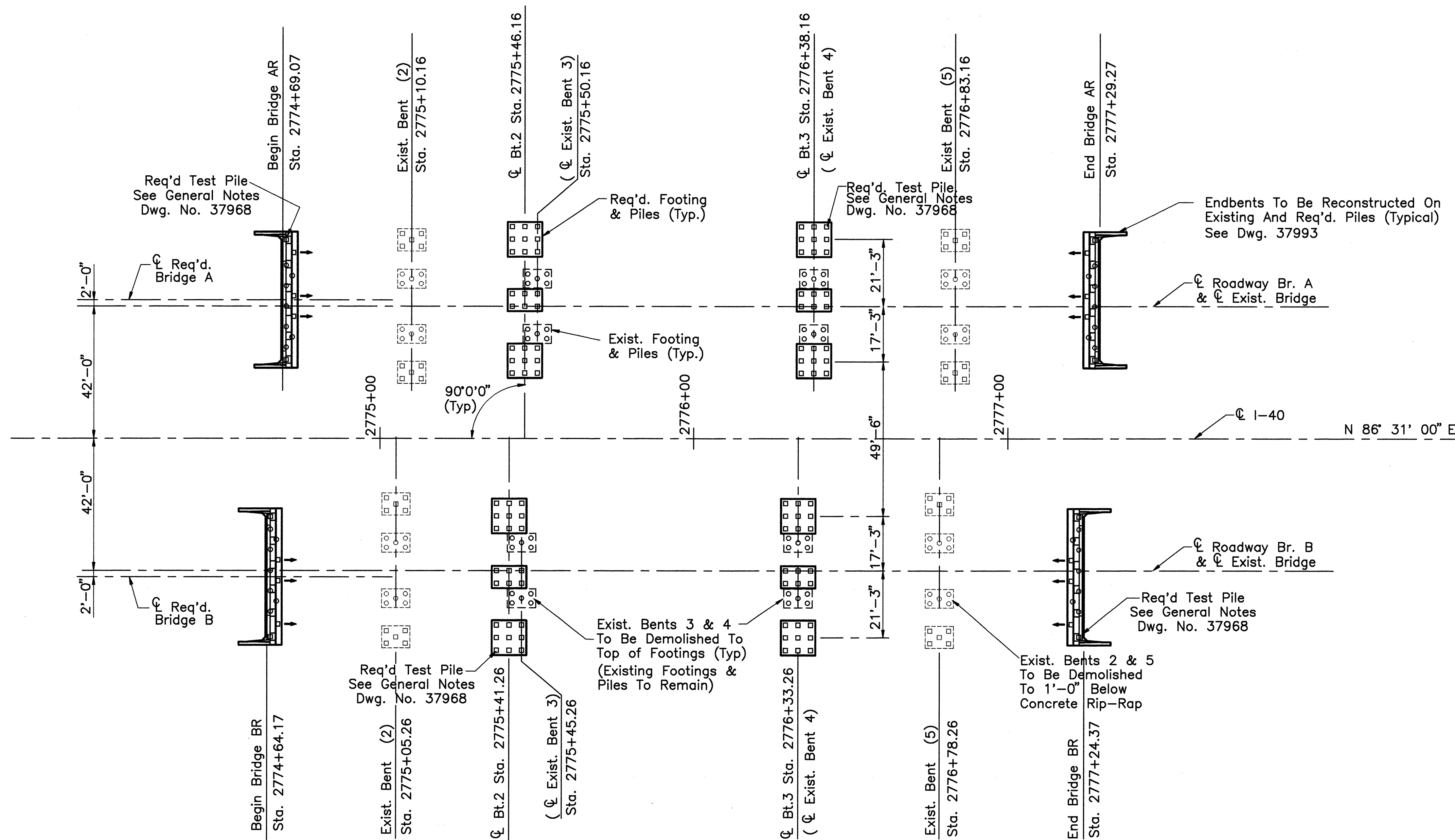
DRAWING NO. 37991

ACAD SCALE: 1"=30'-0"

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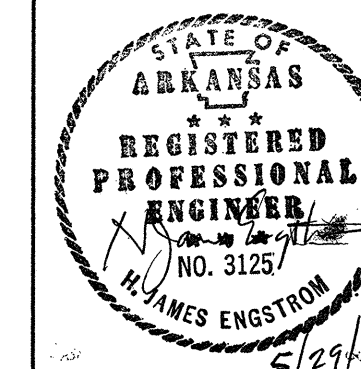
UCT 16 1998

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	R10055	76	116	
				① A & B 3731 FTG PLAN				37992



## NOTES:

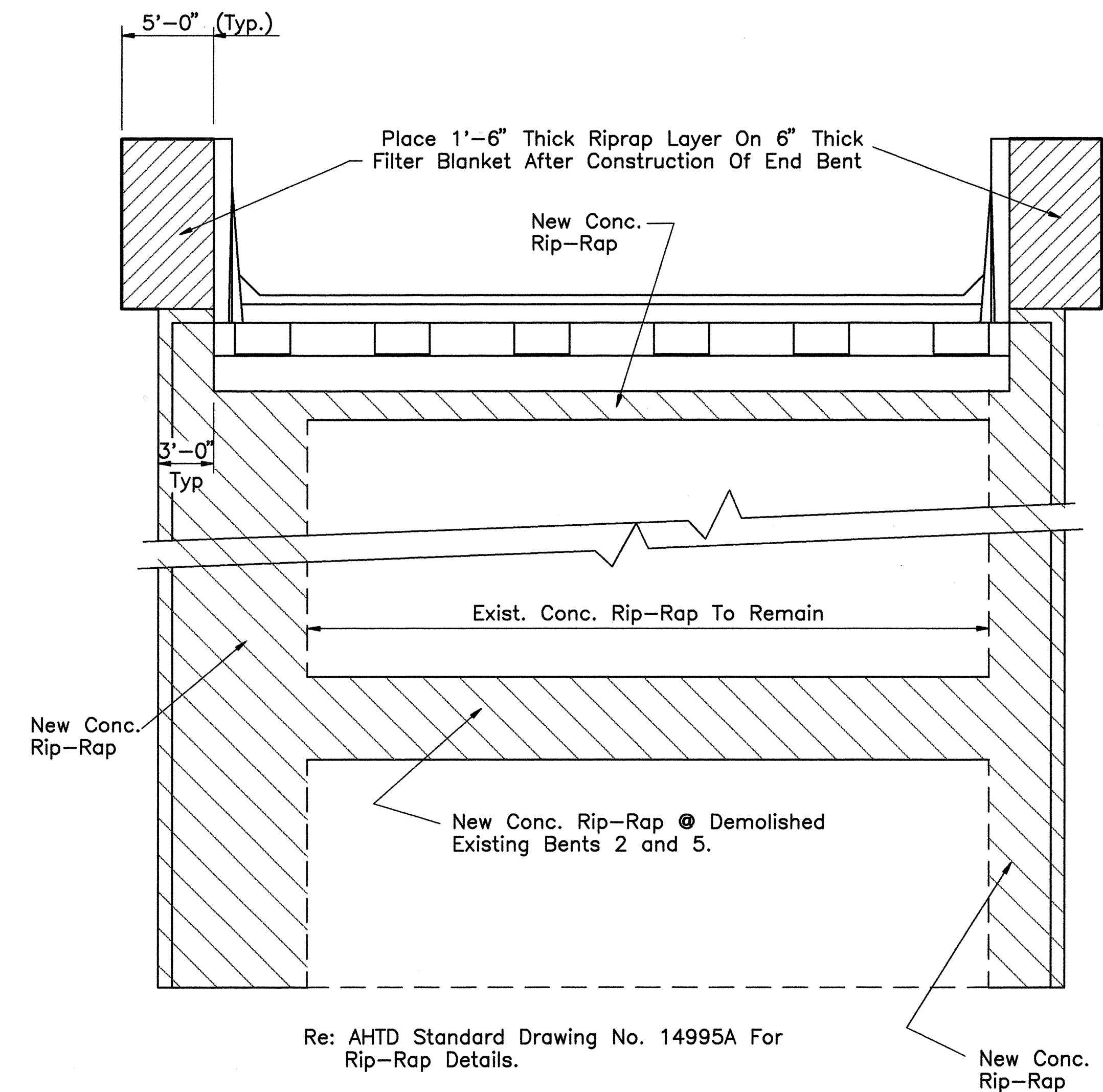
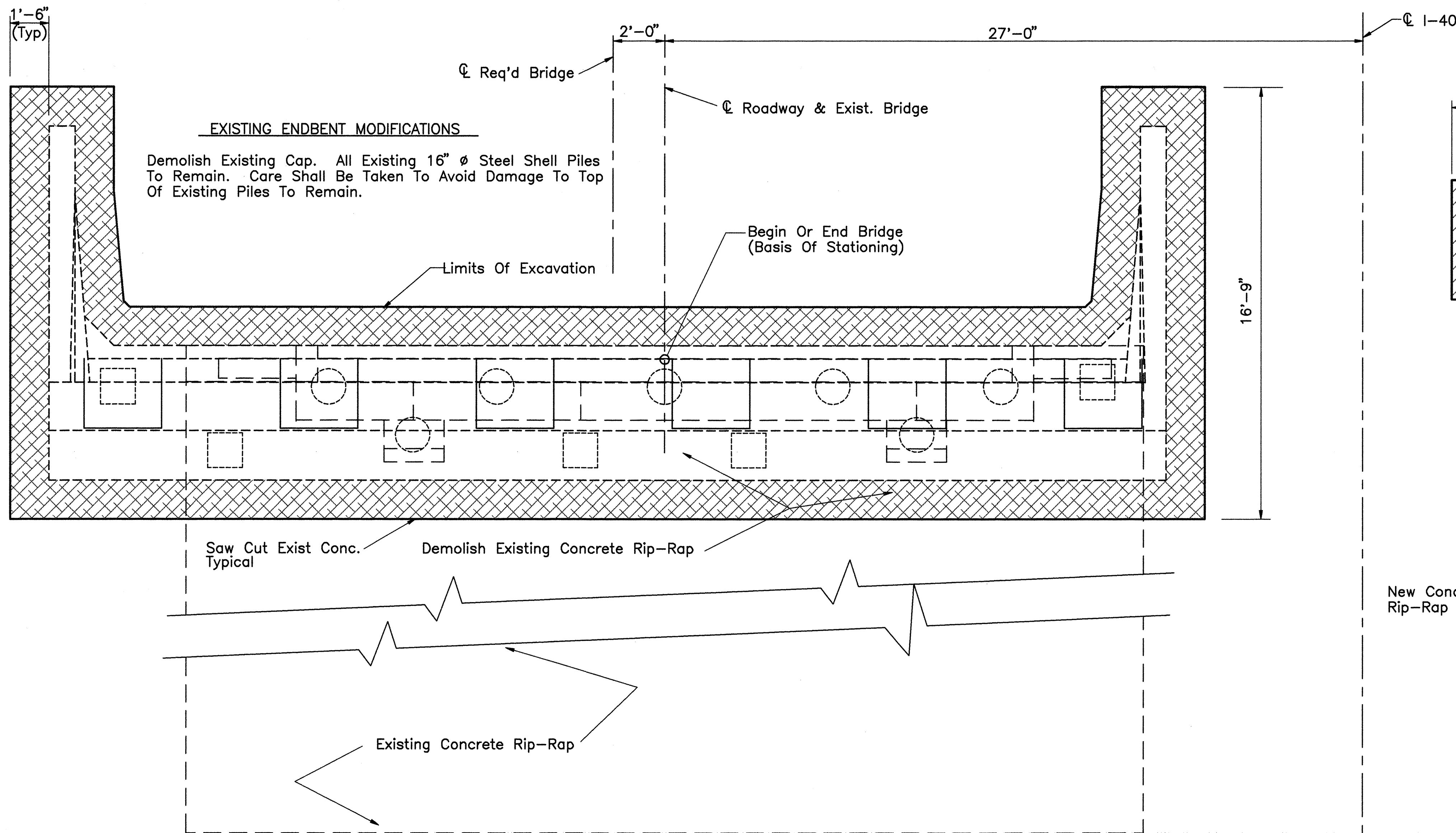
- Stations And Dimensions Based Upon Existing Plans.
- Restoration Of Dumped Riprap Protection And Concrete Riprap Protection Required After End Bent Construction For Details See Dwg. No. 37993.

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OCT 16 1998

ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS	
FOOTING PLAN BRIDGE A & B 3731 OVER ST. LOUIS - SOUTHWESTERN RAILWAY	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.	
DRAWN BY: JHS DATE: 9/94 CHECKED BY: CDE DATE: 5/97 DESIGNED BY: CDE DATE: 9/94	SCALE: 1" = 20'-0"
BRIDGE NO. A & B 3731	DRAWING NO. 37992



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		R10055	77	116
1 A & B 3731 BENT								37993



NOTE:

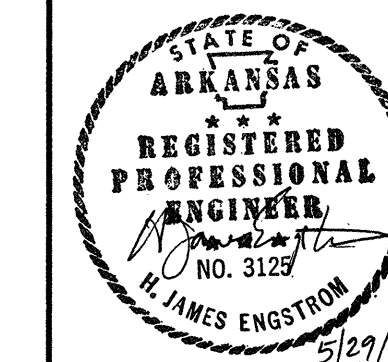
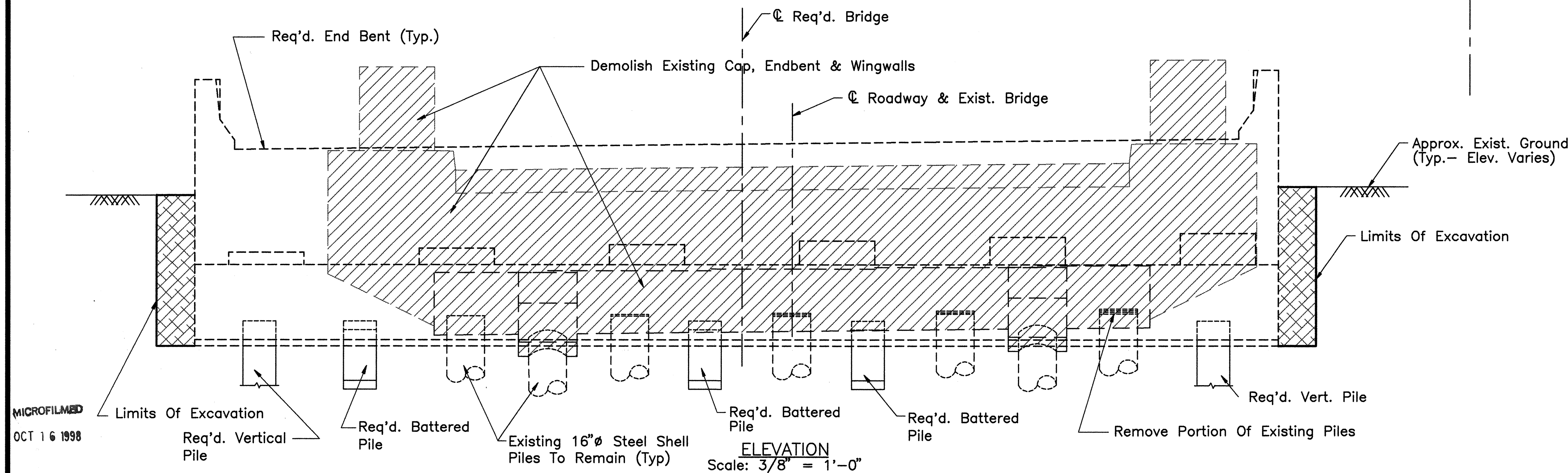
If Voids Are Discovered Under Existing Concrete Riprap During Construction, They Shall Be Filled With Grout By The Contractor. Grout Shall Be Paid For As Conc. Riprap.

#### RIPRAP DETAIL

No Scale

NOTES:

For Notes Pertaining To This Sheet, See Dwg. No. 37994.

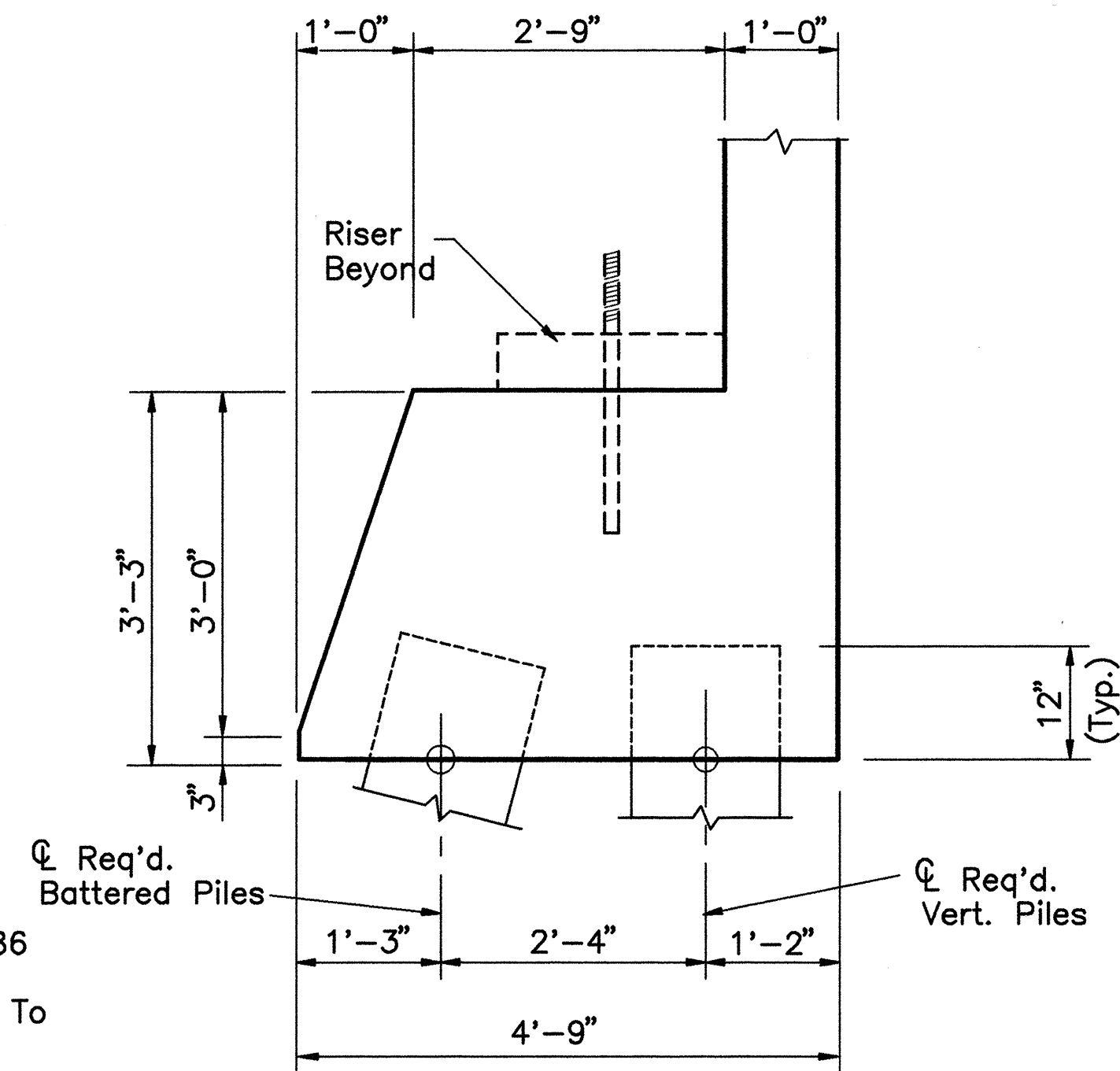


ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS			
LIMITS OF EXCAVATION FOR ENDBENTS 1 & 4 BRIDGE A&B 3731 OVER ST. LOUIS - S.W. RAILWAY			
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.			
DRAWN BY: JHS	DATE: 9/94	SCALE: 3/8" = 1'-0"	
CHECKED BY: CDE	DATE: 5/97		
DESIGNED BY: CDE	DATE: 9/94		
BRIDGE NO. A & B 3731		DRAWING NO. 37993	

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		R10055	78	116
				1 A & B 3731 BENT				37994

Table Of Variables				
	Bridge 3731 AR		Bridge 3731 BR	
	Bent 1	Bent 4	Bent 1	Bent 4
	Sta. 2774+69.07	Sta. 2777+29.27	Sta. 2774+64.17	Sta. 2777+24.37
A	230.84	230.60	230.82	230.63
B	226.75	226.48	226.73	226.50
C	226.90	226.63	226.88	226.65
D	227.06	226.79	227.04	226.81
E	227.21	226.94	227.19	226.96
F	227.36	227.09	227.34	227.11
G	227.51	227.24	227.49	227.26
H	231.64	231.40	231.62	231.43
J	226.25	225.98	226.23	226.00

Elevations A and H Computed at the Beginning or End of Bridge.  
Elevations B thru G Computed at the Centerline of Riser.



#### Pile Note:

Req'd. Pile Tip Elevation Is Approx. El. 186 For Bent 1 (Pile Length Approx. 40 Ft.).  
At Min., The Req'd. Piles For Bent 1 Are To Be Driven To El. 190.

Req'd. Pile Tip Elevation Is Approx. El. 186 For Bent 4 (Pile Length Approx. 40 Ft.).  
At Min., The Req'd. Piles For Bent 4 Are To Be Driven To El. 192.

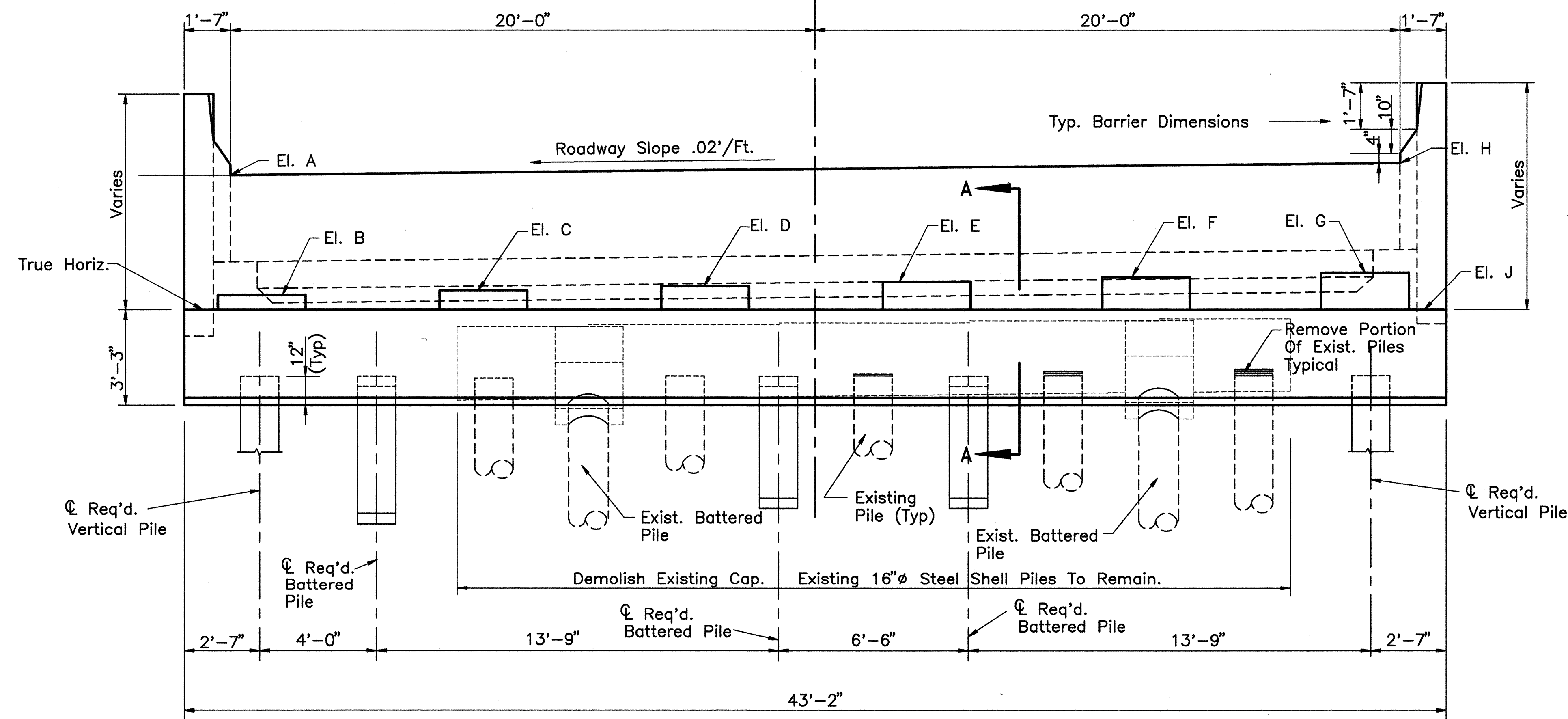
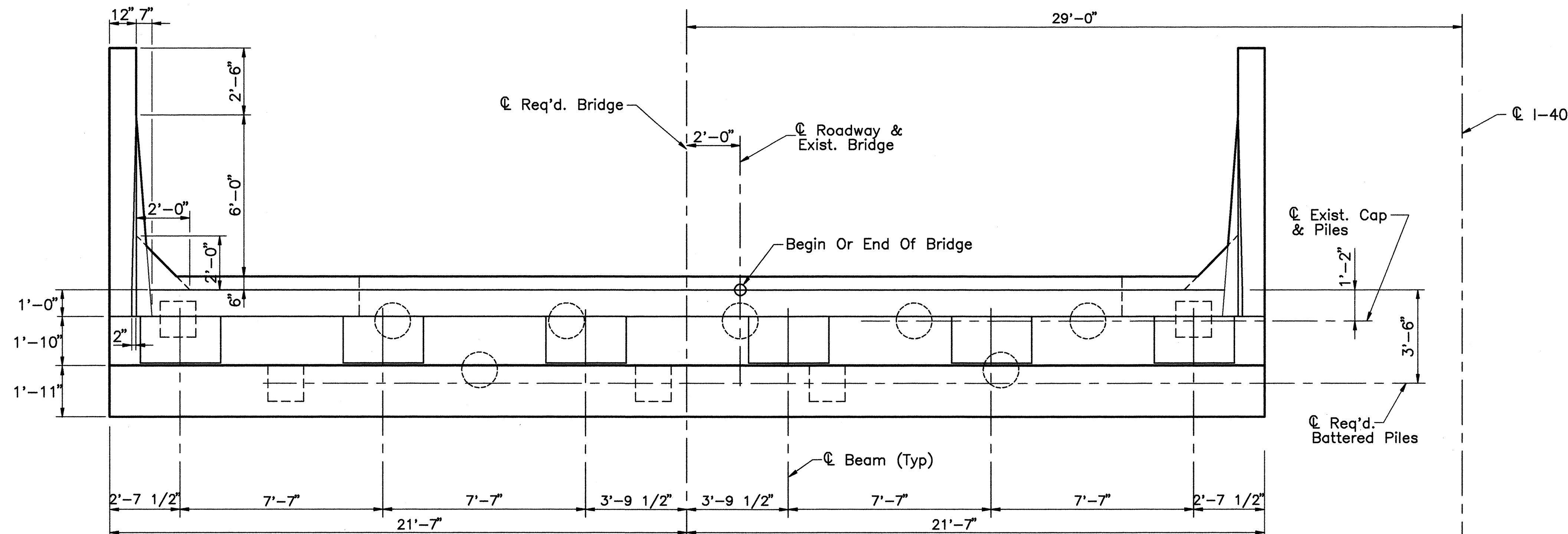
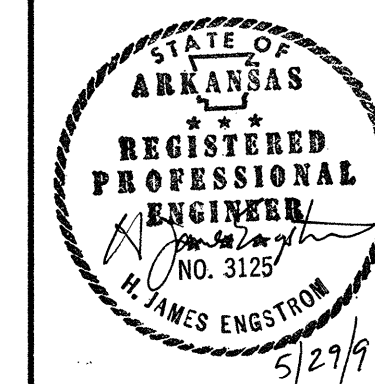
Req'd. Battered Piles To Be Battered Forward 4 Horiz. On 12 Vert.

Req'd Piles To Be 14" Sq. Or 16" Octagonal Concrete Piles.

#### NOTES:

For Riprap Details, See Dwg. No. 37993.  
For Wingwall & Parapet Details, See Dwg. No. 37995.  
For Details Of Risers And Anchor Bolts, See Dwg. No. 37976.

ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS	
<b>EXISTING BENT MODIFICATIONS</b> <b>ENDBENTS 1 &amp; 4 BRIDGE A&amp;B 3731</b> <b>OVER ST. LOUIS - S.W. RAILWAY</b>	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.	
DRAWN BY: JHS DATE: 9/94	SCALE: 3/8" = 1'-0"
CHECKED BY: CDE DATE: 5/97	
DESIGNED BY: CDE DATE: 9/94	
BRIDGE NO. A & B 3731	DRAWING NO. 37994



#### ELEVATION

Scale: 3/8" = 1'-0"

(Bent 1 Bridge B3731 & Bent 4 Bridge A3731 Shown  
Bent 1 Bridge A3731 & Bent 4 Bridge B3731 Opposite Hand)

PILE LENGTHS SHOWN ARE FOR ALTERNATE A, CONCRETE PILES. PILE LENGTHS FOR ALTERNATE B, CONCRETE FILLED STEEL SHELL PILING, MAY BE OBTAINED BY MULTIPLYING LENGTHS SHOWN BY 1.28. SEE SHEET 37968.

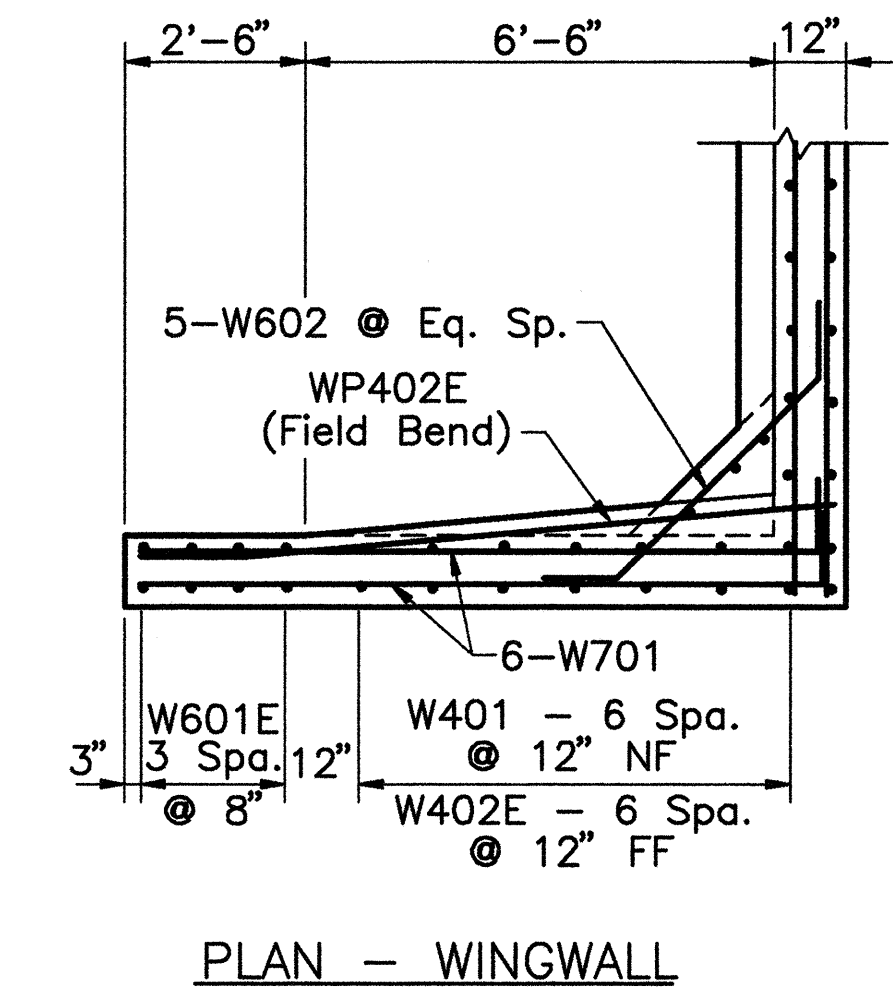
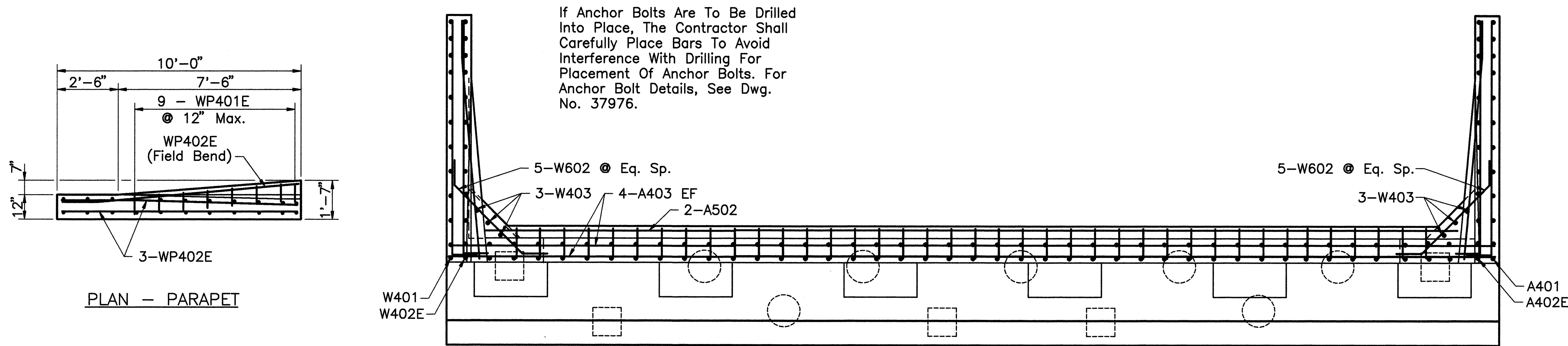
MICROFILMED  
OCT 16 1998

ACAD SCALE: 3/8" = 1'-0"

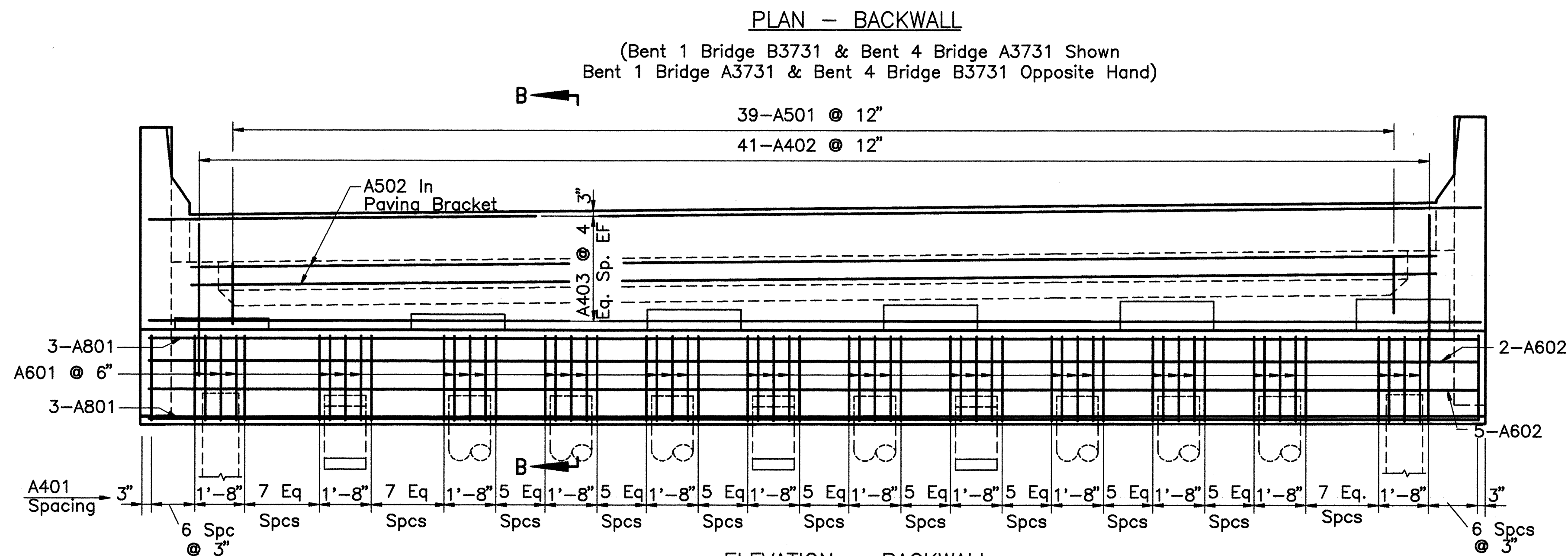
C:\PROJ\AHTD\RAIL\ENDBENT



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		R10055	79	116
				1 A & B 3731 BENT				37995



NOTE:  
Parapet Not Shown  
For Clarity, See Plan Of  
Parapet For Details.

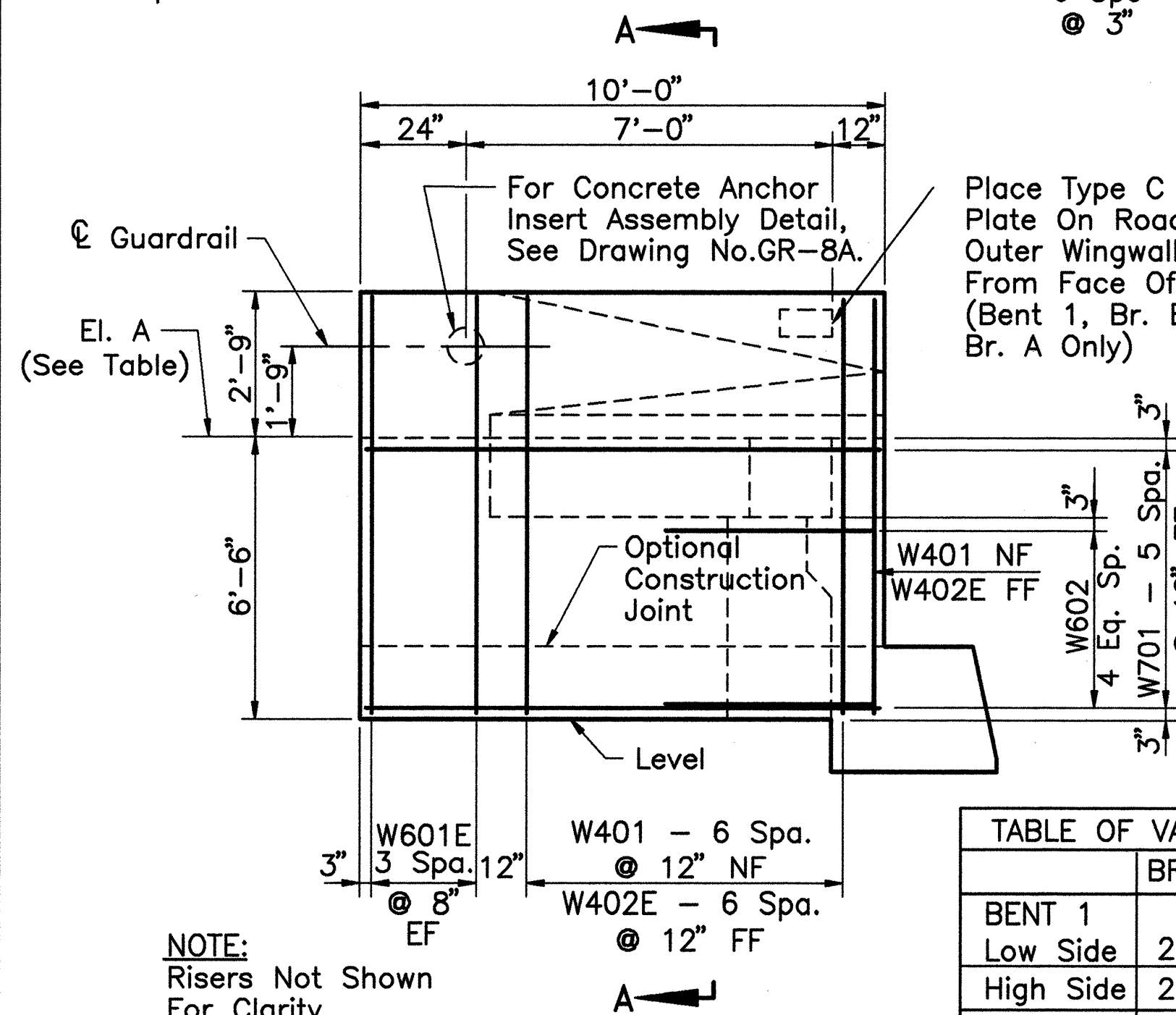


ELEVATION - BACKWALL

Scale: 3/8" = 1'-0"

(Bent 1 Bridge B3731 & Bent 4 Bridge A3731 Shown  
Bent 1 Bridge A3731 & Bent 4 Bridge B3731 Opposite Hand)

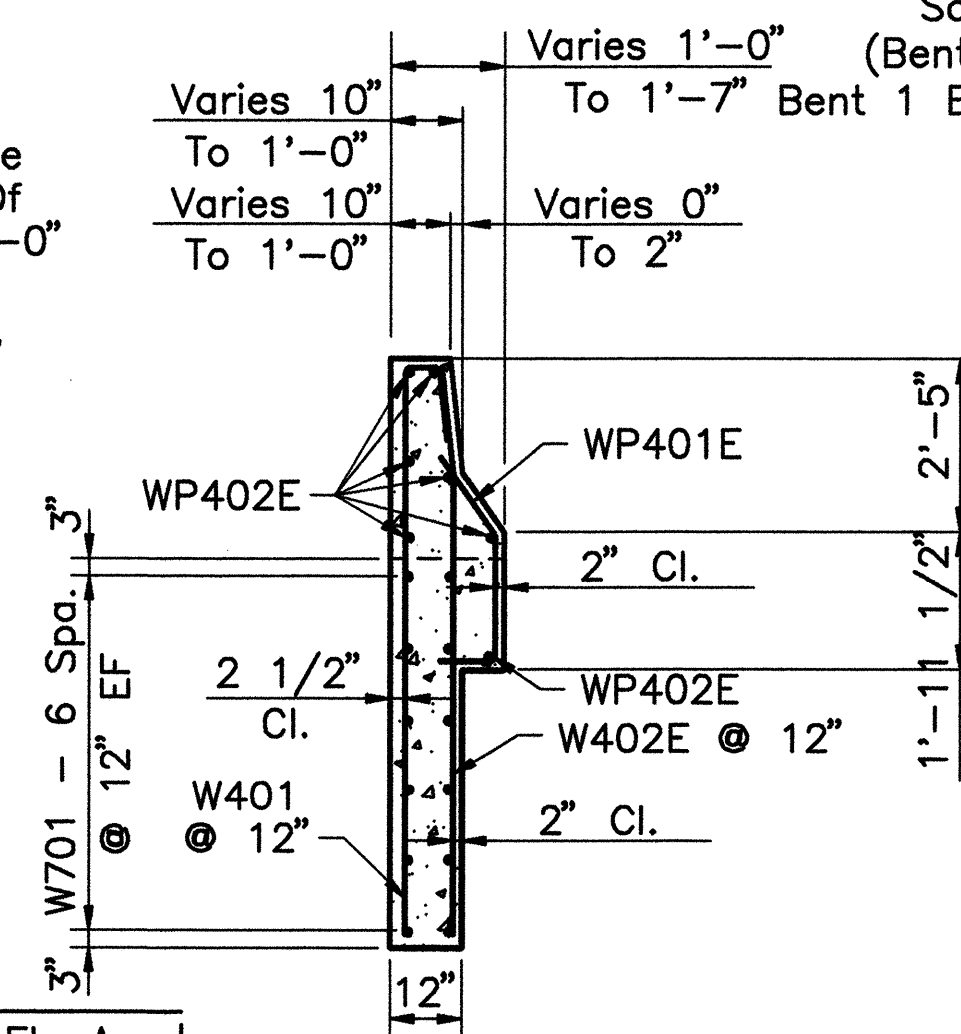
For End Bent Armor  
Detail, See Dwg.  
No. 37986.



ELEVATION - WINGWALL

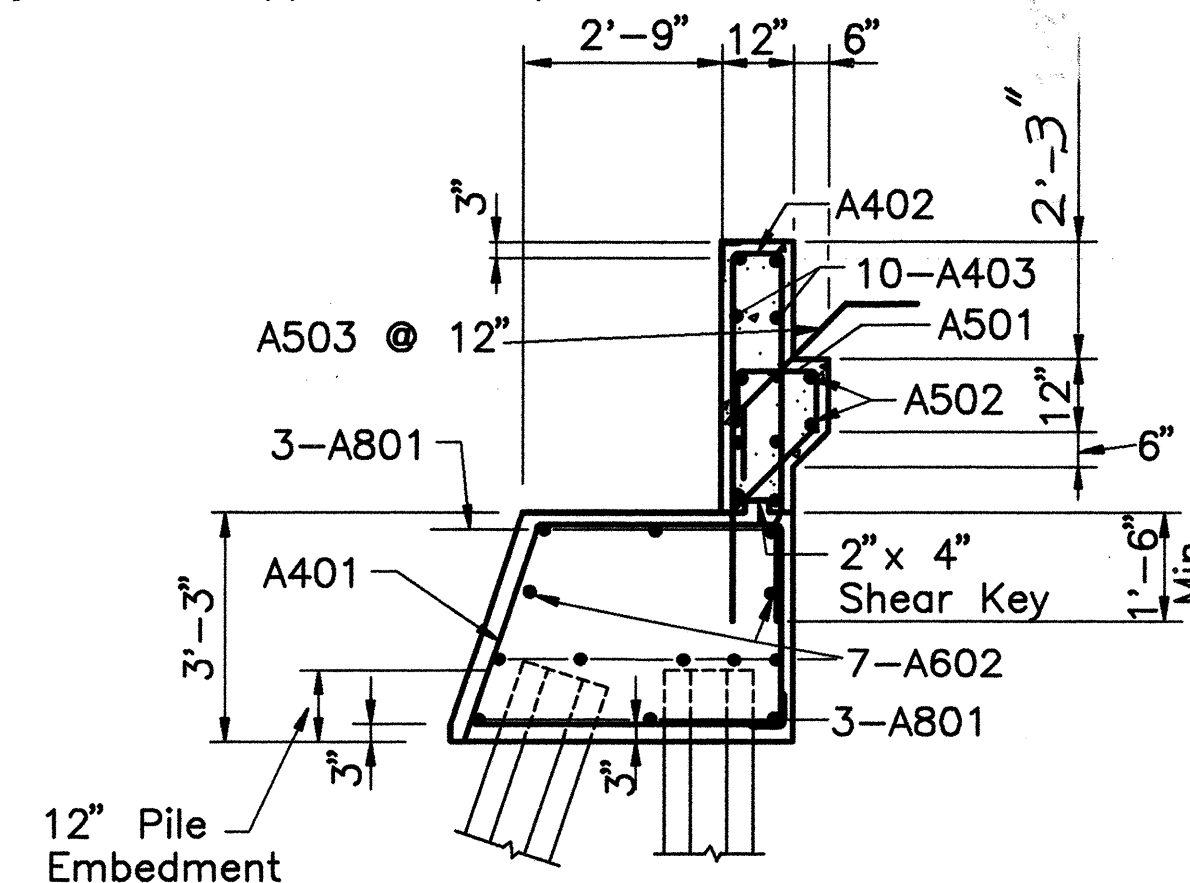
Scale: 3/8" = 1'-0"

	TABLE OF VARIABLES - EL. A	
	BRIDGE A	BRIDGE B
BENT 1		
Low Side	230.84	230.82
High Side	231.64	231.62
BENT 4		
Low Side	230.60	230.63
High Side	231.40	231.43



SECTION A-A

Scale: 3/8" = 1'-0"



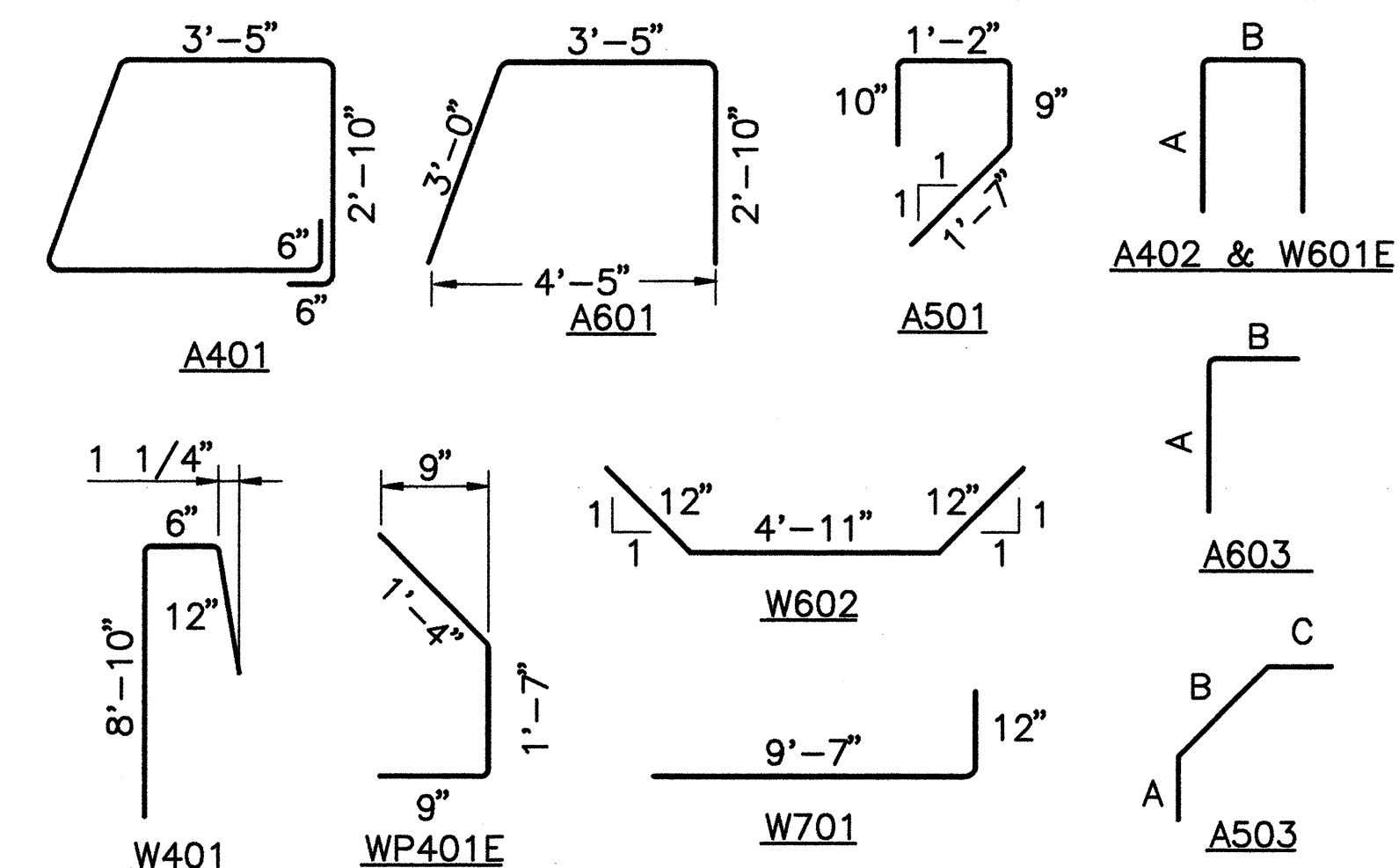
SECTION B-B

Scale: 3/8" = 1'-0"

NOTES:  
For Treatment Of Existing End Bent, See Dwg. No. 37993.

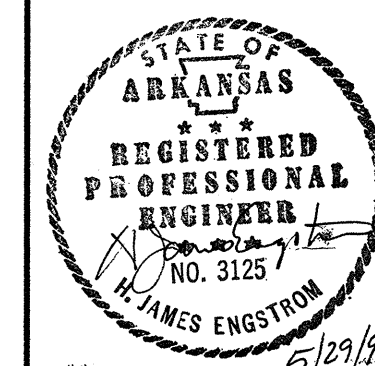
REINFORCEMENT SCHEDULE						
MARK	NO.	LENGTH	PIN DIA.	A	B	C
A401	86	14'-8"	2"			
A402	41	12'-2"	2"	5'-9"	8"	
A403	10	42'-10"	Str.			
A501	39	4'-4"	2 1/2"			
A502	2	39'-8"	Str.			
A503	40	4'-0"	2"	1'-0"	2'-0"	1'-0"
A601	36	9'-3"	4 1/2"			
A602	7	42'-8"	Str.			
A603	36	5'-1"	4 1/2"	2'-7"	2'-6"	
A604	24	18"	Str.			
A801	6	42'-8"	Str.			
W401	16	10'-4"	2"			
W402E	16	8'-10"	Str.			
W403E	6	5'-3"	Str.			
W601E	8	18'-4"	4 1/2"	8'-10"	8"	
W602	10	6'-11"	4 1/2"			
W701	30	10'-7"	5 1/4"			
WP401E	18	3'-8"	2"			
WP402E	14	9'-8"	Str.			

BENDING DIAGRAMS



NOTES:  
1. Dimension Of Bars In Bending Diagram Are Out-Out.  
2. Bar designations Ending With "E" Indicate Epoxy Coated Bars.  
3. Reinforcement Schedule Is For One End Bent, One Bridge Only.

ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS	
EXISTING BENT MODIFICATIONS WINGWALL/ENDBENT REINF. A&B 3731 OVER ST. LOUIS - S.W. RAILWAY	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.	
DRAWN BY: JHS CHECKED BY: CDE DESIGNED BY: CDE	DATE: 9/94 DATE: 5/97 DATE: 9/94
BRIDGE NO. A & B 3731	DRAWING NO. 37995



ACAD SCALE: 3/8" = 1'-0"

C:\PROJ\BENT\WALL\WINGWALL

16 1994

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		R10055	80	116
				①	A & B 3731 BENT			37996

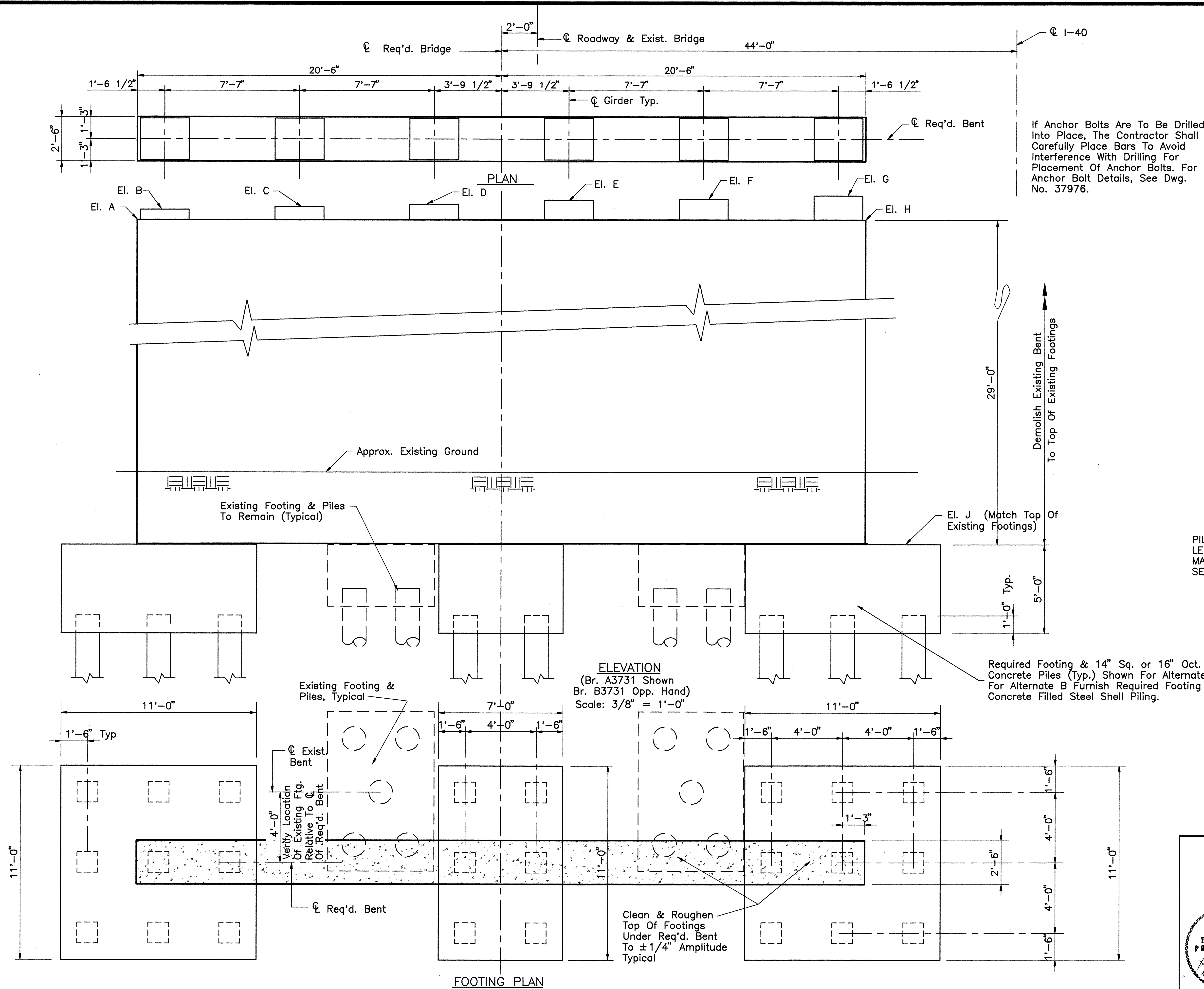
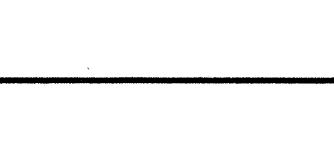


TABLE OF VARIABLES — BENT 2		
	BR. A3731	BR. B3731
A	226.30	226.30
B	226.87	226.87
C	227.02	227.02
D	227.17	227.17
E	227.32	227.32
F	227.47	227.47
G	227.63	227.63
H	226.30	226.30
J	197.30	197.30
K	147	147
L	46'	46'
*M	147	149

- NOTES
1. Pile Loads Are 44 Tons Each.
  2. K= Approximate Pile Tip Elevation.
  3. L= Approximate Pile Length.
  4. \*M= Average Existing Pile Tip Elevation.  
At Minimum, Req'd. Piles Shall Be Driven  
To This Elevation. Ref. Grubbs, Garner,  
& Hoskyns Geotechnical Report, Dated  
November 1993.
  5. Elev. J To Be Field Verified & Wall Reinf.  
Shall Be Adjusted Accordingly.

PILE LENGTHS SHOWN ARE FOR ALTERNATE A, CONCRETE PILES. PILE LENGTHS FOR ALTERNATE B, CONCRETE FILLED STEEL SHELL PILING, MAY BE OBTAINED BY MULTIPLYING LENGTHS SHOWN BY 1.28. SEE SHEET 37968.

- NOTES:
1. For Reinforcement For This Sheet, See Dwg. No. 37998.
  2. For Details Of Risers & A.B.'s See Dwg No. 37976.

	ENGSTRUM/MODJESKI AND MASTERS CONSULTING ENGINEERS						
	EXISTING BENT MODIFICATIONS BENT 2 BRIDGE A & B 3731 OVER ST. LOUIS - S.W. RAILWAY						
	MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.						
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DRAWN BY: JHS	DATE: 9/94	SCALE: _____ AS NOTED _____					
CHECKED BY: CDE	DATE: 5/97						
DESIGNED BY: CDE	DATE: 9/94						
5/29/97	BRIDGE NO. A & B 3731 <table border="1" data-bbox="2737 1788 2966 1810"> <tr> <td>DRAWING NO. 37996</td> </tr> </table>	DRAWING NO. 37996					
DRAWING NO. 37996							

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MICROFILMED  
OCT 16 1998  
ACAD SCALE: 3/8" = 1'-0"



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		R10055	81	116
1 A & B 3731 BENT								37997

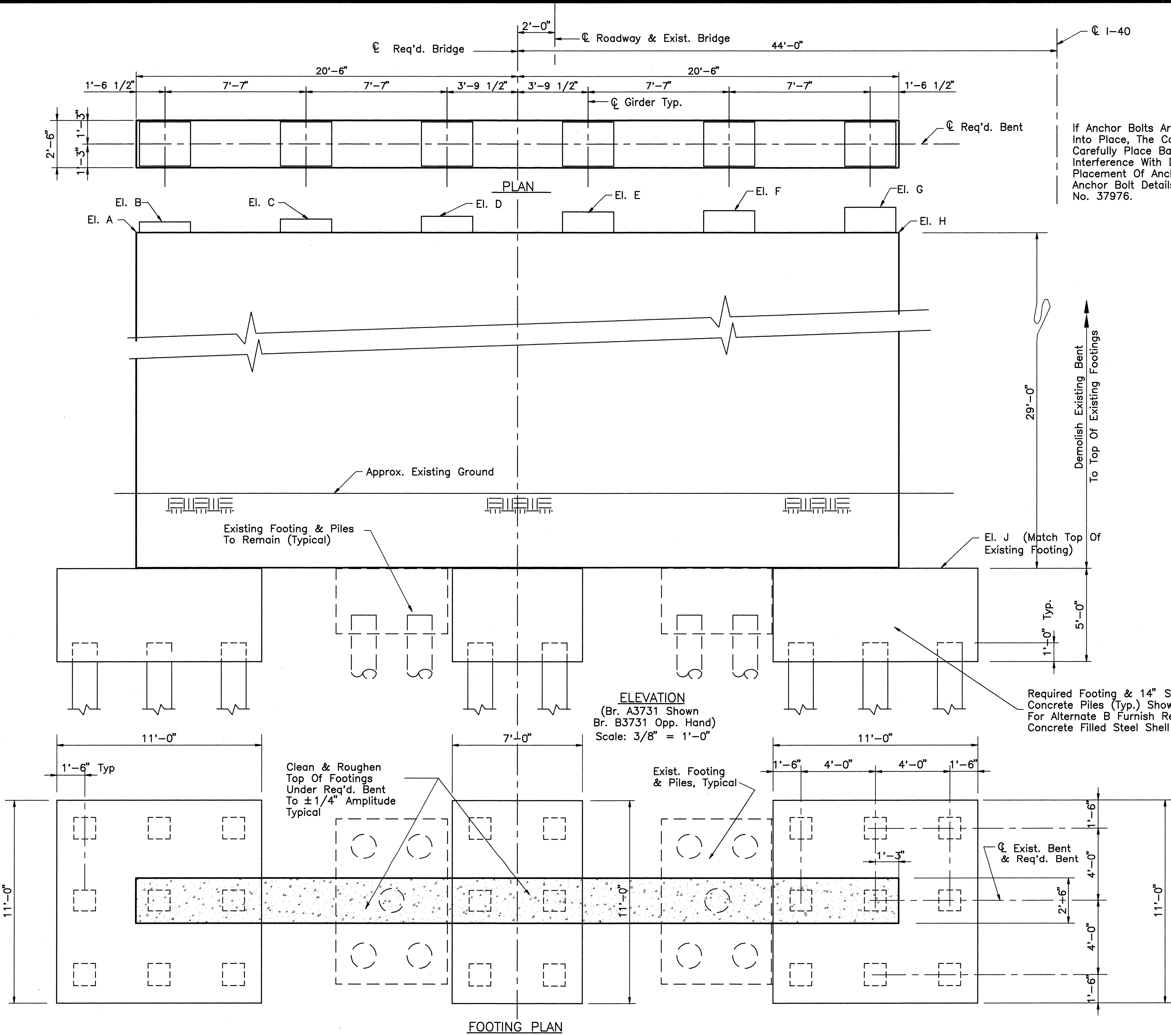


TABLE OF VARIABLES — BENT 3		
	BR. A3731	BR. B3731
A	226.24	226.24
B	226.85	226.86
C	227.00	227.01
D	227.16	227.17
E	227.31	227.32
F	227.46	227.47
G	227.61	227.62
H	226.24	226.24
J	197.24	197.24
K	147	147
L	46'	46'
*M	152	150

- NOTES
- Pile Loads Are 44 Tons Each.
  - K= Approximate Pile Tip Elevation.
  - L= Approximate Pile Length.
  - \*M= Average Existing Pile Tip Elevation. At Minimum, Req'd. Piles Shall Be Driven To This Elevation. Ref. Grubbs, Garner, & Hoskyns Geotechnical Report, Dated November 1993.
  - Elev. J To Be Field Verified & Wall Reinf. Shall Be Adjusted Accordingly.

PILE LENGTHS SHOWN ARE FOR ALTERNATE A, CONCRETE PILES. PILE LENGTHS FOR ALTERNATE B, CONCRETE FILLED STEEL SHELL PILING, MAY BE OBTAINED BY MULTIPLYING LENGTHS SHOWN BY 1.28. SEE SHEET 37968.

- NOTES:
- For Reinforcing For This Sheet, See Dwg. No. 37998.
  - For Details Of Risers & A.B.'s See Dwg. No. 37976.

ENGSTROM/MODJESKI AND MASTERS  
CONSULTING ENGINEERS

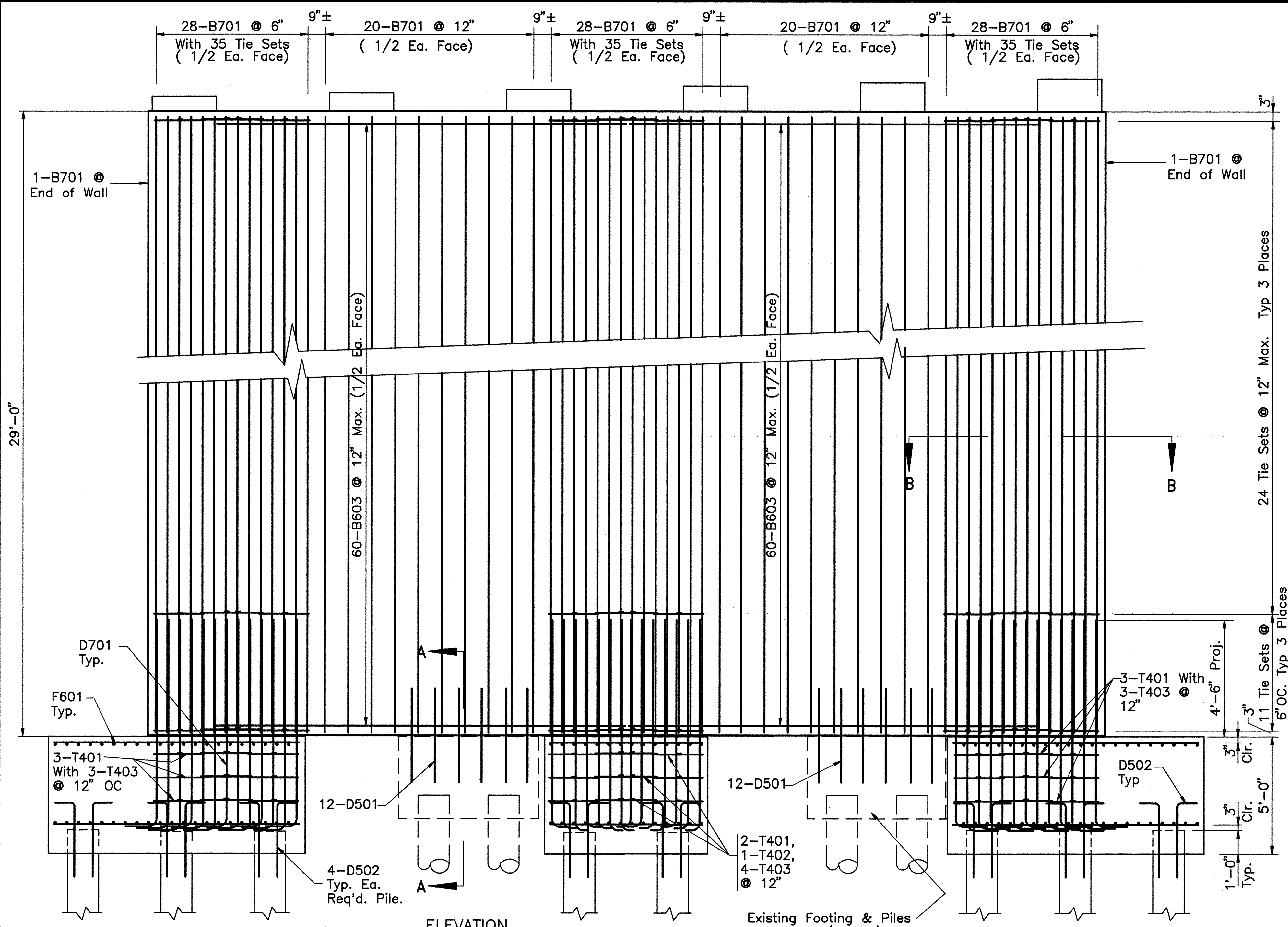
**EXISTING BENT MODIFICATIONS**  
**BENT 3 BRIDGE A & B 3731 OVER**  
**ST. LOUIS — S.W. RAILWAY**

MONROE COUNTY  
INTERSTATE ROUTE 40 SEC. 43  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

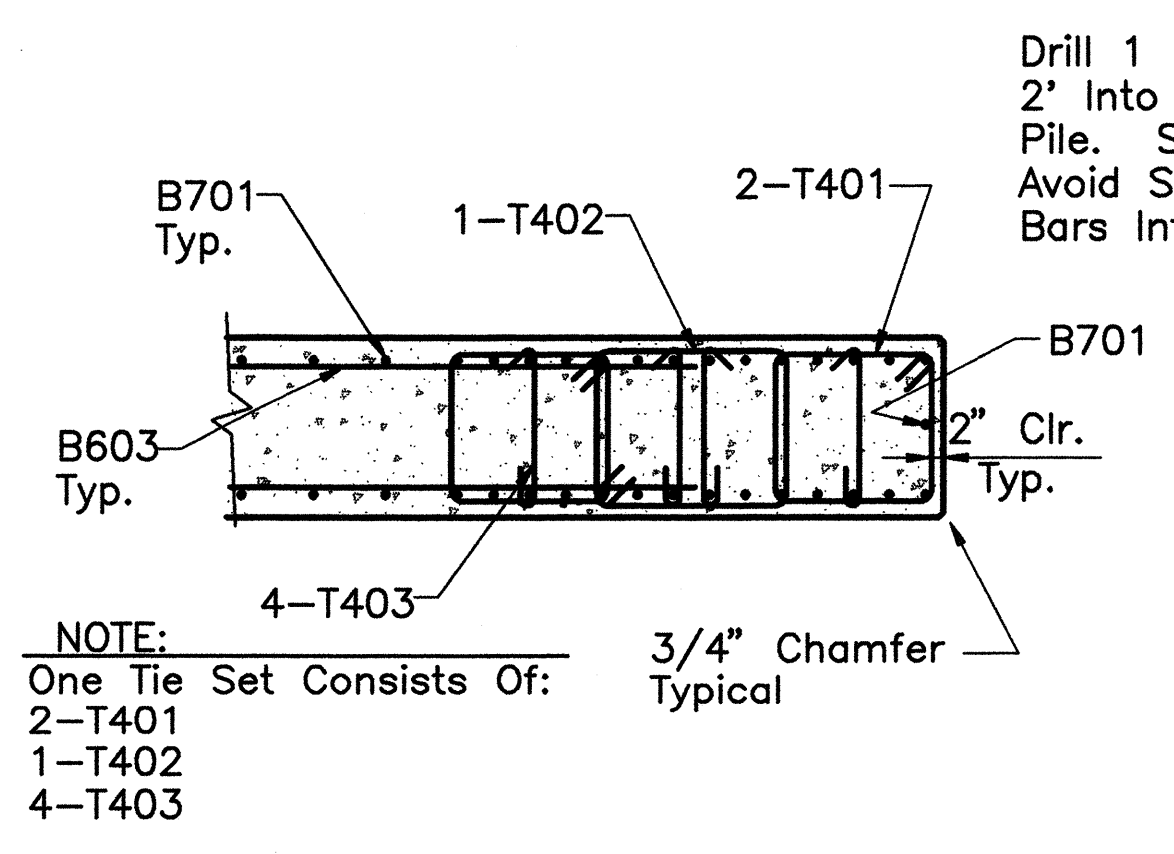
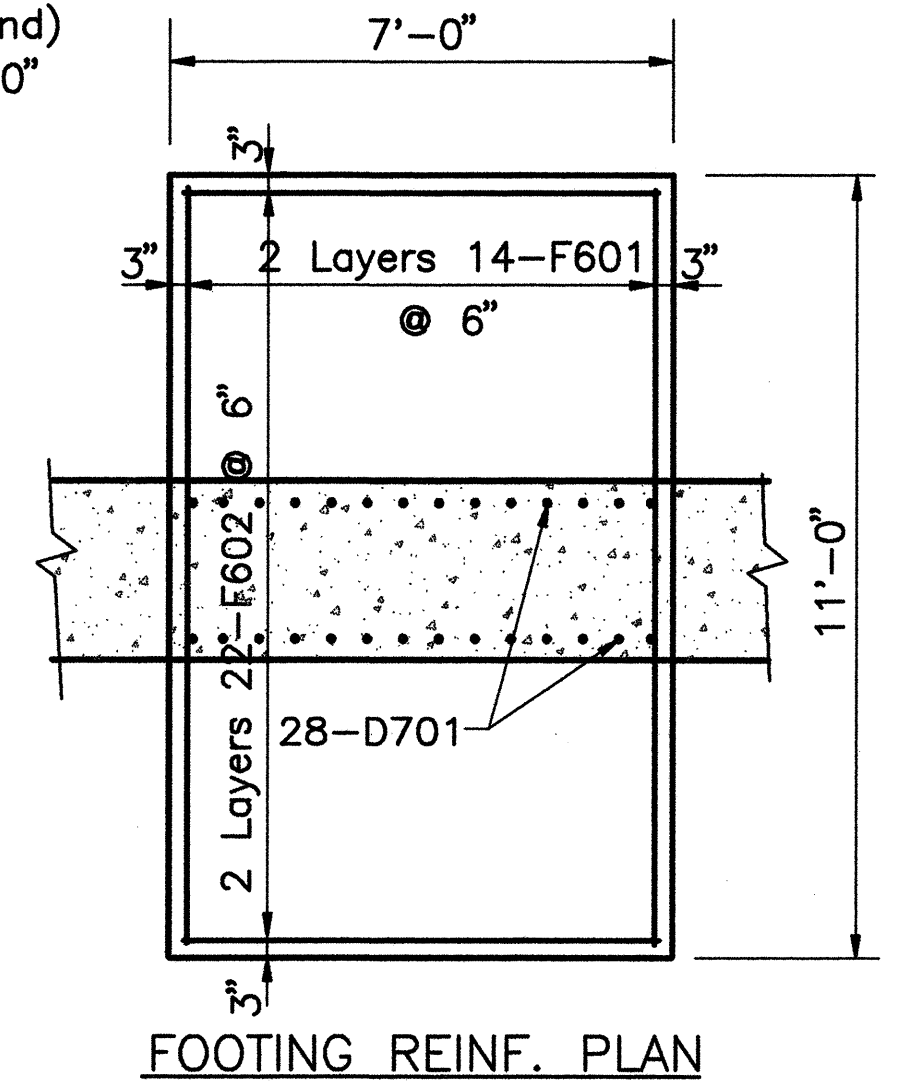
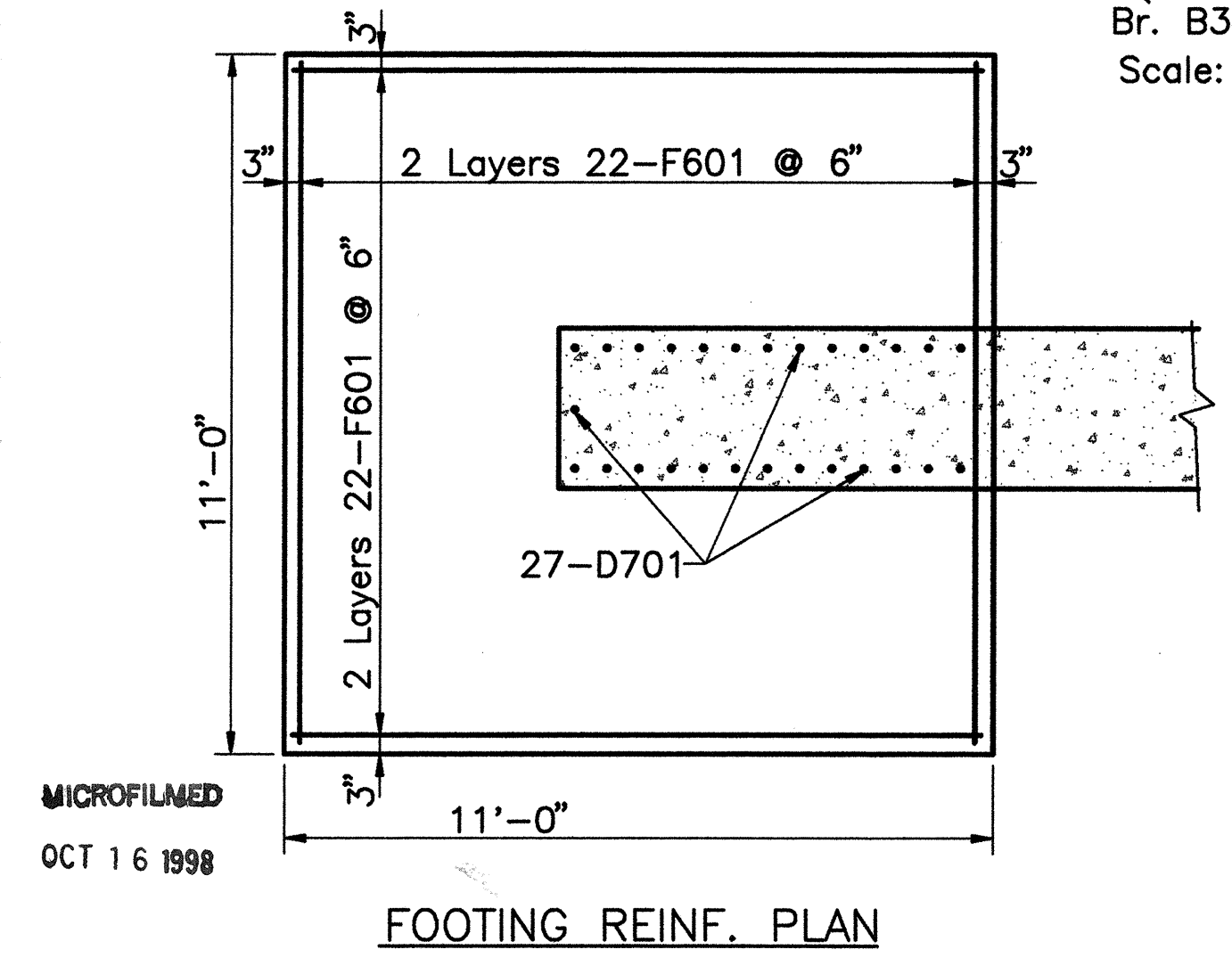
DRAWN BY: JHS	DATE: 9/94	SCALE: AS NOTED
CHECKED BY: CDE	DATE: 5/97	
DESIGNED BY: CDE	DATE: 9/94	

BRIDGE NO. A & B 3731      DRAWING NO. 37997

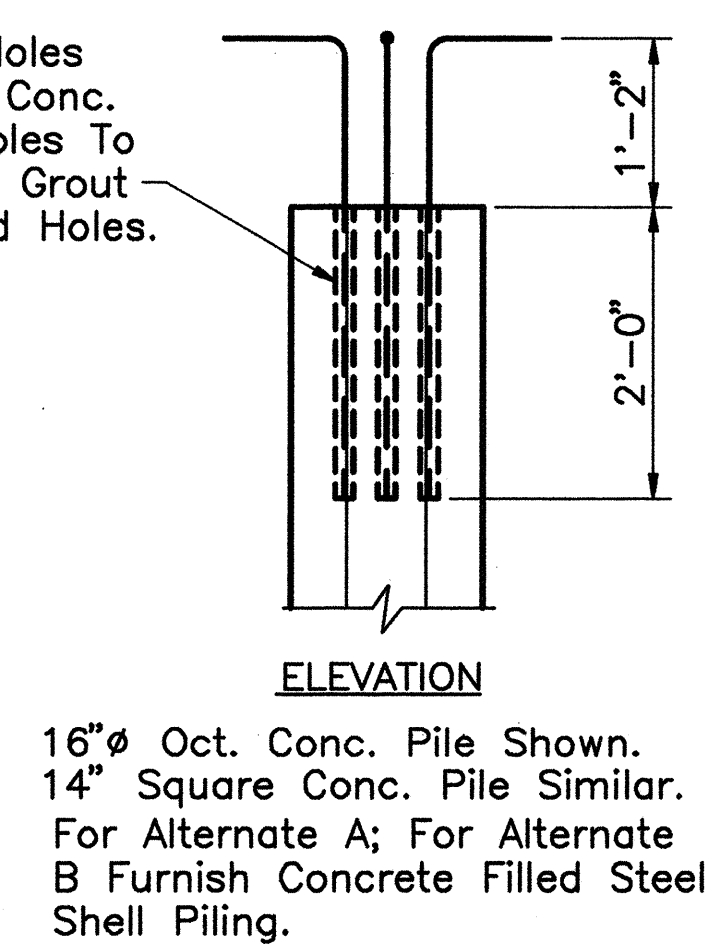
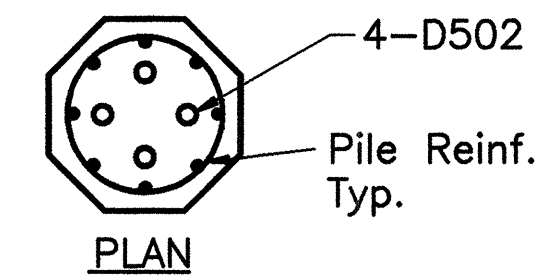
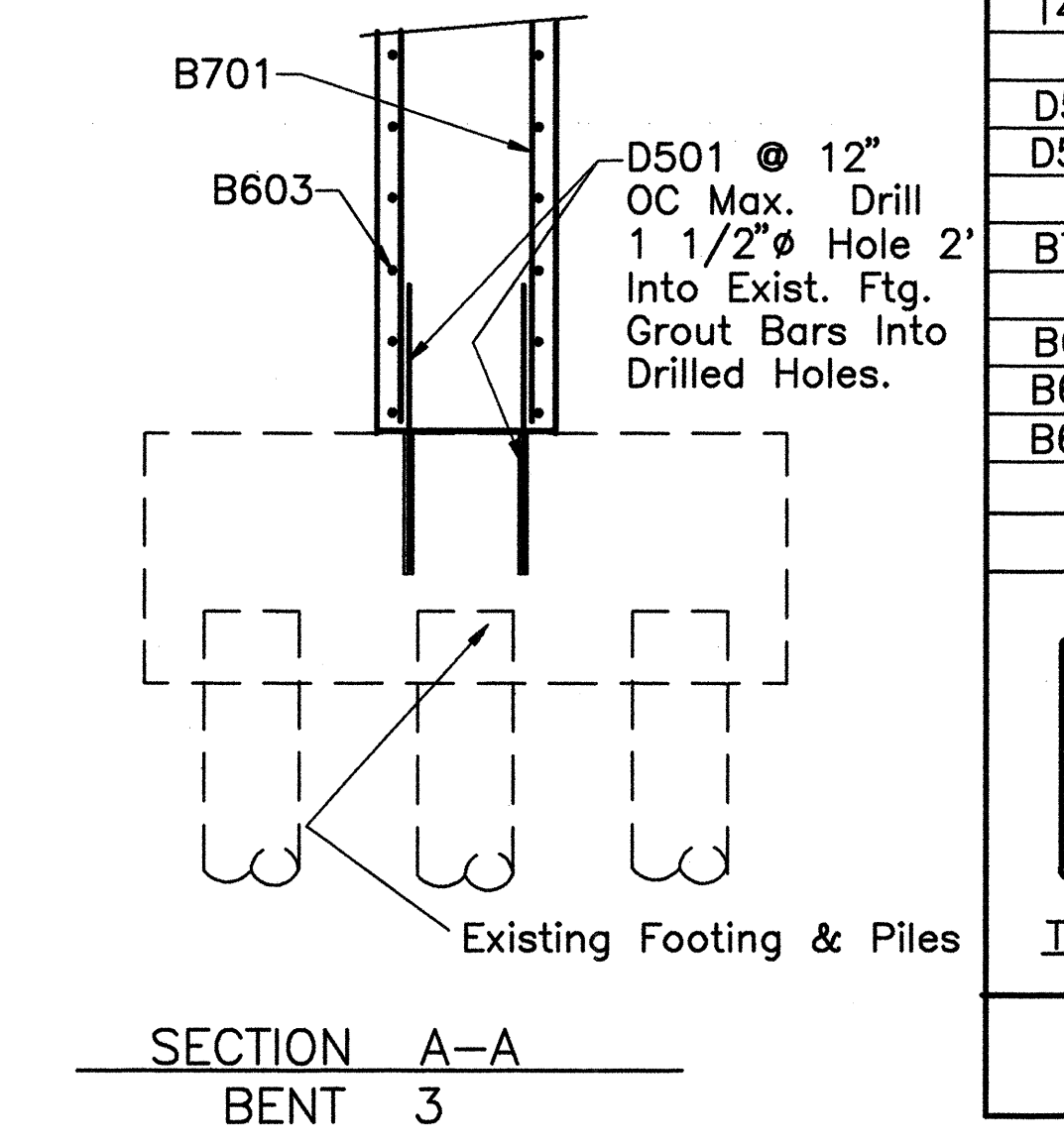
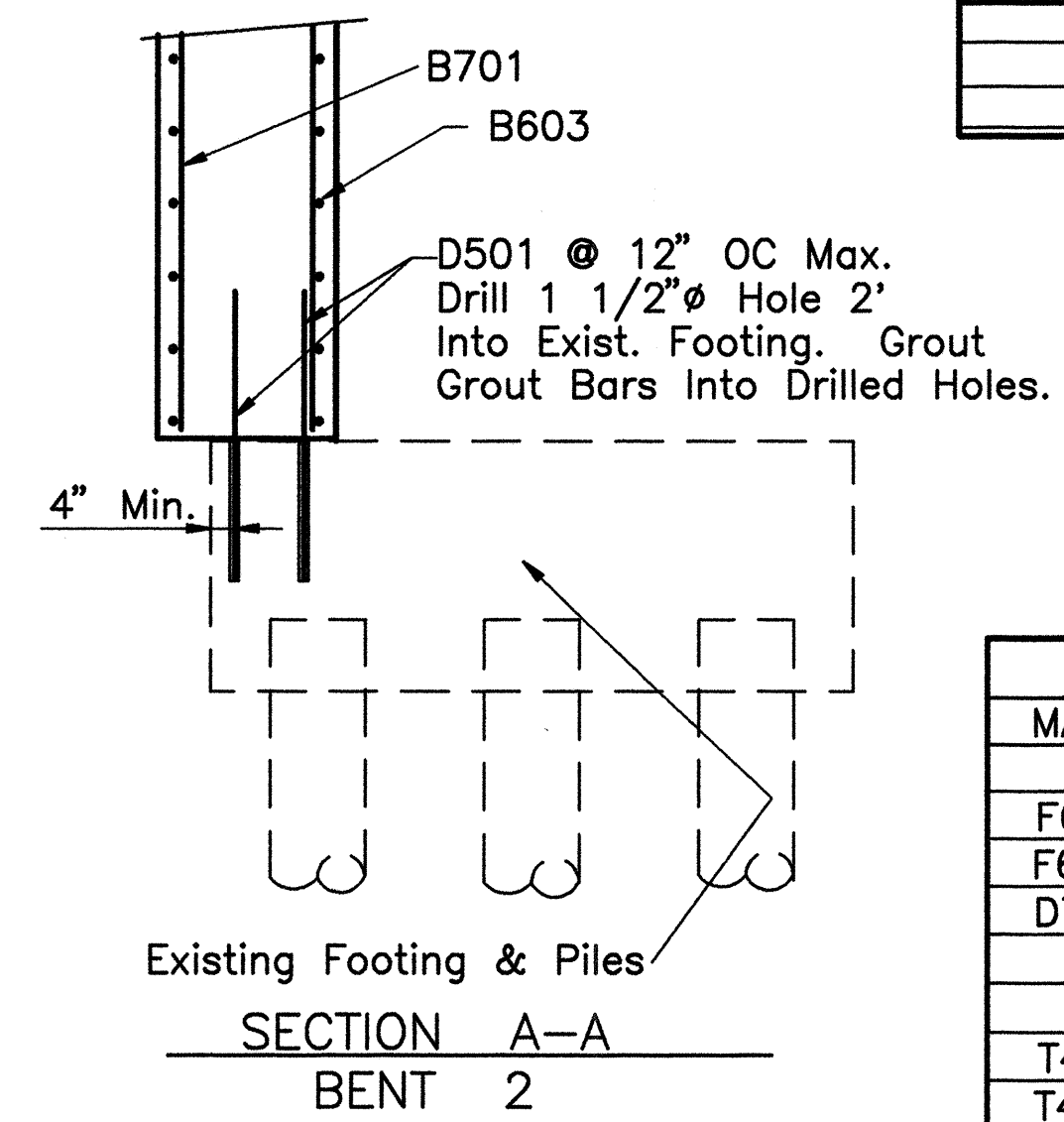




**ELEVATION**  
(Br. A3731 Shown  
Br. B3731 Opp. Hand)  
Scale: 3/8" = 1'-0"



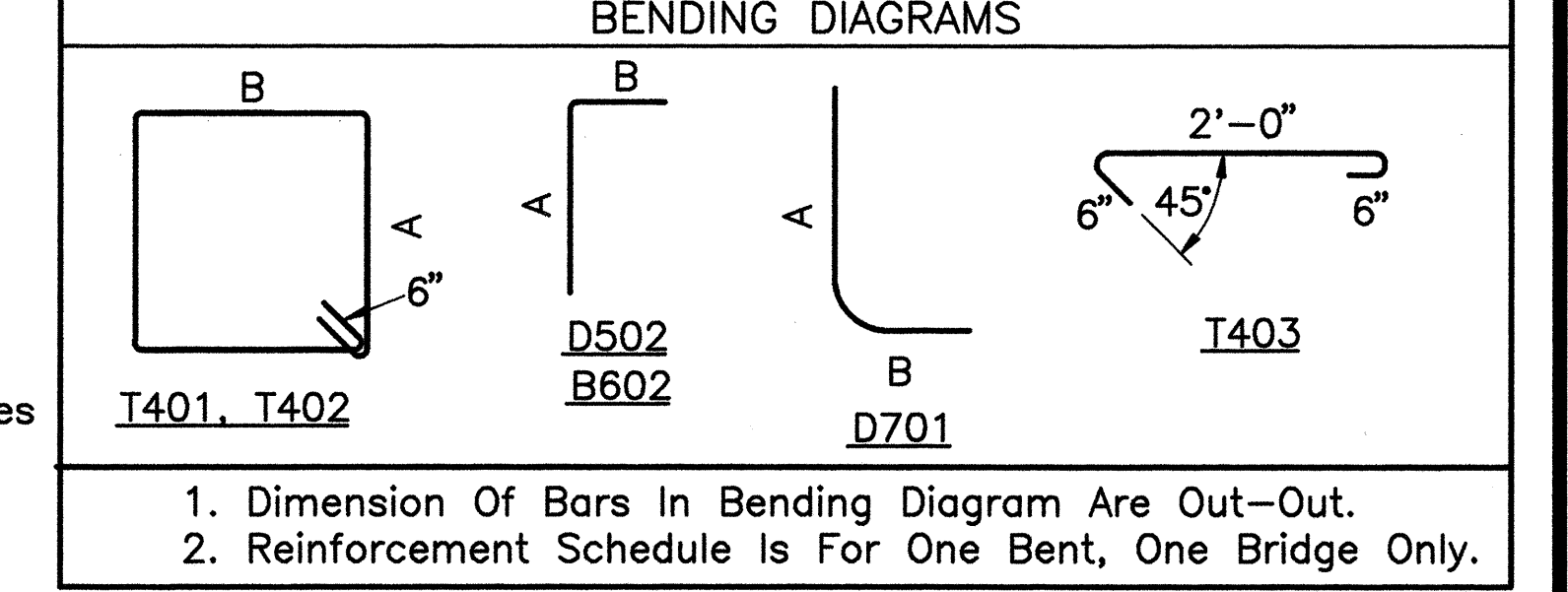
**SECTION B-B**  
WALL REIN. PLAN



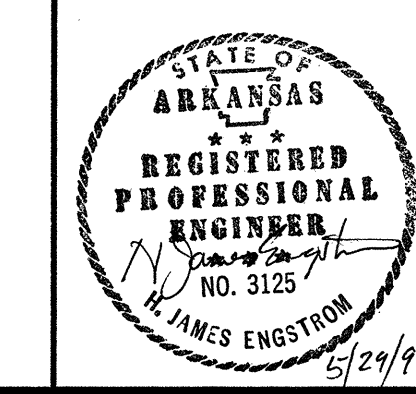
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		R10055	82	116
				A & B 3731 BENT				37998

If Anchor Bolts Are To Be Drilled Into Place, The Contractor Shall Carefully Place Bars To Avoid Interference With Drilling For Placement Of Anchor Bolts. For Anchor Bolt Details, See Dwg. No. 37976.

REINFORCEMENT SCHEDULE					
MARK	NO.	LENGTH	PIN DIA.	A	B
F601	204	10'-6"	Str.		
F602	44	6'-6"	Str.		
D701	82	9'-8"	5 1/4"	8'-4"	1'-4"
T401	234	9'-4"	2"	2'-0"	2'-2"
T402	108	10'-4"	2"	2'-0"	2'-8"
T403	450	3'-0"	2"	See Sketch	
D501	24	4'-0"	Str.		
D502	96	4'-0"	2 1/2"	3'-2"	10"
B701	126	28'-8"	Str.		
B601	24	2'-6"	Str.		
B602	48	4'-7"	4 1/2"	2'-8 1/2"	1'-10"
B603	120	17'-6"	Str.		



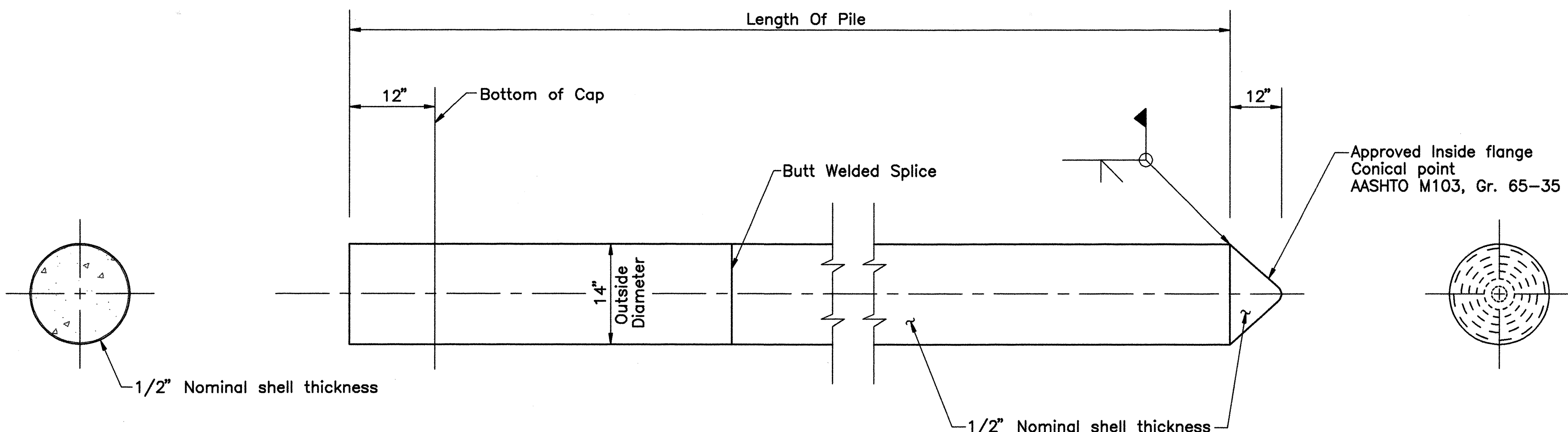
**Note:**  
Payment For Providing & Installing D502 Bars To Be Included In Payment For Req'd. Conc. Piles.



ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS	
<b>EXISTING BENT MODIFICATIONS</b> DETAILS OF BENTS 2 & 3 BR. A&B 3731 OVER ST. LOUIS - S.W. RAILWAY	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.	
DRAWN BY: JHS DATE: 9/94	CHECKED BY: CDE DATE: 5/97
DESIGNED BY: CDE DATE: 9/94	SCALE: 3/8" = 1'-0"
BRIDGE NO. A & B 3731	DRAWING NO. 37998



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK			
				JOB NO.		R10055	33	116
1 A&B 3727 A&B 3731 SHELL PILES 37999								



Note:  
Steel pile tip reinforcing will not be paid for directly, but shall be considered subsidiary to the item "Steel Shell Piling"

GENERAL NOTES FOR CONCRETE FILLED STEEL SHELL PILES

Steel shells shall conform to ASTM A252. Grade 2. (Fy = 35,000 psi.).

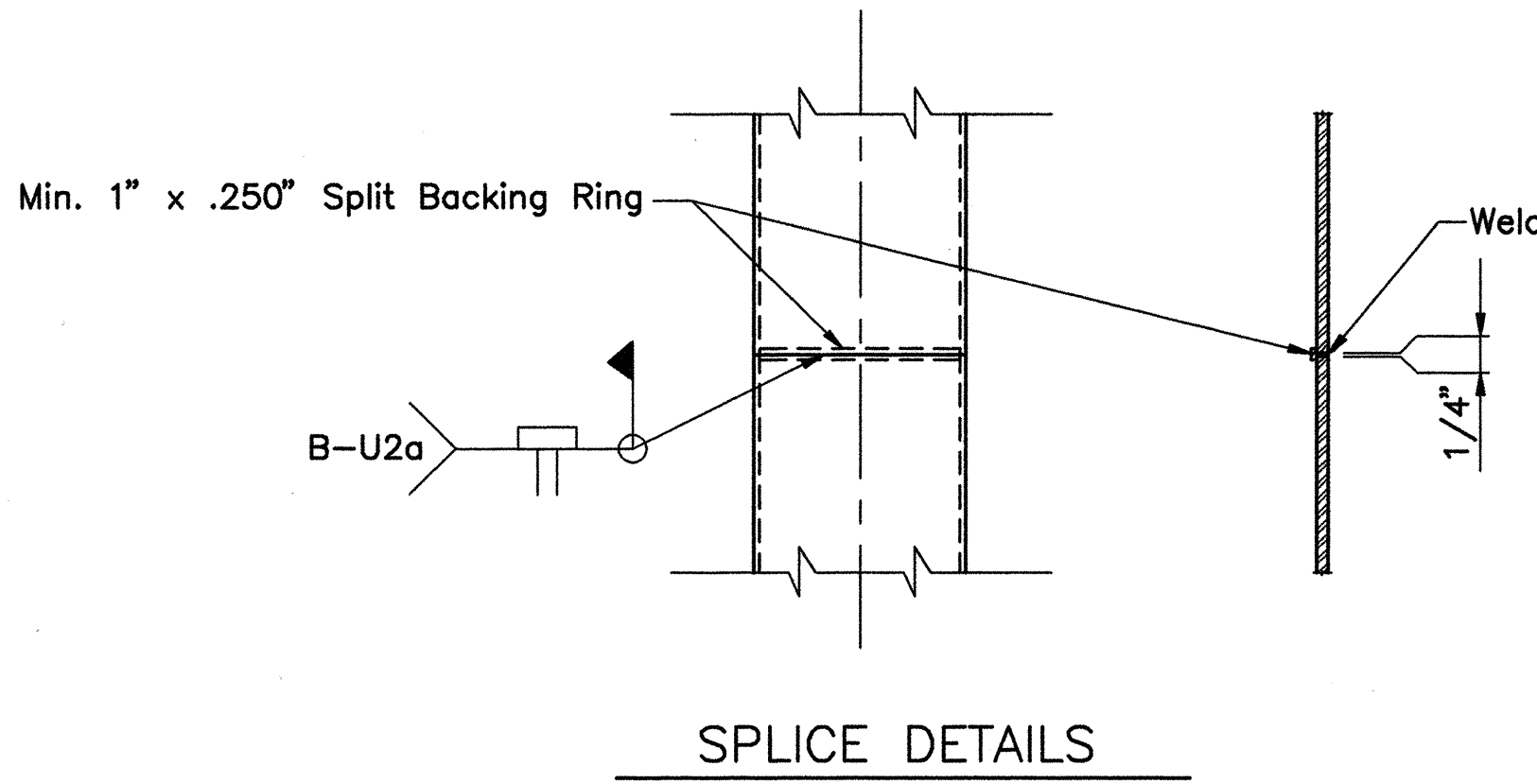
Concrete used for filling of steel shell shall be Class S with a minimum 28 day compressive strength, f'c = 3,500 psi and shall be poured in the dry.

See bridge layout for size and length of shell piles and for additional driving information.

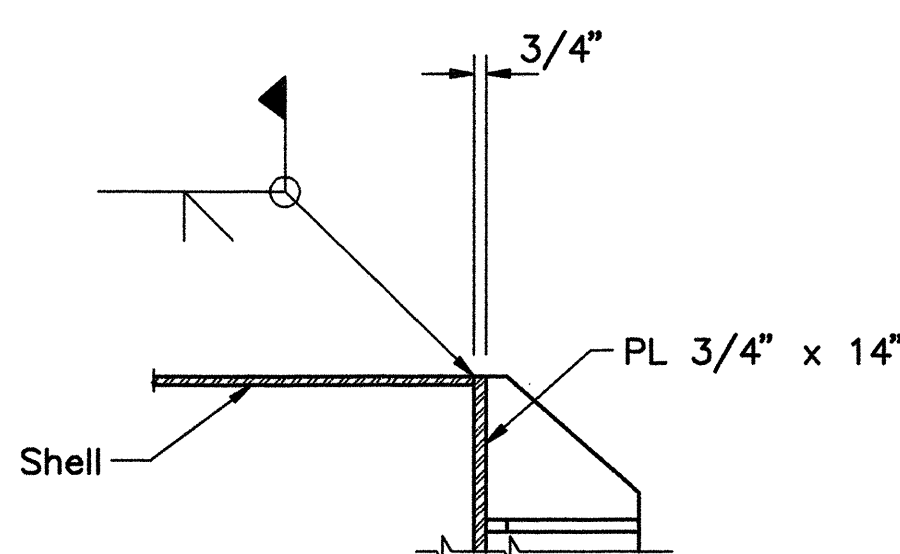
Concrete and structural steel and reinforcing steel, including welding, will not be paid for directly, but will be considered as part of the corresponding item "Steel Shell Piling ( 14" dia.)".

The shell shall be welded or seamless steel pipe.

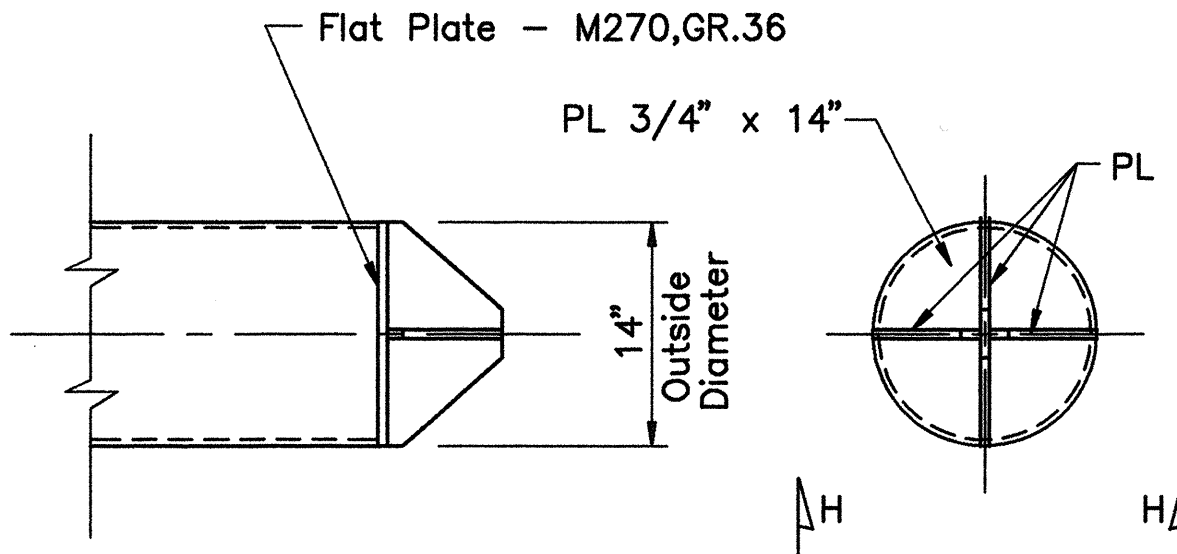
### CONCRETE FILLED STEEL SHELL PILES



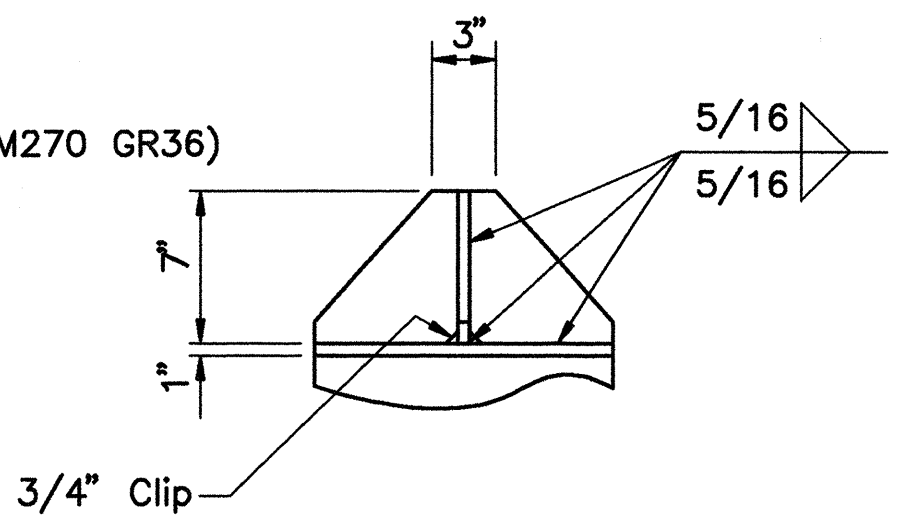
SPLICE DETAILS



PART SECTION

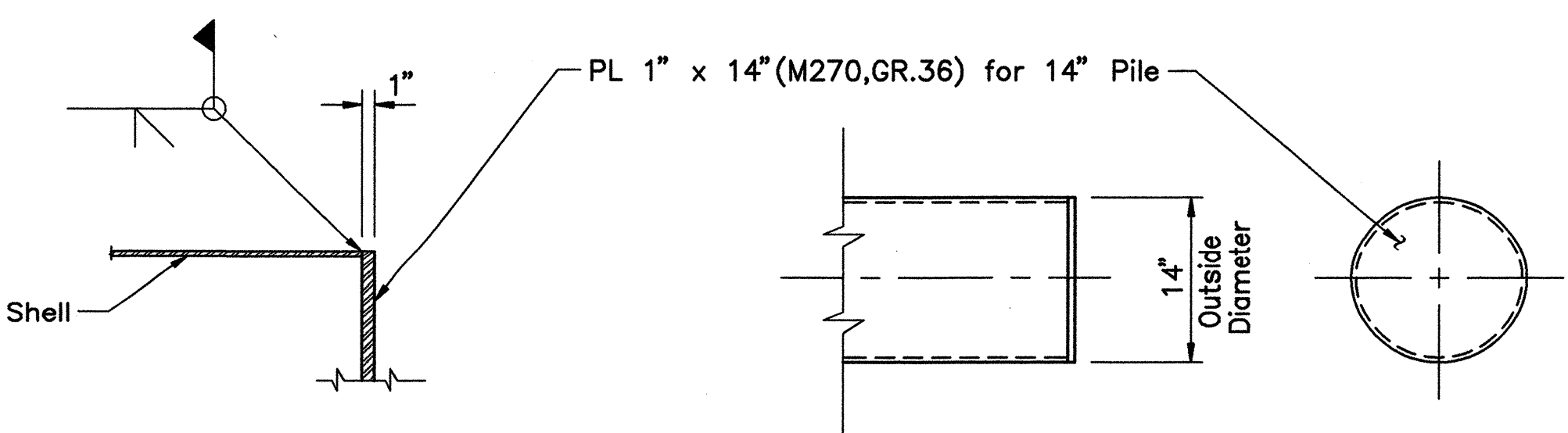


ELEVATIONS



SECTION H-H

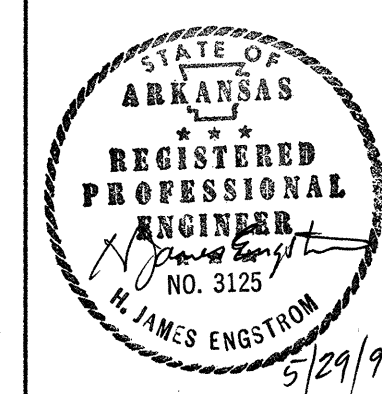
### ALTERNATE VANED TIP DETAIL



PART SECTION

ELEVATIONS

### ALTERNATE FLAT TIP DETAIL



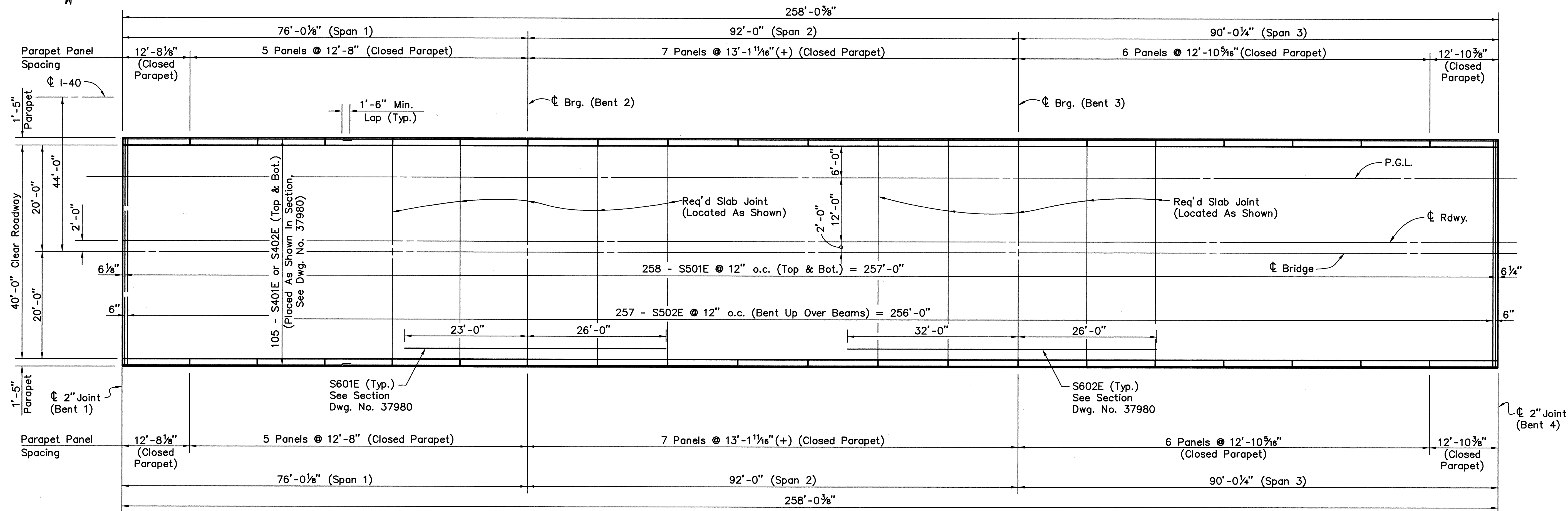
ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS	
DETAILS OF CONCRETE FILLED STEEL SHELL PILES ALT. B	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.	
DRAWN BY: DLG	DATE: 11/96
CHECKED BY: CDE	DATE: 5/97
DESIGNED BY: HJE	DATE: 11/96
SCALE: NONE	
BRIDGE NO. A & B 3727 A & B 3731	DRAWING NO. 37999

BRIDGE ENGINEER

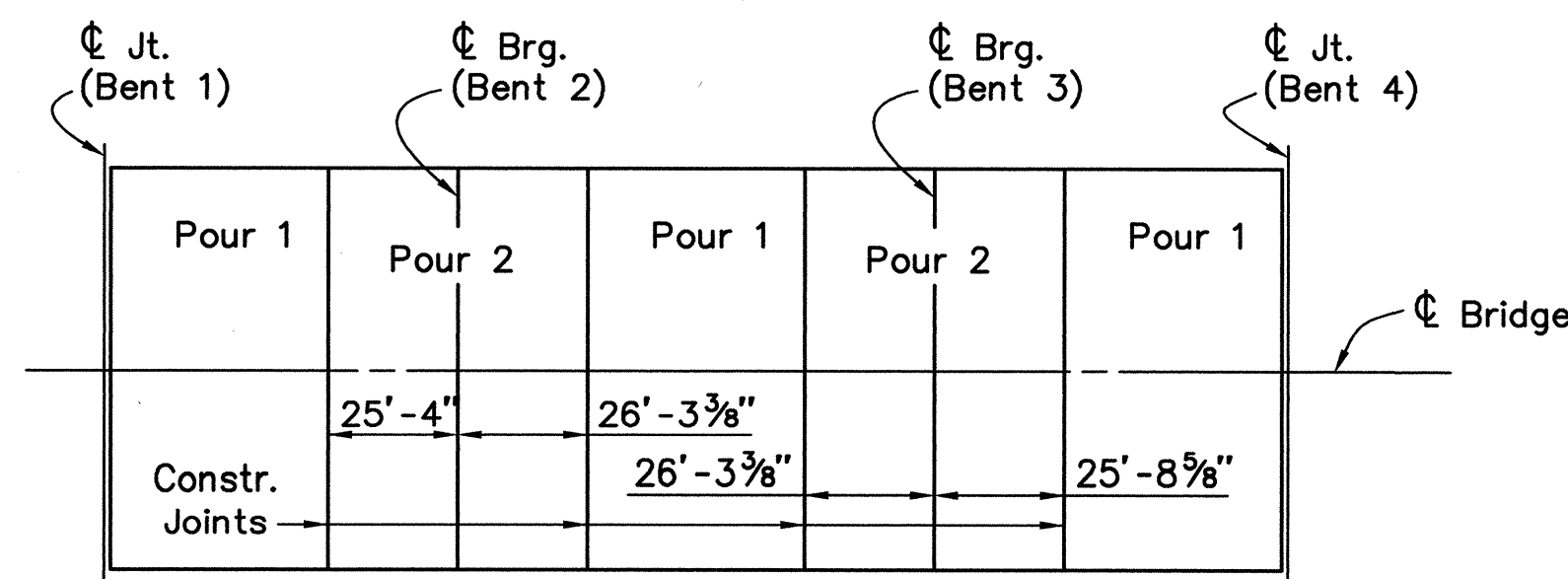
MICROFILMED  
OCT 16 1998

C:\PROJ\AHTD\RAIL\SHLP\ILE2 ACAD SCALE: 3/8" = 1'-0"

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK			
				JOB NO.	R10055	84	116	
				1 A & B 3731	SPAN	38000		

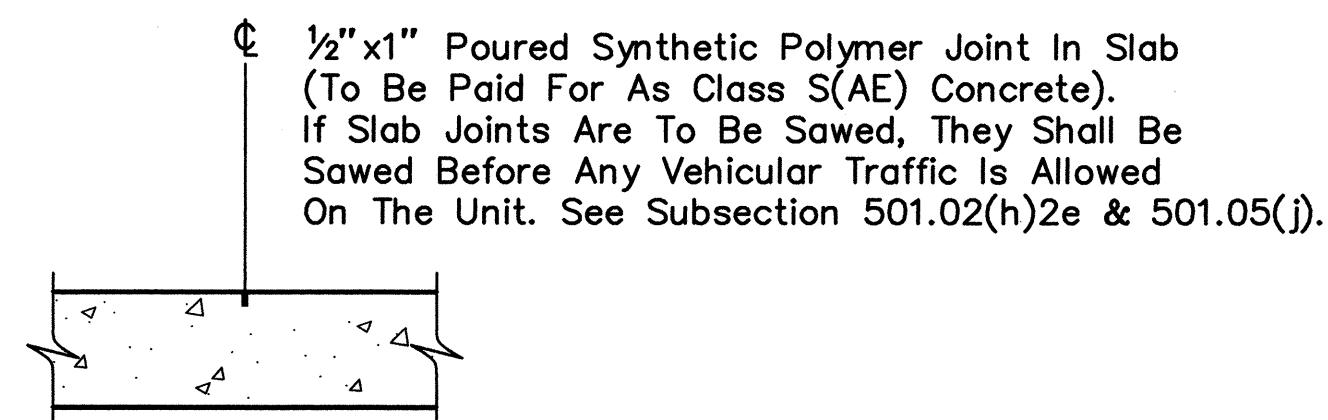


**SLAB PLAN FOR BRIDGE B**  
 Scale: 1"=10'  
 (Bridge A Sym. About C I-40)

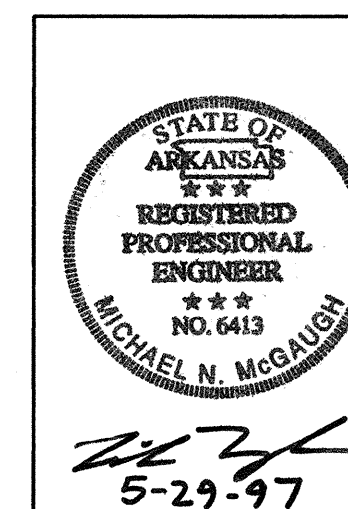


**SLAB POURING SEQUENCE**  
 N.T.S.

Note: For Additional Notes On Pouring Sequence, See Dwg. No. 37977.



**SLAB JOINT DETAIL**  
 N.T.S.



ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS	
<b>SLAB PLAN</b> BRIDGE A & B 3731 OVER ST. LOUIS - SOUTHWESTERN RAILWAY	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.	
DRAWN BY: DHH DATE: 11/96 CHECKED BY: MNM/GPS DATE: 1/97 DESIGNED BY: GPS DATE: 9/94	SCALE: 1" = 10'
BRIDGE NO. A & B 3731	DRAWING NO. 38000

ABMB ENGINEERS, INC.





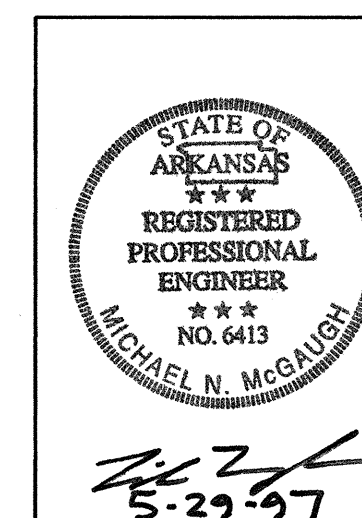
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK			
				JOB NO.	R10055	86	116	
				① A & B 3731 FRMG. PLAN		38002		

TABLE OF DEFLECTIONS-INCHES						
DEAD LOAD DEFLECTION						
Span	Point of Deflection	Structural Steel		Structural Steel+Slab		Str. Steel+Slab+Rail
		Interior	Exterior	Interior	Exterior	Interior Exterior
1	0	0.000	0.000	0.000	0.000	0.000 0.000
	0.1	0.083	0.078	0.438	0.383	0.473 0.419
	0.2	0.153	0.143	0.811	0.708	0.874 0.775
	0.3	0.201	0.189	1.069	0.934	1.153 1.022
	0.4	0.223	0.209	1.186	1.037	1.281 1.136
	0.5	0.217	0.204	1.157	1.011	1.250 1.108
	0.6	0.186	0.175	0.995	0.870	1.076 0.954
	0.7	0.137	0.128	0.736	0.643	0.796 0.706
	0.8	0.080	0.075	0.435	0.380	0.470 0.417
	0.9	0.030	0.028	0.165	0.144	0.177 0.157
2	0	0.000	0.000	0.000	0.000	0.000 0.000
	0.1	0.006	0.006	0.018	0.016	0.026 0.023
	0.2	0.040	0.037	0.185	0.162	0.213 0.191
	0.3	0.078	0.073	0.385	0.337	0.435 0.388
	0.4	0.102	0.096	0.521	0.456	0.585 0.521
	0.5	0.102	0.095	0.540	0.472	0.608 0.541
	0.6	0.077	0.072	0.435	0.380	0.494 0.440
	0.7	0.036	0.034	0.243	0.212	0.283 0.252
	0.8	-0.003	-0.003	0.046	0.039	0.063 0.056
	0.9	-0.022	-0.020	-0.066	-0.058	-0.066 -0.059
3	0	0.000	0.000	0.000	0.000	0.000 0.000
	0.1	0.075	0.071	0.314	0.276	0.340 0.302
	0.2	0.184	0.173	0.783	0.687	0.850 0.756
	0.3	0.300	0.282	1.293	1.135	1.402 1.248
	0.4	0.397	0.373	1.724	1.513	1.868 1.663
	0.5	0.456	0.428	1.987	1.743	2.151 1.914
	0.6	0.463	0.435	2.025	1.777	2.192 1.950
	0.7	0.414	0.389	1.817	1.594	1.965 1.749
	0.8	0.313	0.294	1.374	1.206	1.486 1.322
	0.9	0.169	0.159	0.742	0.651	0.803 0.714
4	0	0.000	0.000	0.000	0.000	0.000 0.000
	0.1	0.075	0.071	0.314	0.276	0.340 0.302
	0.2	0.184	0.173	0.783	0.687	0.850 0.756
	0.3	0.300	0.282	1.293	1.135	1.402 1.248
	0.4	0.397	0.373	1.724	1.513	1.868 1.663
	0.5	0.456	0.428	1.987	1.743	2.151 1.914
	0.6	0.463	0.435	2.025	1.777	2.192 1.950
	0.7	0.414	0.389	1.817	1.594	1.965 1.749
	0.8	0.313	0.294	1.374	1.206	1.486 1.322
	0.9	0.169	0.159	0.742	0.651	0.803 0.714

Notes:  
 Camber for dead load deflection plus vertical curve  
 ± 1/4" tolerance. Deflections shown are from a chord  
 from centerline bearing to centerline bearing. Vertical  
 Curve Corrections not Included. Negative sign (-)  
 Indicates Point Above Chord.

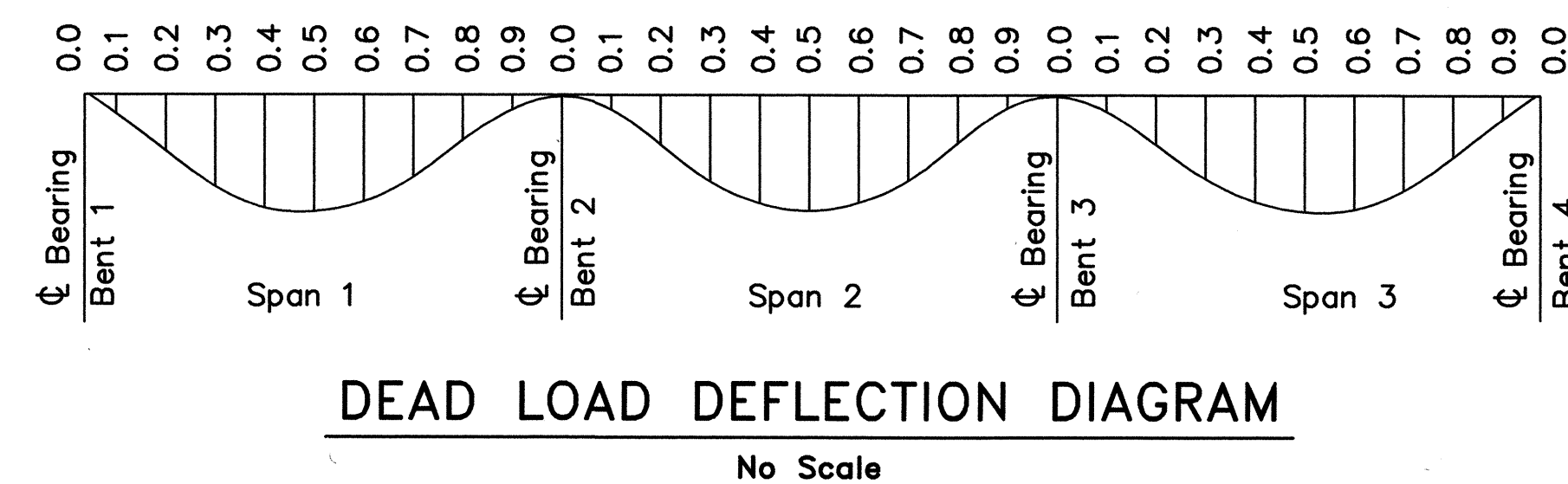
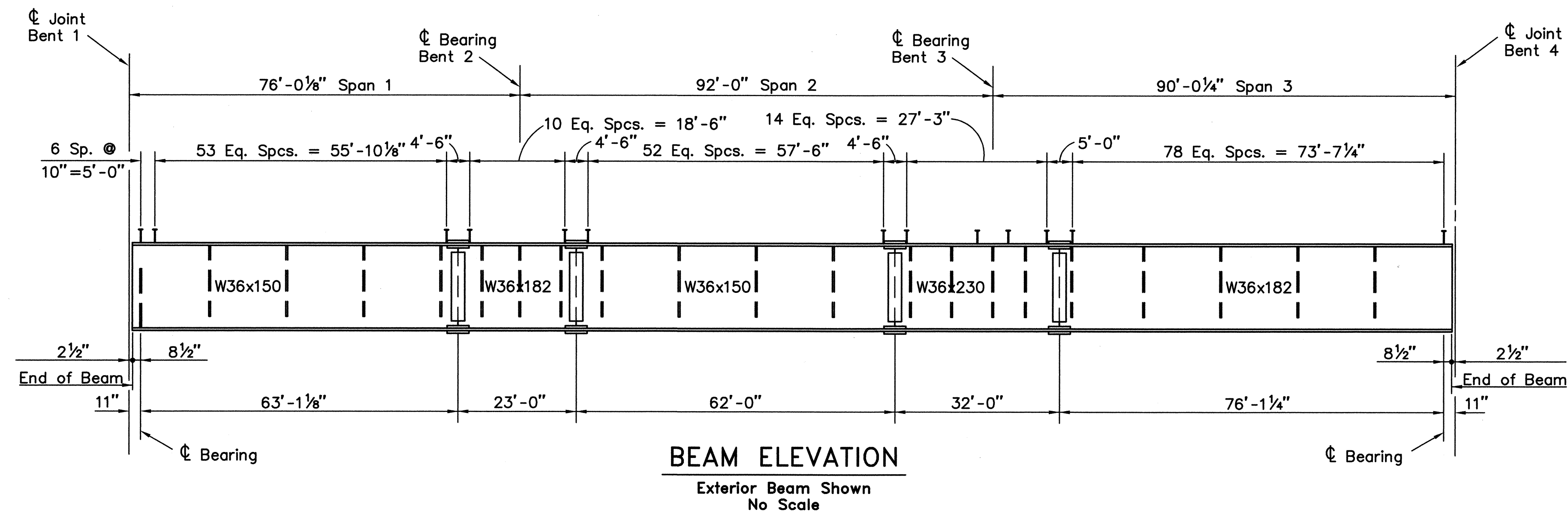
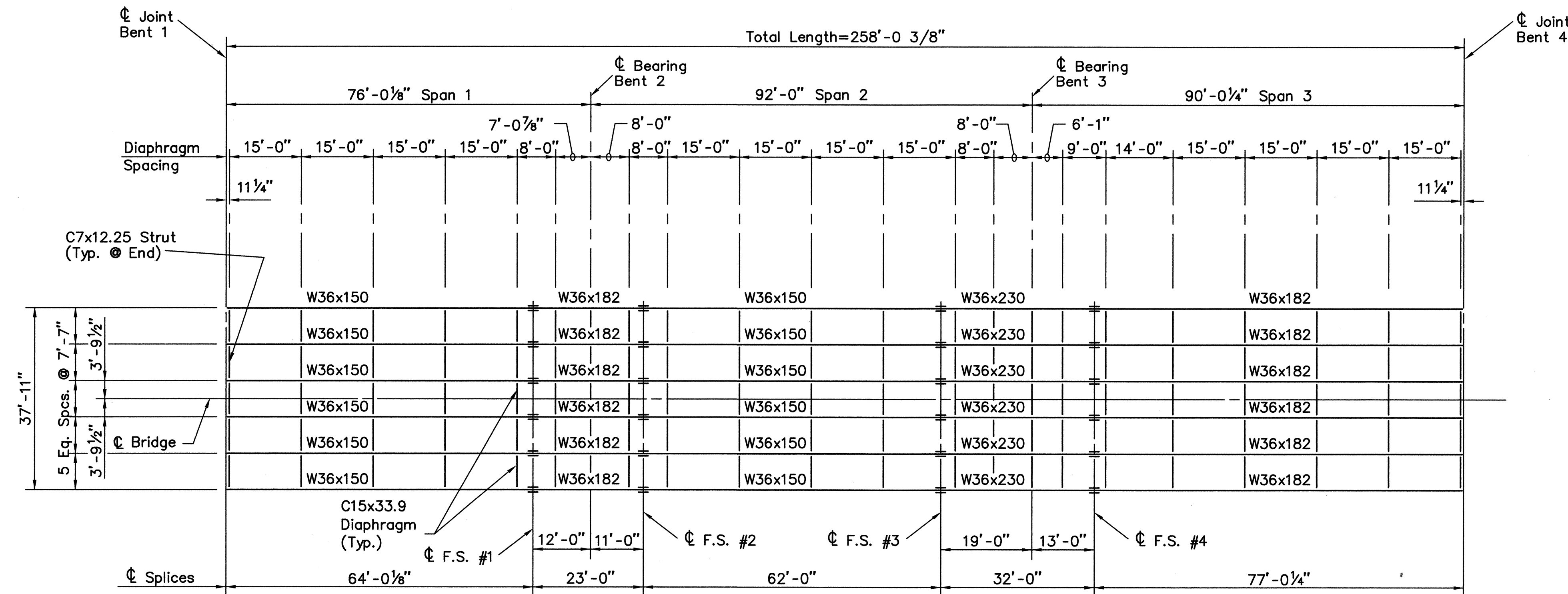
- Notes:
- All steel to be AASHTO M270, GR.50W.
  - See Dwg. No. 37985 for splice and diaphragm details.
  - See Dwg. No. 37986 for expansion joint and shear connector details.
  - See Dwg. No. 37984 for bearing details.
  - See Dwg. No. 37968 for general notes.
  - Bolted Field Splices shown may be Eliminated or Shop Welded Splices may be Substituted with approval of the Bridge Engineer. Payment will be made on the Basis of the Bolted Splices Shown.

Load Distribution		To Interior Beam	To Exterior Beam
Dead Load		758#/Ft. + 1.15(Bm. Wt.)	651#/Ft. + 1.08(Bm. Wt.)
(a) To Beam only		263#/Ft.*	263#/Ft.*
(b) To Composite Beam			
Live Load to Composite Beam		1.379 Wheels + Impact	1.286 Wheels + Impact
* (Includes 133#/Ft. for future wearing surface)			



ENGSTROM/MODJESKI AND MASTERS CONSULTING ENGINEERS	
FRAMING PLAN BRIDGE A & B 3731 OVER ST. LOUIS - SOUTHWESTERN RAILWAY	
MONROE COUNTY INTERSTATE ROUTE 40 SEC. 43 ARKANSAS STATE HIGHWAY COMMISSION LITTLE ROCK, ARK.	
DRAWN BY: DHH DATE: 11/96	SCALE: AS NOTED
CHECKED BY: MNM/GPS DATE: 1/97	
DESIGNED BY: GPS DATE: 9/94	
BRIDGE NO. A & B 3731	DRAWING NO. 38002

ABMB ENGINEERS, INC.

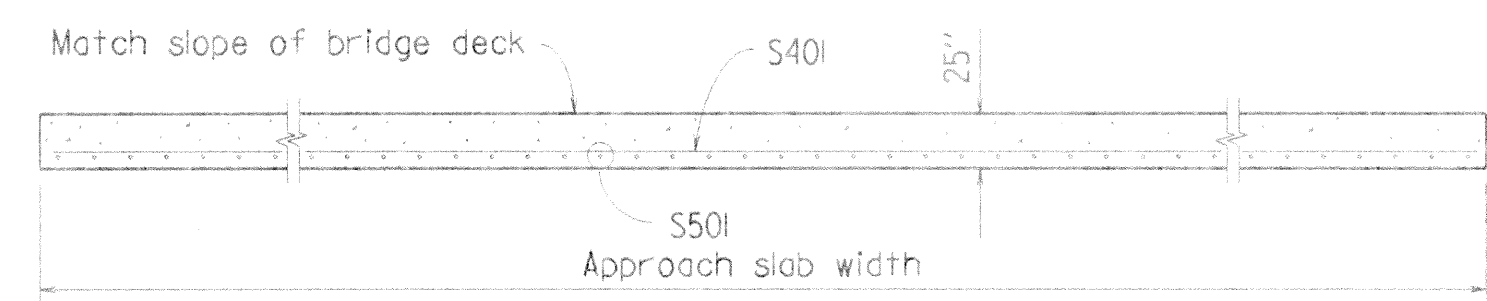
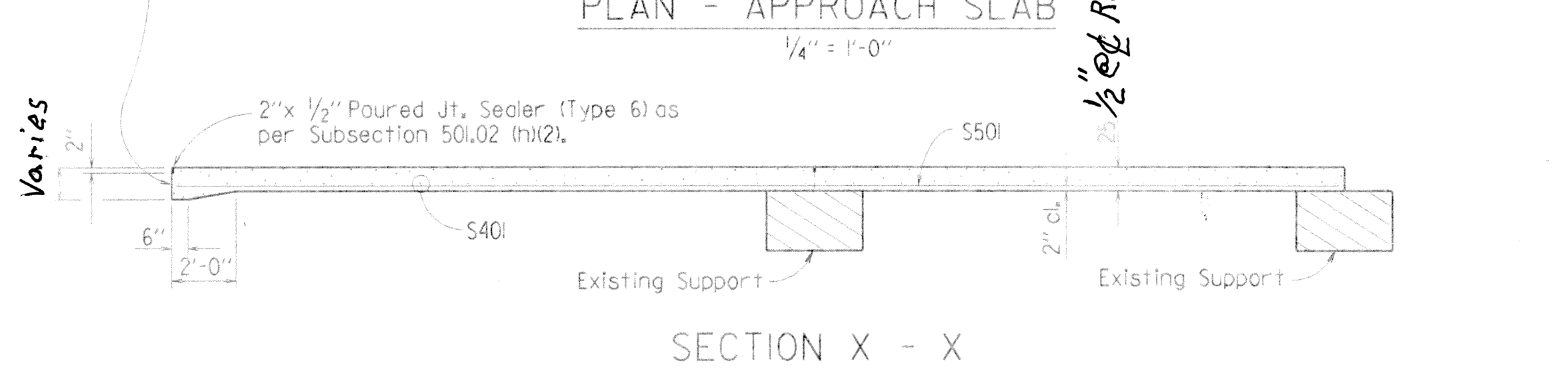
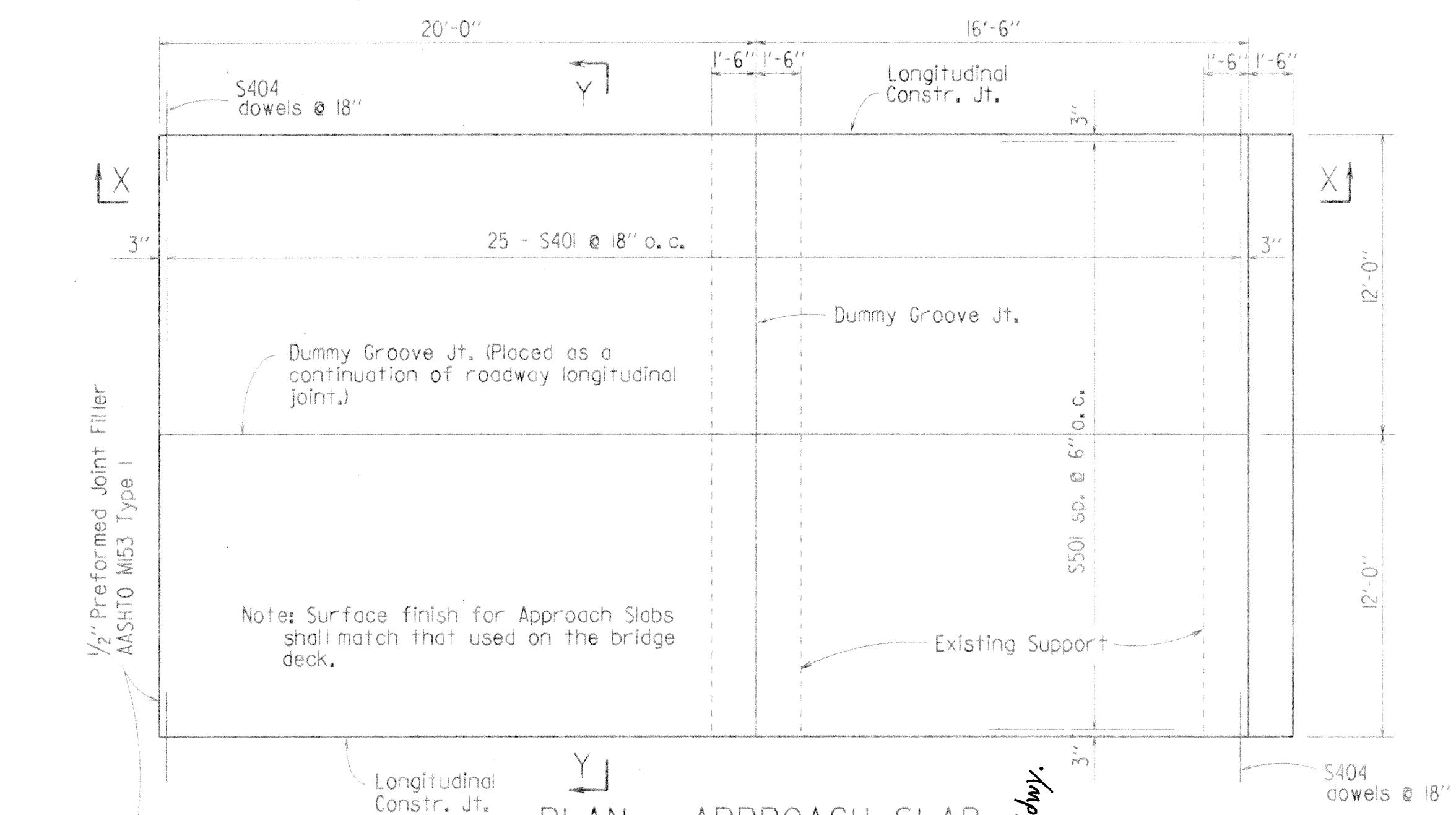


Q:\ACAD\Q1069\SW-RAIL\FRM-1 ACAD SCALE: 1"=16"

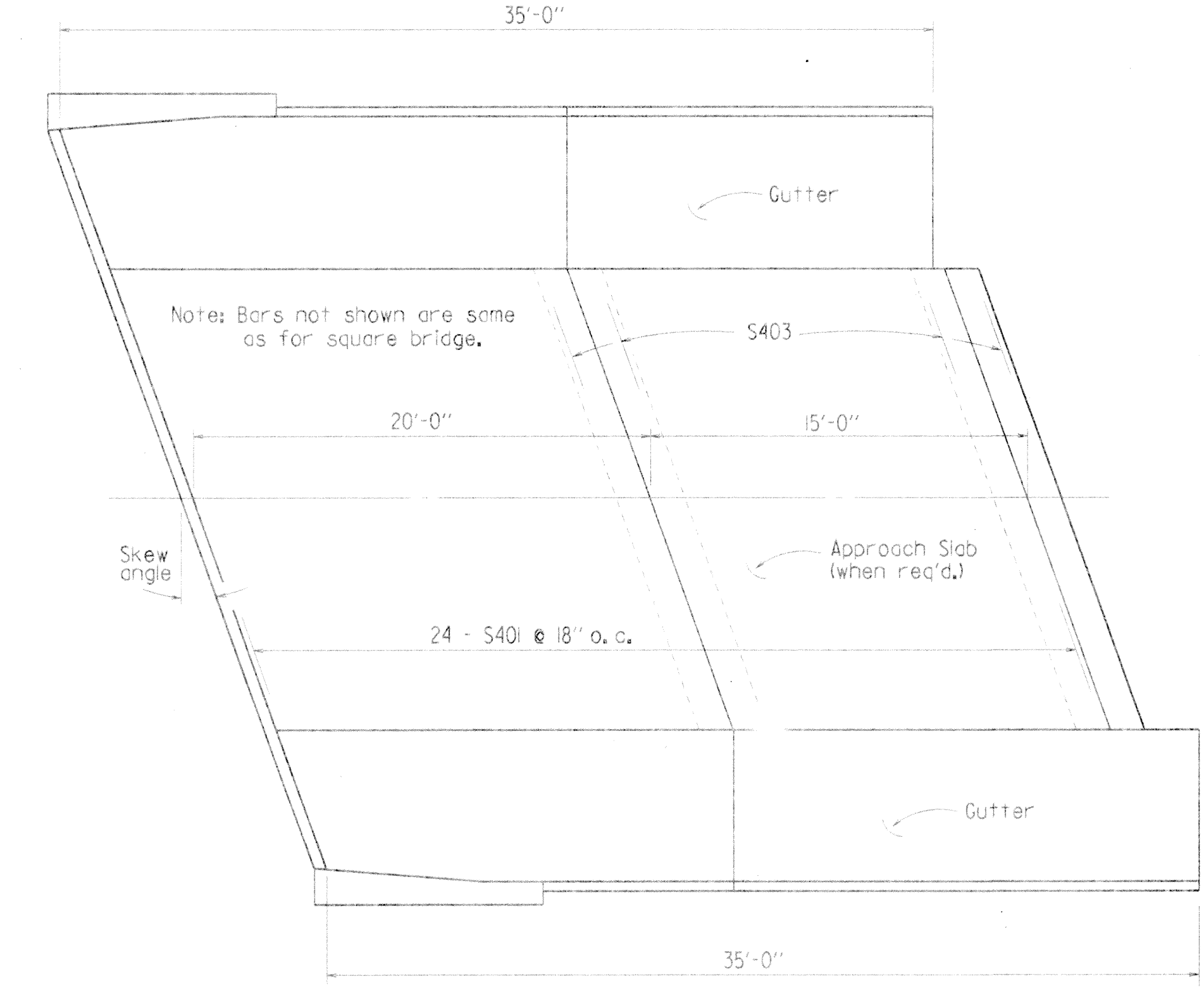
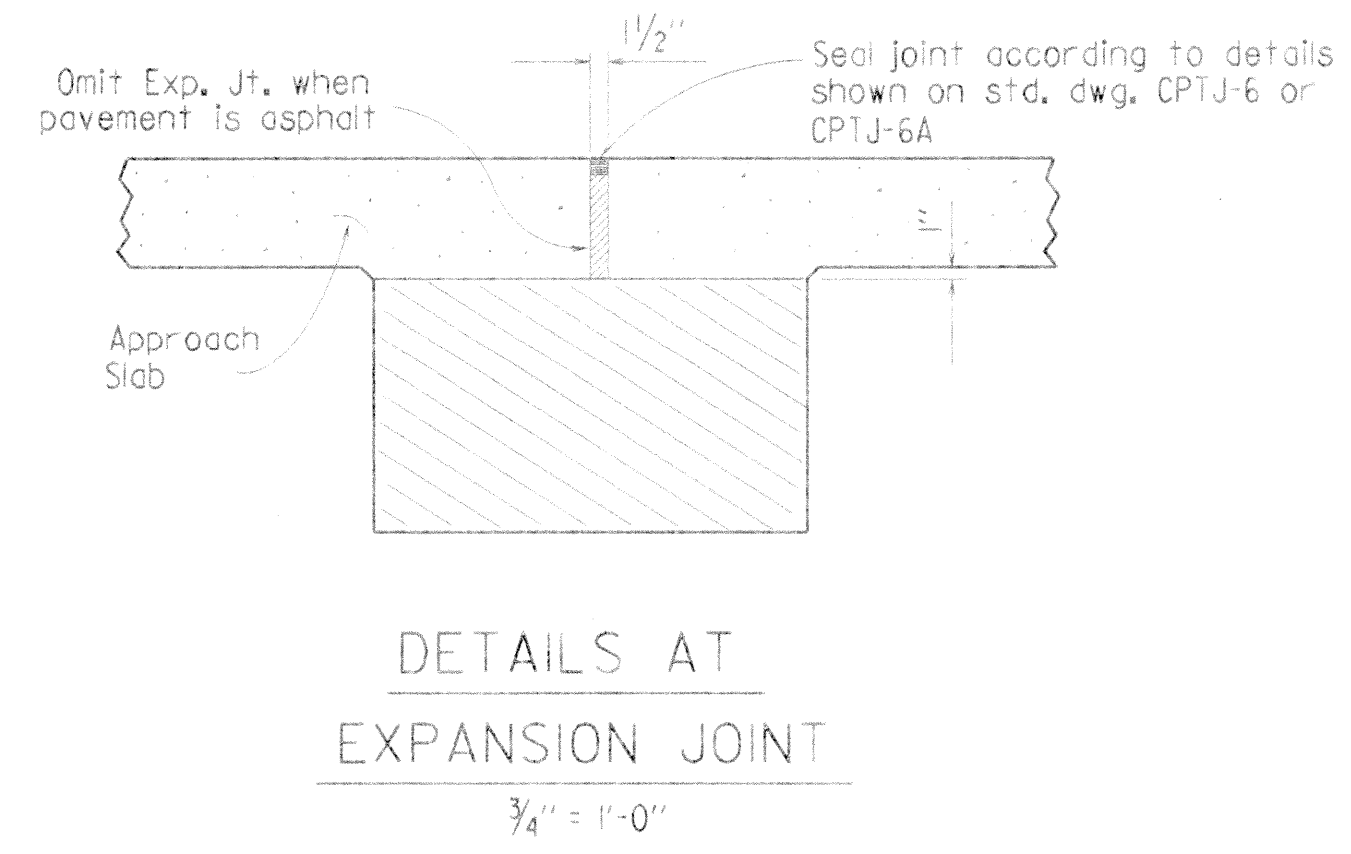
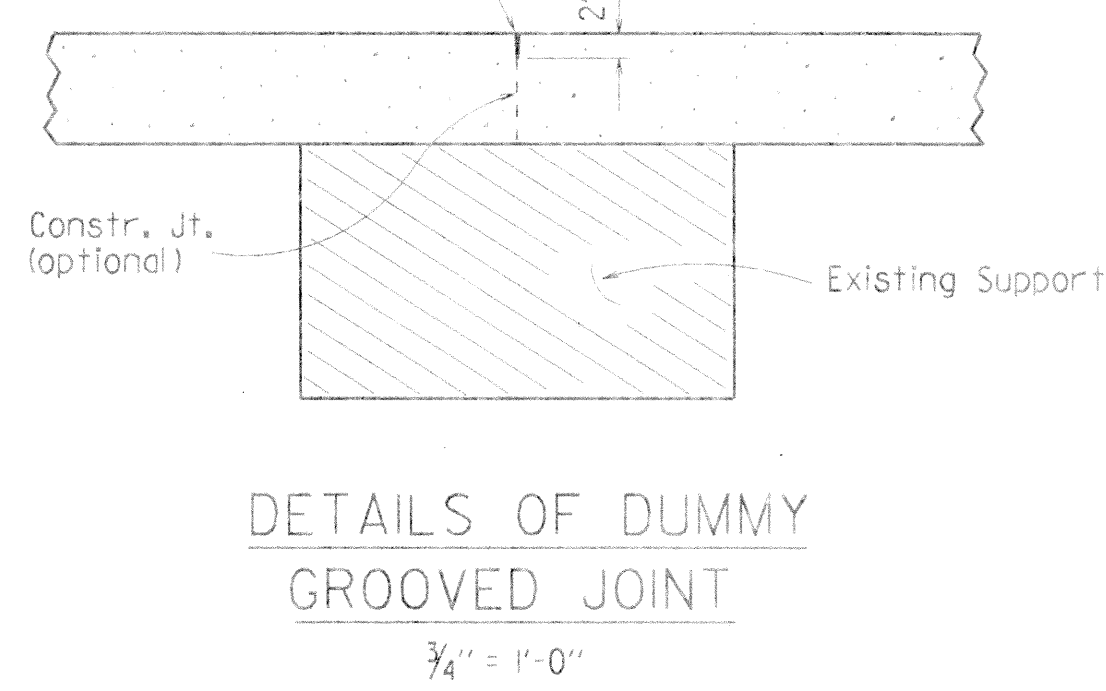
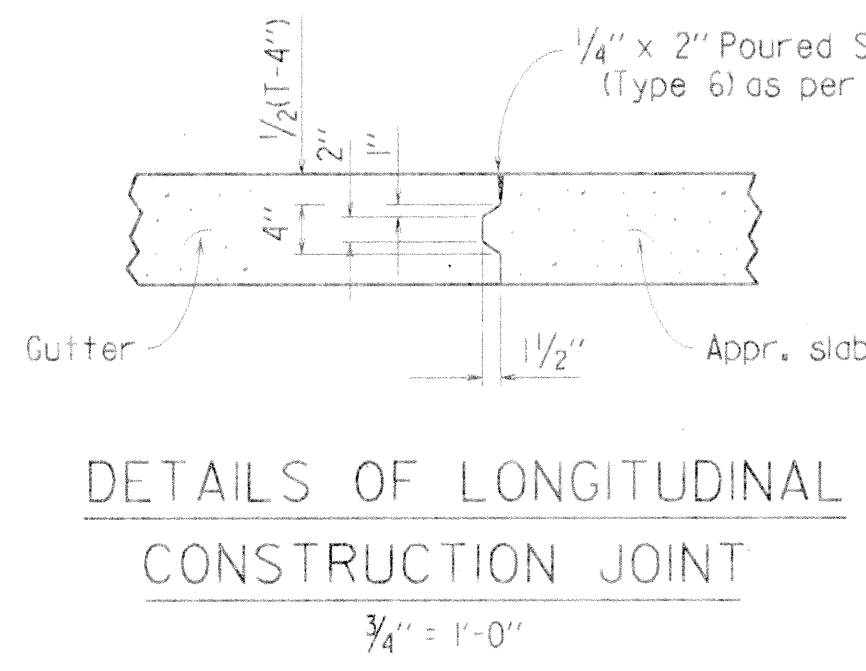
MICROFILMED  
OCT 16 1998



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. AID DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		RI0055	87	116
				A&B 3731		APPR. SLAB	38003	



Note: All slabs are uniform thickness.



PLAN VIEW SHOWING TYPE C APPROACH FOR SKEWED BRIDGE

BAR LISTS  
(Square & Skewed Slabs)

Mark	No. Req'd.	Length	
		Square	Skewed
S401	24	23'-8"	23'-8" (secant skew angle)
S404	48	3'-0"	
S501	48	34'-8"	

GENERAL NOTES

Concrete shall be Class S or Class S (AE) or mixture used for Portland Cement Concrete Pavement.

Reinforcement Steel shall conform to AASHTO M31 or M53, Grade 60 (fy = 60,000 psi).

Approach Slabs and Approach Gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.

This drawing to be used with dwg. no. 38004.

TABLE OF QUANTITIES FOR ONE SQUARE APPROACH SLAB

Slab Width	Reinforcing Steel	Concrete (Cu. Yds.)
24'-0"	221 lb.	910



DETAILS OF APPROACH SLAB

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: WMAJ, DATE: 11-4-97

CHECKED BY: GYA, DATE: 11-4-97

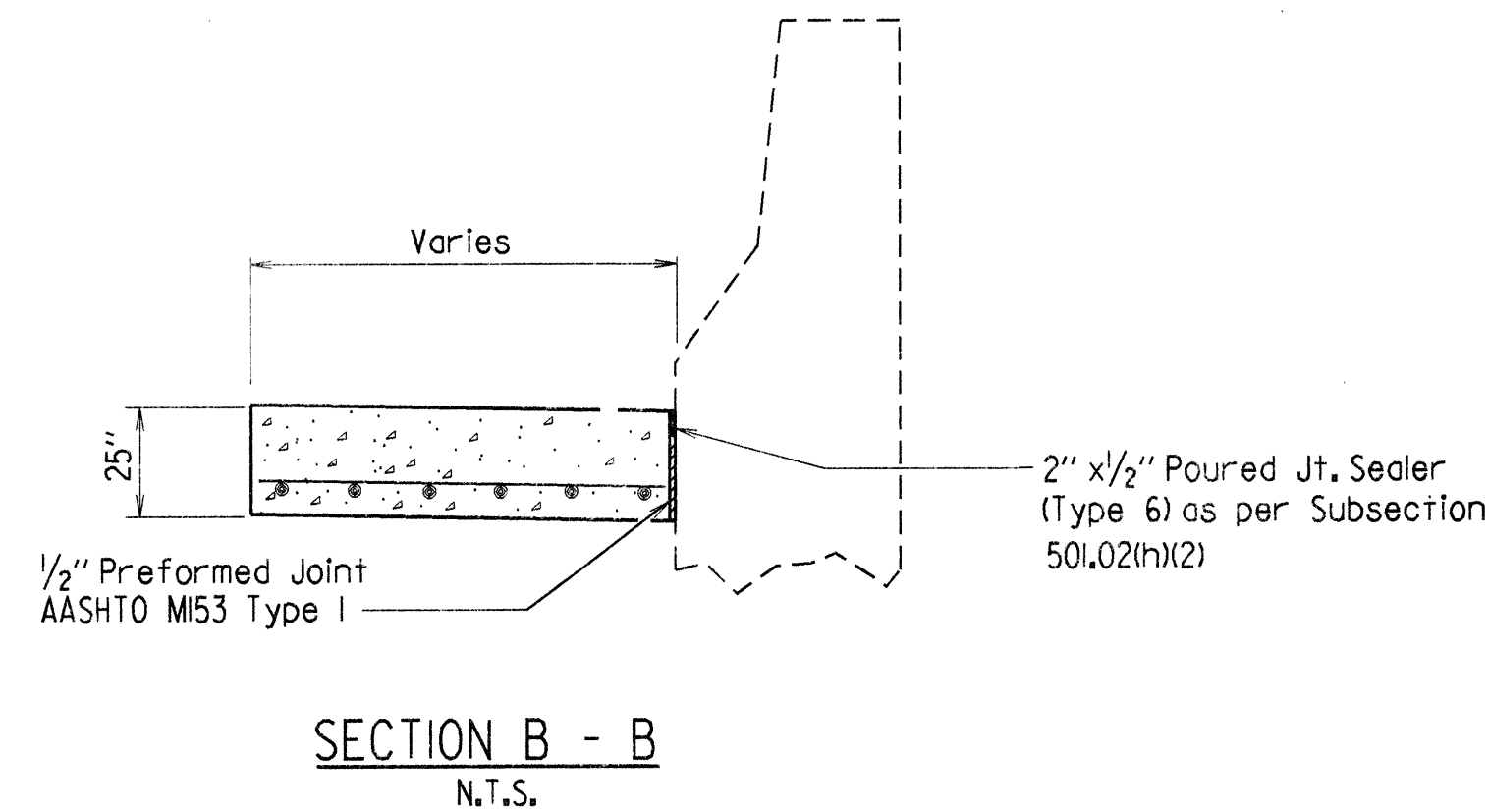
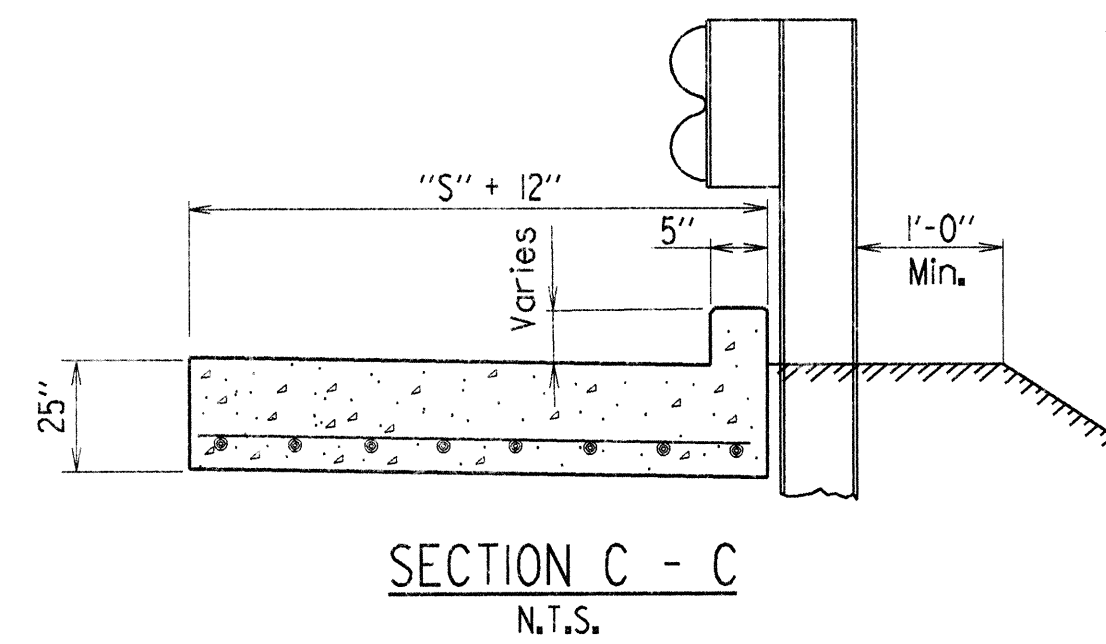
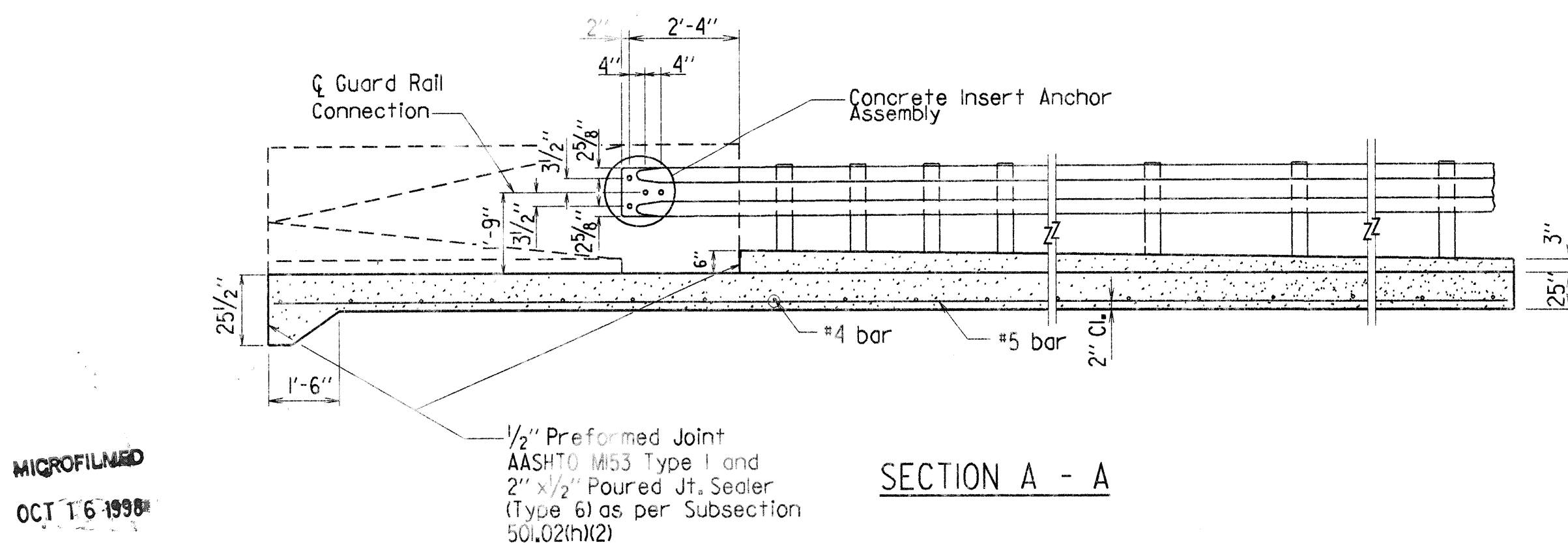
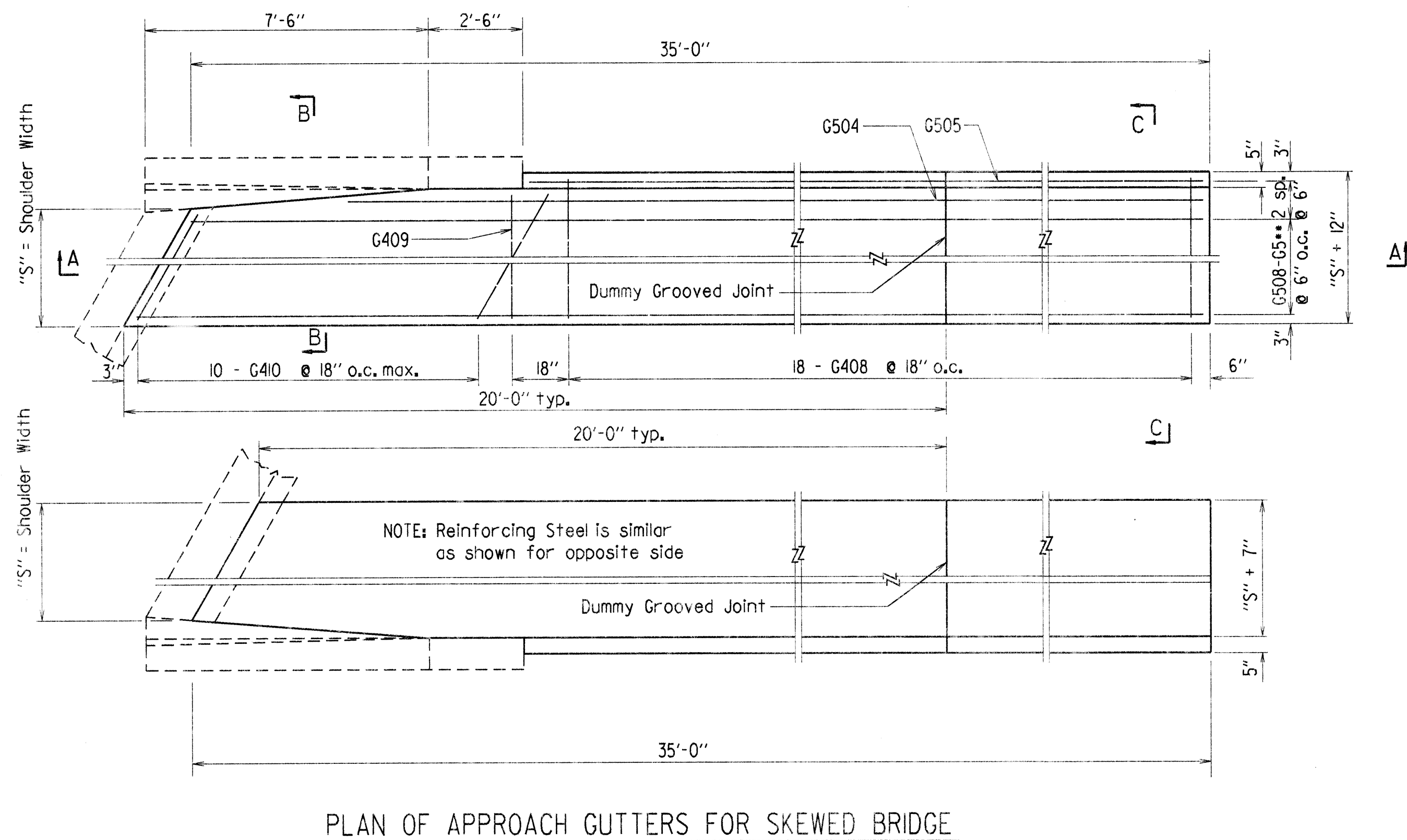
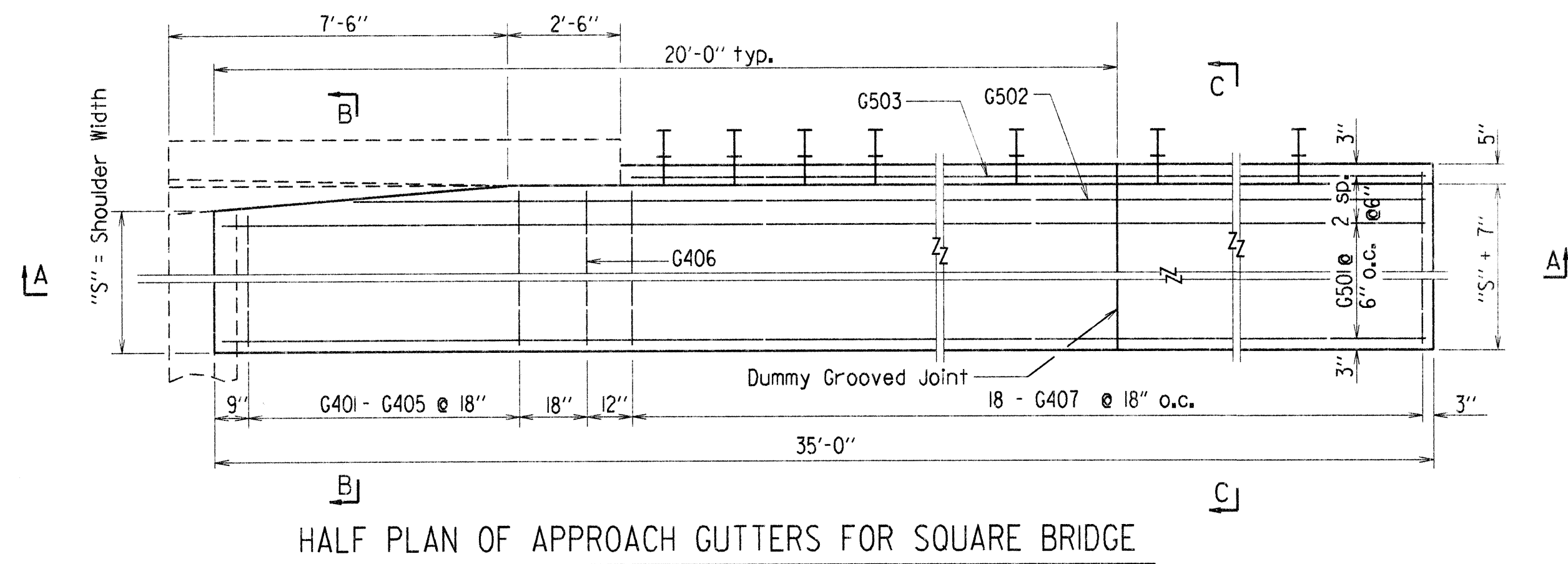
DESIGNED BY: Std, DATE:

BRIDGE NO. A&B 3731, DRAWING NO. 38003

MICROFILMED  
OCT 16 1998

br10r55x1.slb

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.		R10055	88	116
				A&B 3731		GUTTERS		38004



BAR LIST FOR ONE  
TYPE SPECIAL GUTTER

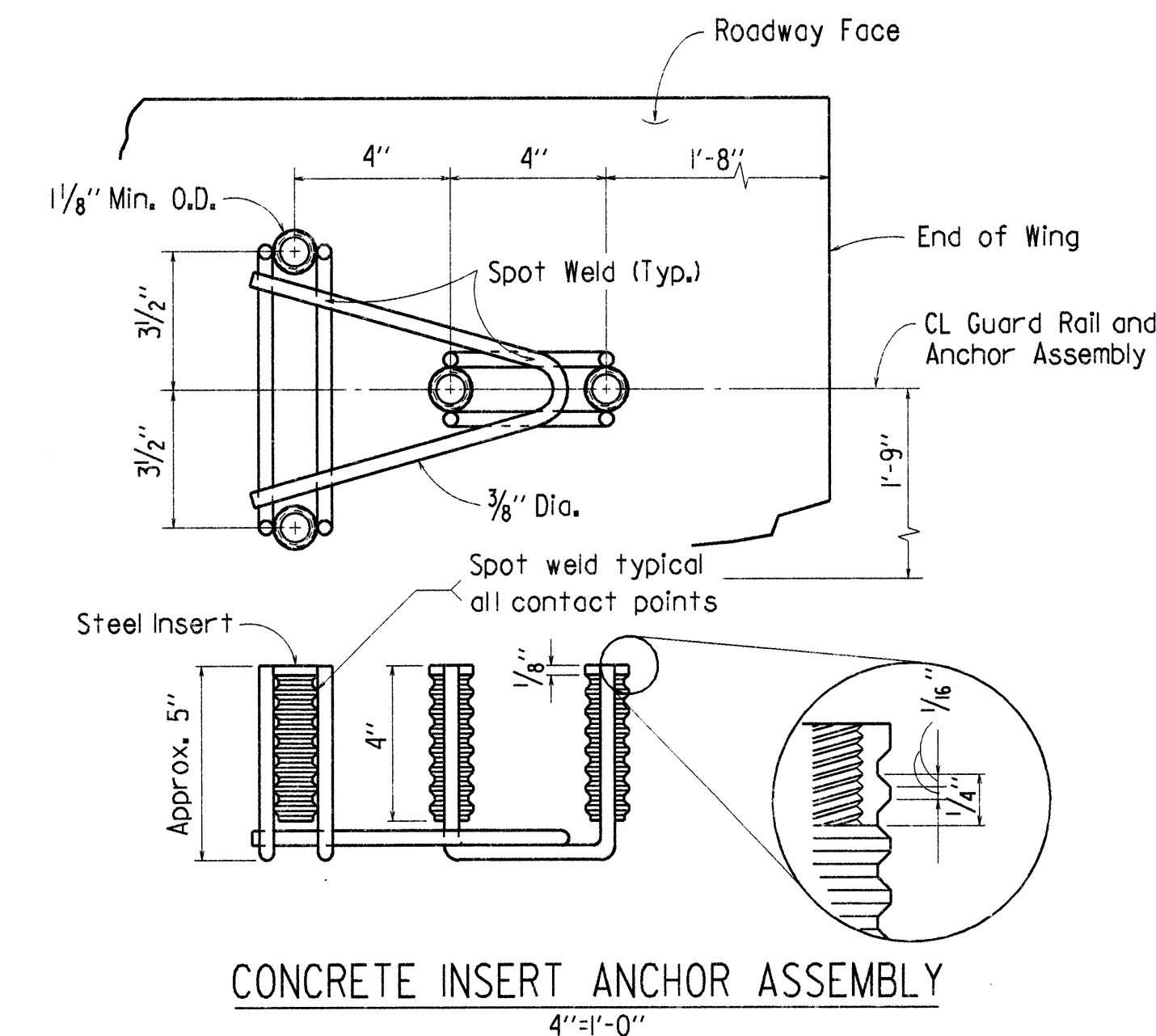
Mark	No. Req'd.		Length	Square Skewed
	Shoulder Width			
	6'-0"	10'-0"		
G401 - G405	1 each	1 each	"S"-3" to "S"+3"	Square
G406	1	1	"S"+3"	Square
G407	19	19	"S"+8"	Square
G408	19	19	"S"+8"	Skewed
G409	1	1	"S"+3"	Skewed
G410	10	10	•	Skewed
G501	12	20	36'-2"	Square
G502	1	1	3'-8"	Square
G503	1	1	27'-2"	Square
G504	1	1	•	Skewed
G505	1	1	•	Skewed
G508 - G5... ••	1 each	1 each	•	Skewed

\* Bar Lengths vary with Skew, Lengths shown are for Square Bridges.

\*\*G519 for S = 6'  
G527 for S = 10'

QUANTITIES FOR ONE  
SQUARE APPROACH GUTTER

Shoulder Width (ft.)	Reinforcing Steel (lbs.)	Concrete (cubic yards)
6'-0"	597	18.80
10'-0"	950	29.70



Minimum capacity of guard rail attachment by concrete insert anchor assembly or other means shall be 12,000 lbs. ultimate shear capacity per bolt and insert (48,000 lbs. per assembly). There shall be a minimum of four bolts per attachment located as shown. The contractor may use the insert anchor assembly shown, or one similar which provides the same ferrule depth and thread length. The capacity of the insert anchor assembly shall be certified to the Engineer.

Guard rail attachment using other types of concrete insert will be allowed, provided they meet the minimum capacity specified, the capacity is certified, and approval is obtained from the Engineer before use.

The threaded steel insert shall have a solid bottom, tapered to a minimum threaded depth of 2 1/2". The guard rail shall be connected with 1/2" x 2 1/2" high strength hex bolts and one hardened steel washer. See Section 807 of the Standard Specifications.

Bolts shall conform to the requirements of AASHTO M64 and shall be threaded full length. Bolts and washers shall be galvanized in accordance with AASHTO M232.

Bolts shall be installed in accordance with Subsection 807.71 of the Standard Specifications.

Concrete Insert Anchor Assembly will not be paid for directly, but will be considered subsidiary to the Item of Class S or Class S (AE) Concrete - Bridge.

For Details of Guard Rail see dwg. nos. GR-8 & GR-8A.

## GENERAL NOTES

Concrete shall be Class S or Class S(AE) or mixture used for Portland Cement Concrete Pavement.

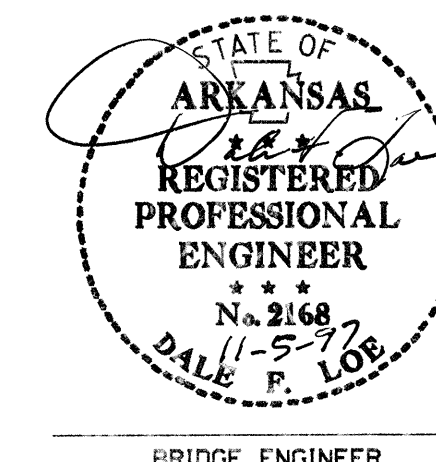
Reinforcement Steel shall conform to AASHTO M31 or M53, Grade 60 (fy = 60,000 psi).

Approach Gutters will be measured and paid for in accordance with Section 504 of the Standard Specifications.

## DETAILS OF TYPE SPECIAL APPROACH GUTTERS

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

DRAWN BY: W.M.A.J. DATE: 11-3-97  
CHECKED BY: G.V.A. DATE: 11-3-97  
DESIGNED BY: S.F.D. DATE: 11-3-97  
BRIDGE NO. A&B 3731 DRAWING NO. 38004



MICROFILMED  
OCT 16 1998

bci0055x1.out



Reverse diagonals in bottom of truss

All chords to be 3 1/2" diameter pipe at 3.15 #

All struts and diagonals to be 1/2" diameter pipe at 0.940 #

8 equal spaces

1'-6"

29'-0"

35'-6"

4'-4"

4'-0"

1'-0"

5'-9"

3'-0 3/4"

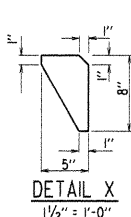
4'-0"

10"

PLAN

TRUSS CAMBER DIAGRAM

No scale



1'-0"

2"

1 1/2" dia. strut

1/4" min. thickness cap end

6" dia. column

5/8" dia. U-bolt

Hex lock nut

2 1/4" x 6 1/2" curved washer (typ.)  
(May be cut from 6" dia. pipe)

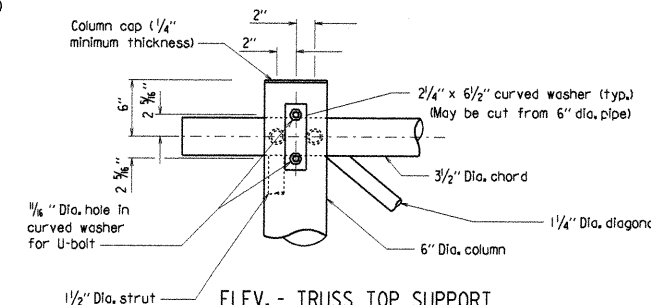
3/2" dia. chord

5/8"

(typ. for all 1 1/4" pipes welded to 3/2" pipe)

PLAN - TRUSS TOP SUPPORT

1 1/2" = 1'-0"

[illegible]

3 1/2" Dia. chord

1 1/2" Dia. strut

1 1/2" Dia. diagonals

3 1/2" Dia. chord

1/4" min. thickness  
cap end

1'-0"

1'-3"

1 1/2"

4"

8"

1 1/2"

2 3/16"

2 3/16"

2 3/16"

5/8" Dia. U-bolt

30°

30°

2 3/16"

6" Dia. column

2"

3 1/16"

5 1/2"

9 1/2"

3 3/8"

1/8" x 1" slot in plate

3/4" x 9 1/2" x 1'-3" plate

**PLAN - TRUSS BOTTOM SUPPORT**

BAR LIST					
MARK	NO. REQ'D	LENGTH	A	B	PIN DIA.
C40I	4	22'-4"	5'-6"	5'-6"	2"
C60I	20	6'-4"	5'-6"	1'-0"	2"
F40I	8	14'-6"			STR.
F402	15	7'-6"			STR.
F50I	15	14'-6"			STR.
F502	29	7'-6"			STR.

Diagram illustrating the Plan view of a Column Base. The base is a square plate with overall dimensions of 1'-0" (12 inches) by 1'-0" (12 inches). The base is centered on a 6" Dia. column. The base has four 1/4" Dia. holes for bolts, spaced 4" apart horizontally and vertically, with 2" margins from the edges. The centering column and centerline base are indicated.

Labels and dimensions shown in the diagram:

- 1'-0" (Overall width)
- 2" (Margin from edge to bolt center)
- 4" (Spacing between bolt centers)
- 6" Dia. column (Centering column)
- Centering column & centerline base (Dashed lines)
- 1/4" Dia. hole (Bolt hole)
- 4" (Spacing between bolt centers vertically)
- 2" (Margin from edge to bolt center vertically)

**PLAN - COLUMN BASE**

STRUCTURE	C	D	E	F	G
OC-040-48-02	19'-6"	3'-3"	15'-3"	10'-0"	5'-0"

Note: For general notes and additional details, see drawing no. 38817.

LITTLE ROCK, ARK.

DRAWN BY:	CSL	DATE:	Nov. 21, 1997	SCALE: 1/4" = 1'-0" or as shown
CHECKED BY:	ALU	DATE:	11/21/97	
DESIGNED BY:	CSL	DATE:	Nov. 21, 1997	

STRUCTURE NO. OC-040-48-02

DRAWING NO. 3886

DRAWN BY: CSL DATE: Nov. 21, 1997  
 CHECKED BY: ALU DATE: 11/21/97  
 DESIGNED BY: CSL DATE: Nov. 21, 1997

STRUCTURE NO. OC-040-48-02

SCALE:  $\frac{1}{4}" = 1'-0"$  or as shown

DRAWING NO. 38816

STATE OF  
ARKANSAS  
REGISTERED  
PROFESSIONAL  
ENGINEER  
No. 2168  
11-21-97  
DALE F. LOE

BRIDGE ENGINEER

BRIDGE ENGINEER

DETAIL OF COLUMN CONNECTION TO BASE PLATE

No Scale

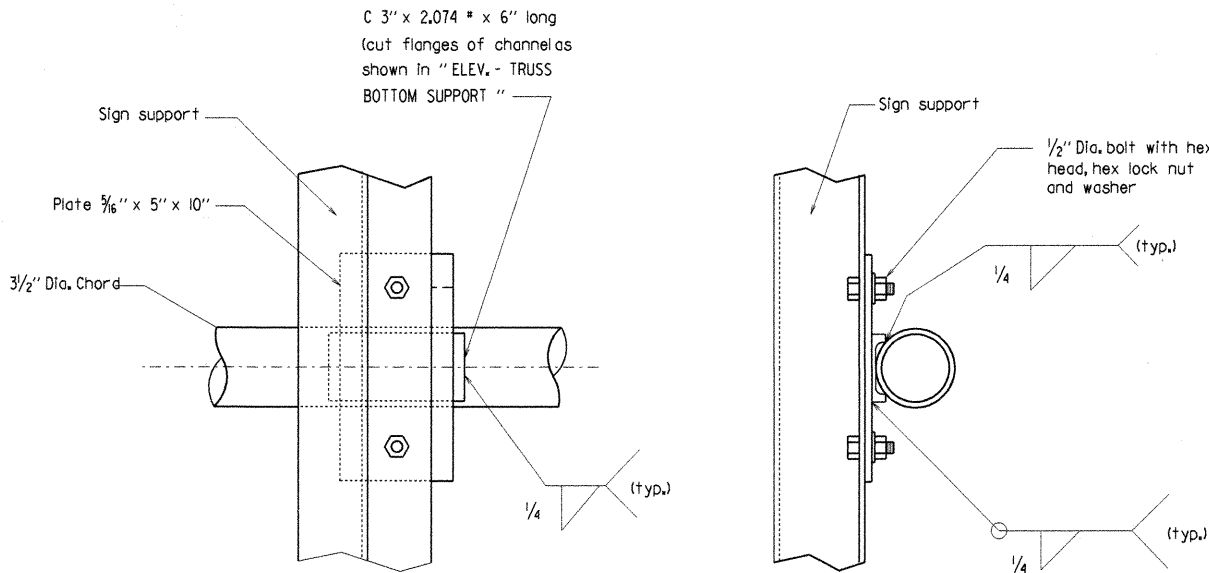
APPROXIMATE QUANTITIES (FOR INFORMATION ONLY)

STRUCTURE NUMBER	CLASS "S" CONCRETE (cu. yd.)	REINFORCING STEEL (pounds)	EXCAVATION (cu. yd.)
OC-040-48-02	14.22	856	27

B0404802.SNI

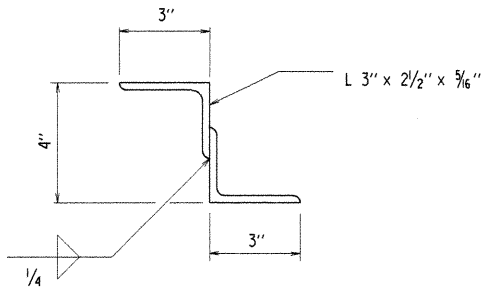
MICROFILMED  
OCT 16 1998

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.		RI0055	90	116
				OC-040-48-02		OVERHEAD SIGNS		38817



DETAILS OF SIGN SUPPORT CONNECTED TO TRUSS

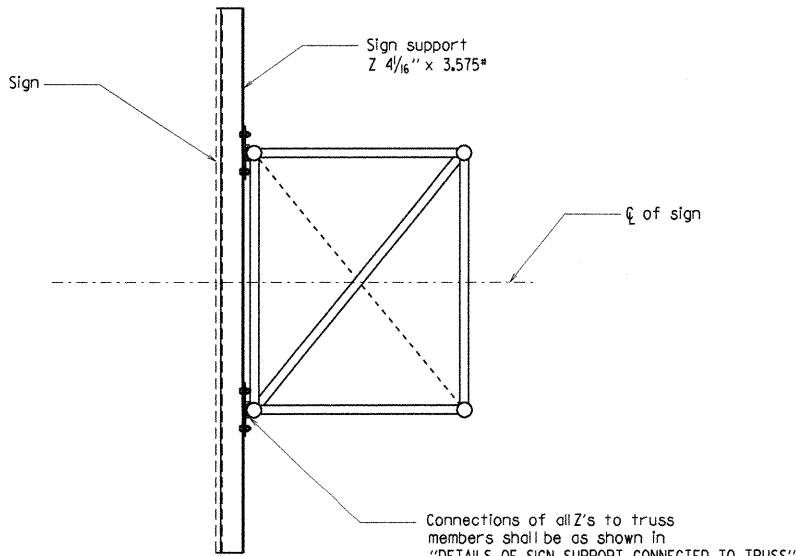
3" = 1'-0"



NOTE: Structural Z support may be fabricated from angles as shown.

DETAILS OF ALTERNATE Z SUPPORT

4" = 1'-0"



SECTION A - A

3/4" = 1'-0"

#### GENERAL NOTES

Design Specifications: Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, AASHTO 1994 with current Interims.

Construction Specifications: Arkansas State Highway Commission Standard Specifications for Highway Construction, edition of 1996, with applicable Special Provisions and Supplemental Specifications.

Design Wind Velocity = 70 m.p.h.

Aluminum sign support members shall comply to the following specifications for aluminum alloy:

Extrusions - Rods, Bars and Shapes: ASTM B221, 6061-T6  
Rolled Shapes: ASTM B308, 6061-T6  
Sheet and Plate: ASTM B209, 6061-T6  
Pipe: ASTM B241, 6061-T6  
Extruded Tubing: ASTM B221, 6061-T6  
Chord and Post Caps: Sand Castings: ASTM B26, 356-T6 or Plate: ASTM B209, 6061-T6

Bolts: ASTM B211, 2024-T4  
Nuts: ASTM B211, 6061-T6 or ASTM B211, 6262-T9  
Locknuts - Approved Type: ASTM B211, 2017-T4  
Washers: ASTM B209, A104 2024-T4  
Panel Clips, Fittings: Permanent Mold Castings  
ASTM B108, A356-T6

Splice Flanges Welded: ASTM B209, 6061-T6  
Welding Rods: ER4043 or ER5556, AWS A5.10, Consumable Electrode Type

Extruded aluminum tubing, not less in diameter and wall thickness than that of the member shown may be used in lieu of pipe.

For aluminum sign supports, stainless steel bolts complying with ASTM A193, Grade B8, Class 2, and strain hardened to a maximum 33 Hardness Rockwell C, may be used in lieu of aluminum alloy. Anchor Bolts, U-bolts and flange splice bolts shall comply with ASTM A193, Grade B8, Class 2, and strain hardened to a maximum 33 Hardness Rockwell C. Nuts for stainless steel bolts shall comply with ASTM A194, Heavy Hex, Grade 8A, 8CA, 8FA, 8LNA, 8MA, 8MLCuNA, 8MLNA, 8MNA, 8NA, 8PA, 8RA, 8SA, or 8TA.

Locknuts to be equipped with nylon locking inserts or other approved type locking system. Locknuts to be installed according to manufacturer's recommendations.

All aluminum welds to be consumable electrode type using aluminum alloy ER5556 for material thickness greater than 0.375 inch or ER5556 or ER4043 for material thickness less than or equal to 0.375 inch, as filler material, AWS A5.10, minimum test strength 24,000 psi.

SHEET 2 OF 2  
DETAILS OF CANTILEVER SIGN STRUCTURES  
BAYOU DEVIEW-BRINKLEY (F)  
MONROE COUNTY  
ROUTE 1-40 SEC. 43  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: CSL DATE: NOV. 21, 1997  
CHECKED BY: ALV DATE: 11/21/97  
DESIGNED BY: CSL DATE: NOV. 21, 1997  
STRUCTURE NO. OC-040-48-02 DRAWING NO. 38817



BRIDGE ENGINEER

MICROFILMED  
OCT 16 1998

80404802.SNI

80404802.SNI