



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.		040238	149	293
				07176	LAYOUT		50949	

# BORING LEGEND

A1-Moist, Stiff, Reddish Brown Clay with Sand  
 B1-Moist, Hard, Reddish Brown Clay with Sand and Trace of Gravel (Sandstone Fragments)  
 C1-Moist, Very Stiff, Brown Clay with Sand and Trace of Gravel (Sandstone Fragments)  
 D1-Moist, Hard, Brown and Gray Clay with Sand and Trace of Gravel (Sandstone Fragments)  
 E1-Moist, Very Hard, Brown and Gray Clay with Sand and Gravel (Sandstone Fragments)  
 F1-Moist, Hard, Brown Clay with Sand and Gravel (Sandstone Fragments)  
 G1-Moist, Hard, Brown Clay with Sand and some Gravel (Sandstone Fragments)  
 H1-SANDSTONE (PROBABLE BOULDERS) WITH CLAY - Brown and Gray, Poorly Cemented  
 J1-SHALE - Brown and Gray, Laminated, Highly Weathered, Medium Hard, with Slight Dip  
 K1-SHALE WITH FREQUENT SANDSTONE SEAMS - Dark Gray, Laminated, Weathered, Medium Hard, with Slight Dip  
 L1-SHALE WITH FREQUENT SANDSTONE SEAMS - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip  
 M1-Moist, Very Stiff, Reddish Brown Clay with Sand and Gravel (Sandstone Fragments)  
 N1-Moist, Very Stiff, Brown Clay with Sand and Gravel (Sandstone Fragments)  
 P1-Moist, Hard, Brown and Gray Clay with Gravel (Sandstone Fragments)  
 Q1-Moist, Very Hard to Hard, Brown and Gray Clay with Sand and Gravel (Sandstone Fragments)  
 R1-SHALE - Brown and Gray, Laminated, Highly Weathered, Soft, with Slight Dip and some Sandstone Fragments  
 S1-SHALE WITH OCCASIONAL SANDSTONE SEAMS - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip  
 T1-Moist, Stiff, Reddish Brown Clay  
 U1-Moist, Hard, Reddish Brown Clay with Sand  
 V1-Moist, Very Hard, Brown Clay with Sand and Gravel (Sandstone Fragments)  
 W1-Moist, Hard, Brown and Gray Clay with Sand and Gravel (Sandstone Fragments)  
 X1-SHALE - Brown and Gray, Highly Weathered, Medium Hard  
 Y1-SHALE - Brown and Dark Gray, Highly Weathered, Medium Hard  
 Z1-Soft, Sandy Clay  
 A2-SANDSTONE (PROBABLE BOULDERS) WITH CLAY - Brown and Gray, Cemented  
 B2-Moist, Very Stiff, Brown Clay  
 C2-SHALE - Gray and Brown, Laminated, Highly Weathered, Medium Hard, with Slight Dip  
 D2-SHALE - Gray and Brown, Laminated, Weathered, Medium Hard, with Slight Dip  
 E2-Moist, Stiff, Reddish Brown Sandy Clay  
 F2-Moist, Very Stiff, Reddish Brown Sandy Clay  
 G2-Moist, Hard, Reddish Brown Clay with Gravel (Sandstone Fragments)  
 H2-Moist, Very Dense, Brown Sand with Clay and Gravel (Sandstone Fragments)  
 J2-Moist, Very Hard, Reddish Brown Sandy Clay with Gravel (Sandstone Fragments)  
 K2-Moist, Very Dense, Brown Sand with Gravel (Sandstone Fragments)  
 L2-SHALE - Gray and Brown, Laminated, Highly Weathered, Soft, with Slight Dip  
 M2-SHALE - Dark Gray and Brown, Laminated, Highly Weathered, Medium Hard, with Slight Dip  
 N2-SHALE - Dark Gray and Brown, Laminated, Slightly Weathered, Medium Hard, with Slight Dip  
 P2-Moist, Dense, Reddish Brown Sand with Clay  
 Q2-Moist, Hard, Reddish Brown Sandy Clay  
 R2-Moist, Very Hard, Reddish Brown Clay with Sand and Gravel (Sandstone Fragments)  
 S2-Moist, Hard, Reddish Brown Sandy Clay with Gravel (Sandstone Fragments)  
 T2-Moist, Very Hard, Brown Sandy Clay with Gravel (Sandstone Fragments)  
 U2-SANDSTONE (PROBABLE BOULDERS) WITH CLAY - Brown and Gray, Cemented  
 V2-SHALE - Gray and Brown, Laminated, Highly Weathered, Soft, with Slight Dip  
 W2-SHALE - Dark Gray, Laminated, Slightly Weathered, Medium Hard, with Slight Dip  
 X2-Moist, Stiff, Reddish Brown and Gray Clay with Sand  
 Y2-Moist, Stiff, Reddish Brown Clay with some Gravel (Sandstone Fragments)  
 Z2-Moist, Very Stiff, Brown and Gray Clay  
 A3-Moist, Very Stiff, Brown and Gray Clay with Highly Weathered Shale  
 B3-SHALE - Brown and Gray, Highly Weathered, Soft  
 C3-SHALE - Brown and Gray, Laminated, Highly Weathered, Medium Hard, with Slight Dip  
 D3-Moist, Hard, Reddish Brown Clay with Weathered Shale and Gravel (Sandstone Fragments)  
 E3-Moist, Hard, Brown Clay with Weathered Shale and Gravel (Sandstone Fragments)  
 F3-Moist, Very Hard, Brown Clay with Weathered Shale  
 G3-SHALE - Brown and Gray, Weathered, Medium Hard  
 H3-SHALE - Brown and Gray, Laminated, Weathered, Medium Hard, with Slight Dip

- ① Drilling Circulation Fluid Loss was encountered from 24.7' to 29.7'  
 ② Partial Fluid loss was encountered from 29.7' to 34.7'

Sta. 150+74 - 70'  
 Lt. of C.L. of Constr.

1.5-	2.5,N=12
3.0-	4.0,N=14
5.5-	6.5,N=33
8.0-	9.0,N=30
10.5-	11.5,N=43
13.0-	14.0,N=83
15.5-	16.5,N=48
20.5-	21.5,N=46

Sta. 150+92 - C.L. of Constr.

1.5-	2.5,N=12
3.0-	4.0,N=14
5.5-	6.5,N=29
8.0-	9.0,N=27
10.5-	11.5,N=44
13.0-	14.0,N=51
15.5-	16.5,N=31
20.5-	21.5,N=49
25.5-	26.5,N=31
30.5-	30.7,N=60(2")
32.1-	33.1,N=53

## "N" VALUES

Sta. 151+07 - 129'  
 Rt. of C.L. of Constr.

1.5-	2.5,N=10
3.0-	4.0,N=11
5.5-	6.5,N=36
8.0-	9.0,N=34
10.5-	11.5,N=50
13.0-	14.0,N=73
15.5-	16.5,N=31
20.5-	21.5,N=43
25.5-	26.4,N=98(11")
30.5-	31.5,N=88
35.5-	35.7,N=60(2")
40.0-	40.4,N=60(5")

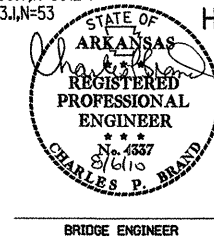
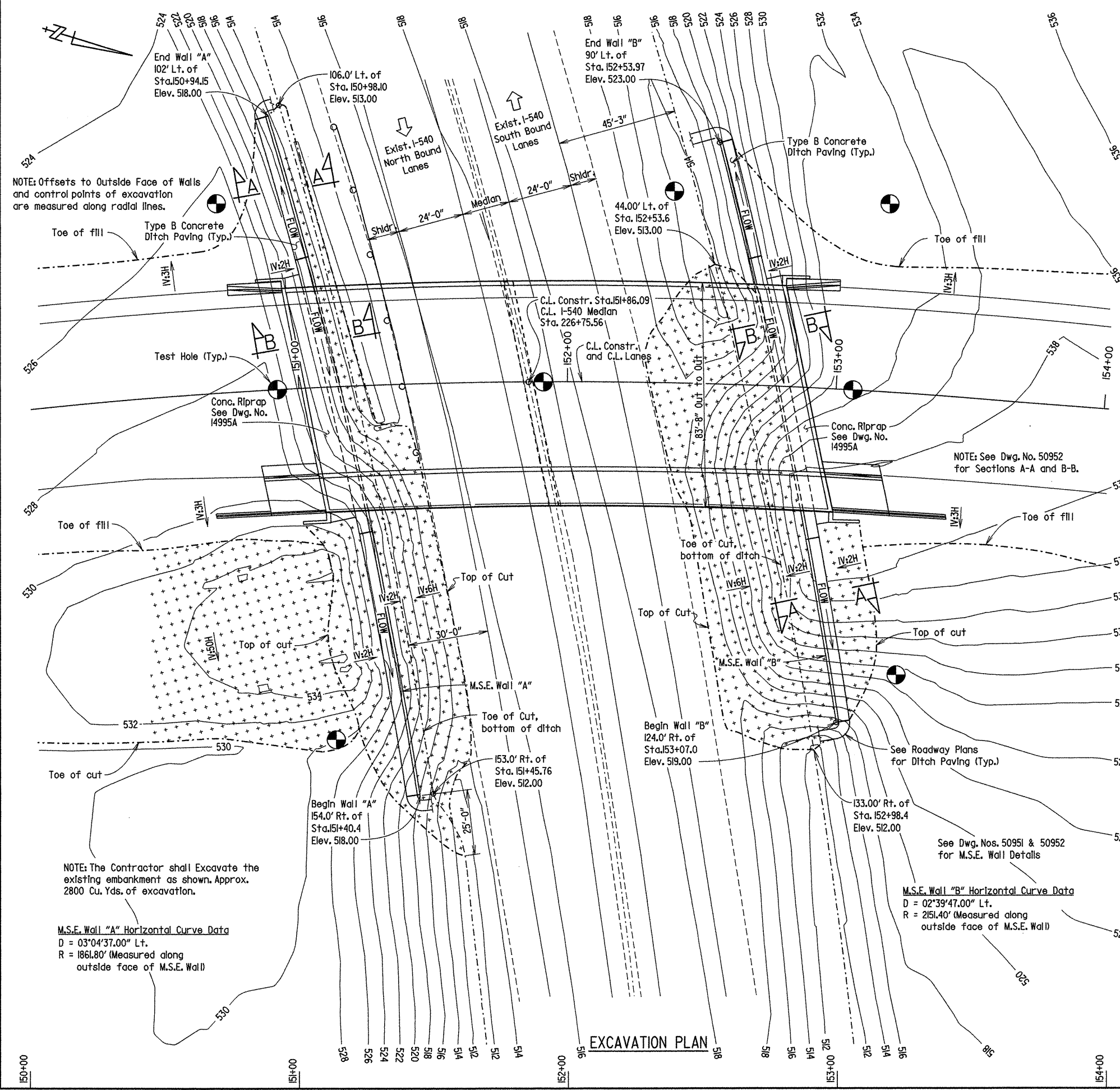
Sta. 151+91 - C.L. of Constr.

4.8-	5.8,N=49
9.8-	10.8,N=59
14.8-	15.8,N=60
19.8-	20.8,N=79
24.8-	25.0,N=60(3")
Sta. 152+40 - 70'	
Left of C.L. of Constr.	
5.0-	5.1,N=40(1")
Sta. 153+06 - C.L. of Constr.	
1.5-	2.5,N=9
3.0-	4.0,N=21
5.5-	6.5,N=39
8.0-	9.0,N=81
10.5-	11.4,N=9(11")
13.0-	14.0,N=83
15.5-	16.5,N=106
20.0-	20.4,N=40(5")
Right of C.L. of Constr.	
1.5-	2.5,N=9
3.0-	4.0,N=9
5.5-	6.5,N=23
8.0-	9.0,N=26
10.5-	11.5,N=30
13.0-	14.0,N=66
15.5-	16.5,N=94
20.5-	21.0,N=60(6")

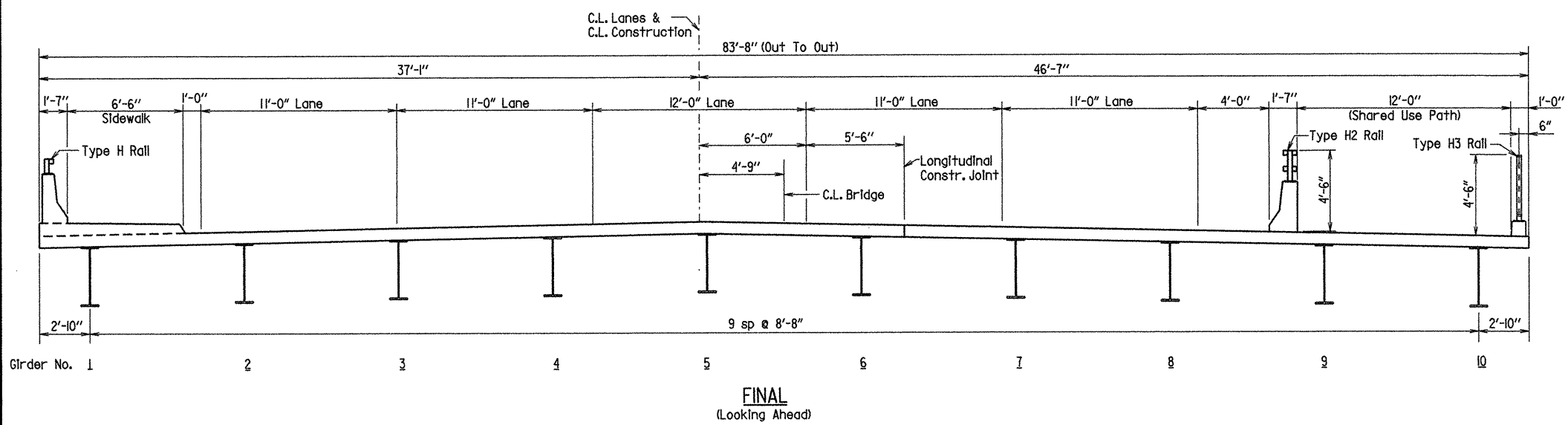
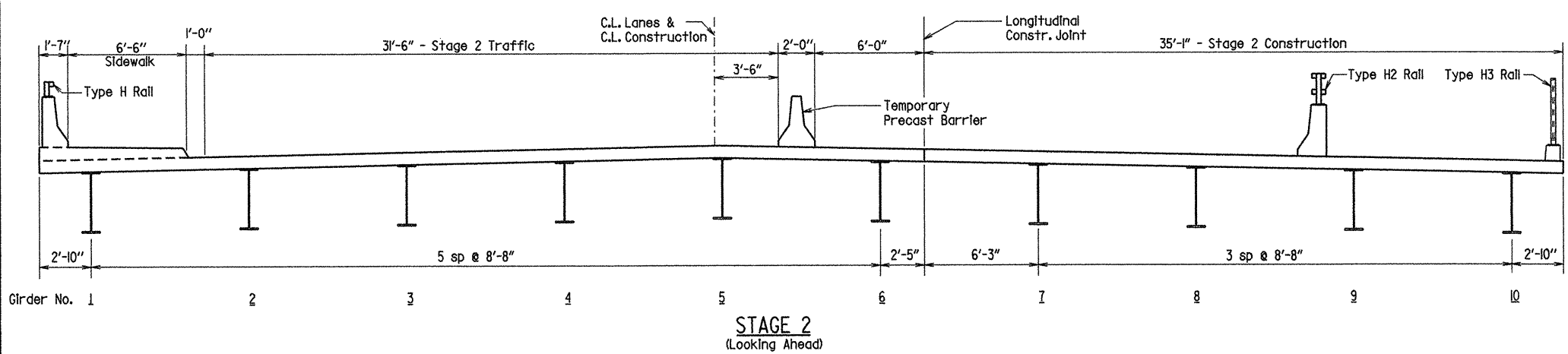
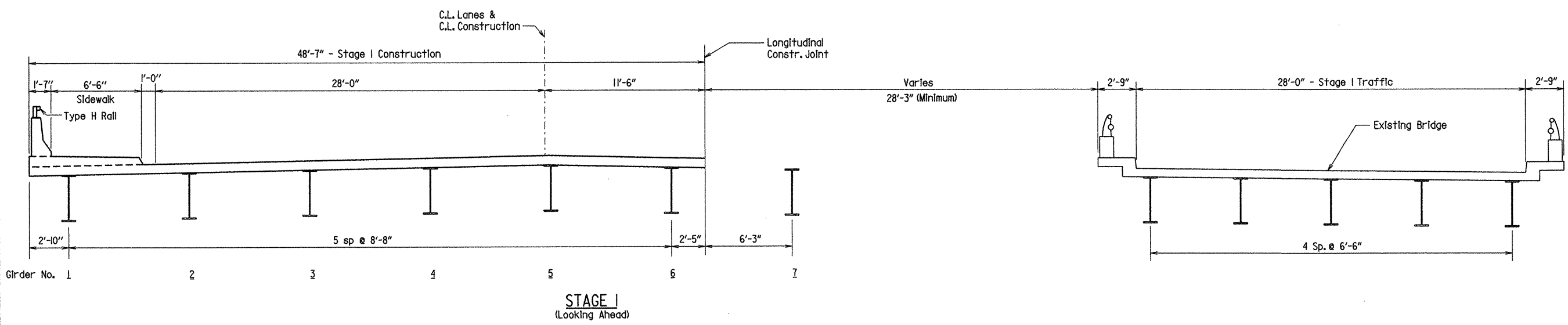
## SHEET 2 OF 2 LAYOUT OF OVERPASS S.H. 45 OVER I-540 HWY. 255 - PHOENIX AVE. (WIDENING)(FT. SMITH)(S) SEBASTIAN COUNTY

ROUTE 45 SEC. 2  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.

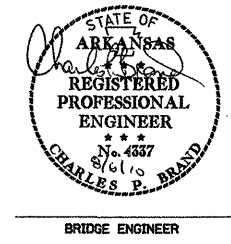
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 CHECKED BY: RBR DATE: 8-6-10 SCALE: 1" = 20'  
 DESIGNED BY: CSL DATE: 7-2-09  
 BRIDGE NO. 07176 DRAWING NO. 50949



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.		040238	50950	
				07176	STAGE CONSTRUCTION			



NOTES:  
 Details which relate to Maintenance of Traffic are shown on bridge plans for information only. See Roadway plans for Maintenance of Traffic.  
 For details of temporary barrier, see Dwg. Nos. TC-4 and TC-5



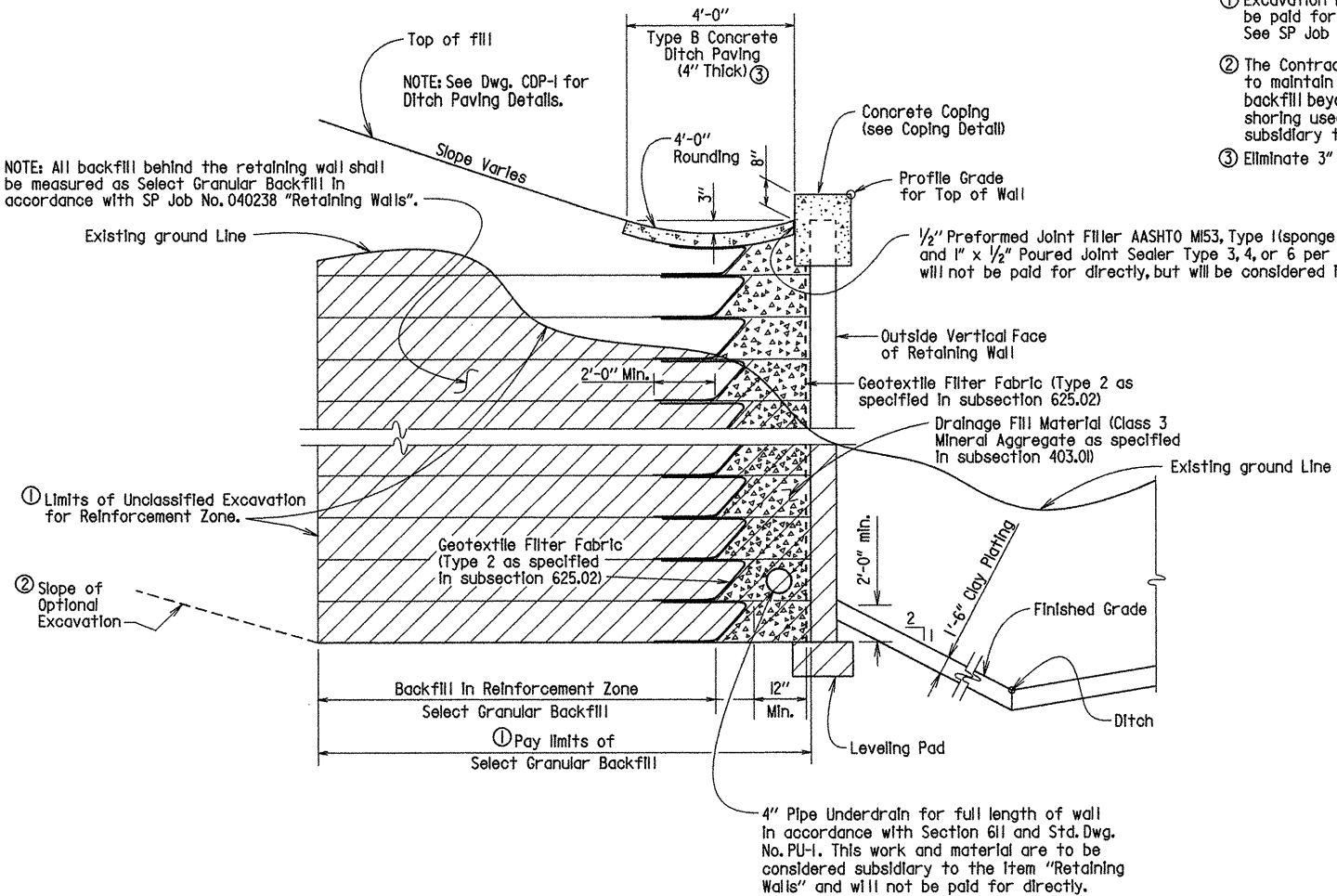
DETAILS OF STAGE CONSTRUCTION

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

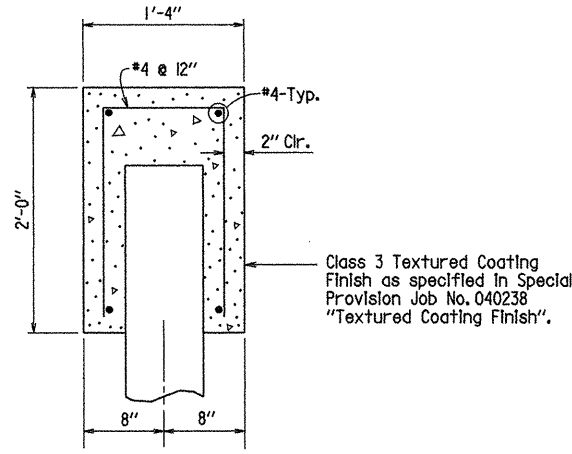
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 DESIGNED BY: PSC      DATE: Jan 2009  
 BRIDGE NO. 07176      DRAWING NO. 50950



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.		040238	152	293
				07176	MSE WALLS		50952	



SECTION A-A  
No Scale



COPING DETAIL  
No Scale

- ① Excavation required for reinforcing zone and Leveling Pad will be paid for under pay Item 210, "Unclassified Excavation", See SP Job No. 040238 "Retaining Walls".
- ② The Contractor has the option of using a cut slope or shoring to maintain stability of cut. Any excavation and subsequent backfill beyond the limits of the Reinforcing Zone and/or any shoring used will not be paid for directly but will be considered subsidiary to various pay items, See SP Job No. 040238 "Retaining Walls".
- ③ Eliminate 3" Weep Holes.

TABLE OF QUANTITIES  
FOR WALLS A & B

Retaining Walls	7,374 Sq. Ft.
Concrete Ditch Paving (Type B)	215 Sq. Yds.
Texture Coating Finish	606 Sq. Yds.
Unclassified Excavation	3,459 Cu. Yds.
Select Granular Backfill	4,909 Cu. Yds.

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

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 No. 040238 "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".

GENERAL NOTES:

Design Specifications: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2009 Interim revisions.

Seismic Performance Zone: I

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 and Proposed Roadway Drainage Structures. See End Bent Details for pile locations and wingwall details. See Roadway Plans for locations and details of Drainage Structures.

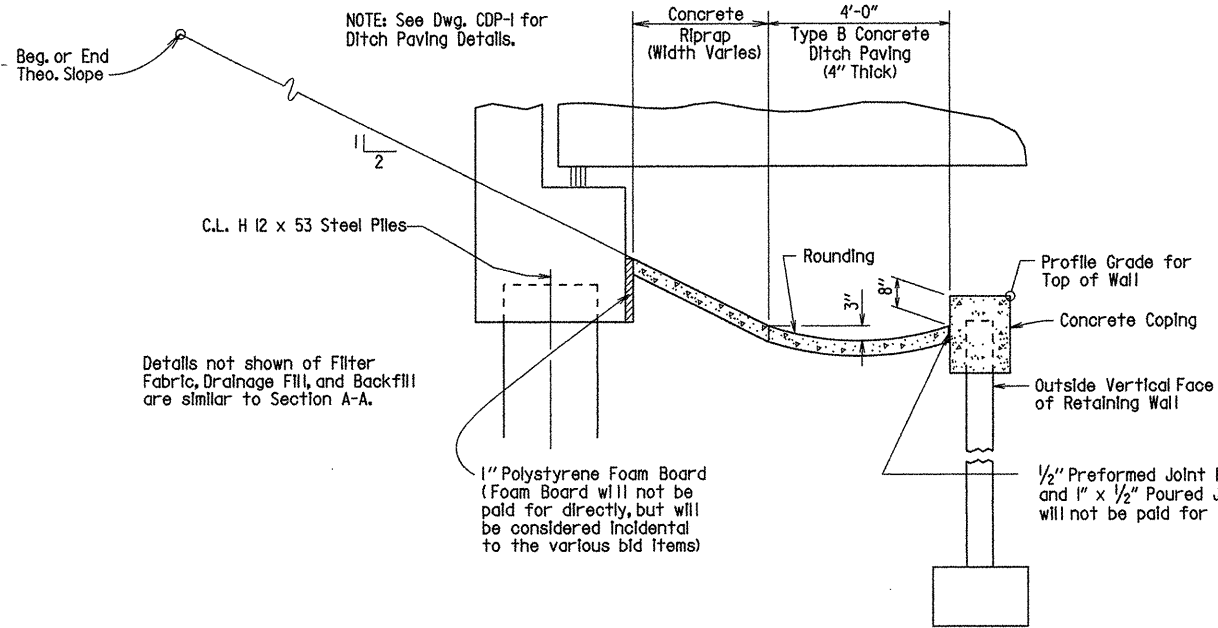
For ditch paving see Standard Dwg. No. CDP-1.

See SP Job No. 040238 "Retaining Walls" for additional information.

State of Arkansas Form Inserts shall be placed on each section of retaining wall in accordance with Dwg. No. 50953.

Boring Logs can be obtained from Programs and Contracts Division upon request.

For Concrete Riprap See Dwg. No. 14995A



SECTION B-B  
No Scale

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

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



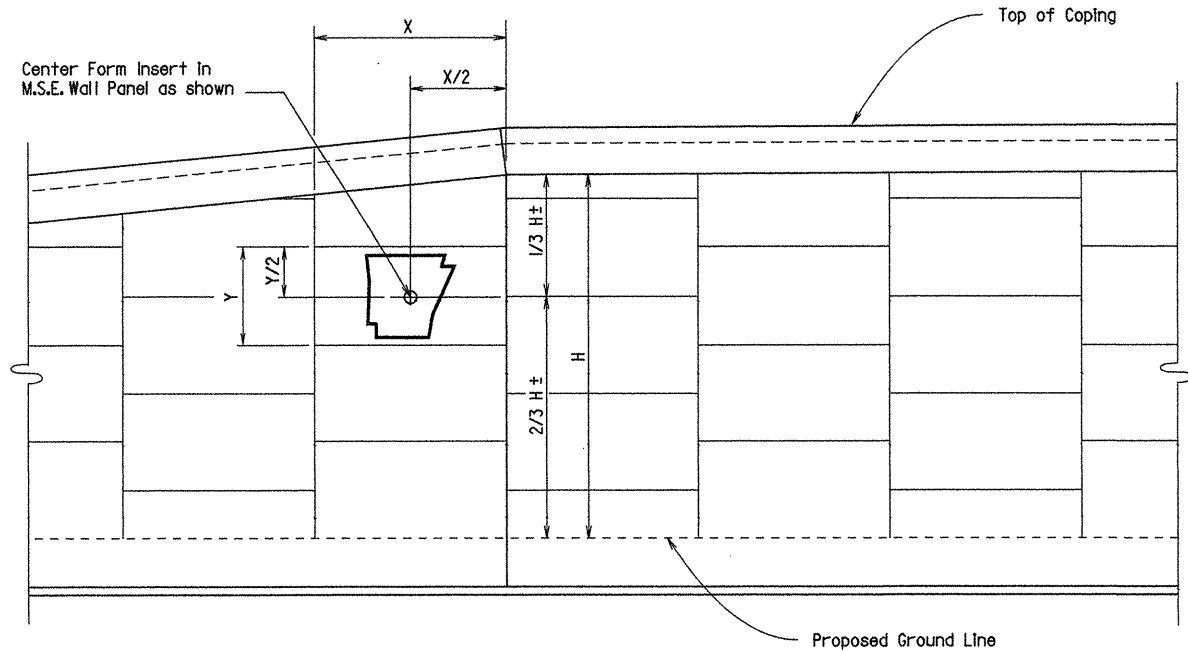
BRIDGE ENGINEER

SHEET 2 OF 2  
DETAILS OF MECHANICALLY STABILIZED EARTH WALLS  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

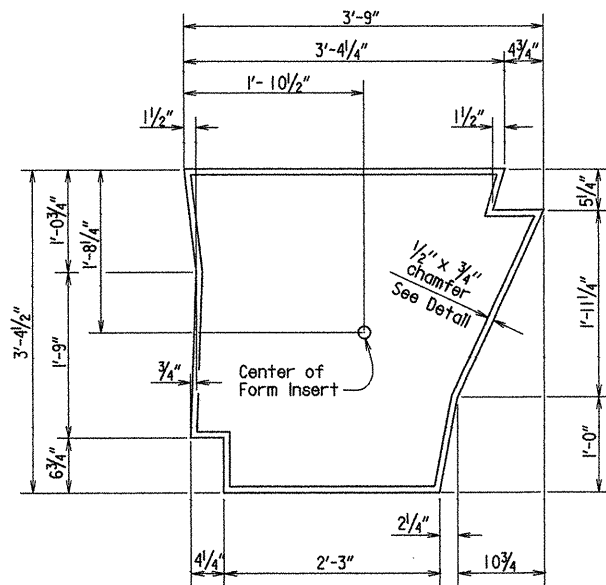
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BRIDGE NO. 07176 DRAWING NO. 50952



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.		040238	193/293	
				07176	FORM INSERT DETAILS		50953	

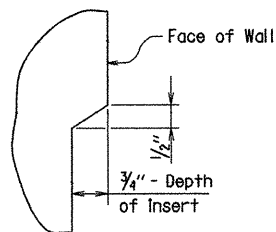


FORM INSERT DETAILS AT M.S.E. WALL "A" or "B"  
NO SCALE



NOTE: Use Form Insert on designated Wall as noted on details of Mechanically Stabilized Earth Walls, Dwg. Nos. 50951 and 50952.

FORM INSERT DETAILS AT M.S.E. WALLS  
Scale: 1" = 1'-0"



CHAMFER DETAILS  
Scale: 6" = 1'-0"

#### GENERAL NOTES

Fabricate form insert as a one piece unit, without the use of splices, joints or glue.

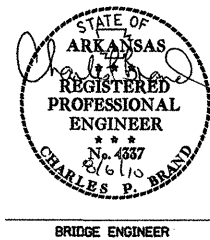
Wash and clean multi-use form Inserts before each use.

All work and materials for form Inserts shall be included in the unit price bld for Class S Concrete-Bridge.

Damaged or worn form Inserts shall be replaced at the contractor's expense.

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

Paint insert with a Class 3 Textured Coating Finish as specified in Special Provision Job No. 040238 "TEXTURED COATING FINISH".

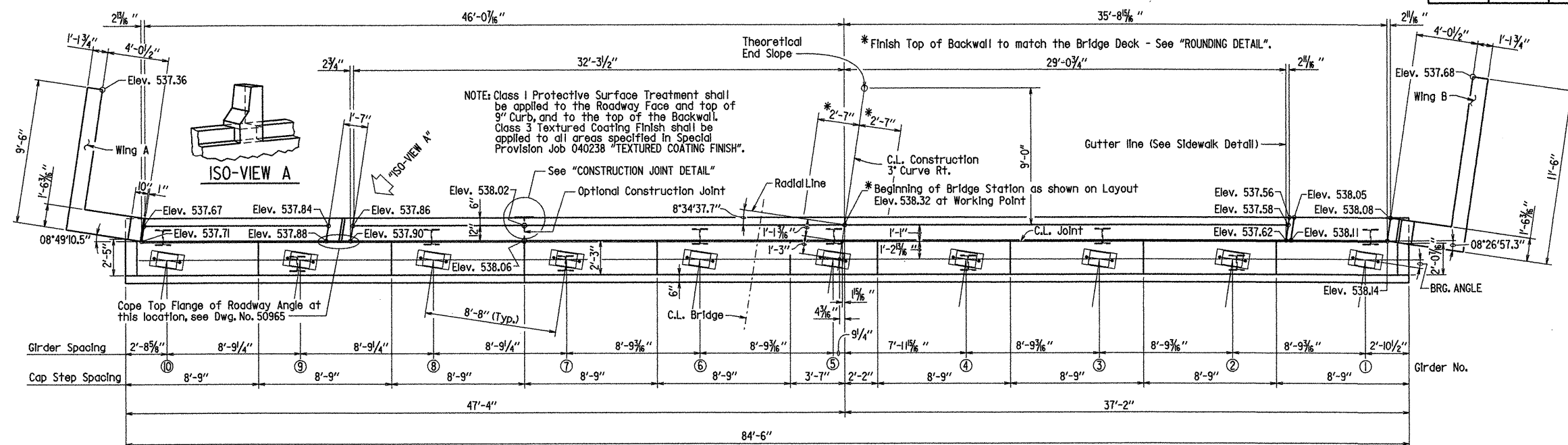


DETAILS OF STANDARD STATE  
OF ARKANSAS FORM INSERT

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

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CHECKED BY: DHP DATE: 8-5-10 SCALE: AS SHOWN  
DESIGNED BY: ESC DATE: Jan 2007  
BRIDGE NO. 07176 DRAWING NO. 50953

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4/14/11				6	ARK.			
				JOB NO.	040238		154	243
				07176	BENT NO. 1		50954	

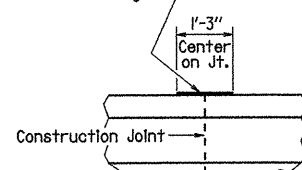


NOTE: For "SECTION A-A" thru "SECTION D-D", "VIEW Z-Z", and details of Wing A and Wing B, see Dwg. No. 50955.

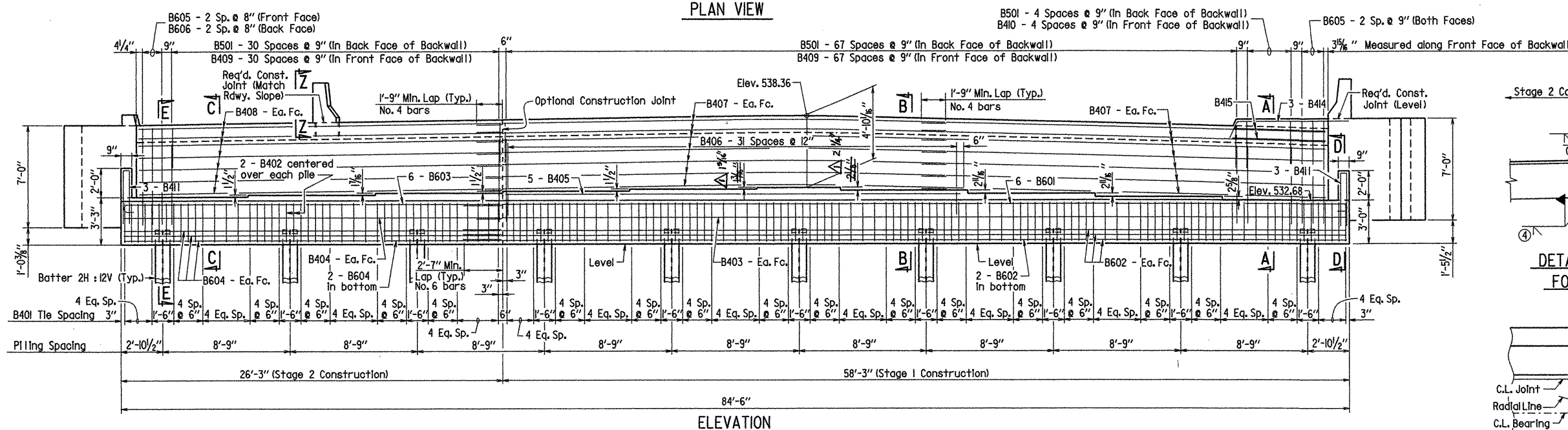
For Section thru Parapet Rail, Median Rail, and Curb, see Dwg. No. 50956.

For Typical Anchor Bolt Layout see Dwg. No. 50956

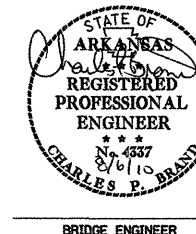
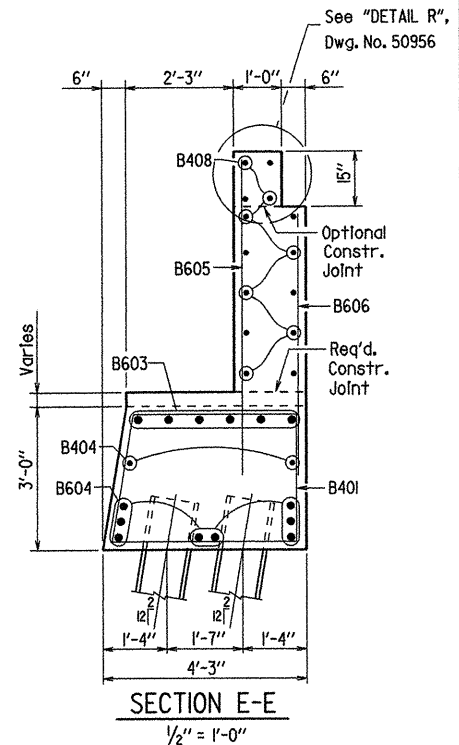
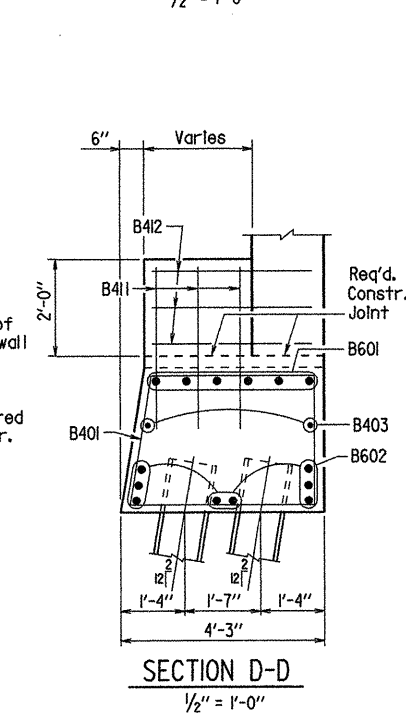
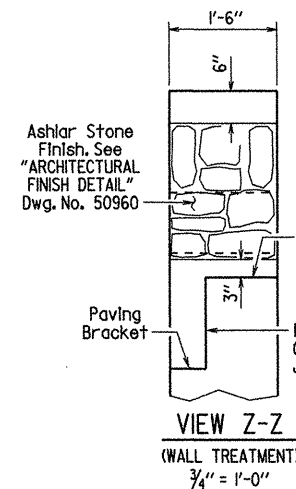
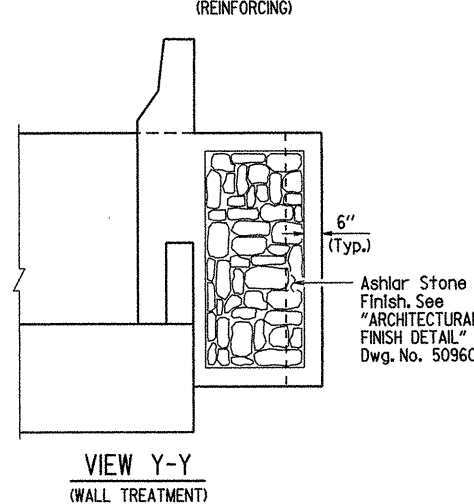
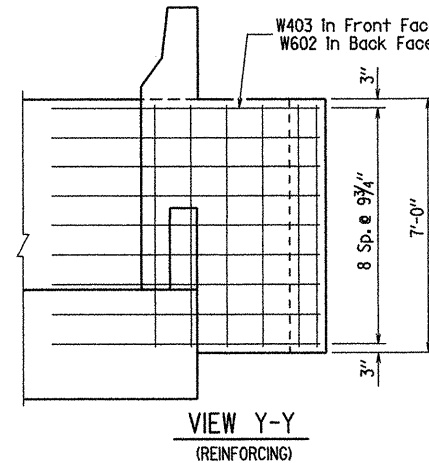
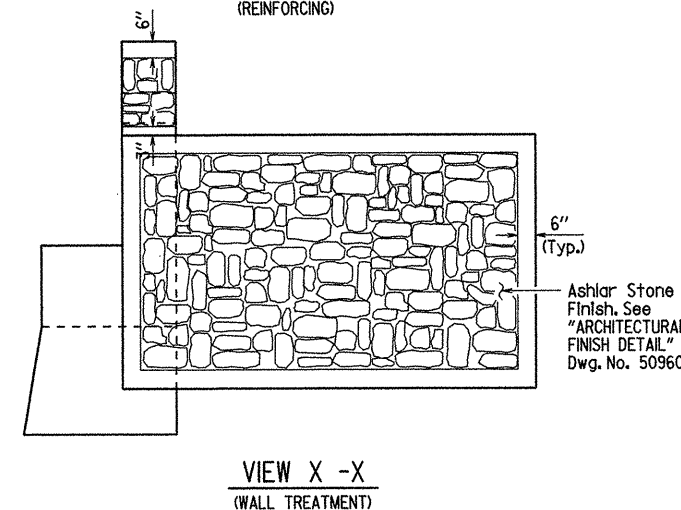
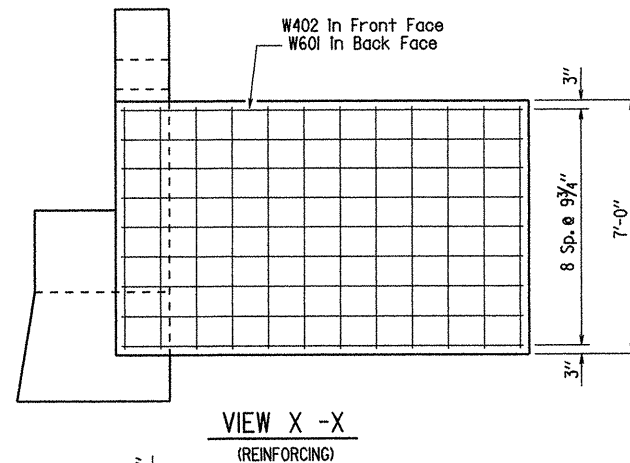
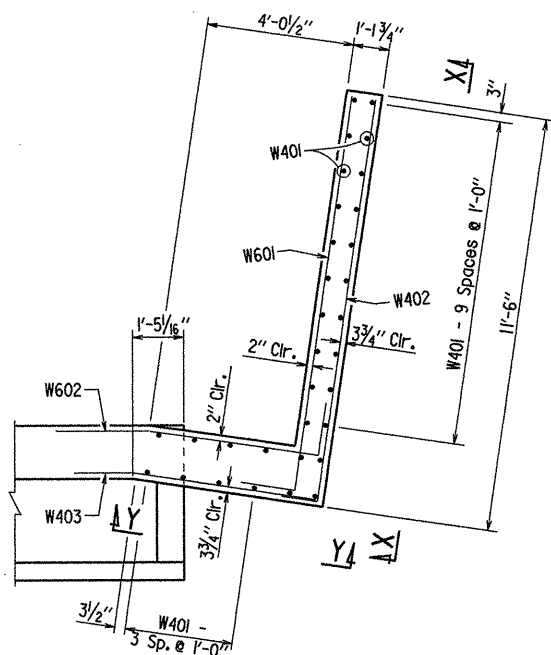
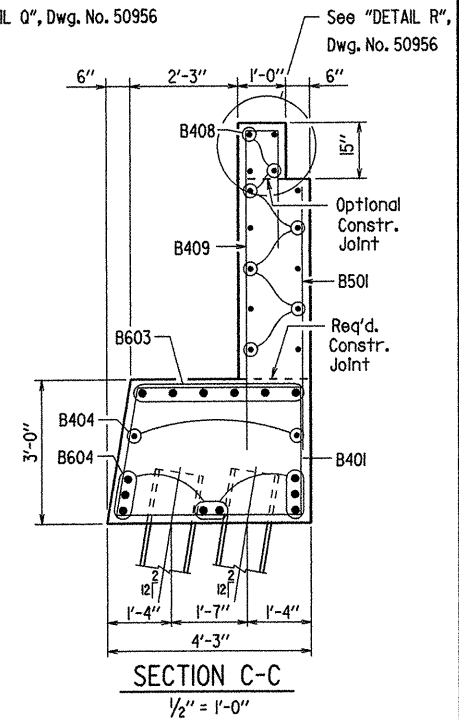
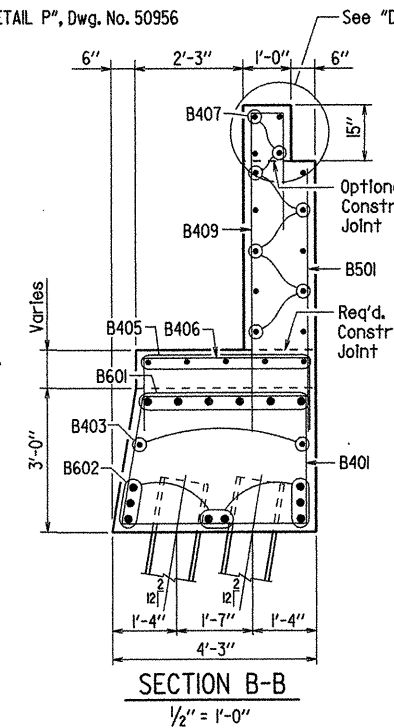
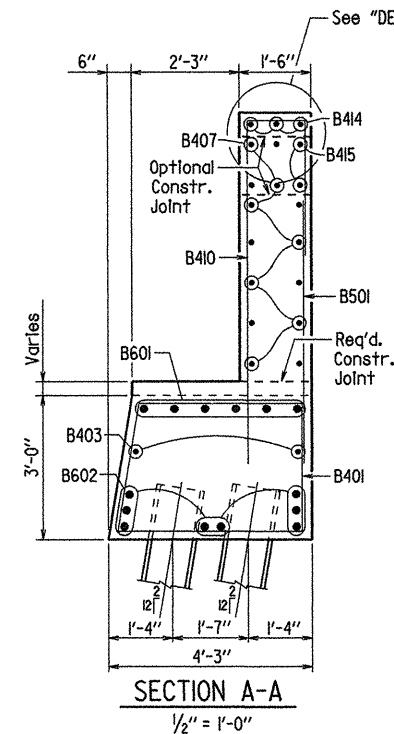
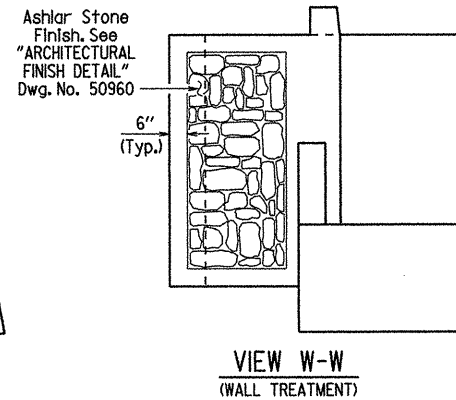
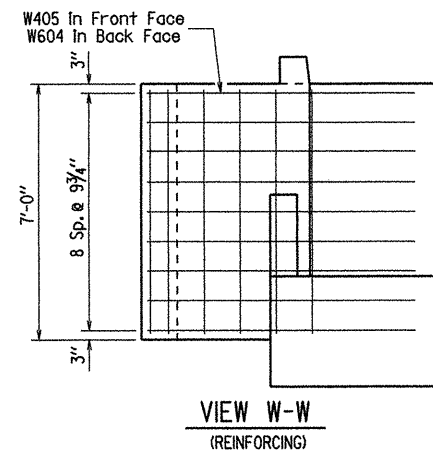
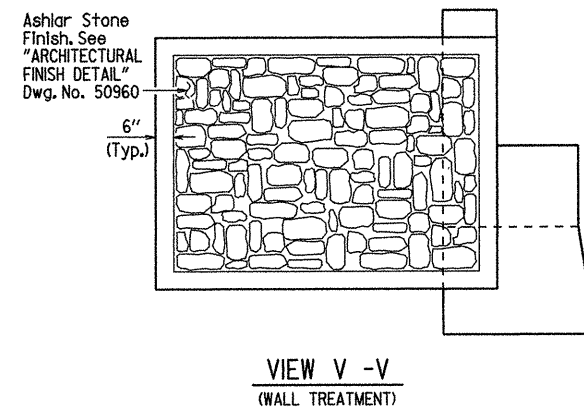
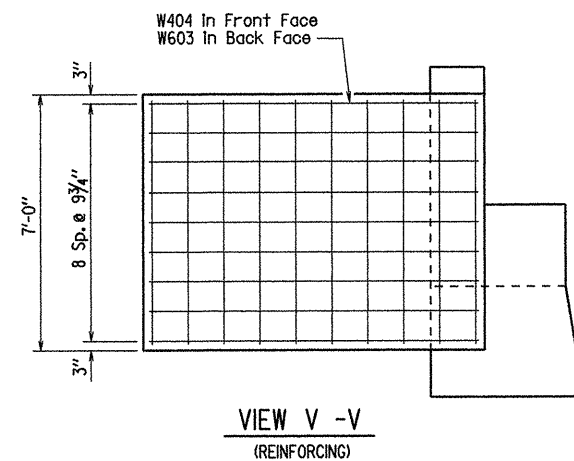
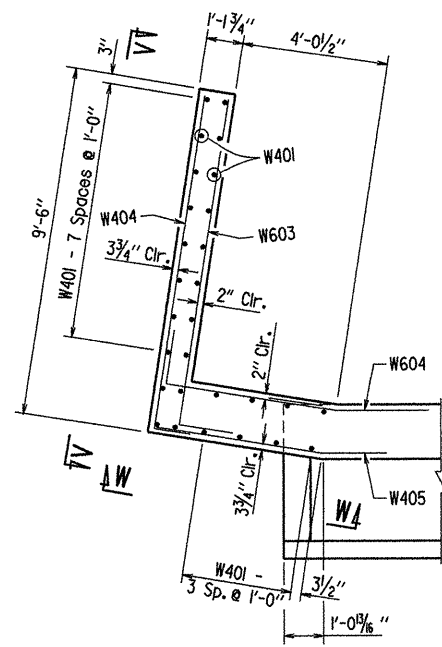
Membrane Waterproofing System Type C or an approved equal to extend full height of backwall and cap. See Section 815. No direct payment shall be made for this work. Payment will be subsidiary to the item "Class 3 Concrete Bridge".



CONSTRUCTION JOINT DETAIL  
1/2" = 1'-0"



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.		040238	155	293
				07176	BENT NO. 1			50955

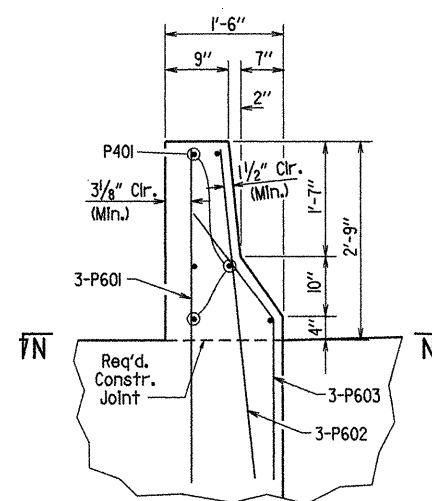
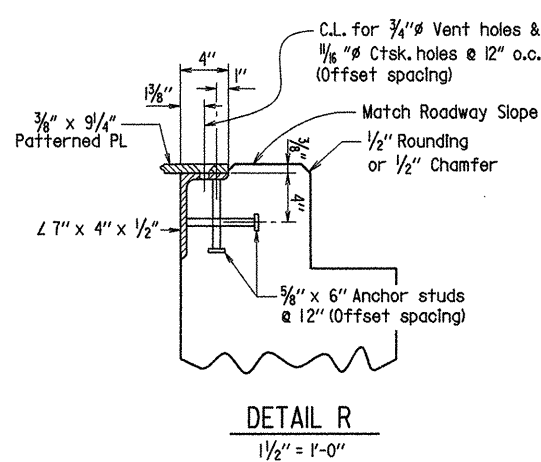
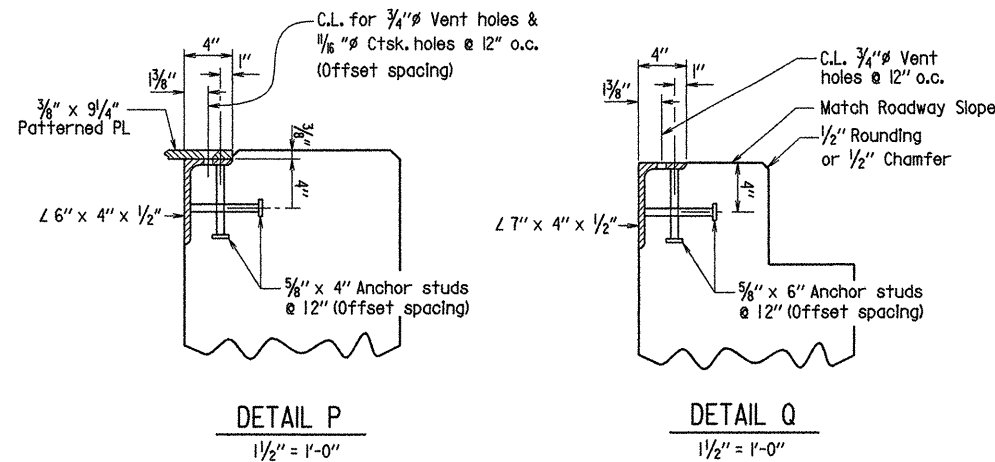


SHEET 2 OF 3  
DETAILS OF BENT NO. 1

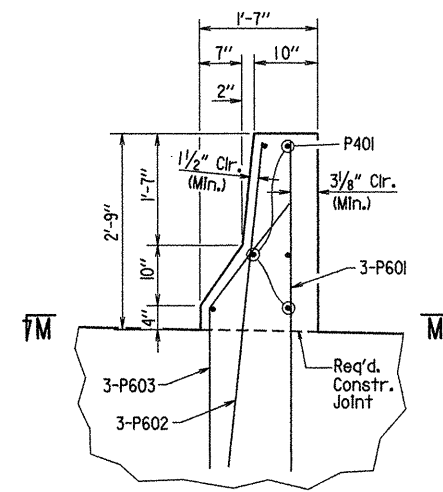
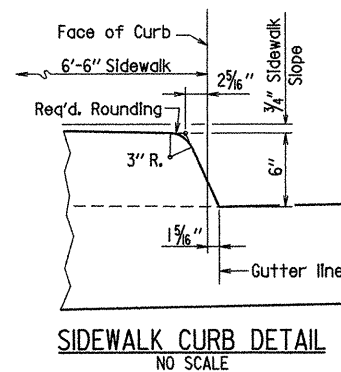
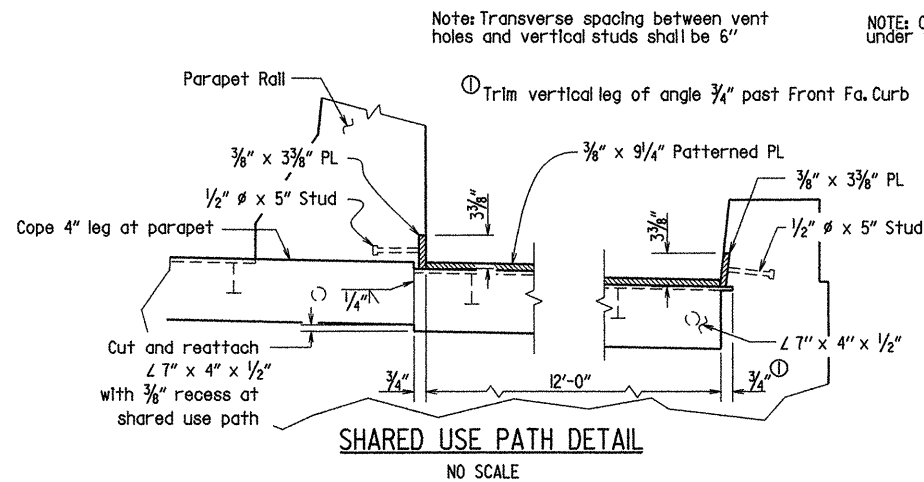
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LITTLE ROCK, ARK.  
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DESIGNED BY: DHP DATE: 10-1-09 OR AS NOTED  
BRIDGE NO. 07176 DRAWING NO. 50955



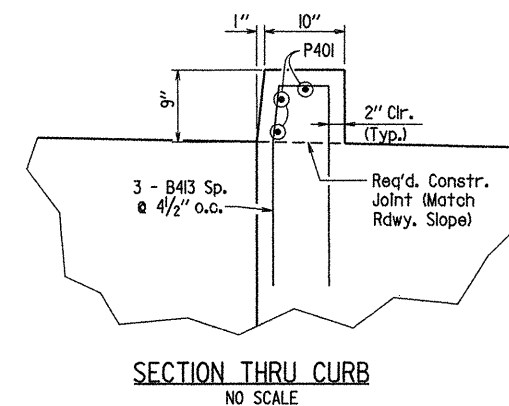
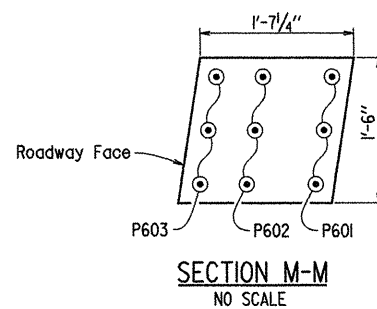
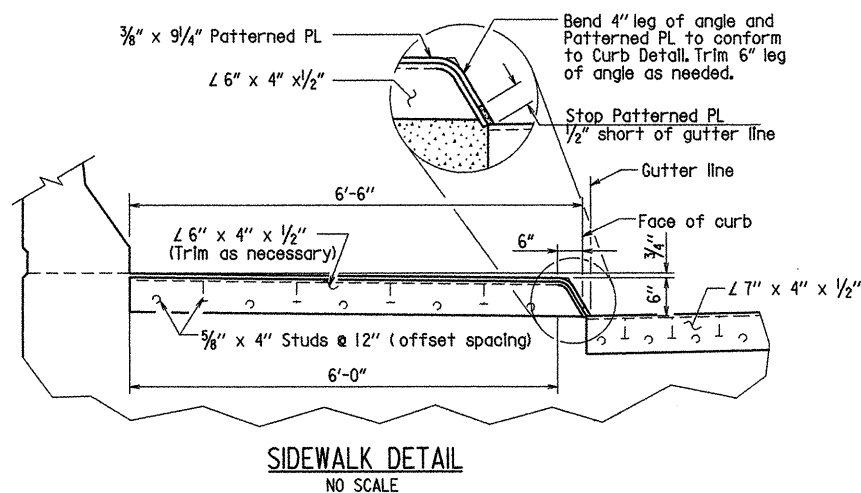
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040238		120293
				① 07176		BENT NO. 1		50956



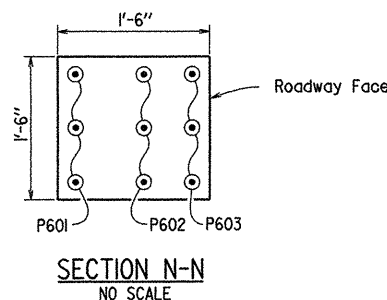
SECTION THRU PARAPET RAIL  
AT SIDEWALK  
NO SCALE



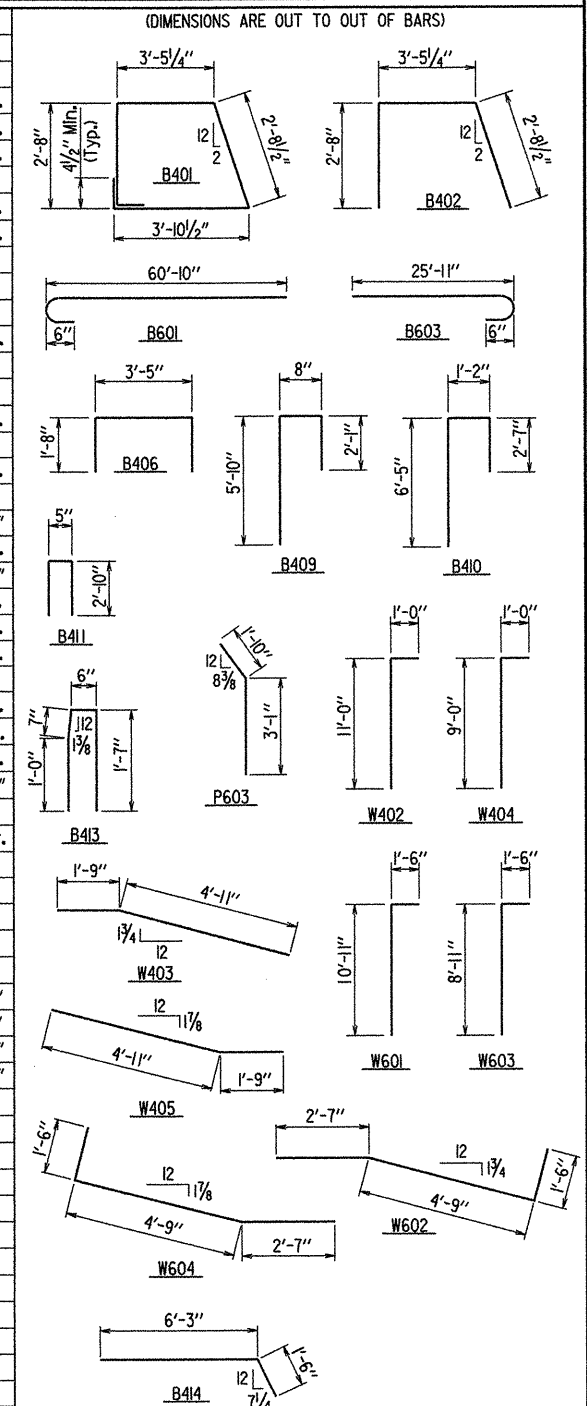
SECTION THRU PARAPET RAIL  
AT SHARED USE PATH  
NO SCALE



SECTION THRU CURB  
NO SCALE



SECTION N-N  
NO SCALE

[illegible]

GENERAL NOTES:

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

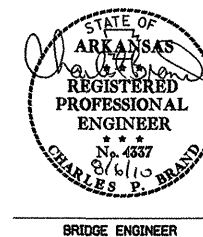
All reinforcing steel shall conform to AASHTO M 31 or M 53, Grade 60 (yield strength = 60,000 psi).

No portion of the backwall shall be poured before girders are in place. The portion of the backwall above the paving bracket shall not be placed until the adjacent deck pour has been made.

Structural steel in end bents shall be AASHTO M 270, Grade 50 and shall be paid for as "STRUCTURAL STEEL IN PLATE GIRDER SPANS (M 270, GR. 50)". Structural steel shall be cleaned and painted as specified in Section 807.

Top reinforcing bars in cap and curb shall be properly placed to avoid interference with anchor bolts.

For additional information, See Layout.



SHEET 3 OF 3  
DETAILS OF BENT NO. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

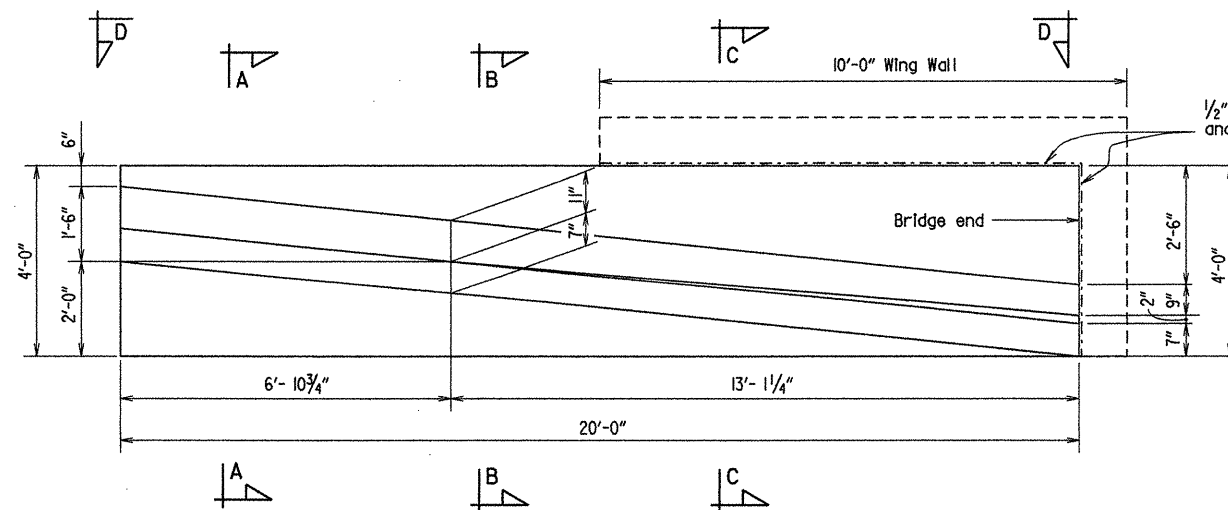
DRAWN BY: MJT      DATE: 09-30-09      FILENAME: B040238\_BI3.dgn

CHECKED BY: DHP DATE: 10-30-09 SCALE: AS NOTED

DESIGNED BY: DHP DATE: 10-1-09

BRIDGE NO. 07176

DRAWING NO. 50956



PLAN OF TRANSITIONAL APPROACH RAIL  
Scale: 1/2" = 1'-0"

GENERAL NOTES:

Transitional Approach Railing shall be placed at ends of parapet rails at locations shown on the layout.

All Concrete shall be Class "S" or Class "S"(AE) and be poured in the dry. All exposed corners are to be chamfered 3/4" unless otherwise noted.

All Reinforcing Steel shall conform to AASHTO M31 or M53, Grade 60.

Reinforcing steel designated as galvanized shall be galvanized in accordance with ASTM A767.

Class 3 Textured Coating Finish shall be applied to meet the requirements specified in SP Job No. 040238 "Textured Coating Finish".

Architectural Finish shall meet the requirements specified in SP Job No. 040238 "Architectural Finish".

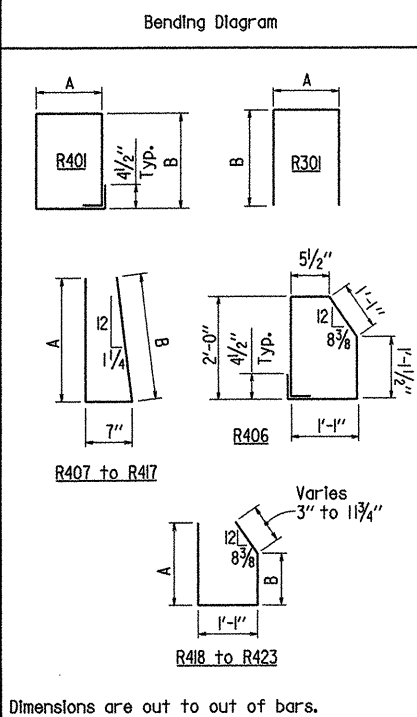
Payment for Class 3 Textured Coating and Architectural Finish shall be considered subsidiary to Item "Transitional Approach Railing".

Transitional Approach Railing shall be paid for at the contract unit price bid per each for "Transitional Approach Railing". See SP Job No. 040238 "Transitional Approach Railing".

BAR LIST - ONE TRANSITIONAL RAIL

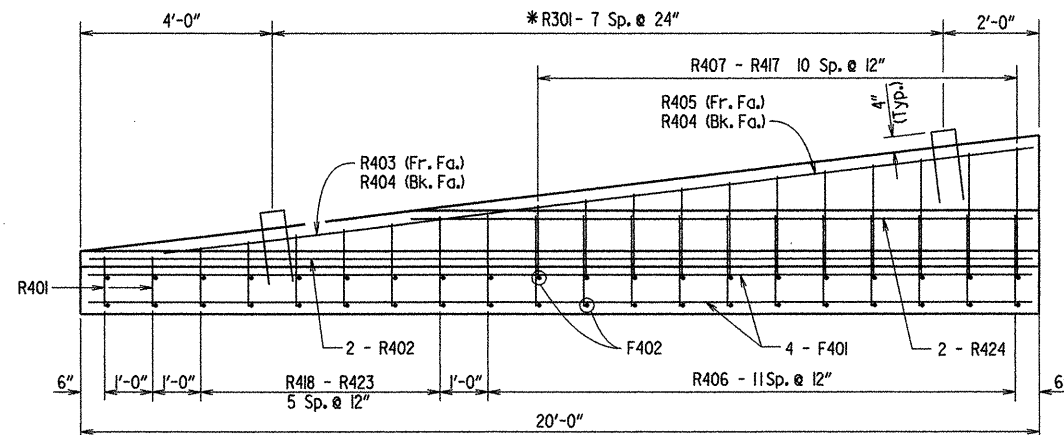
Mark	No. Req'd.	Length	A	B	Pin Dia.
F401	8	19'-8"			Str.
F402	40	3'-8"			Str.
*R301	8	3'-5"	6"	1'-6"	1 1/2"
R401	2	4'-10"	1'-1"	1'-1"	2"
R402	2	19'-8"			Str.
R403	1	5'-1"			Str.
R404	1	18'-3"			Str.
R405	1	12'-10"			Str.
R406	12	6'-3"			2"
R407 to R417	1 ea.	2'-11" to 5'-4"	1'-3" to 2'-5 1/2"	1'-3" to 2'-5 1/2"	2"
R418 to R423	1 ea.	3'-8" to 5'-0"	1'-4" to 1'-11 1/4"	1'-1 1/2"	2"
R424	2	10'-9"			Str.

\*R301 reinforcing steel shall be galvanized.

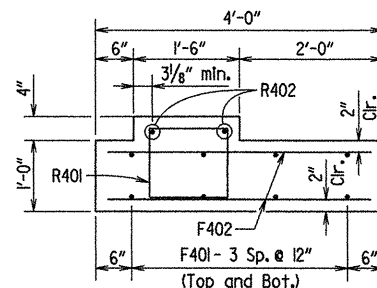


FOR INFORMATION ONLY  
SCHEDULE OF QUANTITIES PER RAIL UNIT

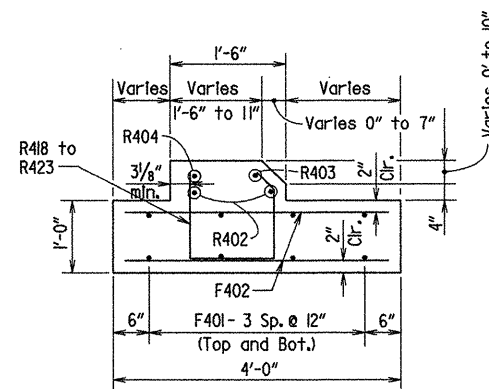
CLASS "S" CONCRETE	REINFORCING STEEL (GRADE 60)	CLASS 3 TEXTURED FINISH	ARCHITECTURAL FINISH
4.3 Cu. Yds.	381 Lbs.	15.3 Sq. Yds.	15 Sq. Ft.



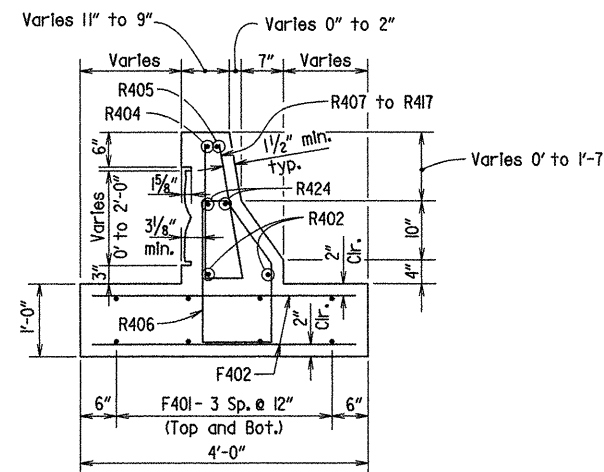
ELEVATION OF TRANSITIONAL APPROACH RAIL  
Scale: 1/2" = 1'-0"



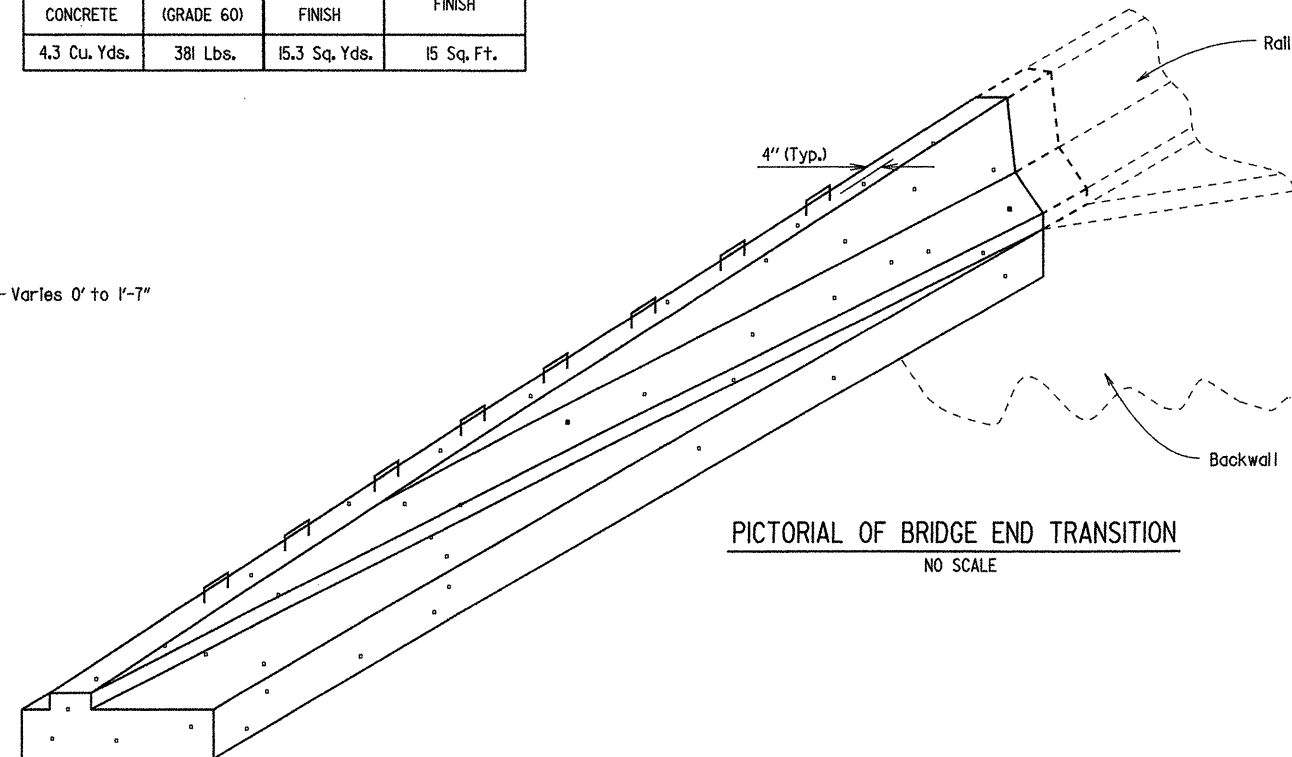
SECTION A-A  
Scale: 3/4" = 1'-0"



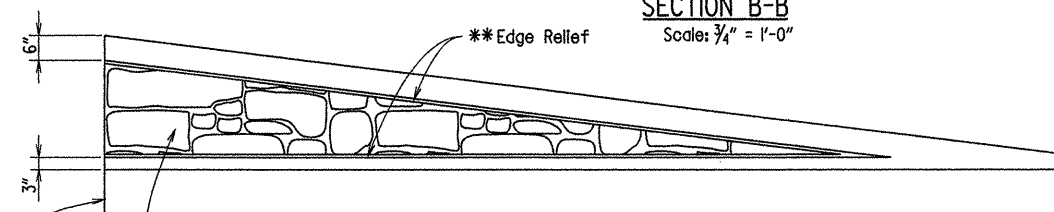
SECTION B-B  
Scale: 3/4" = 1'-0"



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



PICTORIAL OF BRIDGE END TRANSITION  
NO SCALE

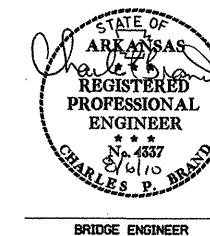


VIEW D-D  
Scale: 1/2" = 1'-0"

1/2" Preformed Joint Filler AASHTO M 153 Type I (sponge rubber) per subsection 501.02(h)(1), and 2" x 1/2" Poured Joint Sealer Type 3, 4, or 6 per subsection 501.02(h)(2).

Ashlar Stone Finish, See "ARCHITECTURAL FINISH DETAIL" Dwg. No. 50960

\*\* NOTE: Provide edge relief around perimeter of texture. Edge relief dimensions shall match manufacturer edge distance.



DETAILS OF TRANSITIONAL APPROACH RAILING

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

DRAWN BY: MRE DATE: 10/22/09 FILENAME: B040238\_tr1.dgn  
CHECKED BY: DHP DATE: 8-5-10 SCALE: as shown  
DESIGNED BY: STD DATE: BRIDGE NO. 07176 DRAWING NO. 50957

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.		040238	158	243
				07176		TRANSITIONAL APPROACH RAIL		50957A

# BAR LIST - PER TRANSITIONAL APPR. RAIL

Mark	No. Req'd.	Length	A	B	Pin Dia.	Bending Diagram
F401	6	2'-8"			Str.	
F402	42	1'-8"			Str.	
F403	2	1'-8"			Str.	
*R301	8	2'-7"	6"	1'-1"	1 1/2"	
R401	2	2'-8"			Str.	
R402	2	15'-2"			Str.	
R403	2	8'-6"			Str.	
R404	2	2'-10"	1'-10"	20'-0"	3"	
R405	4	1'-8"			Str.	
R406 - R407	2 ea.	11 1/2" to 10"			Str.	
R601	2	10'-0"	4 1/2"	4'-11"	3"	
R602 - R614	1 ea.	7'-2" to 4'-3"	4 1/2"	3'-6" to 2'-0 1/2"	3"	
R615 - R619	1 ea.	3'-7" to 2'-7"	4 1/2"	1'-8 1/2" to 1'-2 1/2"	3"	<p>Dimensions are out to out of bars.</p>

\*R301 reinforcing steel shall be galvanized.

Note:  
The surfaces of the 3/8" plates which will not be in contact with concrete shall be painted with aluminum epoxy paint in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to the item "Transitional Approach Railing".

Studs shall be 3" long, granular flux filled, solid fluxed or equal, and automatically end welded to the plate. Studs and plates shall meet the requirements of Section 807. No direct payment shall be made for these items but full compensation will be considered in the contract unit prices bid for various items of the Contract.

## GENERAL NOTES:

For Transitional Approach Railing (Shared Use Path) location see Layout (Dwg. No. 50948)  
All Concrete shall be either Class "S" or Class "S(AE)" and be poured in the dry.  
All exposed corners are to be chamfered 3/4" unless otherwise noted.  
Reinforcing Steel shall conform to AASHTO M31 or M53, Grade 60. Reinforcing Steel shall be galvanized in accordance with ASTM A767.  
Class 3 Textured Coating Finish shall meet the requirements specified in Special Provision Job No. 040238 "Textured Coating Finish".  
Architectural Finish shall meet the requirements specified in SP Job No. 040238 "Architectural Finish".  
Payment for Class 3 Textured Coating and Architectural Finish shall be considered subsidiary to the item "Transitional Approach Railing".  
Transitional Approach Railing (Shared Use Path) shall be paid for at the contract unit price bid per each for "Transitional Approach Railing". See SP Job No. 040238 "Transitional Approach Railing".

## DETAILS OF TRANSITIONAL APPROACH RAILING (SHARED USE PATH)

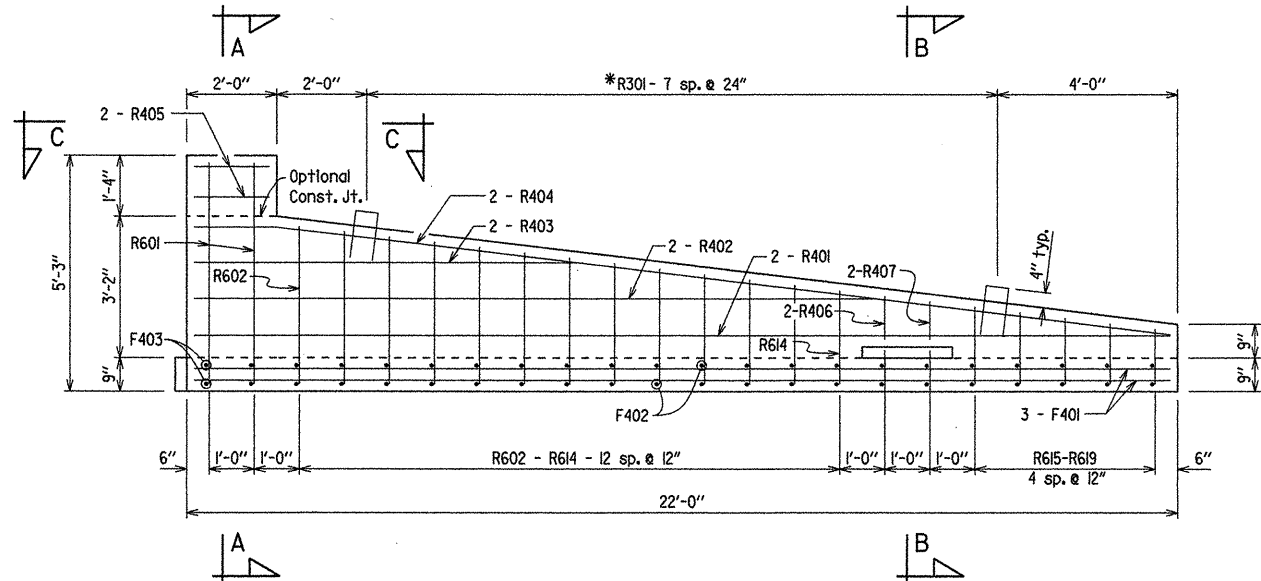
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: RBR DATE: 11/10/09 FILENAME: b040238\_ag.dgn  
CHECKED BY: D.H.P. DATE: 8-5-10 SCALE: 1/2" = 1'-0" or as shown  
DESIGNED BY: STD DATE: BRIDGE NO. 07176 DRAWING NO. 50957A



BRIDGE ENGINEER

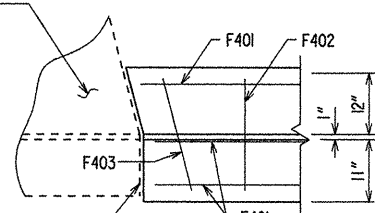
Note: End Rail shall be vertical



## ELEVATION - TRANSITIONAL APPROACH RAIL (SHARED USE PATH)

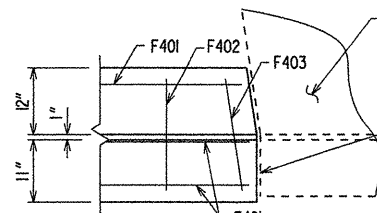
Scale: 1/2" = 1'-0"

See "Details of Type Special Approach Gutters" (Dwg. No. 50976)



## VIEW C-C

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



## VIEW C-C ALTERNATE AT END BENT NO. 1

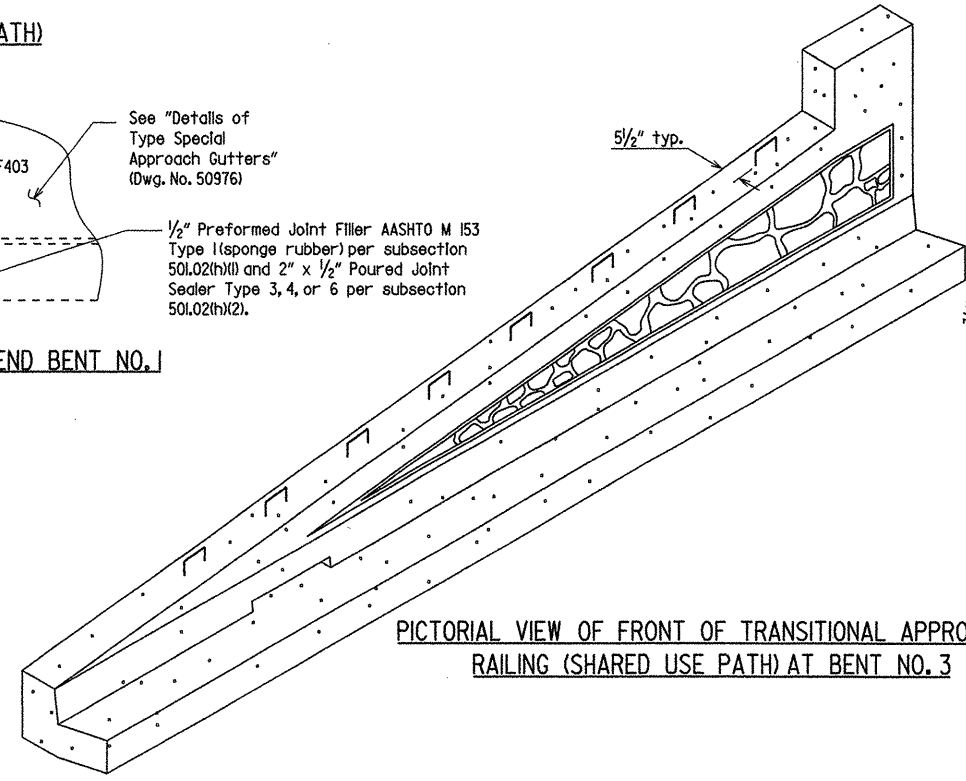
Scale: 3/4" = 1'-0"

See "Details of Type Special Approach Gutters" (Dwg. No. 50976)

1/2" Preformed Joint Filler AASHTO M 153 Type I (sponge rubber) per subsection 501.02(h)(1) and 2" x 1/2" Poured Joint Sealer Type 3, 4, or 6 per subsection 501.02(h)(2).

1/2" Preformed Joint Filler AASHTO M 153 Type I (sponge rubber) per subsection 501.02(h)(1) and 2" x 1/2" Poured Joint Sealer Type 3, 4, or 6 per subsection 501.02(h)(2).

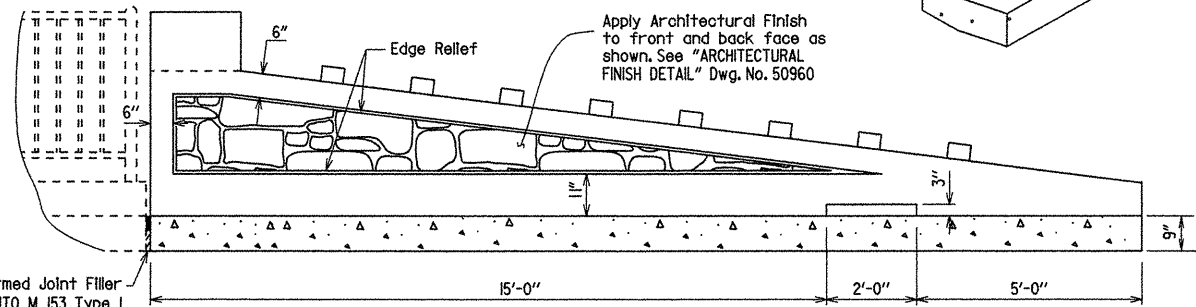
NOTE: Details, dimensions, quantities, and reinforcing shown are for Bent No. 3. Bent No. 1 is similar except as noted.



## PICTORIAL VIEW OF FRONT OF TRANSITIONAL APPROACH RAILING (SHARED USE PATH) AT BENT NO. 3

## FOR INFORMATION ONLY SCHEDULE OF QUANTITIES FOR TRANSITIONAL APPROACH RAILING (SHARED USE PATH)

Rail Length	Concrete (Cu. Yds.)	Reinforcing Steel (Lbs.)	Textured Coating (Sq. Yds.)	Architectural Finish (Sq. Ft.)	Structural Steel (M270 - GR. 36) (Lbs.)
22'-0"	2.9	405	13.6	29.8	13.2



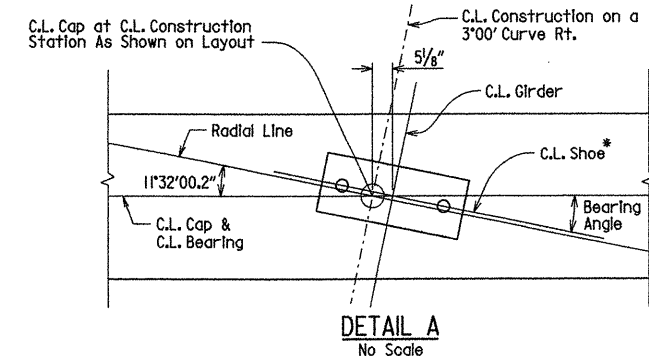
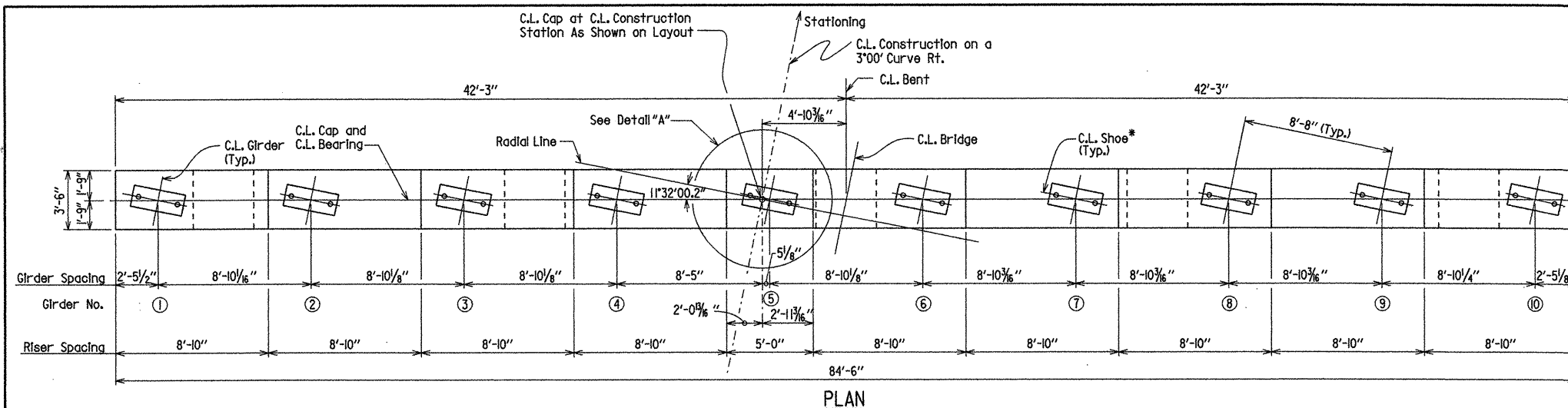
## BACK VIEW AT BENT NO. 3

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

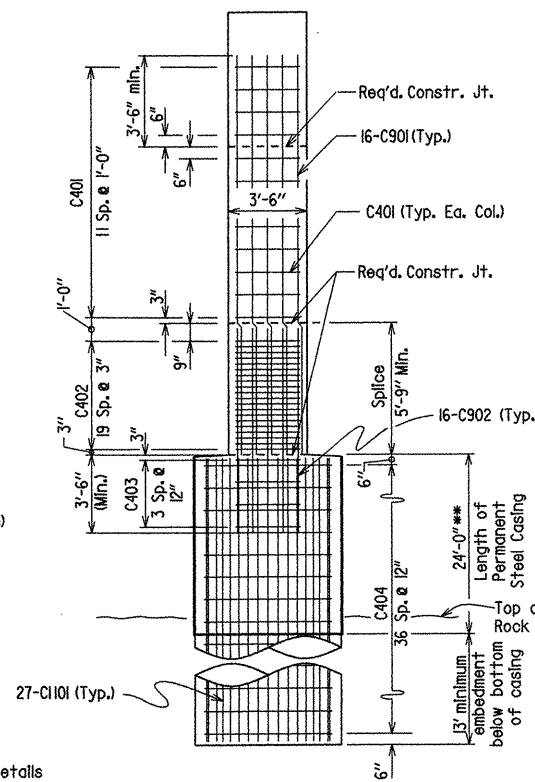
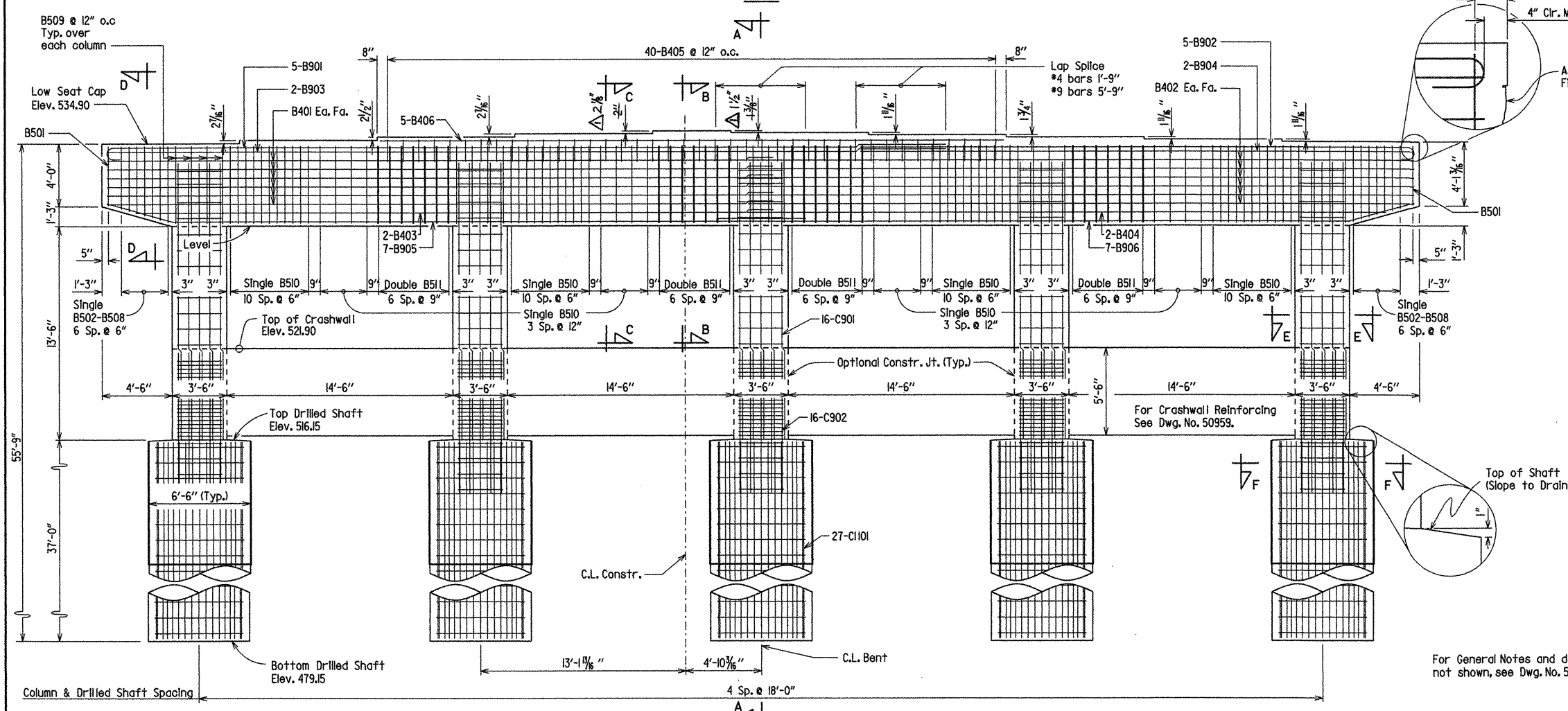
1/2" Preformed Joint Filler AASHTO M 153 Type I (sponge rubber) per subsection 501.02(h)(1) and 2" x 1/2" Poured Joint Sealer Type 3, 4, or 6 per subsection 501.02(h)(2).

Apply Architectural Finish to front and back face as shown. See "ARCHITECTURAL FINISH DETAIL" Dwg. No. 50960

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4/14/11				6	ARK.			
				JOB NO.		040238	159	293
				07176		BENT NO. 2		50958



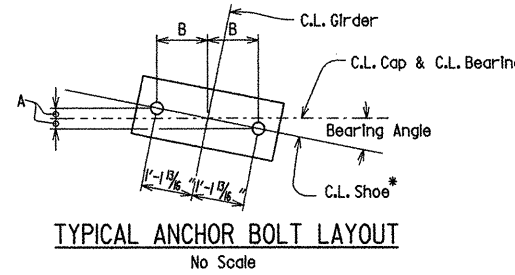
NOTE: The column reinforcing cage consisting of bars C403 and C902 may be placed before or after concrete placement in the shaft is complete. Vibration of concrete in the top 10 feet of the shaft will be needed to ensure the consolidation of the concrete around the reinforcing steel and to insert the column reinforcing cage. The contractor will be responsible for obtaining satisfactory results.



For General Notes and details not shown, see Dwg. No. 50959

# SECTION A-A

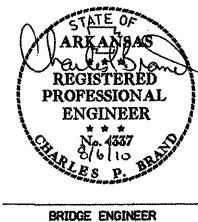
△ REVISED CAP STEP DIMENSION, rbr 04/14/2011



## TABLE OF VARIABLES FOR ANCHOR BOLT LAYOUT

VARIABLE	GIRDER NO.									
	1	2	3	4	5	6	7	8	9	10
A	2 1/8"	2 3/4"	2 3/4"	2 3/4"	2 3/4"	2 3/4"	2 3/4"	2 3/4"	2 3/4"	2 3/4"
B	1'-1 1/8"	1'-1 1/8"	1'-1 1/8"	1'-1 1/8"	1'-1 1/8"	1'-1 1/2"	1'-1 1/2"	1'-1 1/2"	1'-1 1/2"	1'-1 1/2"
BRG. ANGLE	11°19'39.0"	11°22'44.0"	11°25'50.7"	11°28'59.2"	11°32'09.4"	11°35'21.4"	11°38'35.1"	11°41'50.7"	11°45'08.2"	11°48'27.5"

\*Radial Line  
 \*\* Lengths of Permanent Casing shown are for estimating quantities only. Actual lengths are to be determined in the field. See Special Provision Job No. 040238 "Drilled Shaft Foundations."



SHEET 1 OF 3  
 DETAILS OF BENT NO. 2  
 ROUTE SEC.  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.  
 DRAWN BY: RBR DATE: 11/12/09  
 CHECKED BY: DHP DATE: 8-5-10  
 DESIGNED BY: RBR DATE: 8-6-10  
 BRIDGE NO. 07176 DRAWING NO. 50958

## GENERAL NOTES

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

Reinforcing steel shall conform to AASHTO M31 or M53, Grade 60 (yield strength = 60,000 p.s.i.)  
If anchor bolts are drilled into cap, top main reinforcing bars shall be properly placed to avoid damage.

For Details of Elastomeric Bearings see Dwg. No. 50973. For additional information see Layout (Dwg. No. 50948 & 50949).

Drilled Shafts shall conform to Special Provision Job No. 040238 "Drilled Shaft Foundations" and shall be paid for at the unit price bid for Drilled Shaft (78" Dia.).

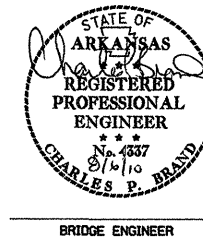
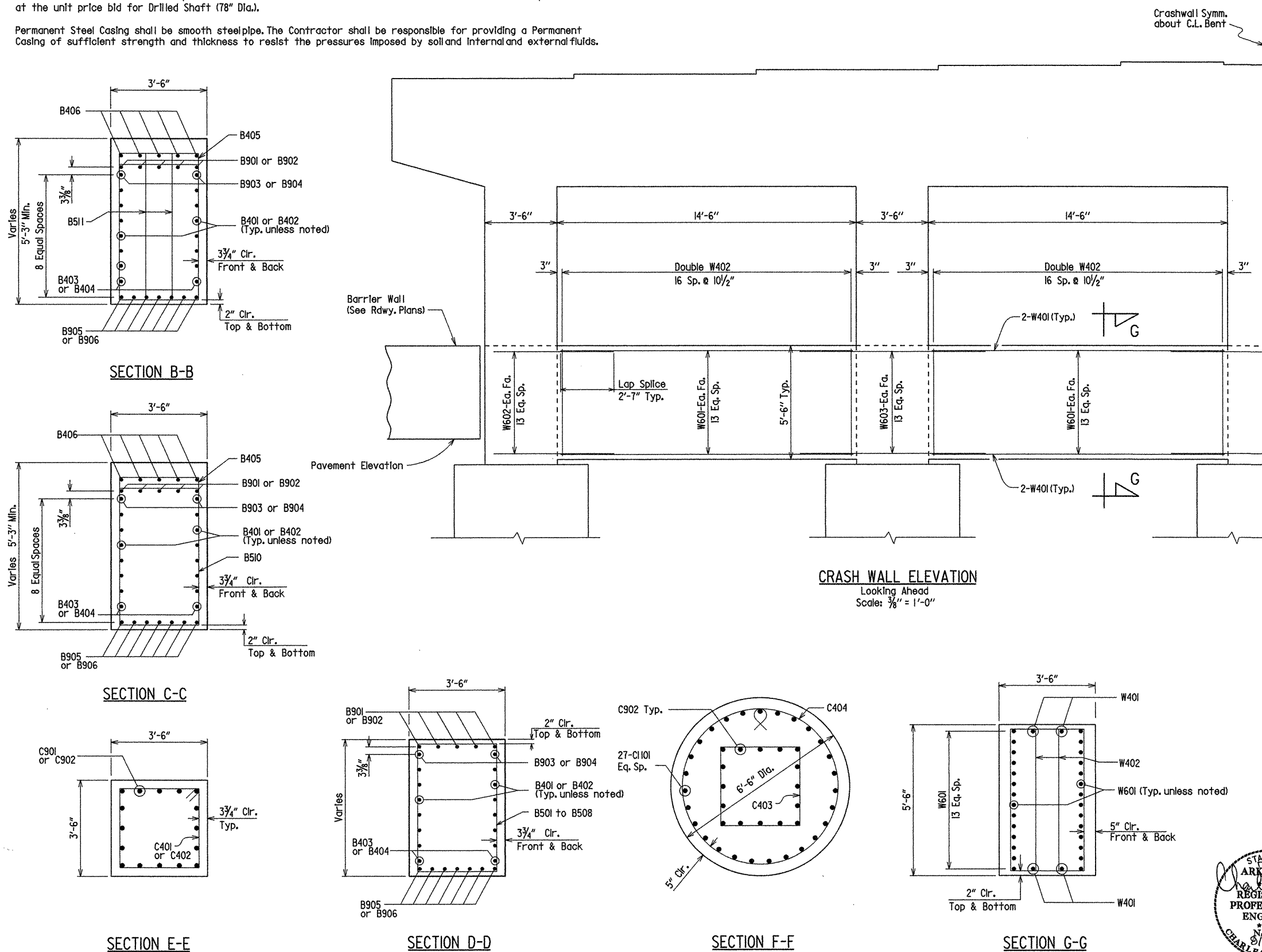
Permanent Steel Casing shall be smooth steel pipe. The Contractor shall be responsible for providing a Permanent Casing of sufficient strength and thickness to resist the pressures imposed by soil and internal and external fluids.

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.		040238	160	247
				07176		BENT NO. 2		50959

## BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
B401	12	42'-10"	Str.	Dimensions are out to out of bars.
B402	12	42'-10"	Str.	
B403	2	41'-0"	Str.	
B404	2	41'-0"	Str.	
B405	40	5'-7"	2"	
B406	5	40'-0"	Str.	
B501	2	13'-9 $\frac{3}{4}$ "	2 $\frac{1}{2}$ "	
B502 - B508	2 each	Var. 14'-3 $\frac{1}{4}$ " to 15'-11 $\frac{1}{4}$ "	2 $\frac{1}{2}$ "	
B509	20	12'-6"	2 $\frac{1}{2}$ "	
B510	60	16'-1"	2 $\frac{1}{2}$ "	
B511	56	14'-2"	2 $\frac{1}{2}$ "	
B901	5	55'-1"	9"	
B902	5	37'-1"	9"	
B903	2	53'-10"	Str.	
B904	2	35'-10"	Str.	
B905	7	45'-0"	9"	
B906	7	45'-0"	9"	
C401	60	12'-0"	3"	
C402	100	12'-0"	3"	
C403	20	12'-0"	3"	
*C404	185	18'-11"	3"	
C901	80	17'-6"	Str.	
C902	80	9'-6"	Str.	
*C1101	135	36'-6"	Str.	
W401	16	14'-2"	Str.	
W402	136	14'-2"	2"	
W601	112	14'-2"	Str.	
W602	56	6'-0"	Str.	
W603	84	9'-0"	Str.	

\* Non-pay item - subsidiary to pay item "Drilled Shaft (78" Dia.)."

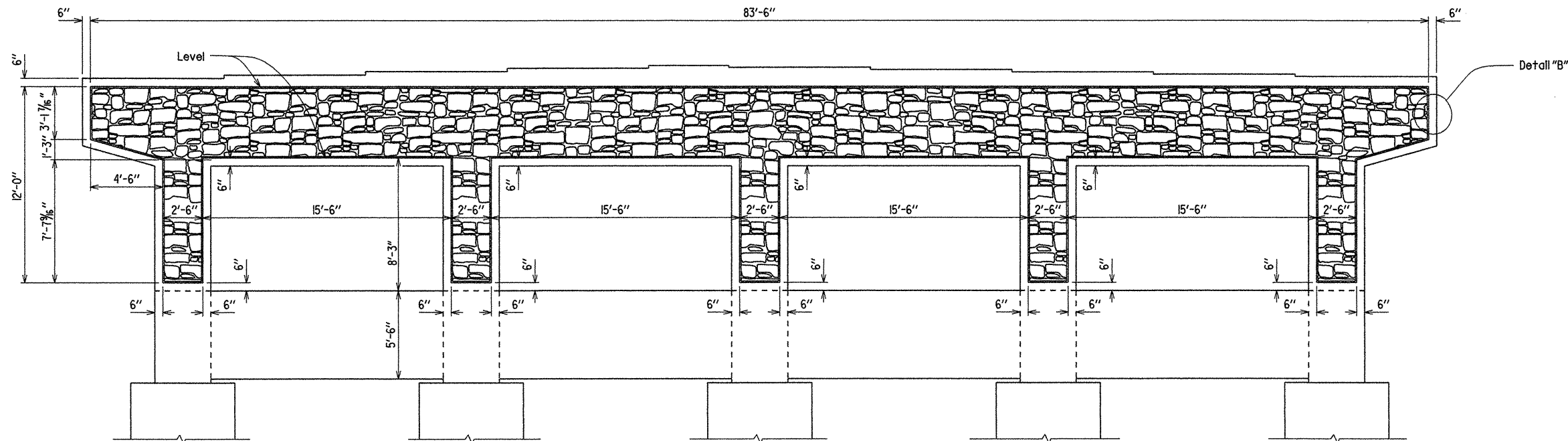
SHEET 2 OF 3  
DETAILS OF BENT NO. 2

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

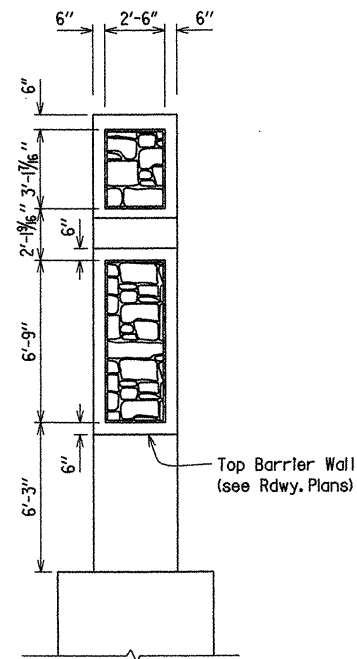
DRAWN BY: RBR DATE: 11/12/09 FILENAME: b040238.b22.dgn  
CHECKED BY: DHP DATE: 8-5-10 SCALE:  $\frac{1}{2}$ " = 1'-0" or as shown  
DESIGNED BY: RBR DATE: 8-6-10  
BRIDGE NO. 07176 DRAWING NO. 50959



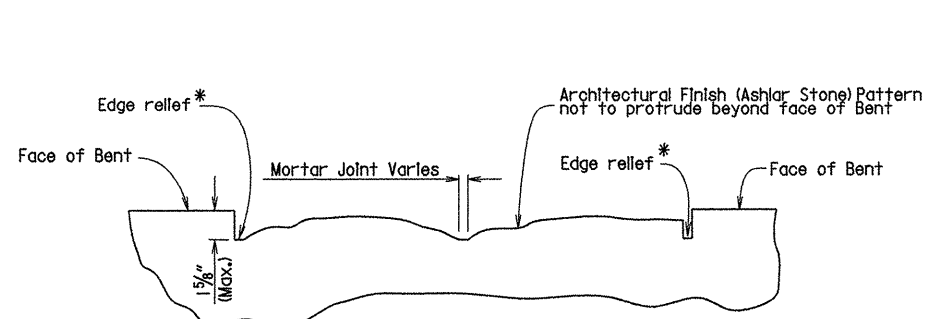
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040238	Vol 212	
				07176		BENT NO. 2	50960	



**ELEVATION**  
Looking Ahead

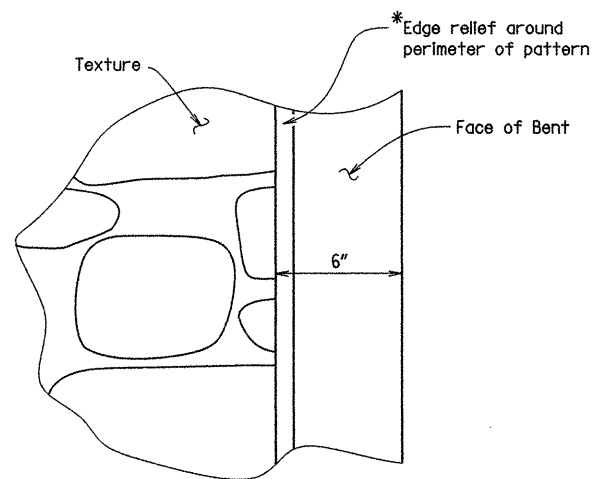


**END ELEVATION**

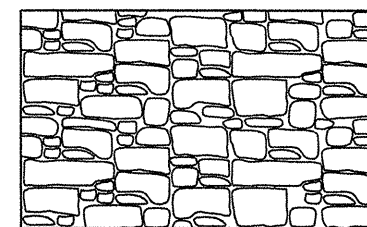


**SECTION VIEW**  
No Scale

\* Provide edge relief around perimeter of pattern. Edge relief dimensions shall match manufacturers edge distance.



**DETAIL "B"**  
No Scale



**ARCHITECTURAL FINISH DETAIL**  
(Ashlar Stone)  
No Scale

**General Notes:**

The pattern finish shall be applied to the exposed surfaces in accordance with Special Provision Job No. 040238 "Architectural Finish" and as shown in the plans. Care shall be taken with form liner handling and installation to insure aesthetic quality of the pattern finish is maintained. Where form liner panels require modification to conform to the location, dimensions, and lines shown in the plans, the Contractor shall provide edge relief matching that of the unaltered form liner. Payment for pattern finish shall be in accordance with Special Provision Job No. 040238 "Architectural Finish".

No adjustments will be made in concrete volume due to the use of "Architectural Finish". Class "S" Concrete shall be measured in accordance with Subsection 802.24(a). Care shall be taken in placing concrete to avoid segregation and to eliminate flow lines.

Class 3 Textured Coating Finish shall be applied to bent surfaces as specified in Special Provision Job No. 040238 "Textured Coating Finish".

For details and dimensions not shown, see Dwg. Nos. 50958 & 50959.



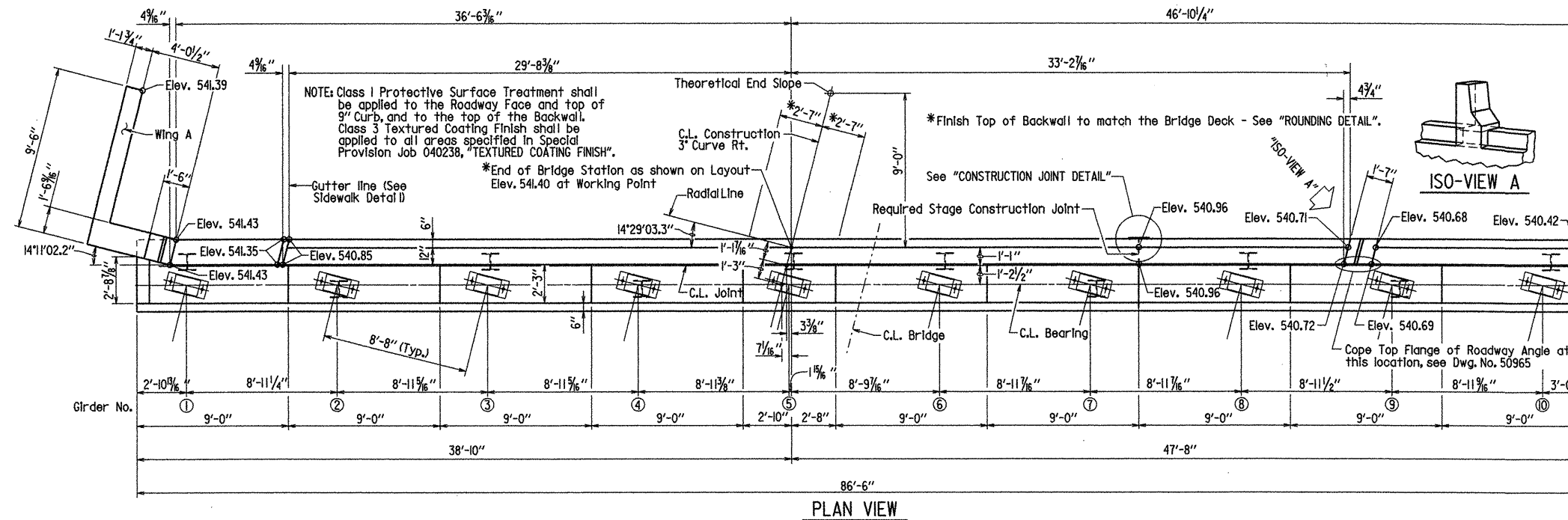
BRIDGE ENGINEER

**SHEET 3 OF 3**  
**DETAILS OF BENT NO. 2**

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

DRAWN BY: RBR DATE: 11/12/09 FILENAME: b040238.b23.dgn  
CHECKED BY: DHP DATE: 8-5-10 SCALE: 1/4" = 1'-0" or as shown  
DESIGNED BY: RBR DATE: 8-6-10  
BRIDGE NO. 07176 DRAWING NO. 50960

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4/14/11				6	ARK.	040238	162	295
				JOB NO.	07176		BENT NO. 3	50961



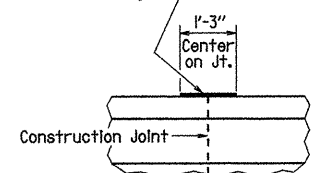
PLAN VIEW

NOTE: For "SECTION A-A" thru "SECTION D-D", "VIEW Z-Z" and details of Wing A and Wing B, see Dwg. No. 50962.

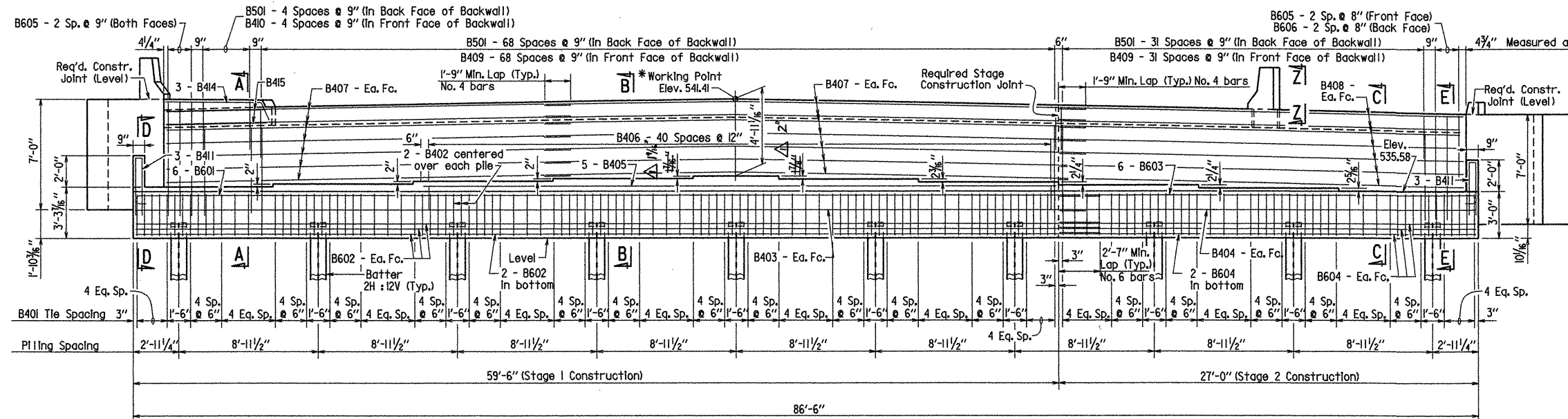
For Section thru Parapet Rail, Median Rail, and Curb, see Dwg. No. 50963.

For Typical Anchor Bolt Layout see Dwg. No. 50963

Membrane Waterproofing System Type C or an approved equal to extend full height of backwall and cap. See Section 815. No direct payment shall be made for this work. Payment will be subsidiary to the item "Class 5 Concrete Bridge".



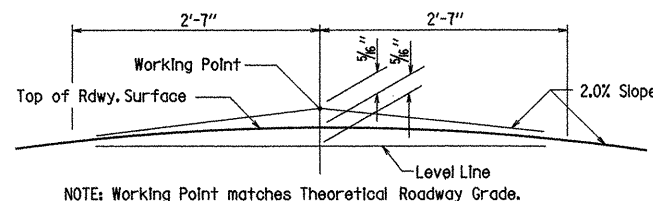
CONSTRUCTION JOINT DETAIL  
1/2" = 1'-0"



ELEVATION

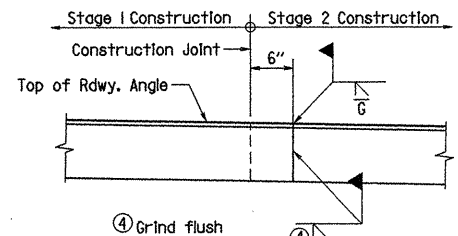
VARIABLE TABLE

VARIABLE	1	2	3	4	5	6	7	8	9	10
BRG. ANGLE	14° 09' 14.1"	14° 13' 07.1"	14° 17' 02.2"	14° 20' 59.5"	14° 24' 59.1"	14° 29' 00.9"	14° 33' 04.9"	14° 37' 11.4"	14° 41' 20.1"	14° 45' 31.3"
"A"	2 9/16"	2 9/16"	2 9/16"	2 9/16"	2 9/16"	2 9/16"	2 9/16"	2 9/16"	2 9/16"	2 9/16"
"B"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"

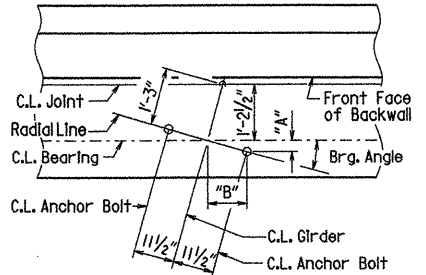


ROUNDING DETAIL  
No Scale

REVISD CAP SEAT DIMENSION 4/14/11



DETAIL OF WELD LOCATION  
FOR EXPANSION DEVICE  
NO SCALE



TYPICAL ANCHOR BOLT LAYOUT  
NO SCALE

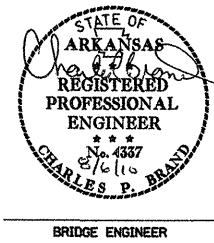
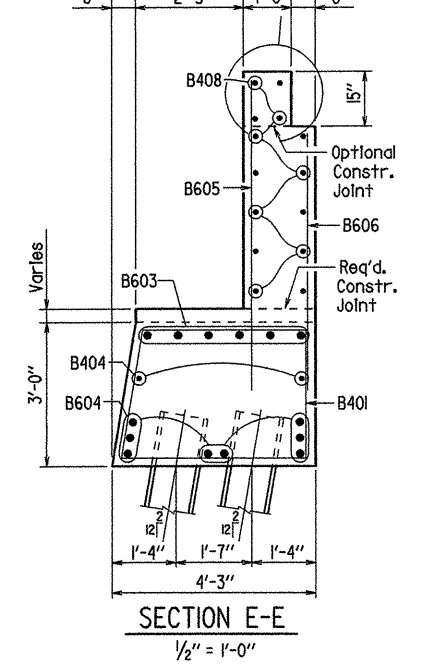
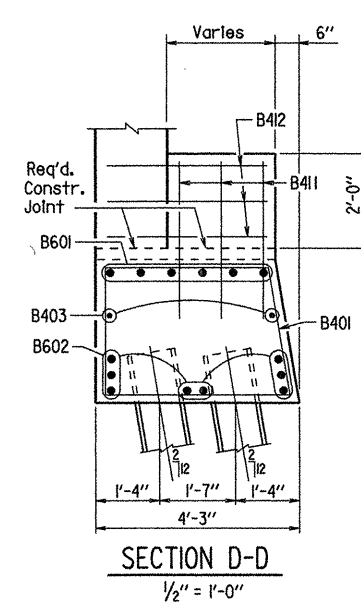
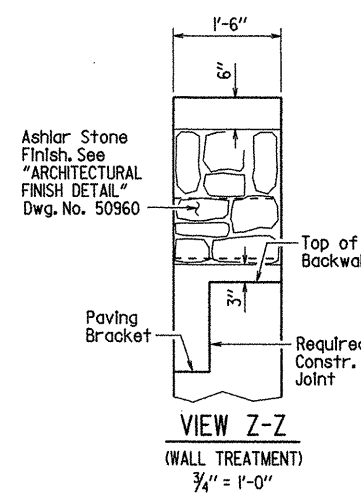
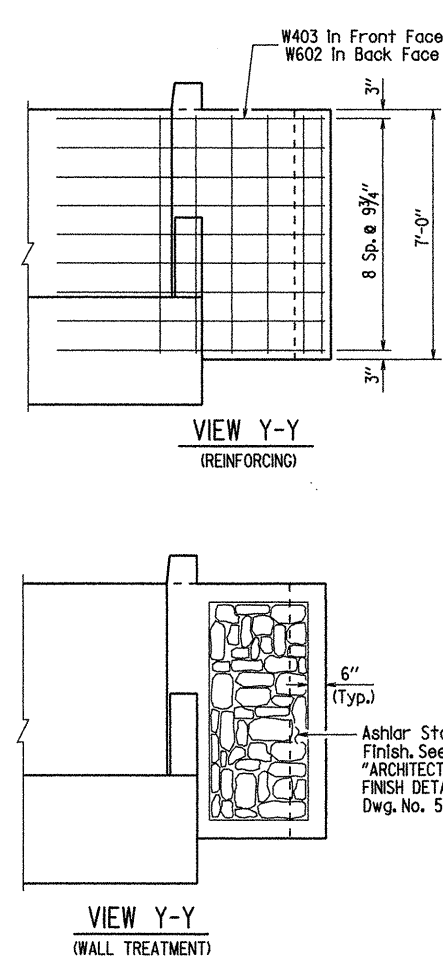
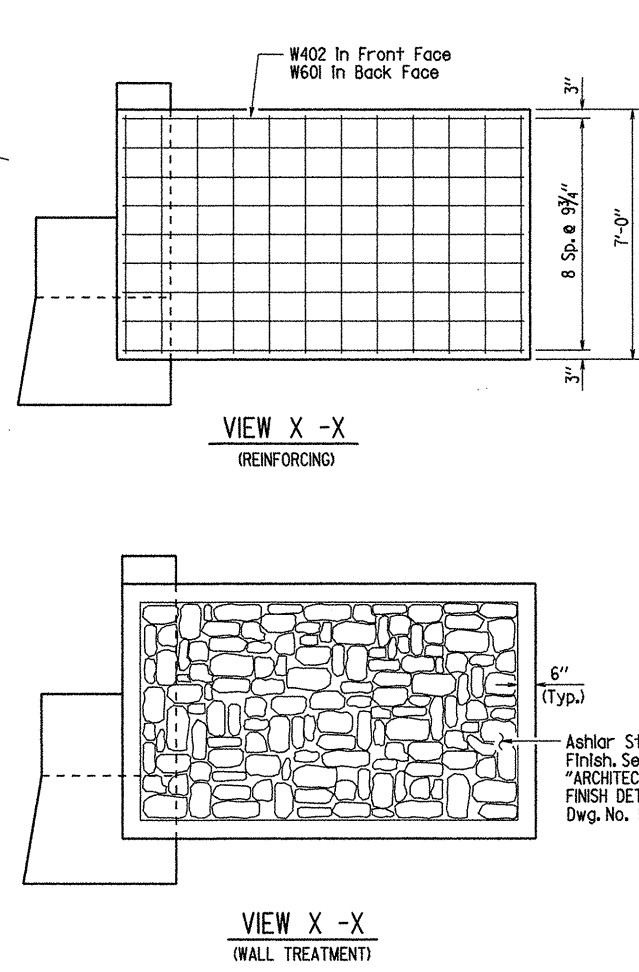
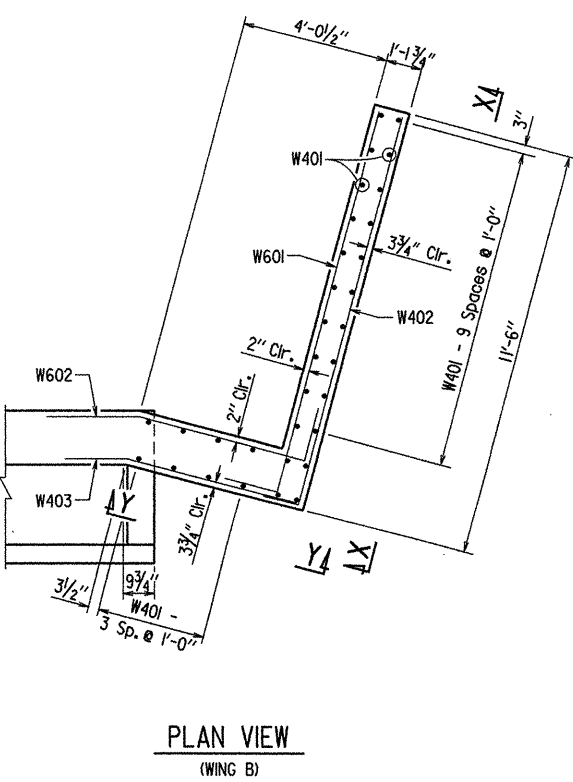
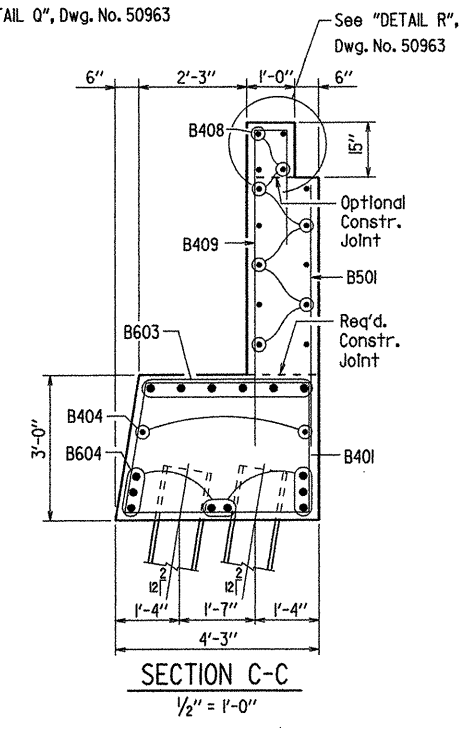
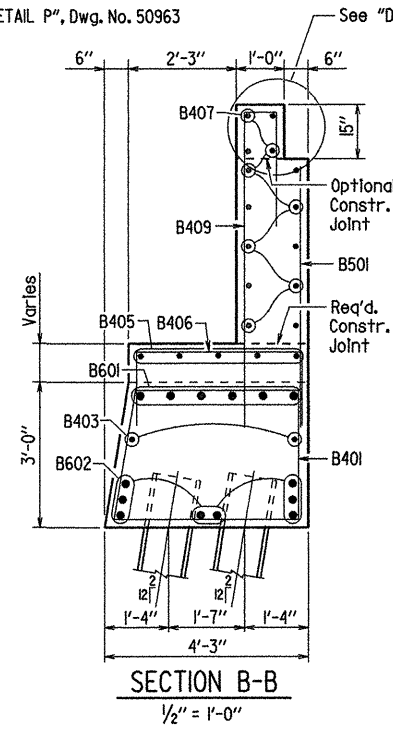
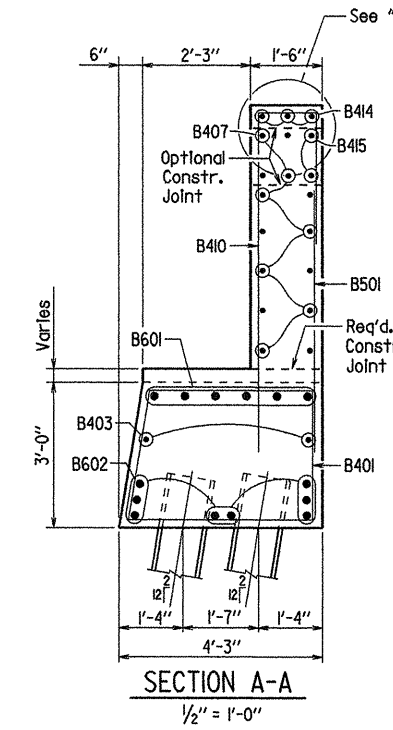
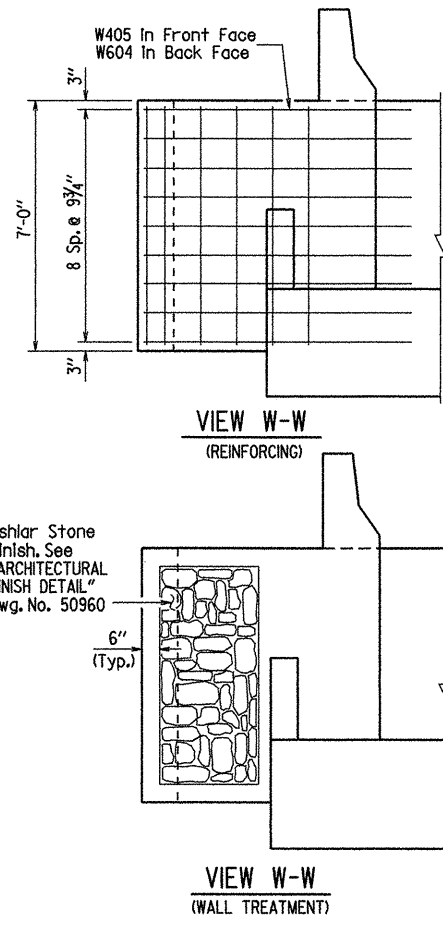
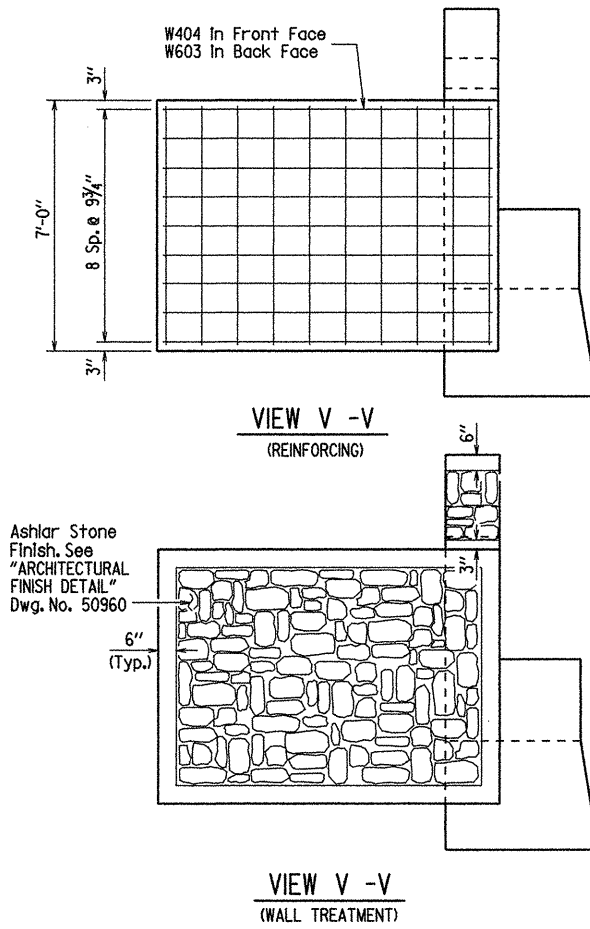
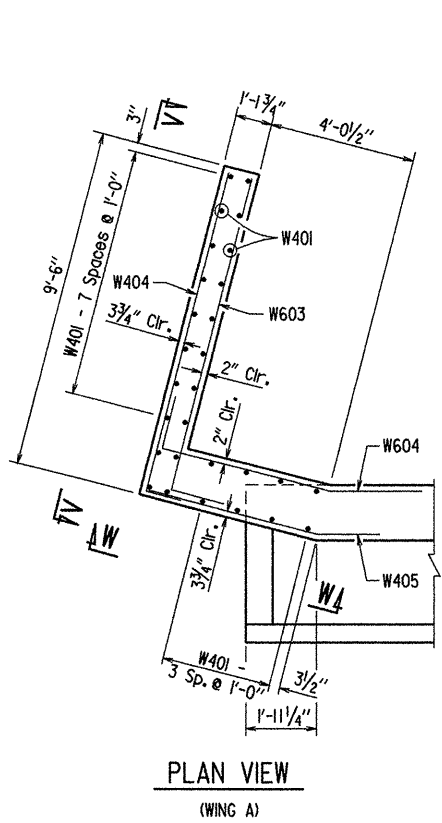
SHEET 1 OF 3  
DETAILS OF BENT NO. 3

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 09-30-09 FILENAME: B040238.B3L.dgn  
CHECKED BY: DHP DATE: 8-5-10 SCALE: 1/4" = 1'-0" OR AS NOTED  
DESIGNED BY: DHP DATE: 10-1-09  
BRIDGE NO. 07176 DRAWING NO. 50961

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.		040238	164243	
				07176	BENT NO. 3		50962	



SHEET 2 OF 3  
DETAILS OF BENT NO. 3

ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

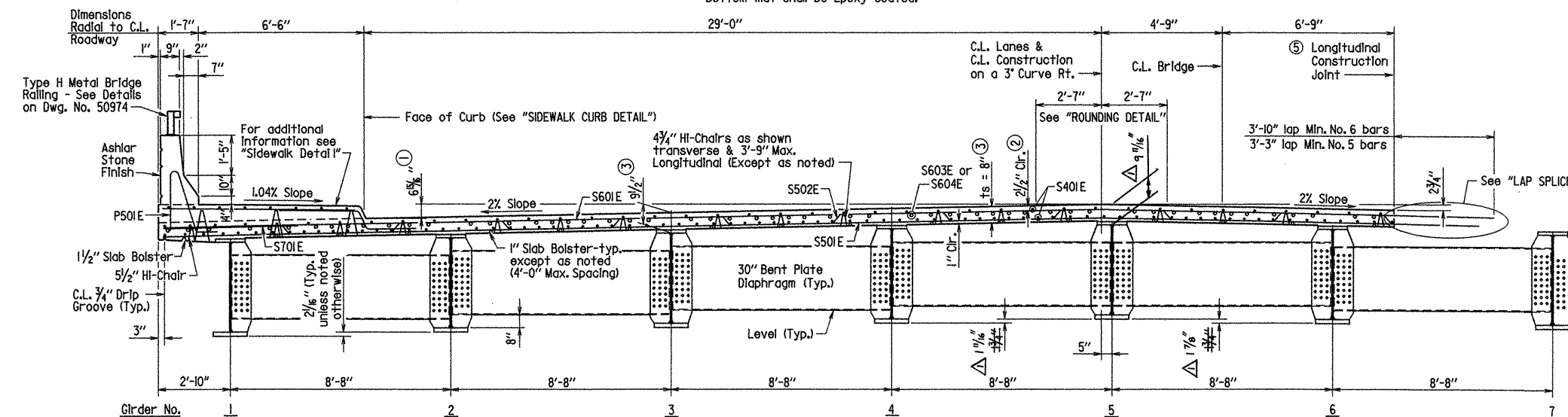
DRAWN BY: MJT DATE: 11-04-09 FILENAME: B040238.B32.dgn  
CHECKED BY: DHP DATE: 8-5-10 SCALE: 1/4" = 1'-0"  
DESIGNED BY: DHP DATE: 10-1-09 OR AS NOTED  
BRIDGE NO. 07176 DRAWING NO. 50962



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4/14/11				6	ARK.			
				JOB NO.		040238	165	213
				07176	SPAN DETAILS			50964

NOTE: Class I Protective Surface Treatment shall be applied to the Roadway Surface, Sidewalk Surface, Shared Use Path Surface, the Inside Face and Top of 9" Curb. Class 3 Textured Coating Finish shall be applied to areas as specified in Special Provision Job No. 040238 "Textured Coating Finish".

NOTE: At the Contractor's option, in lieu of providing Bar S502E & S504E, one #5 epoxy coated bar top and bottom may be substituted. Payment for Reinforcing will be based on the weight of bar S502E & S504E. Bars in top and bottom mat shall be Epoxy coated.



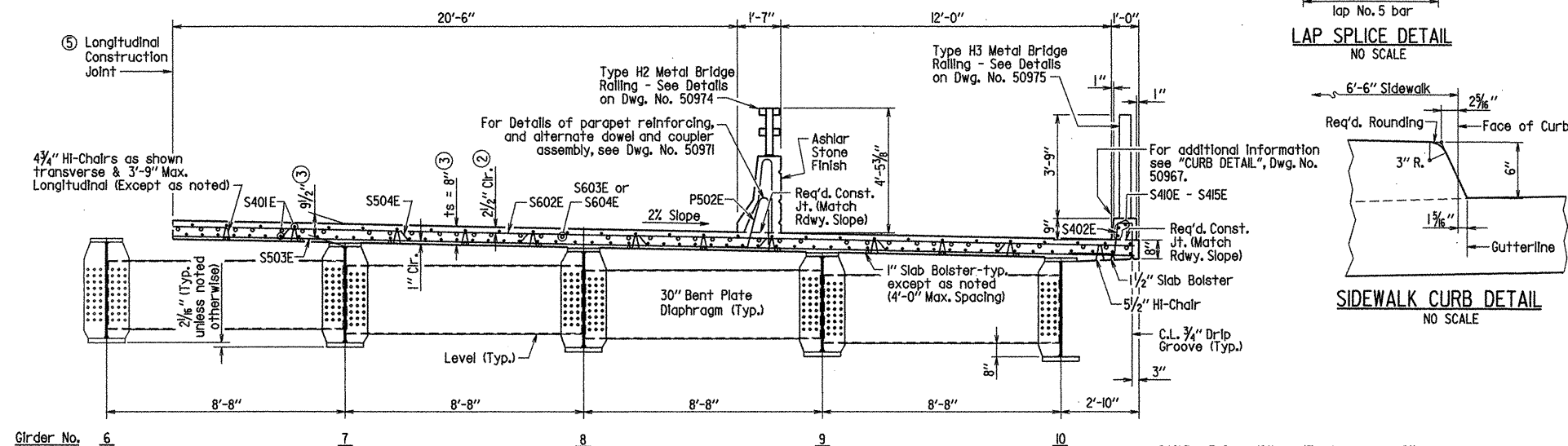
**SLAB REINFORCING:**  
Longitudinal: S401E in top (Place as shown)  
S401E in bottom (Place as shown)  
S603E & S604E centered over Int. Supports and placed as shown  
S701E @ 15" o.c. in Overhang

**SIDEWALK REINFORCING:**  
Longitudinal: S401E in top (Place as shown)  
Transverse: S403E & S404E

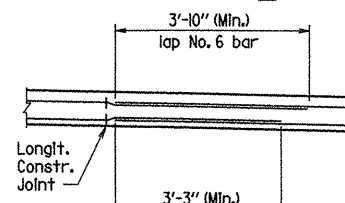
**CURB REINFORCING:**  
Longitudinal: S401E - S415E in Curb (Place as shown)  
Transverse: S402E @ 15" o.c. in Curb

Transverse: S502E or S504E @ 15" o.c. bent up over girders  
S501E or S503E @ 15" o.c. in bottom  
S601E or S602E @ 15" o.c. in top

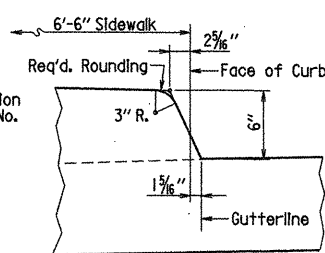
**TYPICAL ROADWAY SECTION - STAGE I**  
(LOOKING AHEAD)



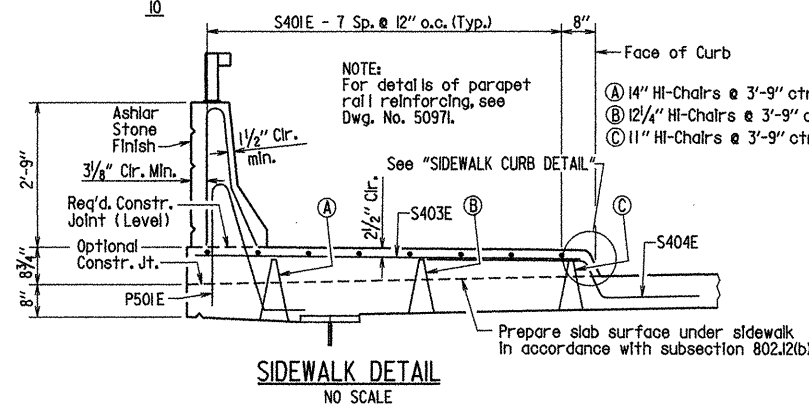
**TYPICAL ROADWAY SECTION - STAGE 2**  
(LOOKING AHEAD)



**LAP SPlice DETAIL**  
NO SCALE



**SIDEWALK CURB DETAIL**  
NO SCALE



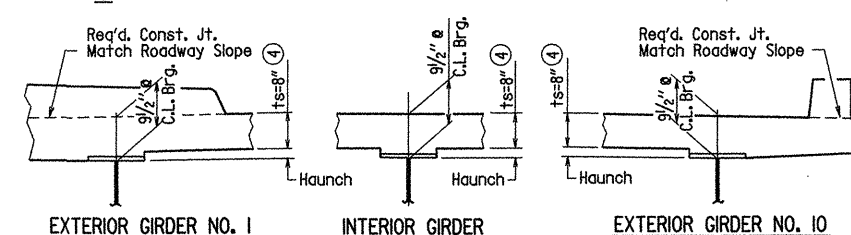
**SIDEWALK DETAIL**  
NO SCALE

- Working Point to Gutterline, see "ROUNDING DETAIL".
- Tolerance: Minus =  $1/4$ "  
Plus = The amount of slab thickening used to meet slab thickness tolerance.
- See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".
- Tolerance when removable deck forming is used is  $+ 1/2$ " -  $1/4$ ".  
Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE".
- Construction Joint is Concentric to C.L. Construction.
- Girder Seven is to be erected as part of Stage One Construction.

NOTE: Longitudinal reinforcing steel in Deck Slab, Sidewalk, Parapet Railings and 9" Curb shall be placed on curves concentric with C.L. Bridge. All transverse reinforcing steel shall be placed on radial lines and are dimensioned along C.L. Construction.

For Details of Poured Silicone Joints, Sections through Joints and Details of Blocking Expansion Joint Device, see Dwg. No. 50972.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class (S) Concrete.

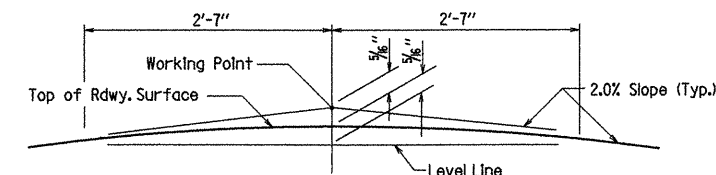


NOTE: Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum - occurs when top flange contacts bottom reinforcing steel; Maximum - top flange thickness plus  $1 1/4$ ". No increase in concrete and structural steel quantities will be made to maintain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

Tolerances shown are applicable only when removable deck forming is used. See Standard Drawing No. 14991 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.

ts = Slab thickness as shown in "TYPICAL ROADWAY SECTION".

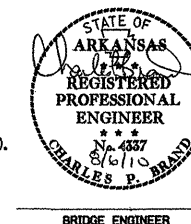
**ADJUSTMENT FOR SLAB THICKNESS TOLERANCE**  
NO SCALE



NOTE: Working Point matches Theoretical Roadway Grade.

**ROUNDING DETAIL**  
NO SCALE

Δ REVISED DIMENSIONS, for 4/14/11

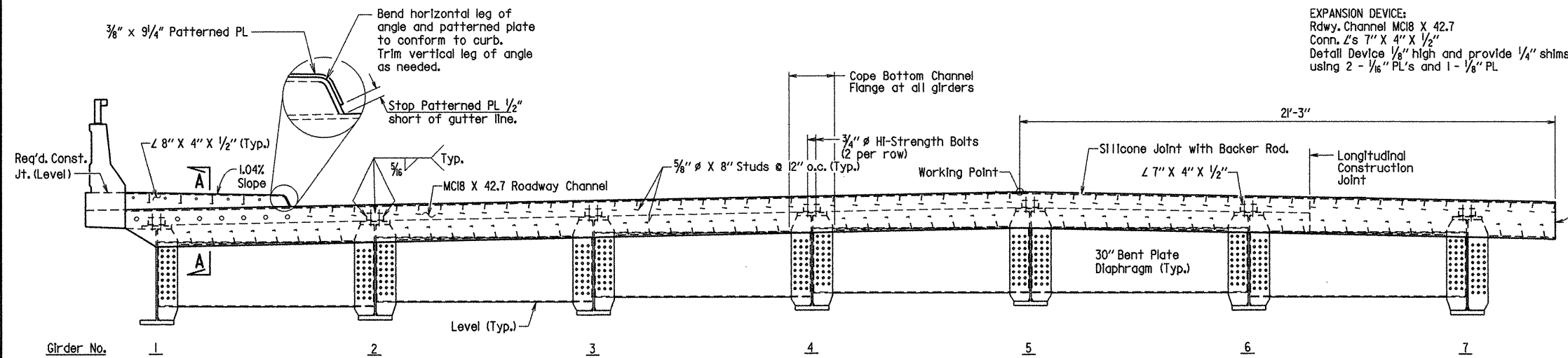


SHEET 1 OF 9  
DETAILS OF 186'-0" CONTINUOUS  
COMPOSITE PLATE GIRDER UNIT  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 10/01/09 FILENAME: B040238.sl.dgn  
CHECKED BY: DHP DATE: 8-5-10 SCALE: 3/8" = 1'-0" OR AS NOTED  
DESIGNED BY: JRP DATE: 9/09  
BRIDGE NO. 07176 DRAWING NO. 50964

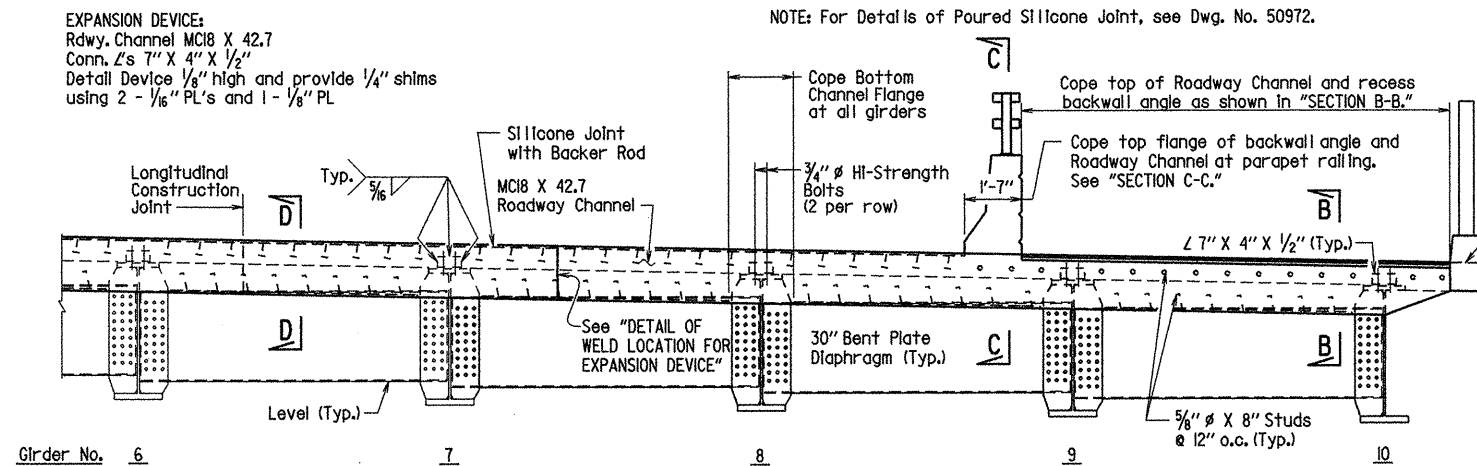


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040238	66 243	
1				07176	SPAN DETAILS		50965	



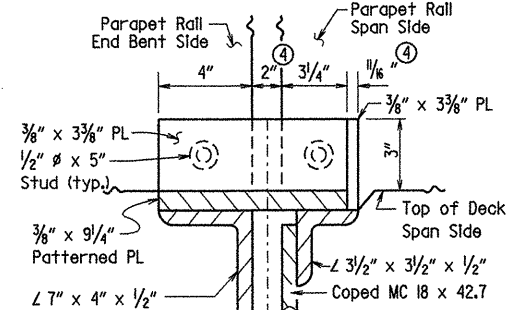
TYPICAL SECTION THRU JOINT - STAGE 1  
(LOOKING AHEAD)

NOTE: For Details of Poured Silicone Joint, see Dwg. No. 50972.

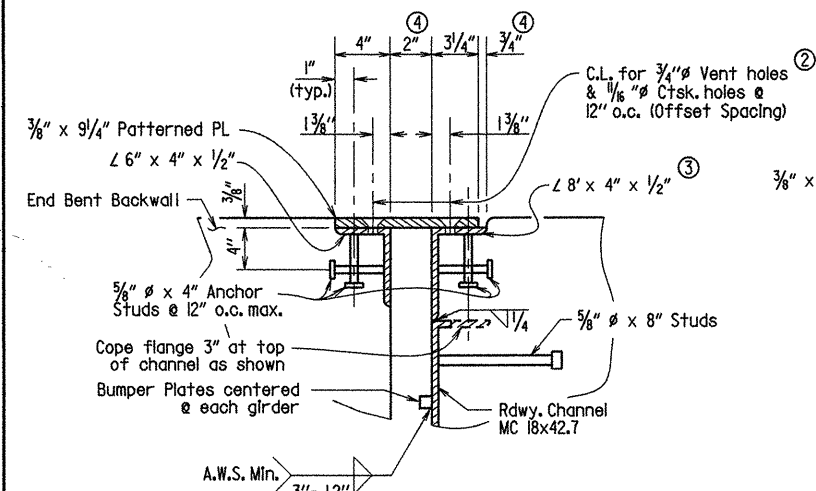


TYPICAL SECTION THRU JOINT - STAGE 2  
(LOOKING AHEAD)

- ② Ctsk.  $\frac{1}{8}$ "  $\emptyset$  holes in  $\frac{3}{8}$ " Patterned Plate. Tap 4" leg of angles for ASTM A449  $\frac{5}{8}$ "  $\emptyset$  screws @ 12" o.c. Install screws in the shop and ship as a unit. Screws on the span side to be removed. Screws on backwall side to remain in place after erection. See "Expansion Device Installation" Dwg. No. 50972.
- ③ Trim vertical leg of  $L\ 8" \times 4" \times \frac{1}{2}"$  as needed.
- ④ Dimensions shown @ 60° F
- ⑤ Trim vertical leg of  $L\ 3\frac{1}{2}" \times 3\frac{1}{2}" \times \frac{1}{2}"$  past Front Fa. Curb

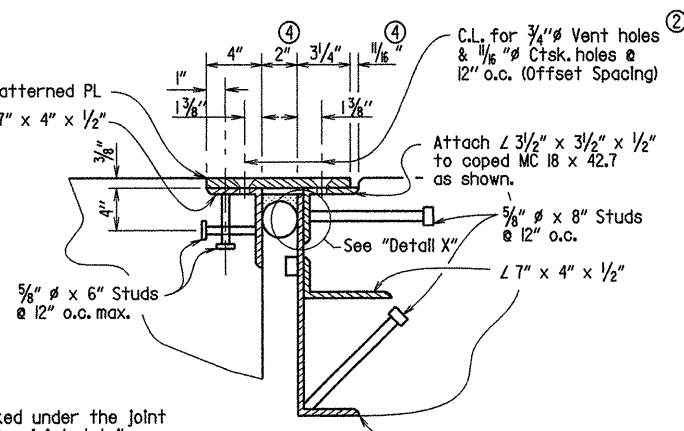


VIEW E-E  
NO SCALE

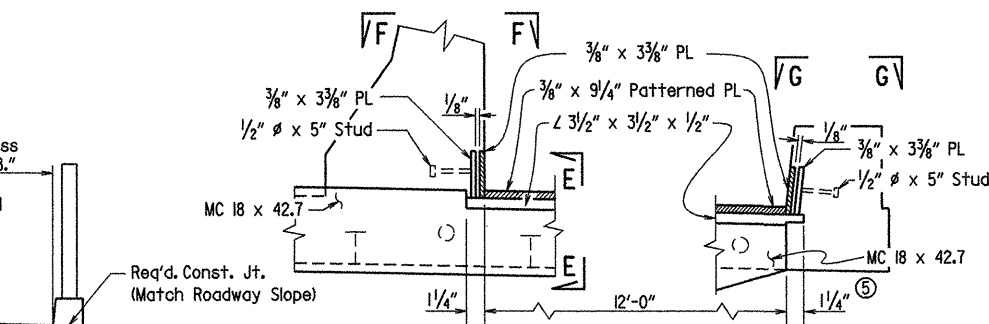


SECTION A-A  
NO SCALE

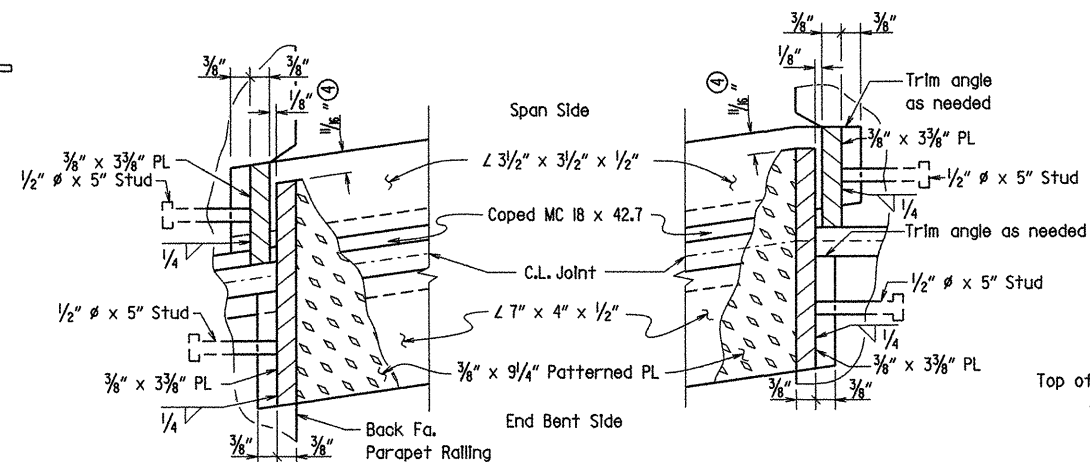
NOTE: Concrete shall be hand packed under the joint armor in the sidewalk. For expansion joint detail see "Detail of Poured Silicone Joint Seal" Dwg. No. 50972



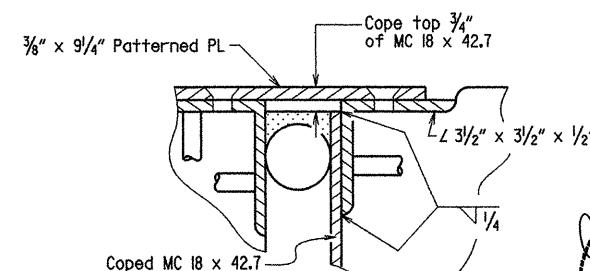
SECTION B-B  
NO SCALE



SHARED USE PATH DETAIL  
NO SCALE

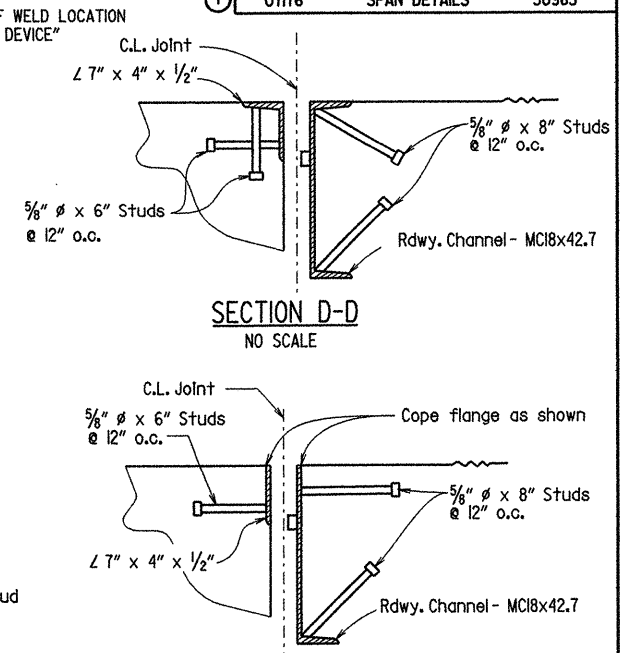


VIEW F-F  
NO SCALE

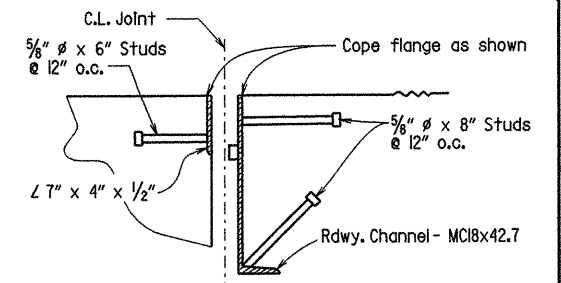


DETAIL X  
NO SCALE

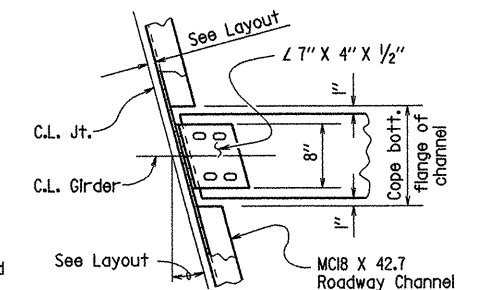
NOTE: Details shown are for  
Bent No.1. Bent No.3 is similar.



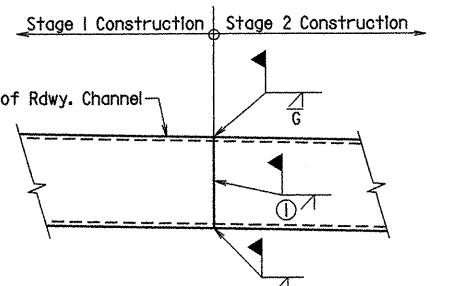
SECTION D-D  
NO SCALE



SECTION C-C  
NO SCALE



CHANNEL CONNECTION DETAIL  
NO SCALE



① Grind flush from top of deck to top of bumper plate.

### DETAIL OF WELD LOCATION FOR EXPANSION DEVICE

(LOOKING AHEAD)  
NO SCALE

SHEET 2 OF 9  
DETAILS OF 186'-0" CONTINUOUS  
COMPOSITE PLATE GIRDER UNIT

ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION

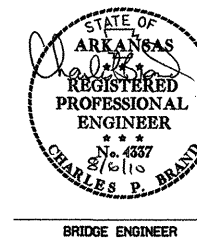
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 10/01/09 FILENAME: B040238\_sl.dgn

CHECKED BY: DHP DATE: 8-5-10  
DESIGNED BY: JRP DATE: 7-09

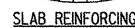
BRIDGE NO. 07176

DRAWING NO. 50965

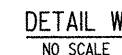
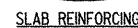
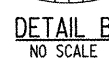
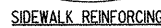


①

NOTE: All Longitudinal Lines and Longitudinal reinforcing steel is dimensioned on curves concentric with C.L. Construction. All transverse reinforcing steel shall be placed on Radial Lines and is dimensioned along C.L. Construction.



DETAIL A  
NO SCALE

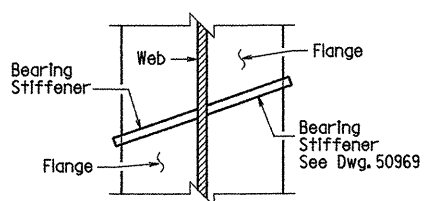
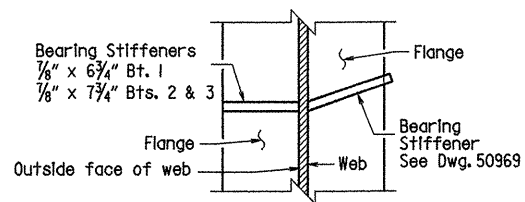
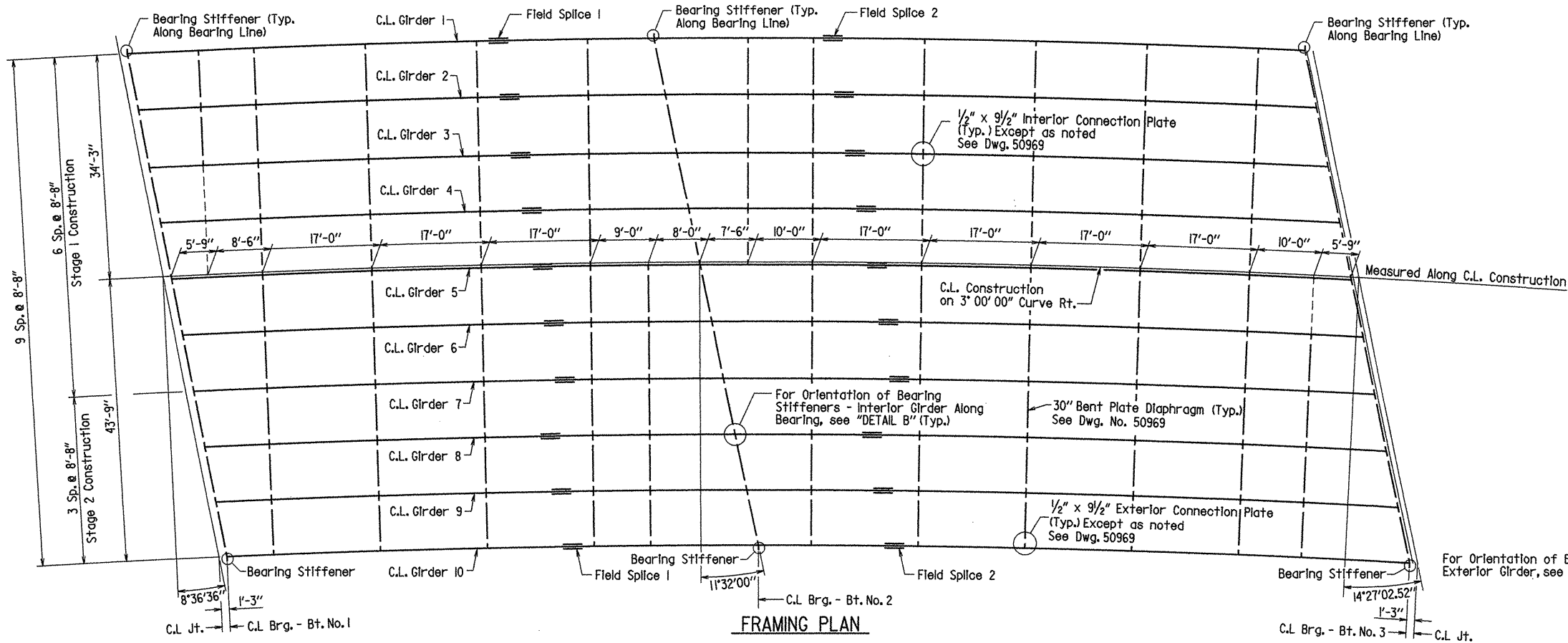


SHEET 3 OF 9  
DETAILS OF 186'-0" CONTINUOUS  
COMPOSITE PLATE GIRDER UNIT  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION

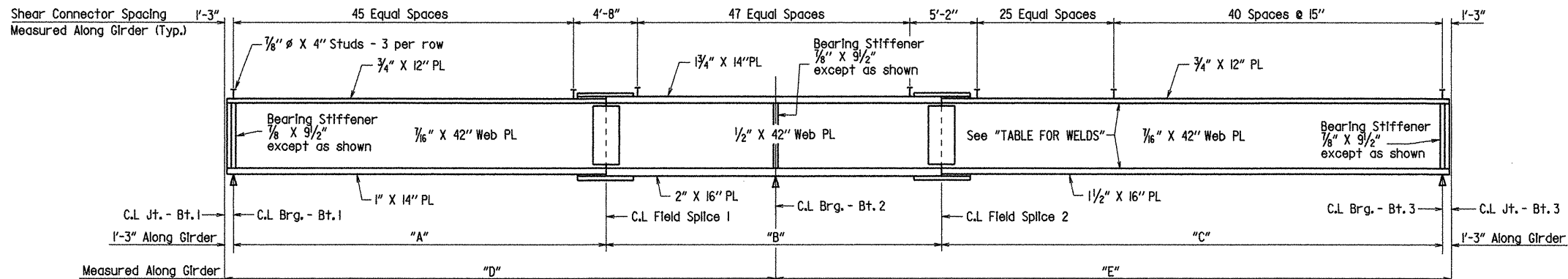
DRAWN BY: MJT DATE: 10/01/09 FILENAME: B040238\_sl.dgn  
CHECKED BY: DHP DATE: 8-5-10 SCALE: 3/8" = 1'-0" OR AS NOTED  
DESIGNED BY: JRP DATE: 9-09  
BRIDGE NO. 07176 DRAWING NO. 50966



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.		040238	169	293
				07176		SPAN DETAILS		50968



NOTE: Girders are Curved and Concentric to C.L. Construction. Diaphragms are placed on Radial Lines and spaced along C.L. Construction



VARIABLE TABLE

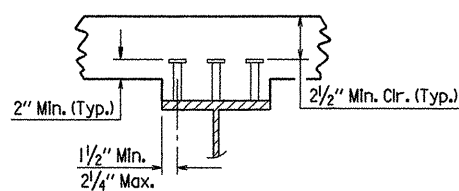
	A	B	C	D	E
	(FT)	(FT)	(FT)	(FT)	(FT)
Girder 1	57'-9"	52'-0"	73'-5 3/8"	83'-2 3/8"	102'-6 1/16"
Girder 2	57'-9"	52'-0"	73'-6 5/16"	83'-3 3/4"	102'-6"
Girder 3	57'-9"	52'-0"	73'-7 3/16"	83'-4 3/16"	102'-6"
Girder 4	57'-9"	52'-0"	73'-8 1/8"	83'-5 1/8"	102'-6"
Girder 5	57'-9"	52'-0"	73'-9 1/16"	83'-6 1/16"	102'-6"
Girder 6	57'-9"	52'-0"	73'-10"	83'-7"	102'-6"
Girder 7	57'-9"	52'-0"	73'-10 5/16"	83'-7 7/8"	102'-6"
Girder 8	53'-9"	50'-0"	73'-11 7/8"	83'-8 5/8"	102'-6"
Girder 9	53'-9"	50'-0"	74'-0 3/16"	83'-9 3/4"	102'-6"
Girder 10	53'-9"	50'-0"	74'-1 3/4"	83'-10 1/16"	102'-6 1/16"

NOTE: Dimensions are measured along each Girder.

TABLE FOR WELDS

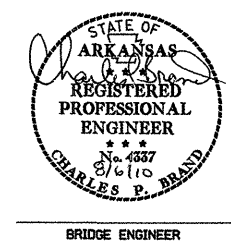
Material Thickness of Thicker Part Joined (Inches)	Minimum Size of Fillet Weld (Inches)	Single Pass Weld Must Be Used
To 3/4" Inclusive	1/4"	
Over 3/4"	5/16"	

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.



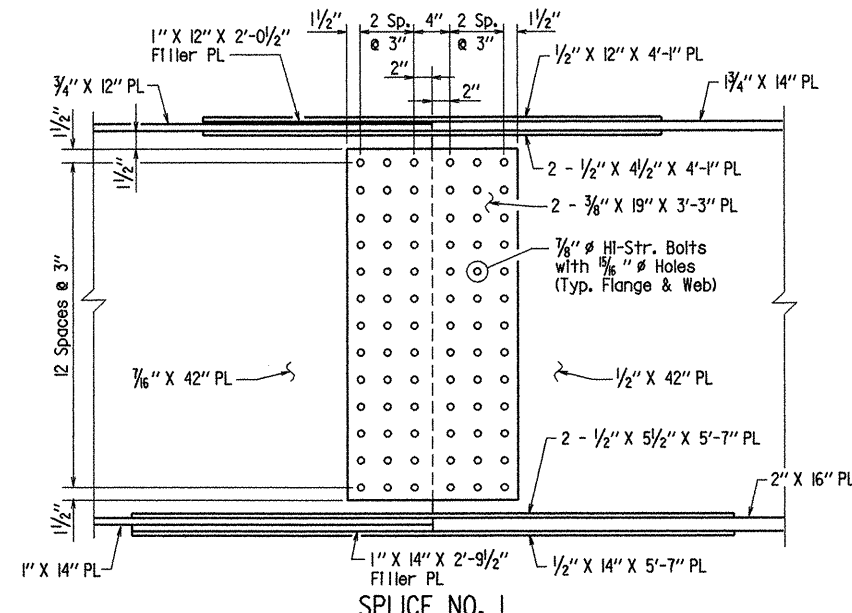
Stud Shear Connectors shown shall be 7/8" x 4" long, granular flux filled, solid fluxed or equal, and automatically end welded to the girder flange in accordance with the recommendations of the Manufacturer. 3/4" studs may be used in place of the 7/8" studs shown, at the ratio of 1.361-3/4" studs in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

SHEAR CONNECTOR DETAIL  
NO SCALE

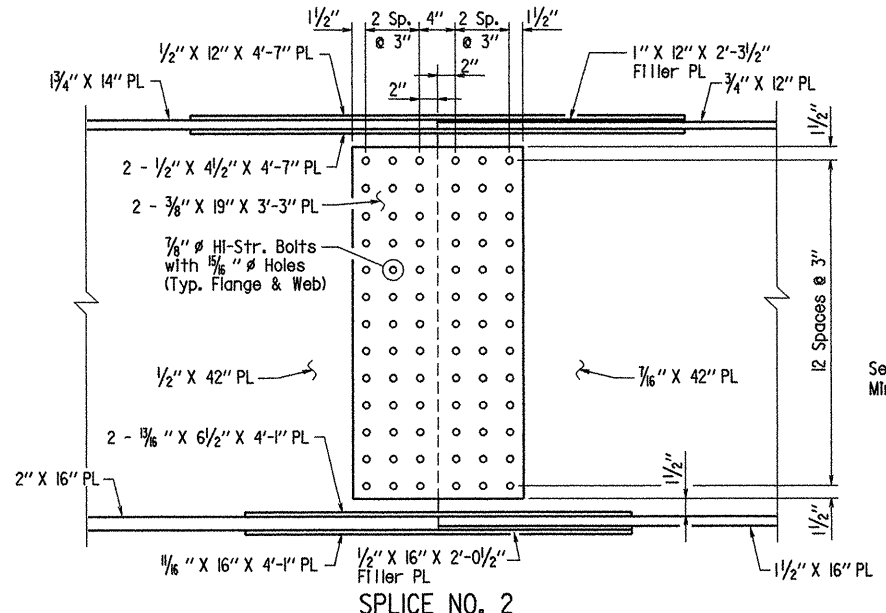


SHEET 5 OF 9  
DETAILS OF 186'-0" CONTINUOUS  
COMPOSITE PLATE GIRDER UNIT  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: MJT DATE: 09-11-09 FILENAME: B040238.sl.dgn  
CHECKED BY: DHP DATE: 8-5-10 SCALE: 3/8" = 1'-0" OR AS NOTED  
DESIGNED BY: JRP DATE: 9-09  
BRIDGE NO. 07176 DRAWING NO. 50968

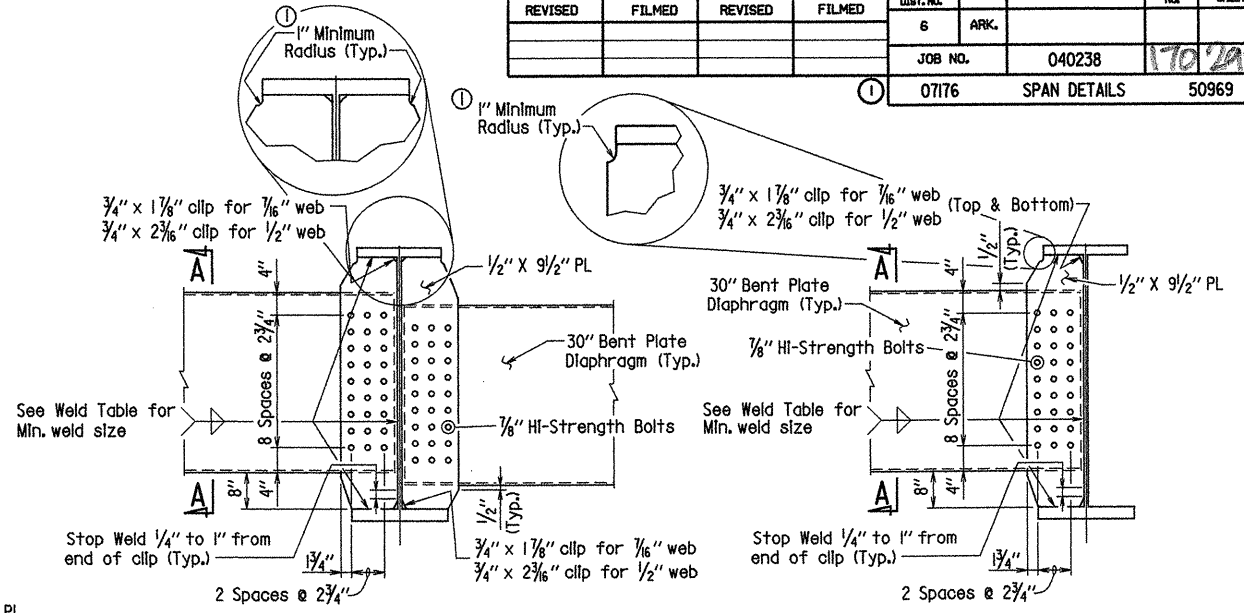
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		040238	170	247
				07176		SPAN DETAILS		50969



SPLICE NO. 1

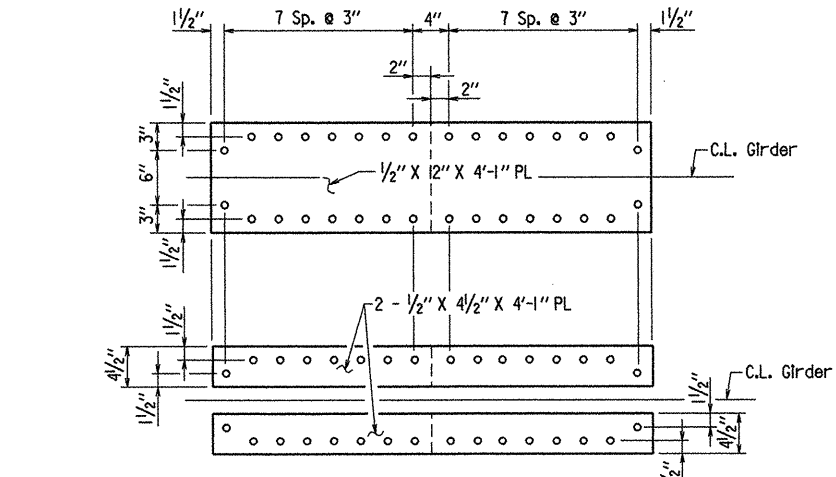


SPLICE NO. 2

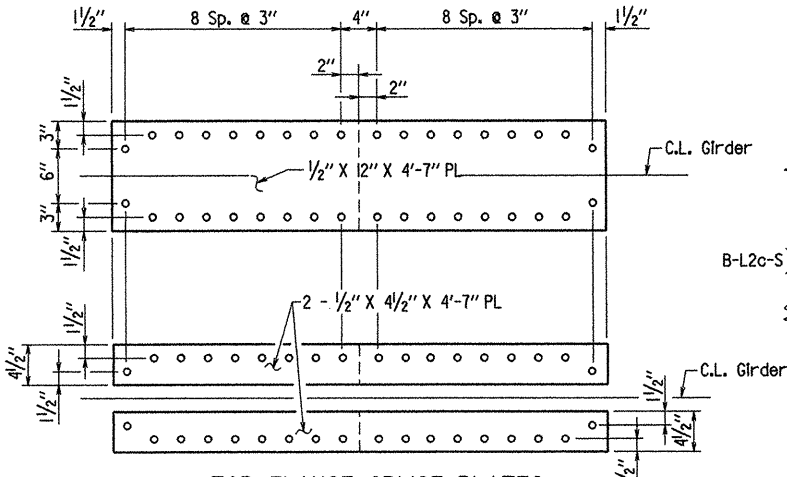


TYPICAL INTERIOR PLATE CONNECTION  
NO SCALE

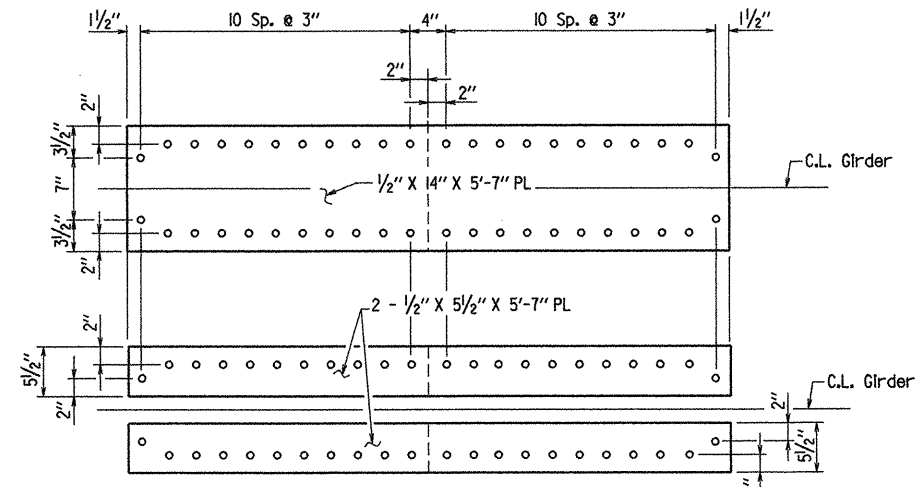
TYPICAL EXTERIOR PLATE CONNECTION  
NO SCALE



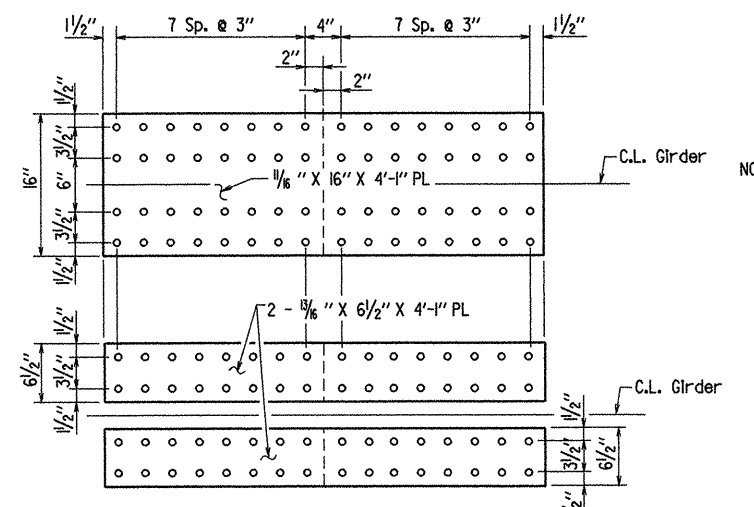
TOP FLANGE SPLICE PLATES  
SPLICE NO. 1



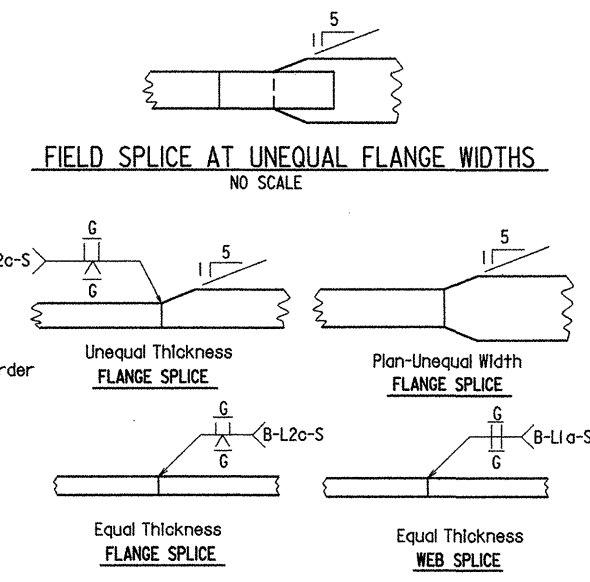
TOP FLANGE SPLICE PLATES  
SPLICE NO. 2



BOTTOM FLANGE SPLICE PLATES  
SPLICE NO. 1

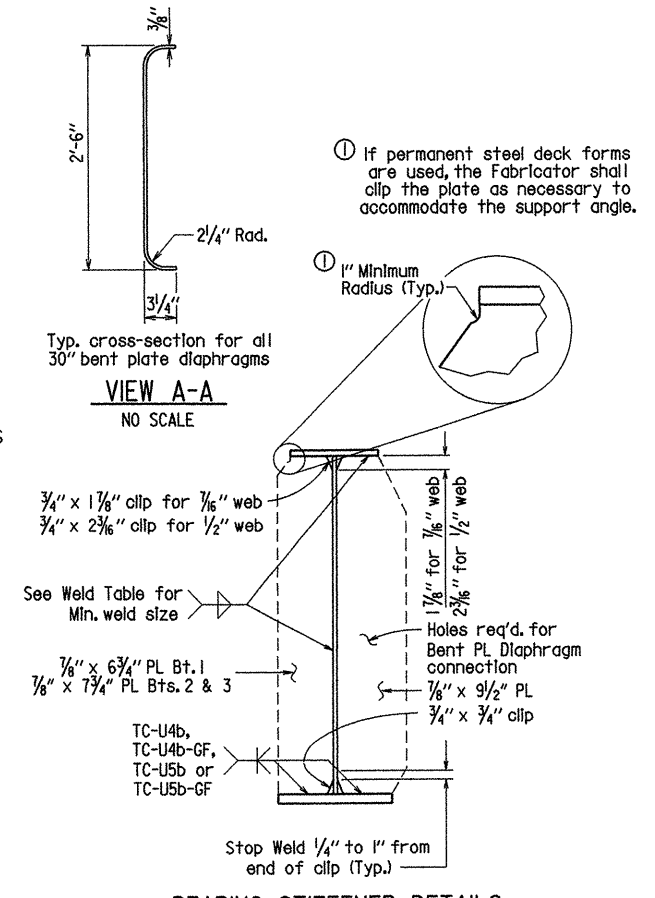


BOTTOM FLANGE SPLICE PLATES  
SPLICE NO. 2



DETAILS OF WELDED SPLICES  
NO SCALE

NOTES: Bearing stiffeners to be fabricated so as to be vertical in their final position.  
All bearing stiffener plates, connection plates, and field splice plates shall be AASHTO M270, Grade 50 steel.  
All bolted connections shall be properly installed and tightened in accordance with subsection 807.7.



BEARING STIFFENER DETAILS  
NO SCALE

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

DETAILS OF FIELD SPLICES  
NO SCALE

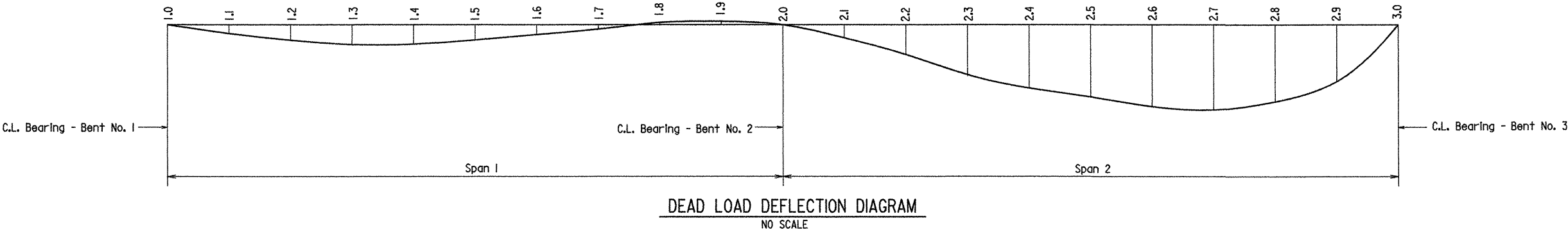
STATE OF ARKANSAS  
REGISTERED PROFESSIONAL ENGINEER  
CHARLES P. BRAND  
BRIDGE ENGINEER

SHEET 6 OF 9  
DETAILS OF 186'-0" CONTINUOUS  
COMPOSITE PLATE GIRDER UNIT  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: MJT DATE: 09-11-09 FILENAME: B040238.sl.dgn  
CHECKED BY: DHP DATE: 8-5-10 SCALE: NO SCALE  
DESIGNED BY: JRP DATE: 9-09  
BRIDGE NO. 07176 DRAWING NO. 50969

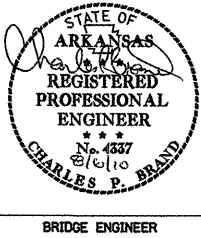


TABLE OF DEAD LOAD DEFLECTIONS - INCHES

POINT OF DEFLECTION	GIRDER NO. 1			GIRDER NO. 2			GIRDER NO. 3			GIRDER NO. 4			GIRDER NO. 5			GIRDER NO. 6			GIRDER NO. 7 (STAGE 1)			GIRDER NO. 7 (STAGE 2)			GIRDER NO. 8			GIRDER NO. 9			GIRDER NO. 10		
	STRUCT. STEEL	STRUCT. STEEL + SLAB	STRUCT. STEEL + SLAB + PARAPET+SIDEWALK	STRUCT. STEEL	STRUCT. STEEL + SLAB	STRUCT. STEEL + SLAB + PARAPET+SIDEWALK	STRUCT. STEEL	STRUCT. STEEL + SLAB	STRUCT. STEEL + SLAB + PARAPET+SIDEWALK	STRUCT. STEEL	STRUCT. STEEL + SLAB	STRUCT. STEEL + SLAB + PARAPET+SIDEWALK	STRUCT. STEEL	STRUCT. STEEL + SLAB	STRUCT. STEEL + SLAB + PARAPET+SIDEWALK	STRUCT. STEEL	STRUCT. STEEL + SLAB	STRUCT. STEEL + SLAB + PARAPET+SIDEWALK	STRUCT. STEEL	STRUCT. STEEL + SLAB	STRUCT. STEEL + SLAB + PARAPET+SIDEWALK	STRUCT. STEEL	STRUCT. STEEL + SLAB	STRUCT. STEEL + SLAB + PARAPET+SIDEWALK	STRUCT. STEEL	STRUCT. STEEL + SLAB	STRUCT. STEEL + SLAB + PARAPET+SIDEWALK	STRUCT. STEEL	STRUCT. STEEL + SLAB	STRUCT. STEEL + SLAB + PARAPET+SIDEWALK	STRUCT. STEEL	STRUCT. STEEL + SLAB	STRUCT. STEEL + SLAB + PARAPET+SIDEWALK
1.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1.1	0.041	0.218	0.285	0.047	0.262	0.299	0.052	0.299	0.319	0.057	0.328	0.345	0.056	0.299	0.316	0.051	0.240	0.254	0.041	0.072	0.078	0.000	0.245	0.266	0.050	0.286	0.308	0.055	0.279	0.302	0.055	0.254	0.280
1.2	0.067	0.369	0.491	0.080	0.456	0.523	0.090	0.527	0.564	0.094	0.550	0.580	0.092	0.503	0.533	0.084	0.444	0.468	0.066	0.115	0.125	0.000	0.414	0.452	0.084	0.485	0.523	0.094	0.477	0.518	0.095	0.440	0.487
1.3	0.077	0.438	0.597	0.094	0.554	0.639	0.106	0.641	0.687	0.110	0.657	0.695	0.109	0.611	0.649	0.098	0.549	0.580	0.077	0.129	0.142	0.000	0.505	0.554	0.101	0.598	0.648	0.117	0.596	0.651	0.120	0.556	0.619
1.4	0.066	0.406	0.577	0.085	0.538	0.628	0.098	0.627	0.676	0.105	0.651	0.692	0.104	0.621	0.662	0.093	0.547	0.580	0.069	0.109	0.122	0.000	0.505	0.558	0.098	0.594	0.648	0.114	0.591	0.649	0.117	0.552	0.619
1.5	0.040	0.297	0.458	0.061	0.434	0.515	0.074	0.523	0.567	0.079	0.538	0.576	0.077	0.514	0.552	0.065	0.420	0.451	0.042	0.051	0.063	0.000	0.399	0.447	0.071	0.467	0.515	0.088	0.471	0.524	0.094	0.452	0.514
1.6	0.005	0.135	0.262	0.022	0.248	0.308	0.031	0.319	0.351	0.033	0.322	0.350	0.032	0.312	0.342	0.025	0.209	0.234	0.007	0.021	0.031	0.000	0.241	0.279	0.038	0.296	0.334	0.055	0.316	0.358	0.061	0.308	0.358
1.7	-0.031	-0.043	0.036	-0.015	0.057	0.092	-0.006	0.124	0.143	-0.002	0.146	0.165	-0.005	0.132	0.152	-0.010	0.049	0.066	-0.025	-0.018	-0.012	0.000	0.110	0.134	0.001	0.095	0.118	0.012	0.111	0.136	0.016	0.109	0.139
1.8	-0.046	-0.134	-0.097	-0.037	-0.076	-0.064	-0.033	-0.045	-0.039	-0.035	-0.038	-0.031	-0.040	-0.060	-0.052	-0.040	-0.078	-0.071	-0.046	-0.017	-0.015	0.000	-0.067	-0.058	-0.026	-0.061	-0.051	-0.017	-0.036	-0.025	-0.014	-0.026	-0.012
1.9	-0.044	-0.156	-0.155	-0.038	-0.124	-0.127	-0.034	-0.100	-0.101	-0.032	-0.083	-0.082	-0.038	-0.100	-0.099	-0.036	-0.094	-0.093	-0.038	-0.054	-0.054	0.000	-0.062	-0.061	-0.029	-0.103	-0.102	-0.023	-0.080	-0.078	-0.019	-0.061	-0.057
2.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2.1	0.109	0.426	0.482	0.109	0.426	0.463	0.110	0.423	0.445	0.110	0.408	0.422	0.108	0.429	0.439	0.101	0.378	0.385	0.104	0.167	0.170	0.000	0.286	0.303	0.101	0.418	0.435	0.096	0.384	0.402	0.088	0.333	0.353
2.2	0.262	1.039	1.191	0.263	1.050	1.146	0.265	1.048	1.105	0.264	1.026	1.064	0.258	1.061	1.090	0.245	0.939	0.961	0.246	0.392	0.402	0.000	0.711	0.756	0.239	1.013	1.059	0.229	0.928	0.976	0.215	0.826	0.880
2.3	0.418	1.683	1.937	0.422	1.712	1.871	0.425	1.716	1.811	0.424	1.677	1.741	0.419	1.753	1.804	0.403	1.561	1.599	0.410	0.653	0.671	0.000	1.223	1.302	0.399	1.716	1.797	0.382	1.565	1.650	0.358	1.365	1.459
2.4	0.558	2.268	2.615	0.570	2.344	2.562	0.575	2.358	2.488	0.572	2.321	2.410	0.560	2.375	2.445	0.536	2.086	2.138	0.538	0.860	0.884	0.000	1.633	1.739	0.528	2.296	2.405	0.513	2.119	2.235	0.490	1.871	2.000
2.5	0.638	2.614	3.013	0.651	2.700	2.946	0.661	2.743	2.891	0.665	2.759	2.863	0.657	2.809	2.892	0.628	2.456	2.518	0.629	1.010	1.040	0.000	1.943	2.067	0.617	2.703	2.831	0.597	2.469	2.605	0.567	2.170	2.318
2.6	0.656	2.705	3.112	0.671	2.806	3.054	0.683	2.854	3.004	0.685	2.857	2.963	0.671	2.884	2.969	0.639	2.503	2.566	0.642	1.034	1.065	0.000	2.004	2.130	0.634	2.790	2.920	0.617	2.560	2.699	0.588	2.267	2.418
2.7	0.588	2.434	2.795	0.604	2.537	2.754	0.616	2.588	2.721	0.619	2.585	2.680	0.607	2.621	2.698	0.578	2.266	2.324	0.581	0.936	0.965	0.000	1.827	1.940	0.572	2.527	2.643	0.556	2.318	2.442	0.531	2.064	2.198
2.8	0.448	1.859	2.128	0.462	1.949	2.109	0.471	1.990	2.089	0.472	1.964	2.036	0.462	1.999	2.058	0.438	1.718	1.762	0.439	0.613	0.636	0.000	1.390	1.473	0.435	1.921	2.007	0.423	1.770	1.862	0.405	1.594	1.694
2.9	0.244	1.014	1.155	0.249	1.052	1.133	0.254	1.075	1.126	0.257	1.057	1.095	0.254	1.102	1.134	0.238	0.933	0.957	0.237	0.381	0.394	0.000	0.754	0.798	0.236	1.044	1.090	0.231	0.968	1.018	0.223	0.887	0.942
3.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000



NOTES: Camber for Dead Load Deflection plus Vertical curve +/- 1/4" Tolerance.  
Vertical Curve Corrections not Included. Negative sign (-) Indicates  
upward deflection. Deflections shown are along C.L. Girder from the  
plane perpendicular to the web extending from C.L. Bearing to C.L.  
Bearing.

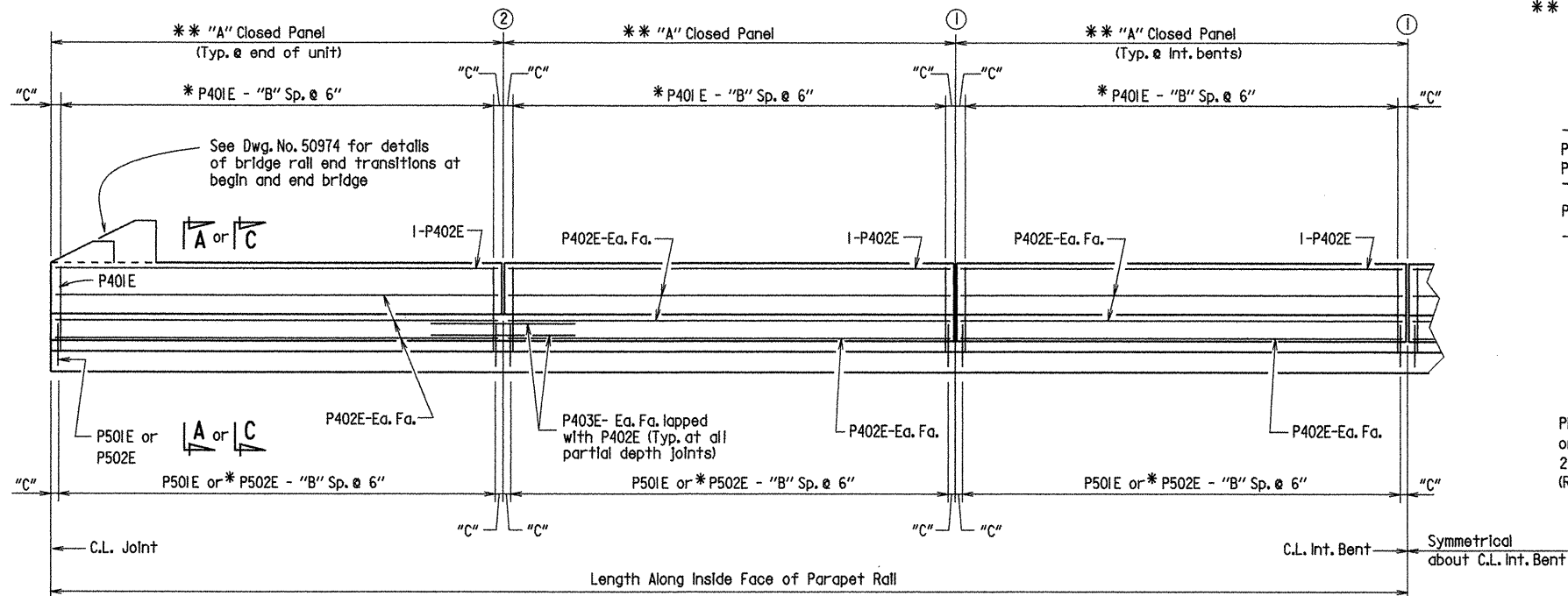


SHEET 7 OF 9  
DETAILS OF 186'-0" CONTINUOUS  
COMPOSITE PLATE GIRDER UNIT  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 09-11-09 FILENAME: B040238.sl.dgn  
CHECKED BY: DHP DATE: 8-5-10 SCALE: NO SCALE  
DESIGNED BY: JRP DATE: 9-29-09  
BRIDGE NO. 07176 DRAWING NO. 50970

\* P501E Bars - Stage One Construction  
P502E Bars - Stage Two Construction

① C.L. Full-Depth Parapet Joint (1/4" to 1" Max.) Stop 4" from top of slab.  
② C.L. Partial-Depth Parapet Joint (1/4" to 1" Max.) Stop 1'-2" from top of slab.



DETAILS OF PARAPET RAIL

NO SCALE

STAGE 1 CONSTRUCTION

Panel No.	"A"	"B"	"C"
1	16'-9 5/8"	32	4 5/8"
2	16'-4 1/8"	31	5 1/8"
3	16'-4 1/8"	31	5 1/8"
4	12'-11 3/8"	24	5 5/8"
5	13'-5 5/8"	25	5 5/8"
6	19'-0 1/8"	37	3 1/8"

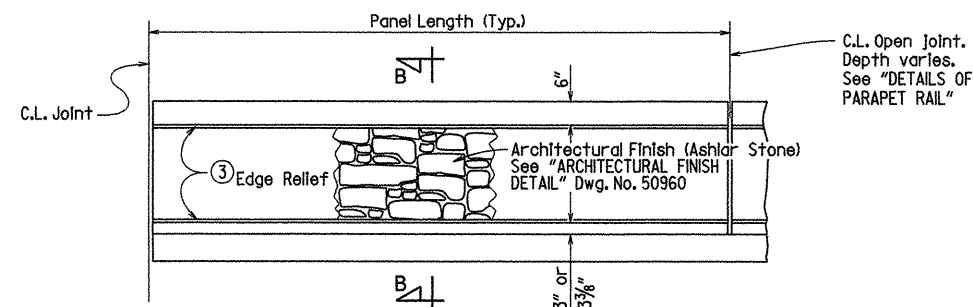
STAGE 2 CONSTRUCTION

Panel No.	"A"	"B"	"C"
7	16'-11 1/8"	32	5 5/8"
8	16'-4 1/8"	31	5 1/8"
9	16'-5 1/8"	31	5 1/8"
10	13'-0"	24	6"
11	13'-6 1/8"	25	6"
12	19'-0"	36	6"

TABLES OF VARIABLES

NOTE: Dimensions shown are along inside face of Parapet Rail.

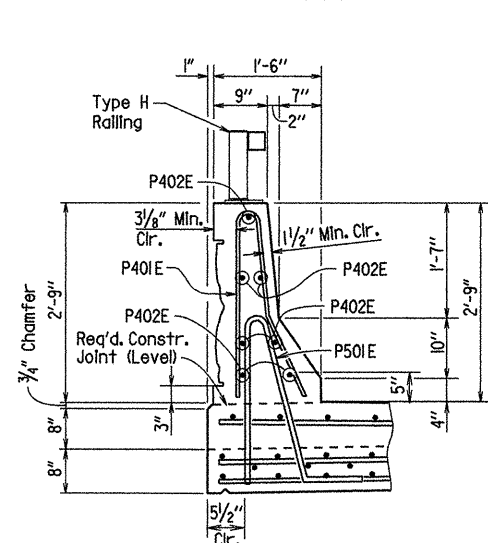
\*\*\* For Panel Location See Dwg. 50966



DETAILS OF PARAPET ENHANCEMENT

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

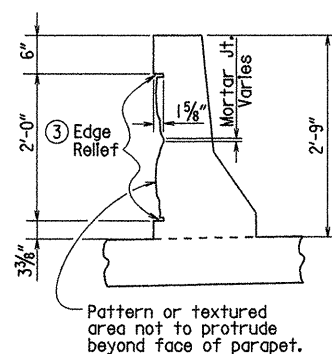
NOTE: Slip forming of Parapet Panels shall not be permitted.



SECTION A-A

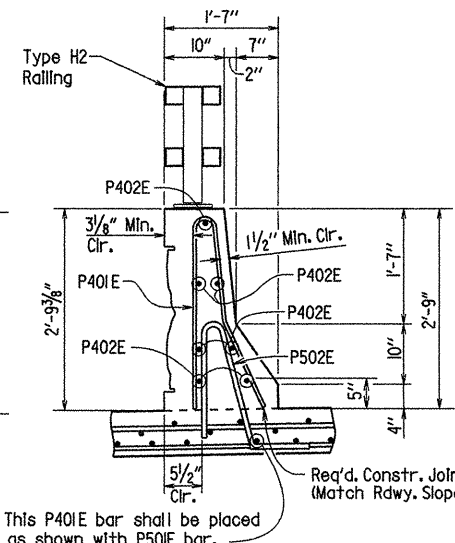
Scale: 3/4" = 1'-0"

③ NOTE: Provide edge relief around perimeter of texture. Edge relief dimensions shall match manufacturer edge distance.



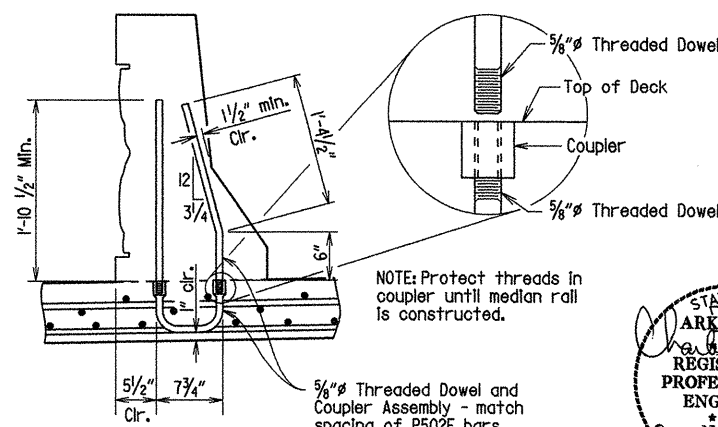
SECTION B-B

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



SECTION C-C

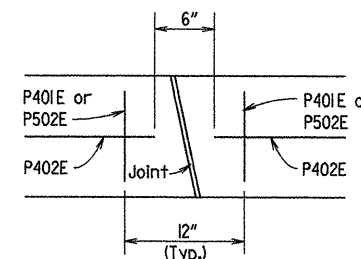
Scale: 3/4" = 1'-0"



ALTERNATE SECTION C-C

Scale: 1" = 1'-0"

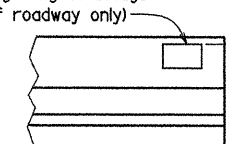
\*\* Parapet Joints are on Radial Lines unless otherwise noted, See Dwg. 50966



SKewed JOINT DETAIL

No Scale

Place Type D Bridge Name Plate on front face of span rail approx. 2'-0" from beginning of bridge (Right side of roadway only)



NAME PLATE DETAIL

No Scale

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.		040238	172223	
				07176	PARAPET RAIL DETAILS		50971	

BAR LIST

STAGE ONE PARAPET

Mark	No. Req'd.	Length	Pln Dia.
P401E	366	5'-6"	3"
P403E	28	5'-2"	Str.
P404E	6	4'-6"	3"
P405E	2	3'-10"	2"
P501E	366	6'-1"	3 3/4"

BAR LIST - P402E

Panel No.	No. Req'd.	Length	Pln Dia.
1	21	16'-5"	Str.
2	7	16'-0"	Str.
3	7	16'-0"	Str.
4	7	12'-7"	Str.
5	7	13'-1"	Str.
6	28	18'-8"	Str.

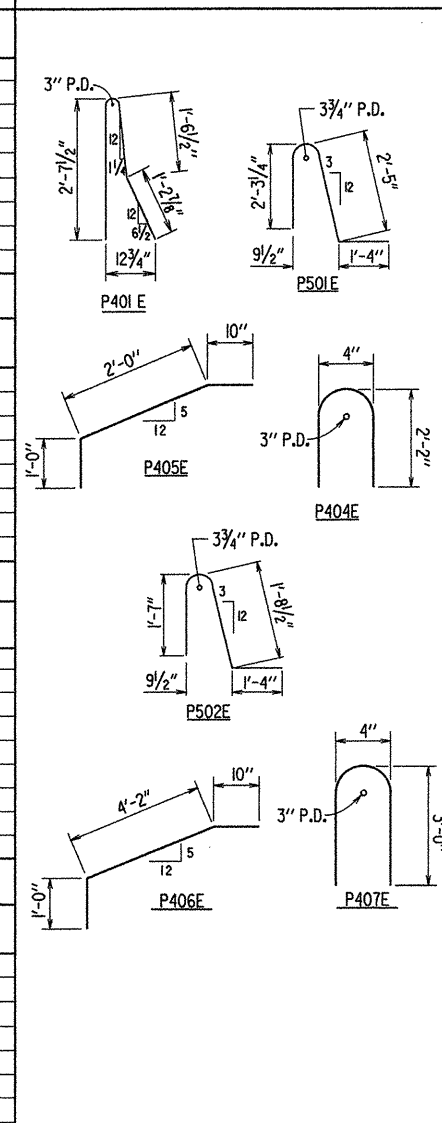
STAGE TWO PARAPET

Mark	No. Req'd.	Length	Pln Dia.
P401E	362	5'-6"	3"
P403E	28	5'-2"	Str.
P404E	6	4'-6"	3"
P406E	2	6'-0"	2"
P407E	4	6'-2"	3"
P502E	362	4'-8"	3 3/4"

BAR LIST - P402E

Panel No.	No. Req'd.	Length	Pln Dia.
7	21	16'-7"	Str.
8	7	16'-0"	Str.
9	7	16'-1"	Str.
10	7	12'-8"	Str.
11	7	13'-2"	Str.
12	28	18'-8"	Str.

BENDING DIAGRAMS



(Dimensions are out to out of bars.)

NOTES:  
The Contractor may at his option substitute the Threaded Dowel and Coupler Assembly shown for bar P502E. The Threaded Dowel and Coupler Assembly shall consist of a QPL approved mechanical splice with protective cap and threaded dowel bars as shown and shall develop at least 125% of the yield strength of the dowel bars. Payment shall be based upon the weight of the P502E bars.

Dowel bars shall be of minimum 60 ksi yield strength and threaded as required. Threaded Dowel and Coupler Assembly, except mating surfaces, shall be epoxy coated in accordance with the requirements of Section 804.

SHEET 8 OF 9  
DETAILS OF 186'-0" CONTINUOUS  
COMPOSITE PLATE GIRDER UNIT

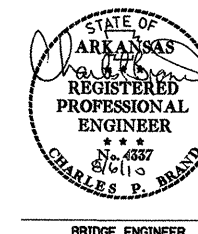
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 09/22/09 FILENAME: b040238.plt.dgn

CHECKED BY: RBR DATE: 8-6-10 SCALE: AS SHOWN

DESIGNED BY: JRP DATE: 9/9

BRIDGE NO. 07176 DRAWING NO. 50971



## 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 4th Edition (2007) with 2009 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.) or AASHTO M270 Gr.36 ( $F_y = 36,000$  psi.).

## STRUCTURAL STEEL:

All 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. AASHTO M270, Gr. 50 Steel shall be painted. 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 including all field splice plates, bent plate diaphragms, and connection 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)".

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.

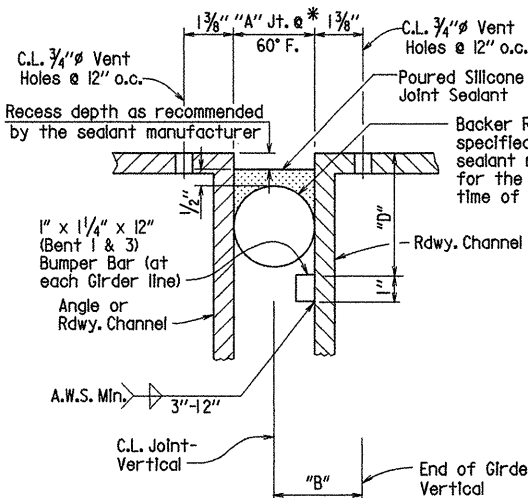
Drawings show general features of design only. Shop drawings shall be made in accordance with subsection 807.04, submitted and approval secured before fabrication is begun. Girder webs may be made by shop splicing with minimum lengths of 25'-0" for sections. Flange plates longer than 50'-0" may be made 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 with webs horizontal in the shop as specified in subsection 807.54(b)(2). 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  $1/4"$  +/- is allowed for camber.

All field connections shall be bolted with high-strength bolts. Bolts in Bent Plate Diaphragms and Field Splices shall be  $1/2"$  diameter bolts with  $5/8"$  open holes at a spacing of  $2 3/4"$  and 3" spacing respectively. Bolts shall be placed with heads on the outside face of the exterior girder web and on the bottom of the girder flanges.

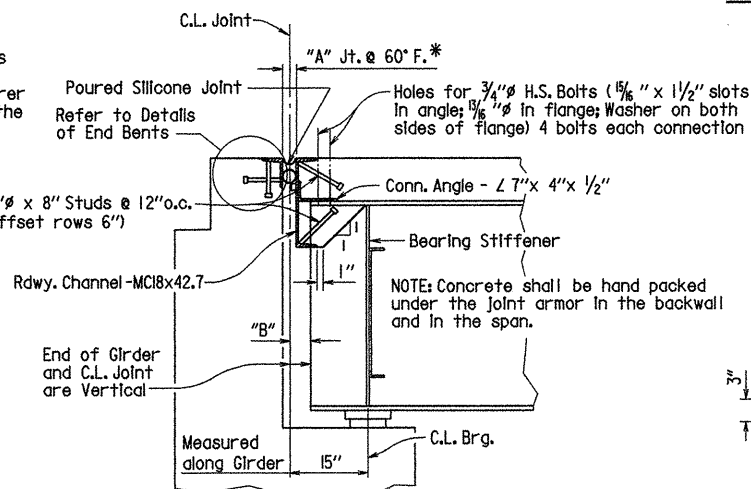
All welding that is to be done during fabrication of structural steel, including temporary welds, shall be detailed on the shop drawings and submitted for approval. If additional welds are required, whether permanent or temporary, a formal request with detailed drawings shall be submitted to the Engineer for approval; however, additional welds used for attaching falsework support devices or screed rail supports to the structural steel that does not exceed the limitations of subsection 802.13 will not require approval prior to construction. All welding shall conform to subsection 807.26.

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.



DETAIL OF POURED SILICONE JOINT SEAL

NO SCALE



SECTION THRU JOINT AT BENTS 1 &amp; 3

NO SCALE

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

Bearings shall be seated in accordance with subsection 808.08. 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)".

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

PAINTING: All structural steel except galvanized members, machined surfaces, and surfaces in contact with concrete shall be painted as specified in Section 807. Color of paint shall be Brown Fed. Std. 595B, Color Chip 20059. See subsection 807.75.

## 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-Bridge (Grade 60)".

## 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  $3/4"$  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 Tine Finish in accordance with subsection 802.19 for Class 5, Tined Bridge Roadway Surface Finish. The sidewalk and shared use path 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. A longitudinal strike-off will not be allowed on this project.

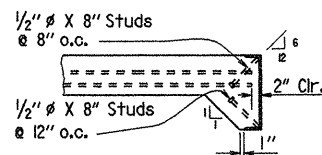
In Stage One Construction, a minimum of 72 hours shall elapse between completion of the bridge deck slab and the pouring of the sidewalk and a minimum of 72 hours shall elapse between the pouring of the sidewalk and the pouring of the parapet railing. For Stage Two Construction, a minimum of 72 hours shall elapse between the completion of the bridge deck slab and the pouring of the parapet railing and curb. Any railing pours made before the entire slab has been placed and cured must be approved by the Engineer.

## LOAD DISTRIBUTION:

## DEAD LOAD

	Girder No.	
A: To Girder:	1 and 10	717 plf + Wt. of Structural Steel
	2 Thru 9	867 plf + Wt. of Structural Steel
B: To Composite Girder:	1	795 plf **
	2 Thru 9	287 plf **
	10	252 plf **

\*\*Includes 146 plf future wearing surface.

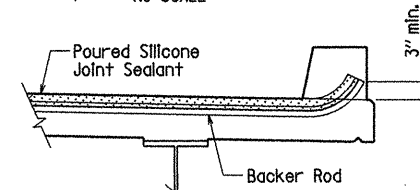


## NOTE:

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

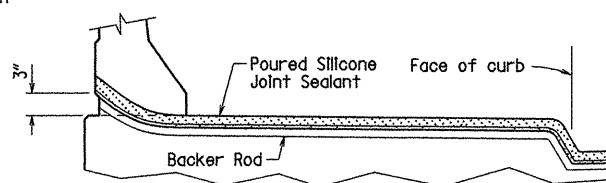
## DETAILS OF ALTERNATE ANCHORS AND PLACEMENT OF LONGITUDINAL REINFORCEMENT

NO SCALE



JOINT SEAL PLACEMENT AT CURB

NO SCALE



JOINT SEAL PLACEMENT AT SIDEWALK &amp; PARAPET

NO SCALE

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.		040238	172293	
				07176		SPAN DETAILS		50972

## SILICONE JOINT DATA

Bent Number	"A" Width Perpendicular to Joint at 24 Hour Average Temperature * Of:			"B" Perpendicular to Joint at 60°F	Bumper Plate Size	"D"
	40°F	60°F	80°F			
1 & 3	2 1/8"	2"	1 1/8"	2 3/8" +/-	1" x 1 1/4"	5"

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.

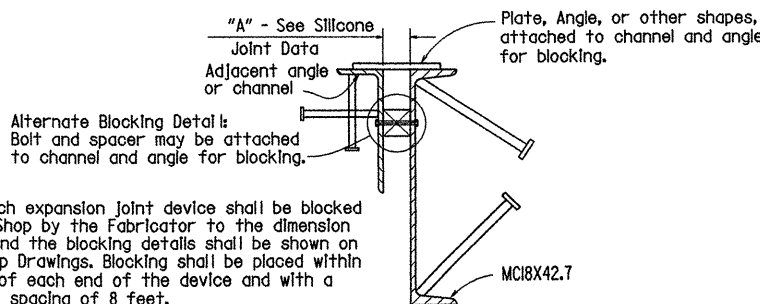
The sealant shall be installed only when the average 24 hour air temperature is between 40° and 80°F.

## 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 that 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.



NOTE: Each expansion joint device shall be blocked in the Shop by the Fabricator to the dimension shown, 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

NO SCALE

## EXPANSION DEVICE INSTALLATION

BENTS 1 &amp; 3

The Contractor may elect to install the expansion device for the end bents 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 girders erected, the blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the backwall concrete, the blocking shall be removed, the opening adjusted for temperature, and the backwall constructed.
- 2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature. Backfill shall not be placed behind the backwall until the deck concrete on the adjacent span has been placed.



SHEET 9 OF 9  
DETAILS OF 186'-0" CONTINUOUS  
COMPOSITE PLATE GIRDER UNIT  
ROUTE SEC.  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 10-14-09 FILENAME: B040238\_sl.dgn  
CHECKED BY: DHP DATE: 8-5-10 SCALE: NO SCALE  
DESIGNED BY: JRP DATE: 9-6-09  
BRIDGE NO. 07176 DRAWING NO. 50972

Technical drawing of a beam-to-column connection, showing a side elevation and a top view.

**Side Elevation Labels:**

- C.L. Beam or Girder ②
- D
- M
- Girder Flange
- ①
- 5/16"
- G
- Top of Cap
- Sheet Metal Sleeve
- Elastomeric Bearing
- External Load Plate
- Heavy Hex Nut
- Steel Washer
- 1/4" Min.
- Pipe Sleeve Length
- Std. Weight Pipe Sleeve
- Swedge Anchor Bolt
- A

The diagram shows a beam of total width  $C$  and height  $E$ . A central slot of width  $F$  is cut through the beam. The beam is divided into two sections of width  $C/2$  each. A dashed line indicates the original beam profile. A label 'Slot in External Load  $P$ ' points to the right side of the beam.

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

Stations Increase →

Thickness under Dead Load

2" (Min.) Steel PL @ C.L. Bearing

C.L. Bearing

T<sub>b</sub> (External Load Plate Thickness @ Back Station Edge)

T<sub>a</sub> (External Load Plate Thickness @ Ahead Station Edge)

Top of Cap

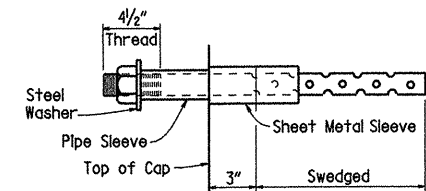
K B K

C

[illegible]

The diagram illustrates a laminated bearing assembly. It consists of a central stack of steel laminae, labeled "Steel Laminae", with a total thickness denoted as  $t_l$  and "Number of layers thickness =  $t_l$ ". This central stack is flanked by two layers of "50 Durometer Elastomer", each with a thickness of  $\frac{1}{4}$ " Cir. (Typ.). The entire assembly is shown within a rectangular frame, with a total thickness dimension  $T$  indicated on the right side.

### ELASTOMERIC BEARING



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 GPL 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. 50L."

[illegible]

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 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 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".

Designed by : JRP Date: 9-22-09



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

CHECKED BY: DHP DATE: 8-5-10 SCALE: No Scale

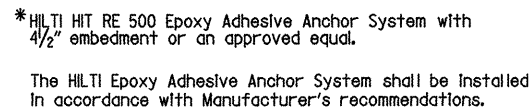
DESIGNED BY: STD. DATE:

BRIDGE NO. 07176 DRAWING NO. 50973

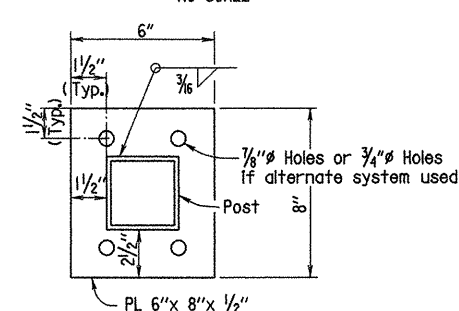
BRIDGE ENGINEER

DRAWING NO. 50973

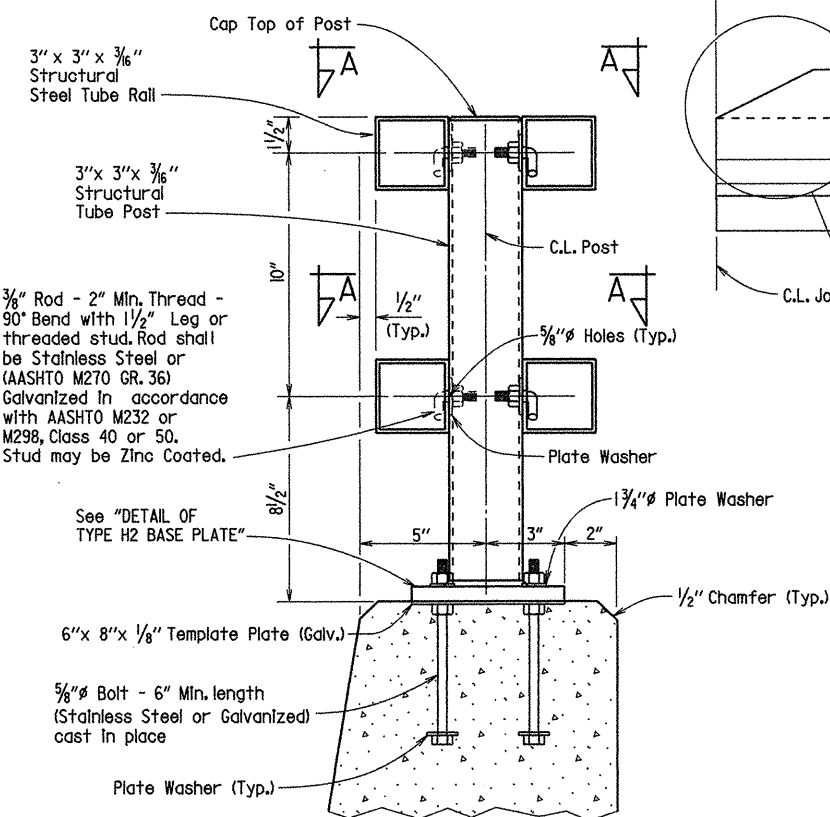




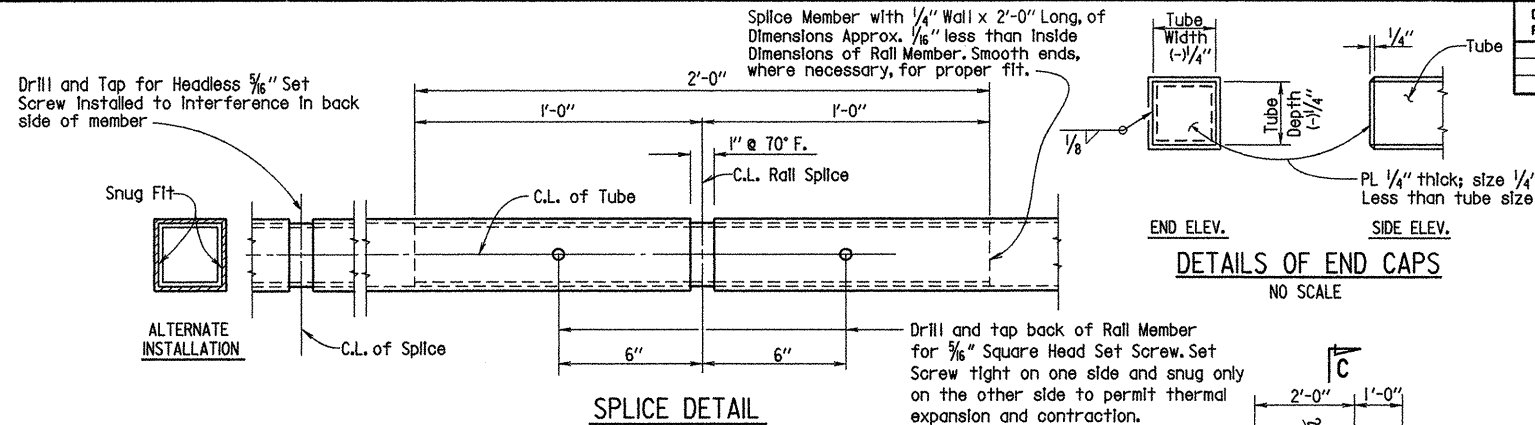
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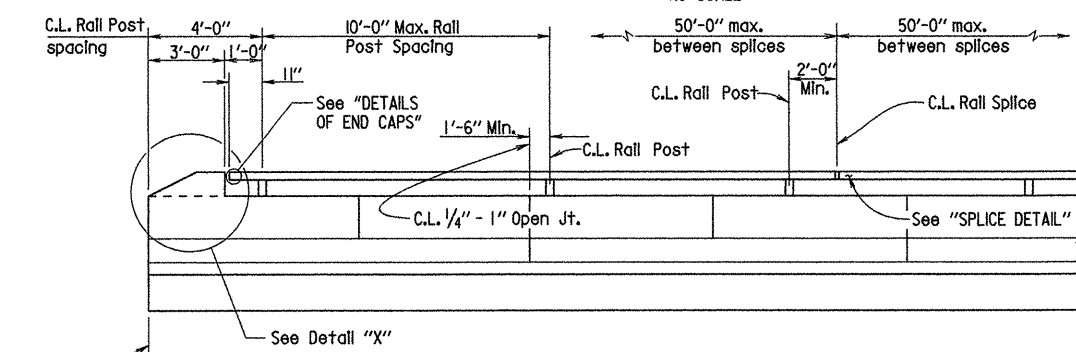
DETAILS OF TYPE H2 BASE PLATE  
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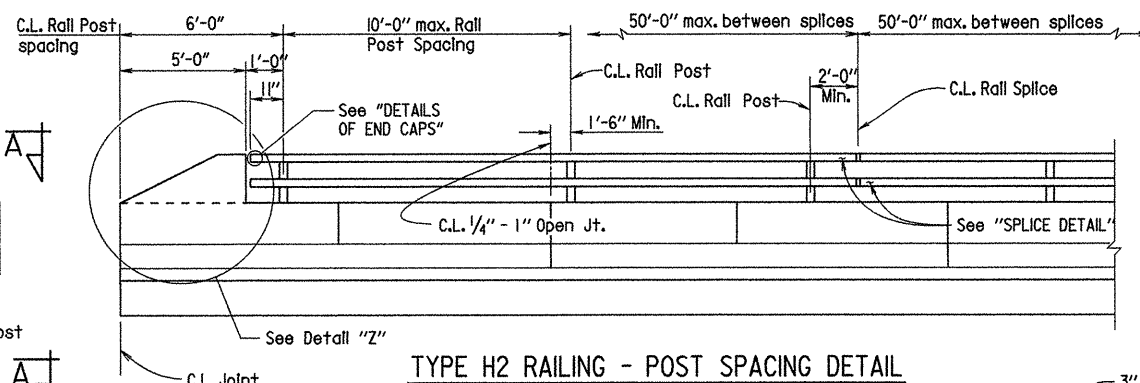
DETAILS OF TYPE H2 RAILING  
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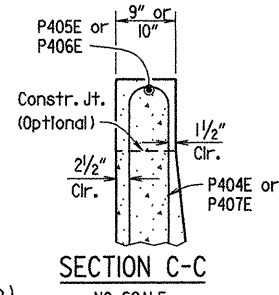
### SPLICE DETAIL



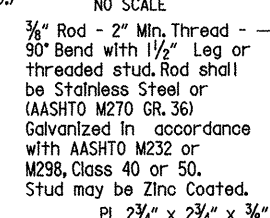
TYPE H RAILING - POST SPACING DETAIL



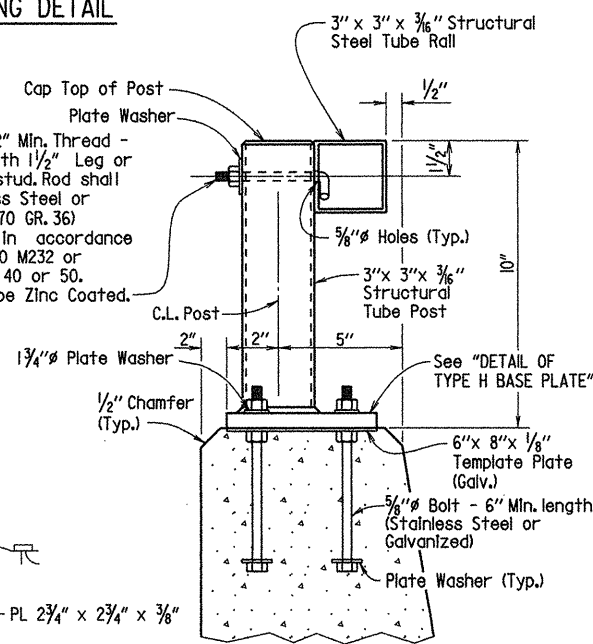
TYPE H2 RAILING - POST SPACING DETAIL



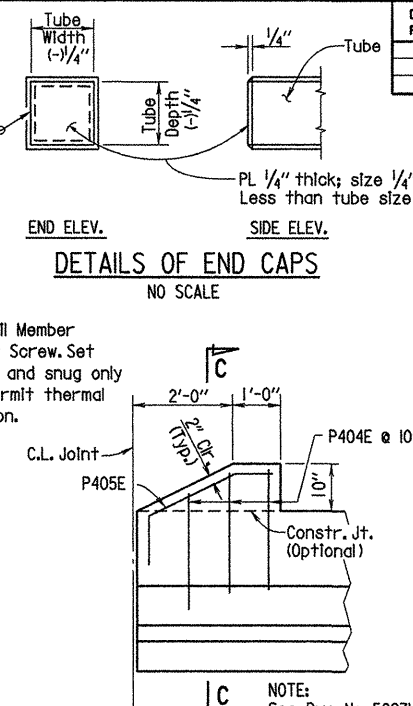
## SECTION C-C



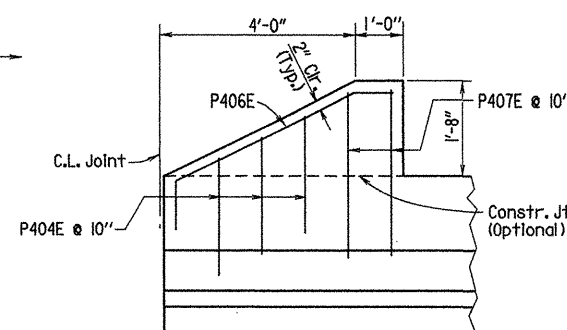
SECTION A-A  
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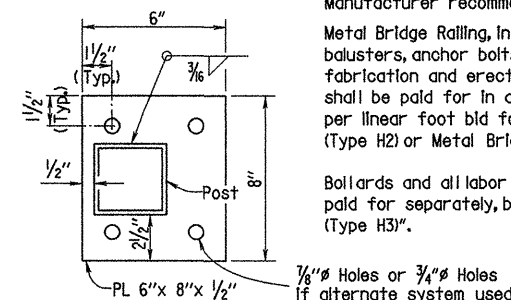
DETAILS OF TYPE H RAILING  
NO SCALE



DETAIL X



DETAIL Z  
NO SCALE



DETAILS OF TYPE H BASE PLATE  
NO SCALE



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.		040238	175	297
				07176	METAL RAIL DETAILS			50974

GENERAL NOTES FOR METAL BRIDGE RAILING:

Rail layout shall conform to vertical and horizontal alignment of the bridge.  
All Posts, Balusters and Bollards shall be vertical.

Base plates shall not be placed upon areas that are improperly finished, deformed or irregular.

Shop drawings showing details of railing shall be submitted and approval secured prior to fabrication.

**MATERIALS:**

Structural Tubing shall be AASHTO M270, Gr. 36 or ASTM A500-Grade B. Rolling, Balusters, Base Plates, End Cap Plates and Misc. Steel shall be AASHTO M270 Gr. 36.

Cast In place anchor bolts shall be of stainless steel or high strength steel. Stainless steel anchor bolts shall conform to ASTM A193 or A320-Grade B8 with a minimum yield strength of 80,000 psi. High strength steel anchor bolts shall conform to AASHTO M64 or A354-Grade BC, galvanized in accordance with AASHTO M232 or M298, Class 40 or 50.

Bolts shall conform to the requirements of ASTM A193 Grade B8, B8N or B8C, Class 2 (Stainless Steel).

Nuts shall conform to AASHTO M292, Gr. 8A (Stainless Steel) or AASHTO M232 or M298, Class 40 or 50 (Galvanized). Panel connection nuts for Metal Bridge Railing (Type H3) shall be nylon Insert lock nuts that meet or exceed the requirements of AASHTO M292 Grade 8A (Stainless Steel).

Washers shall be Stainless Steel and conform to the requirements of ASTM A167-Type 302 with dimensions meeting ASTM F436 or high-strength steel conforming to AASHTO M293 and galvanized in accordance with AASHTO M232 or M298, Class 40 or 50.

Splice Set Screws shall conform to the requirements of ASTM A193 or A320-Gr. B8 (Stainless steel) or AASHTO M270, Gr. 36 (Galvanized).

Plate Washers shall be Stainless Steel and conform to the requirements of ASTM A167-Type 302 or AASHTO M270, Gr. 36, galvanized in accordance with AASHTO M232 or M298, Class 40 or 50. Plate Washers shall have dimensions meeting the requirements of ANSI/ASME B18.22.1, Type A plain washer (Wide Series).

0" Threads for bolts, screws, and nuts shall conform to American Standard Course Series, Class 2 FIT, ASA Specification B1.1.

Mixing of Stainless Steel and Galvanized fasteners will not be permitted.

Steel rail members and Bollards shall be galvanized in accordance with AASHTO M11 after fabrication and shall receive a powder coating process after galvanizing. Galvanizing shall not interfere with the powder coating process. Galvanized surfaces shall be prepared in accordance with subsection 807.87 and the powder coating manufacturer's recommendations before application of the powder coating process. The powder coating process shall be a two coat system applied using electrostatic spray. The base coat shall be a thermosetting epoxy powder with a minimum thickness of 2 - 4 mils. The top coat shall be tough polyester powder with a minimum thickness of 2 - 4 mils. Color shall be Brown equal to or close to Federal Std. 595B, color chip 20059 and as approved by the Engineer. Coated galvanized framework shall have a salt spray resistance of 3000 hours using ASTM B117 without loss of adhesion. The powder coating process shall be in accordance with Manufacturer recommendations.

Metal Bridge Railing, including posts, fasteners, base plates, template plates, balusters, anchor bolts, neoprene pad, galvanizing and powder coatings; fabrication and erection; and all incidentals necessary to complete the work shall be paid for in accordance with Section 807 at the contract unit price per linear foot bid for "Metal Bridge Railing (Type H), Metal Bridge Railing (Type H2) or Metal Bridge Railing (Type H3)".

Boilards and all labor and material associated with Boilards will not be paid for separately, but shall be considered subsidiary to "Metal Bridge Railing (Type H3)".

SHEET 1 OF 2  
DETAILS OF METAL BRIDGE RAILING

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

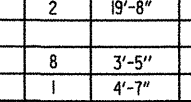
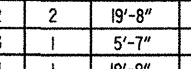
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 DESIGNED BY: JRP DATE: 9/9  
 BRIDGE NO. 07176 DRAWING NO. 50974





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.		040238	171	249
				07176		APPROACH GUTTER		50976

BAR LIST - EACH APPROACH GUTTER

Mark	No. Req'd.	Length		A	B	Pin Dia.
		Bent No. 1	Bent No. 3			
G401	26	18'-4"	18'-9"			Str.
G402	2	3'-8"	3'-9"			Str.
G403	2	11'-9"	12'-1"			Str.
G501	64	20'-2"	20'-2"			Str.
G502	6	19'-8"	19'-8"			Str.
G503	2	19'-8"	19'-8"			Str.
						
*R301	8	3'-5"	3'-5"	6"	1'-6"	1½"
R401	1	4'-7"	4'-7"	1'-2"	11½"	2"
R402	2	19'-8"	19'-8"			Str.
R403	1	5'-7"	5'-7"			Str.
R404	1	19'-9"	19'-9"			Str.
R405	1	14'-0"	14'-0"			Str.
R406	12	5'-9"	5'-9"			2"
R407 to R418	lea.	2'-11" to 5'-5"	2'-11" to 5'-5"	1'-2½" to 2'-5½"	1'-2½" to 2'-5½"	2"
R419 to R424	lea.	3'-3" to 4'-5"	3'-3" to 4'-5"	1'-1" to 1'-7½"	3" to 11"	2"
R425	2	13'-10"	13'-10"			Str.
C401	18	3'-7"	3'-7"			2"
C402	1	19'-8"	19'-8"			Str.
C403	2	1'-8"	1'-8"			Str.
C404	2	15'-8"	15'-8"			Str.
						

\*R301 reinforcing steel shall be galvanized.

GENERAL NOTES:

For Approach Gutter locations see Bridge Layout.

All Concrete shall be either Class "S" or Class "SAE" and be poured in the dry.

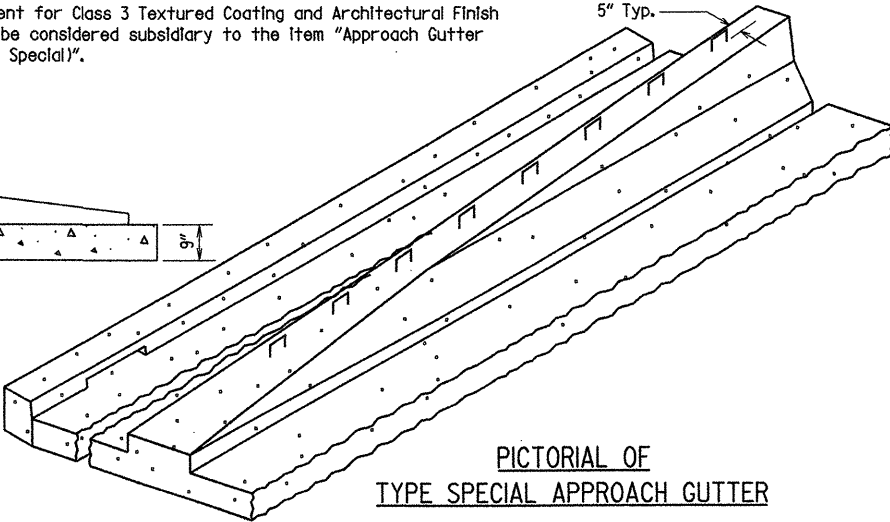
All exposed corners are to be chamfered 3/4" unless otherwise noted.

Reinforcing Steel Shall conform to AASHTO M31 or M53, Grade 60. Reinforcing Steel designated as galvanized shall be galvanized in accordance with ASTM A767.

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

Class 3 Textured Coating Finish shall meet the requirements specified in Special Provision Job No. 040238 "Textured Coating Finish".

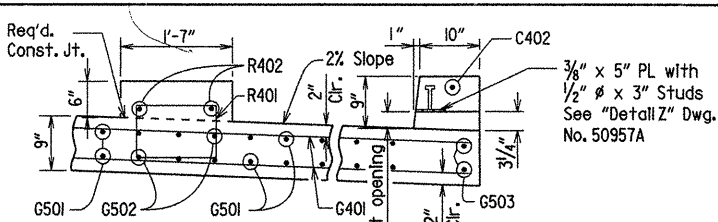
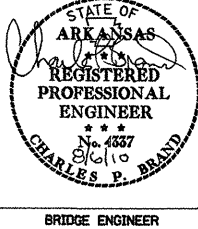
Payment for Class 3 Textured Coating and Architectural Finish shall be considered subsidiary to the item "Approach Gutter (Type Special)".



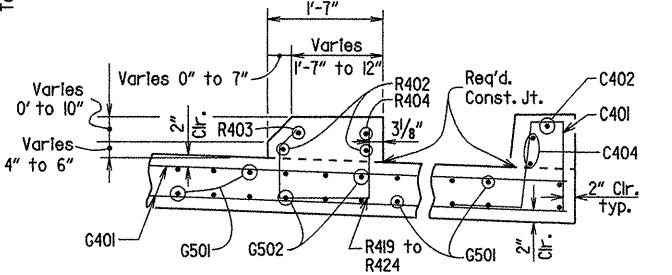
DETAILS OF TYPE SPECIAL APPROACH GUTTER

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

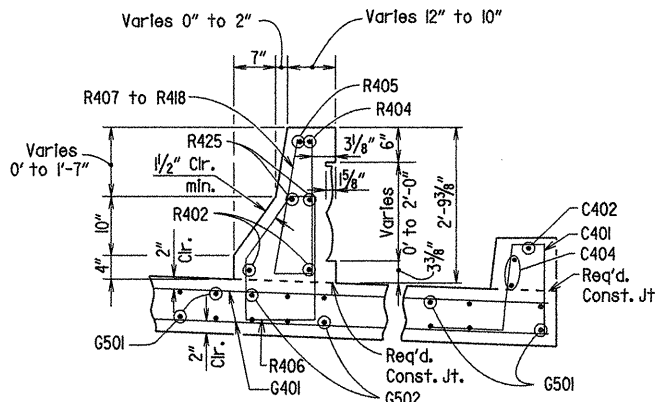
DRAWN BY: RBR DATE: 11/10/09 FILENAME: b040238\_ag.dgn  
 CHECKED BY: RBR DATE: 8/6/10 SCALE: 1/2" = 1'-0" or as shown  
 DESIGNED BY: RBR DATE: 10/09  
 BRIDGE NO. 07176 DRAWING NO. 50976



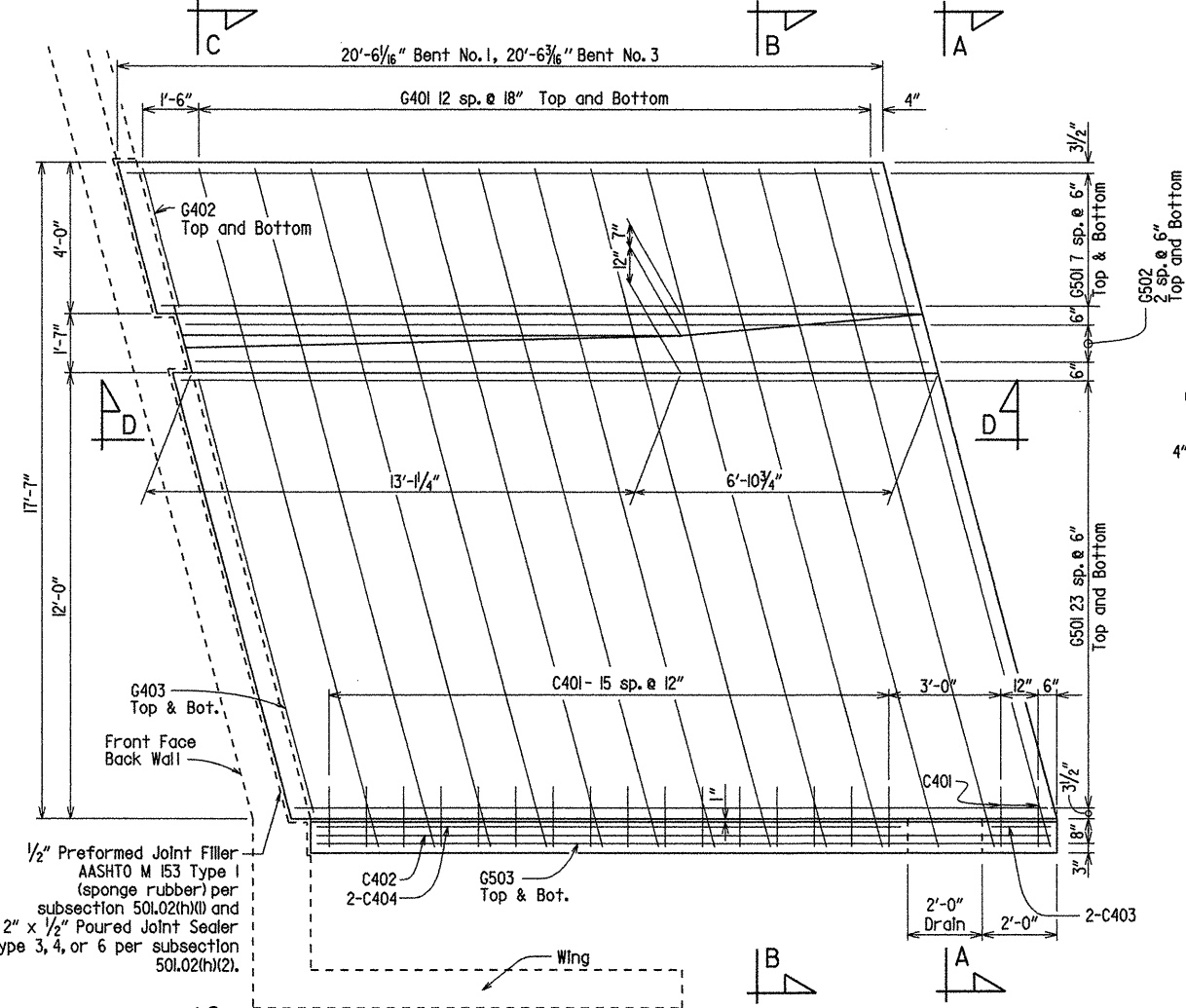
SECTION A-A  
Scale: 3/4" = 1'-0"



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



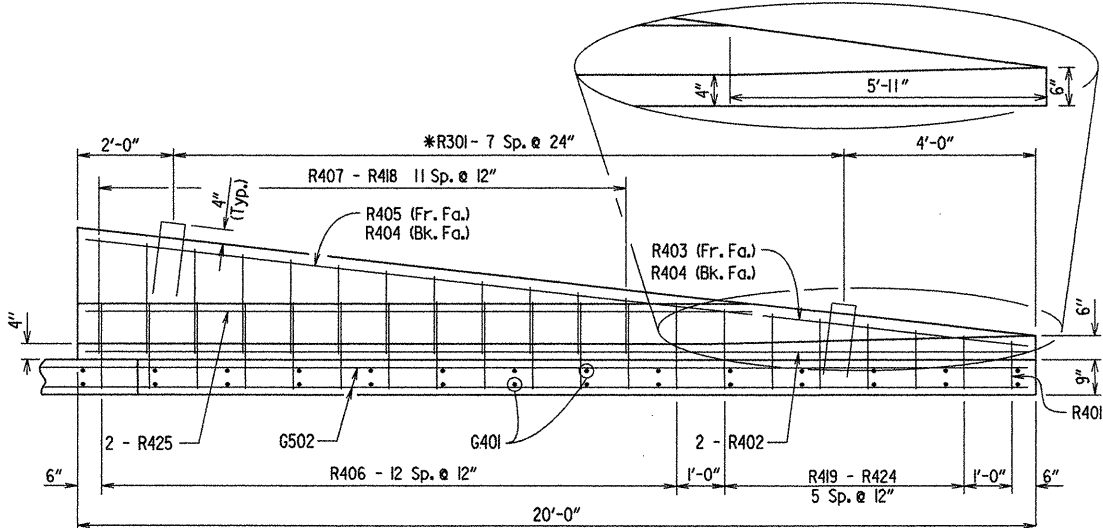
SECTION C-C  
Scale: 3/4" = 1'-0"



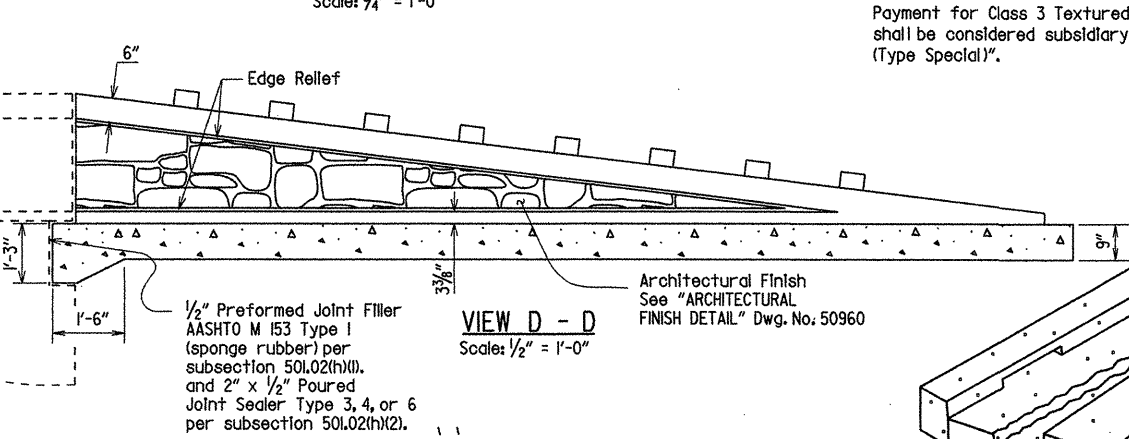
PLAN AT BENT NO. 3 - TYPE SPECIAL APPROACH GUTTER  
NO SCALE

QUANTITIES FOR TYPE SPECIAL APPROACH GUTTERS

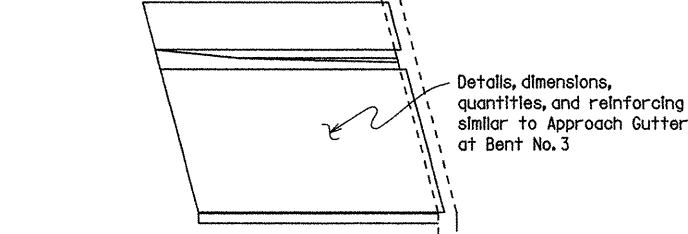
Gutter Length	Concrete (Cu. Yds.)	Reinforcing Steel (Lbs.)	Textured Coating (Sq. Yds.)	Architectural Finish (Sq. Ft.)	Structural Steel (M270 - GR. 36) (Lbs.)
20'-0"	12.5	2,115	10	15	13.2



ELEVATION - TYPE SPECIAL APPROACH GUTTER  
NO SCALE



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



PLAN AT BENT NO. 1 - TYPE SPECIAL APPROACH GUTTER  
Scale: 1/8" = 1'-0"