

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.		061039	75	257
				①	07087 - LAYOUT	- 48965		

# GENERAL NOTES

BENCH MARK: TBM=903 CPS CP, 9.72' left of centerline construction at Station 313+31.7, Elevation 328.11

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable Supplemental Specifications and Special Provisions. Unless otherwise noted on the plans, Section and subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2004 edition with 2005 & 2006 Interims)

LIVE LOADING: HL93

SEISMIC PERFORMANCE ZONE: I

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)  $f_y = 60,000$  psi  
Structural Steel (AASHTO M270, Gr. 36)  $F_y = 36,000$  psi  
Structural Steel (AASHTO M270, Gr. 50)  $F_y = 50,000$  psi  
Structural Steel (AASHTO M270, Gr. HPS 70W)  $F_y = 70,000$  psi

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

STEEL PILING: Piling in Abutments 1 and 2 shall be HP 14x73. Piling shall be driven with an approved air, steam, or diesel hammer to a minimum safe bearing capacity of 80 tons per pile and to a minimum penetration of 20 feet below natural ground. Lengths of piling shown are for estimating quantities only. Piling shall not be driven until embankment to bottom of cap is in place. Drive one 85' test pile in Abut. No. 1 and one 85' test pile in Abut. No. 2. On all piles the contractor shall use approved steel H-Pile driving points.

Pile casings are required for all piling in Abutments 1 & 2. Casings shall be installed prior to or during the embankment construction and shall extend from bottom of leveling pad or bottom of undercut if required to bottom of cap. Pile casing material shall be of sufficient strength to retain its original form free from harmful distortions after compaction of the fill material surrounding it. The minimum inside diameter of the casing shall be 24". Piles shall be driven through the open casings. After driving is complete, the pile casings shall be filled with Class S Concrete in a single continuous operation to completely fill voids. Pile casings and concrete will not be paid for directly but shall be considered subsidiary to the item "Steel Piling (HP 14x73)".

TEMPORARY RETAINING WALL: Temporary Retaining Wall will be required to maintain traffic on detour. See Roadway Plans.

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. The 6'-0" Sidewalk shall receive a broomed finish as specified for final finishing in subsection 802.19 for Class 6, Broomed Finish.

TEXTURE COATING FINISH: Class 3 Textured Coating Finish shall be applied to bridge surfaces as specified in Special Provision "Textured Coating Finish" and in accordance with subsection 802.19(b)(3). Textured Coating Finish shall not be applied on surfaces where Class 1 Protective Surface Treatment is applied.

PAINTING: All structural steel except galvanized members and surfaces in contact with concrete shall be painted as specified in Section 807. Color of paint shall be Maroon equal to or close to Fed. Std. 595B, Color Chip 10049 and as approved by the Engineer.

DETAIL DRAWINGS:  
MSE Walls  
Abutments  
168' Cont. Comp. Plate Girder Span  
Elastomeric Bearings  
Transitional Approach Railing  
Soil Borings

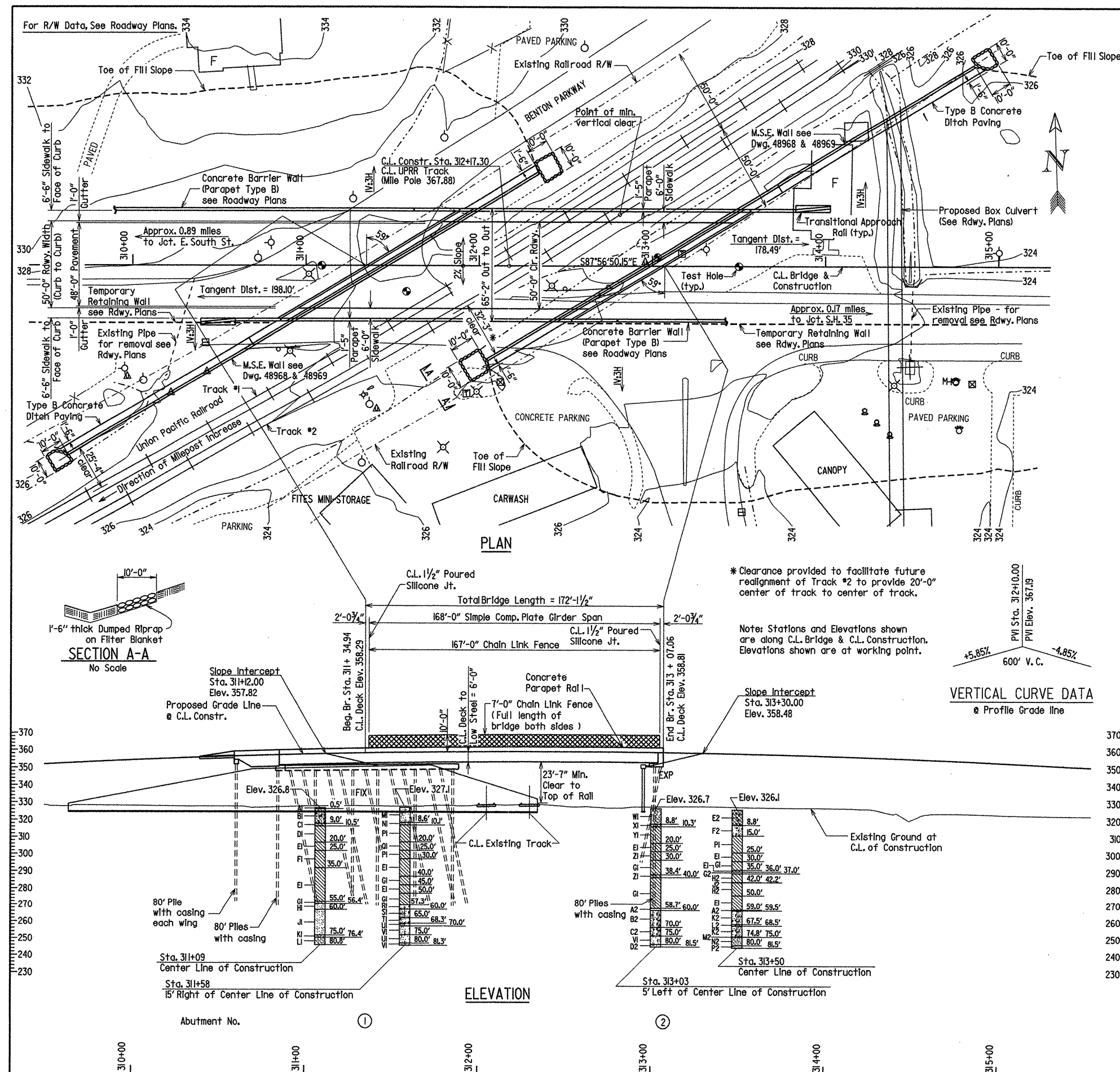
DRAWING NO.  
48968 - 48969  
48970 - 48973  
48974 - 48979  
48980  
49031  
48966

MAINTENANCE OF TRAFFIC: See Roadway Plans.

SHEET 1 OF 2  
LAYOUT OF BRIDGE  
HWY. 35 OVER U.P.R.R.  
HWY. 35 RAILROAD OVERPASS (BENTON) (S)  
SALINE COUNTY

ROUTE 35 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: JWD DATE: 7-19-06 FILENAME: b061039x11.dgn  
CHECKED BY: JSL DATE: 8/1/06 SCALE: 1"=30'-0"  
DESIGNED BY: JWD DATE: 5-06  
BRIDGE NO. 07087 DRAWING NO. 48965



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		061039	76	257
				①	07087 - LAYOUT	-	48966	

BORING LEGEND

AI-Concrete Island  
BI-Molst, Very Loose, Gray and Brown Sand with Gravel with Clay Seams  
CI-Molst, Medium Stiff, Brown and Gray Sandy Clay with Gravel  
DI-Molst, Medium Stiff to Stiff, Dark Gray Clay (Blocky)  
EI-Molst, Very Stiff, Dark Gray Clay (Blocky)  
FI-Molst, Stiff to Very Stiff, Dark Gray Clay (Blocky) with some Gravel-sized Concretions  
GI-Molst, Very Stiff, Dark Gray Clay (Blocky) with some Gravel-sized Concretions  
HI-Molst, Medium Dense, Gray Calcareous Sand  
JI-Molst, Very Dense, Light Gray Calcareous Sand with Cemented Sand Seams  
KI-Molst, Very Dense, Gray Calcareous Clayey Sand with Cemented Sand Seams  
LI-Molst, Very Dense, Dark Gray Calcareous Clayey Sand with Cemented Sand Seams  
MI-Molst, Loose, Light Gray Silty Sand  
NI-Molst, Medium Dense, Light Gray Sand with Clay and Traces of Gravel  
PI-Molst, Stiff, Dark Gray Clay (Blocky)  
QI-Molst, Stiff, Dark Gray Clay (Blocky) with some Sand  
RI-Hard, Gray Sandstone Fragments  
SI-Molst, Very Dense, Light Gray Carbonate Silty Sand with Cemented Sand Seams and Limestone Fragments  
TI-Molst, Very Dense, Light Gray Carbonate Silty Sand with Cemented Sand Seams and Large Limestone Fragments  
UI-Molst, Dense, Light Gray Calcareous Silty Sand  
VI-Molst, Very Dense, Light Gray Calcareous Silty Sand  
WI-Molst, Loose, Brown Clayey Sand with some Gravel  
XI-Molst, Stiff, Brown Sandy Clay with some Quartz Gravel  
YI-Molst, Stiff, Brown to Dark Gray Clay (Blocky)  
ZI-Molst, Hard, Dark Gray Clay (Blocky) with some Gravel-sized Concretions  
A2-Hard, Brown Sandstone  
B2-Molst, Very Dense, Gray Carbonate Silty Sand with Cemented Sand Seams and Limestone Fragments  
C2-Molst, Very Dense, Light Gray Calcareous Silty Sand with Cemented Sand Seams and Limestone Fragments  
D2-Molst, Dense, Gray Calcareous Silty Sand  
E2-Molst, Stiff, Brown and Gray Sandy Clay with Gravel  
F2-Molst, Very Dense, Brown Gravel with Sand and Traces of Clay  
G2-Hard, Brown and Gray Sandstone (36.0' to 37.0')  
H2-Molst, Very Stiff, Dark Gray Clay (Blocky) with Traces of Quartz Gravel  
J2-Hard, Brown and Gray Sandstone (42.0' to 42.2')  
K2-Molst, Very Dense, Light Gray Carbonate Silty Sand with Cemented Sand and Limestone Fragments  
L2-Molst, Dense, Light Gray Carbonate Silty Sand with Cemented Sand and Limestone Fragments  
M2-Molst, Dense, Calcareous Clayey Sand  
N2-Molst, Very Dense, Calcareous Clayey Sand  
P2-Molst, Very Dense, Gray Clayey Sand

NOTE: Groundwater table is present from ground level to 8.9' below the existing ground surface

"N" VALUES

Sta. 311+09 - Center Line of Construction

4.5- 5.5, N=4  
9.5- 10.5, N=5  
15.5- 16.5, N=10  
20.5- 21.5, N=24  
25.5- 26.5, N=15  
30.5- 31.5, N=21  
35.5- 36.5, N=18  
40.5- 41.5, N=18  
45.5- 46.5, N=19  
50.5- 51.5, N=22  
55.5- 56.5, N=26  
60.0- 60.3, N=60(4')  
65.0- 65.1, N=60(1')  
70.5- 71.5, N=82  
75.5- 76.5, N=67  
80.5- 80.8, N=60(4')

Sta. 311+58 - 15' Right of Center Line of Construction

4.1- 5.1, N=5  
9.1- 10.1, N=12  
15.6- 16.6, N=12  
20.5- 21.5, N=12  
25.5- 26.5, N=15  
30.5- 31.5, N=17  
35.5- 36.5, N=16  
40.5- 41.5, N=19  
45.5- 46.5, N=19  
50.5- 51.5, N=20  
55.5- 56.5, N=21  
60.0- 60.2, N=60(2')  
65.0- 65.1, N=60(1')  
70.5- 71.5, N=72  
75.5- 76.5, N=36  
80.5- 81.2, N=76(9')

Sta. 313+03 - 5' Left of Center Line of Construction

4.3- 5.3, N=7  
9.3- 10.3, N=13  
14.3- 15.3, N=13  
20.5- 21.5, N=16  
25.5- 26.5, N=37  
30.5- 31.5, N=16  
35.5- 36.5, N=16  
40.5- 41.5, N=21  
45.5- 46.5, N=21  
50.5- 51.5, N=26  
55.5- 56.5, N=23  
60.5- 60.9, N=60(5')  
65.0- 65.1, N=60(1')  
70.5- 71.5, N=78  
75.5- 75.7, N=60(2')  
80.5- 81.5, N=34

Sta. 313+50 - Center Line of Construction

4.3- 5.3, N=14  
9.3- 10.3, N=51  
15.5- 16.5, N=12  
20.5- 21.5, N=13  
25.5- 26.5, N=17  
30.5- 31.5, N=17  
35.5- 36.5, N=23  
40.5- 41.5, N=17  
45.5- 46.5, N=21  
50.5- 51.5, N=16  
55.5- 56.5, N=24  
59.0- 59.0, N=60(0)  
65.0- 65.1, N=60(1')  
70.5- 70.8, N=60(4')  
75.5- 75.8, N=60(4')  
80.5- 81.5, N=51



BRIDGE ENGINEER

SHEET 2 OF 2  
LAYOUT OF BRIDGE  
HWY. 35 OVER U.P.R.R.  
HWY. 35 RAILROAD OVERPASS (BENTON) (S)  
SALINE COUNTY

ROUTE 35 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

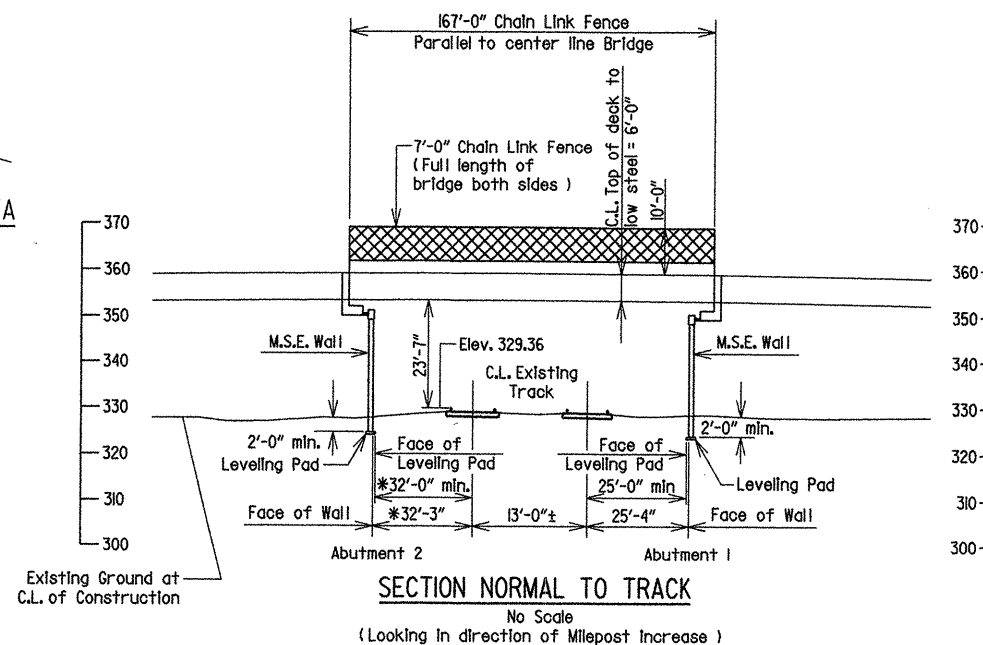
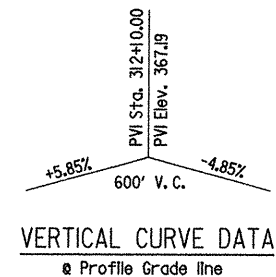
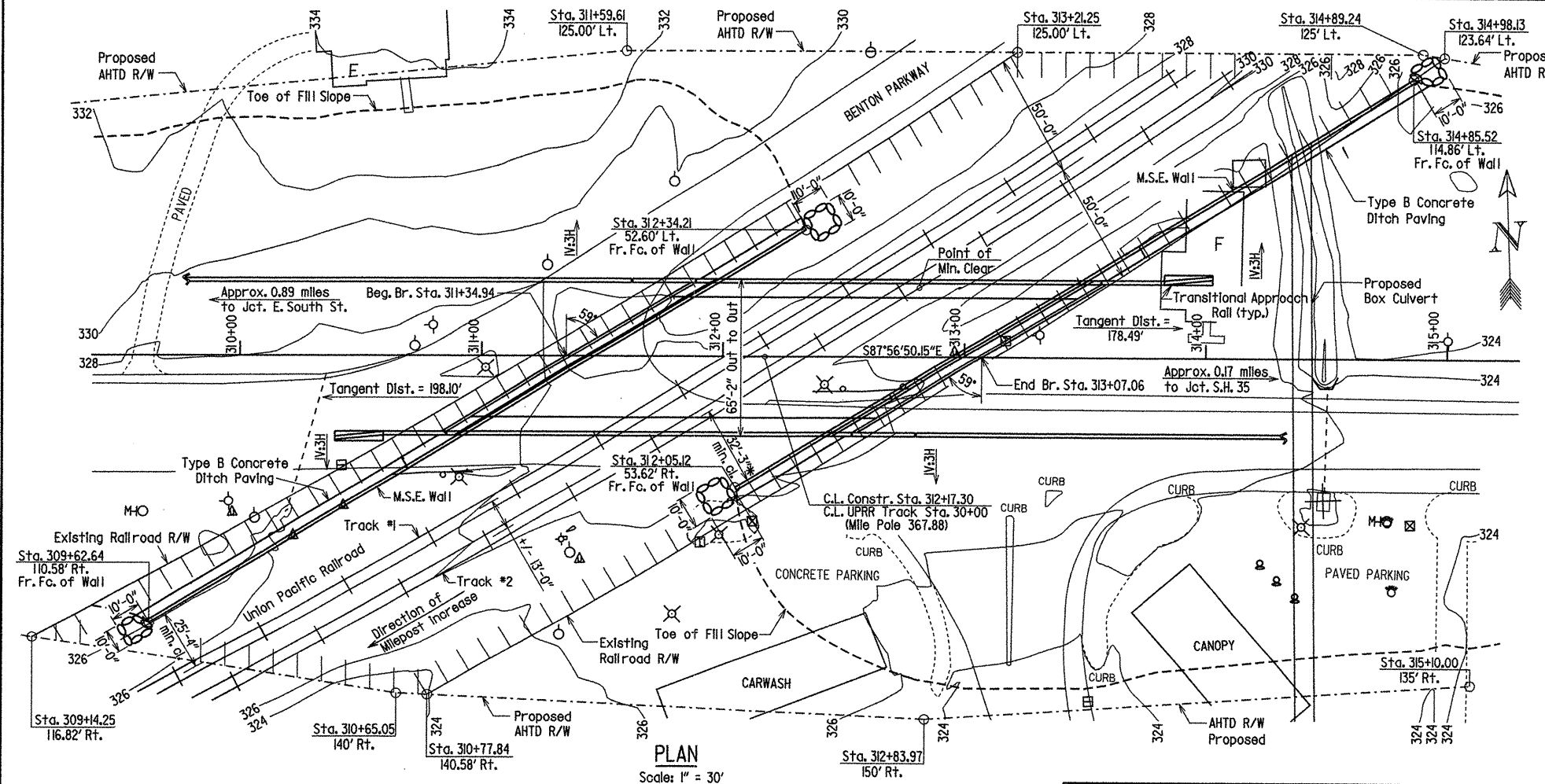
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BRIDGE NO. 07087 DRAWING NO. 48966

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.		061039	77	257
						07087 - EXHIBIT A		48967

TOP OF RAIL ELEVATIONS  
(Looking in direction of Milepost Increase.  
Stations Increase with Milepost Increase.)

Align: N. Track Rt. Rail		Align: N. Track Lt. Rail		Align: S. Track Rt. Rail		Align: S. Track Lt. Rail	
Station	Elevation	Station	Elevation	Station	Elevation	Station	Elevation
20+00	333.59	20+00	333.60	20+00	333.72	20+00	333.75
21+00	333.05	21+00	333.07	21+00	333.24	21+00	333.26
22+00	332.51	22+00	332.57	22+00	332.83	22+00	332.89
23+00	331.98	23+00	332.12	23+00	332.39	23+00	332.53
24+00	331.44	24+00	331.63	24+00	331.91	24+00	332.06
25+00	330.94	25+00	331.12	25+00	331.36	25+00	331.49
26+00	330.50	26+00	330.67	26+00	330.75	26+00	330.93
27+00	330.01	27+00	330.20	27+00	330.23	27+00	330.40
28+00	329.54	28+00	329.72	28+00	329.79	28+00	329.95
29+00	329.15	29+00	329.29	29+00	329.36	29+00	329.50
①30+00	328.72	①30+00	328.87	①30+00	328.90	①30+00	329.04
31+00	328.18	31+00	328.36	31+00	328.30	31+00	328.46
32+00	327.42	32+00	327.60	32+00	327.60	32+00	327.75
33+00	326.45	33+00	326.62	33+00	326.86	33+00	326.99
34+00	325.56	34+00	325.75	34+00	326.13	34+00	326.28
35+00	324.72	35+00	324.89	35+00	325.48	35+00	325.60
36+00	323.95	36+00	324.11	36+00	324.82	36+00	324.95
37+00	323.36	37+00	323.51	37+00	324.14	37+00	324.26
38+00	322.81	38+00	322.96	38+00	323.50	38+00	323.64
39+00	322.34	39+00	322.50	39+00	322.86	39+00	322.98
40+00	321.82	40+00	321.98	40+00	322.26	40+00	322.38

The elevations of the existing top-of-rail profile shall be verified by the Contractor prior to beginning construction.



\* Clearance provided to facilitate future realignment of Track #2 to provide 20'-0" center of track to center of track.

Shoring shall comply with the Union Pacific Railroad requirements noted in Job 061039 Special Provision "Special Railroad Safety Requirements".

The following statement is in the "State Rail Agreement":  
The State shall not plow ice, snow, or sleet over the sides of the structure. In consideration of this practice, the Carrier waives its request for the State to attach splash boards to sides of the structure.

#### DRAINAGE REQUIREMENTS

The proposed bridge structures will not significantly change the quantity and/or characteristics of the flow in the railway's ditches and/or drainage structures.

Closed Parapet Railing (No Deck Drains) over Railroad Right of Way - Typical on both sides of Bridges.

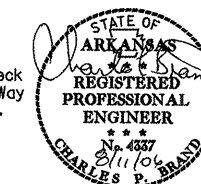
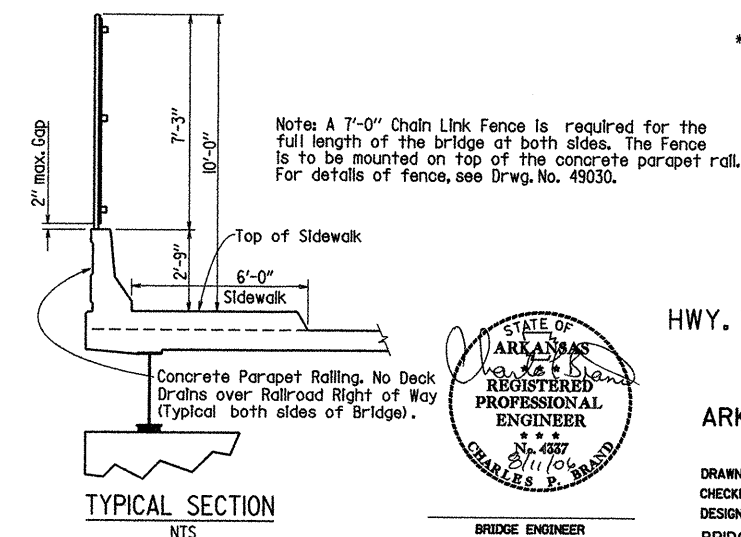
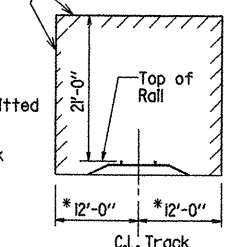
① C.L. UPRR Track Sta. 30+00 (Mile Pole 367.88) = C.L. Constr. Sta. 312+17.30.

Note: Currently there are no known utilities on the railroad right-of-way other than shown

No construction activities or other obstructions may be placed within these limits.

Note: No excavation permitted within 12' of C.L. track.

\* Measured Normal to Track



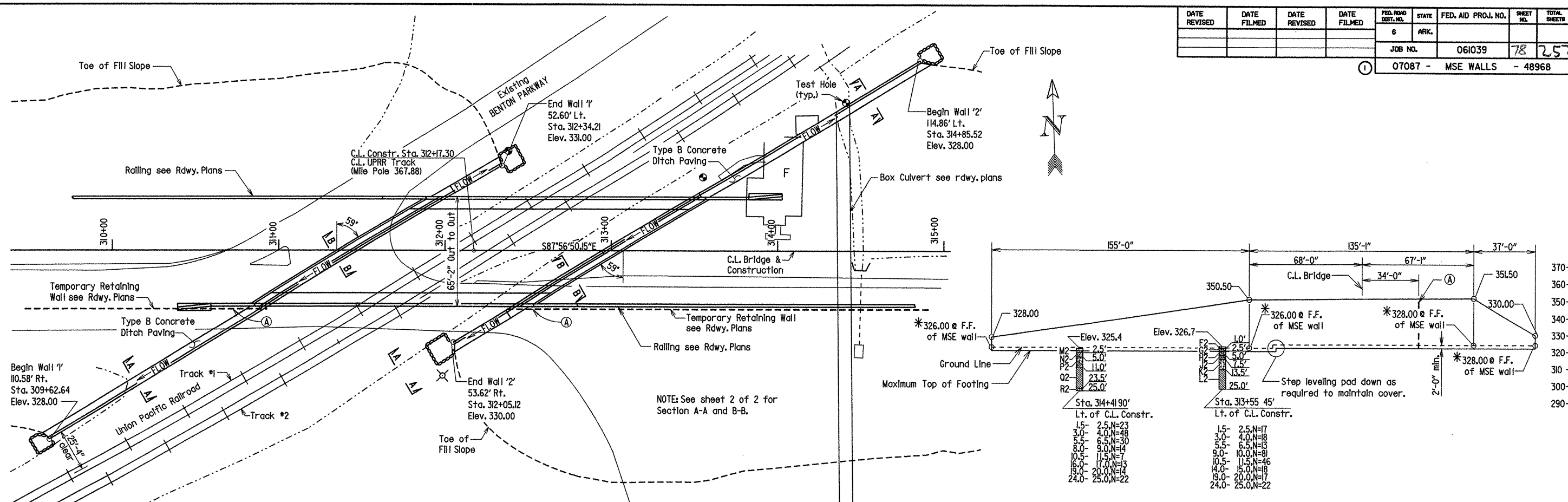
BRIDGE ENGINEER

EXHIBIT A  
HWY. 35 OVER U.P.R.R.  
HWY. 35 RAILROAD OVERPASS (BENTON) (S)  
SALINE COUNTY

ROUTE 35 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

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CHECKED BY: JWD DATE: 5-4-06 SCALE: 1" = 30' or as noted  
DESIGNED BY: JWD DATE: 5-4-06  
BRIDGE NO. 07087 DRAWING NO. 48967

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.		061039	78	257
				① 07087 - MSE WALLS - 48968				

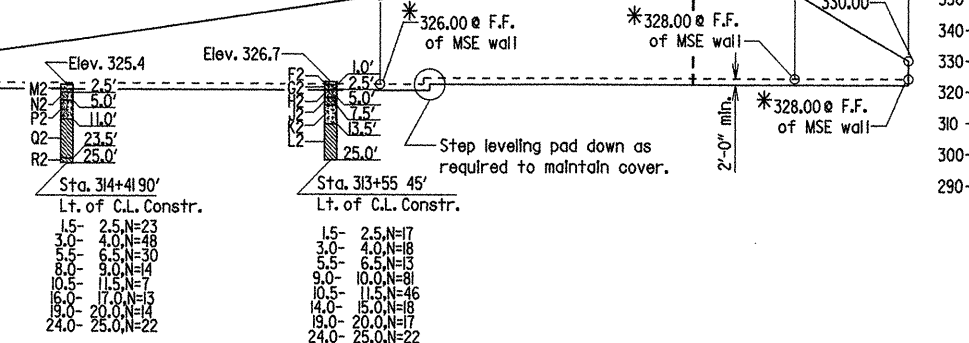


PLAN

① Note: Temporary Retaining Wall shall be constructed to maintain backfill during construction with traffic on detour. See Rdwy. Plans for details.

NOTE: See sheet 2 of 2 for Section A-A and B-B.

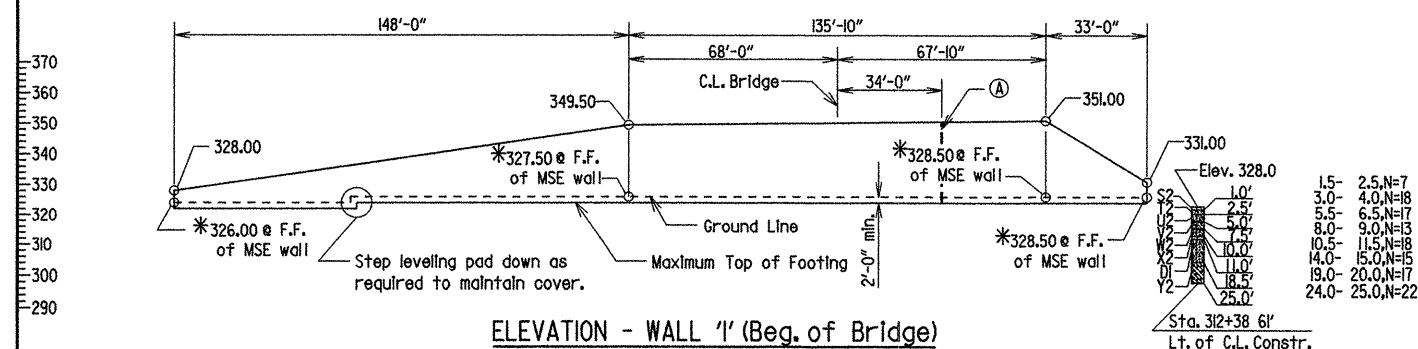
ELEVATION - WALL '2' (End of Bridge)



BORING LEGEND

D1-Moist, Medium Dense, Brown and Gray Sand with Gravel with Clay Seams  
F2-Moist, Loose, Brown Sand and Gravel  
G2-Moist, Medium Dense, Brown to Brown and Gray Silty Sand with Gravel  
H2-Moist, Medium Dense, Brown and Gray Silty, Clayey Sand  
J2-Moist, Stiff, Brown and Gray Sandy Clay with Gravel  
K2-Wet, Very Dense to Dense, Brown Sand and Gravel  
L2-Moist, Very Stiff, Dark Gray Clay with Traces of Gravel  
M2-Moist, Loose to Medium Dense, Brown Sand  
N2-Moist, Dense to Medium Dense, Brown Sand with Gravel  
P2-Wet, Medium Dense, Brown Quartz Gravel with Silty Sand  
Q2-Moist, Stiff, Dark Gray Clay with Traces of Gravel  
R2-Wet, Very Stiff, Dark Gray Clay  
S2-Moist, Loose, Brown and Gray Sand with Gravel  
T2-Moist, Loose, Brown Silty Sand with Clay Seams and some Gravel  
U2-Moist, Medium Dense, Brown Sand with Gravel with Clay Seams  
V2-Moist, Very Stiff, Brown Sandy Clay with Gravel  
W2-Moist, Medium Dense, Brown and Gray Clayey Sand with Gravel  
X2-Moist, Medium Dense, Brown and Gray Sand with Gravel  
Y2-Moist, Very Stiff, Dark Gray Clay with Gravel

\* Note: Ground elevations shown at front face of MSE wall are approximate and for information only. Contractor shall verify actual ground elevations at front face of wall and provide information to MSE wall supplier prior to shop drawing submittal.



ELEVATION - WALL '1' (Beg. of Bridge)

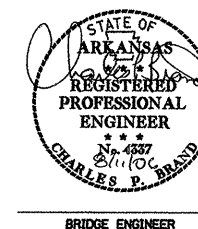
SHEET 1 OF 2  
DETAILS OF MECHANICALLY  
STABILIZED EARTH WALLS  
HWY. 35 OVER U.P.R.R.

ROUTE 35 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

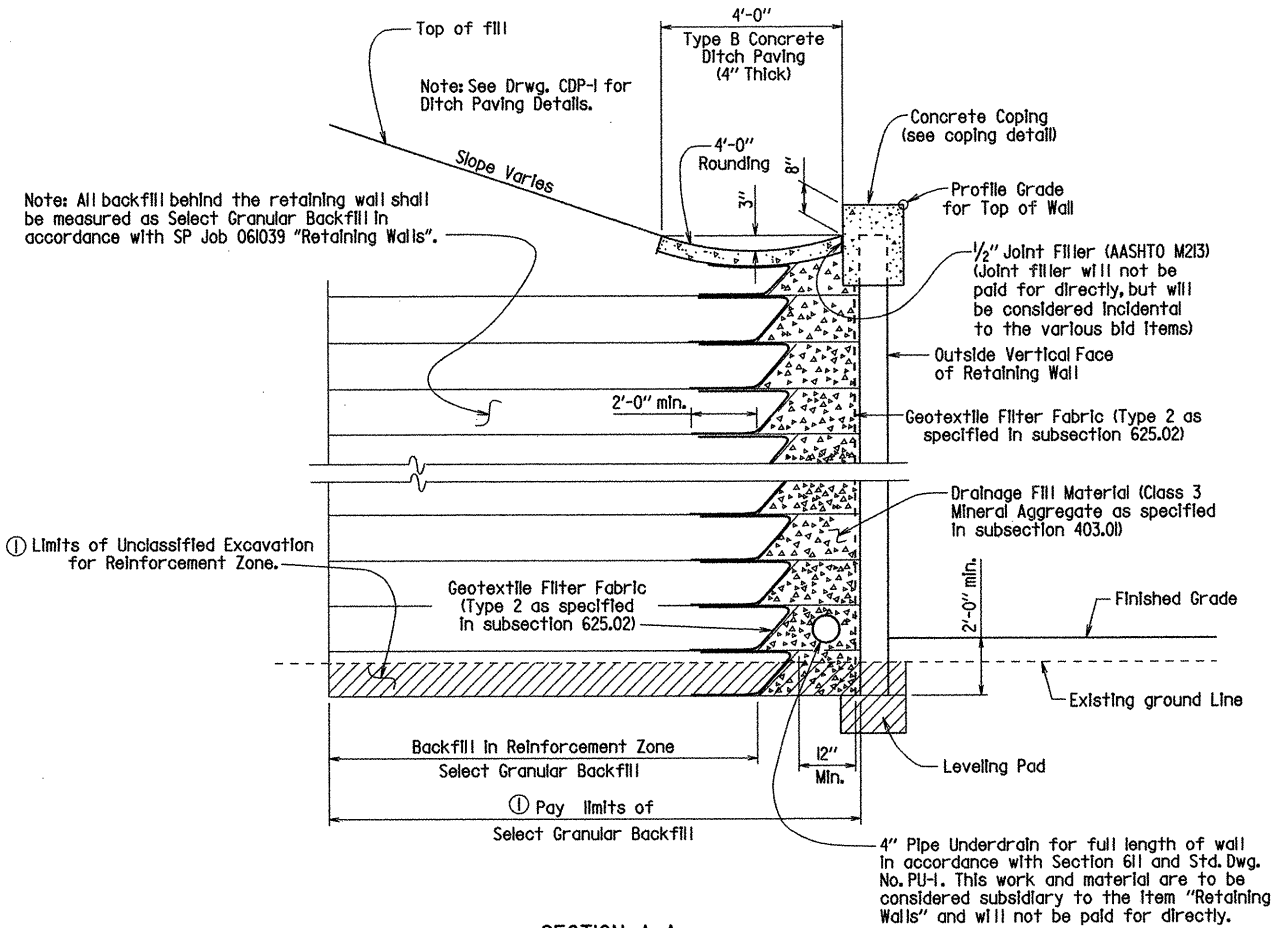
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BRIDGE NO. 07087

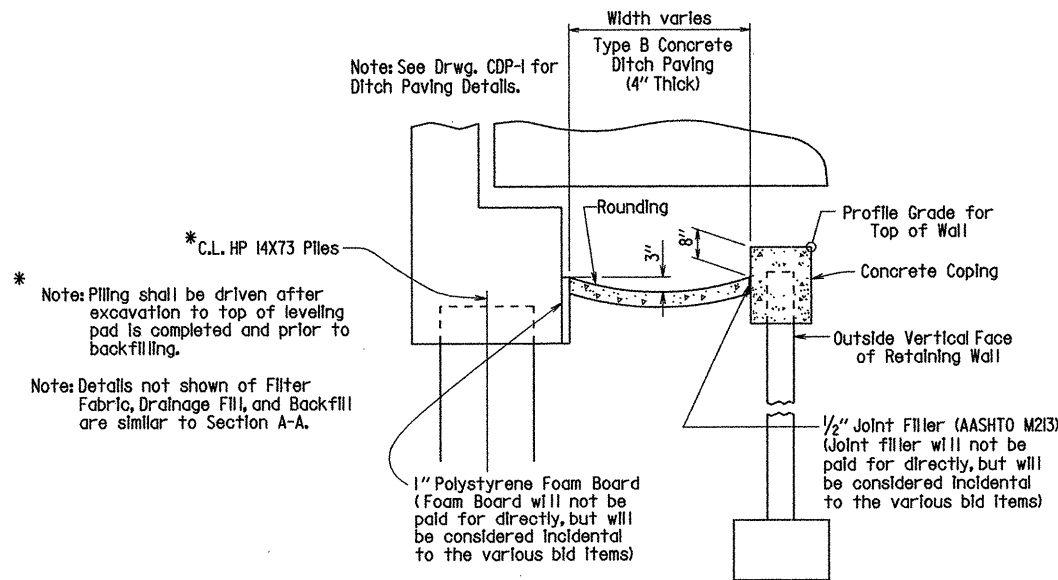
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DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061039	79	257
				07087	MSE WALLS		48969	

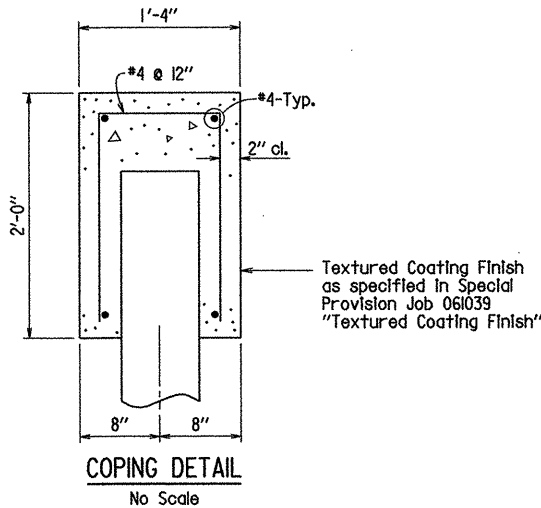


SECTION A-A  
No Scale



SECTION B-B  
No Scale

① Excavation required for reinforcing zone and/or undercut will be paid for under pay item 210, "Unclassified Excavation". The Contractor has the option of using a cut slope or shoring to maintain stability of cut. Any excavation beyond the pay limits shown and/or any shoring used will not be paid for directly but will be considered subsidiary to various pay items, see SP Job 061039 "Retaining Walls" for additional information.



Note: Reinforcing Steel for Concrete Coping shall not be paid for directly but will be considered subsidiary to the item "Retaining Walls".

Note: Precast concrete coping may be substituted for the cast in place coping shown.

TABLE OF QUANTITIES  
FOR WALLS 1 & 2

Retaining Wall	12320 Sq. Ft.
Concrete Ditch Paving (Type B)	203 Sq. Yds.
Textured Coating Finish	382 Sq. Yds.

Note: Quantities shown are approximate and for estimating purposes only.

NOTES FOR UNDERCUTTING & BACKFILL FOR RETAINING WALLS:

Based on the borings shown the wall can be founded on existing material. If isolated soft and unstable materials are encountered beneath the wall's reinforcing zone they shall be removed and backfilled with Select Granular Backfill. Depth and length of any required undercutting shall be as determined by the Engineer in the field. Payment shall be in accordance with SP Job 061039 "Retaining Walls".

The excavated material may be utilized at other locations within the project area if approved by the Engineer. Excavated material that cannot be utilized shall be disposed of by the Contractor in accordance with subsection 210.08.

All backfilled areas that will be seeded will require a 1'-6" thick plating material measured perpendicular to the finished ground. The plating material shall be a suitable silty clay or clayey silt with a minimum Plasticity Index of 6 and maximum Plasticity Index of 25 which will support vegetation and not be highly susceptible to erosion. All work and materials required for plating will not be paid for directly, but shall be considered incidental to the item "Select Granular Backfill".

Notes:

Design Specifications: AASHTO Standard Specifications for Highway Bridges, 2002 edition.

Seismic Performance Category: A

Elevations are approximate. Wall dimensions may vary depending on wall design selected.

Placement of reinforcing for retaining walls may be affected by end bent construction. See end bent details for pile locations and wingwall details.

For ditch paving see Standard Drwg. No. CDP-1.

See SP Job 061039 "Retaining Walls" for additional information.



BRIDGE ENGINEER

SHEET 2 OF 2  
DETAILS OF MECHANICALLY  
STABILIZED EARTH WALLS  
HWY. 35 OVER U.P.R.R.

ROUTE 35 SEC. 1  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

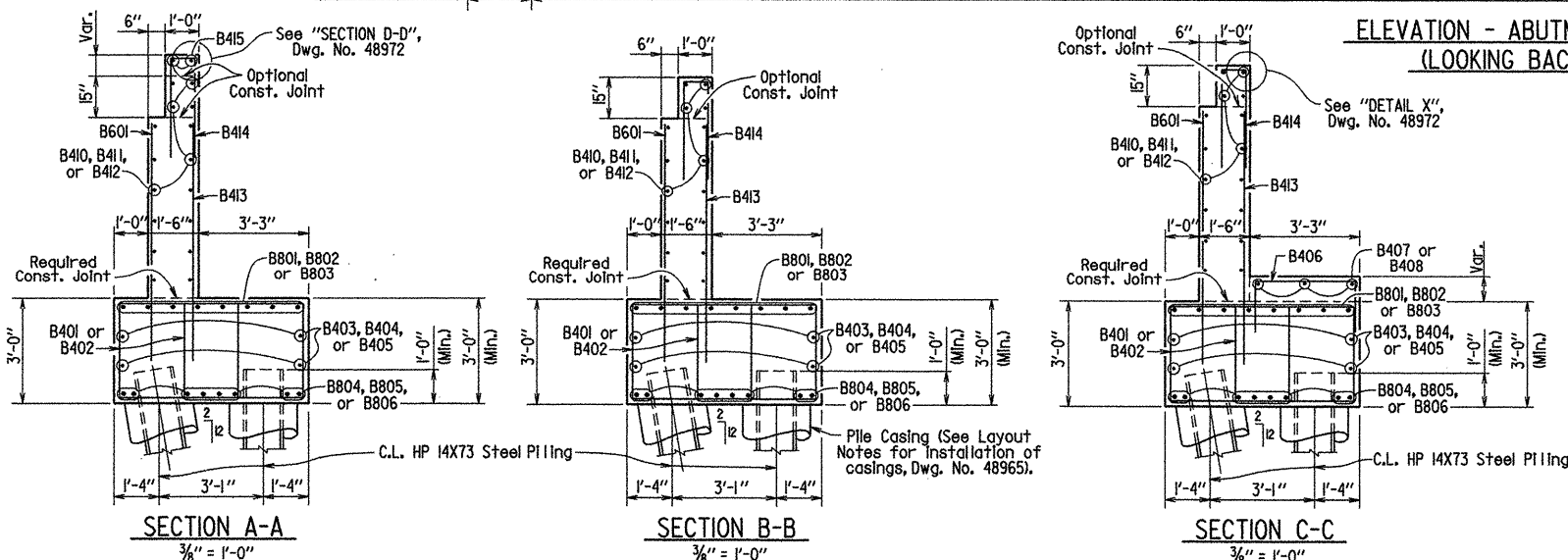
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BRIDGE NO. 07087 DRAWING NO. 48969



Note: Class 1 Protective Surface Treatment shall be applied to the Top of the Backwall and Sidewalk Surface. Class 3 Textured Coating Finish shall be applied to all areas as specified in Special Provision Job 061039 "Textured Coating Finish".

PLAN

ELEVATION - ABUTMENT 1  
(LOOKING BACK)



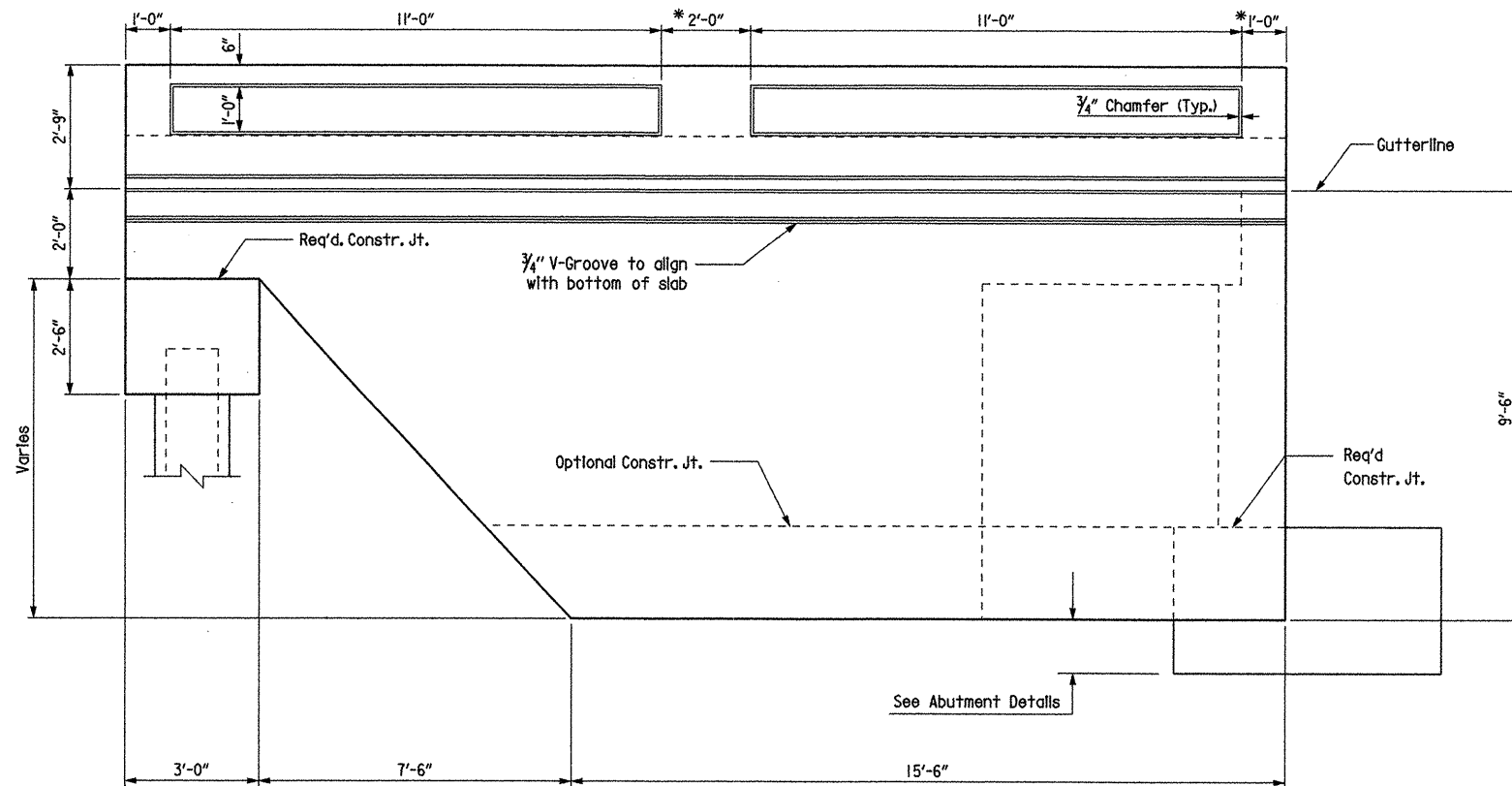
**NOTE:**  
THE PROFILE OF THE BACKWALL ANGLE SHALL BE ESTABLISHED BASED ON THE VERTICAL CURVE IN CONJUNCTION WITH THE SKEW.

Note: For General Notes and details not shown, see Dwg. Nos. 48971 & 48972.

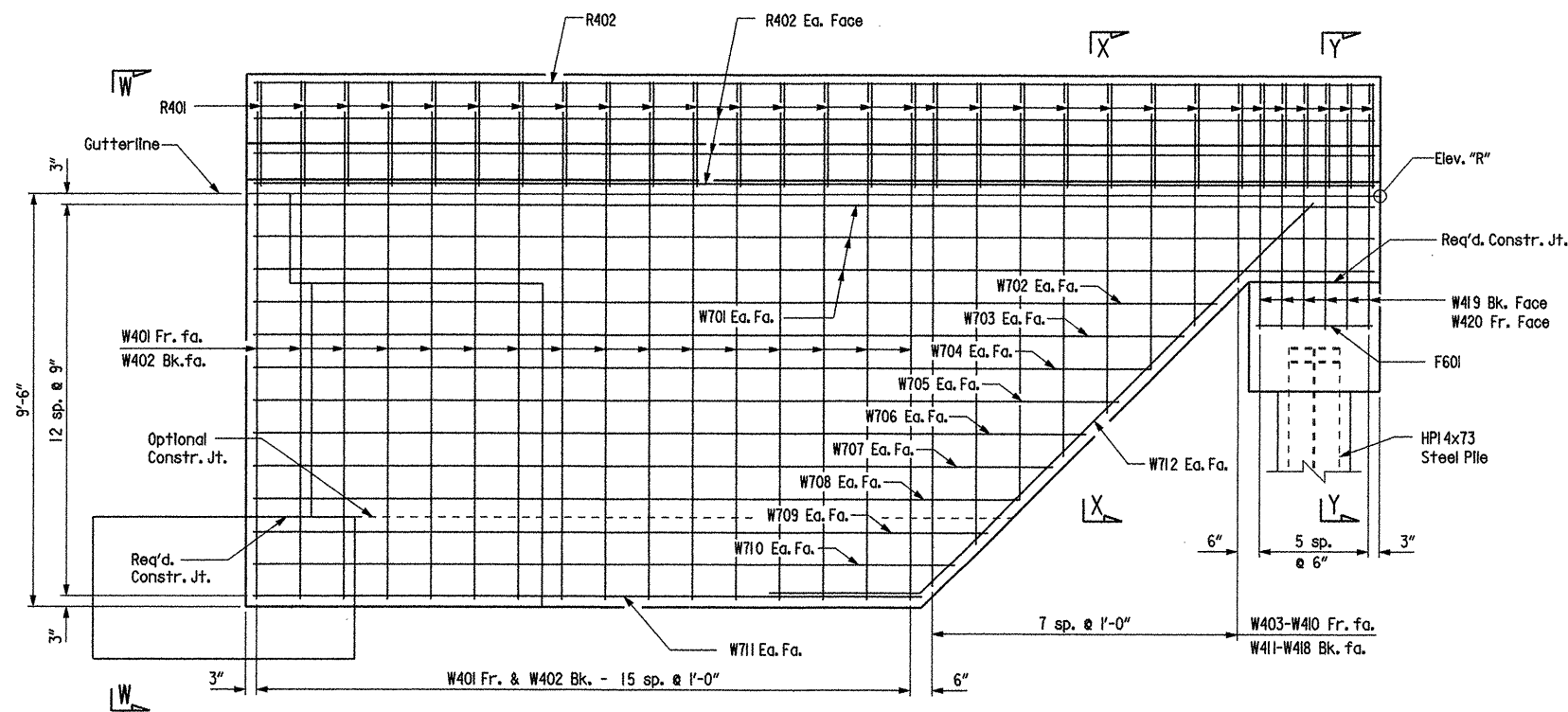
DETAILS OF ABUTMENT I  
HWY. 35 OVER U.P.R.R.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 07-14-06 FILENAME: b061039xl.blg.dgn  
 CHECKED BY: DHP DATE: 8-11-06 SCALE:  $\frac{3}{16}'' = 1'-0''$   
 DESIGNED BY: DHP DATE: 6-06 OR AS NOTED  
 BRIDGE NO. 07087 DRAWING NO. 48970

\* Panel Inset shall be made continuous if slip forms on bridge parapet are used.



VIEW V-V  
1/2" = 1'-0"



VIEW T-T  
1/2" = 1'-0"

Note: Reinforcing and dimensions are the same for Wing A and Wing B, except as noted.

For View W-W, and Sections X-X and Y-Y see dwg. 48972

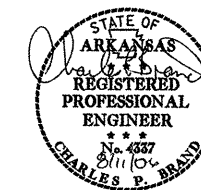
TABLE OF VARIABLES

Wing Location	Elev. "R"
Abut. 1	
Wing A	358.79
Wing B	356.45
Abut. 2	
Wing A	359.14
Wing B	357.43

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.		061039	81	257
				07087	WING AND RAIL			48971

BAR LIST - PER ABUTMENT

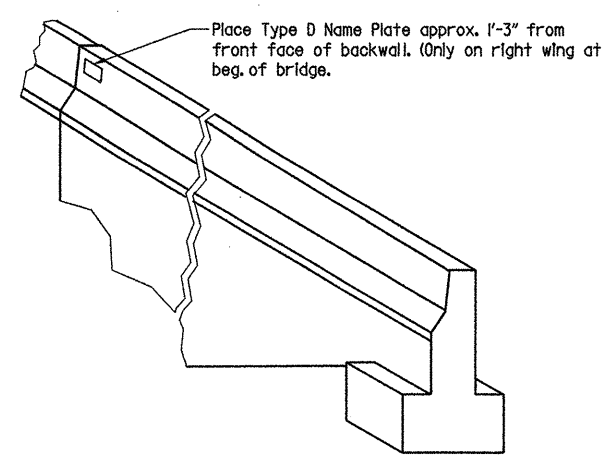
Mark	No. Req'd.	Length	Pin Dia.	Bending Diagram
				Dimensions are out to out of bars.
B401	340	13'-4"	2"	
B402	60	9'-0"	2"	
B403	4	4'-7"	Str.	
B404	4	42'-11"	Str.	
B405	4	40'-7"	Str.	
B406	86	6'-7"	2"	
B407	12	15'-8"	Str.	
B408	3	2'-8"	Str.	
B409	9	7'-2"	Str.	
B410	16	43'-8"	Str.	
B411	16	42'-11"	Str.	
B412	16	4'-4"	2"	
B413	121	7'-9"	Str.	
B414	121	7'-0"	2"	
B415	4	14'-3"	2"	
B601	161	7'-0"	Str.	
B602	10	19'-6"	Str.	
B603	10	7'-8"	4 1/2"	
B801	8	43'-11"	6"	
B802	8	45'-9"	Str.	
B803	8	42'-11"	6"	
B804	8	43'-0"	Str.	
B805	8	45'-9"	Str.	
B806	8	42'-0"	Str.	
F601	12	2'-6"	Str.	
R401	60	3'-9"	5"	
R402	14	25'-8"	Str.	
W401	32	11'-7"	2"	
W402	32	11'-11"	Str.	
W403-W410	2 Each	11'-3"-4'-3"	Str.	
W411-W418	2 Each	11'-7"-4'-7"	Str.	
W419	12	7'-11"	2"	
W420	12	7'-9"	2"	
W701	12	25'-8"	Str.	
W702-W711	4 Each	22'-10"-15'-4"	Str.	
W712	4	16'-3"	5 1/4"	
W401 Fr. fa.				
W402 Bk. fa.				
W403-W410 Fr. fa.				
W411-W418 Bk. fa.				



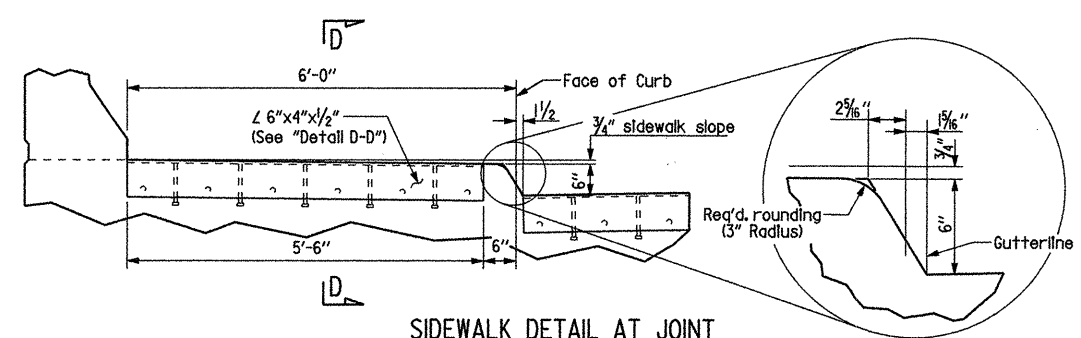
BRIDGE ENGINEER

SHEET 1 OF 2  
DETAILS OF WING AND RAIL  
HWY. 35 OVER U.P.R.R.  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: JLB DATE: 07-14-06 FILENAME: b061039xl.wld.dgn  
CHECKED BY: DHP DATE: 8-11-06 SCALE: 1/2" = 1'-0"  
DESIGNED BY: DHP DATE: 6-06  
BRIDGE NO. 07087 DRAWING NO. 48971

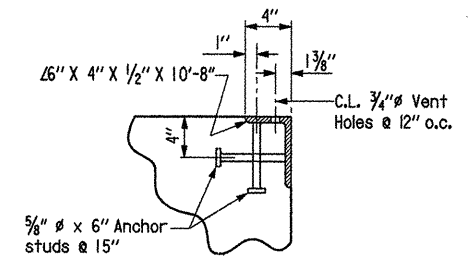
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	061039		82	257
				07087	WING AND RAIL		48972	



**THREE DIMENSIONAL VIEW OF RAIL**  
No Scale

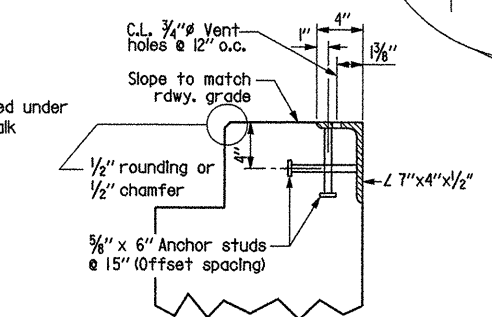


**SIDEWALK DETAIL AT JOINT**  
No Scale  
Note: View is perpendicular to centerline of bridge.



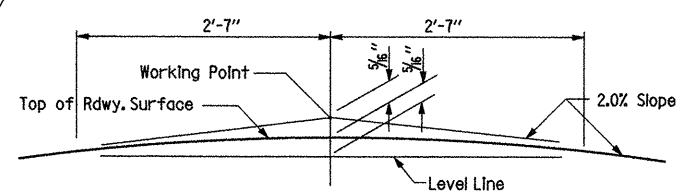
Note: Concrete shall be hand packed under the joint armor in the sidewalk.

**SECTION D-D**  
No Scale



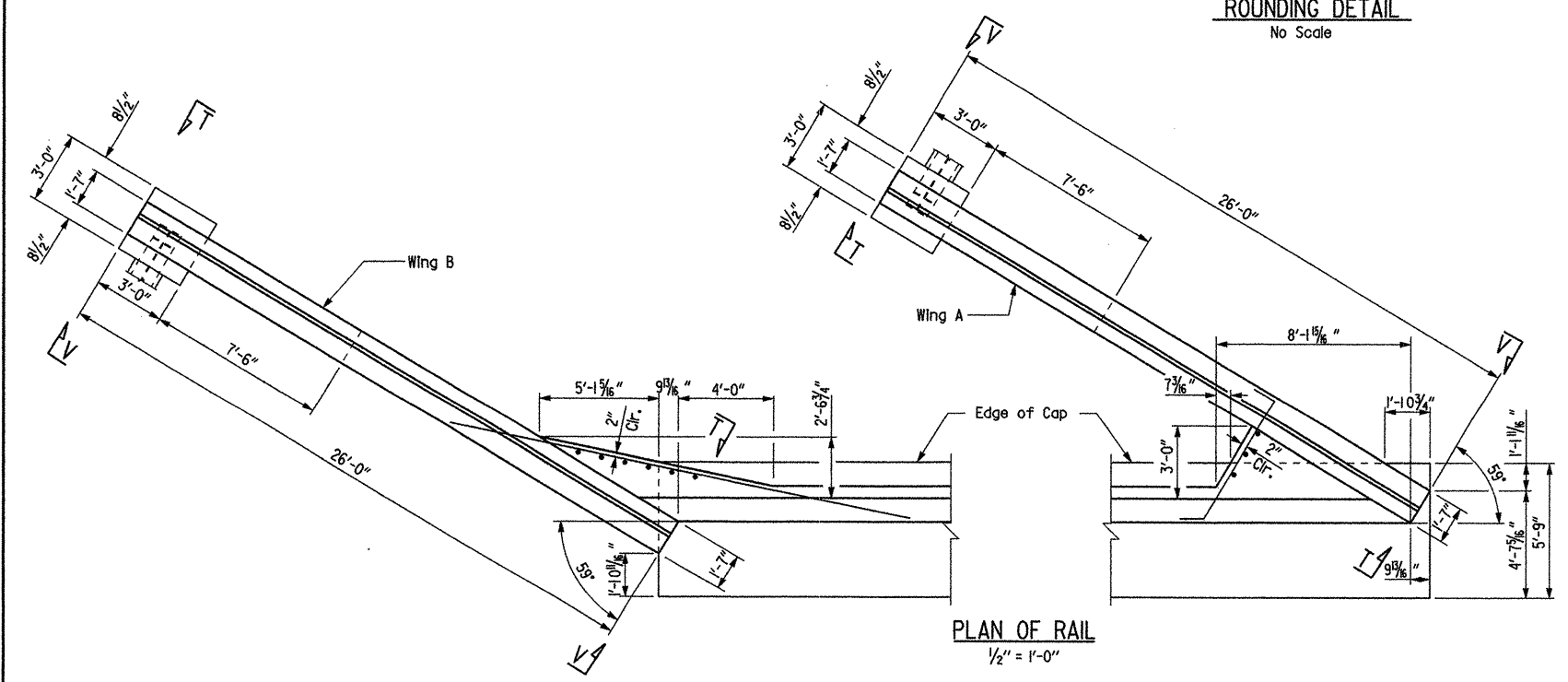
Note: Concrete shall be hand packed under the joint armor.  
For joint details, see dwg. 48979

**DETAIL X**  
1 1/2" = 1'-0"

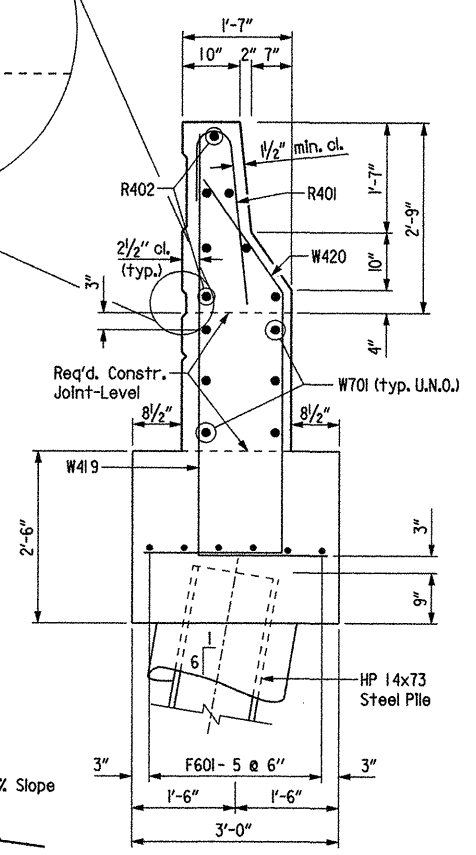


NOTES: Working Point matches Theoretical Roadway Grade.  
Rounding is measured perpendicular to C.L. Bridge & C.L. Construction.

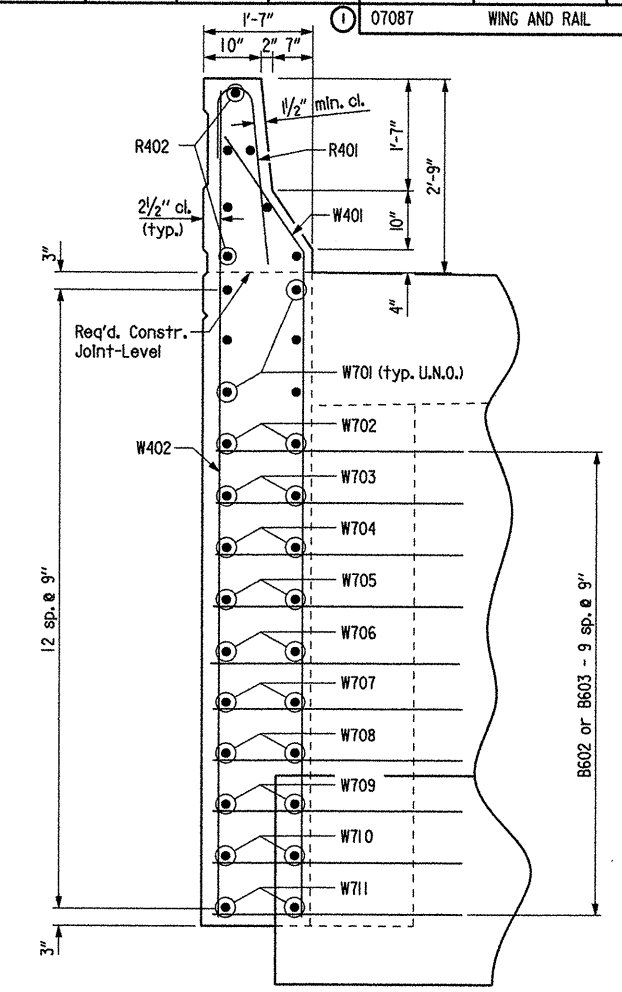
**ROUNDING DETAIL**  
No Scale



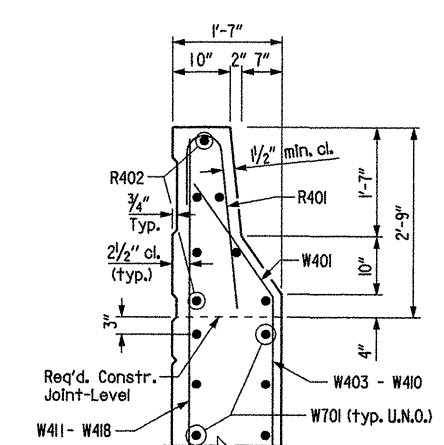
**PLAN OF RAIL**  
1/2" = 1'-0"



**SECTION Y-Y**  
3/4" = 1'-0"



**VIEW W-W**  
3/4" = 1'-0"



**SECTION X-X**  
3/4" = 1'-0"

**GENERAL NOTES**

All concrete shall be Class "S" with a minimum 28 day compressive strength  $f'_c = 3500$  psi. Concrete shall be poured in the dry and all exposed corners to be chamfered 3/4" unless otherwise noted.

All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60 (yield strength = 60,000 psi).

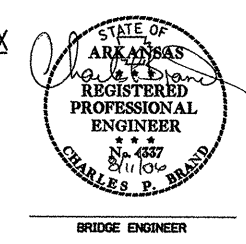
Structural steel in end bents shall be M270, Gr. 50 and shall be paid for as "Structural Steel in Girder Spans (M270, Gr. 50)". Structural steel shall be cleaned and painted in accordance with Section 638.

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

No portion of the backwall shall be poured before girders are in place. The portion of the backwall above the optional construction joint at the paving bracket shall not be placed until the deck pour has been made. Refer to the "Expansion Device Installation" note, see Dwg. No. 48979.

Special care shall be taken to properly and thoroughly consolidate the concrete in the vicinity of the expansion joint device in the backwall. See section 802.09 (a)(3).

For additional information, see layout.



**SHEET 2 OF 2**  
**DETAILS OF WING AND RAIL**  
**HWY. 35 OVER U.P.R.R.**  
**ROUTE SEC.**  
**ARKANSAS STATE HIGHWAY COMMISSION**  
**LITTLE ROCK, ARK.**

DRAWN BY: JLB DATE: 07-14-06 FILENAME: b061039xl.w2.dgn  
CHECKED BY: DHP DATE: 8-11-06 SCALE: As Shown  
DESIGNED BY: DHP DATE: 6-06  
BRIDGE NO. 07087 DRAWING NO. 48972



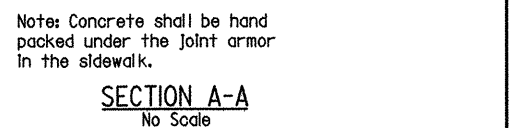
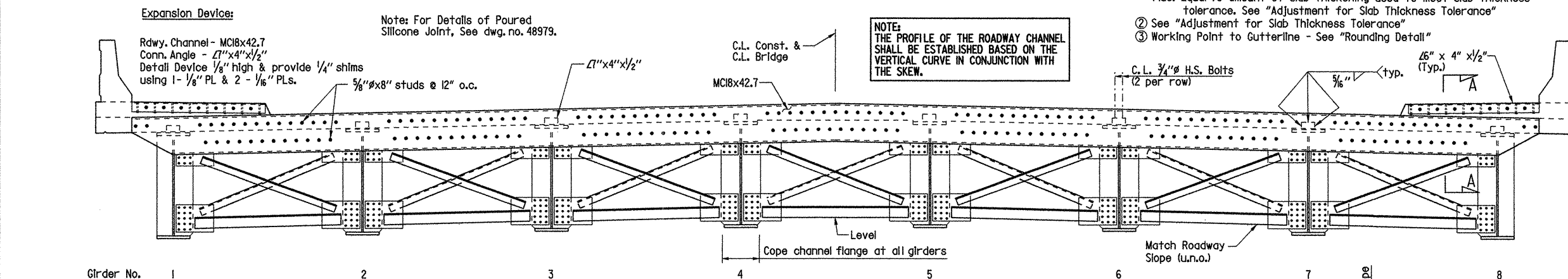
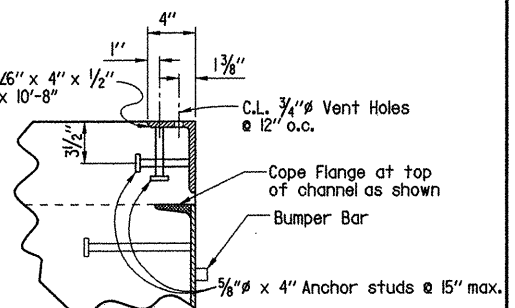
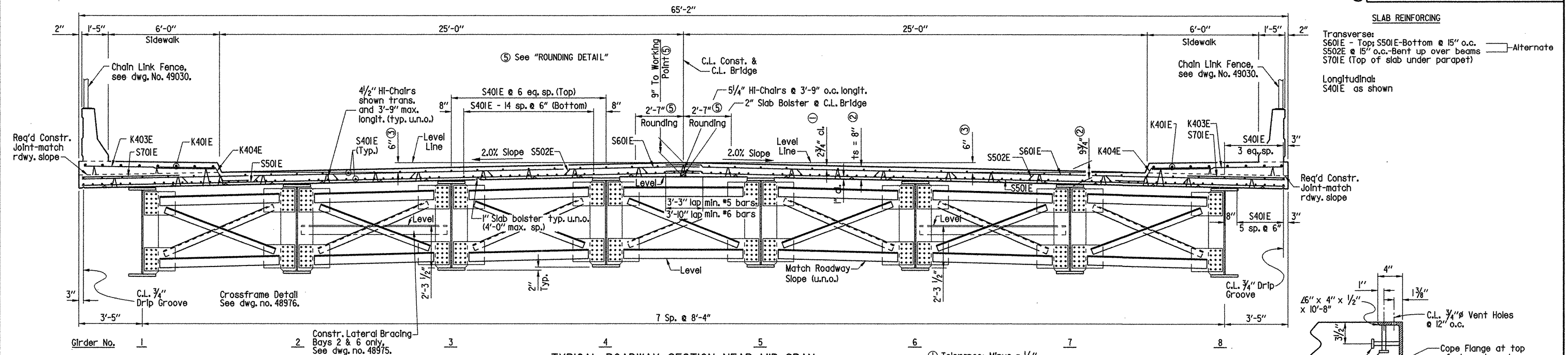


Note: Class I Protective Surface Treatment shall be applied to the Roadway and Sidewalk Surface. Class 3 Textured Coating Finish shall be applied to all areas as specified in Special Provision Job 061039 "Textured Coating Finish".

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.

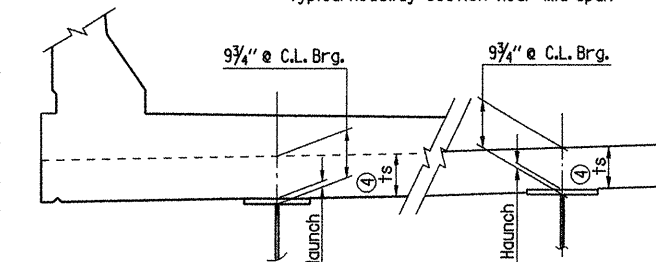
Note: At the Contractor's option, two straight epoxy coated #5 bars may be substituted for bar S502E. Payment for reinforcing will be based on the weight of bar S502E.

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.		061039	84	257
				07087		SUPERSTRUCTURE DETAILS	48974	



④ Tolerance when removable deck forming is used is  $\pm 1/2$ " &  $\pm 1/4$ ". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

Note: ts = slab thickness as shown in "Typical Roadway Section Near Mid-Span"

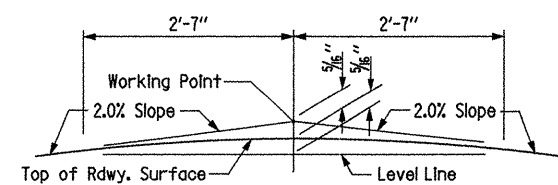


Tolerances shown are applicable only when removable deck forming is used. See Dwg. No. 48979A for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum - occurs when top flange contacts bottom reinforcing steel; Maximum - top flange thickness plus  $1/4$ ". No increase in concrete and structural steel quantities will be made to maintain tolerances.

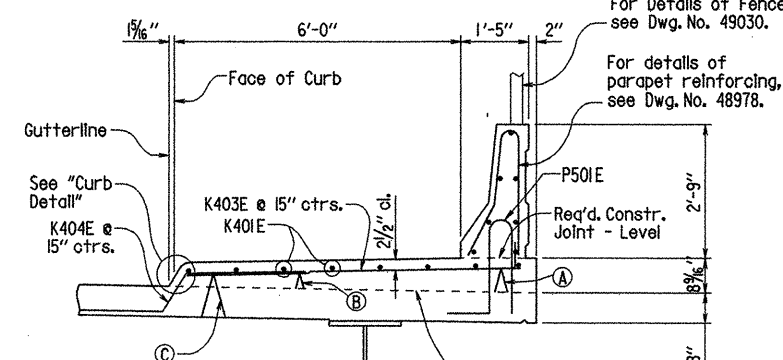
ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

NTS



ROUNDING DETAIL

No Scale



SIDEWALK DETAIL

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

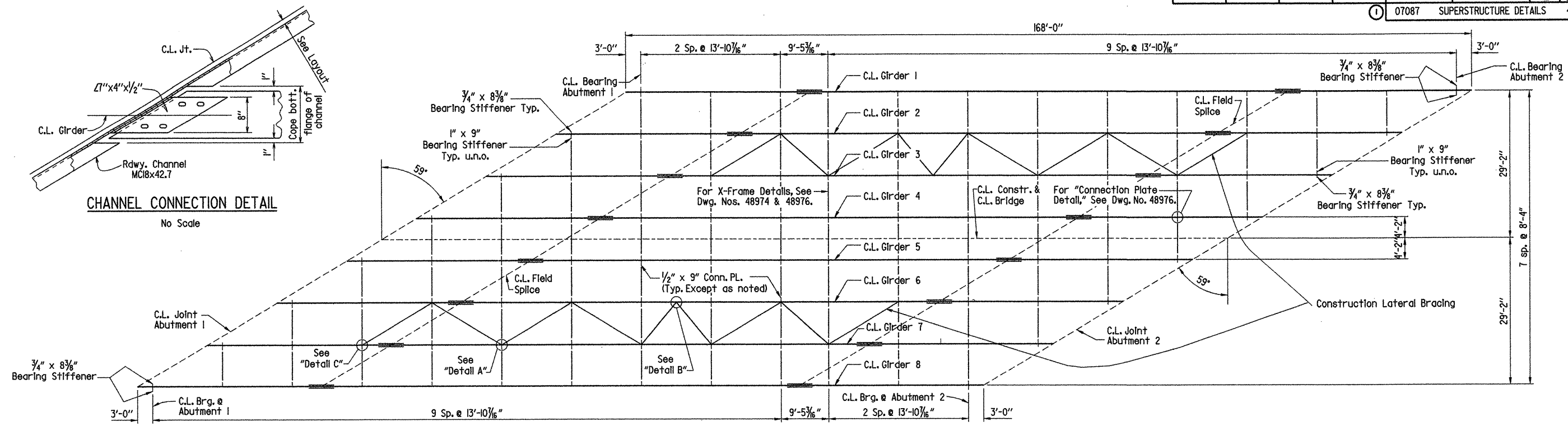


SHEET 1 OF 6  
DETAILS OF 168'-0" SIMPLE COMPOSITE  
PLATE GIRDER SPAN  
HWY. 35 OVER U.P.R.R.

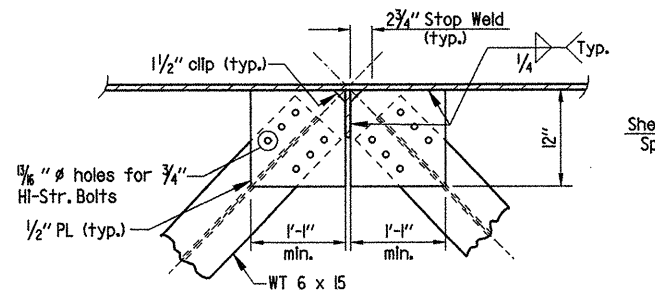
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: JWD DATE: 05/16/06 FILENAME: b061039x1.sldgn  
CHECKED BY: CRE DATE: 8-10-06 SCALE: 3/8" = 1'-0" or as noted  
DESIGNED BY: JWD DATE: 5-06  
BRIDGE NO. 07087 DRAWING NO. 48974

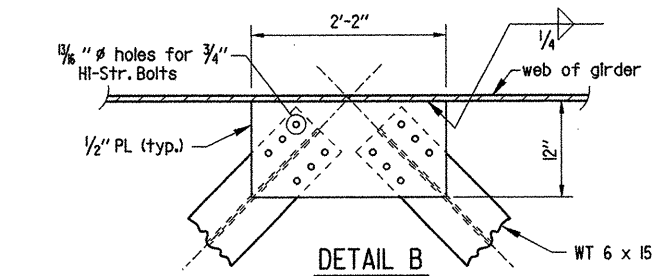
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		061039	85	257
				07087	SUPERSTRUCTURE DETAILS			48975



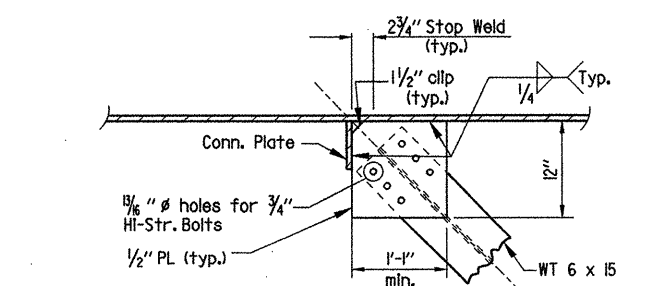
**FRAMING PLAN**  
1/2" = 1'-0"



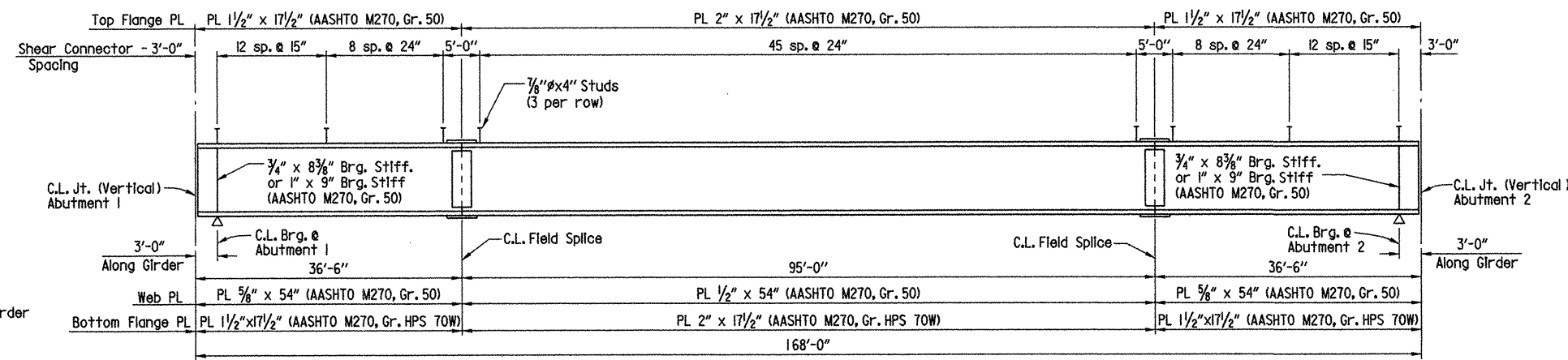
**DETAIL A**  
N.T.S.



**DETAIL B**  
N.T.S.

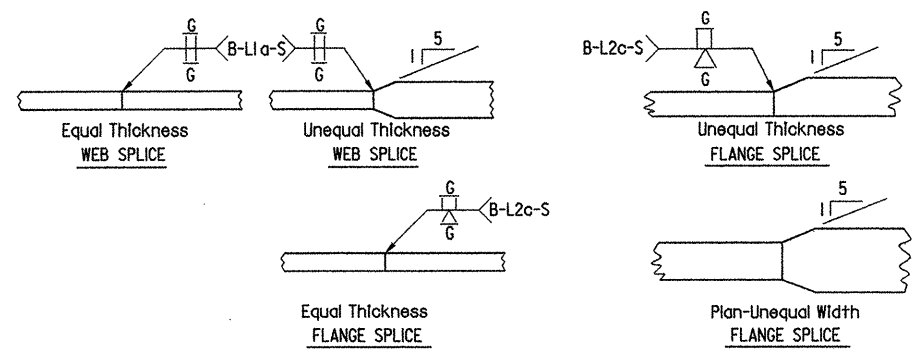


**DETAIL C**  
N.T.S.

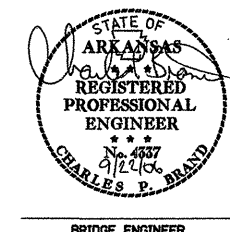


**GIRDER ELEVATION**  
N.T.S.

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.



**DETAILS OF WELDED SPLICES**  
N.T.S.



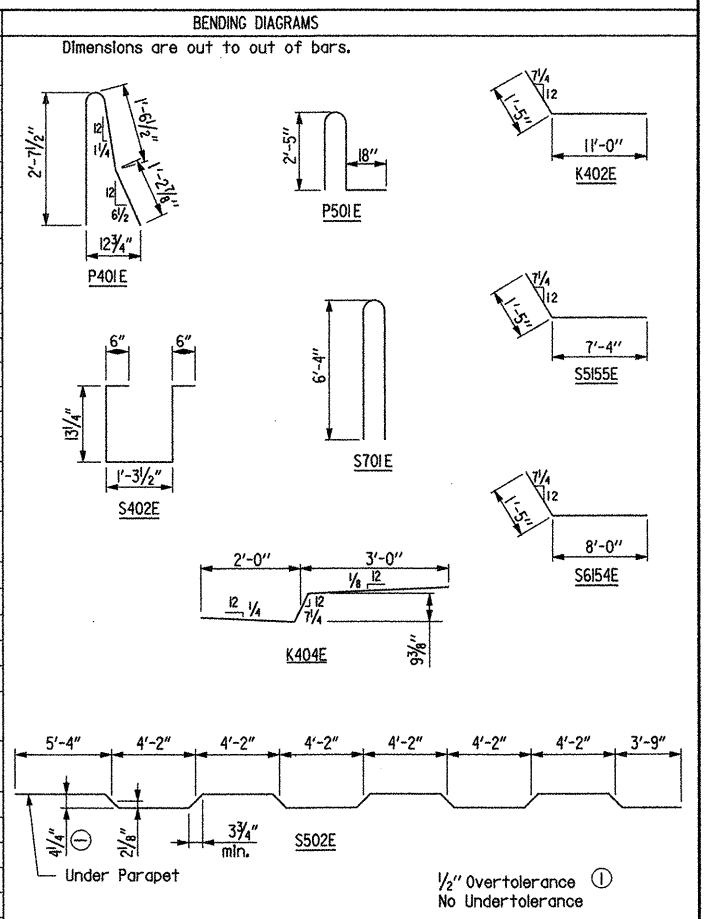
SHEET 2 OF 6  
DETAILS OF 168'-0" SIMPLE COMPOSITE  
PLATE GIRDER SPAN  
HWY. 35 OVER U.P.R.R.

ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: JWD DATE: 07/05/06 FILENAME: b061039xl.s2.dgn  
CHECKED BY: GRE DATE: 8-10-06 SCALE: As Noted  
DESIGNED BY: JWD DATE: 5-06  
BRIDGE NO. 07087 DRAWING NO. 48975

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		86	251
				JOB NO.		061039		
				07087	SUPERSTRUCTURE DETAILS		48976	

# BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
K401E	80	35'-7"	Str.
K402E	26	12'-5"	2"
K403E	244	7'-1"	Str.
K404E	244	5'-5"	2"
P401E	576	5'-6"	3"
P402E	40	35'-7"	Str.
P403E	72	13'-7"	Str.
P501E	576	6'-5"	3 3/4"
S401E	830	35'-7"	Str.
S402E	126	4'-2"	2"
S501E	116	34'-1"	Str.
S502E	102	34'-10"	3"
S503E	12	57'-10"	Str.
S504E-S509E	2 each	31'-4" to 29'-6"	Str.
S510E-S5154E	2 each	59'-10" to 5'-9"	Str.
S5155E	24	8'-8"	3 3/4"
S601E	116	34'-4"	Str.
S602E	28	15'-6"	Str.
S603E-S608E	2 each	31'-8" to 29'-9"	Str.
S609E-S6153E	2 each	59'-10" to 5'-9"	Str.
S6154E	22	9'-4"	4 1/2"
S701E	254	13'-0"	6 1/2"



At the contractor's option, two straight #5 bars may be substituted for the S502E bar with the top and bottom bars epoxy coated. Payment for reinforcing will be based on the weight of S502E.

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

# TABLE FOR WELD

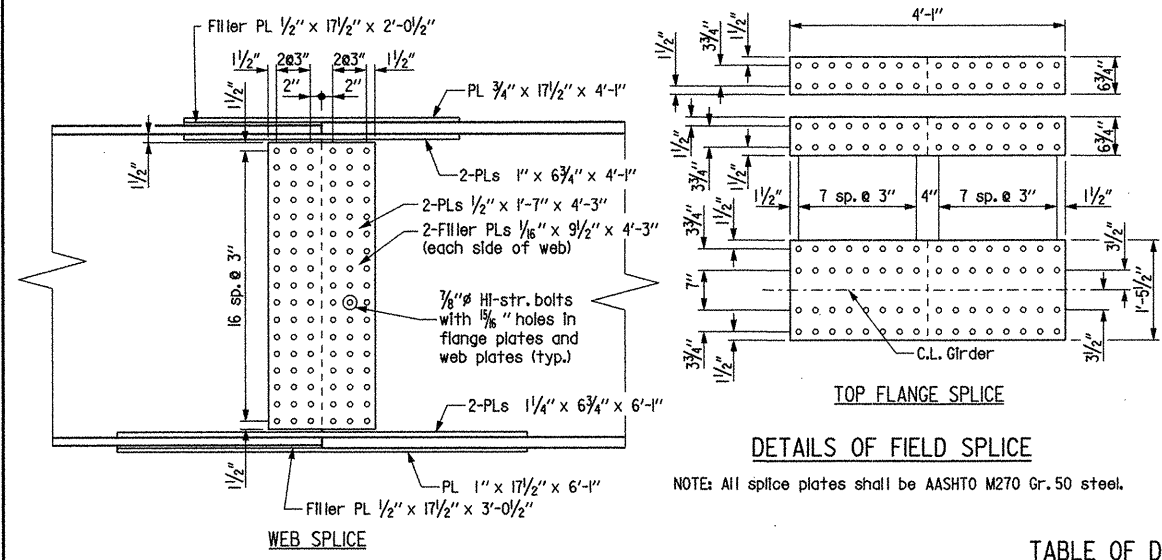
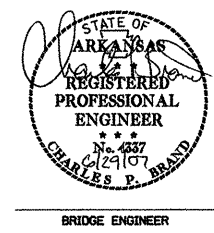
Material Thickness of Thicker Part Joined (Inches)	Minimum Size of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To 3/4" inclusive	1/4"	
Over 3/4"	5/16"	

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

SHEET 3 OF 6  
DETAILS OF 168'-0" SIMPLE COMPOSITE PLATE GIRDER SPAN  
HWY. 35 OVER U.P.R.R.

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

DRAWN BY: JWD DATE: 07/13/06 FILENAME: b061039xl.s3.dgn  
CHECKED BY: CRE DATE: 8-10-06 SCALE: 3/4" = 1'-0" or as noted  
DESIGNED BY: JWD DATE: 5-06  
BRIDGE NO. 07087 DRAWING NO. 48976

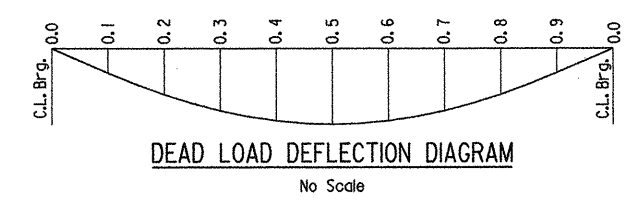


NOTE: All splice plates shall be AASHTO M270 Gr. 50 steel.

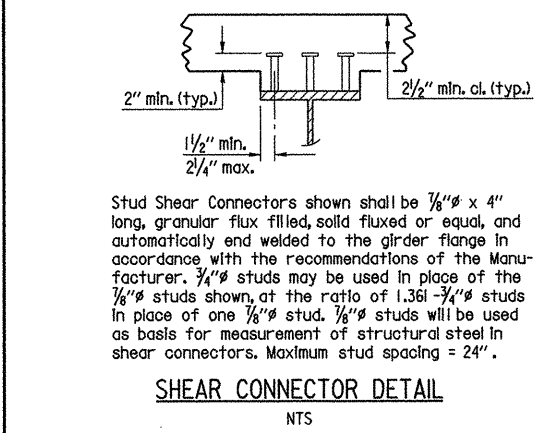
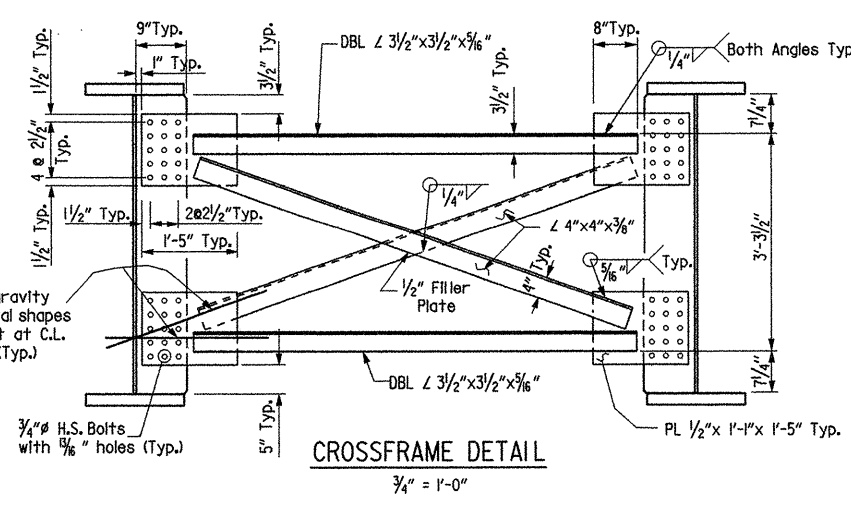
# TABLE OF DEAD LOAD DEFLECTIONS-INCHES

Point of Deflection	Structural Steel								Structural Steel+Slab								Str. Steel+Slab+Sidewalk & Parapet							
	G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.1	1.160	1.401	1.406	1.385	1.385	1.405	1.404	1.150	3.520	3.322	3.150	3.045	3.015	3.082	3.231	3.710	4.137	3.835	3.550	3.392	3.349	3.441	3.656	4.343
0.2	2.175	2.629	2.637	2.597	2.598	2.636	2.634	2.157	6.634	6.223	5.914	5.710	5.666	5.812	6.110	6.942	7.797	7.170	6.657	6.359	6.297	6.495	6.935	8.126
0.3	2.939	3.554	3.565	3.511	3.511	3.564	3.561	2.919	9.034	8.417	8.010	7.726	7.680	7.900	8.335	9.358	10.621	9.677	9.002	8.601	8.538	8.837	9.490	10.956
0.4	3.414	4.132	4.142	4.081	4.081	4.144	4.138	3.404	10.574	9.789	9.323	8.985	8.954	9.224	9.765	10.860	12.437	11.230	10.458	9.997	9.955	10.330	11.145	12.718
0.5	3.576	4.333	4.343	4.278	4.279	4.343	4.335	3.572	11.157	10.261	9.775	9.432	9.422	9.704	10.296	11.344	13.127	11.744	10.944	10.484	10.473	10.880	11.774	13.289
0.6	3.408	4.137	4.144	4.084	4.083	4.145	4.137	3.412	10.711	9.784	9.308	9.017	9.027	9.306	9.878	10.793	12.607	11.169	10.405	10.010	10.030	10.442	11.314	12.646
0.7	2.924	3.559	3.565	3.513	3.513	3.566	3.558	2.937	9.270	8.408	7.996	7.776	7.794	8.057	8.544	9.270	10.913	9.571	8.923	8.620	8.656	9.042	9.800	10.861
0.8	2.161	2.638	2.641	2.602	2.602	2.641	2.635	2.176	6.929	6.234	5.916	5.775	5.795	6.011	6.364	6.869	8.155	7.072	6.589	6.391	6.431	6.743	7.308	8.045
0.9	1.156	1.410	1.412	1.391	1.391	1.412	1.409	1.163	3.746	3.341	3.166	3.096	3.108	3.234	3.417	3.675	4.408	3.780	3.520	3.421	3.446	3.624	3.927	4.304
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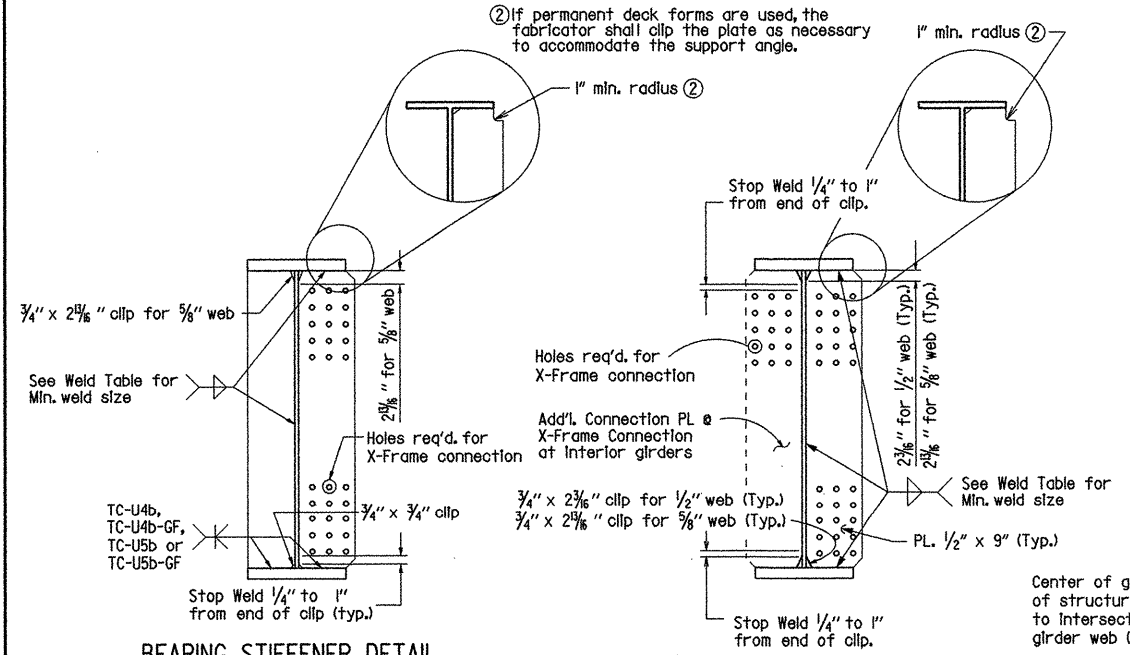
\* Deflections are based on Pour Sequence shown. Deviation from the pour sequence will require adjustment to structural steel camber.



NOTE: Camber for Dead Load Deflection plus Vertical curve  $\pm 1/4"$  tolerance. Deflections shown are along C.L. Girder from a chord from C.L. Bearing. Vertical curve corrections not included.



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



Notes: Bearing stiffeners to be fabricated so as to be vertical in their final position.

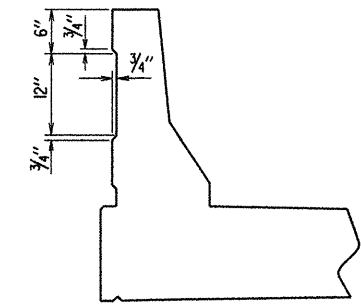
Notes: Bolts in X-Frame connections shall be properly installed and tightened in accordance with subsection 807.71 except as noted.



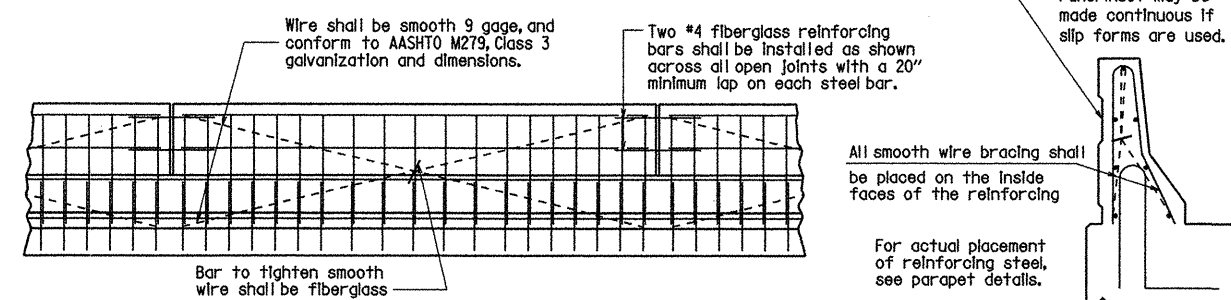




①	07087	SUPERSTRUCTURE DETAILS	48978
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(B) Details not shown are similar to details of 14'-0" Rail shown.



All panels shall be braced as required 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.



STATE OF  
ARKANSAS  
REGISTERED  
PROFESSIONAL  
ENGINEER  
No. 4337  
Exp. 12/10  
CHARLES P. BRAND

BRIDGE ENGINEER

SHEET 5 OF 6  
DETAILS OF 168'-0" SIMPLE COMPOSITE  
PLATE GIRDER SPAN  
HWY. 35 OVER U.P.R.R.

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

DRAWN BY: JWD      DATE: 07-11-06      FILENAME: b061039xl.s5.dgn  
 CHECKED BY: CRE      DATE: 8-10-06      SCALE: As Shown  
 DESIGNED BY: JWD      DATE: 5-06  
 BRIDGE NO. 07087      DRAWING NO. 48978

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2003 edition), with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications (2004 edition with 2005 and 2006 Interims).

LIVE LOADING: HL-93

MATERIALS AND STRENGTHS:

Concrete: All concrete shall be Class (S/AE) with a minimum 28 day strength  $f'_c = 4000$  psi.

Reinforcing Steel: Reinforcing steel shall conform to AASHTO M31 or M53, Grade 60 (Yield Strength = 60,000 psi.)

Structural Steel: Structural steel shall conform to AASHTO M270, Gr. 50 ( $F_y = 50,000$  psi.), AASHTO M270, Gr. HPS 70W ( $F_y = 70,000$  psi.), or AASHTO M270 Gr. 36 ( $F_y = 36,000$  psi.)

STRUCTURAL STEEL:

Flange plates noted on Girder Elevation as AASHTO M270, Gr. HPS 70W shall be paid for as "Structural Steel in Plate Girder Spans (M270, Gr. HPS 70W)." All other structural steel shall be AASHTO M270, Gr. 50, unless otherwise noted and shall be paid for as "Structural Steel in Plate Girder Spans (M270, Gr. 50)". Structural Steel completely embedded in concrete may be AASHTO M270, Gr. 36. All exposed surfaces shall be cleaned in accordance with subsection 807.84, unless noted otherwise.

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 and materials shown in the plans, and no additional compensation will be made for any adjustments due to substitutions.

Longitudinal girders and all 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 will be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M270, Gr. 50)" or "Structural Steel in Plate Girder Spans (M270, Gr. HPS 70W)".

Steel 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.

Drawings show general features of design only. Shop drawings shall be made in accordance with subsection 807.04, submitted and approved before fabrication is begun. Girder webs may be made by shop splicing with minimum lengths of 25'-0" for sections. Flange plates longer than 50'-0" may be made by shop splicing with minimum lengths of 25'-0" for sections. Material specifications and location of shop-welded splices, if any, shall be shown on the shop drawings. No additional payment for welds for these splices will be made.

All girders shall be blocked in their true position in the shop as specified in Subsection 807.54 (b)(1). The camber, length of sections, distance between bearings and openings of joints shall be measured with the girder in their true position. This information shall become part of the permanent records of this job. The component parts shall be match marked in this assembly and these marks shall be shown on the erection diagram. All girder dimensions are based on a temperature of 60°F. A tolerance of  $\frac{1}{4}$ " +/- is allowed for camber.

Field connections shall be bolted with high-strength bolts. Bolts shall be  $\frac{3}{4}$ " diameter, except as noted, and open holes shall be  $\frac{1}{8}$ ", unless noted otherwise. Holes for  $\frac{3}{4}$ " diameter bolts may be  $\frac{1}{2}$ " diameter if a washer is supplied for use under both the nut and head of the bolt. Bolt spacing shall be  $2\frac{1}{2}$ " for  $\frac{3}{4}$ " diameter bolts unless otherwise noted. For field splices, bolts shall be  $\frac{1}{2}$ " diameter bolts unless otherwise noted. Open holes shall be  $\frac{1}{8}$ " unless noted otherwise. Bolt spacing shall be 3" for  $\frac{1}{2}$ " diameter bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior girder web and on the bottom of the girder flanges.

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 Engineer for approval. All welding shall conform to subsection 807.26 and Special Provision Job 061039 "Grade HPS 70W Structural Steel."

Groove welds in main plate girder members shall be Quality Control (Q.C.) tested by nondestructive testing, as required by the Standard Specifications. Fillet welds at flange to web plate connections shall be Q.C. tested by the magnetic particle method. All Quality Control (Q.C.) testing is at the contractor's expense.

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

Bearings shall be seated in accordance with subsection 807.66. This work and material will not be paid for directly but will be considered subsidiary to the item "Structural Steel in Plate Girder Spans (M270, Gr. 50)."

Cross-Frames and Construction Lateral Bracing shall be installed as girders are erected. All bolts in Cross-Frames, Construction Lateral Bracing, and field splices shall be installed and tightened in accordance with subsection 807.71 prior to pouring of the concrete deck.

The erection of the structural steel should be performed according to a plan permitting the steel to be erected plumb for steel-load fit. Deflections are based on pour sequence shown.

PAINTING: All structural steel except galvanized members and surfaces in contact with concrete shall be painted as specified in Section 807. Color of paint shall be Maroon equal to or close to Fed. Std. 595B, Color Chip 10049 and as approved by the Engineer.

REINFORCING STEEL:

All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60. The reinforcing steel shall 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 of "Epoxy Coated Reinforcing Steel (Grade 60)".

DATE REVISED  
DATE FILMED  
DATE REVISED  
DATE FILMED  
FED. ROAD DIST. NO.  
STATE  
FED. AID PROJ. NO.  
SHEET NO.  
TOTAL SHEETS

6  
ARK.  
061039  
67  
257

07087  
SUPERSTRUCTURE DETAILS  
48979

CONCRETE:

All concrete shall be Class (S/AE) with a minimum 28 day compressive strength  $f'_c = 4000$  psi. Concrete shall be poured in the dry and all exposed corners to be chamfered  $\frac{3}{4}$ " unless otherwise noted.

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. The sidewalk shall receive a Broomed Finish as specified for final finishing in subsection 802.19 for Class 6, Broomed 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 girder. 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 sidewalk and parapet railing.

A minimum of 72 hours shall elapse between completion of the bridge deck slab and the pouring of the sidewalk and a minimum of 72 hours shall elapse between completion of the sidewalk and the pouring of the parapet railing. Any railing pours made before the entire slab has been placed and cured must be approved by the Engineer.

LOAD DISTRIBUTION:

DEAD LOAD

INTERIOR GIRDER

EXTERIOR GIRDER

To Girder:

833 plf + wt. of girder + wt. of x-frames

758 plf + wt. of girder + wt. of x-frames

To Composite Girder:

① 331 plf

② 694 plf

① Includes 150 plf future wearing surface and 116 plf sidewalk load.

② Includes 150 plf future wearing surface and 349 plf sidewalk load.

③ Installation is limited to 40°F min. and 80°F max. See Table A for installation temperatures other than 60°F

Refer to Abutment Details

③  $1\frac{1}{2}$ " Jt. @ 60°F

Poured Silicone Joint Sealant

Conn. Angle L7"x4"x  $\frac{1}{2}$ "

$\frac{1}{8}$ " x  $1\frac{1}{2}$ " slots in angle  $\frac{1}{8}$ " hole in flange. Washer on top of angle. 4 bolts per conn.

End of girder & C.L. Jt. are vertical

2'-± - Perpendicular to joint @ 60°F

3'-0" Along Girder

C.L. Brg.

JOINT AT ABUTMENT

NTS

③  $1\frac{1}{2}$ "

For Transverse Strike-off: Plate, Angle, or other shapes, attached to channel and angle for blocking.

For longitudinal strikeoff, bolt and spacer attached to channel (or angles) for blocking.

MC18x42.7

Note: Each expansion joint device shall be blocked in the Shop by the Fabricator to  $1\frac{1}{2}$ ", and the blocking details shall be shown on the Shop Drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

NTS

TABLE A

③ Width perpendicular to joint at 24 hour average temperature of:

40°F 60°F 80°F

$1\frac{1}{8}$ "  $1\frac{1}{2}$ "  $1\frac{3}{8}$ "

④ BACKER ROD NOTE:

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.

Except as 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.

③  $1\frac{1}{2}$ " Jt. @ 60°F

C.L. Joint (Vertical)  $\frac{1}{8}$ "

Recess depth as specified by sealant manufacturer

1" x  $\frac{3}{4}$ " x 12" Bumper Bar (at each girder line)

Poured Silicone Joint Sealant

Backer Rod

④

A.W.S. min. 3'-12"

DETAIL OF POURED SILICONE JOINT

NTS

Note: Concrete shall be hand packed under the joint armor.

Face of curb

Poured Silicone Sealant

JOINT SEAL PLACEMENT AT SIDEWALK & PARAPET

NTS

C.L.  $\frac{1}{2}$ " x 1" Slab Joint

Use Type 3, 4, or 6 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. Slab joints shall be installed before the sidewalk and parapet railing are 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. No joint sealer shall be placed on the deck slab under the sidewalk area. The joint sealer shall extend across the deck slab (gutterline to gutterline) and across the top of the sidewalk. Slab joints shall align with parapet open joints.

SLAB JOINT DETAIL

No Scale

STATE OF ARKANSAS  
REGISTERED PROFESSIONAL ENGINEER  
No. 4337  
2/11/06  
CHARLES P. BRAND  
BRIDGE ENGINEER

SHEET 6 OF 6

DETAILS OF 168'-0" SIMPLE COMPOSITE PLATE GIRDER SPAN

HWY. 35 OVER U.P.R.R.

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

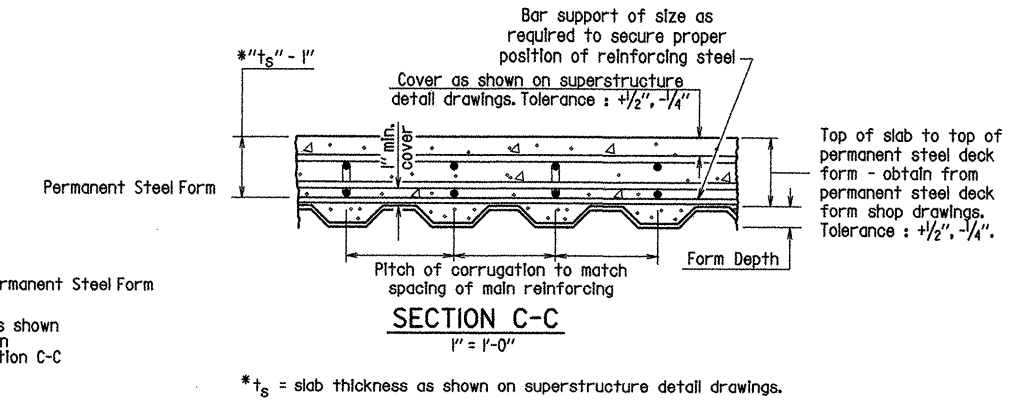
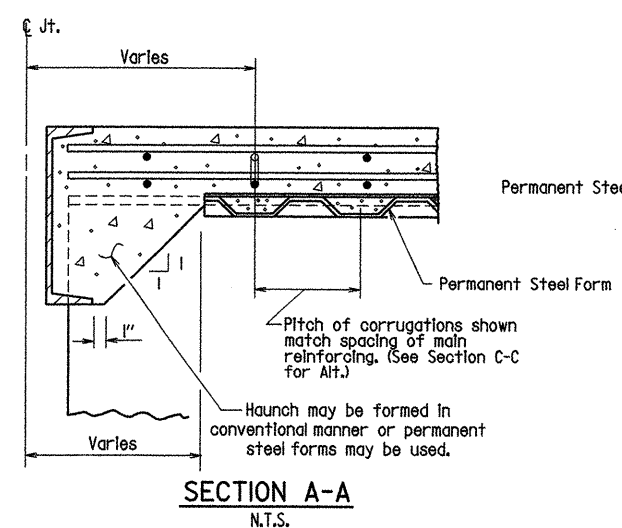
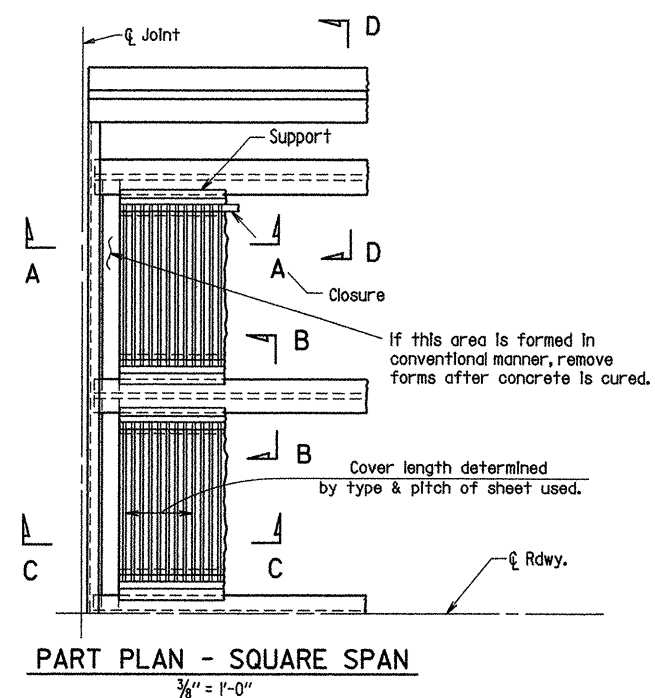
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CHECKED BY: CRE DATE: 8-10-06 SCALE: No Scale

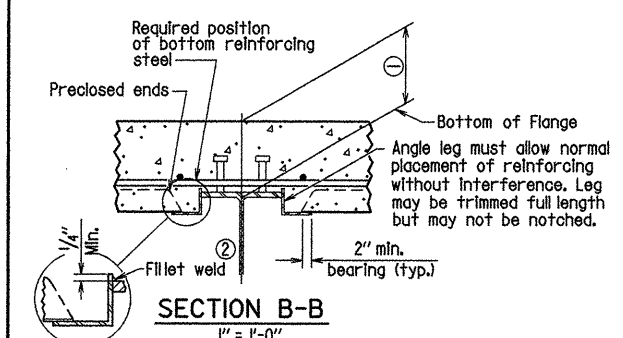
DESIGNED BY: JWD DATE: 5-06

BRIDGE NO. 07087 DRAWING NO. 48979

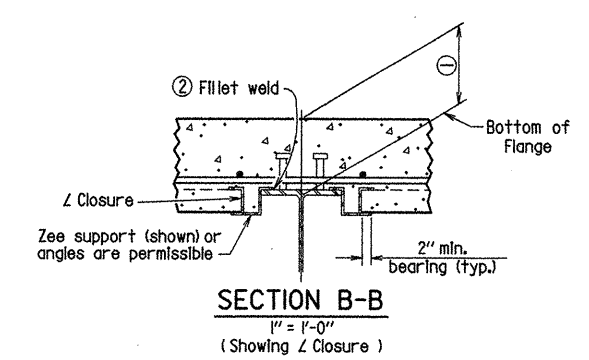
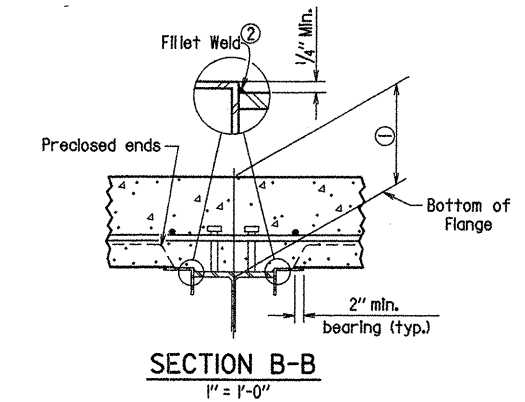
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	061039		90	257
				① 07087 -	DECK FORMS		- 48979A	



Top of slab to top of permanent steel deck form - obtain from permanent steel deck form shop drawings. Tolerance: +1/2", -1/4".



② Minimum weld: 1/8" x 1" @ 12". More weld may be required; maximum length per weld = 1 1/2" (typ.)



① Distance from top of slab to bottom of top flange as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances: Minimum - occurs when either the top flange or the support angle leg contacts the bottom reinforcing steel; Maximum =  $t_s + 1 1/4"$  + flange thickness. See Section C-C for slab thickness tolerance between adjacent girder flanges.

#### GENERAL NOTES

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

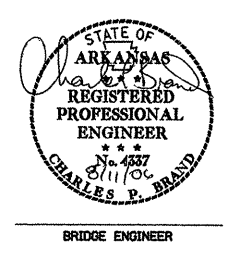
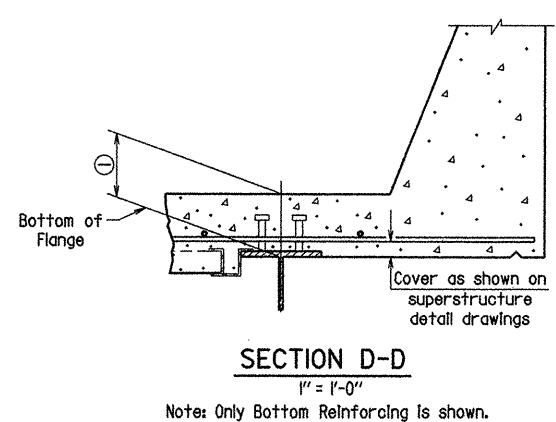
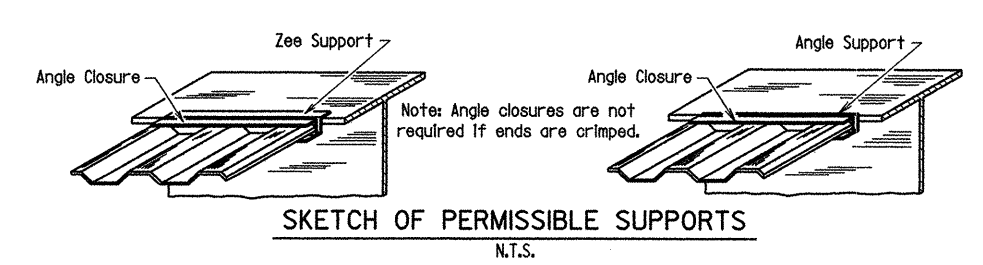
Permanent steel deck forms shall conform to subsection 802.14(b) of the Standard Specifications. Detailed plans, including detailed calculations and manufacturer's technical brochure, shall be submitted to and approved by the Bridge Engineer before work of forming the bridge deck is started.

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

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

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

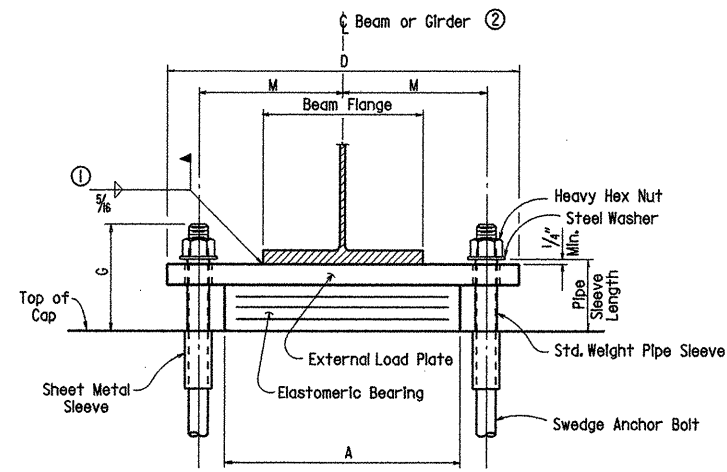
Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 Edition), with applicable supplemental specifications and special provisions.



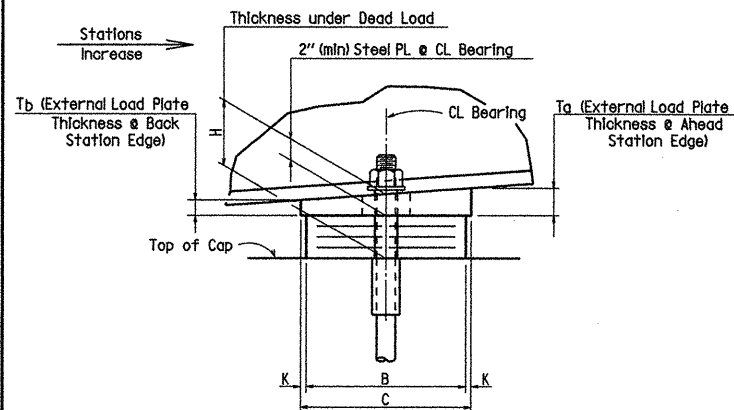
### DETAILS OF PERMISSIBLE TYPE PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL GIRDER SPAN HWY. 35 OVER U.P.R.R.

ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: JLB DATE: 7-19-06 FILENAME: b061039xl.s7.dgn  
CHECKED BY: DHP DATE: 8-11-06 SCALE: AS NOTED  
DESIGNED BY: Std. DATE: -  
BRIDGE NO. 07087 DRAWING NO. 48979A

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.		061039	91	257
				07087		ELASTO. BRGS.		48980



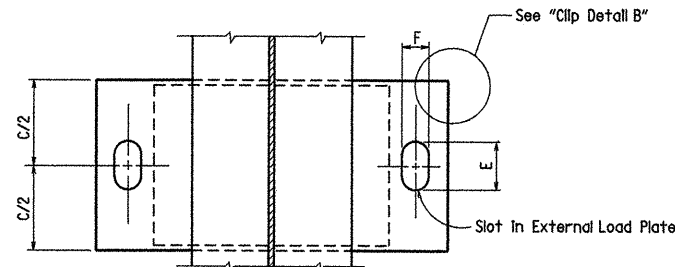
FRONT VIEW - AT ABUTMENT NO. 2



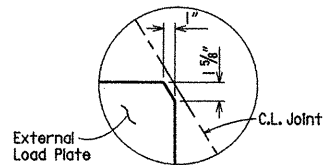
SIDE VIEW - AT ABUTMENT NO. 2

- 1 Care shall be taken to ensure that the external load plate is in full and complete contact with the beam or girder flange before welding begins.
- 2 Centerline Beam or Girder shall align with centerline bearing.

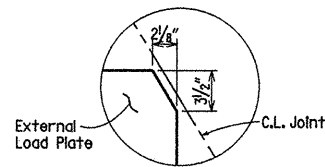
Unless otherwise approved by the Engineer, welding of the external load plate at expansion bearings to the girder will be allowed only when: 1) the approximate average air temperature during the 24 hour period immediately preceding welding is between 40° F and 80° F; and 2) the slots in the external load plate are positioned to center on the anchor bolts; and 3) no horizontal deformation of the elastomeric pad is evident. If welding at other temperatures is required, the Engineer will provide adjustment data.



PLAN VIEW - AT ABUTMENT NO. 2



CLIP DETAIL B  
(Abutment No. 2 Only)

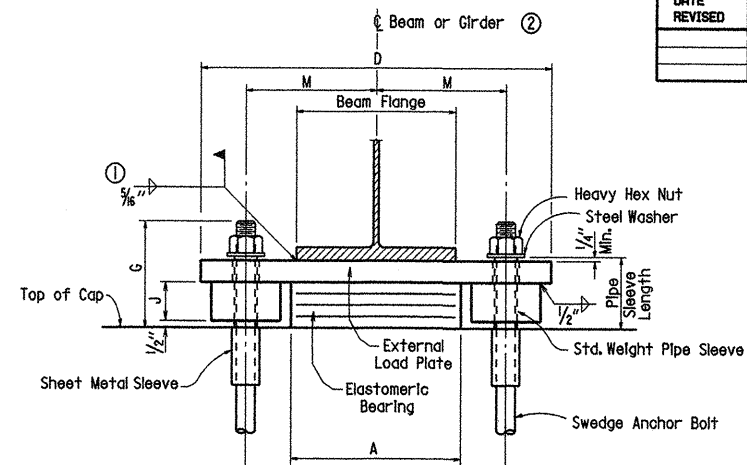


CLIP DETAIL A  
(Abutment No. 1 Only)

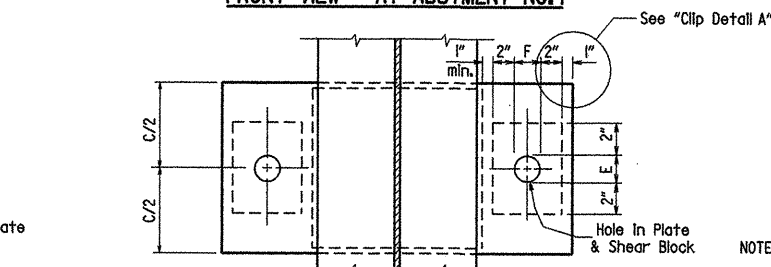
TABLE OF FABRICATOR VARIABLES

BRIDGE NO.	LOCATION		BEARING TYPE	NO. of BEARINGS EACH BENT	③ MAXIMUM DESIGN LOAD (KIPS)	G	H	ELASTOMERIC PAD							EXTERNAL LOAD PLATE										ANCHOR BOLT				
	ABT. NO(S)	SPAN						GIRD. NO.	A	B	N	t <sub>1</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.)
																									(ø x L)	GRADE			
07087	1	168'	All	Fix.	8	263	11 1/4"	④ 8 1/16"	20"	16"	9	1/2"	5/16"	10 @ 12 Ga.	6 3/16"	17"	37 1/4"	2 5/8"	2 5/8"	5 1/8"	1/2"	14 5/16"	⑤	⑤	1 3/4"ø x 32"	55	2"ø x 8 1/2"	4"ø x 7"	3 3/8"
								④ H=8 1/8" Girder 2 only																					
																					⑤ Girder 1	2.08	1.92						
																					Girder 2	2.19	1.99						
																					Girder 3&4	2.13	1.87						
																					Girder 5&6	2.17	1.83						
																					Girder 7&8	2.21	1.79						
2	168'	All	Exp.	8	263	12 1/2"	8 1/16"	20"	16"	9	1/2"	5/16"	10 @ 12 Ga.	6 3/16"	17"	33"	6 1/2"	3 3/4"		1/2"	13"	⑤	⑤	2 3/4"ø x 42"	55	3"ø x 8 1/2"	5"ø x 7"	5"	

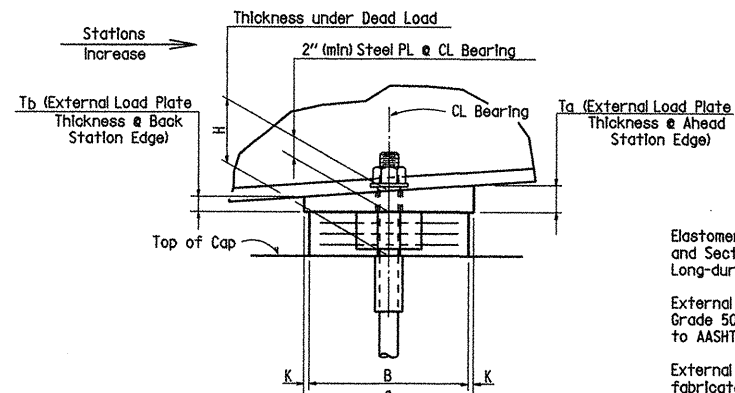
③ Maximum Design Load = Service I Limit State



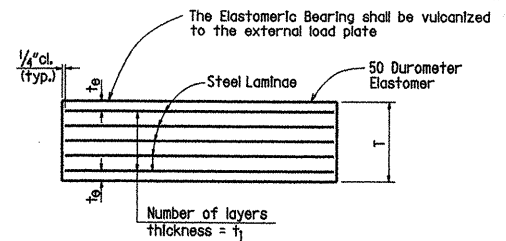
FRONT VIEW - AT ABUTMENT NO. 1



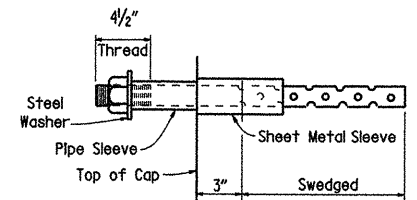
PLAN VIEW - AT ABUTMENT NO. 1



SIDE VIEW - AT ABUTMENT NO. 1



ELASTOMERIC BEARING



ANCHOR BOLT DETAIL

NOTE: Anchor Bolts may be cast in place or drilled and grouted in 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 QPL 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 Plate Girder Spans (M 270, Gr. 50)." Gr. 50."

#### GENERAL NOTES

Elastomeric Bearings shall conform to Special Provision Job 061039 "Elastomeric Bearings" and Section 808 and shall be paid for at the unit price bid for "Elastomeric Bearings." Long-duration testing of random lot samples specified in subsection 808.05 is not required.

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 external load plates with shear blocks shall be completely fabricated (including bevel and bolt holes) 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) and painted according to subsection 807.75. Painting will not be paid for directly but will be considered subsidiary to "Elastomeric Bearings".

Anchor Bolts, Washers and Nuts shall conform to subsection 807.07. 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 Plate Girder 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".

Tabular Data by: JWD Date: 05/19/06  
Checked by: CRE Date: 8-10-06  
Designed by: JWD Date: 10/05



BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS  
HWY. 35 OVER U.P.R.R.

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

DRAWN BY: CRE DATE: 2-09-05 FILENAME: b061039xl.el.dgn  
CHECKED BY: CSL DATE: 2-11-05 SCALE: No Scale  
DESIGNED BY: Std. DATE: \_\_\_\_\_

BRIDGE NO. 07087

DRAWING NO. 48980