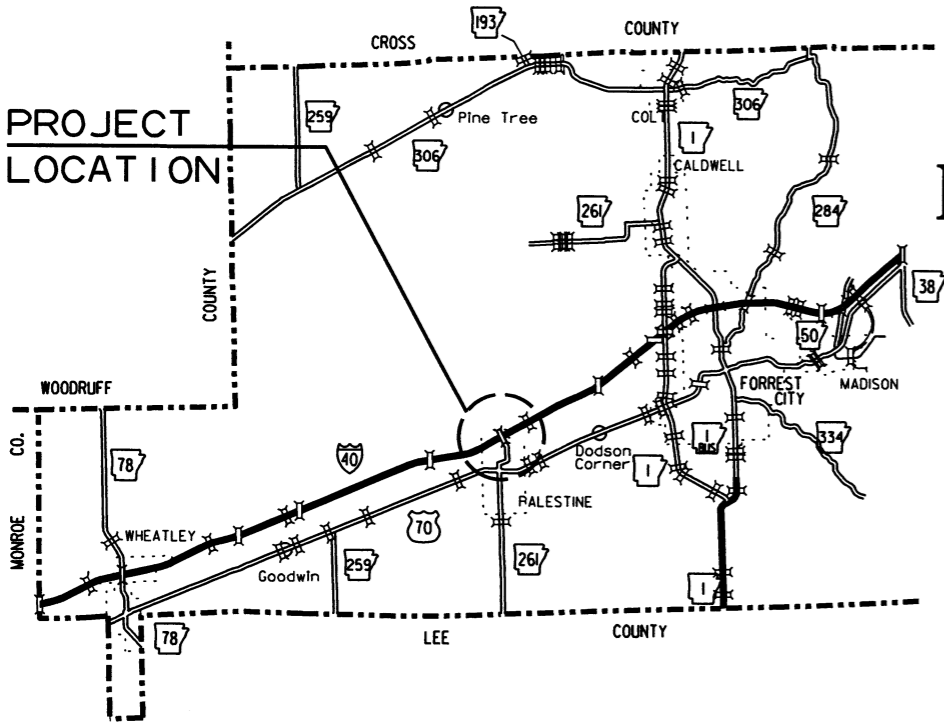


ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
CONSTRUCTION PLANS FOR STATE HIGHWAY

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.		#0586	1	130

2 HWY. 261 STR. & APPRS. (S)

PROJECT  
LOCATION



VICINITY MAP

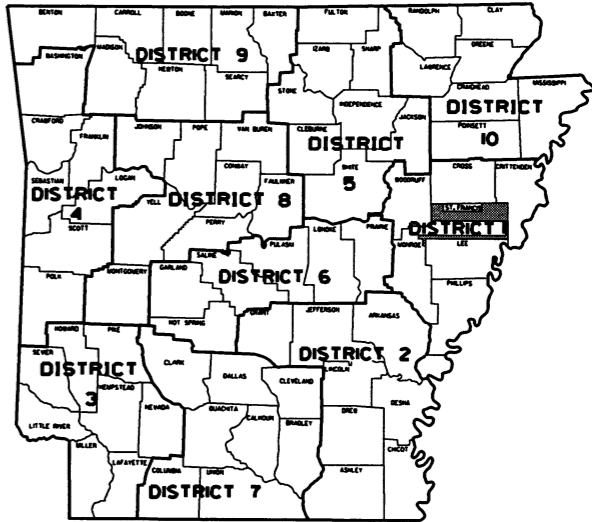
HWY. 261 STR. & APPRS. (S)

ST. FRANCIS COUNTY

ROUTE 261 SECTION 2

JOB 110586

FED. AID PROJ. NHPP-0068(38)



ARK. HWY. DIST. NO. 1

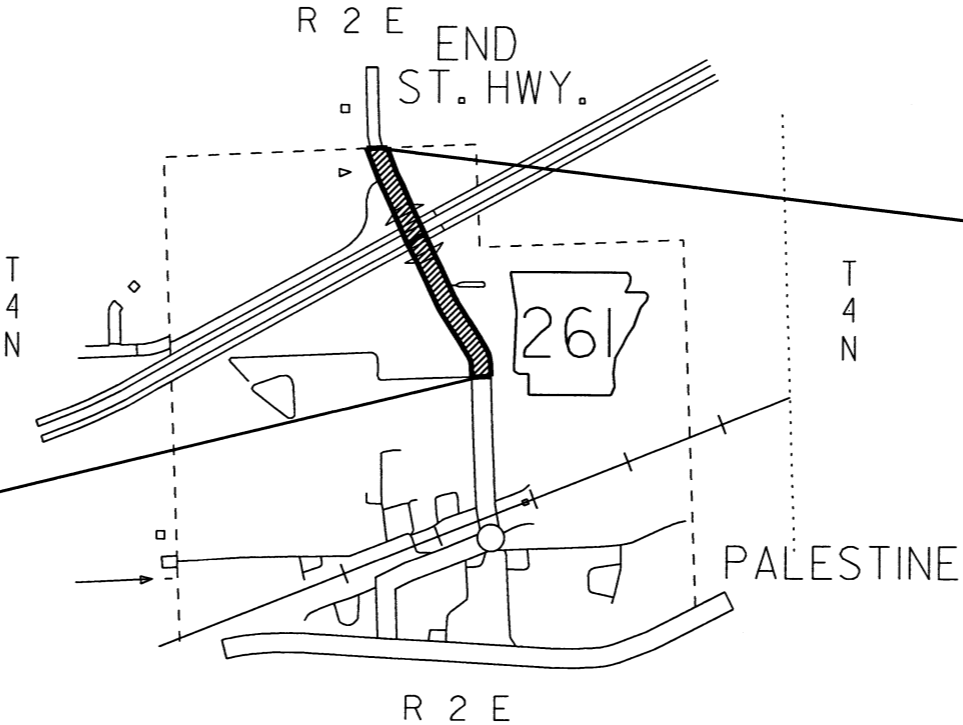
NOT TO SCALE

DESIGN TRAFFIC DATA	
DESIGN YEAR	2036
2016 ADT	3,000
2036 ADT	3,600
2036 DHV	396
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	5%
DESIGN SPEED	40 MPH

BRIDGE DATA

- ① HWY. 261 OVER INTERSTATE 40  
STA. 114+17.92 BR. END  
296'-2" BRIDGE LENGTH  
40'-0" CLEAR ROADWAY  
294'-0" CONT. COMP. W-BEAM (60'-87'-87'-60')  
BR. NO. 07232  
STA. 117+14.08 BR. END

STA. 100+50.00  
BEGIN JOB 110586  
LOG MILE 5.23



STA. 126+00.00  
END JOB 110586

APPROVED



9-30-16

DEPUTY DIRECTOR  
AND CHIEF ENGINEER

BEGINNING OF PROJECT	MID POINT OF PROJECT	END OF PROJECT
LATITUDE = N 34°58'49"	LATITUDE = N 34°58'59"	LATITUDE = N 34°59'10"
LONGITUDE = W 90°54'10"	LONGITUDE = W 90°54'16"	LONGITUDE = W 90°54'21"

GROSS LENGTH OF PROJECT	2550.00	FEET	OR	0.483	MILES
NET " " ROADWAY	2253.84	"	"	0.427	"
NET " " BRIDGES	296.16	"	"	0.056	"
NET " " PROJECT	2550.00	"	"	0.483	"

P.E. #0586

### GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department  
Standard Specifications for Highway Construction (2014 Edition) with applicable supplemental  
specifications and special provisions. Unless otherwise noted, Section and subsection  
refer to the Construction Specifications.

LIVE LOADING: HL93  
SEISMIC PERFORMANCE ZONE: 3

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

STEEL SHELL PILING: All piling shall be 18" diameter concrete filled steel shell piles and shall be driven to a minimum ultimate bearing capacity of 210 tons per pile. All piling shall be driven with an approved air, steam or diesel hammer to a minimum tip elevation of 140.0 or lower. Piling in end bents shall be driven after embankment to bottom of cap is in place.

Lengths of piling shown are assumed for estimating quantities only. Actual lengths to be determined in the field. No additional payment will be made for cut-off or build-up. Test Piles are not required but may be driven for the Contractor's information in accordance with Subsection 805.08(g).

Water jetting or other methods as approved by the Engineer may be required to achieve minimum penetration. This work shall not be paid for directly, but shall be considered incidental to the item "Steel Shell Piling (18" Dia.)."

**DRIVING SYSTEM:** The driving system approval and ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b) "Method B-Wave Equation Analysis (WEAP)". It is estimated that a minimum rated hammer energy of 33,000 ft.-lbs. per blow will be required to obtain the ultimate bearing capacity at all bents.

FOOTINGS: Footings at Bents 2 thru 4 shall be set a minimum of 2' below natural ground or at the elevations shown on the plans, whichever is lower. Foundations for footings shall be prepared in accordance with Subsection 801.04.

PAINTING: All Grade 50 structural steel except galvanized members shall be painted as specified in Subsection 807.75. The color of paint shall be Gray and shall match Federal Std. 595B, Color Chip 36270.

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

## DETAIL DRAWINGS

DRAWING NOS.

End Bents  
Intermediate Bents  
Steel Shell Piling  
Elastomeric Bearings  
294'-0" Cont. Comp. W-Beam Unit  
Type Special Approach Slabs

53309-53311  
53313-53315  
53316  
53317  
53318-53325  
53326

**EXISTING BRIDGE:** Existing Bridge No. 03774 (I-40 Logmile 233.22) is 31' wide and 218' long and consists of steel I-beam spans supported by concrete columns on steel shell pile footings.

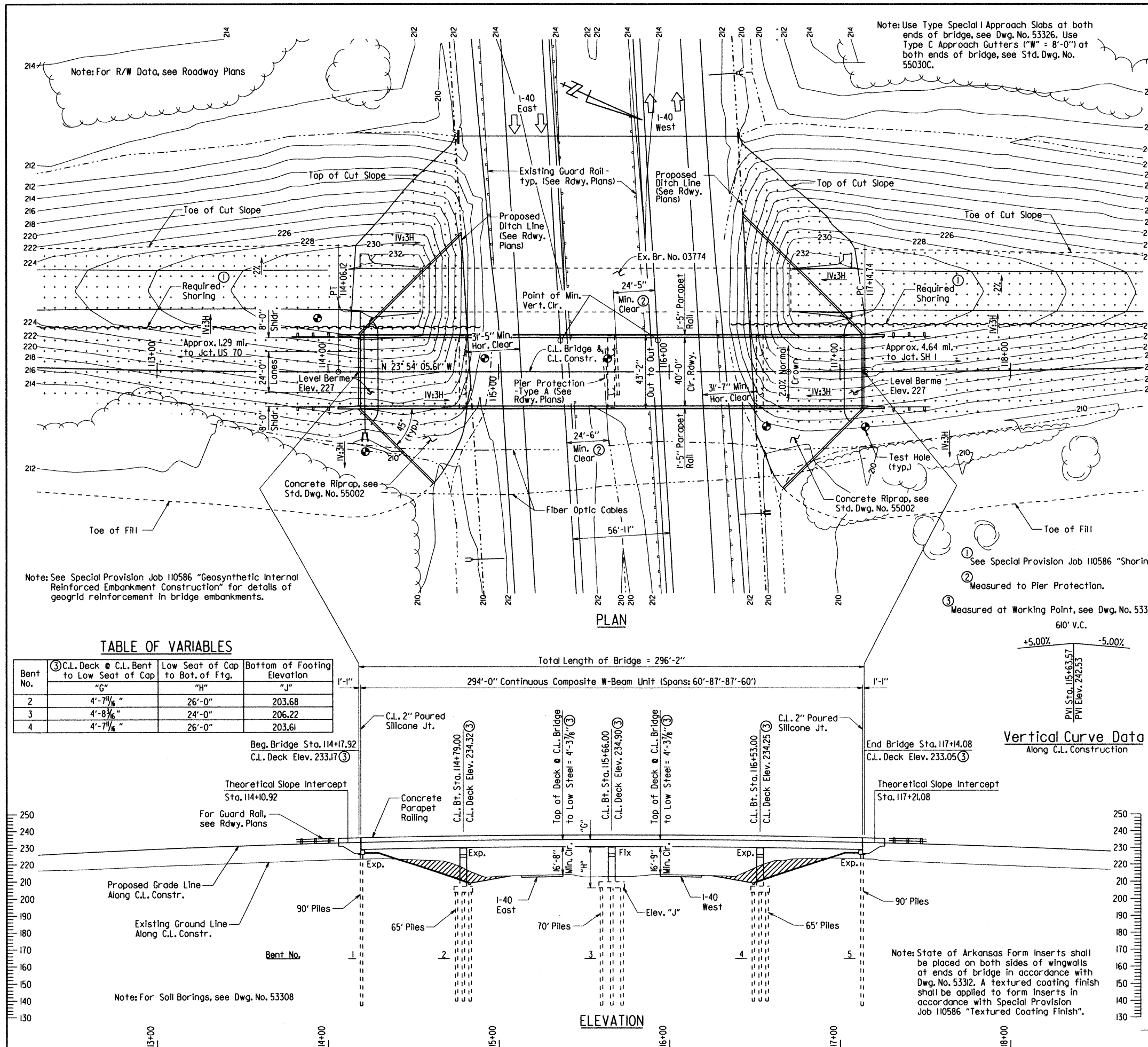
**REMOVAL AND SALVAGE:** After the new bridge is open to traffic, existing bridge no. 03774 shall be removed in accordance with Section 205. All material from the existing bridge shall become the property of the Contractor.

MAINTENANCE OF TRAFFIC: See Roadway Plans for maintenance of traffic.

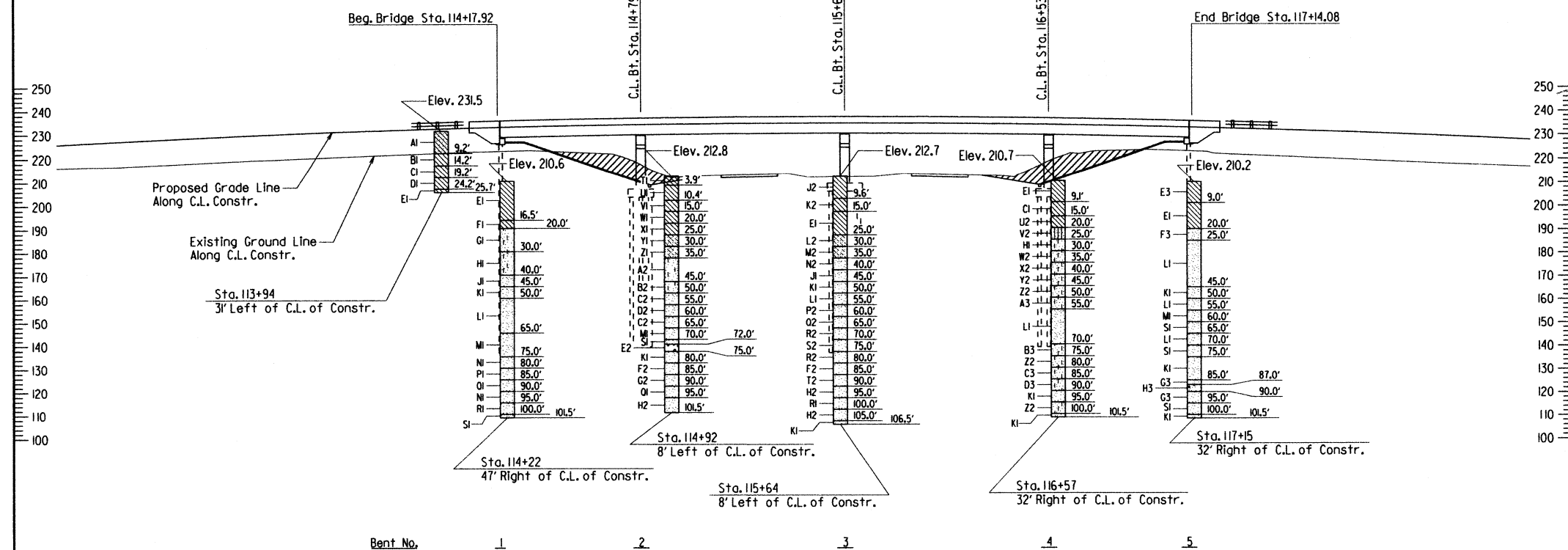
LAYOUT OF BRIDGE  
HWY. 261 OVER INTERSTATE 40  
HWY. 261 STR. & APPRS. (S)  
ST. FRANCIS COUNTY

ROUTE 261 SEC. 2  
ARKANSAS STATE HIGHWAY COMMISSION

DRAWN BY: PGT DATE: 5-11 FILENAME: bl0586x1.L1.dgn  
 CHECKED BY: AMS DATE: 6-6-11 SCALE: 1" = 30'  
 DESIGNED BY: POT DATE: 5-11  
 BRIDGE NO. 07232 DRAWING NO. 53307



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.		110586	44	130
				07232		LAYOUT		53308



ELEVATION OF SOIL BORINGS

BORING LEGEND

- AI-Moist, Medium Stiff, Brown and Gray Clay with Sand and some Organic Matter
- BI-Moist, Medium Stiff, Brown and Gray Clay with some Organic Matter
- CI-Moist, Medium Stiff, Brown and Gray Clay
- DI-Moist, Medium Stiff, Brown Clay
- EI-Moist, Stiff, Brown Clay
- FI-Moist, Very Stiff, Brown Clay
- GI-Moist, Medium Dense, Brown Silty Sand
- HI-Wet, Medium Dense, Brown Silty Sand
- JI-Wet, Medium Dense, Brown and Gray Sand
- KI-Wet, Dense, Brown Sand
- LI-Wet, Medium Dense, Brown Sand
- MI-Wet, Medium Dense, Brown Sand with Trace of Gravel
- NI-Wet, Very Dense, Brown Sand with Trace of Gravel
- PI-Wet, Very Dense, Brown and Gray Sand
- OI-Wet, Very Dense, Brown Sand with some Gravel
- RI-Wet, Dense, Brown Sand with some Gravel
- SI-Wet, Dense, Brown Sand with Trace of Gravel
- TI-Moist, Medium Stiff, Light Brown Clay with some Organic Matter
- UI-Moist, Stiff, Light Brown Clay with some Organic Matter
- VI-Moist, Medium Stiff, Light Gray and Light Brown Clay with some Organic Matter
- WI-Moist, Stiff, Light Gray and Light Brown Clay with some Organic Matter
- XI-Moist, Stiff, Light Gray and Light Brown Clay
- YI-Wet, Medium Dense, Light Brown Clayey Sand
- ZI-Wet, Loose, Light Brown Clayey Sand
- A2-Wet, Medium Dense, Light Brown to Brown Silty Sand
- B2-Wet, Dense, Brown Silty Sand
- C2-Wet, Dense, Light Brown Sand
- D2-Wet, Medium Dense, Light Brown Sand with Trace of Organic Matter
- E2-Gravel
- F2-Wet, Medium Dense, Brown Sand with some Gravel
- G2-Wet, Dense, Gray Sand
- H2-Wet, Very Dense, Brown Sand
- J2-Moist, Stiff, Brown Clay with some Organic Matter
- K2-Moist, Medium Stiff, Brown Clay with some Organic Matter
- L2-Wet, Medium Dense, Brown Sand with Clay
- M2-Wet, Medium Dense, Brown Sand with Clay and some Organic Matter
- N2-Wet, Medium Dense, Brown Sand with some Organic Matter
- P2-Wet, Medium Dense, Brown and Gray Sand with some Organic Matter
- Q2-Wet, Medium Dense, Reddish Brown Sand
- R2-Wet, Medium Dense, Reddish Brown Sand with Trace of Gravel
- S2-Wet, Dense, Reddish Brown Sand
- T2-Wet, Dense, Gray Sand with Trace of Gravel
- U2-Moist, Stiff, Brown and Gray Clay
- V2-Moist, Loose, Brown Sandy Silt
- W2-Wet, Loose, Brown Silty Sand with Trace of Organic Matter
- X2-Wet, Medium Dense, Brown Sand with Silt
- Y2-Wet, Medium Dense, Brown and Gray Sand with Silt
- Z2-Wet, Dense, Brown Sand with Silt
- A3-Wet, Medium Dense, Brown and Gray Sand with Silt and Trace of Organic Matter
- B3-Wet, Dense, Brown Sand with Silt and Trace of Gravel
- C3-Wet, Very Dense, Gray and Brown Sand with Silt
- D3-Wet, Medium Dense, Gray Sand with Silt
- E3-Moist, Stiff, Brown Clay with Trace of Organic Matter
- F3-Moist, Medium Dense, Brown Sand
- G3-Wet, Dense, Light Gray and Brown Sand with some Gravel
- H3-Wet, Dense, Light Gray and Brown Sand with Gravel

Sta. 113+94 - 3' Left of C.L. of Constr.

4.7- 5.7, N=6  
9.7- 10.7, N=5  
14.7- 15.7, N=7  
19.7- 20.7, N=8  
24.7- 25.7, N=10

Sta. 114+22 - 47' Right of C.L. of Constr.

7.0- 8.0, N=10  
12.0- 13.0, N=15  
17.0- 18.0, N=20  
20.5- 21.5, N=13  
25.5- 26.5, N=15  
30.5- 31.5, N=22  
35.5- 36.5, N=26  
40.5- 41.5, N=19  
45.5- 46.5, N=38  
50.5- 51.5, N=25  
55.5- 56.5, N=19  
60.5- 61.5, N=22  
65.5- 66.5, N=16  
70.5- 71.5, N=19  
75.5- 76.5, N=56  
80.5- 81.3, N=90(10')  
85.5- 86.5, N=56  
90.5- 91.5, N=51  
95.5- 96.5, N=33  
100.5- 101.5, N=35

Sta. 114+92 - 8' Left of C.L. of Constr.

4.4- 5.4, N=12  
10.9- 11.9, N=6  
15.5- 16.5, N=13  
20.5- 21.5, N=14  
25.5- 26.5, N=12  
30.5- 31.5, N=10  
35.5- 36.5, N=21  
40.5- 41.5, N=15  
45.5- 46.5, N=38  
50.5- 51.5, N=38  
55.5- 56.5, N=14  
60.5- 61.5, N=33  
65.5- 66.5, N=21  
70.5- 71.5, N=33  
75.5- 76.5, N=32  
80.5- 81.5, N=25  
85.5- 86.5, N=32  
90.5- 91.5, N=82  
95.5- 96.5, N=60  
100.5- 101.5, N=63

Sta. 115+64 - 8' Left of C.L. of Constr.

5.1- 6.1, N=11  
10.1- 11.1, N=8  
15.5- 16.5, N=13  
20.5- 21.5, N=10  
25.5- 26.5, N=18  
30.5- 31.5, N=12  
35.5- 36.5, N=14  
40.5- 41.5, N=14  
45.5- 46.5, N=32  
50.5- 51.5, N=20  
55.5- 56.5, N=15  
60.5- 61.5, N=29  
65.5- 66.5, N=21  
70.5- 71.5, N=32  
75.5- 76.5, N=21  
80.5- 81.5, N=20  
85.5- 86.5, N=31  
90.5- 91.5, N=53  
95.5- 96.5, N=40  
100.5- 101.5, N=55  
105.5- 106.5, N=47

Sta. 116+57 - 32' Right of C.L. of Constr.

4.6- 5.6, N=9  
9.6- 10.6, N=8  
15.5- 16.5, N=11  
20.5- 21.5, N=9  
25.5- 26.5, N=15  
30.5- 31.5, N=9  
35.5- 36.5, N=13  
40.5- 41.5, N=15  
45.5- 46.5, N=37  
50.5- 51.5, N=18  
55.5- 56.5, N=21  
60.5- 61.5, N=20  
65.5- 66.5, N=25  
70.5- 71.5, N=41  
75.5- 76.5, N=50  
80.5- 81.5, N=54  
85.5- 86.5, N=26  
90.5- 91.5, N=45  
95.5- 96.5, N=35  
100.5- 101.5, N=35

Sta. 117+15 - 32' Right of C.L. of Constr.

4.5- 5.5, N=15  
9.5- 10.5, N=10  
15.5- 16.5, N=9  
20.5- 21.5, N=12  
25.5- 26.5, N=16  
30.5- 31.5, N=12  
35.5- 36.5, N=14  
40.5- 41.5, N=12  
45.5- 46.5, N=33  
50.5- 51.5, N=30  
55.5- 56.5, N=20  
60.5- 61.5, N=31  
65.5- 66.5, N=25  
70.5- 71.5, N=39  
75.5- 76.5, N=37  
80.5- 81.5, N=40  
85.5- 86.5, N=32  
90.5- 91.5, N=40  
95.5- 96.5, N=32  
100.5- 101.5, N=32

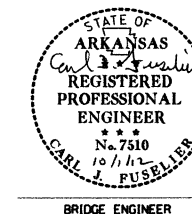
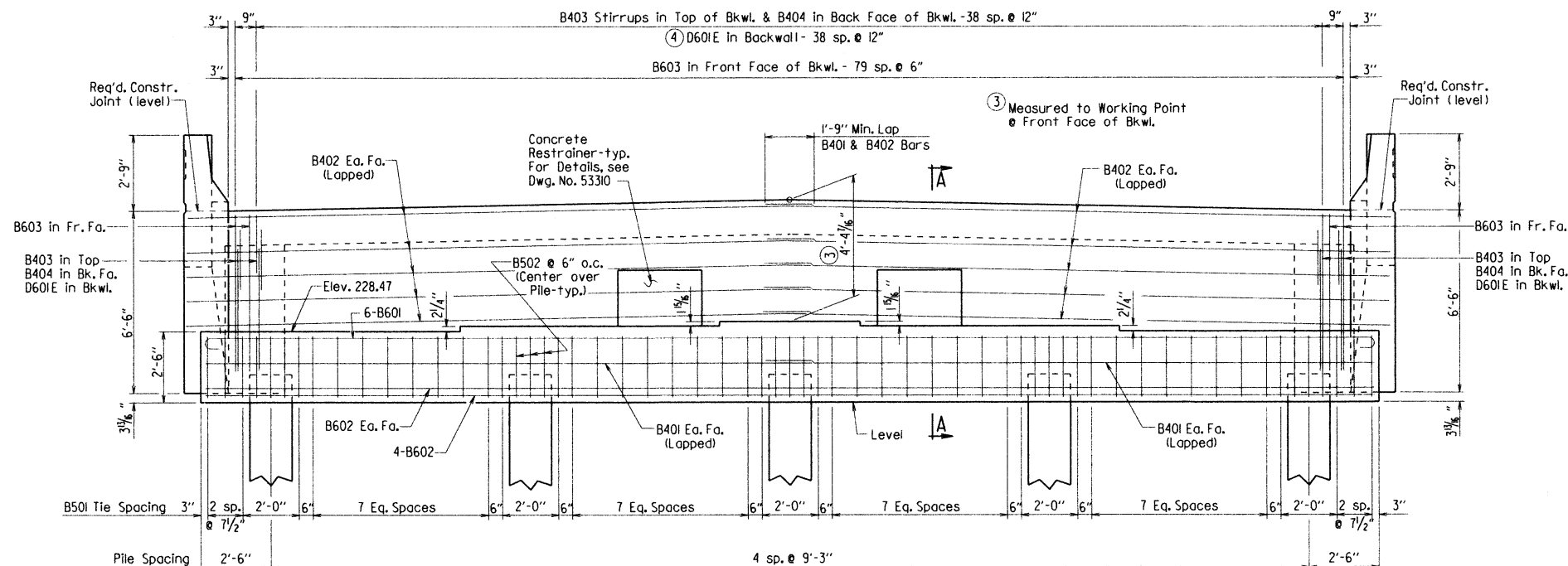
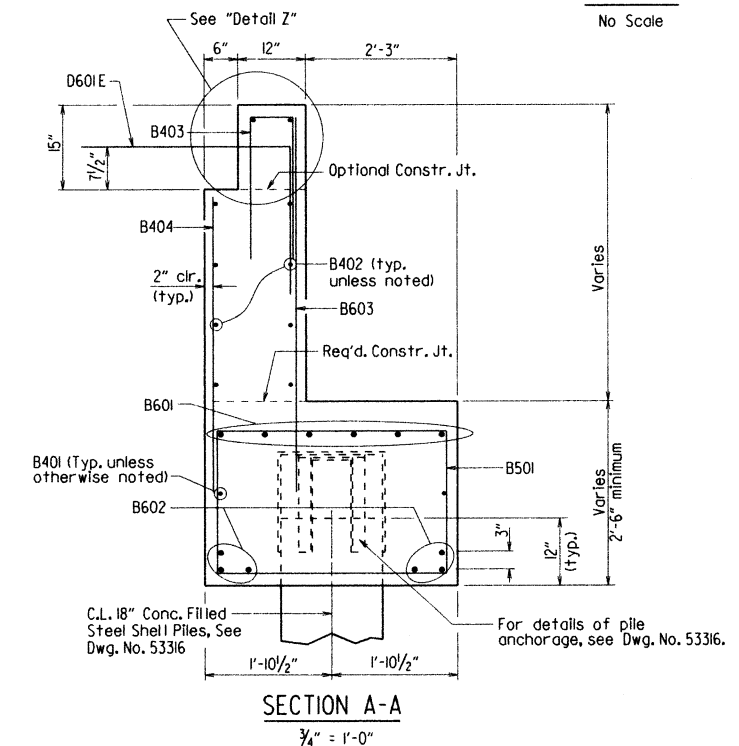
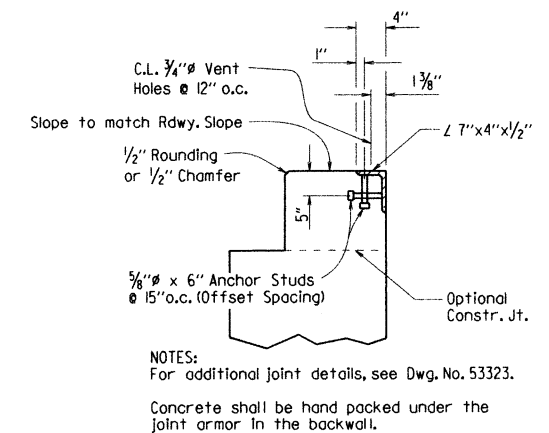
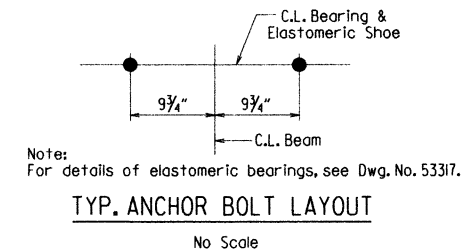
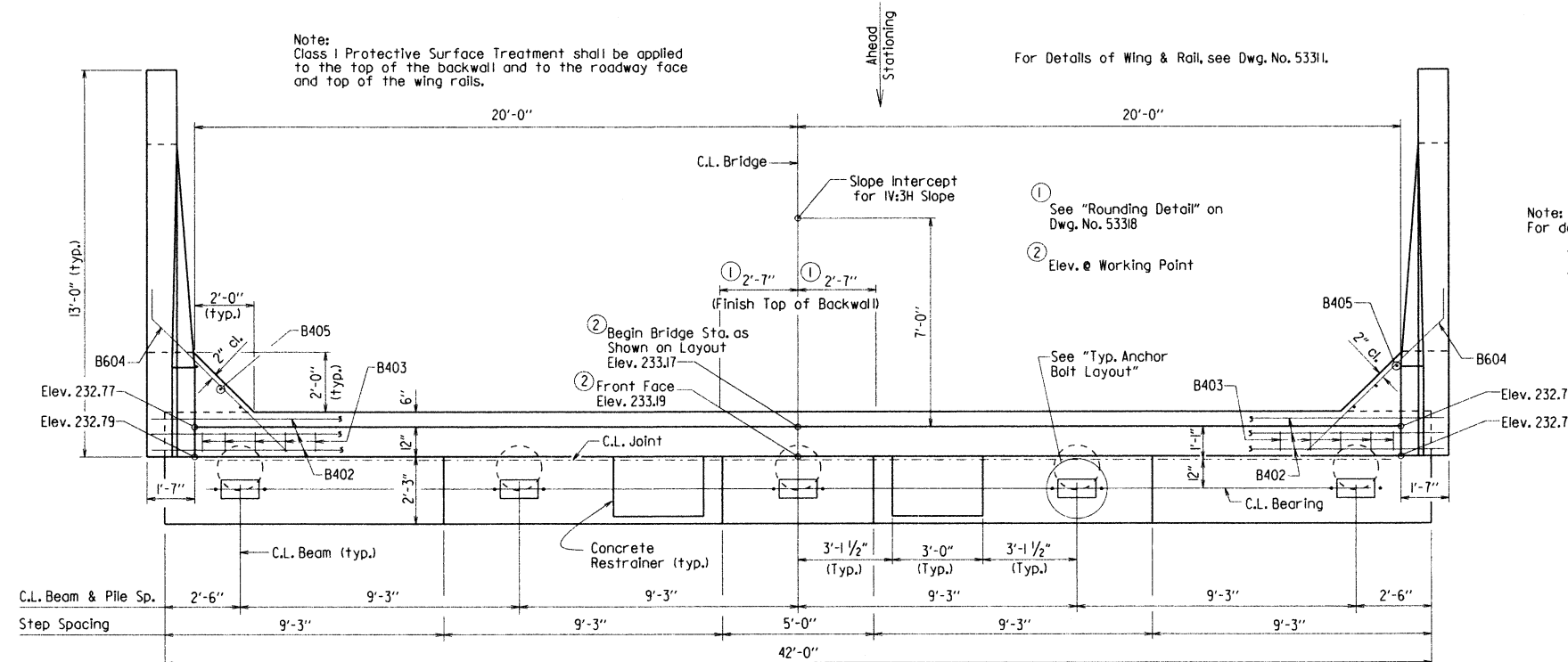
"N" VALUES



BRIDGE ENGINEER

SHEET 2 OF 2  
LAYOUT OF BRIDGE  
HWY. 261 OVER INTERSTATE 40  
HWY. 261 STR. & APPRS. (S)  
ST. FRANCIS COUNTY  
ROUTE 261 SEC. 2  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: PGT DATE: 5-11 FILENAME: bl10586x1.L1.dgn  
CHECKED BY: AMS DATE: 6-4-11 SCALE: 1" = 30'  
DESIGNED BY: PGT DATE: 5-11  
BRIDGE NO. 07232 DRAWING NO. 53308

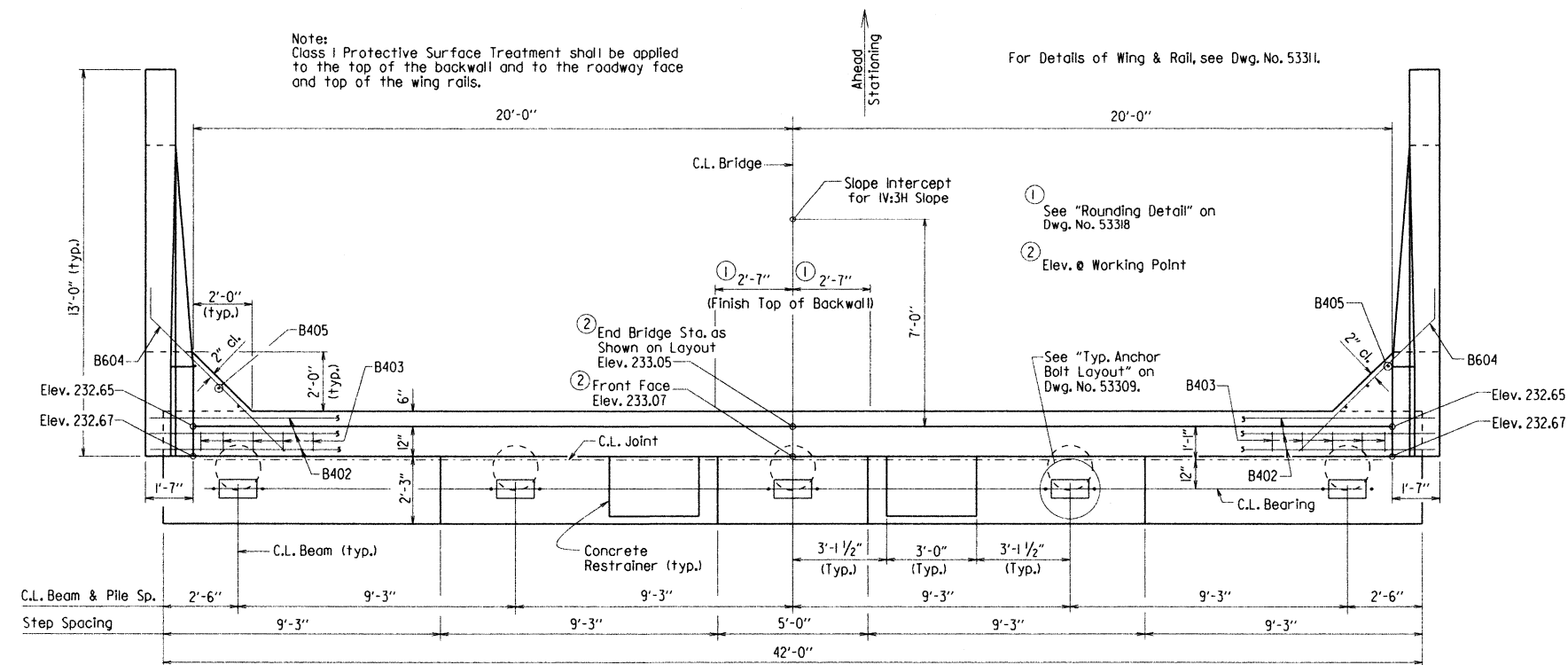
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				6	ARK.			
				JOB NO.		110586	45	130
				07232		END BENT		53309



SHEET 1 OF 3  
DETAILS OF END BENTS  
HWY. 261 OVER INTERSTATE 40  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

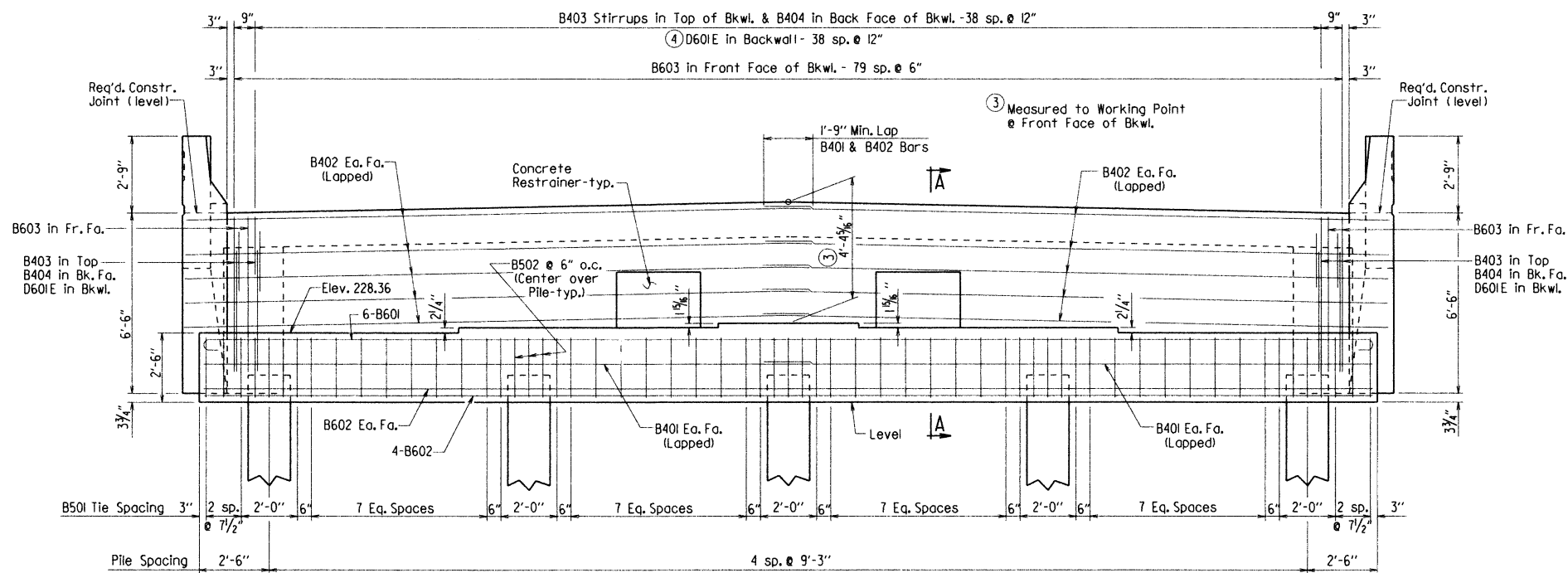
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DESIGNED BY: JWP DATE: 7/11  
BRIDGE NO. 07232 DRAWING NO. 53309

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.		110586	46	130
				07232		END BENT		53310



PLAN - BENT 5

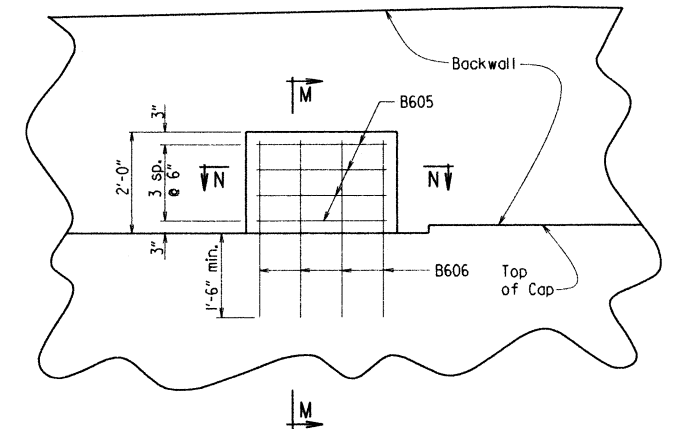
④ Adjust spacing of D601E bars as necessary to provide 3" clear from the longitudinal construction joint between the approach slab and gutters.



ELEVATION - BENT 5

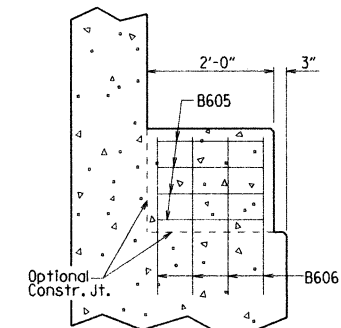
Looking Ahead  
3/8" = 1'-0"

Notes:  
For "Section A-A" & Typ. Anchor Bolt Layout, see Dwg. No. 53309.  
For General Notes & Bar List, See Dwg. No. 53311.



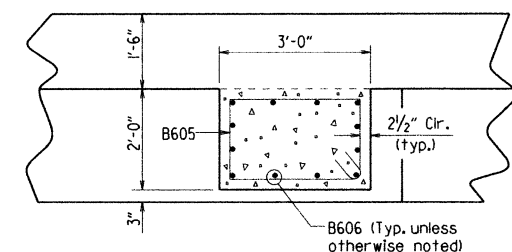
ELEVATION - CONCRETE RESTRAINER

Looking Back Bent 1; Looking Ahead Bent 5  
No Scale



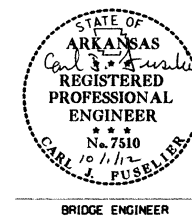
SECTION M-M

No Scale



SECTION N-N

No Scale



SHEET 2 OF 3  
DETAILS OF END BENTS  
HWY. 261 OVER INTERSTATE 40  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: AMS. DATE: 9/13/11 FILENAME: b110586x1.bl.dgn  
CHECKED BY: EWS. DATE: 9/18/11 SCALE: As Shown  
DESIGNED BY: JJP. DATE: 7/11  
BRIDGE NO. 07232 DRAWING NO. 53310

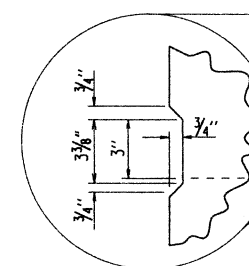
BAR LIST - PER BENT

[illegible]

1'-7"  
 10" 2" 7"  
 R403  
 1 1/2" min. cl.  
 R401  
 W401  
 2 1/2" cl.  
 3"  
 Req'd. Constr. Jt. (Level)  
 6'-6" 8 sp. @ 9"  
 Z  
 3"  
 W701 - Typ. unless noted  
 B604  
 W402  
 W702  
 W703  
 W704  
 W705  
 W706  
 W707  
 W417  
 2'-9"  
 1'-7"  
 4" 10"

**VIEW W-W**  
 Scale:  $\frac{3}{4}" = 1'-0"$

Bent	"F"	Elev. "G"
1	4'-2 $\frac{3}{8}$ "	232.47
5	4'-2 $\frac{1}{8}$ "	232.34



3 sp. 9"

Connector plate.  
See Std. Dwg. GR-10

1'-0"

2'-9"

2 1/2" cl.

Req'd. Constr. Jt. (level)

2'-0"

R602

R403 (Typ.  
unless noted)

R602

7 1/2"

D501 E

W701

1 1/2" cl.

R601

C. L. 1"Ø formed holes Typ. for  
guardrail connection bolts

**SECTION Y-Y**

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

MARK	NO.
B401	
B402	
B403	
B404	
B405	
B501	
B502	
B601	
B602	
B603	
B604	
B605	
B606	

[illegible]

1'-6  $\frac{1}{8}$ "

B405

W417

2'-0"

3'-6"

W402

**SECTION Z-Z**

$\frac{3}{8}" = 1'-0"$

For details of guardrail connection,  
See Std. Dwg. No. GR-10

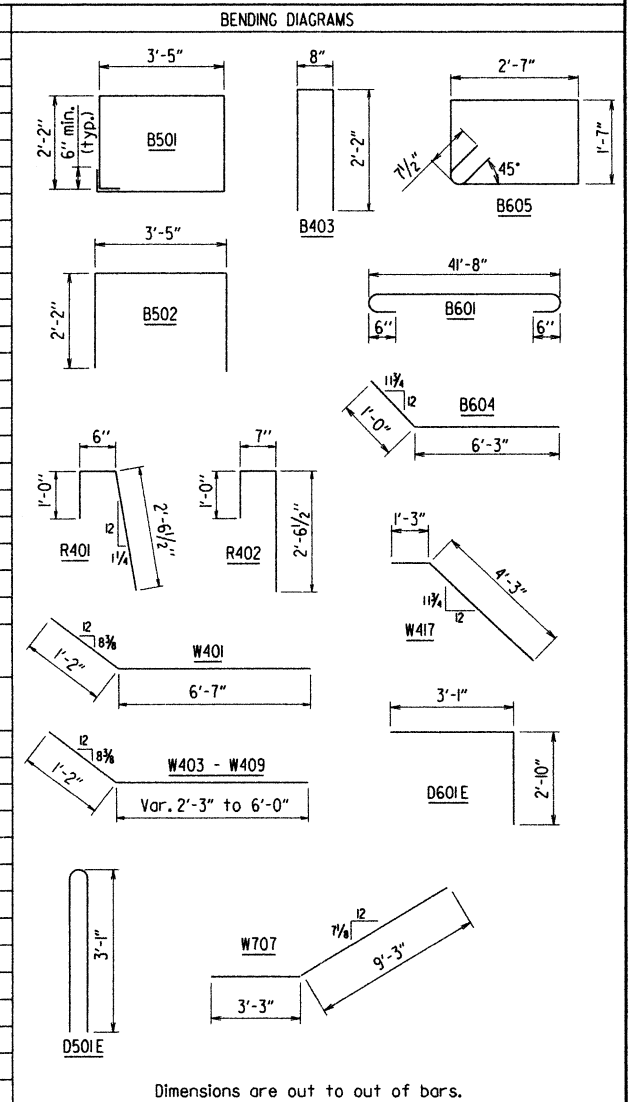
Guardrail  
Connection

1'-9"

THREE DIMENSIONAL VIEW OF RAIL

No Scale

MARK	NO. REQ'D.	LENGTH	P.D.
B401	4	2'-9"	Str.
B402	20	22'-4"	Str.
B403	41	4'-10"	2"
B404	41	4'-5"	Str.
B405	6	4'-11"	Str.
B501	46	11'-8"	2 1/2"
B502	15	7'-7"	2 1/2"
B601	6	43'-0"	4 1/2"
B602	6	41'-8"	Str.
B603	80	6'-0"	Str.
B604	8	7'-3"	4 1/2"
B605	8	9'-2"	4 1/2"
B606	24	3'-4"	Str.
R401	14	3'-11"	2"
R402	8	4'-0"	2"
R403	12	12'-8"	Str.
R601	16	4'-5"	Str.
R602	6	5'-0"	Str.
W401	8	7'-9"	2"
W402	8	8'-10"	Str.
W403- W409	2 each	Var. 3'-5" to 7'-2"	2"
W410- W416	2 each	Var. 4'-7" to 8'-4"	Str.
W417	6	5'-6"	2"
W701	12	12'-8"	Str.
W702	4	9'-8"	Str.
W703	4	8'-5"	Str.
W704	4	7'-2"	Str.
W705	4	5'-11"	Str.
W706	4	4'-8"	Str.
W707	4	12'-6"	5 1/4"
D501E	22	6'-4"	3 3/4"
D601E	41	5'-9"	4 1/2"



Note: Bars designated with an "E" suffix shall be epoxy coated.

### GENERAL NOTES

All concrete shall be Class "S" with a minimum 28 day compressive strength  $f'_c = 3,500$  psi. Concrete shall be poured in the dry and all exposed corners to be chamfered  $\frac{3}{4}"$  unless otherwise noted.

All reinforcing steel shall be Grade 60 (yield strength = 60,000 psi) conforming to AASHTO M31 or M322, Type A, with mill test reports.

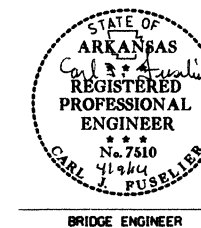
Structural steel in end bents shall be M270, Gr. 50W and shall be paid for as "Structural Steel in Beam Spans (M270, Gr. 50)".

Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

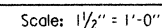
For additional information, see Layout.

SHEET 3 OF 3  
DETAILS OF END BENTS  
HWY. 261 OVER INTERSTATE 40  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION

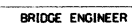
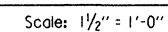
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 CHECKED BY: KWY DATE: 4/8/14 SCALE: As Shown  
 DESIGNED BY: JYP DATE: 7/11  
 BRIDGE NO. 07232 DRAWING NO. 53311



1



The form insert shall be approved by the Engineer before its use.



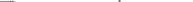
BRIDGE NO. 07232 DRAWING NO. 53312

BAR LIST - PER BENT	
1	100.00
2	100.00
3	100.00
4	100.00
5	100.00
6	100.00
7	100.00
8	100.00
9	100.00
10	100.00
11	100.00
12	100.00
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92	100.00
93	100.00
94	100.00
95	100.00
96	100.00
97	100.00
98	100.00
99	100.00
100	100.00

Mark	No.	Length	A	B	Pin	Reading Diagrams
------	-----	--------	---	---	-----	------------------

2'-7' B401



$\frac{1}{2}'' = 1'-0''$  

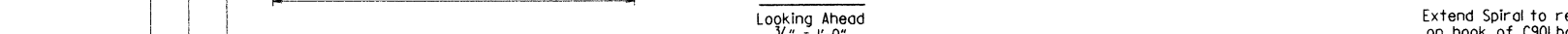

$$\frac{1}{2}'' = 1'-0''$$

DRAWN BY: ACW DATE: 08/11 FILENAME: bl10586x1\_b2.dgn

BRIDGE NO. 07232 DRAWING NO. 53313

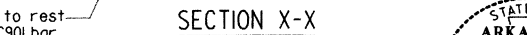


BE17 12" x 12" x 12" (Center)  $\frac{3}{8}" = 1'-0"$  Concrete Restrainer (typ.) - Elev. "A"



Looking Ahead  
3/4" 11.04

$$\frac{1}{2}'' = 1'-0''$$

$$\frac{1}{2}'' = 1'-0''$$

$$\frac{3}{8}'' = 1'-0''$$

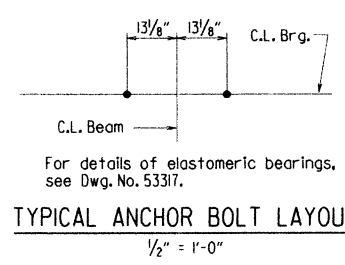
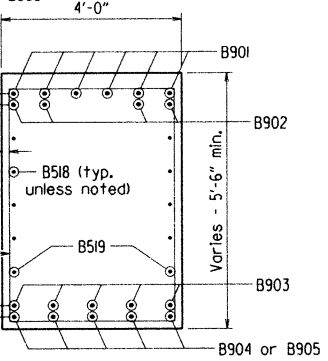
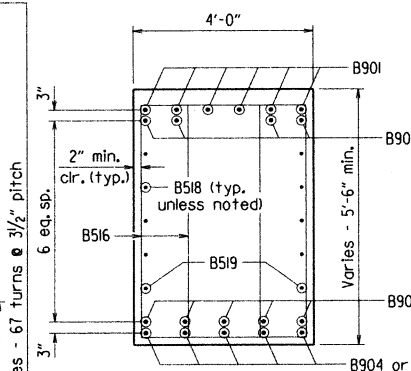
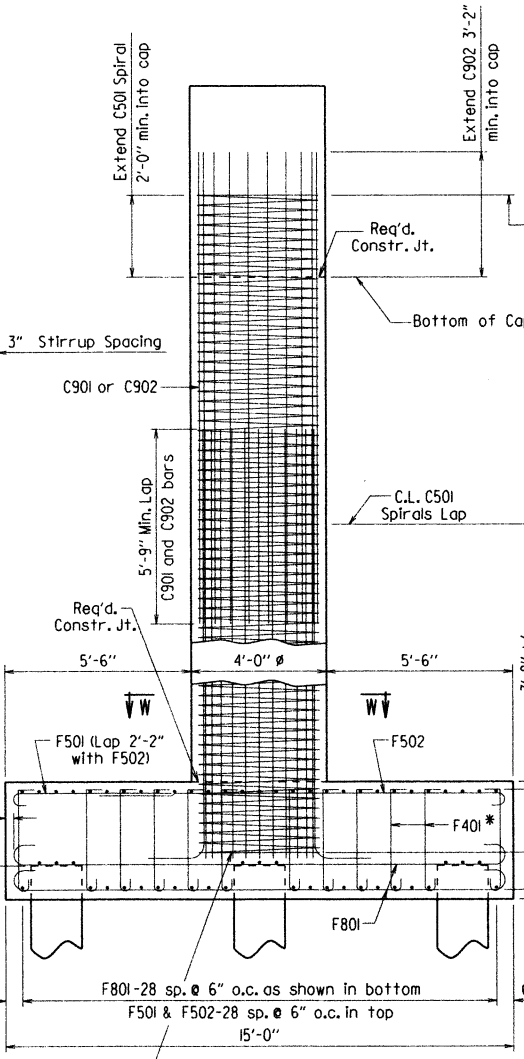
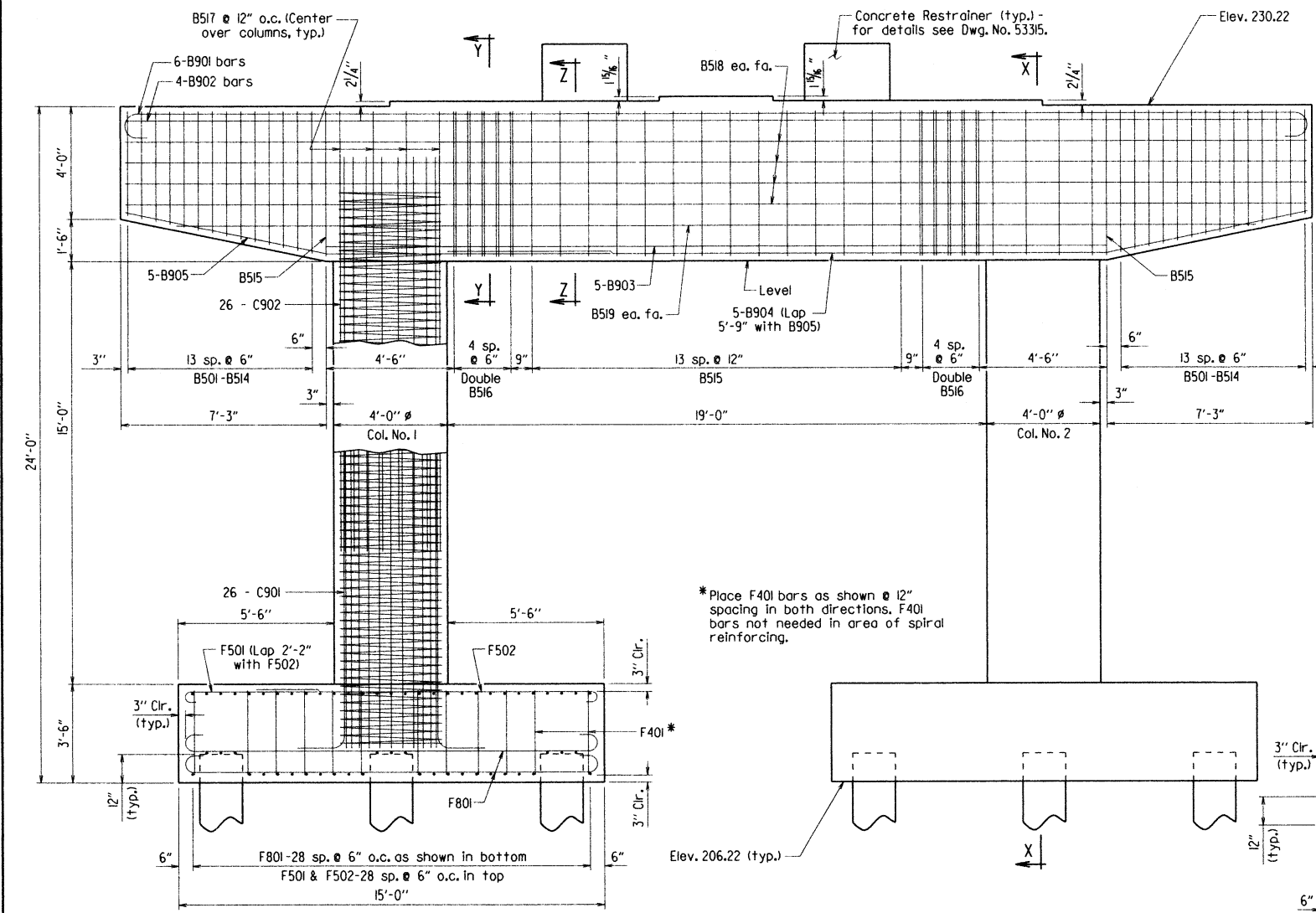
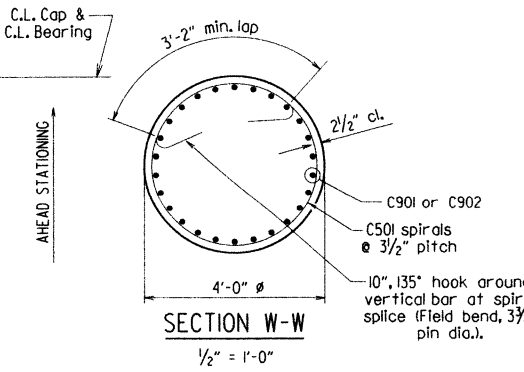
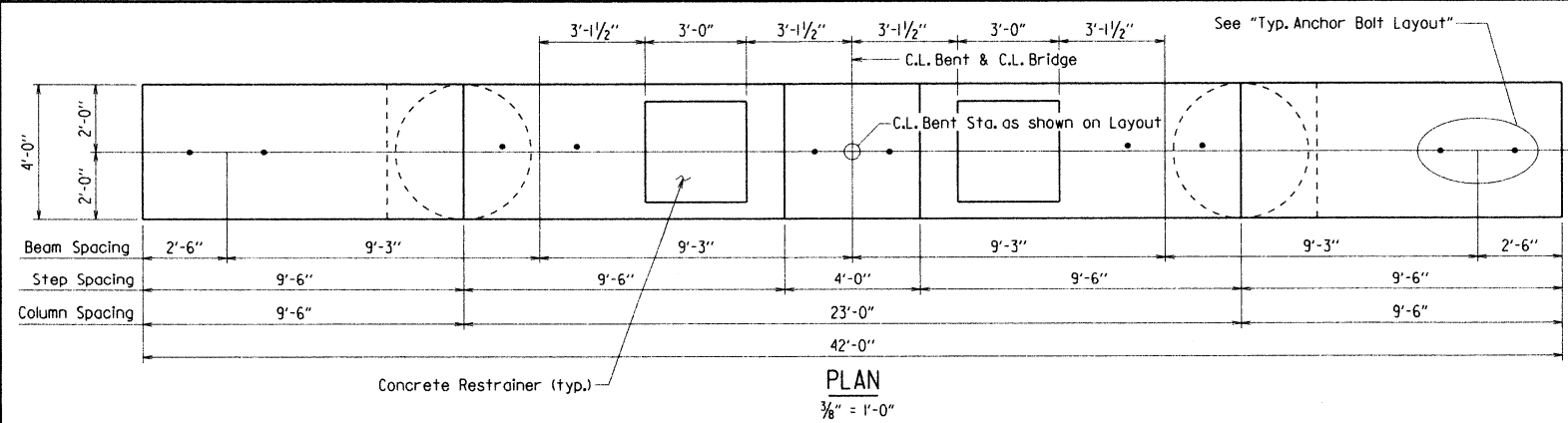
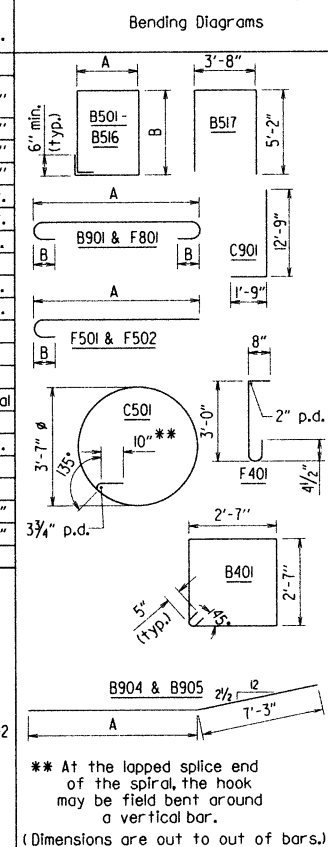
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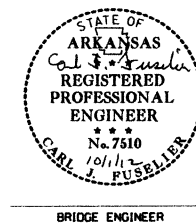
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110586	50	130
				07232		INT. BENTS		53314

### BAR LIST

Mark	No. Req'd.	Length	A	B	Pin Dia.
B401	8	10'-10"			3"
B501 - B514	2 ea.	15'-2" - 17'-10"	3'-8"	3'-8" - 5'-0"	2 1/2"
B515	16	18'-2"	3'-8"	5'-2"	2 1/2"
B516	20	16'-1"	2'-7 1/2"	5'-2"	2 1/2"
B517	8	13'-10"			2 1/2"
B518	8	4'-8"			Str.
B519	2	38'-0"			Str.
B601	24	3'-4"			Str.
B901	6	44'-2"	4'-8"	10"	9"
B902	4	4'-8"			Str.
B903	5	27'-6"			Str.
B904	5	30'-5"	23'-2"		9"
B905	5	17'-4"	10'-1"		9"
C501	4	393'-9"			Spiral
C901	52	14'-3"			9"
C902	52	14'-0"			Str.
F401	280	4'-1"			3"
F501	116	5'-3"	4'-8"	5"	3 3/4"
F502	116	12'-7"	12'-0"	5"	3 3/4"
F801	116	16'-4"	14'-6"	8"	6"

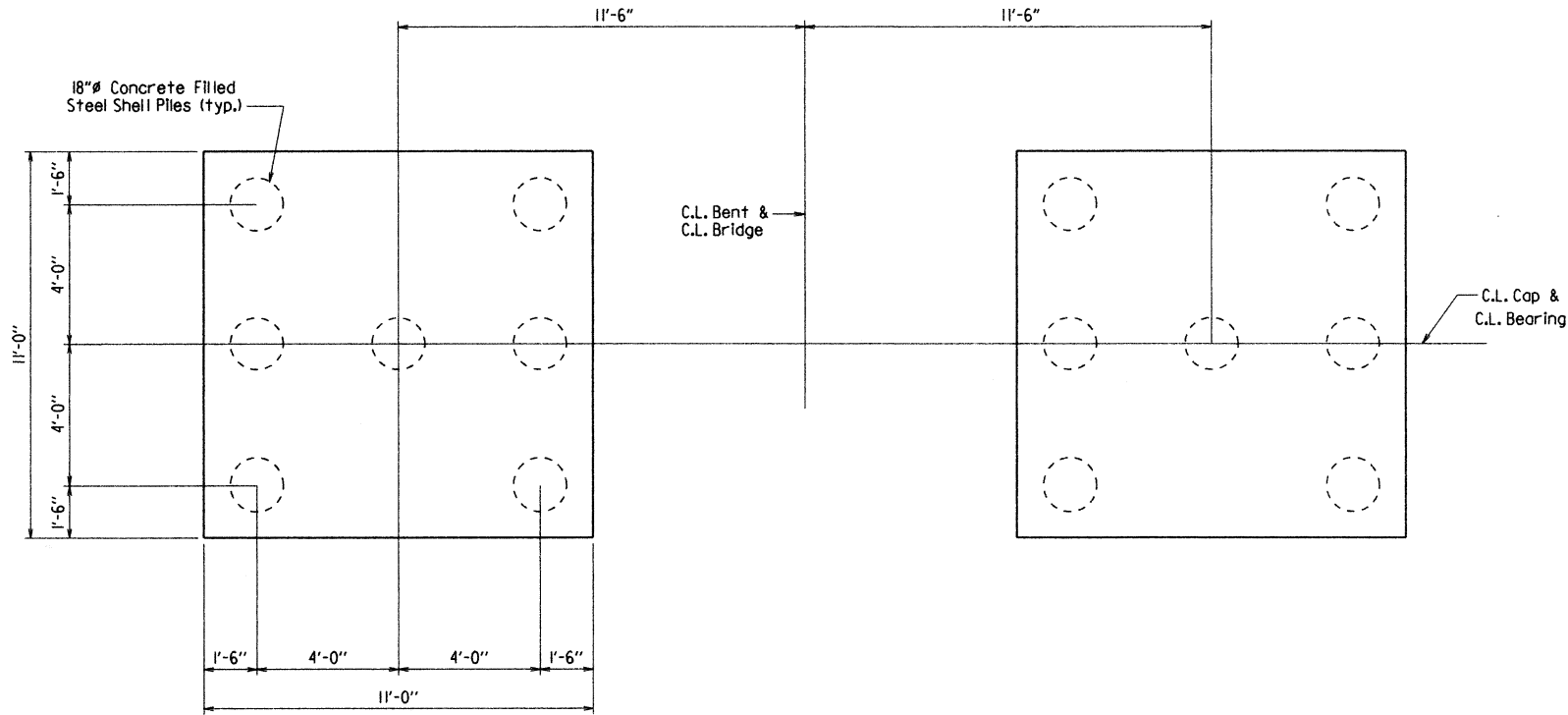


NOTE: For General Notes & "Plan of Footings" see Dwg. No. 53315.  
NOTE: Reinforcing for columns and footings is typical.



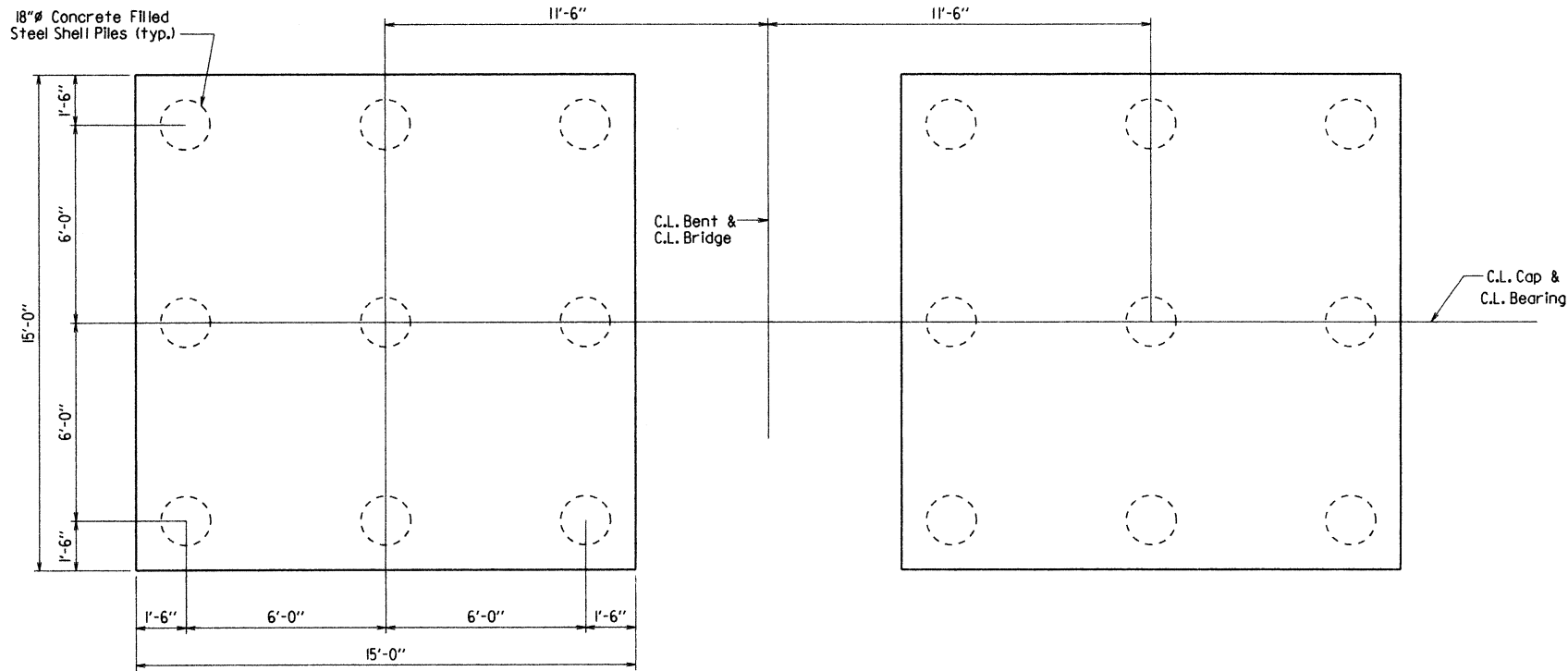
DETAILS OF BENT 3  
HWY. 261 OVER INTERSTATE 40  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: ACW DATE: 08/11 FILENAME: b110586x1.b2.dgn  
CHECKED BY: JWP DATE: 1/8/13 SCALE: As Shown  
DESIGNED BY: JWP DATE: 7/11  
BRIDGE NO. 07232 DRAWING NO. 53314

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.		110586	51	130
				07232		INT. BENTS		53315



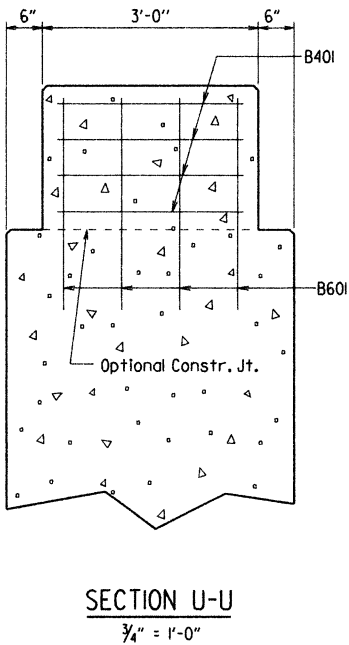
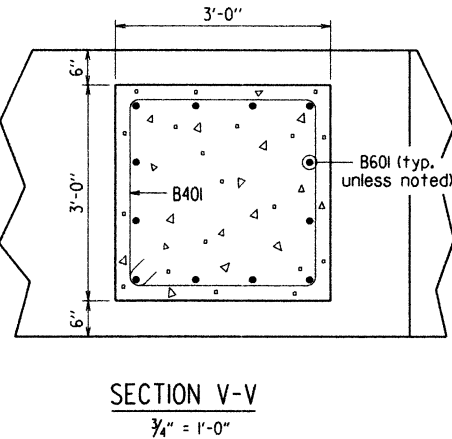
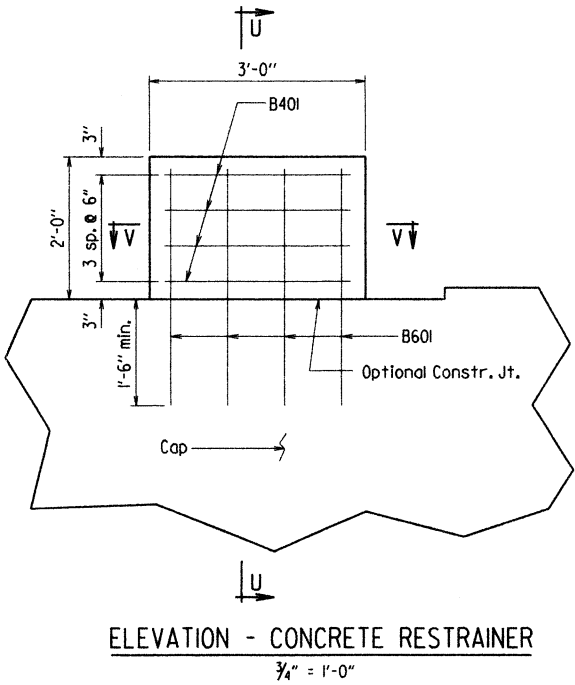
NOTE: For details of piles and pile anchorage, see Dwg. No. 53316.

BENTS 2 & 4 - PLAN OF FOOTINGS  
 $\frac{3}{8}" = 1'-0"$



NOTE: For details of piles and pile anchorage, see Dwg. No. 53316.

BENT 3 - PLAN OF FOOTINGS  
 $\frac{3}{8}" = 1'-0"$



**GENERAL NOTES**

All concrete shall be Class "S" and shall be poured in the dry. All exposed corners to be chamfered  $\frac{3}{4}"$  unless otherwise noted.

All reinforcing steel shall be Grade 60 conforming to AASHTO M31 or M322, Type A, with mill test reports.

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

All piling shall be Grade 3,  $F_y = 45$  ksi.

For additional information, see Layout.

**NOTES FOR SPIRAL REINFORCING:**

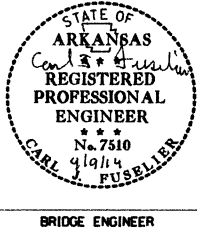
Spiral reinforcing shall be plain round or deformed Grade 60 steel bars meeting the requirements of AASHTO M31 or M322 Type A with mill test reports or shall be cold drawn wire meeting the requirements of AASHTO M32 or M225 (Grade 70) with a minimum diameter of 0.625".

Spiral reinforcement shall be paid for at the contract unit price bid per pound for "Reinforcing Steel-Bridge (Grade 60)". No additional payment shall be made for spacers, additional splices or bracing needed for assembly, shipping, handling or erecting.

The Contractor may elect to use a different number of spiral lapped splices per column. In no case shall a spiral be lapped within 4'-0" of the top or bottom of the column.

Splices in spiral reinforcement shall be lapped a minimum of 60 bar diameters.

Spiral reinforcement at lapped splices shall be terminated by a 135° hook with a 10" tail around a vertical bar. Hook may be field bent. Ends of spirals not lapped shall be terminated with  $1\frac{1}{2}$  turns and a 135° hook with a 10" tail around a vertical bar.



DETAILS COMMON TO INTERMEDIATE BENTS  
 HWY. 261 OVER INTERSTATE 40  
 ROUTE SEC.  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.

DRAWN BY: ACW DATE: 08/11  
 CHECKED BY: JWP DATE: 4/8/14  
 DESIGNED BY: JWP DATE: 9/11

BRIDGE NO. 07232 DRAWING NO. 53315

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.		110586	52	130
				07232		STEEL SHELL PILES		5336

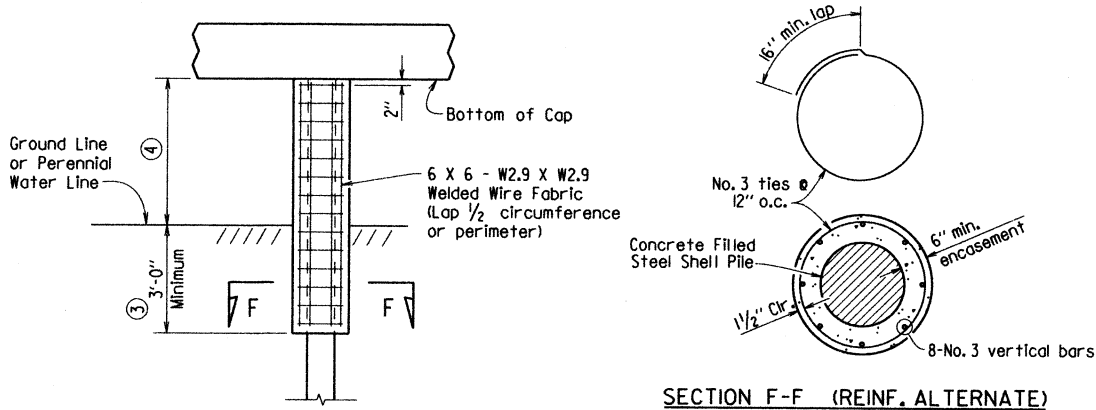
### GENERAL NOTES FOR PILE ENCASEMENTS:

See Bridge Layout for required location of pile encasements. Only interior trestle pile bents shall have pile encasements.

Concrete shall be Class S with a minimum 28-day compressive strength,  $f'_c = 3,500$  psi. If concrete cannot be placed in the dry, Seal Concrete may be used from top to bottom of encasement.

Reinforcing steel shall conform to AASHTO M 31 or M 53, Grade 60.

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

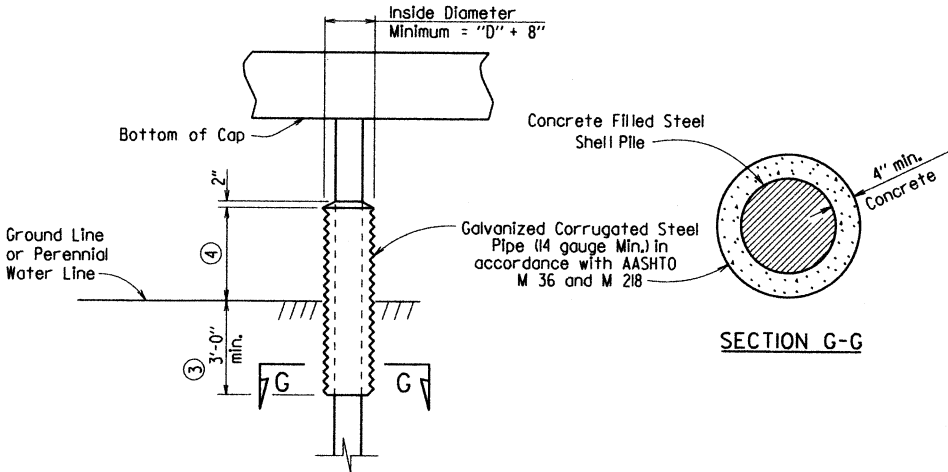


PILE ENCASEMENT DETAIL FOR STEEL SHELL PILES  
(Shown with Encasement to Bottom of Cap)<sup>⑤</sup>

③ Unless otherwise noted on Bridge Layout.

④ See Bridge Layout for height of pile encasement (3'-0" Minimum).

⑤ Pile encasement, when not extended to bottom of cap, shall have 2" concrete taper for water runoff as shown in the detail for partial height encasement.



ALTERNATE PILE ENCASEMENT DETAIL FOR STEEL SHELL PILES  
(Shown with Partial Height Encasement)

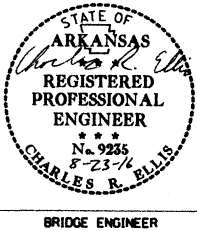
### DETAILS OF CONCRETE FILLED STEEL SHELL PILES AND PILE ENCASEMENTS

ROUTE SECTION  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: JYP DATE: 9/14/11  
CHECKED BY: LJB DATE: 8/22/16  
DESIGNED BY: STD. DATE: —

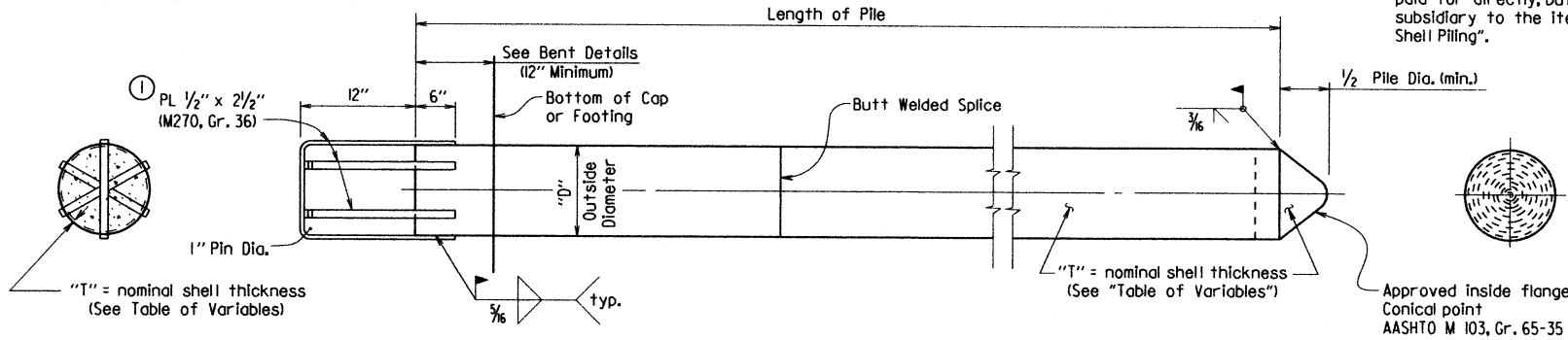
BRIDGE NO. 07232

FILENAME: b110586\_piles.dgn  
SCALE: NONE  
DRAWING NO. 53316



BRIDGE ENGINEER

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



### CONCRETE FILLED STEEL SHELL PILE

#### GENERAL NOTES FOR CONCRETE FILLED STEEL SHELL PILES:

Seismic Performance Zone: 3

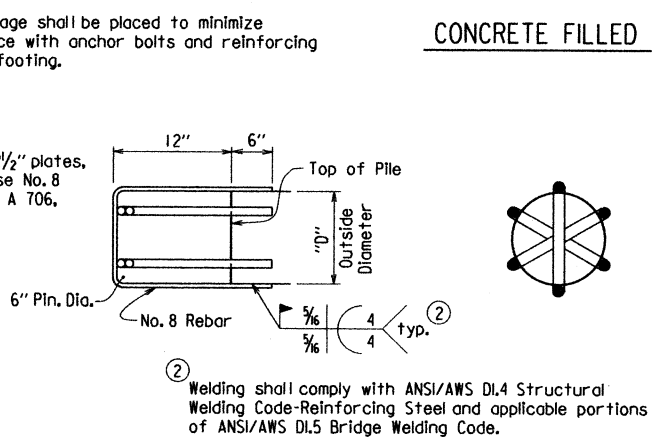
Steel shell piles shall conform to ASTM A252, Grade 3, ( $F_y = 45,000$  psi).

Steel shell piles 50' in length or less shall be completely filled with Class S Concrete with a minimum 28-day compressive strength,  $f'_c = 3,500$  psi, and shall be poured in the dry. At the Contractor's option, pile lengths greater than 50' may be filled with sand up to 50' below the top plan elevation of the steel shell pile and the remaining 50' filled with Class S Concrete. Sand used for filling of steel shell piles shall be clean and free of any organic matter.

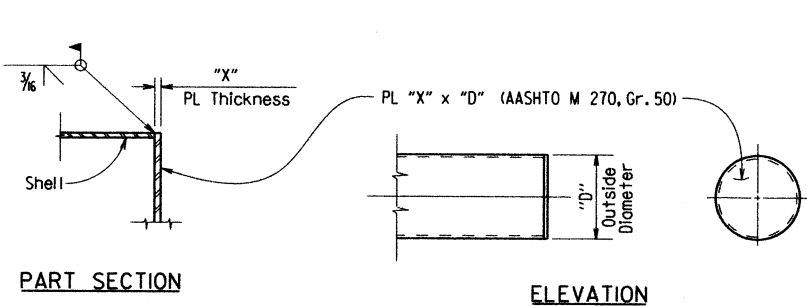
Steel shell piles that extend above the ground and are not protected by pile encasement shall be painted in accordance with subsection 805.02 of the Standard Specifications for Highway Construction.

See Bridge Layout for size and estimated length of steel shell piles and for additional driving information.

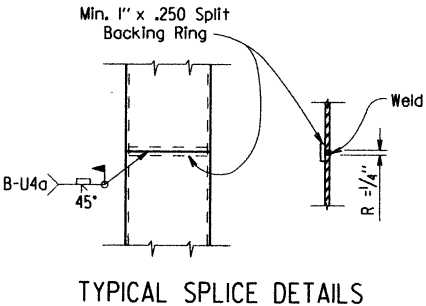
Concrete, sand, structural steel, reinforcing steel (including welding), and painting will not be paid for separately, but will be considered included in the contract unit price bid for "Steel Shell Piling".



ALTERNATE FOR 1/2" x 2 1/2" PLATE



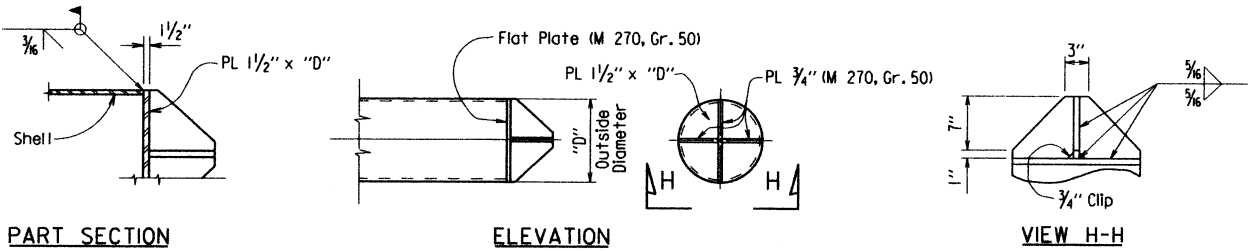
ALTERNATE FLAT TIP DETAIL  
(ALTERNATE FLAT PILE TIPS SHALL NOT BE USED ON PILES IN END BENTS)



TYPICAL SPLICE DETAILS

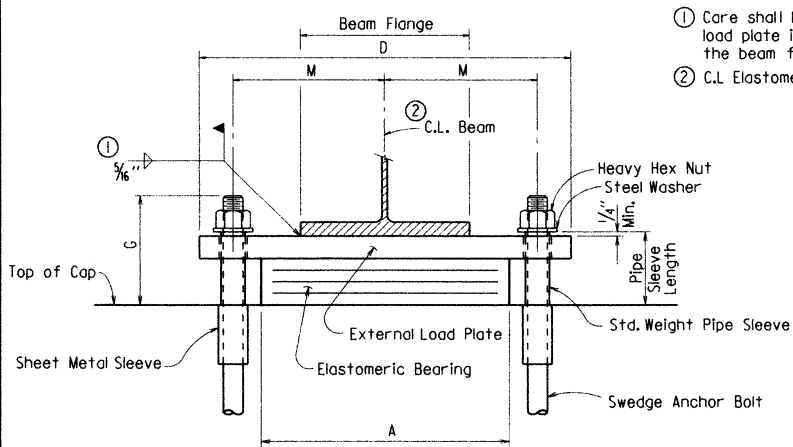
#### TABLE OF VARIABLES

OUTSIDE DIAMETER "D"	NOMINAL SHELL THICKNESS "T"	PLATE THICKNESS "X"
18"	0.50"	2 1/2"

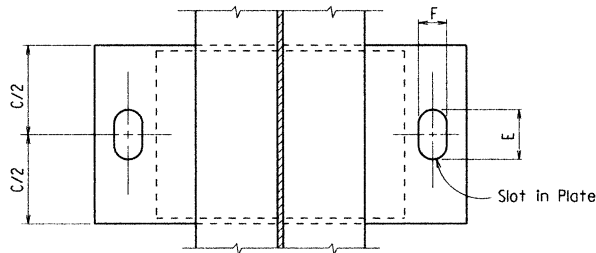


ALTERNATE VANED TIP DETAIL

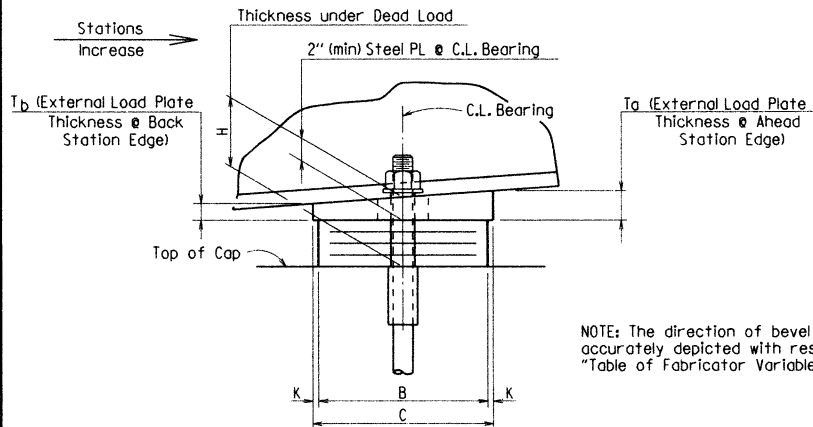
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110586	53	130
				07232	ELASTOMERIC BEARINGS		53317	



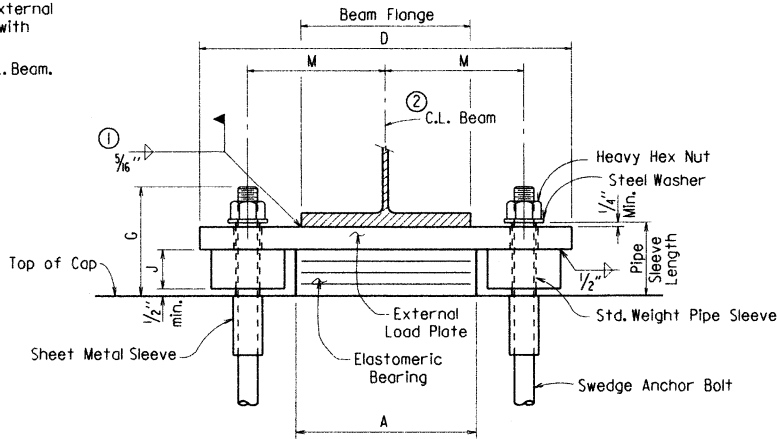
FRONT VIEW AT BENTS 1-2 & 4-5



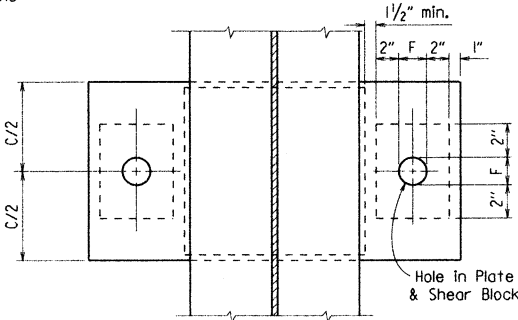
PLAN VIEW AT BENTS 1-2 & 4-5



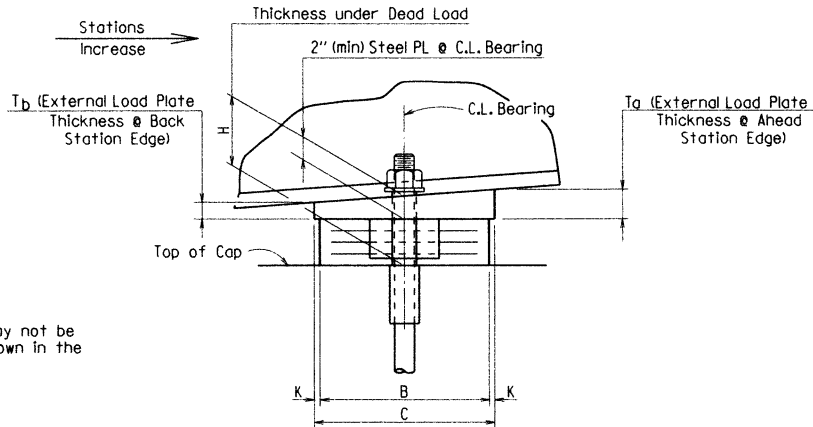
SIDE VIEW AT BENTS 1-2 & 4-5



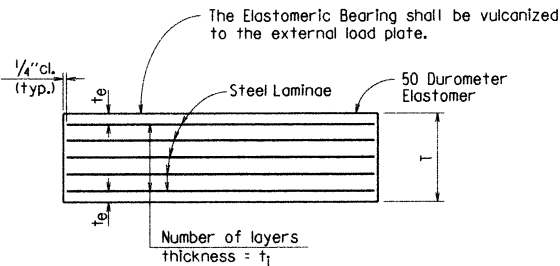
FRONT VIEW AT BENT 3



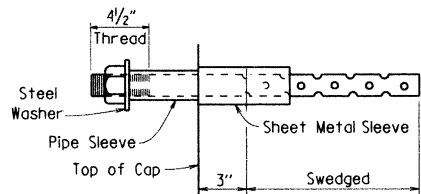
PLAN VIEW AT BENT 3



SIDE VIEW AT BENT 3



ELASTOMERIC BEARING



ANCHOR BOLT DETAIL

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

If Anchor Bolts are to be drilled and grouted in place, the Galvanized Sheet Metal Sleeves shall be cast in place as shown. Sleeves shall be dry packed with styrofoam, urethane foam or approved equal prior to pouring of concrete. After pouring of the cap and prior to erection of Structural Steel, the dry pack shall be removed and holes for the anchor bolts shall be accurately drilled into the masonry. Bolts placed in drilled holes shall be accurately set and fixed using a OPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Beam Spans (M 270, Gr. 50)".

#### GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 of the Standard Specifications and shall be paid for at the unit price bid for "Elastomeric Bearings."

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

External load plates and shear blocks shall be completely fabricated (including bevel, bolt holes and all shop welding) and shall be cleaned before vulcanizing to the elastomeric bearing. Surfaces in contact with the elastomeric bearing shall be cleaned in accordance with subsection 808.03. Other surfaces shall be blast cleaned in accordance with subsection 807.84(b) for painted steel and 807.84(e) for unpainted Grade 50W steel.

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

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Beam Spans (M270, Gr. 50)". External load plates and shear blocks will not be measured or paid for separately but will be considered included in the unit bid price for "Elastomeric Bearings".

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

TABLE OF FABRICATOR VARIABLES

BRIDGE NO.	* Maximum Design Load = Service I Limit State						ELASTOMERIC PAD							EXTERNAL LOAD PLATE										ANCHOR BOLT						
	LOCATION			BEARING TYPE	NO. of BEARINGS EACH BENT	*MAXIMUM DESIGN LOAD (KIPS)	G	H	A	B	N	t <sub>i</sub>	t <sub>e</sub>	NO. & THICKNESS OF STEEL LAMINAE	T	C	D	E	F	J	K	M	T <sub>a</sub>	T <sub>b</sub>	ANCHOR BOLT		PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)	
	BENT NO(S),	BEAM OR GIRDER NO.																							(ø x L)	GRADE				
07232	1	All	Exp.	5	108	7¾"	5"	15"	7½"	4	½"	¼"	5 @ 12 ga.	3"	8½"	25"	4⅝"	2¼"	N/A	½"	9¾"	2.10"	1.90"	1½"øx25"	55	1½"øx 5¼"	3"øx 9"	3"		
	2	All	Exp.	5	245	6⅞"	3⅜"	16"	12½"	2	½"	¼"	3 @ 12 ga.	1⅞"	13½"	27"	4¼"	2⅝"	N/A	½"	10½"	2.09"	1.91"	1¾"øx27"	55	2"øx4⅛"	4"øx 9"	3⅜"		
	3	All	Fix	5	284	6⅞"	3⅜"	16"	14½"	2	½"	¼"	3 @ 12 ga.	1⅞"	15½"	35⅝"	N/A	3⅞"	1¼"	½"	13⅞"	2.00"	2.00"	2"øx30"	55	2½"øx 4⅞"	4"øx 9"	3¾"		
	4	All	Exp.	5	245	6⅞"	3⅜"	16"	12½"	2	½"	¼"	3 @ 12 ga.	1⅞"	13½"	27"	4¼"	2⅝"	N/A	½"	10½"	1.90"	2.10"	1¾"øx27"	55	2"øx 4⅞"	4"øx 9"	3⅜"		
	5	All	Exp.	5	108	7¾"	5"	15"	7½"	4	½"	¼"	5 @ 12 ga.	3"	8½"	25"	4⅝"	2¼"	N/A	½"	9¾"	1.90"	2.10"	1½"øx25"	55	1½"øx 5¼"	3"øx 9"	3"		



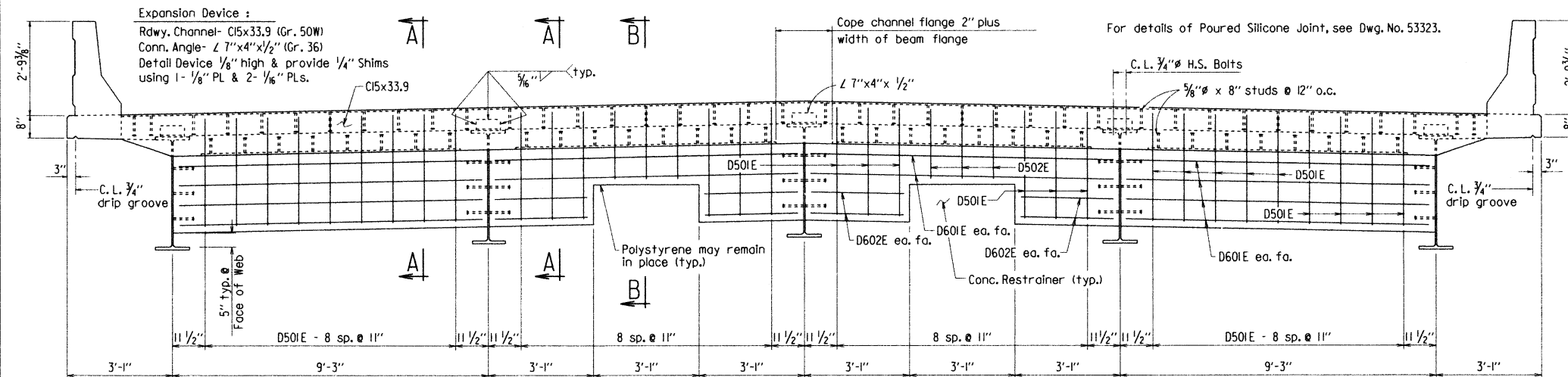
#### DETAILS OF ELASTOMERIC BEARINGS HWY. 261 OVER INTERSTATE 40

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

DRAWN BY: PGT DATE: 9-7-11 FILENAME: bl10586xl.el.dgn  
 CHECKED BY: A115 DATE: 9-14-11 SCALE: NONE  
 DESIGNED BY: PGT DATE: 5-11  
 BRIDGE NO. 07232 DRAWING NO. 53317



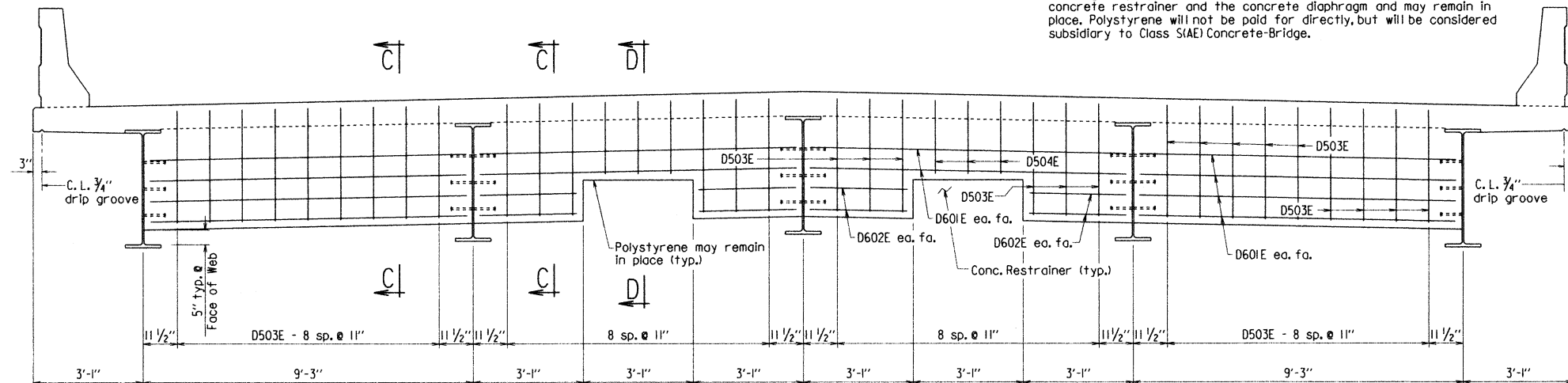
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110586	55	130
				07232		294' UNIT		53319



TYPICAL ROADWAY SECTION NEAR JOINT

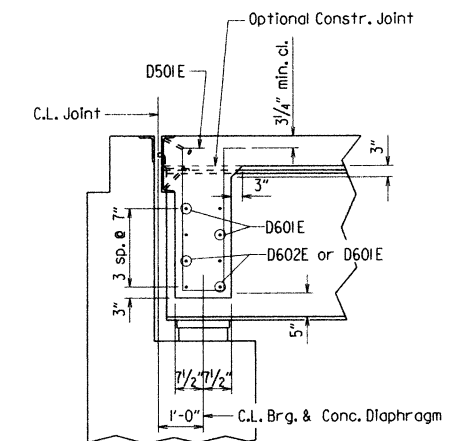
1/2" = 1'-0"

NOTE: 1/2" polystyrene shall be used as a bond breaker between the  
concrete restrainer and the concrete diaphragm and may remain in  
place. Polystyrene will not be paid for directly, but will be considered  
subsidiary to Class (S) Concrete-Bridge.



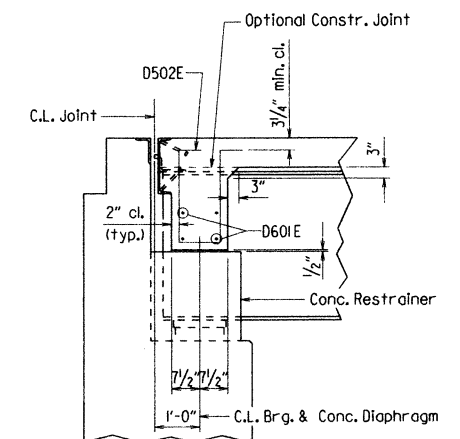
TYPICAL ROADWAY SECTION AT INTERMEDIATE BENTS

1/2" = 1'-0"



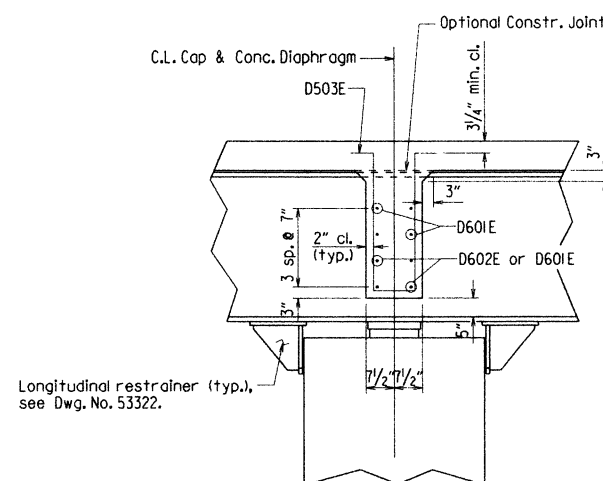
SECTION A-A

1/2" = 1'-0"



SECTION B-B

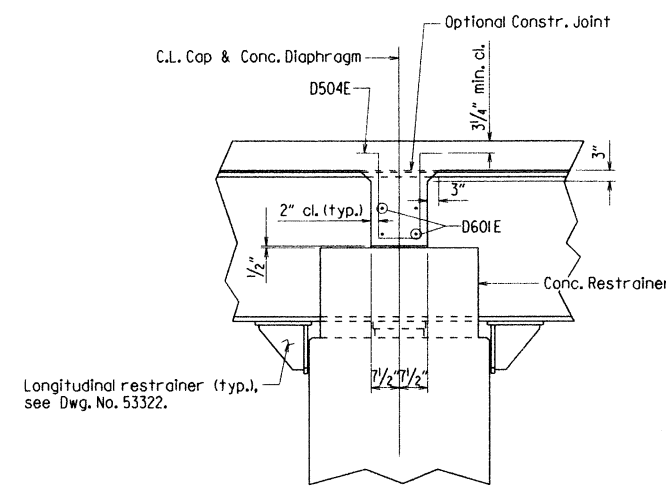
1/2" = 1'-0"



SECTION C-C

1/2" = 1'-0"

Longitudinal restrainer (typ.),  
see Dwg. No. 53322.



SECTION D-D

1/2" = 1'-0"

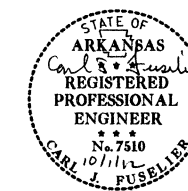
Longitudinal restrainer (typ.),  
see Dwg. No. 53322.

NOTES: Forms for concrete diaphragms shall be removable.  
Concrete diaphragms shall be vertical.

SHEET 2 OF 7  
DETAILS OF  
294'-0" CONTINUOUS W-BEAM UNIT  
HWY. 261 OVER INTERSTATE 40

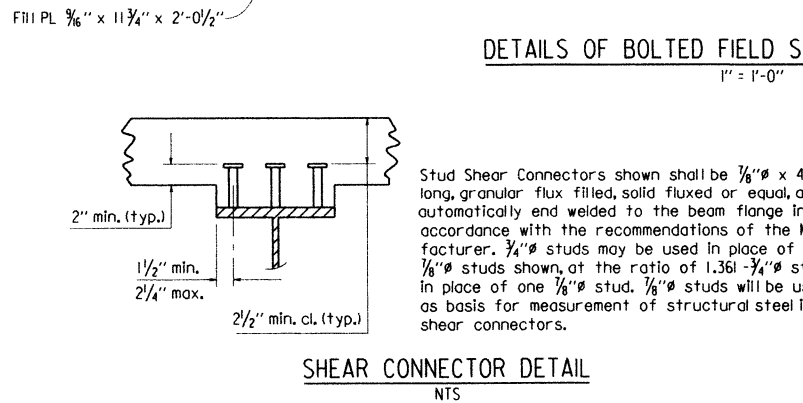
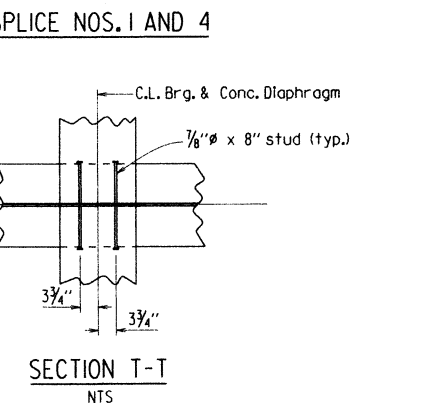
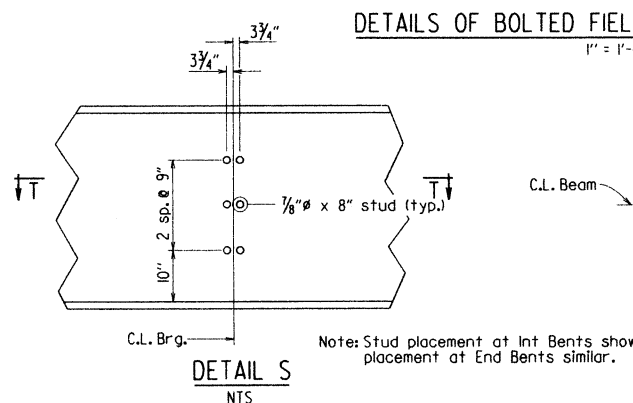
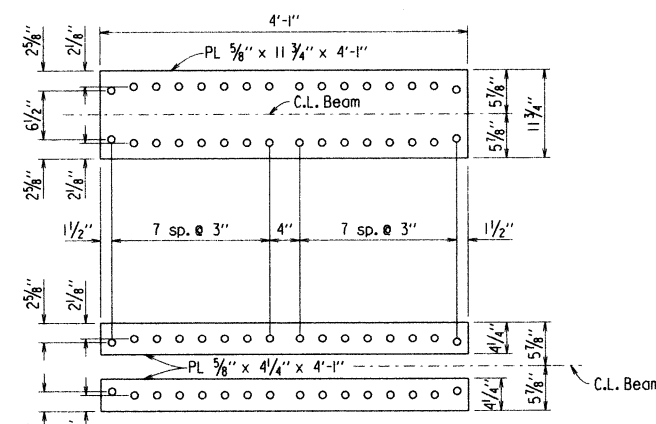
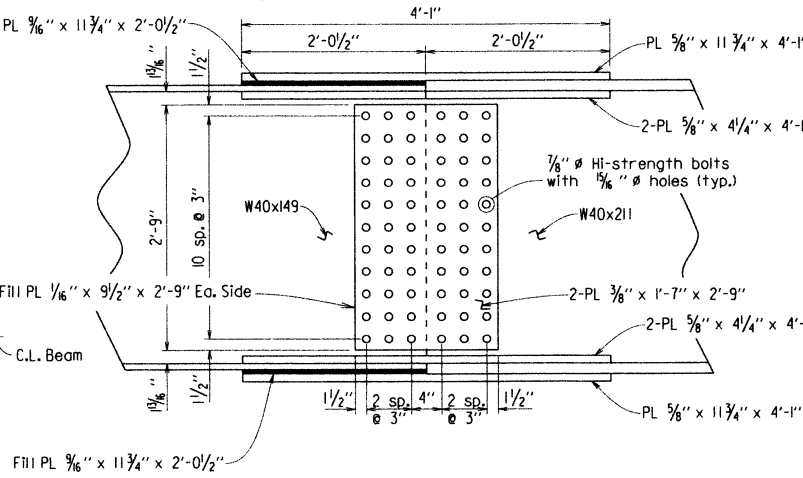
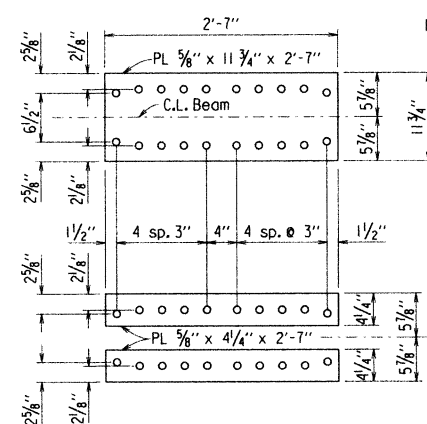
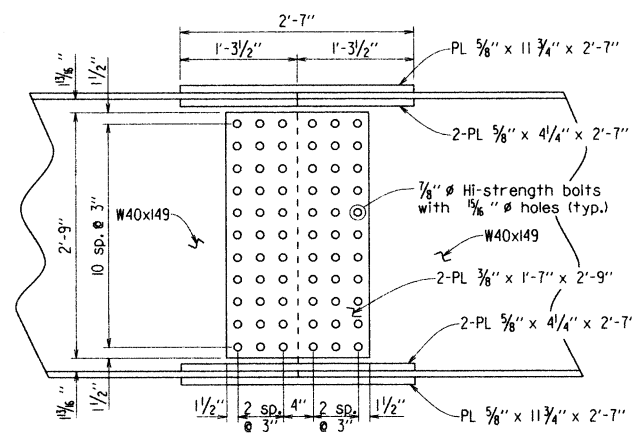
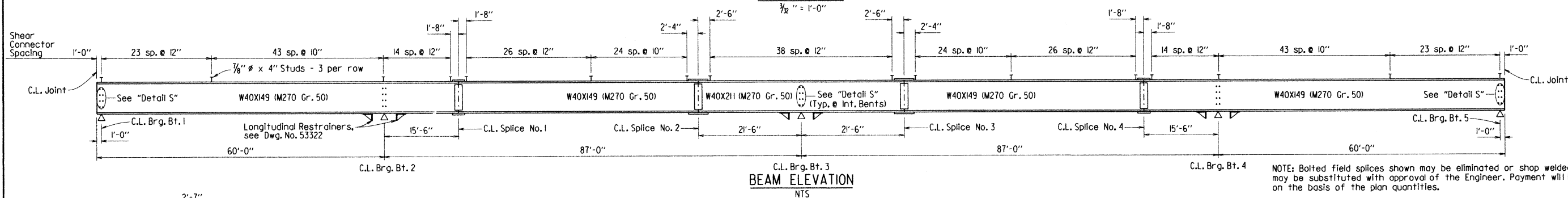
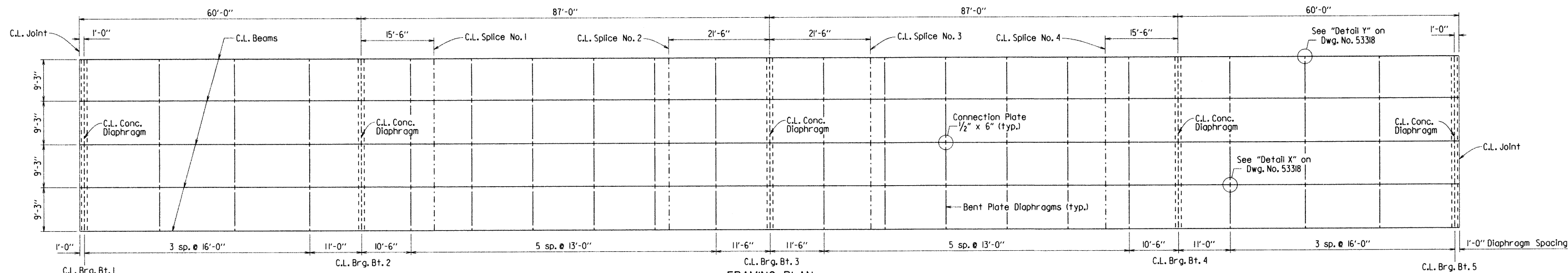
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

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DESIGNED BY: PGT DATE: 5-11  
BRIDGE NO. 07232 DRAWING NO. 53319



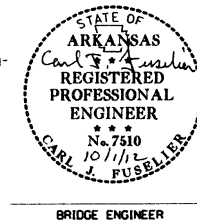
BRIDGE ENGINEER

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.		110586	56	130
				07232		294' UNIT		53320



NOTE: Bolted field splices shown may be eliminated or shop welded splices may be substituted with approval of the Engineer. Payment will be made on the basis of the plan quantities.

NOTE: All field splice plates shall be AASHTO M270, Gr. 50 steel.



SHEET 3 OF 7  
 DETAILS OF  
 294'-0" CONTINUOUS W-BEAM UNIT  
 HWY. 261 OVER INTERSTATE 40  
 ROUTE SEC.  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.  
 DRAWN BY: PGT DATE: 6-11 FILENAME: bl0586xl.sl.dgn  
 CHECKED BY: AHS DATE: 9-14-11 SCALE: As Noted  
 DESIGNED BY: PGT DATE: 5-11  
 BRIDGE NO. 07232 DRAWING NO. 53320

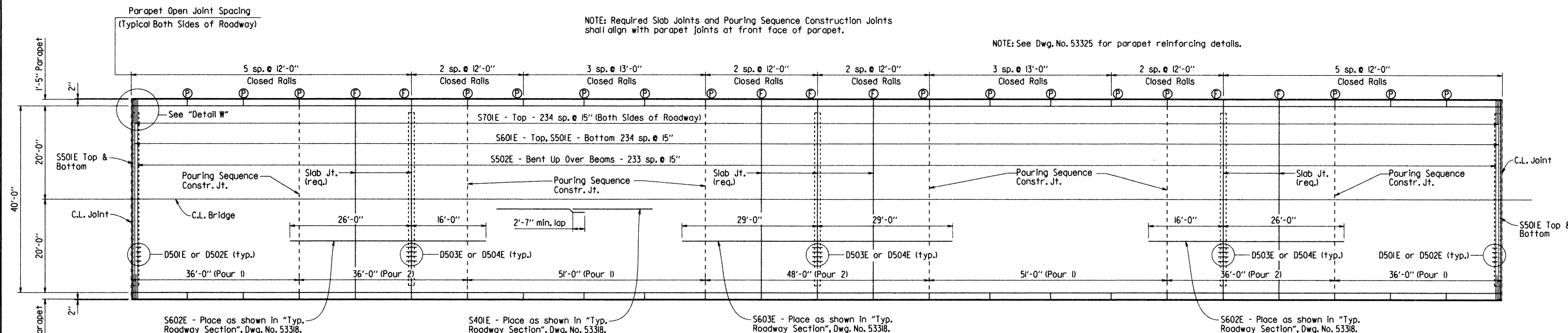
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110586	57	130
				07232		294' UNIT		53321

- Ⓟ Partial depth parapet joint at this location (typ. both sides).  
Ⓡ Full depth parapet joint at this location (typ. both sides).

NOTE: Pours with the same number may be placed simultaneously or separately. All Pours (1) must be placed before Pour (2) can be placed, 48 hours shall elapse between the end of a pour and the start of the next pour, 72 hours shall elapse between adjacent pours. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. The Contractor must obtain approval from the Engineer for any deviations from the pouring sequence shown.

NOTE: Required Slab Joints and Pouring Sequence Construction Joints shall align with parapet joints at front face of parapet.

NOTE: See Dwg. No. 53325 for parapet reinforcing details.



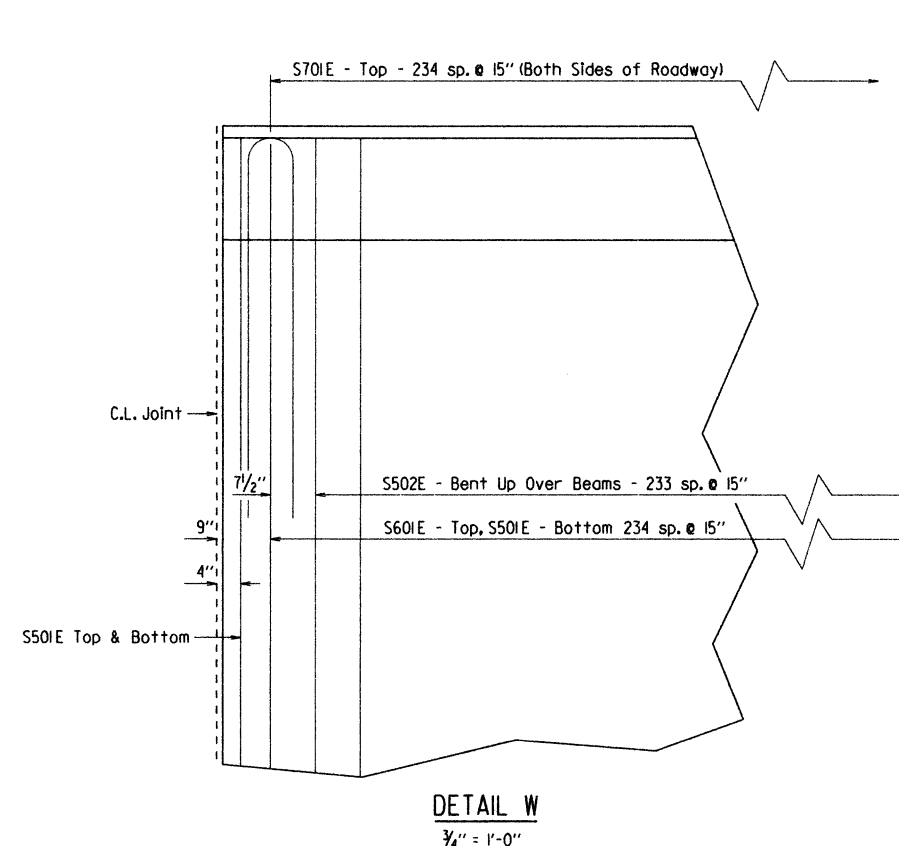
## REINFORCING PLAN & POURING SEQUENCE

$\frac{1}{2}'' = 1'-0''$

## BAR LIST

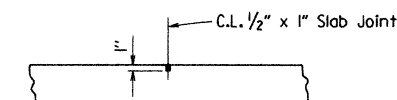
MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
S401E	984	39'-0"	Str.	Dimensions are out to out of bars. Ⓡ 1/2" Overtolerance No Undertolerance
S501E	239	42'-10"	Str.	
S502E	234	43'-8"	3"	
S601E	235	42'-8"	Str.	
S602E	92	42'-0"	Str.	
S603E	46	58'-0"	Str.	
S701E	470	11'-11"	6 1/2"	
P401E	1,176	5'-6"	3"	
P402E	128	5'-6"	Str.	
P403E	252	11'-8"	Str.	
P404E	84	12'-8"	Str.	
P501E	1,176	5'-0"	3 3/4"	
D501E	60	7'-6"	2 1/2"	
D502E	12	5'-2"	2 1/2"	
D503E	90	7'-6"	2 1/2"	
D504E	18	5'-2"	2 1/2"	
D601E	120	8'-10"	Str.	
D602E	80	2'-8"	Str.	

Bars designated with an "E" suffix are epoxy coated.



## DETAIL W

$\frac{3}{4}'' = 1'-0''$

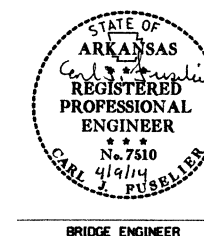


## SLAB JOINT DETAIL

No Scale

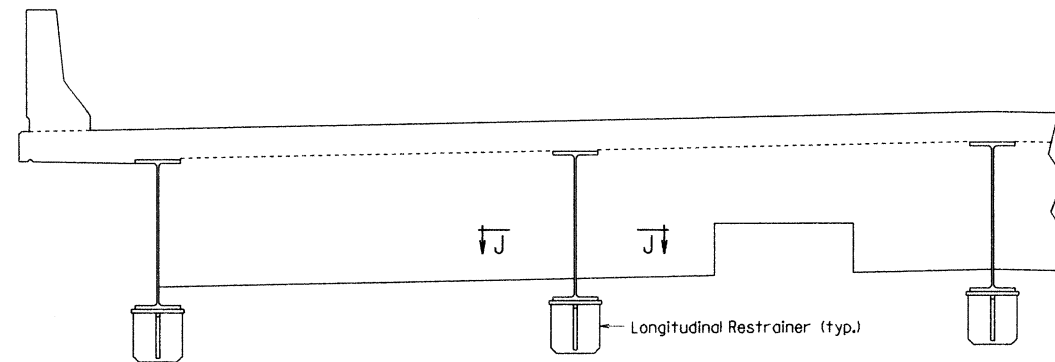
Use Type 3 or 4 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Backer Rod filler will not be required. Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab Joints shall extend to the outside edge of the deck slab and shall align with open joints at the front face of the parapet. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations. The joint sealer shall extend across the deck from gutterline to gutterline.

SHEET 4 OF 7  
DETAILS OF  
294'-0" CONTINUOUS W-BEAM UNIT  
HWY. 261 OVER INTERSTATE 40  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

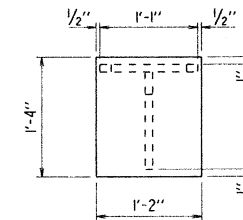


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CHECKED BY: AME DATE: 9-14-11 SCALE: As Noted  
DESIGNED BY: PGT DATE: 5-11  
BRIDGE NO. 07232 DRAWING NO. 53321

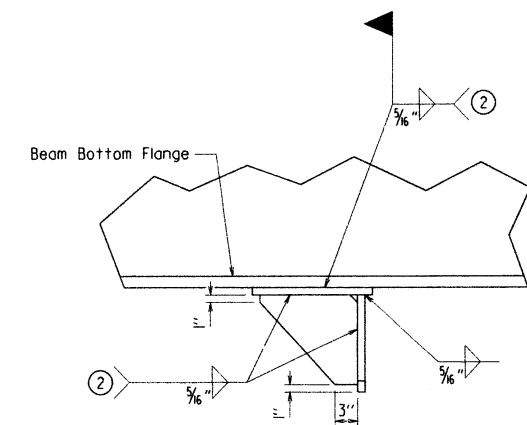
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		110586	58	130
				07232		294' UNIT		53322



SKETCH OF LONGITUDINAL RESTRAINER  
DEVICES AT INTERMEDIATE BENTS  
1/2" = 1'-0"

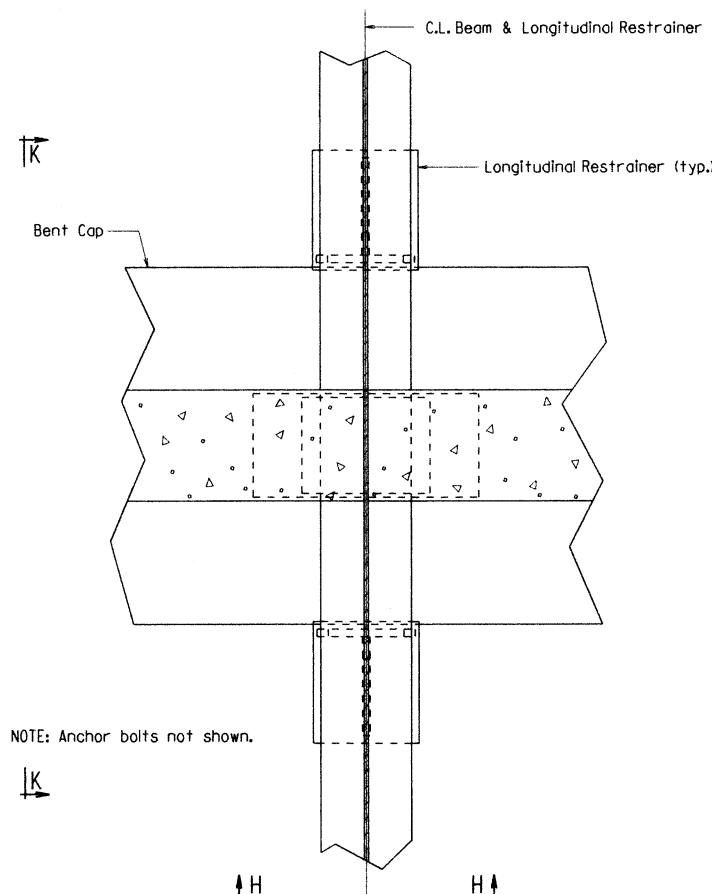


PLAN OF LONGITUDINAL RESTRAINER  
1" = 1'-0"



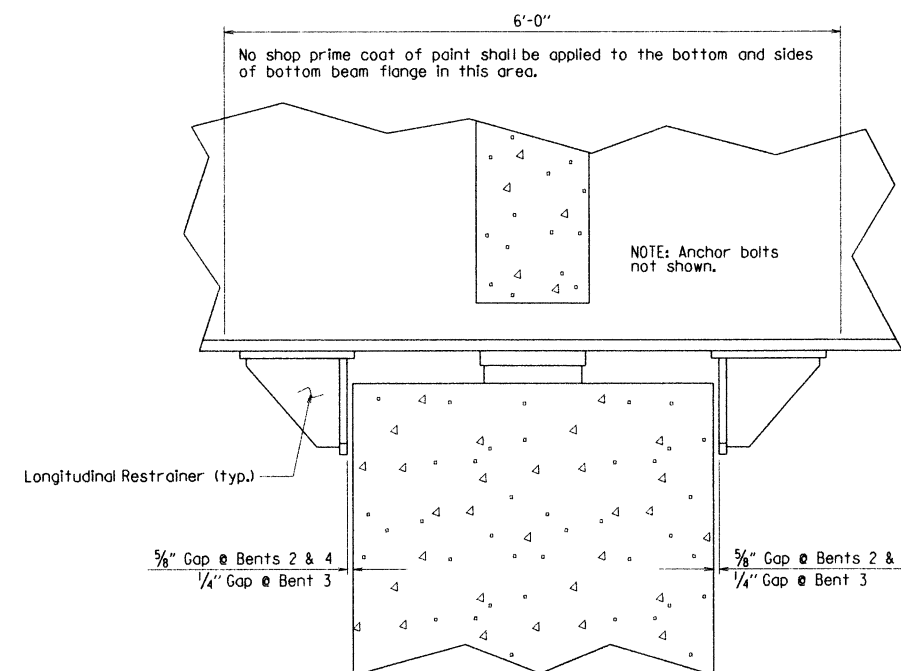
VIEW L-L  
1" = 1'-0"

- ① Stop weld 1/2" from end of clip.  
② Longitudinal restrainer shall not be welded to beam until deck has been poured.

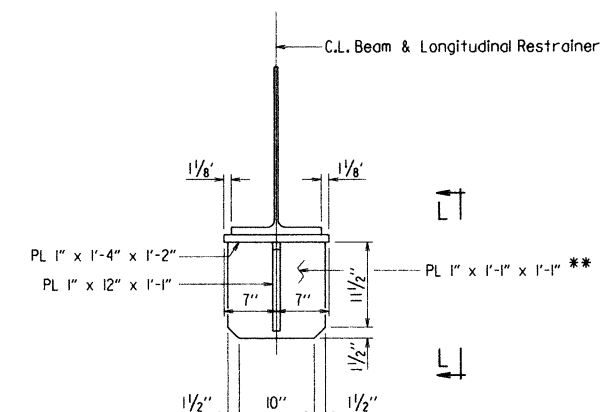


NOTE: Anchor bolts not shown.

VIEW J-J  
1" = 1'-0"



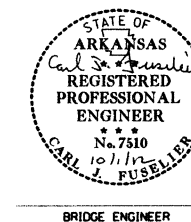
VIEW K-K  
1" = 1'-0"



NOTE: All plates shall be Grade 50.

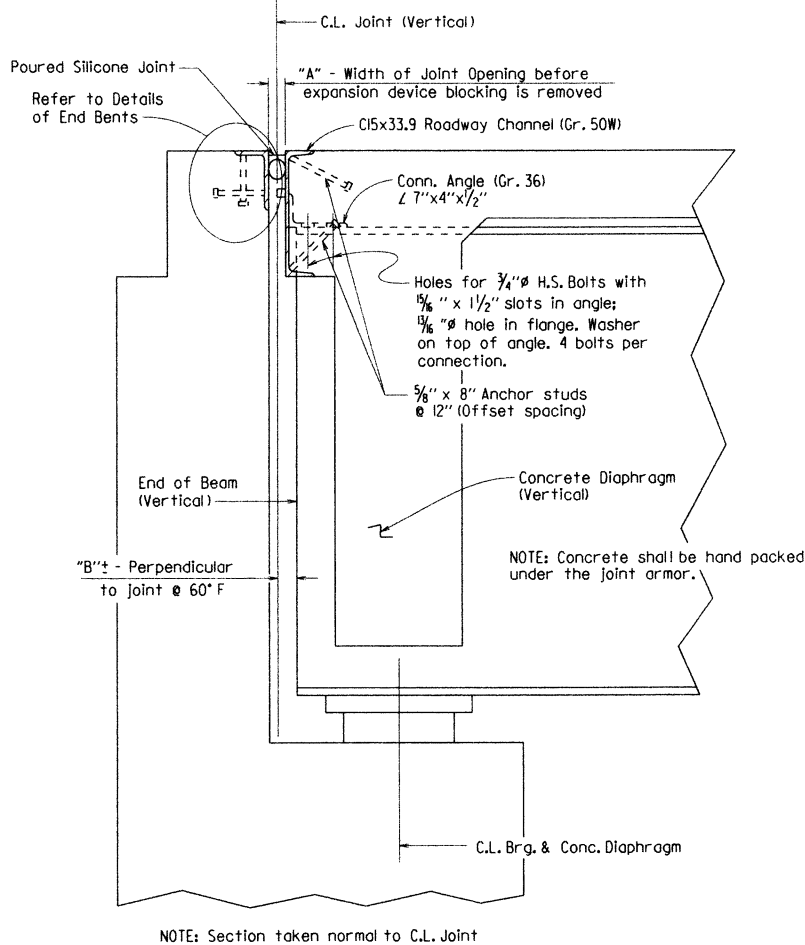
VIEW H-H  
1" = 1'-0"

\*\*Longitudinal restrainer shall be fabricated to account for grade so the final position of this plate will be vertical.

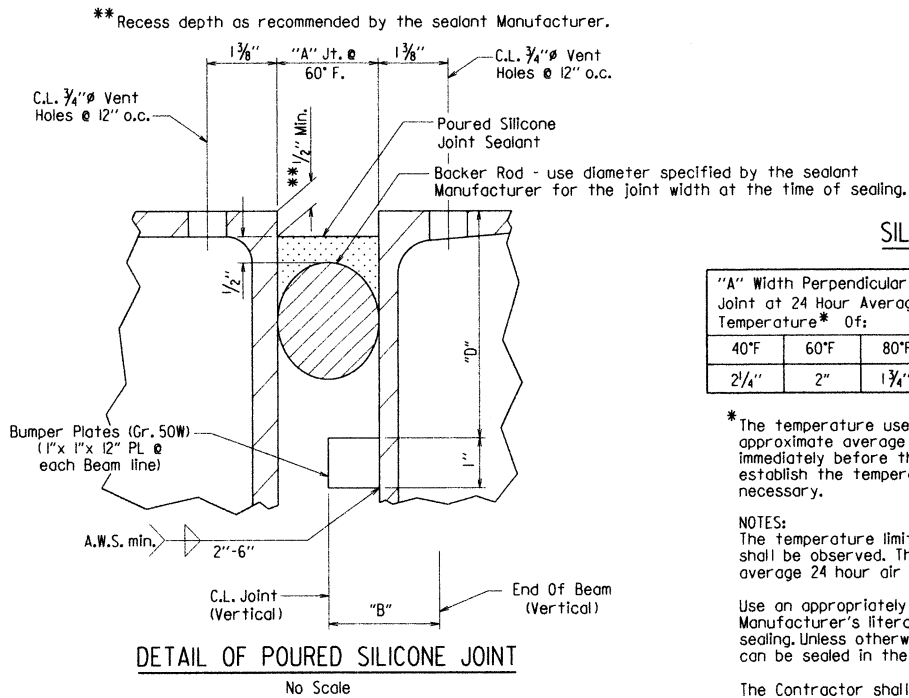


SHEET 5 OF 7  
DETAILS OF  
294'-0" CONTINUOUS W-BEAM UNIT  
HWY. 261 OVER INTERSTATE 40  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: PGT DATE: 6-11 FILENAME: b110586xl.sldgn  
CHECKED BY: AFS DATE: 9-14-11 SCALE: As Noted  
DESIGNED BY: PGT DATE: 5-11  
BRIDGE NO. 07232 DRAWING NO. 53322

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.		110586	59	130
				07232		294' UNIT		53323



SECTION THRU JOINT AT END BENT  
No Scale



DETAIL OF POURED SILICONE JOINT  
No Scale

### SILICONE JOINT DATA

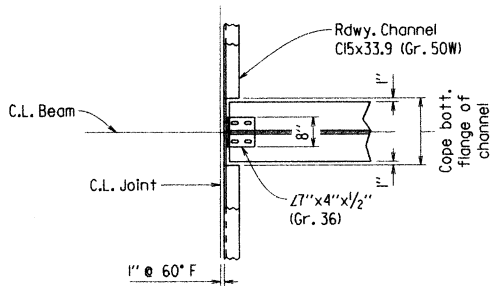
"A" Width Perpendicular to Joint at 24 Hour Average Temperature* Of:			"B" Perpendicular to Joint at 60°F	"D"	Bumper Plate Size
40°F	60°F	80°F			
2 1/4"	2"	1 3/4"	2 1/4" ±	4 1/2"	1" x 1" x 1/2"

\* The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature. Interpolation of the table may be necessary.

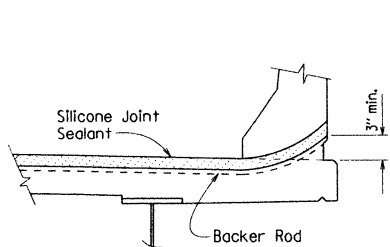
NOTES:  
The temperature limitations recommended by the sealant Manufacturer shall be observed. The sealant shall be installed only when the average 24 hour air temperature is between 40° and 80° F.

Use an appropriately sized backer rod at the depth shown in the Manufacturer's literature based on the joint width at the time of sealing. Unless otherwise noted, do not install more backer rod than can be sealed in the same day.

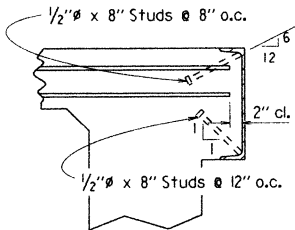
The Contractor shall verify separation of the backer rod from the joint material after the joint material has set.



CHANNEL CONNECTION DETAIL  
No Scale

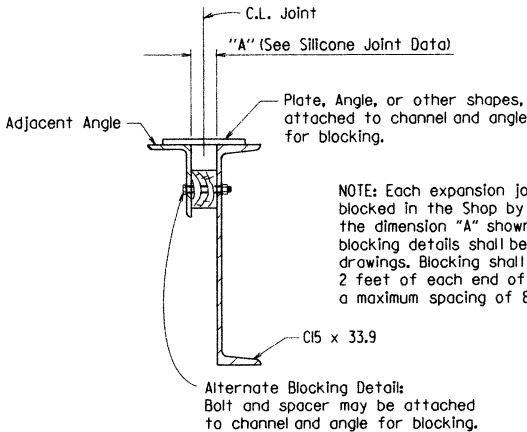


JOINT SEAL PLACEMENT AT CURB  
No Scale



NOTE: As an alternate to 5/8" studs, 1/2" x 8" studs spaced as shown may be used. Use weight of 5/8" stud as basis of measurement of structural steel in anchors.

DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCEMENT  
No Scale



DETAILS FOR BLOCKING EXPANSION JOINT DEVICE  
No Scale

### EXPANSION DEVICE INSTALLATION AT END BENTS:

The Contractor may elect to install the expansion device using one of the following two alternatives:

- 1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature and grade, and the backwall constructed.
- 2) The backwall shall be poured to the optional construction joint after beams are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature.



BRIDGE ENGINEER

SHEET 6 OF 7  
DETAILS OF  
294'-0" CONTINUOUS W-BEAM UNIT  
HWY. 261 OVER INTERSTATE 40  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: PGT DATE: 6-11 FILENAME: b110586xl.sl.dgn  
CHECKED BY: AMS DATE: 9-14-11 SCALE: As Noted  
DESIGNED BY: PGT DATE: 5-11  
BRIDGE NO. 07232 DRAWING NO. 53323

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2014 edition) with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, Fifth Edition with 2010 Interim Revisions.

MATERIALS AND STRENGTHS:

Class (S/AE) Concrete  $f'_c = 4,000$  psi  
Reinforcing Steel (Gr. 60, AASHTO M31 or M322, Type A)  $f_y = 60,000$  psi  
Structural Steel (M 270, Gr. 50)  $F_y = 50,000$  psi  
Structural Steel (M 270, Gr. 36)  $F_y = 36,000$  psi

CONCRETE :

Concrete shall be poured in the dry and all exposed corners to be chamfered  $\frac{3}{4}$ " unless otherwise noted. All concrete shall be Class (S/AE) with a minimum 28 day compressive strength  $f'_c = 4,000$  psi.

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. 55005 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

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

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

REINFORCING STEEL :

All reinforcing steel shall be Grade 60 conforming to AASHTO M31 or M322, Type A, with mill test reports. The reinforcing steel is to be accurately located in the forms and firmly held in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly, but will be considered subsidiary to the item "Epoxy Coated Reinforcing Steel (Grade 60)".

STRUCTURAL STEEL :

All structural steel shall be AASHTO M 270, Grade 50 unless otherwise noted and shall be paid for as "Structural Steel in Beam Spans (M 270, Gr. 50)". All exposed surfaces shall be cleaned in accordance with Subsection 807.84. Structural steel completely embedded in concrete may be AASHTO M 270, Grade 36 unless otherwise noted.

All Grade 50 and Grade 36 structural steel except galvanized steel and steel which is completely encased in concrete shall be painted in accordance with Subsection 807.75. The color of paint shall conform to Federal Standard 595B, Color Chip No. 36270, Gray.

Drawings show general features of design only. Shop drawings shall be made in accordance with the specifications, submitted and approval secured before fabrication is begun.

Requests for substitution of structural steel shapes shown with shapes of greater size must be submitted by the Contractor to the Engineer for approval. Steels of equal or greater strengths will be accepted only when shown on the approved shop drawings. Payment will be based on the basis of shapes shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

Beams and field splice plates are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly, but shall be considered subsidiary to the item "Structural Steel in Beam Spans (M270, Gr. 50)".

All beams shall be assembled in the shop as specified in Subsection 807.54 and blocked in their true position with webs horizontal. The camber, length of sections, distance between bearings, and openings of joints shall be measured and this information shall become part of the permanent records. 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 degrees F. A tolerance of  $\frac{1}{4}$ " +/- is allowed for camber.

Flange field splice plates for main members shall be cut and fabricated so that the primary direction of railing 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 additional welds are required, whether permanent or temporary, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that do not exceed the limitations of Subsection 802.13 will not require approval prior to construction. All welding shall conform to Subsection 807.26.

Field connections shall be bolted with high-strength bolts and shall be  $\frac{3}{4}$ "  $\phi$  bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior beam webs and on the bottom of the beam flanges. Holes for  $\frac{3}{4}$ "  $\phi$  high-strength bolts may be  $\frac{1}{8}$ "  $\phi$  diameter if a washer is supplied for use under both the nut and head of the bolt.

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

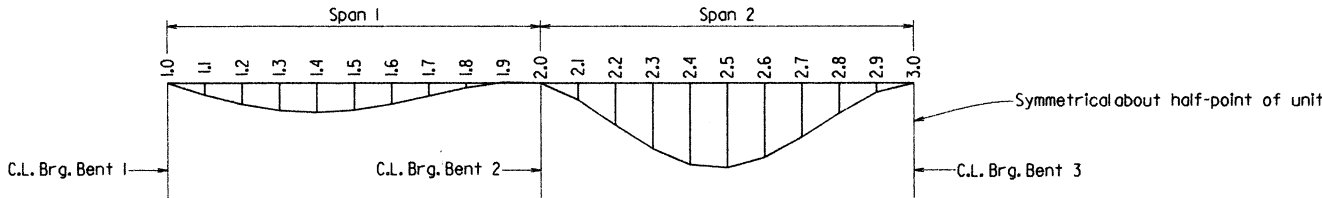
All shear connectors shall be granular flux filled, solid fluxed, or equal and shall be automatically end welded in accordance with recommendations of the Manufacturer.

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Span	Point of Deflection	Structural Steel		Structural Steel + Slab		Structural Steel + Slab + Parapet	
		Exterior	Interior	Exterior	Interior	Exterior	Interior
1	1.0	0	0	0	0	0	0
	1.1	0.020	0.022	0.124	0.154	0.133	0.163
	1.2	0.036	0.039	0.226	0.279	0.243	0.295
	1.3	0.046	0.050	0.290	0.358	0.312	0.379
	1.4	0.049	0.054	0.310	0.384	0.333	0.406
	1.5	0.045	0.049	0.285	0.352	0.306	0.372
	1.6	0.035	0.038	0.222	0.275	0.238	0.290
	1.7	0.021	0.023	0.136	0.169	0.146	0.178
	1.8	0.007	0.008	0.050	0.062	0.053	0.065
	1.9	-0.002	-0.002	-0.008	-0.010	-0.009	-0.011
2	2.0	0	0	0	0	0	0
	2.1	0.029	0.032	0.175	0.216	0.189	0.230
	2.2	0.074	0.080	0.446	0.550	0.482	0.584
	2.3	0.116	0.126	0.700	0.864	0.757	0.918
	2.4	0.143	0.156	0.864	1.066	0.934	1.132
	2.5	0.149	0.162	0.895	1.104	0.968	1.173
	2.6	0.132	0.143	0.789	0.973	0.854	1.034
	2.7	0.097	0.105	0.575	0.709	0.623	0.754
	2.8	0.054	0.059	0.318	0.392	0.345	0.417
	2.9	0.017	0.018	0.097	0.119	0.105	0.127
	3.0	0	0	0	0	0	0

Half-point of unit

Note: Table is symmetrical about half-point of unit.

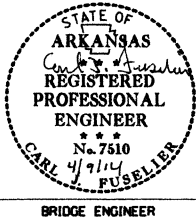


DEAD LOAD DEFLECTION DIAGRAM

NOTE: Camber for Dead Load Deflection +/-  $\frac{1}{4}$ " tolerance. Deflections shown are along C.L. Beam from a chord from C.L. Bearing to C.L. Bearing. Negative sign (-) indicates point above chord. Vertical curve corrections not included.

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.		110586	60	130
				07232		294' UNIT		53324

1



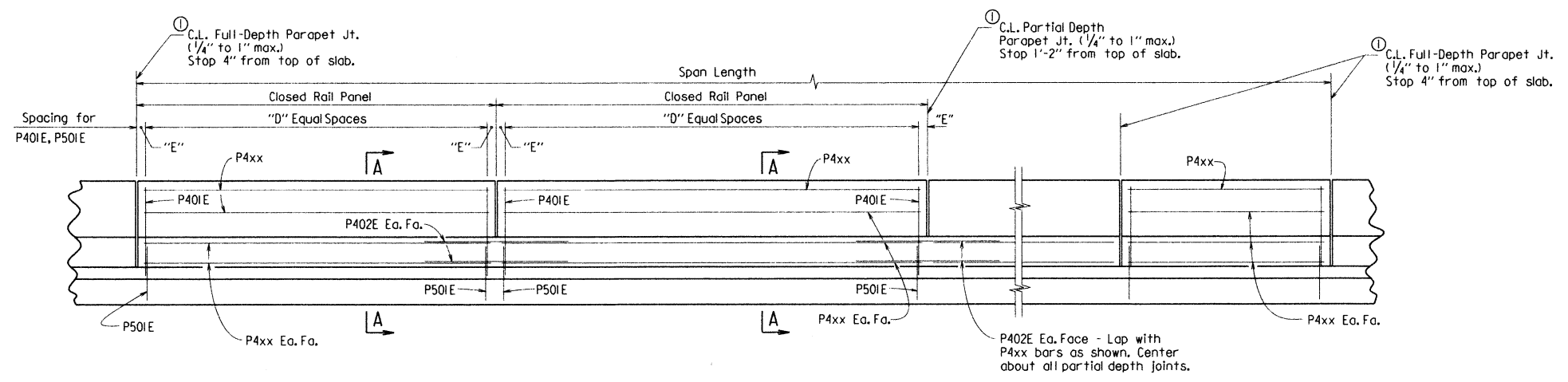
SHEET 7 OF 7  
DETAILS OF  
294'-0" CONTINUOUS W-BEAM UNIT  
HWY. 261 OVER INTERSTATE 40  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: PGT DATE: 6-11 FILENAME: bil0586xl.sl.dgn  
CHECKED BY: AMS DATE: 9-14-11 SCALE: As Noted  
DESIGNED BY: PGT DATE: 5-11  
BRIDGE NO. 07232 DRAWING NO. 53324

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.		110586	61	130
				07232		PARAPET		53325

TABLE OF VARIABLES

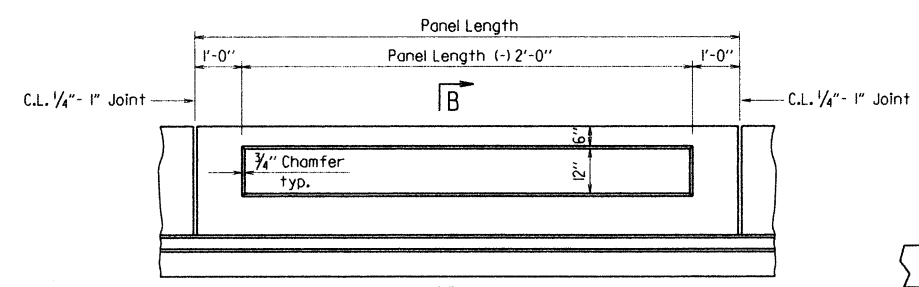
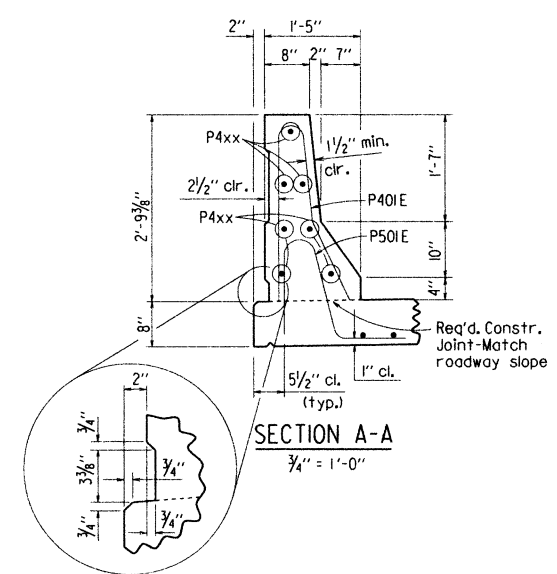
Bridge No.	Closed Rail Panels			
	Length	"D"	"E"	P4xx Bar
07232 (Hwy. 261)	12'-0"	23	3"	P403E
	13'-0"	25	3"	P404E



ELEVATION - CONCRETE PARAPET RAIL

1/2" = 1'-0"

For location of full and partial depth parapet joints, see "Reinforcing Plan & Pouring Sequence".

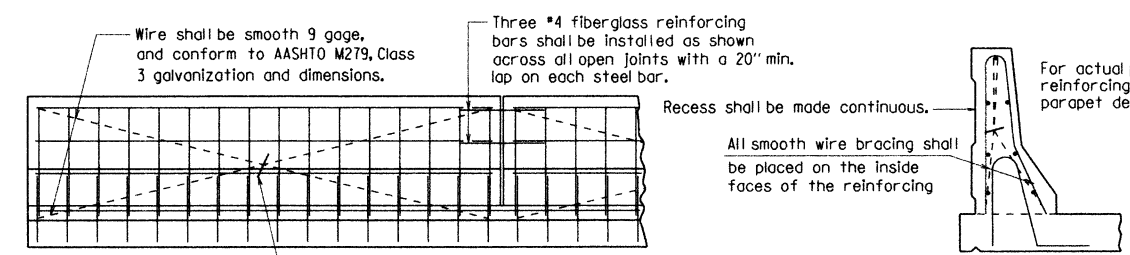


DETAILS OF PARAPET ENHANCEMENT

No Scale

SECTION B-B

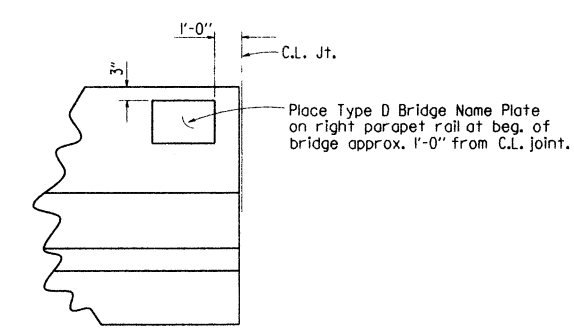
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DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

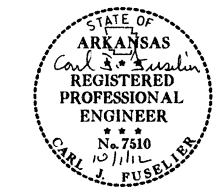
No Scale

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. Unless otherwise noted, exposed surfaces may be given a light brush finish or a Class 3 Textured Coating Finish in place of Class 2 Rubbed Finish.



VIEW SHOWING LOCATION OF NAME PLATE

No Scale



BRIDGE ENGINEER

DETAILS OF PARAPET RAIL

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

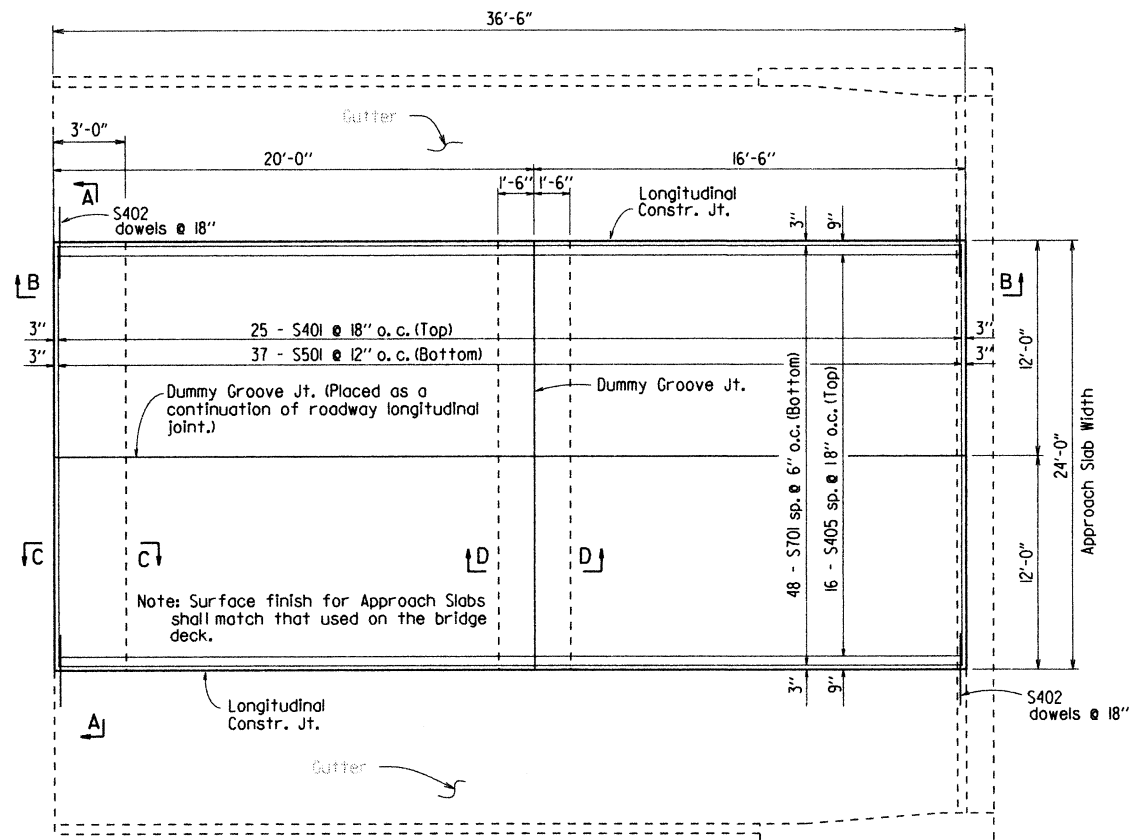
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CHECKED BY: AJS DATE: 9-19-11 SCALE: As Noted

DESIGNED BY: PGT DATE: 5-11

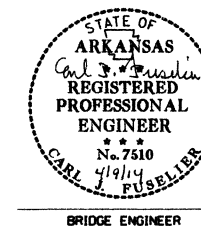
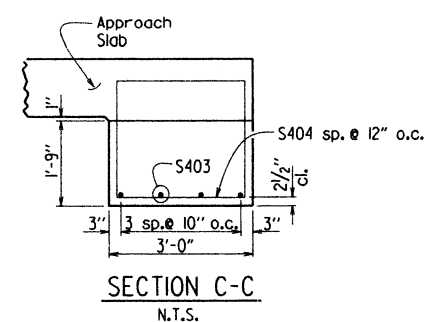
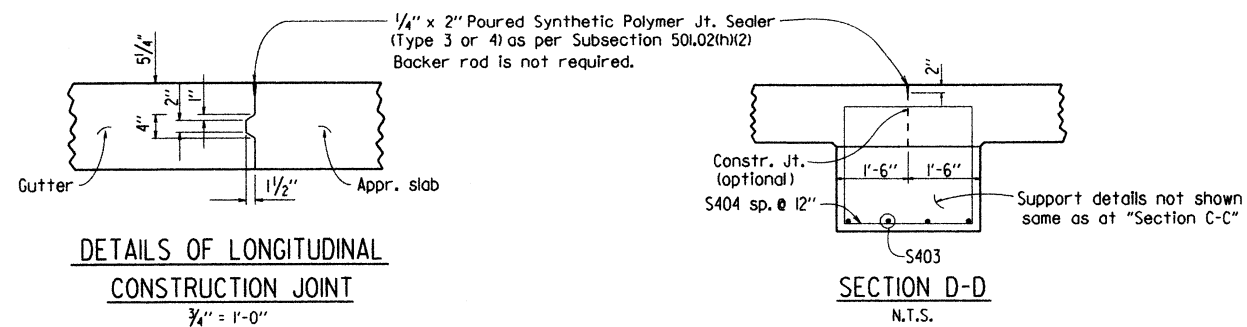
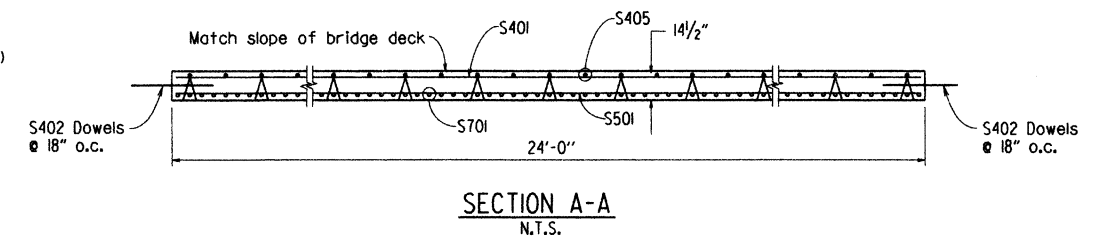
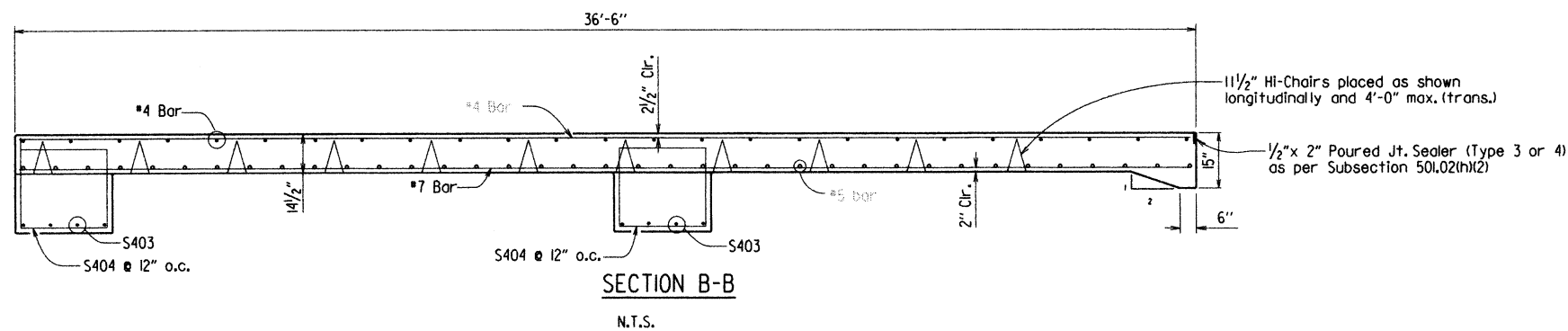
BRIDGE NOS. 07232 DRAWING NO. 53325

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.		110586	62	130
				07232		APPROACH SLAB		53326



PLAN OF TYPE SPECIAL I APPROACH SLAB

$\frac{3}{16}" = 1'-0"$

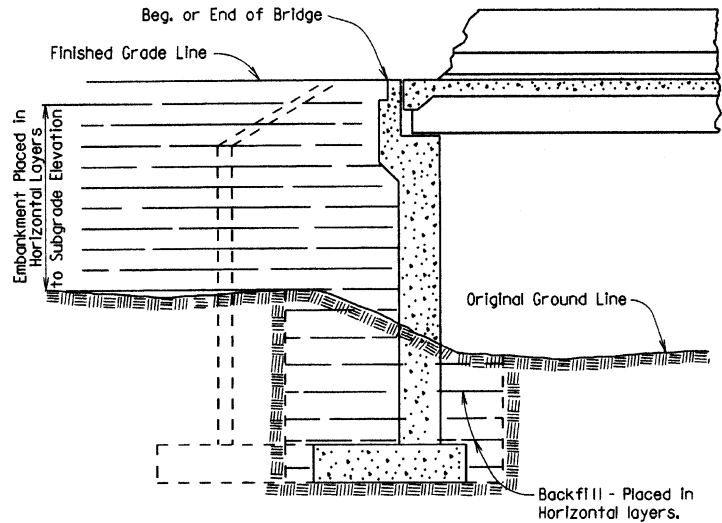


DETAILS OF  
TYPE SPECIAL I APPROACH SLAB

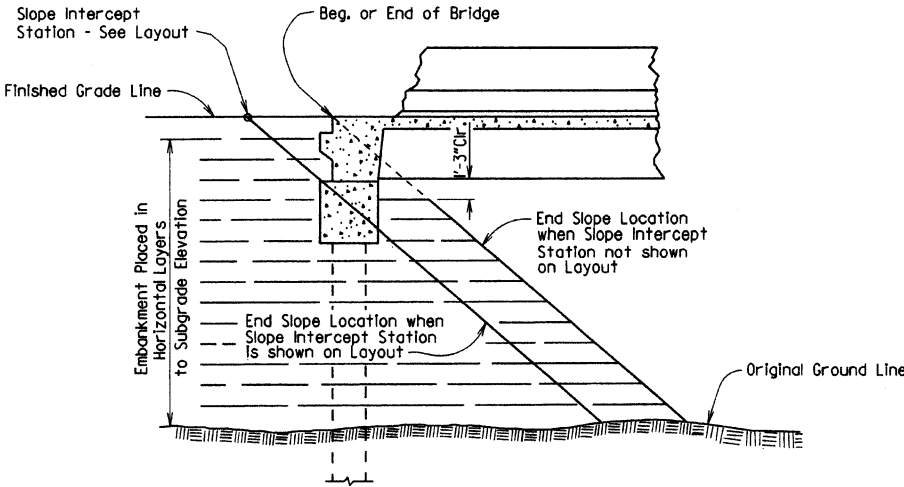
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: ACW DATE: 6-13-11 FILENAME: b110586-as.dgn  
CHECKED BY: PGT DATE: 9-19-11 SCALE: AS SHOWN  
DESIGNED BY: STD. DATE: ---  
BRIDGE NO. 07232 DRAWING NO. 53326

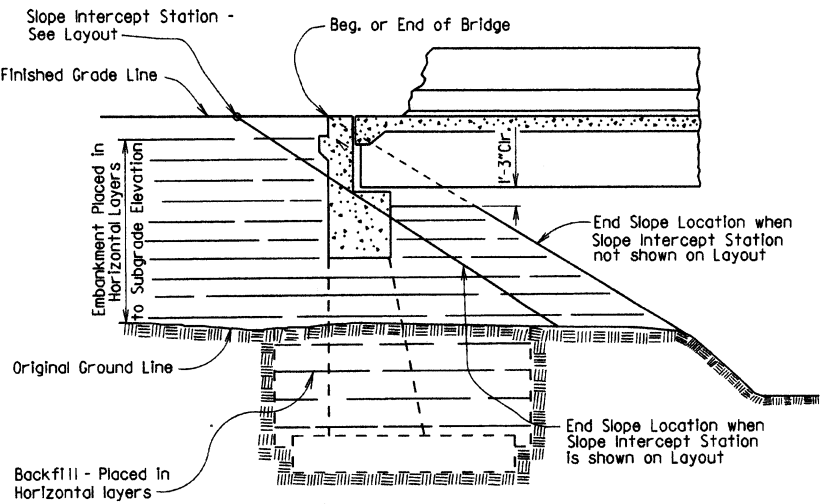
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				6	ARK.		63	
							JOB NO.	
EMBANKMENT & BACKFILL								55000



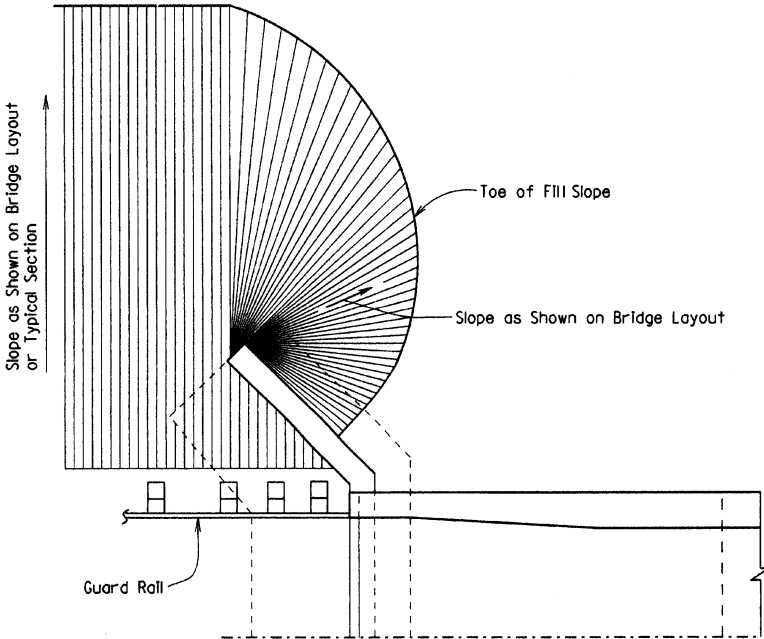
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL  
AT VERTICAL WALL ABUTMENTS



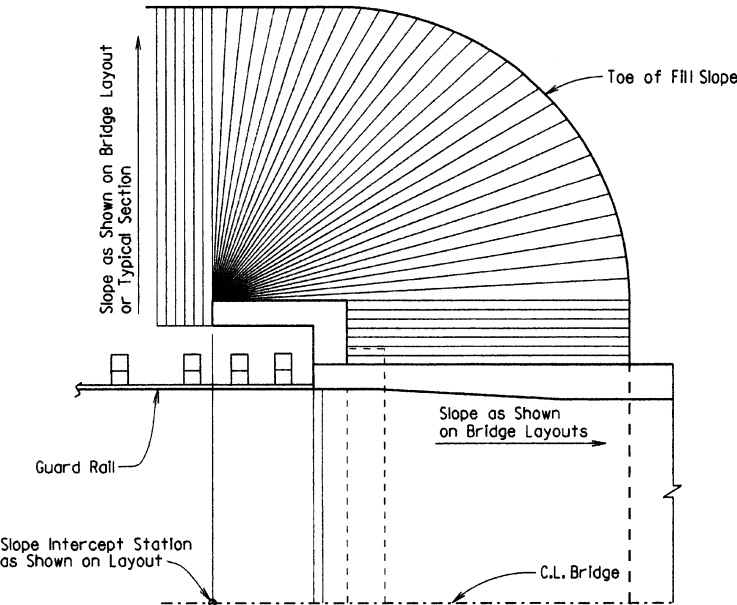
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH  
PILE END BENTS



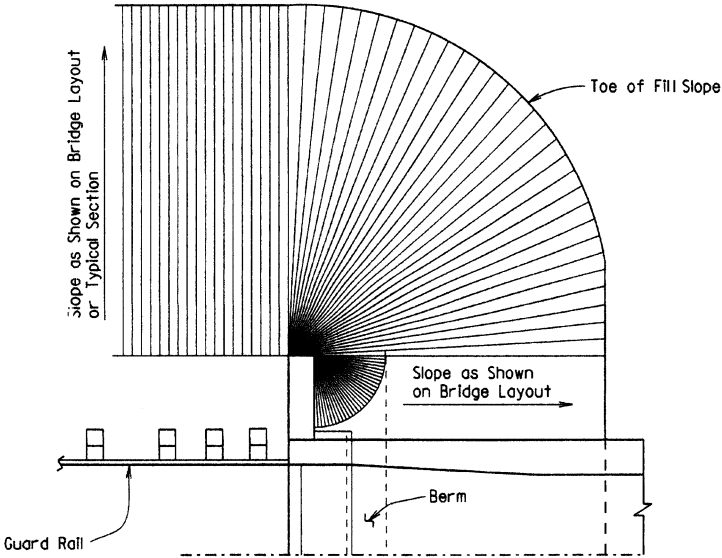
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL  
AT SPILL-THROUGH END BENTS



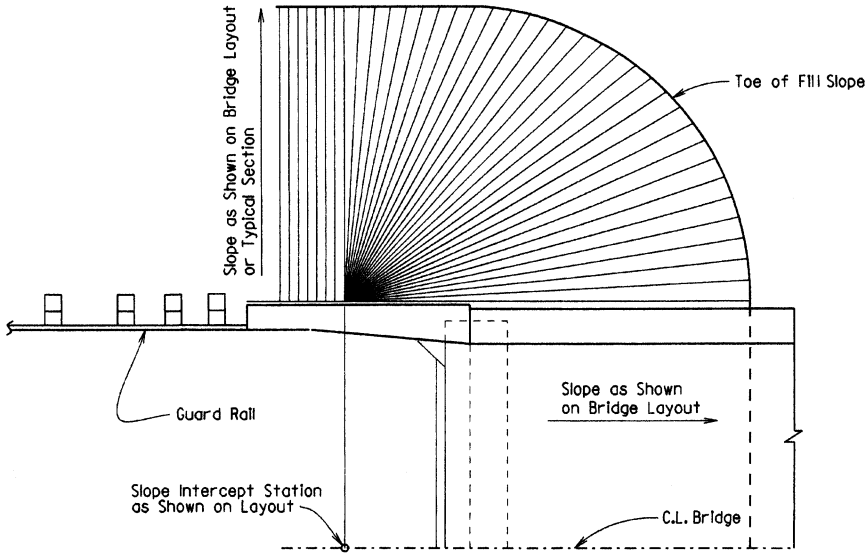
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

#### METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

#### GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 20 feet long adjacent to the bridge end, together with the side slopes and slopes under the bridge end including around the end of wingwalls. Embankment adjacent to structures shall be constructed in 6 inch horizontal layers (loose measure) and compacted by the use of mechanical equipment to the satisfaction of the Engineer. Refer to Subsections 210.09, 210.10 and 801.08 for construction requirements.

#### STANDARD DETAILS FOR EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 2-27-2014 FILENAME: b55000.dgn  
CHECKED BY: BEF DATE: 2-27-2014 SCALE: NO SCALE  
DESIGNED BY: STD. DATE: -

DRAWING NO. 55000