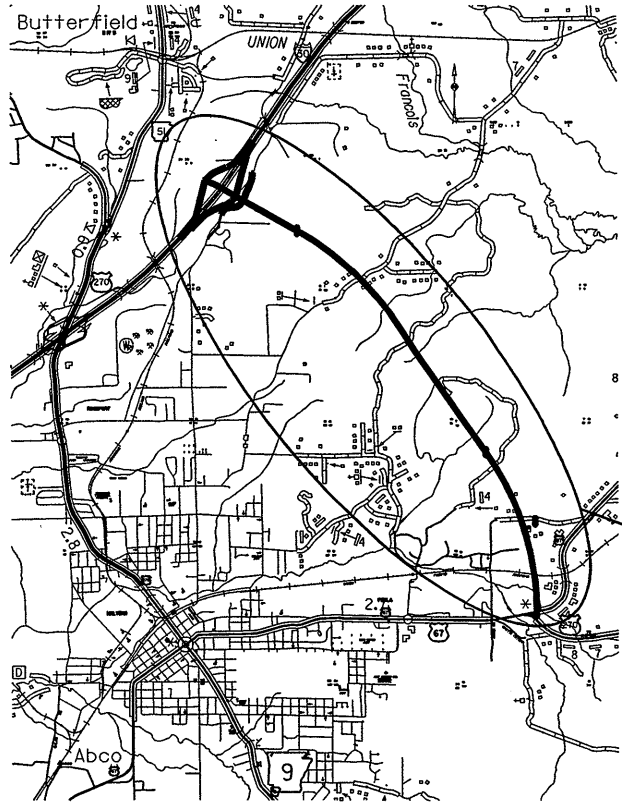


"THIS IS A PARTIALLY CONTROLLED ACCESS FACILITY"
ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. RD. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		060900	1	380
				HWY. 67-I-30 (MALVERN BYPASS) (S)				



VICINITY MAP

HWY. 67-I-30 (MALVERN BYPASS) (S)
HOT SPRING COUNTY

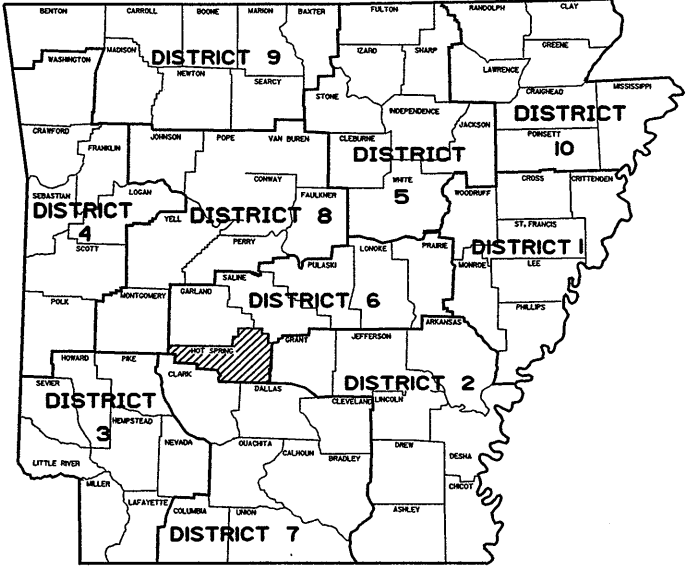
ROUTE 270 SECTION 7

F.A.P. STP-9272 (2)

JOB 060900

NOT TO SCALE

PROJECT
LOCATION



ARKANSAS HIGHWAY DISTRICT 6

DESIGN TRAFFIC DATA

DESIGN YEAR	-----2023
2003 ADT	-----2300
2023 ADT	-----3375
2023 DHV	-----371
DIRECTIONAL DISTRIBUTION	-----60%
TRUCKS	-----30%
DESIGN SPEED	-----60 MPH

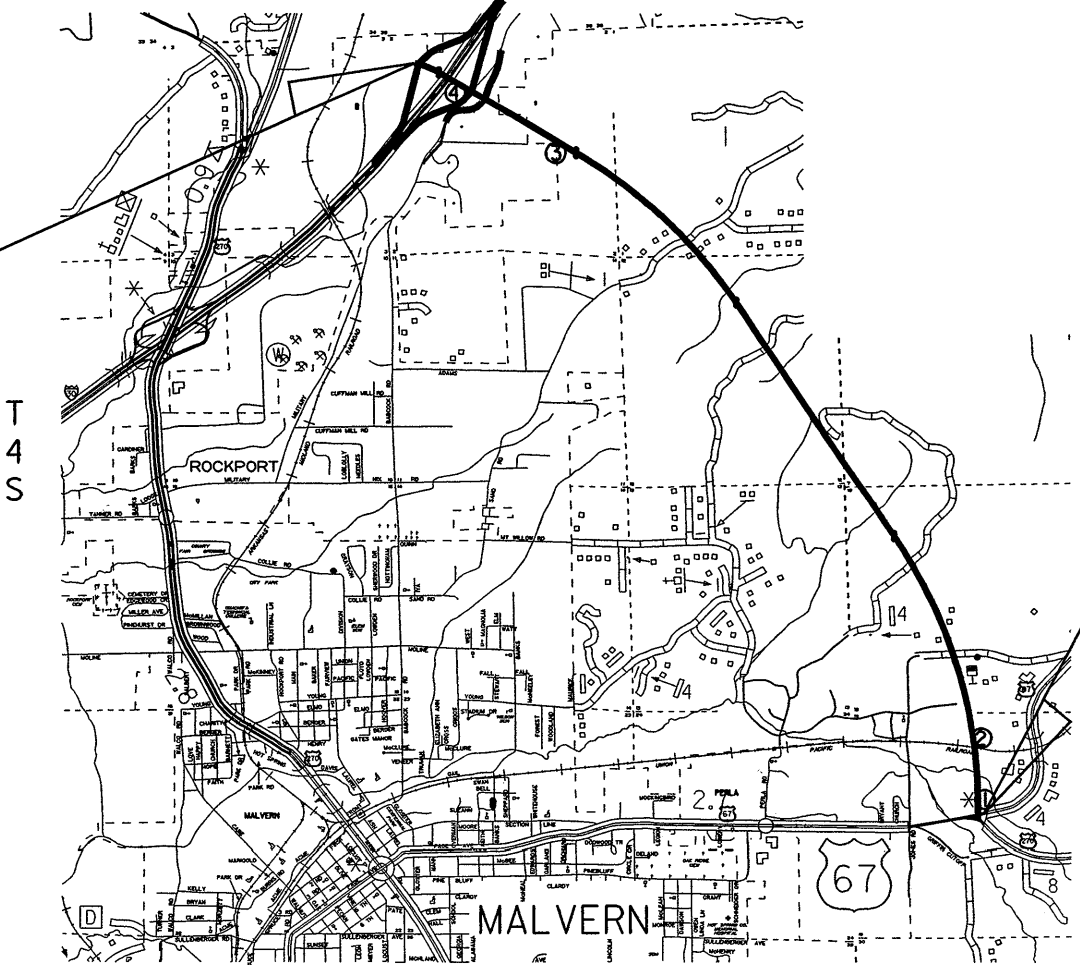
STA. 282+00 END
JOB 060900

STRUCTURES OVER 20'-0" SPAN

STATION	DESCRIPTION	SPAN
① HWY. 67 23+90	EXTEND 6' X 4' X 67'-25' LT. DBL. 7' X 4' X 92' PRECAST R.C. BOX CULV'T.	22'-8"
③ 226+90	CONST. TRIPLE 8' X 5' X 115' R.C. BOX CULV'T. ON 45° RT. FWD. SKEW	37'-8 1/2"

BRIDGES CONST. UNDER JOB 060900

LOCATION	BRIDGE ENDS		BRIDGE LENGTH	CLEAR ROADWAY WIDTH	BRIDGE NUMBER
	STATION	STATION			
②	64+79.90	66+64.10	184' -2-1/2'	40' -0"	06981
④	268+92.29	272+03.50	311' -2-1/4'	52' -0"	06982



STA. 50+00.000 BEGIN
JOB 060900

NOTE: JOB LENGTH CALCULATED ALONG MAIN LANE CONST CENTERLINE
GROSS LENGTH OF PROJECT 23200.00 FEET OR 4.394 MILES
NET LENGTH OF ROADWAY 22666.88 FEET OR 4.293 MILES
NET LENGTH OF BRIDGES 533.10 FEET OR 0.101 MILES
NET LENGTH OF PROJECT 23200.00 FEET OR 4.394 MILES

P.E. JOB 060900
NON-PART.

APPROVED

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4034
ROBERT L. WALTERS

10-1-2003
CHIEF ENGINEER

MIDPOINT OF JOB 060900
LAT N 34°23'22"
LONG W 92°46'33"

r060900.ttt

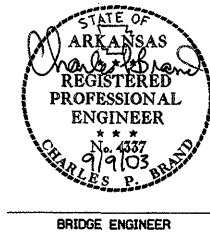
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		060900	48	380
① 06981, 06982 QUANTITIES								46161

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 060900

BRIDGE NO.	CODE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE	ITEM NO.	619	801	802	802	803	804	804	805	805	807	807	SP & 807	SP & 808	809	812	816	SP JOB 060900
				ITEM	7'-0" STEEL CHAIN LINK FENCE	UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE	CLASS S CONCRETE-BRIDGE	CLASS S(AE) CONCRETE-BRIDGE	CLASS 1 PROTECTIVE SURFACE TREATMENT	REINFORCING STEEL - BRIDGE (GRADE 60)	EPOXY COATED REINFORCING STEEL (GRADE 60)	CONCRETE PILING (18' SQ.)	TEST PILE (18' SQ.)	STRUCTURAL STEEL IN BEAM SPANS (M 270, GRADE 50)	STRUCTURAL STEEL IN BEAM SPANS (M 270, GRADE 50W)	PAINTING STRUCTURAL STEEL ①	ELASTOMERIC BEARINGS	PREFORMED JOINT SEAL	BRIDGE NAME PLATE (TYPE D)	CONCRETE RIPRAP	ARMORED JOINT WITH NEOPRENE STRIP SEAL
				UNIT	LIN. FT.	CU. YD.	CU. YD.	CU. YD.	GAL.	LB.	LB.	LIN. FT.	LIN. FT.	LB.	LB.	TON	CU. IN.	LIN. FT.	EACH	CU. YD.	LIN. FT.
06981	X171	UNION - PACIFIC RAILROAD																			
			BENT NOS.1 & 4			61.46		0.5	5,860		520	55	1,430						108		
			BENT NOS.2 & 3		215	130.34			16,820		400	25									
			182'-0" CONTINUOUS COMPOSITE W-BEAM UNIT	208			219.00	19.1		50,125				177,420		17,856	90	1			
TOTALS FOR BRIDGE NO. 06981				208	215	191.80	219.00	19.6	22,680	50,125	920	80		178,850		17,856	90	1	108		
06982	X771	I-30 OVERPASS																			
			BENT NOS.1 & 5		148	75.86		0.6	7,450		350	40	1,800						152		
			BENT NOS.2,3 & 4		549	308.14			33,310		2,655	50									
			309'-0" CONTINUOUS COMPOSITE W-BEAM UNIT				468.30	40.6		104,715			470,330		235.2	37,506		1		111	
TOTALS FOR BRIDGE NO. 06982					697	384.00	468.30	41.2	40,760	104,715	3,005	90	472,130		235.2	37,506		1	152	111	
TOTALS FOR JOB NO. 060900				208	912	575.80	687.30	60.8	63,440	154,840	3,925	170	472,130	178,850	235.2	55,362	90	2	260	111	

① THE COLOR OF PAINT SHALL CONFORM TO FEDERAL STANDARD 595A, COLOR CHIP NO. 14109, GREEN.

AILEEN SCHUBEL
DESIGN SECTION SUPERVISOR



SCHEDULE OF BRIDGE QUANTITIES
HWY. 67 - I-30 (MALVERN BYPASS) (S)
HOT SPRING COUNTY

ROUTE 270 SEC. 7
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: KMG DATE: 17 JUL 03 FILENAME: b060900.q1
CHECKED BY: JAC DATE: 9-3-03 SCALE: NONE
DESIGNED BY: - DATE: -
BRIDGE NO. 06981, 06982 DRAWING NO. 46161

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.		060900	132	380
				06982	LAYOUT			46176

GENERAL NOTES

BENCH MARK: Cotton Picker Spindle in Combination Pole, 40.65' Rt. of Sta. 263+41.981, Elev. 396.66.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable supplemental specifications and special provisions. Unless otherwise noted on the plans, Section and Subsection refer to the Standard Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges (2002 edition) with current Interim specifications.

LIVE LOADING: HS20 METHOD OF DESIGN: Load Factor

SEISMIC PERFORMANCE CATEGORY: A

MATERIALS AND STRENGTHS:

Substructure Concrete (Class S) $f'_c = 3,500$ psi
Superstructure Concrete (Class S(AE)) $f'_c = 4,000$ psi
Reinforcing Steel (AASHTO M 31 or M 53, Gr. 60) $f_y = 60,000$ psi
Structural Steel (AASHTO M 270, Gr. 36) $F_y = 36,000$ psi
Structural Steel (AASHTO M 270, Gr. 50) $F_y = 50,000$ psi

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

FOOTINGS: The top to the footings at bents 2 thru 4 shall be set a minimum of 2' below natural ground. Foundations for footings shall be prepared in accordance with Section 801.

CONCRETE PILING: Piling for bents 1 thru 5 shall be 18" square precast concrete and shall be driven to a minimum safe bearing capacity of 60 tons per pile. All piling shall be driven with an approved air, steam or diesel hammer. Piling in end bents shall be driven after embankment to bottom of cap is in place and shall be driven to a minimum penetration of 15' below bottom of cap. Piles in intermediate bents shall be driven to a minimum penetration of 10' below bottom of footings. Lengths of piling shown are assumed for estimating quantities only. Actual lengths to be determined in the field. Drive one 40' test pile in Bent 1 and one 50' test pile in Bent 4.

PREBORING as approved by the Engineer may be required to achieve the minimum penetration. Any cost for preboring shall be included in the Items "Concrete Piling (18" Sq.)" and "Test Pile (18" Sq.)."

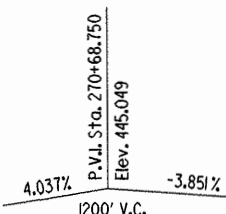
BRIDGE DECK: The concrete bridge deck shall be given a fine finish as specified for final finishing in Subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

PAINTING: All new structural steel except galvanized members, machined surfaces, and some surfaces in contact with concrete shall be painted as specified in Subsection 807.75. The color of the paint shall be Green and shall match the Federal Standard Color Chip No. 14109.

DETAIL DRAWINGS:
End Bents
Intermediate Bents
309'-0" Cont. Comp. W-Beam Unit
Elastomeric Bearings
Concrete Piling
Type C Approach Gutters
Concrete Riprap

DRAWING NO.
46178, 46179, 46184, 46185
46180 thru 46183
46186 thru 46191
46192 & 46193
2383
206C
14995A

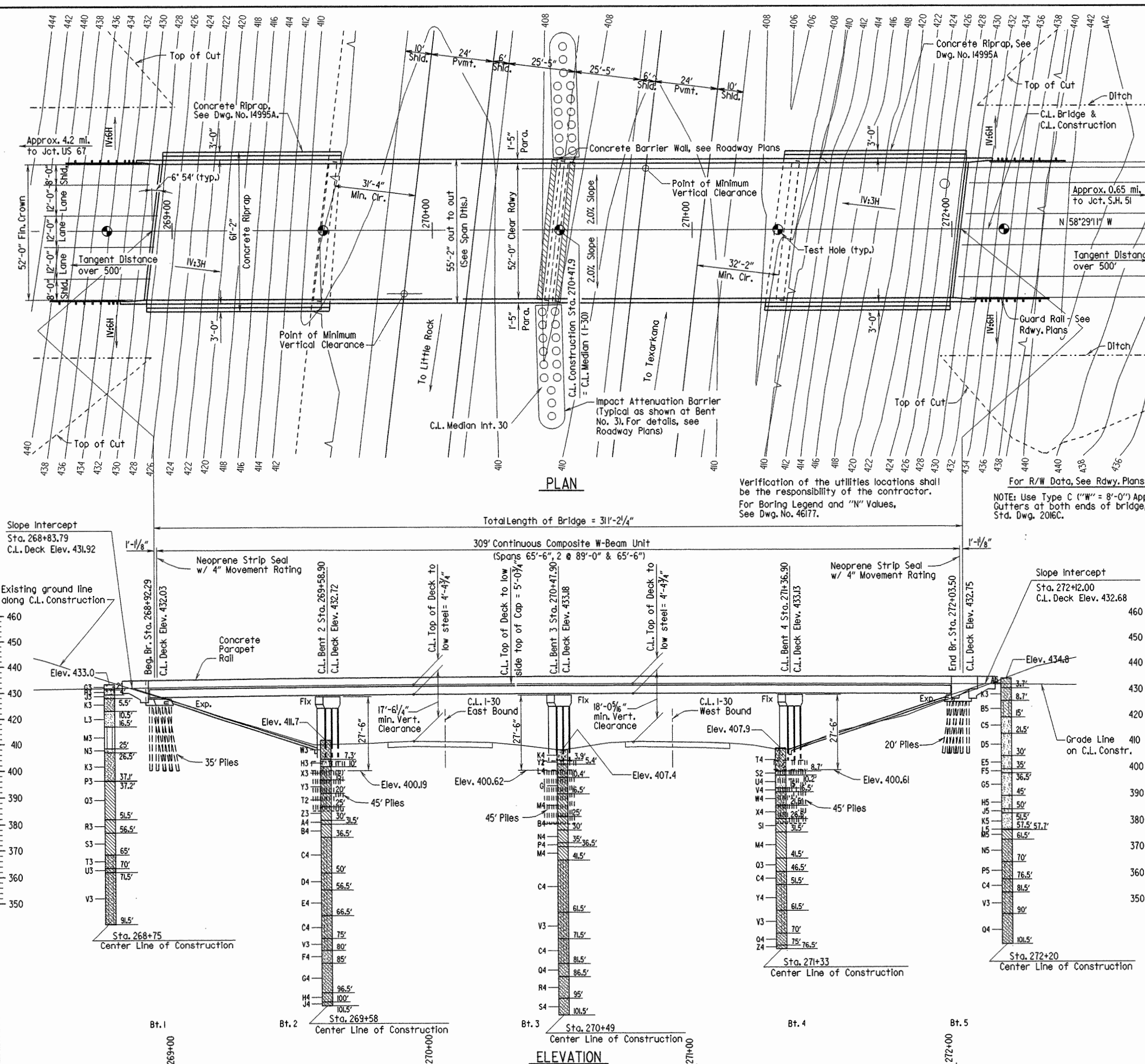
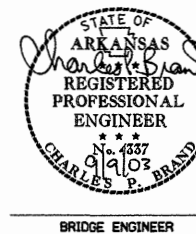
MAINTENANCE OF TRAFFIC: See SP Job 060900 "Special Safety Requirements for Bridge No. 06982" and Roadway Plans for maintenance of traffic details.



SHEET NO. 1 OF 2 LAYOUT OF BRIDGE OVER I-30 HWY. 67 - I-30 (MALVERN BYPASS) (S) HOT SPRING COUNTY

ROUTE 270 SEC. 7
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JXJ DATE: 12-05-2002 FILENAME: 060900J21
CHECKED BY: CAB DATE: 9-03 SCALE: 1"=20'-0"
DESIGNED BY: AHZ DATE: 11-02
BRIDGE NO. 06982 DRAWING NO. 46176



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.	060900	133 380
						06982	LAYOUT	46177

BORING LEGEND

G3-Moist, Medium Dense, Brown Gravel with some Clay
H3-Moist, Medium Dense, Brown Sand and Gravel
J3-Moist, Medium Dense, Reddish Brown to Brown Sand with Traces of Gravel and Clay
K3-Moist, Medium Dense, Reddish Brown Sand with Clay Seams
L3-Moist, Medium Dense, Reddish Brown Sand with Traces of Gravel and Clay
M3-Moist, Medium Dense, Light Brown and Gray Silt with Traces of Clay
N3-Moist, Medium Dense, Light Brown Silty Sand
P3-Hard, Light Brown Cemented Sand (37.1' to 37.2')
Q3-Moist, Stiff, Gray Clay
R3-Moist, Hard, Gray and Brown Clay
S3-Moist, Very Stiff, Gray and Brown Clay
T3-Moist, Very Stiff to Hard, Gray and Brown Clay with Silt and Sand Lenses
U3-Moist, Hard, Gray and Brown Clay with Silt and Sand Lenses and some Organic Matter
V3-Moist, Hard, Gray and Brown Clay with Silt and Sand Lenses
W3-Moist, Soft, Reddish Brown to Brown Sandy Clay
X3-Moist, Hard to Very Stiff, Brown Clay with Silt and Sand Lenses
Y3-Moist, Very Stiff, Brown and Gray Clay with Silt and Sand Lenses
Z3-Moist, Very Stiff to Hard, Gray Clay with some Organic Matter
A4-Moist, Hard, Brown and Gray Clay with some Organic Matter
B4-Moist, Very Stiff, Gray Clay with some Organic Matter
C4-Moist, Very Stiff, Gray and Brown Clay with Silt and Sand Lenses
D4-Moist, Very Stiff, Gray and Brown Clay with Silt and Sand Lenses and some Organic Matter
E4-Moist, Hard, Gray and Brown Clay with Silt and Sand Lenses
F4-Moist, Dense, Gray and Brown Sand with Clay Seams
G4-Moist, Very Stiff, Gray and Brown Clay with Sand Seams and some Organic Matter
H4-Moist, Stiff, Gray and Brown Clay with Sand Seams
J4-Moist, Stiff, Gray and Brown Clay with Sand Seams and Traces of Gravel
K4-Moist, Medium Dense, Brown Sand and Gravel with some Clay
L4-Moist, Medium Stiff, Brown Sandy Clay
M4-Moist, Very Stiff, Gray Clay
N4-Moist, Very Stiff to Stiff, Gray Clay
P4-Moist, Stiff, Gray Clay with some Organic Matter
Q4-Moist, Hard, Gray and Brown Clay with Sand Seams
R4-Moist, Very Stiff, Gray and Brown Clay with Sand Seams
S4-Moist, Very Stiff, Gray and Brown Sandy Clay
T4-Moist, Very Stiff, Brown Sandy Clay with Gravel (Fill Material)
U4-Moist, Dense, Brown Silty Sand with Traces of Gravel
V4-Moist, Dense, Brown Silty Sand
W4-Moist, Medium Dense, Reddish Brown to Brown Silty Sand with Clay Seams
X4-Moist, Hard, Reddish Brown to Brown Sandy, Silty Clay with Traces of Gravel
Y4-Moist, Hard to Very Hard, Gray and Brown Clay with Silt and Sand Lenses
Z4-Moist, Hard, Gray and Brown Clay with Sand Seams and Traces of Gravel
A5-Moist, Medium Dense, Reddish Brown Sand with Clay Seams and some Cobbles
B5-Moist, Medium Dense, Brown to Reddish Brown Silt with Clay Seams
C5-Moist, Medium Dense, Brown to Reddish Brown Silty Sand with Traces of Clay
D5-Moist, Dense to Medium Dense, Brown Silty Sand
E5-Moist, Medium Dense to Dense, Brown Silty Sand with Traces of Clay
F5-Moist, Dense, Brown to Reddish Brown Silty Sand with Traces of Clay
G5-Moist, Very Dense, Reddish Brown Silty Sand
H5-Moist, Very Dense, Brown Silty Sand with some Cemented Sand and Traces of Clay
J5-Moist, Very Dense, Brown to Reddish Brown Silty Sand with Traces of Clay
K5-Moist, Dense, Brown Sand with Traces of Clay
L5-Hard, Brown Cemented Sand (57.5' to 57.7')
M5-Moist, Stiff, Gray and Brown Clay
N5-Moist, Stiff, Gray Sandy Clay
P5-Moist, Stiff, Gray to Gray and Brown Clay with Silt and Sand Lenses

"N" VALUES

Sta. 268+75 - Center Line of Construction

4.5- 5.5, N=24
9.5- 10.5, N=14
15.5- 16.5, N=18
20.5- 21.5, N=21
25.5- 26.5, N=19
30.5- 31.5, N=16
35.5- 36.5, N=24
40.5- 41.5, N=15
45.5- 46.5, N=14
50.5- 51.5, N=15
55.5- 56.5, N=33
60.5- 61.5, N=28
65.5- 66.5, N=19
70.5- 71.5, N=42
75.5- 76.5, N=34
80.5- 81.5, N=31
85.5- 86.5, N=39
90.5- 91.5, N=35

Sta. 269+58 - Center Line of Construction

3.9- 4.9, N=3
10.5- 11.5, N=33
15.5- 16.5, N=29
20.5- 21.5, N=19
25.5- 26.5, N=17
30.5- 31.5, N=40
35.5- 36.5, N=17
40.5- 41.5, N=16
45.5- 46.5, N=19
50.5- 51.5, N=27
55.5- 56.5, N=29
60.5- 61.5, N=60
65.5- 66.5, N=37
70.5- 71.5, N=27
75.5- 76.5, N=33
80.5- 81.5, N=40
85.5- 86.5, N=28
90.5- 91.5, N=29
95.5- 96.5, N=18
100.5- 101.5, N=10

Sta. 270+49 - Center Line of Construction

4.4- 5.4, N=32
9.4- 10.4, N=6
15.5- 16.5, N=32
20.5- 21.5, N=24
25.5- 26.5, N=19
30.5- 31.5, N=24
35.5- 36.5, N=15
40.5- 41.5, N=20
45.5- 46.5, N=17
50.5- 51.5, N=27
55.5- 56.5, N=27
60.5- 61.5, N=25
65.5- 66.5, N=33
70.5- 71.5, N=32
75.5- 76.5, N=28
80.5- 81.5, N=29
85.5- 86.5, N=45
90.5- 91.5, N=23
95.5- 96.5, N=20
100.5- 101.5, N=17

Sta. 271+33 - Center Line of Construction

4.2- 5.2, N=19
9.2- 10.2, N=22
15.5- 16.5, N=34
20.5- 21.5, N=11
25.5- 26.5, N=31
30.5- 31.5, N=31
35.5- 36.5, N=26
40.5- 41.5, N=18
45.5- 46.5, N=14
50.5- 51.5, N=20
55.5- 56.5, N=31
60.5- 61.5, N=62
65.5- 66.5, N=32
70.5- 71.5, N=31
75.5- 76.5, N=50

Sta. 272+20 - Center Line of Construction

4.2- 5.2, N=25
9.2- 10.2, N=18
15.5- 16.5, N=20
20.5- 21.5, N=22
25.5- 26.5, N=39
30.5- 31.5, N=24
35.5- 36.5, N=41
40.5- 41.5, N=63
45.5- 46.4, N=90(0.9')
50.5- 51.5, N=86
55.5- 56.5, N=38
60.5- 61.5, N=15
65.5- 66.5, N=10
70.5- 71.5, N=12
75.5- 76.5, N=15
80.5- 81.5, N=24
85.5- 86.5, N=36
90.5- 91.5, N=34
95.5- 96.5, N=36
100.5- 101.5, N=39



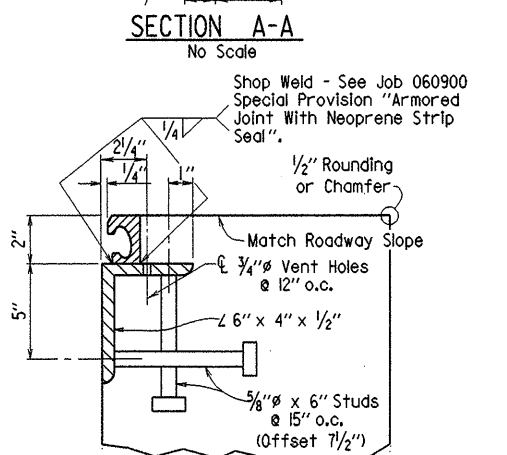
SHEET NO. 2 OF 2
LAYOUT OF
BRIDGE OVER I-30
HWY. 67 - I-30 (MALVERN BYPASS) (S)
HOT SPRING COUNTY

ROUTE 270 SEC. 7
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JXJ DATE: 11-20-2002 FILENAME: 060900122
CHECKED BY: CAB DATE: 9-07 SCALE: 1" = 20'-0"
DESIGNED BY: JHE DATE: 11/02
BRIDGE NO. 06982 DRAWING NO. 46177

Technical drawing of a pile cap cross-section. The drawing shows a concrete pile cap with various reinforcement bars and dimensions. Key features include:

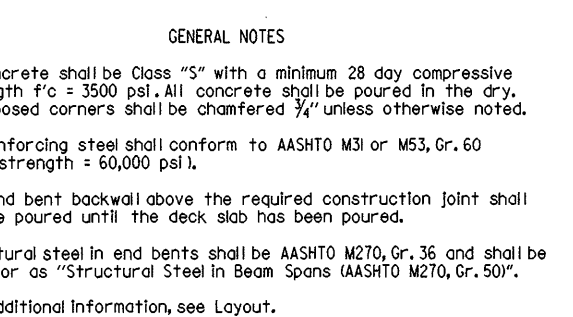
- Dimensions:**
 - Top width: 12" (total), 1'-9" (left section), 1'-0" (right section).
 - Right side height: 6" (total), 1'-0" (upper section), 6" (lower section).
 - Left side height: 3'-0" (total).
 - Bottom width: 8" (total), 1'-6" (right section).
 - Vertical spacing: 2" cl. typ. (between B406 and B603/B404), 12" typ. (between B401 and B602).
- Reinforcement:**
 - B406: Top longitudinal bars.
 - B403 or B501: Vertical bars in the upper section.
 - B603 or B404: Vertical bars in the lower section.
 - B601: Diagonal bars in the lower section.
 - B401: Horizontal bars in the lower section.
 - B602: Bottom longitudinal bars.
- Other Labels:**
 - See Detail "Z": Points to the top corner reinforcement.
 - Varies (9/16" at gutterline): Points to the top edge of the cap.
 - Req'd Constr. Jt.: Points to the joint between the upper and lower sections.
 - B601 - see Detail "X": Points to the diagonal bars.
 - C.L. 18" Square Precast Concrete Piles: Points to the piles supporting the cap.



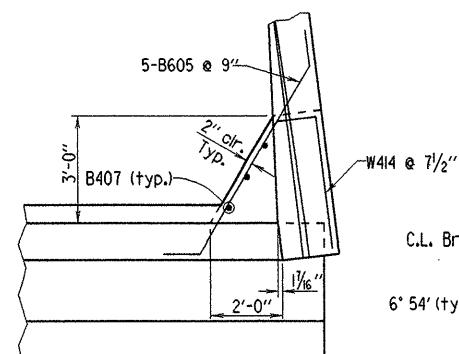
For additional details, See Dwg. No. 4619L.

DETAIL Z
Not To Scale

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

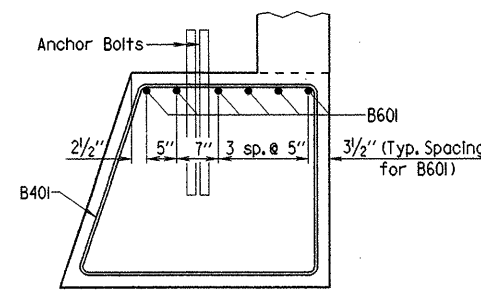


SHEET 1 OF 2
DETAILS OF BENT NO. 1
BRIDGE OVER I-30
HOT SPRING COUNTY
ROUTE 270 SEC. 7
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: KMG DATE: 10 JUN 03 FILENAME: b060900x2.b11
CHECKED BY: CSB DATE: 9-03 SCALE: As Shown
DESIGNED BY: SLM DATE: 05/03
BRIDGE NO. 06982 DRAWING NO. 46178

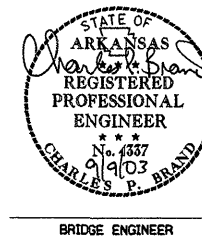


DETAIL "B"

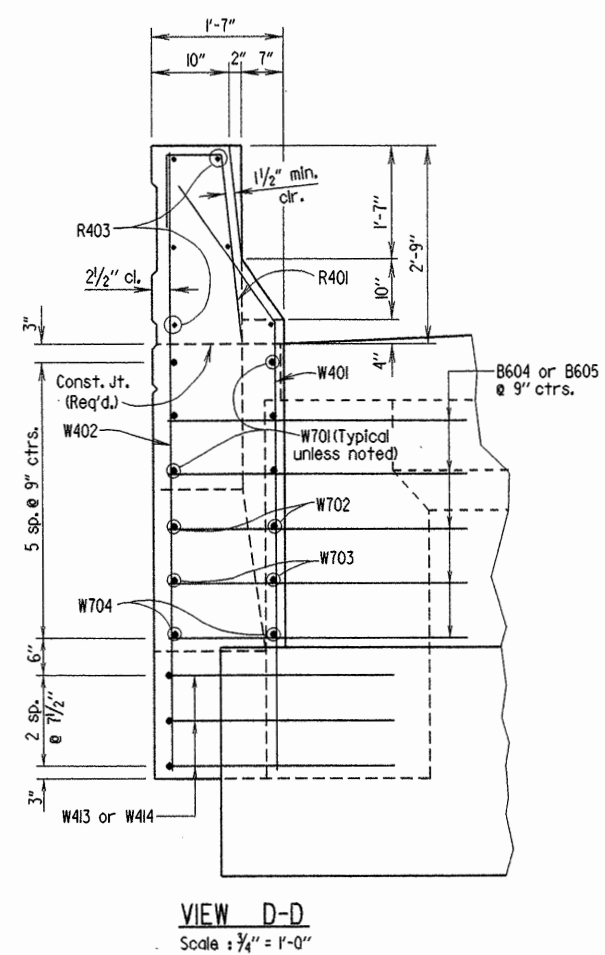
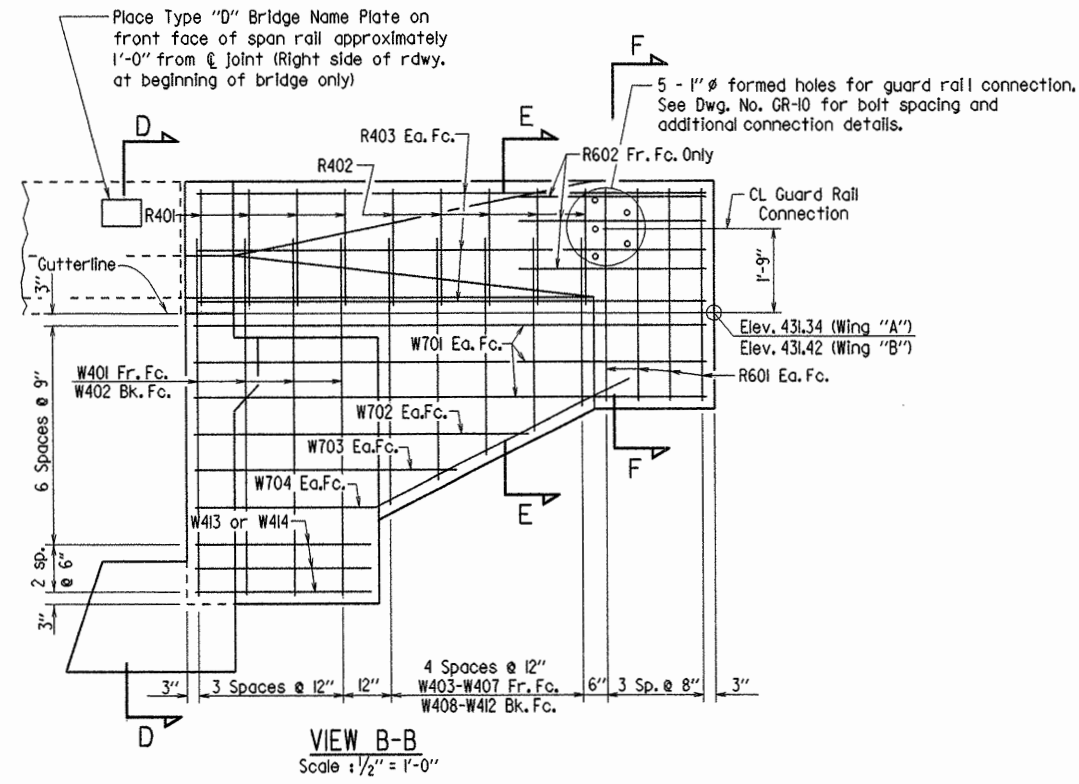
Scale: $\frac{3}{8}" = 1'-0"$



DETAIL "X"
No Scale



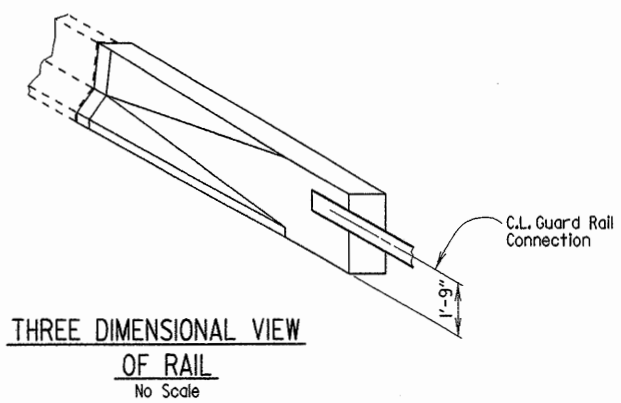
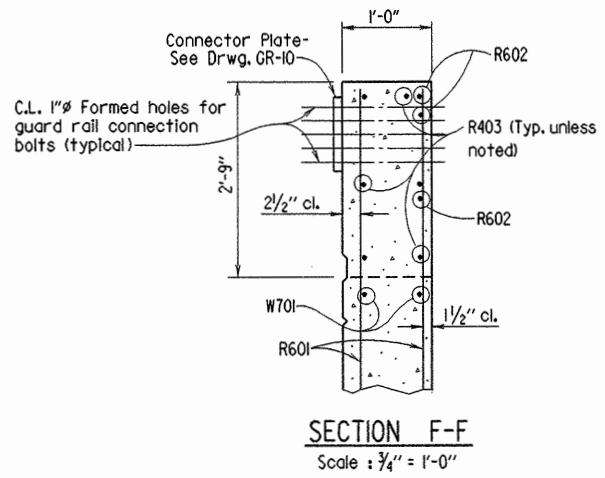
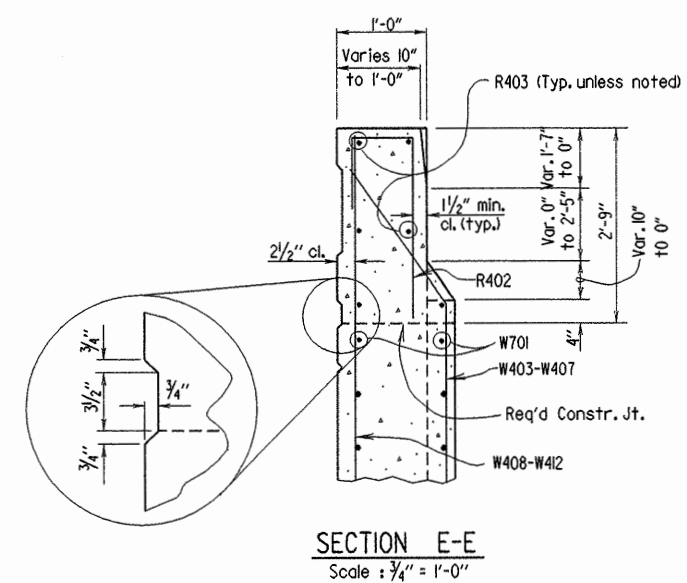
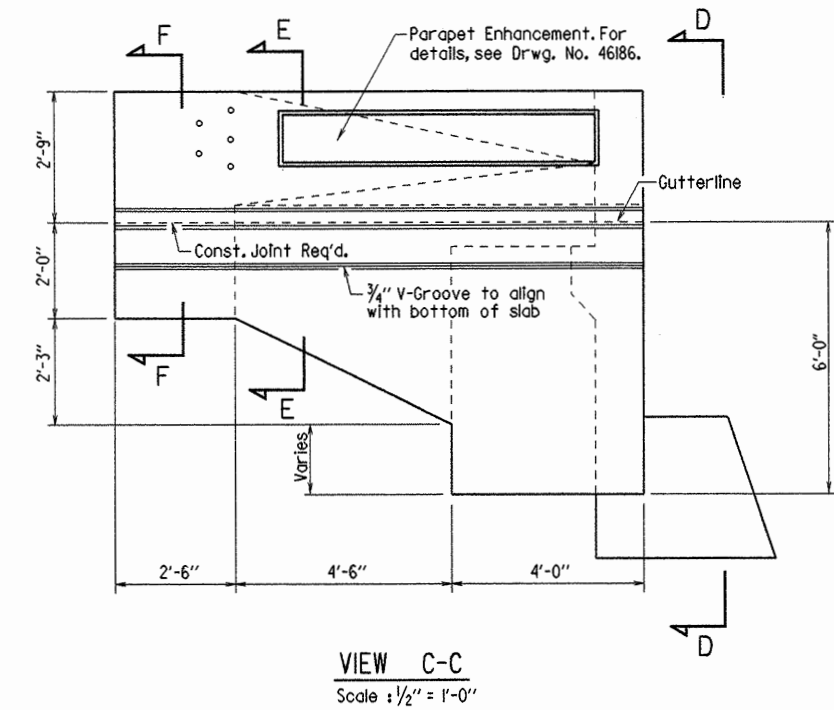
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.	060900		135	380
				06982	BENT DTLS.		46179	



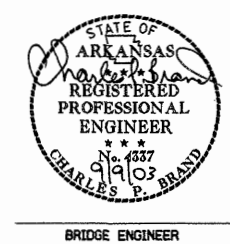
BAR LIST

Mark	No. Req'd.	Length	A	B	Pin Dia.
B401	60	11'-8"	2'-5 1/2"	3'-4 1/4"	2"
B402	21	7'-10"	2'-5 1/2"	3'-4 1/4"	2"
B403	4	27'-11"			Str.
B404	49	5'-11"			Str.
B405	49	3'-11"	1'-2"	4 1/2"	2"
B406	16	28'-6"			3"
B407	7	4'-10"			Str.
B501	49	6'-3"			Str.
B601	6	55'-6"	54'-2"	6"	4 1/2"
B602	6	54'-2"			Str.
B603	8	6'-8"			Str.
B604	5	8'-9"			4 1/2"
B605	5	8'-1"			4 1/2"
R401	8	3'-11"			2"
R402	10	4'-0"			2"
R403	12	10'-8"			Str.
R601	16	4'-5"			Str.
R602	6	5'-0"			Str.
W401	8	7'-3"	6'-1"	1'-2"	2"
W402	8	8'-5"			Str.
W403-W407	2 Ea.	Var. 3'-5" to 5'-5"	Var. 2'-3" to 4'-3"	1'-2"	2"
W408-W412	2 Ea.	Var. 4'-6" to 6'-6"			Str.
W413	3	9'-7"			2"
W414	3	8'-11"			2"
W701	12	10'-8"			Str.
W702	4	6'-11"			Str.
W703	4	5'-5"			Str.
W704	4	9'-7"			5 1/4"

Bending Diagrams
(Dimensions are out to out of bars.)



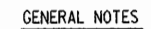
Note: For details of guard rail connections, see Drwg. No. GR-10.



SHEET 2 OF 2
 DETAILS OF BENT NO. 1
 BRIDGE OVER I-30
 HOT SPRING COUNTY
 ROUTE 270 SECTION 7
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: KMG DATE: 16 JUL 03 FILENAME: b060900x2.b12
 CHECKED BY: CAB DATE: 9-03 SCALE: As Shown
 DESIGNED BY: [Signature] DATE: 05/03
 BRIDGE NO. 06982 DRAWING NO. 46179

BAR LIST (BENT NO. 2)

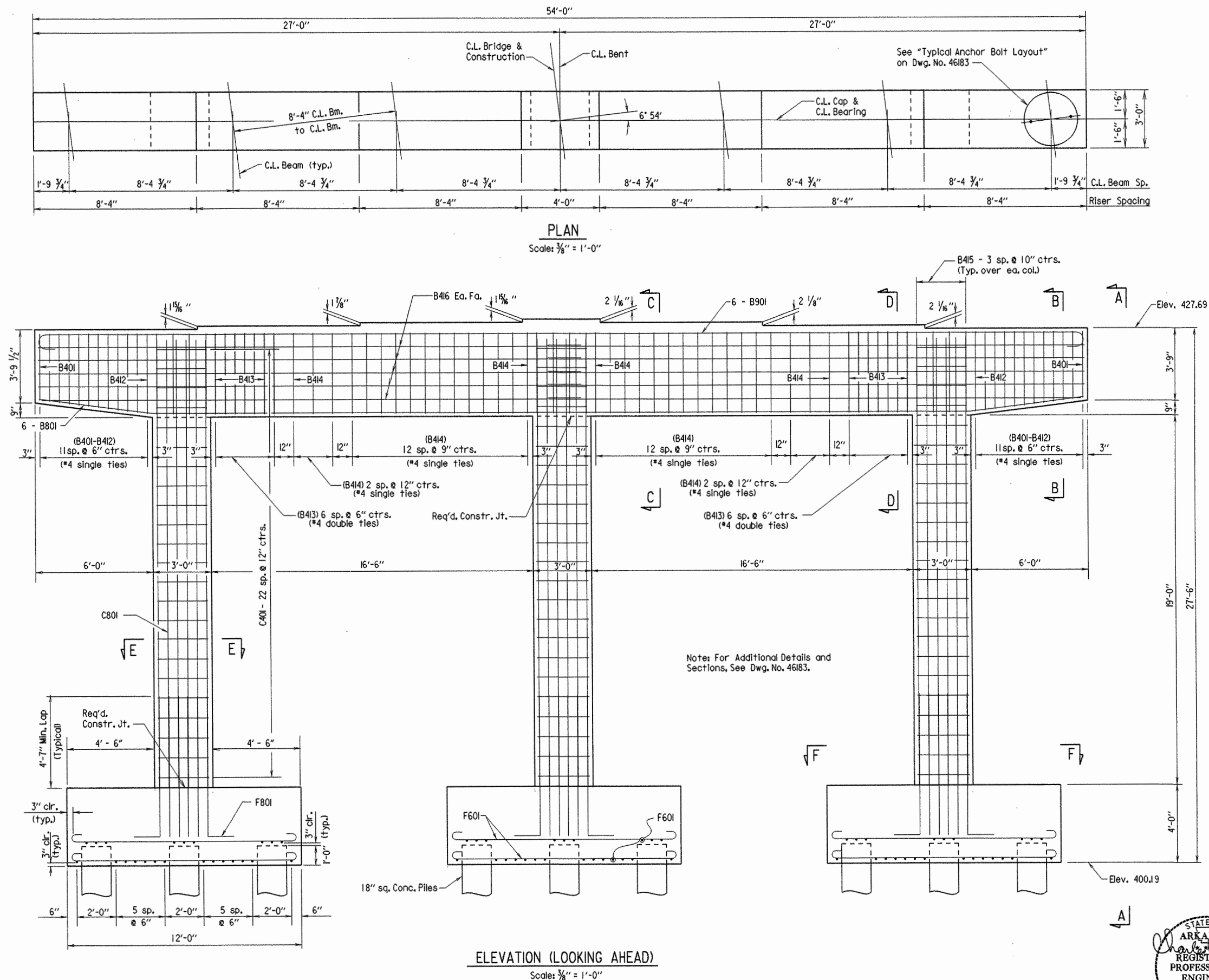
BENDING DIAGRAMS



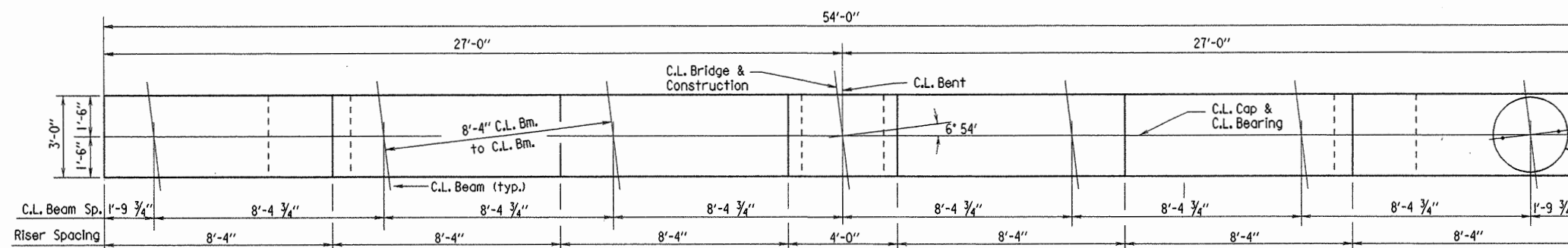
For additional information, see Layout.

ROUTE 270 SEC. 7
STATE HIGHWAY CO
LITTLE ROCK, ARK.

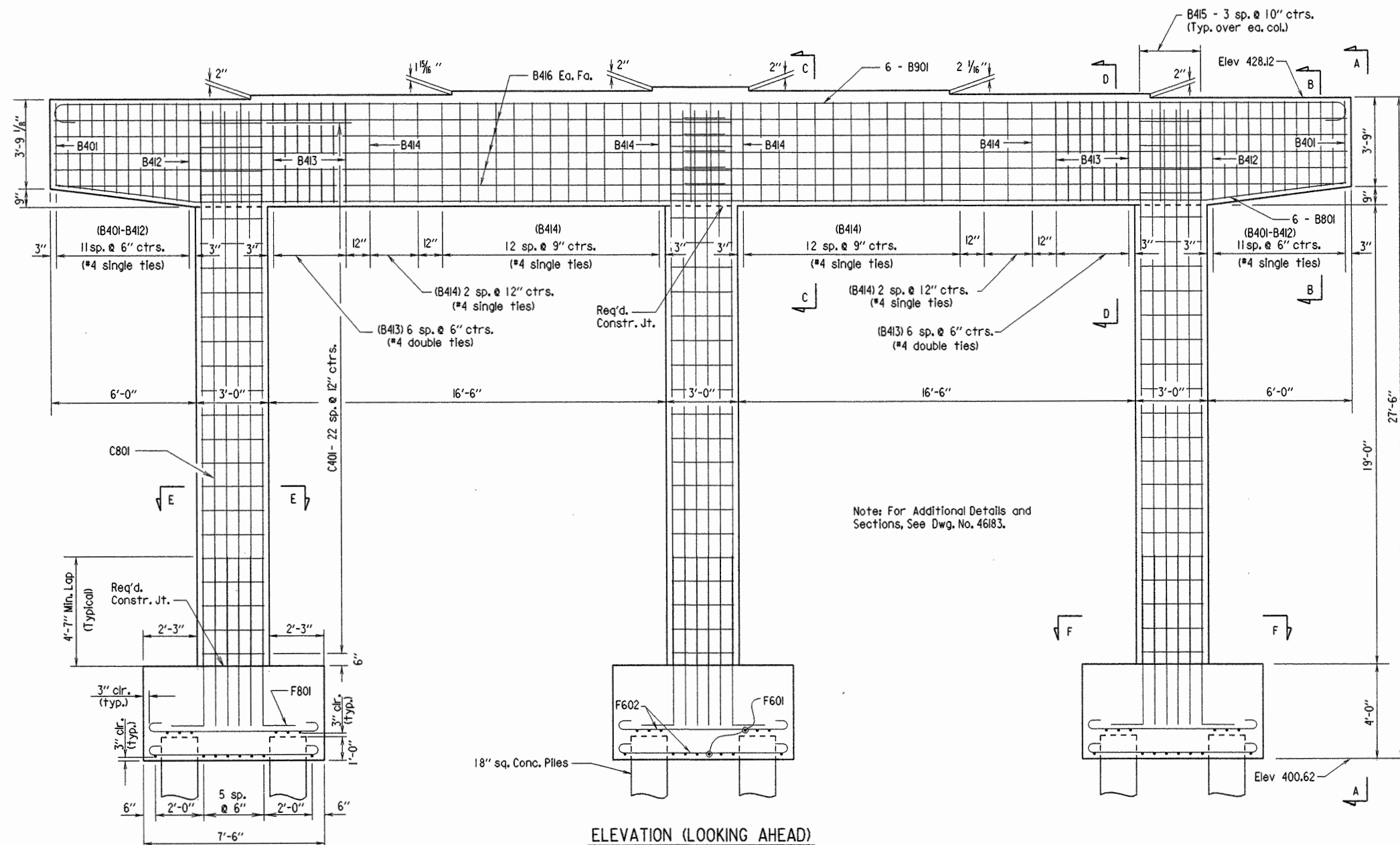
DRAWN BY: JC DATE: 06/21/2003 FILENAME: b060900.b22
 CHECKED BY: CAD DATE: 9-03 SCALE: AS SHOWN
 DESIGNED BY: 22m DATE: 05/03
 BRIDGE NO. 06982 DRAWING NO. 46180



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.		060900	137	380
				06982		BENT DETAILS		46181



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

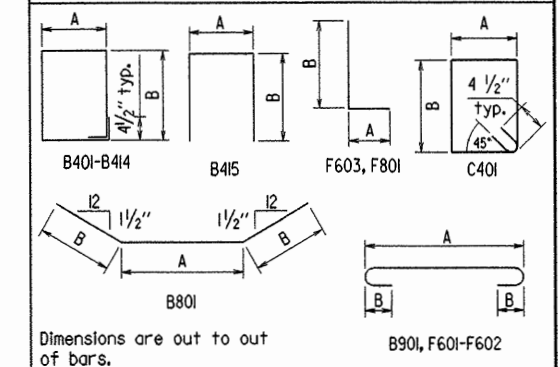


ELEVATION (LOOKING AHEAD)
Scale: 3/8" = 1' - 0"

BAR LIST (BENT NO. 3)

MARK	NO. REQ'D	LENGTH	'A'	'B'	P.D.
B401 - B412	2 ea.	Var. 12'-7" to 13'-11"	2'-8"	Var. 3'-5" to 4'-1 1/2"	2"
B413	28	12'-0"	1'-8"	4'-2"	2"
B414	32	14'-0"	2'-8"	4'-2"	2"
B415	12	10'-10"	2'-8"	4'-2"	2"
B416	20	27'-8"	—	—	Str.
B801	6	53'-8"	4'-11"	5'-10 1/2"	6"
B901	6	56'-2"	53'-8"	10"	9"
B401	69	10'-8"	2'-7"	2'-7"	2"
B801	60	23'-0"	—	—	Str.
F601	42	12'-10"	11'-6"	6"	4 1/2"
F602	69	8'-4"	7'-0"	6"	4 1/2"
F603	12	4'-10"	2'-6"	2'-6"	4 1/2"
F801	60	8'-5"	7'-3"	1'-4"	6"

BENDING DIAGRAMS



GENERAL NOTES

- All concrete shall be Class "S" with a minimum 28 day compressive strength $f'_c = 3,500$ psi. Concrete shall be poured in the dry and all exposed corners to be chamfered 3/4" unless otherwise noted.
- All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60 (yield strength = 60,000 psi.)
- All piles shall be 18" square concrete and driven to a safe minimum bearing capacity of 60 tons per pile.
- Top reinforcing bars in cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.
- For anchor bolt and optional sheet metal sleeve detail, see Dwg. No. 46193.
- For additional information, see Layout.

DETAILS OF BENT NO. 3 BRIDGE OVER I-30 HOT SPRING COUNTY

ROUTE 270 SEC. 7
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JC DATE: 06/21/2003 FILENAME: b060900.b22
CHECKED BY: CJB DATE: 9-03 SCALE: AS SHOWN
DESIGNED BY: CJB DATE: 05/03
BRIDGE NO. 06982 DRAWING NO. 46181

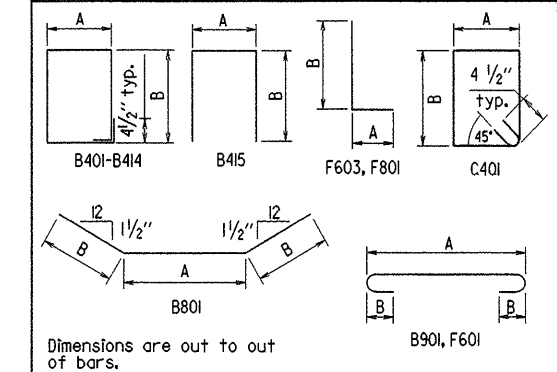


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		060900	138	380

① 06982 BENT DETAILS 46182
BAR LIST (BENT NO. 4)

MARK	NO. REQ'D	LENGTH	'A'	'B'	P.D.
B401 - B412	2 ea.	Var. 12'-7" to 13'-11"	2'-8"	Var. 3'-5" to 4'-11/2"	2"
B413	28	12'-0"	1'-8"	4'-2"	2"
B414	32	14'-0"	2'-8"	4'-2"	2"
B415	12	10'-10"	2'-8"	4'-2"	2"
B416	20	27'-8"	—	—	Str.
B801	6	53'-8"	4'-11"	5'-10 1/2"	6"
B901	6	56'-2"	53'-8"	10"	9"
C401	69	10'-8"	2'-7"	2'-7"	2"
C801	60	23'-0"	—	—	Str.
F601	138	12'-10"	1'-0"	6"	4 1/2"
F603	12	4'-10"	2'-6"	2'-6"	4 1/2"
F801	60	8'-5"	7'-3"	1'-4"	6"

BENDING DIAGRAMS



GENERAL NOTES

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

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

All piles shall be 18" square concrete and driven to a safe minimum bearing capacity of 60 tons per pile.

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

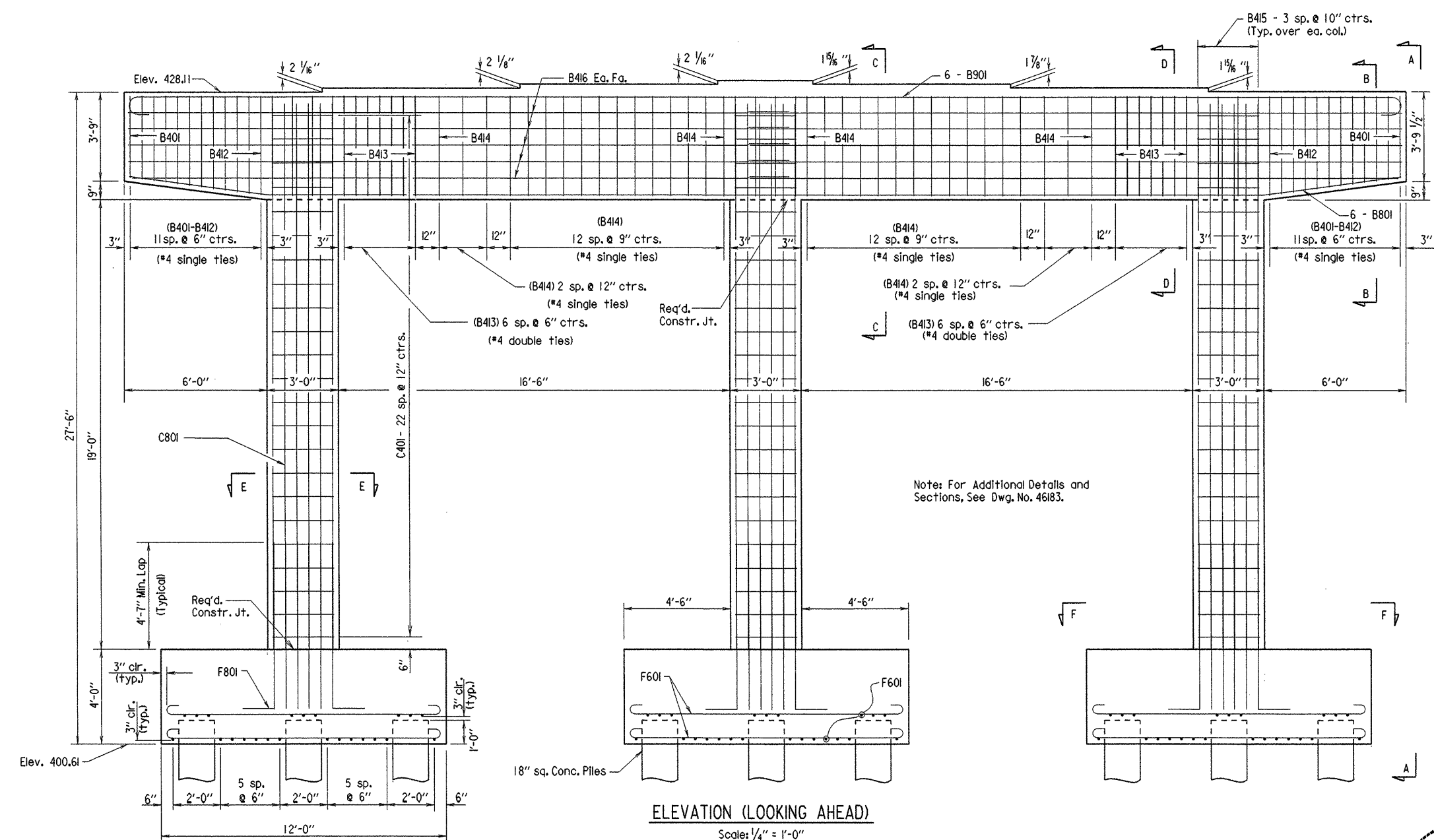
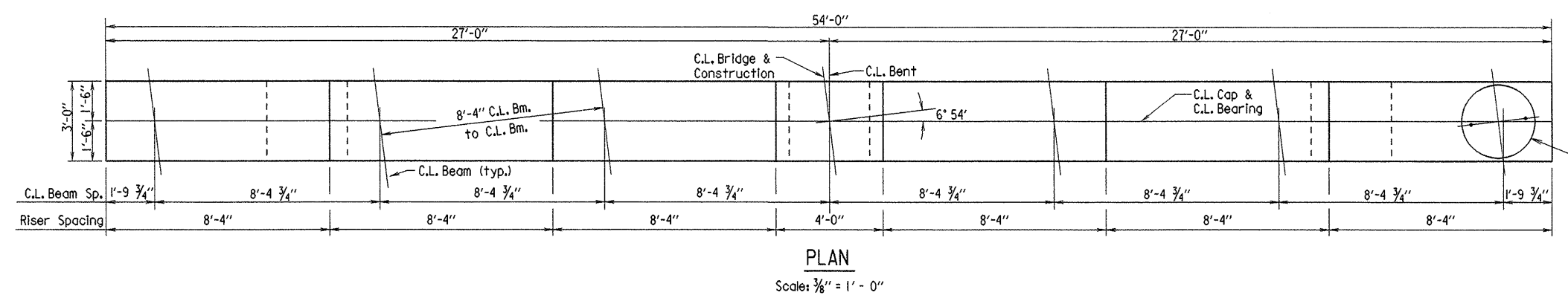
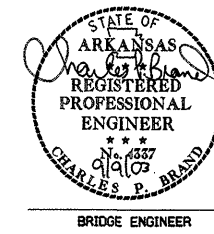
For anchor bolt and optional sheet metal sleeve details, see Dwg. No. 46193.

For additional information, see Layout.

**DETAILS OF BENT NO. 4
 BRIDGE OVER I-30
 HOT SPRING COUNTY**

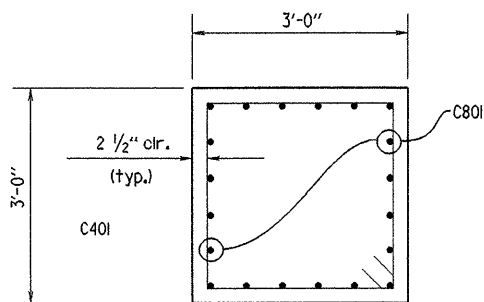
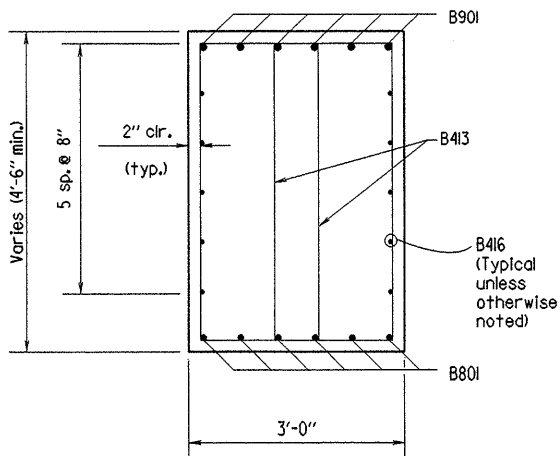
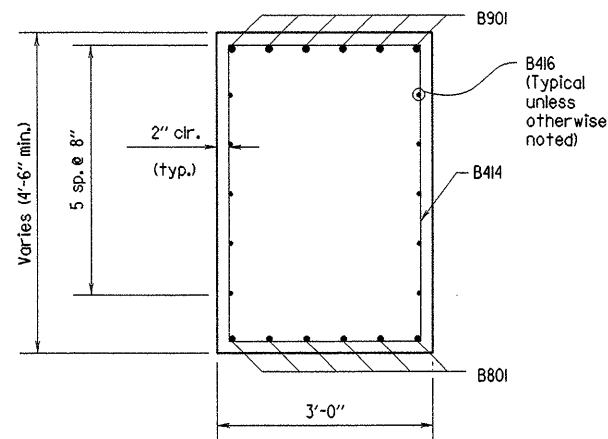
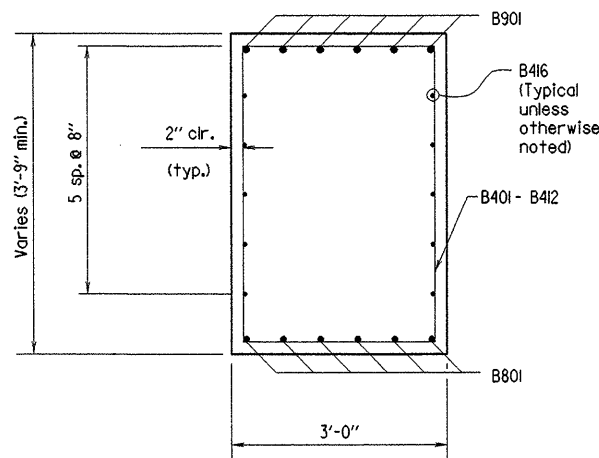
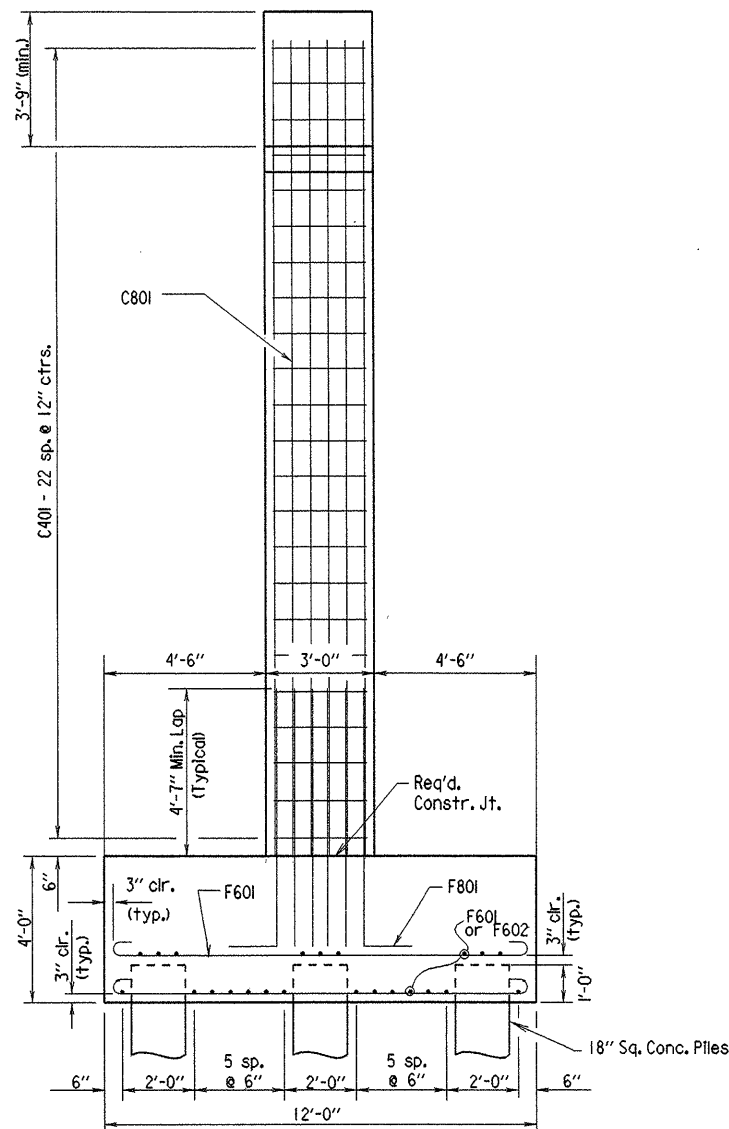
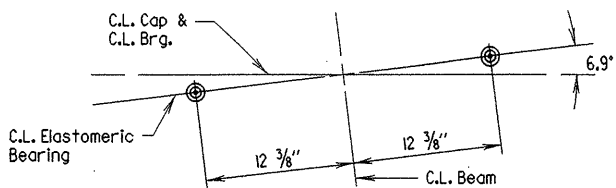
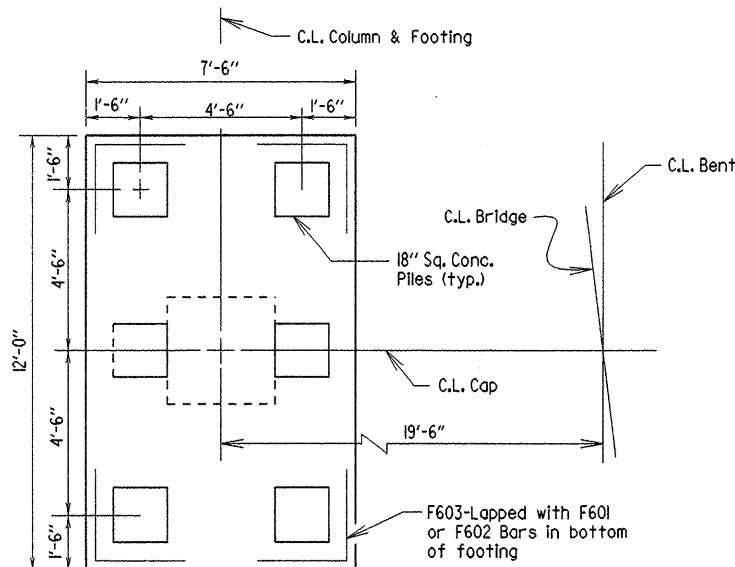
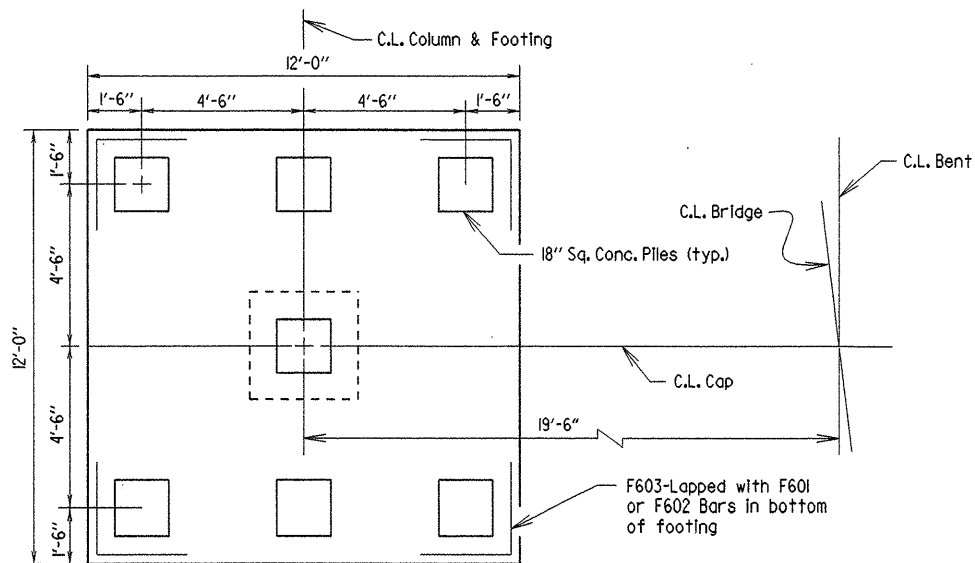
ROUTE 270 SEC. 7
ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

DRAWN BY: JC DATE: 06/21/2003 FILENAME: b060900.b22
 CHECKED BY: C&B DATE: 9-03 SCALE: AS SHOWN
 DESIGNED BY: D&M DATE: 05/03
 BRIDGE NO. 06982 DRAWING NO. 46182



Note: For Additional Details and Sections, See Dwg. No. 46183.

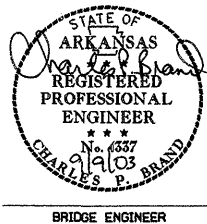
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		060900	139	380
				06982		BENT DETAILS		46183



COMMON DETAILS
FOR BENTS NOS. 2, 3 & 4
BRIDGE OVER I-30
HOT SPRING COUNTY

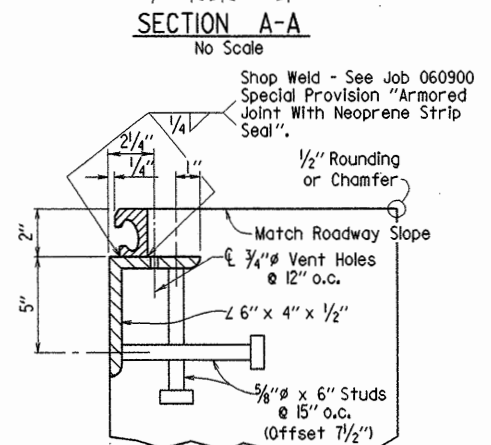
ROUTE 270 SEC. 7
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: JC DATE: 06/21/2003 FILENAME: b060900.b22
CHECKED BY: CJD DATE: 9-03 SCALE: AS SHOWN
DESIGNED BY: CJD DATE: 05/03
BRIDGE NO. 06982 DRAWING NO. 46183

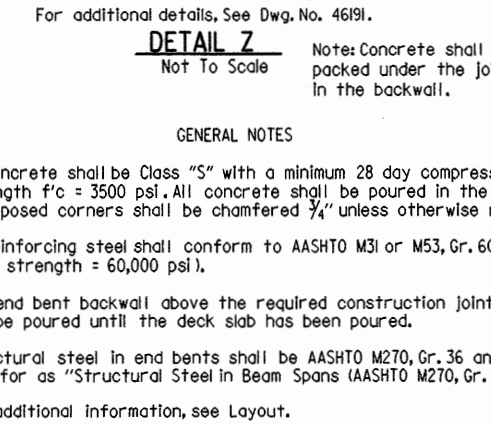


Technical drawing of a bridge pier cross-section. The drawing shows a vertical structure with a wide base and a narrower top section. Key components and dimensions include:

- Dimensions:**
 - Top width: 12'-0" (total), 1'-9" (left side), 1'-0" (right side), 6" (right side).
 - Right side height: 1'-0" (top section), 6" (middle section).
 - Left side height: 3'-0" (lower section).
 - Bottom width: 8' (left side), 1'-6" (right side).
 - Bottom section height: 12" typ.
- Components:**
 - B401:** A horizontal section at the base of the main pier body.
 - B402:** A horizontal section at the bottom of the pier.
 - B403:** A horizontal section above B401.
 - B404 or B603:** A horizontal section above B403.
 - B405:** A horizontal section at the top of the pier.
 - B406:** A horizontal section above B405.
 - B601:** A horizontal section above B406.
 - B602:** A horizontal section at the bottom of the pier.
 - B603 or B501:** A horizontal section above B601.
- Other Labels:**
 - See Detail "Z":** Points to a detail of the top section.
 - Varies (9/16" at gutterline):** Points to a detail of the top section.
 - 2" cl'r typ.:** Points to a detail of the top section.
 - Req'd Constr. Jt.:** Points to a detail of the top section.
 - B601 - see Detail "X":** Points to a detail of the top section.
 - C.L. 18" Square Precast Concrete Piles:** Points to the bottom section.

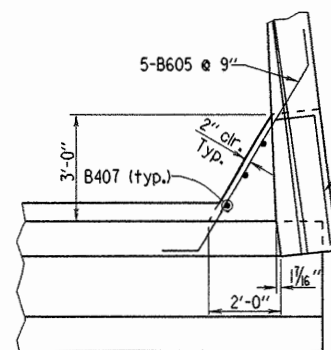


Scale: $\frac{3}{8}'' = 1'-0''$



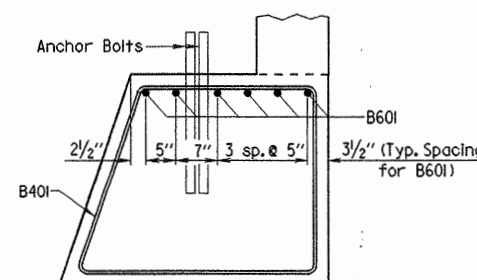
Scale: $\frac{3}{8}'' = 1'-0''$

(VIEW IS LOOKING AHEAD)



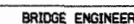
Scale: $\frac{3}{8}'' = 1'-0''$

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



No Scale

No Scale

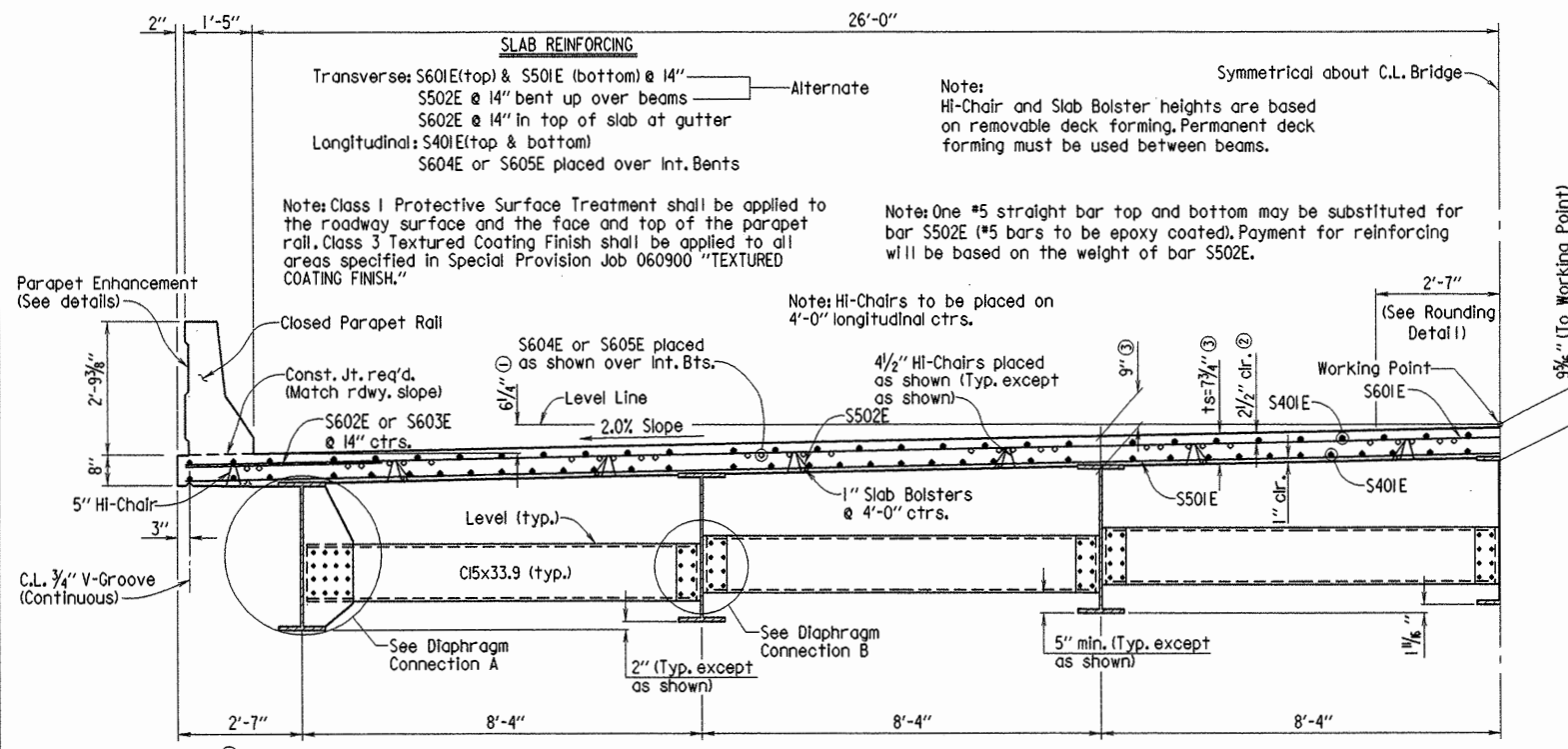


LITTLE ROCK, ARK.

DRAWN BY: KMG DATE: 10 JUN 03 FILENAME: b060900x2, b51
CHECKED BY: CAB DATE: 9-05 SCALE: As Shown
DESIGNED BY: ASH DATE: 05/03
BRIDGE NO. 06982 DRAWING NO. 46184

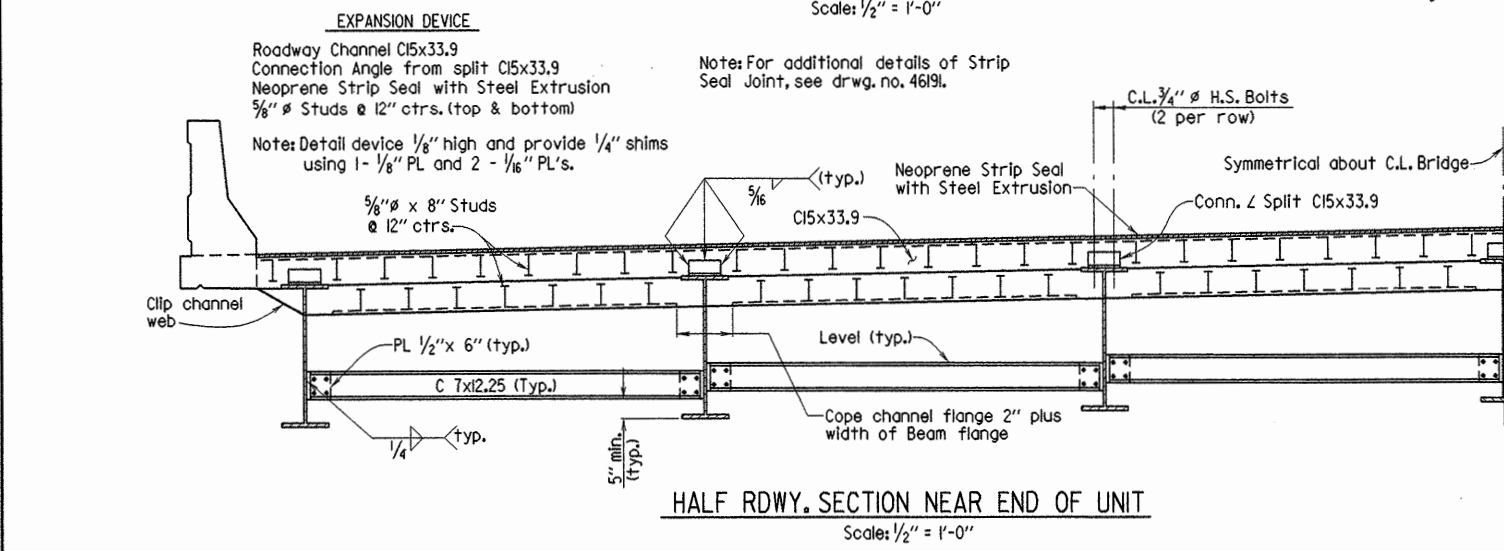
LITTLE ROCK, ARK.

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.		060900	142	380
				① 06982		SPAN DTLS.		46186

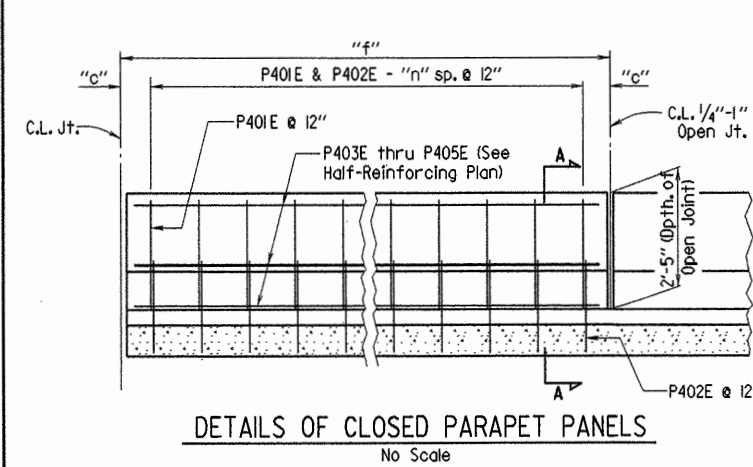


① Working Point to Gutter Line
② Tolerance: Minus = $\frac{1}{4}$ "
Plus: Equal to amount of slab thickening used to meet slab thickness tolerance-See Detail A on this drawing.

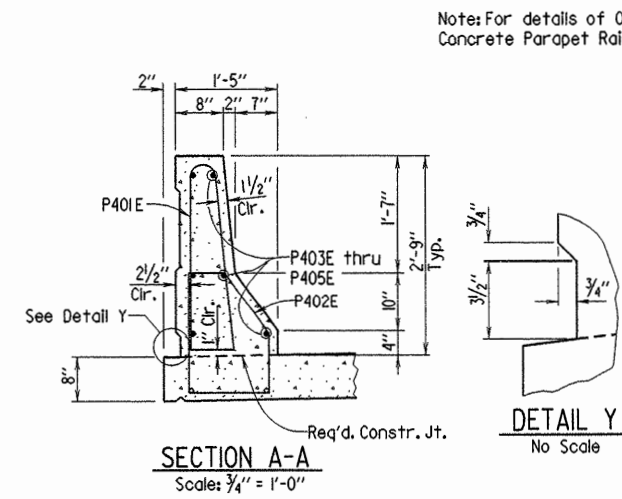
ROADWAY HALF SECTION
Scale: $\frac{1}{2}$ " = 1'-0"



HALF RDWY. SECTION NEAR END OF UNIT
Scale: $\frac{1}{2}$ " = 1'-0"

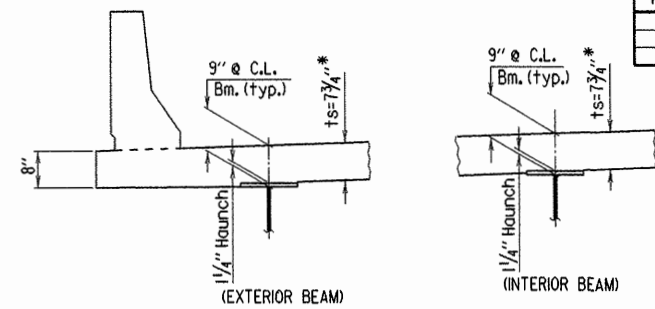


DETAILS OF CLOSED PARAPET PANELS
No Scale

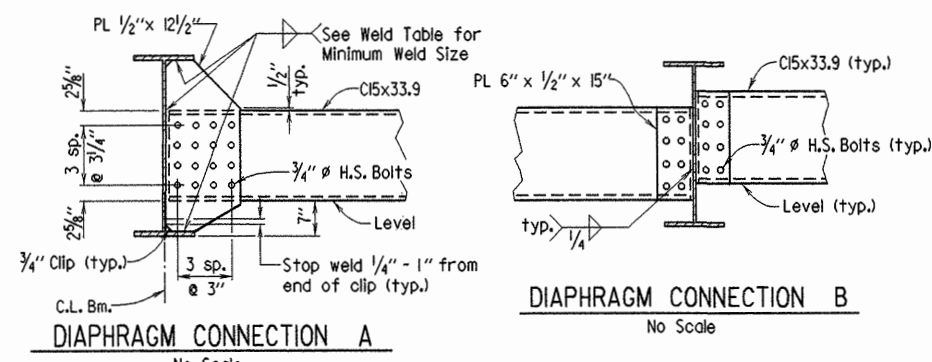


SECTION A-A
Scale: $\frac{3}{4}$ " = 1'-0"

DETAIL Y
No Scale

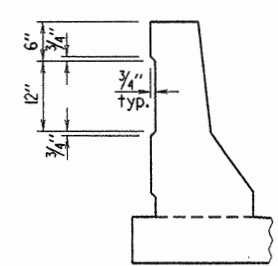


DETAIL "A"
No Scale

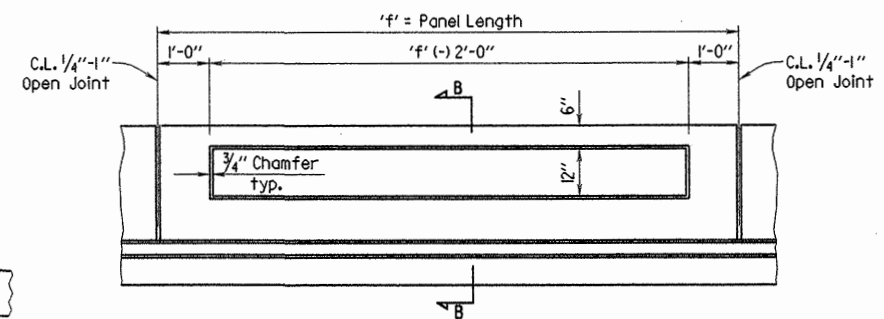


DIAPHRAGM CONNECTION A
No Scale

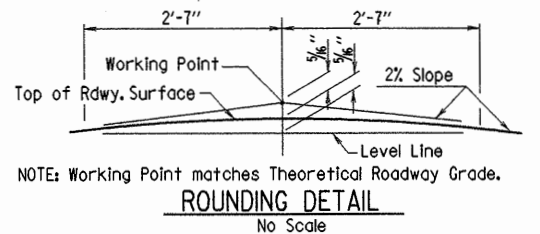
DIAPHRAGM CONNECTION B
No Scale



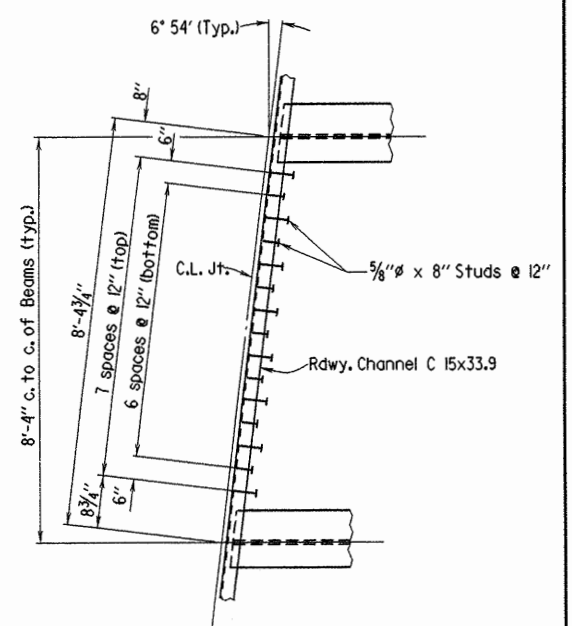
SECTION B-B
Scale: $\frac{3}{4}$ " = 1'-0"



DETAILS OF PARAPET ENHANCEMENT
Scale: $\frac{1}{2}$ " = 1'-0"



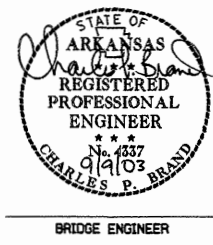
ROUNDING DETAIL
No Scale



ANCHOR SPACING DETAIL
No Scale

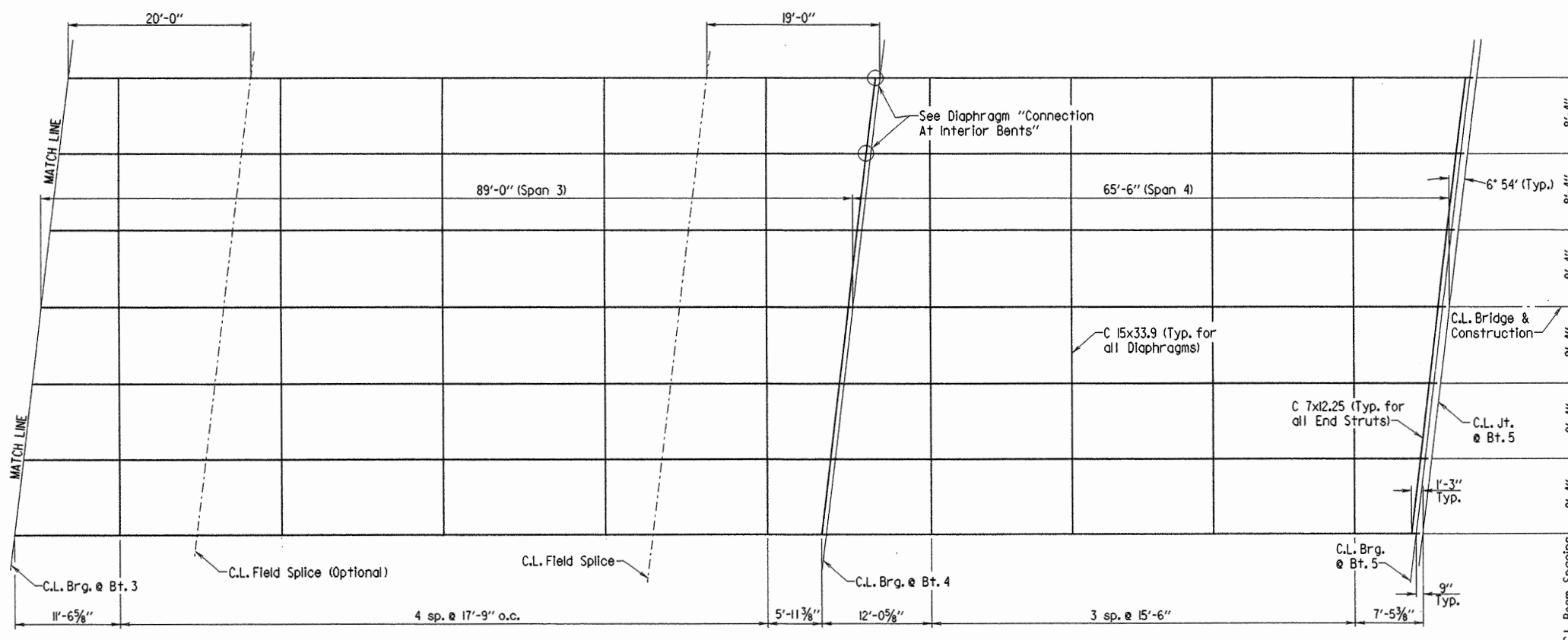
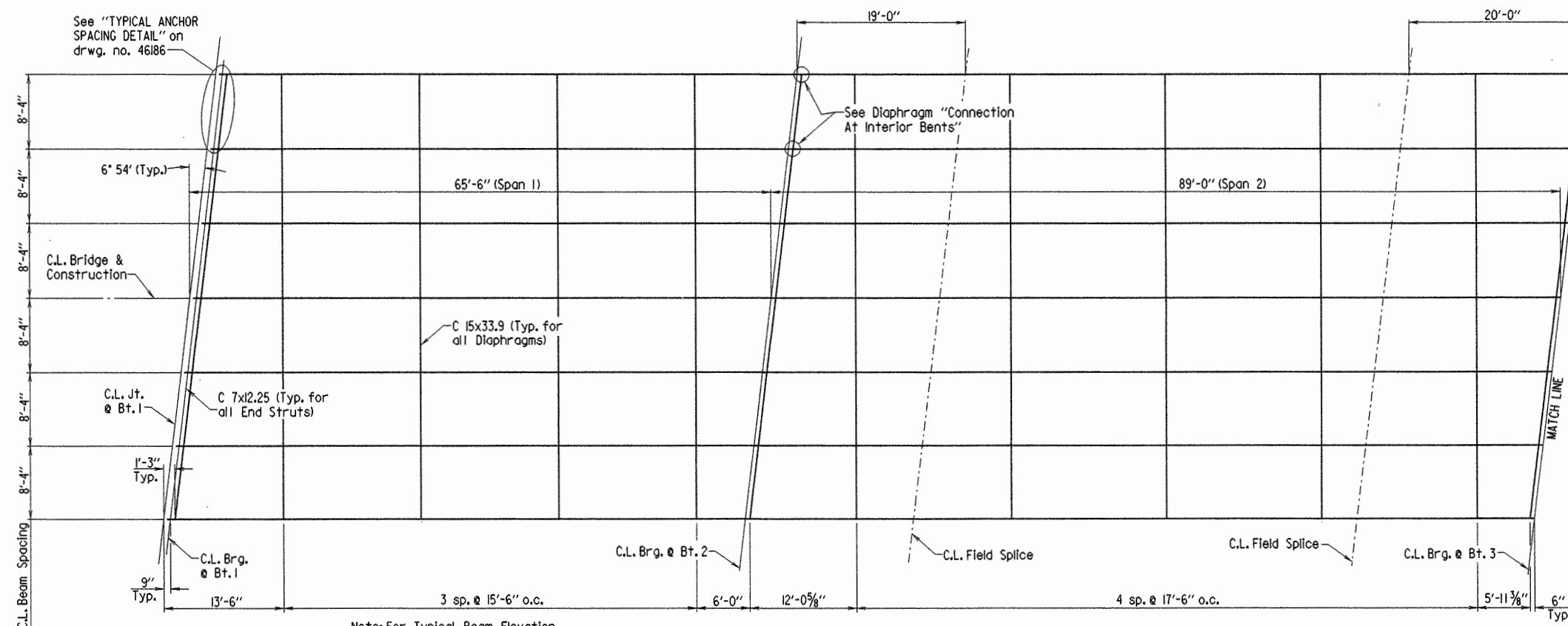
VARIABLES FOR PARAPET RAIL

"f"	"c"	"n"
7'-9"	4 1/2"	7
10'-0"	6"	9
10'-6"	3"	10

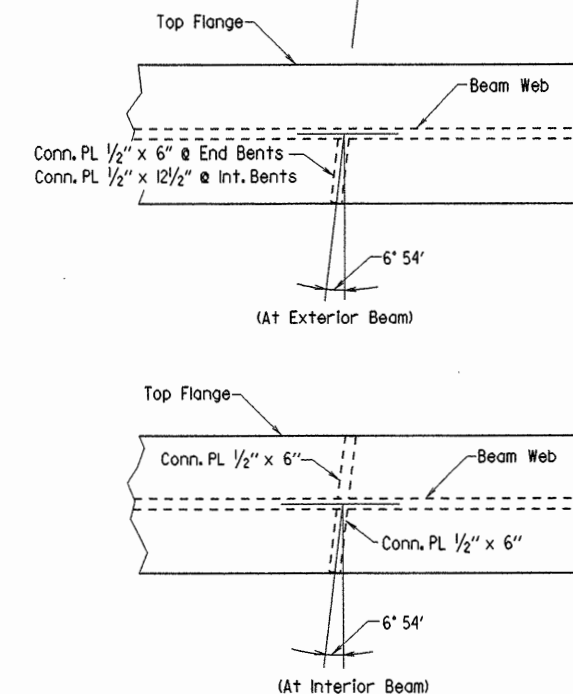


Note: For General Notes, see Drwg. No. 46189.
SHEET 1 OF 5
DETAILS OF 309'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT
BRIDGE OVER I-30
HOT SPRING COUNTY
 ROUTE 270 SEC. 7
ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: KMG DATE: 29 MAY 03 FILENAME: b060900x2.s11
 CHECKED BY: JAC DATE: 8-21-03 SCALE: As Shown
 DESIGNED BY: RLM DATE: 05/03
 BRIDGE NO. 06982 DRAWING NO. 46186

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.		060900	143	380
				06982		SPAN DETAILS		46187



FRAMING PLAN
Scale: 1/8" = 1'-0"



DIAPHRAGM CONNECTION AT BENTS
No Scale

SHEET 2 OF 5
DETAILS OF 309'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT
BRIDGE OVER I-30
HOT SPRING COUNTY
ROUTE 270 SEC. 7
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: KMG DATE: 30 MAY 03 FILENAME: b060900x2.s12
CHECKED BY: JAC DATE: 8-21-03 SCALE: As Shown
DESIGNED BY: JLM DATE: 05/03
BRIDGE NO. 06982 DRAWING NO. 46187



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.		060900	144	380
				06982		SPAN DTLS.		46188

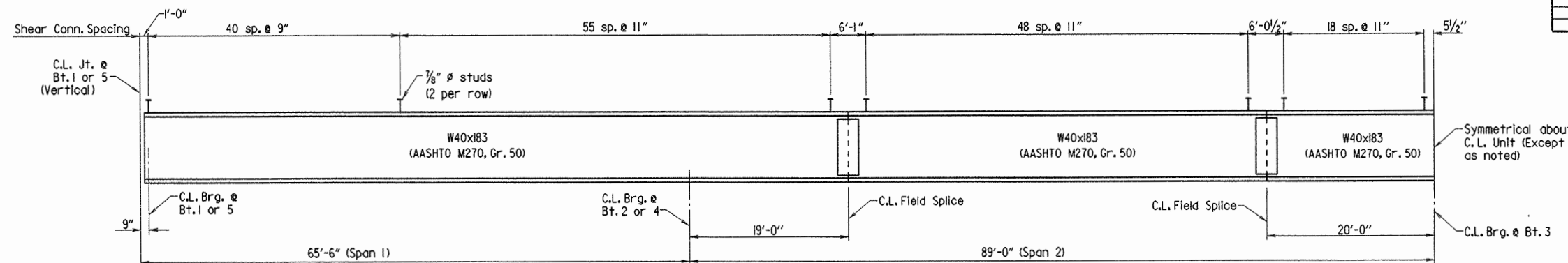
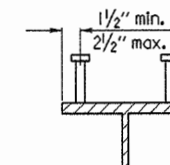


TABLE FOR WELD

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

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.



SHEAR CONNECTOR DETAIL

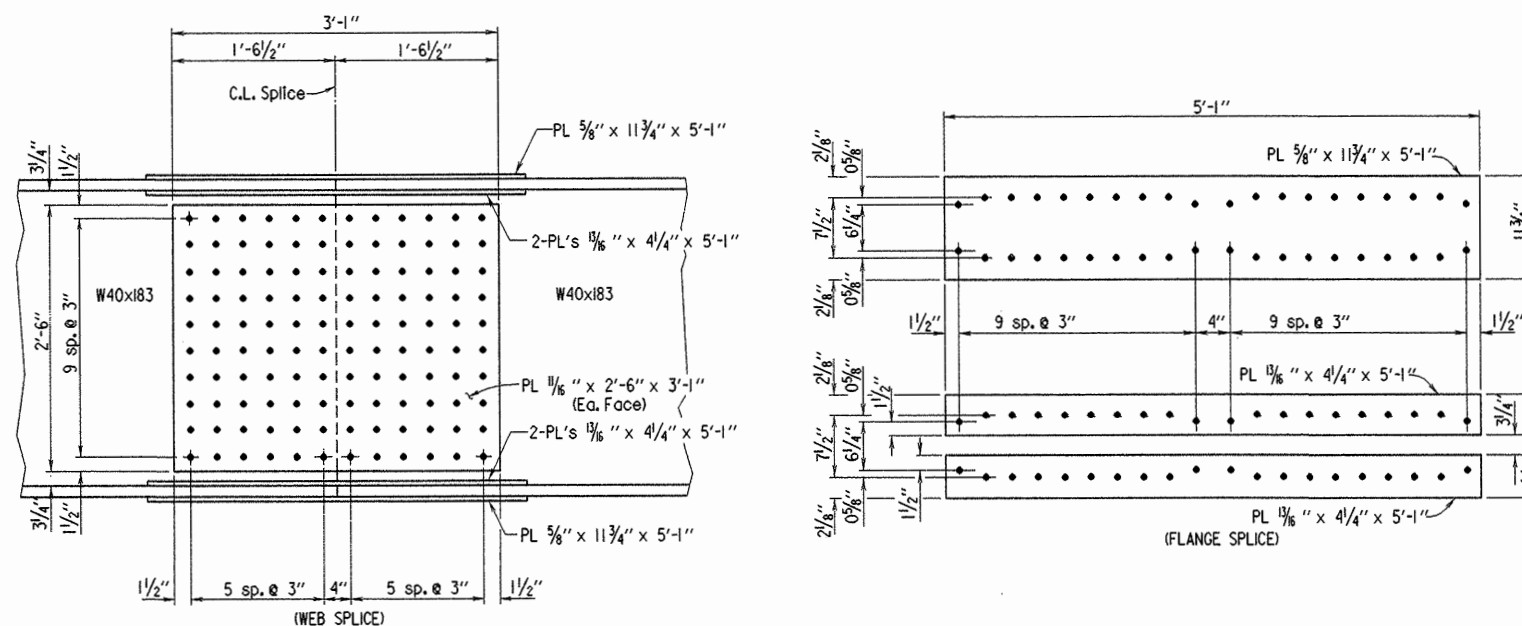
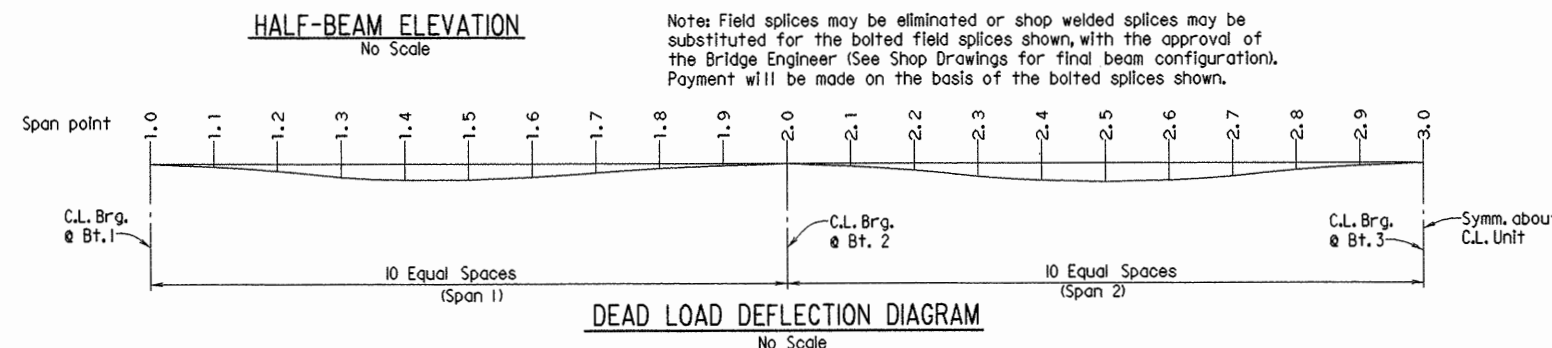
Not To Scale

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

TABLE OF DEAD LOAD DEFLECTIONS (INCHES)

Camber for Dead Load Deflection and Vertical Curve = $\pm \frac{1}{4}$ " tolerance. Vertical Curve corrections not included. Deflections shown are from a chord from C.L. Bearing to C.L. Bearing. Estimated weight of permanent deck forming is included.

Span	Point of Deflection	Structural Steel		Structural Steel (+) Slab		Structural Steel (+) Slab (+) Parapet	
		Interior	Exterior	Interior	Exterior	Interior	Exterior
SPAN 1	1.0	0.000	0.000	0.000	0.000	0.000	0.000
	1.1	0.027	0.026	0.144	0.119	0.153	0.128
	1.2	0.049	0.048	0.263	0.218	0.279	0.235
	1.3	0.064	0.062	0.341	0.282	0.362	0.304
	1.4	0.069	0.066	0.368	0.304	0.391	0.328
	1.5	0.064	0.062	0.343	0.284	0.365	0.307
	1.6	0.051	0.050	0.274	0.227	0.292	0.246
	1.7	0.033	0.032	0.177	0.146	0.189	0.159
	1.8	0.014	0.014	0.076	0.063	0.082	0.070
	1.9	0.001	0.001	0.003	0.003	0.004	0.004
SPAN 2	2.0	0.000	0.000	0.000	0.000	0.000	0.000
	2.1	0.029	0.028	0.154	0.128	0.166	0.140
	2.2	0.076	0.073	0.405	0.335	0.434	0.365
	2.3	0.122	0.117	0.649	0.537	0.693	0.583
	2.4	0.153	0.148	0.817	0.676	0.872	0.733
	2.5	0.162	0.157	0.866	0.716	0.924	0.776
	2.6	0.147	0.142	0.786	0.650	0.839	0.705
	2.7	0.111	0.108	0.595	0.492	0.636	0.535
	2.8	0.064	0.062	0.342	0.283	0.367	0.309
	2.9	0.020	0.019	0.108	0.089	0.117	0.098
SPAN 3	3.0	0.000	0.000	0.000	0.000	0.000	0.000
	3.1	0.020	0.019	0.108	0.089	0.117	0.098
	3.2	0.064	0.062	0.342	0.283	0.367	0.309
	3.3	0.111	0.108	0.595	0.492	0.636	0.535
	3.4	0.147	0.142	0.786	0.650	0.838	0.705
	3.5	0.162	0.157	0.866	0.716	0.923	0.776
	3.6	0.153	0.148	0.817	0.676	0.871	0.733
	3.7	0.122	0.117	0.649	0.537	0.693	0.583
	3.8	0.076	0.073	0.405	0.335	0.433	0.365
	3.9	0.029	0.028	0.154	0.128	0.166	0.140
SPAN 4	4.0	0.000	0.000	0.000	0.000	0.000	0.000
	4.1	0.001	0.001	0.003	0.003	0.004	0.004
	4.2	0.014	0.014	0.076	0.063	0.082	0.069
	4.3	0.033	0.032	0.177	0.146	0.189	0.159
	4.4	0.051	0.050	0.274	0.227	0.292	0.246
	4.5	0.064	0.062	0.343	0.284	0.365	0.307
	4.6	0.069	0.066	0.368	0.304	0.391	0.328
	4.7	0.064	0.062	0.341	0.282	0.362	0.304
	4.8	0.049	0.048	0.263	0.218	0.279	0.235
	4.9	0.027	0.026	0.144	0.119	0.153	0.128
	5.0	0.000	0.000	0.000	0.000	0.000	0.000



Notes: 1. All Field Splice Bolts to be $\frac{7}{8}$ " ϕ H.S. Bolts.
2. All Field Splice plates to be AASHTO M270, Gr. 50 steel.
3. All holes for splice bolts to be $\frac{1}{8}$ " ϕ .



SHEET 3 OF 5
DETAILS OF 309'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT
BRIDGE OVER I-30
HOT SPRING COUNTY

ROUTE 270 SEC. 7
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: KMG DATE: 30 MAY 03 FILENAME: b060900x2.s13
CHECKED BY: JAC DATE: 8-21-03 SCALE: As Shown
DESIGNED BY: BLM DATE: 05/03
BRIDGE NO. 06982 DRAWING NO. 46188

SUPERSTRUCTURE 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 Standard Specifications for Highway Bridges (2002 edition) with current Interim specifications.

LIVE LOADING: HS20 METHOD OF DESIGN: Load Factor

MATERIALS AND STRENGTHS:

Concrete: All concrete shall be Class S(AE) with minimum 28 day compressive 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 beams and field splice plates shall be AASHTO M 270, Grade 50. All other structural steel shall be AASHTO M 270, Grade 36 unless otherwise noted. All structural steel shall be paid for as "Structural Steel in Beam Spans (M 270, Gr. 50)". All exposed surfaces shall be cleaned in accordance with subsection 807.84. Structural steel completely embedded in concrete may be AASHTO M270, Grade 36.

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

Longitudinal beams and web and flange field splice plates are considered main load carrying members and shall meet the Longitudinal Charpy V-Notch Test specified in Subsection 807.05. This work and material will not be paid for directly, but will be considered included in the unit price bid for "Structural Steel in Beam Spans (M270-Grade 50)."

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

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

Anchor bolts shall be galvanized according to Subsection 807.07 and shall be Grade 55.

Field connections shall be bolted with high-strength bolts and shall be $\frac{3}{4}$ " ϕ bolts unless otherwise noted. Bolts shall be placed with heads on the outside face of the exterior beam webs and on the bottom of the beam flanges. Holes for $\frac{3}{4}$ " ϕ high-strength bolts may be $\frac{5}{16}$ " ϕ diameter if a washer is supplied for use under both the nut and head of the bolt.

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

All welding that is to be done during fabrication of structural steel, including temporary welds shall be detailed on the shop drawings and submitted for approval. If the Contractor or Erector should want to make additional welds, whether temporary or permanent, he shall submit detailed drawings with a formal request to the Bridge Engineer for approval. All welding shall conform to Subsection 807.26.

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

PAINTING:

All new structural steel except galvanized members, machined surfaces, and some surfaces in contact with concrete shall be painted as specified in Section 807. The color of the paint shall be Green and shall match the Federal Standard 595A Color Chip No. 14109, Green. See subsection 807.75.

REINFORCING STEEL:

The reinforcing steel shall be accurately located in the forms and firmly held in place by steel wire supports sufficient in size and number to prevent displacement during the course of construction. The wire supports will not be paid for directly but will be considered subsidiary to the item of "Epoxy Coated Reinforcing Steel - (Grade 60)".

CONCRETE:

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

The superstructure details shown are for use with permanent steel deck forms. See Standard Drawing No. 1499I for allowable modifications and for tolerances. Measurement of Class S (AE) Concrete shall be based on removable deck forming.

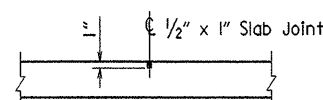
Concrete in bridge superstructure shall be placed, consolidated and screeded off for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent.

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

LOAD DISTRIBUTION:	Int. Beam	Ext. Beam
Dead Load:		
To W-Beam	807 PLF + 1.3 (wt./ft. of W-Bm.)	658 PLF + 1.3 (wt./ft. of W-Bm.)
To Composite Beam	291 *	291 *
*Includes 180 PLF Future Wearing Surface		

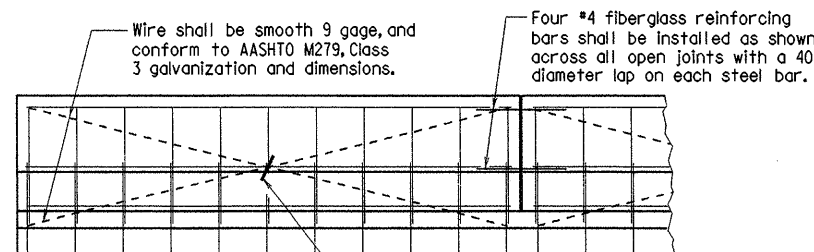
Live Load:

To each Composite Beam	Int. Bm. = 1,515 wheels (+) impact Ext. Bm. = 1,370 wheels (+) impact
------------------------	--



Use Type 6 Joint Sealer. See Subsections 501.02(h) and 501.05(j). Joint Sealer shall be measured and paid for as Class S(AE) Concrete-Bridge. Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set to allow sawing of the joint without damage to the slab. Slab joints shall be placed at all pouring sequence construction joints and required slab joint locations.

SLAB JOINT DETAIL N.T.S.



Note: Reinforcing details shown are general. For actual reinforcing details, see parapet rail details on this drawing.

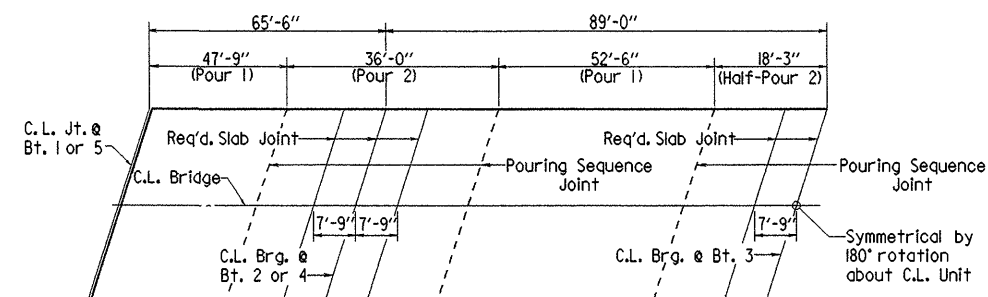
All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of $\frac{1}{4}$ ". To control cracking before sawing, all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

All smooth wire bracing shall be placed on the inside faces of the reinforcing

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

No Scale

Note: The extruded parapet shall conform to the horizontal and vertical lines shown on the plans or as directed by the Engineer and shall present a smooth, uniform appearance and texture. Exposed surfaces may be given a light brush finish or a Class 3 Textured Coating Finish, in place of Class 2, Rubbed Finish.



Note: Pours with the same number may be poured simultaneously or separately. All Pours (1) must be placed before Pours (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between the end of the next pour. 72 hours shall elapse between the end of a pour and the start of an adjacent pour.

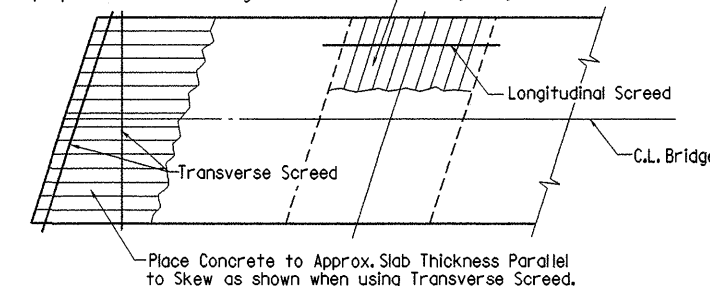
CONCRETE POURING SEQUENCE

No Scale

Note: Any railing pours made before the entire slab unit has been placed must be approved by the Bridge Engineer.

Concrete in bridge superstructure must be consolidated for the entire pour before any concrete has taken its initial set. This may require the use of a retarding agent. The Contractor must obtain approval from the Bridge Engineer for any deviations from the Pouring Sequences shown.

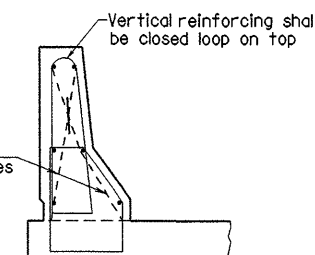
Note: At the Contractor's Option, the Transverse Screenshot may be placed parallel to the skew or perpendicular to CL Bridge.



CONCRETE PLACEMENT PROCEDURE

No Scale

Note: If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for the future dead load deflection due to the rolling.



BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF 309'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT
BRIDGE OVER I-30
HOT SPRING COUNTY

ROUTE 270 SEC. 7
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KMG DATE: 02 JUN 03 FILENAME: b060900x2.s14

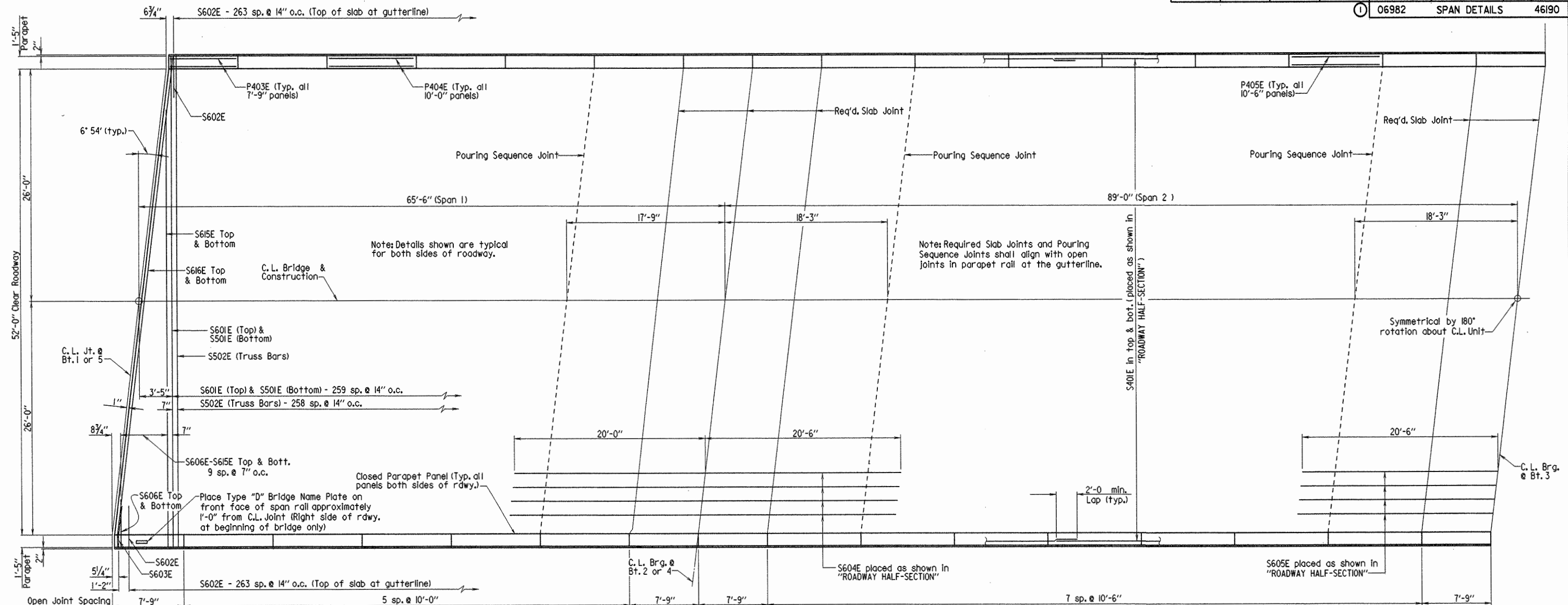
CHECKED BY: JAC DATE: 8-25-03 SCALE: As Shown

DESIGNED BY: EJM DATE: 05/03

BRIDGE NO. 06982

DRAWING NO. 46189

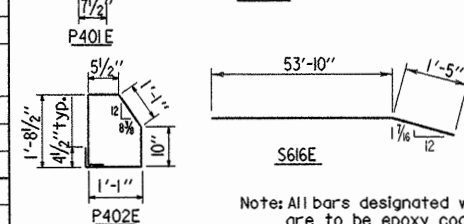
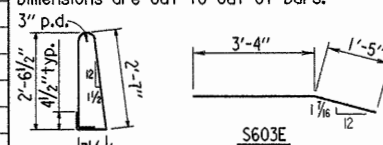
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		060900	146	380
				06982		SPAN DETAILS		46190



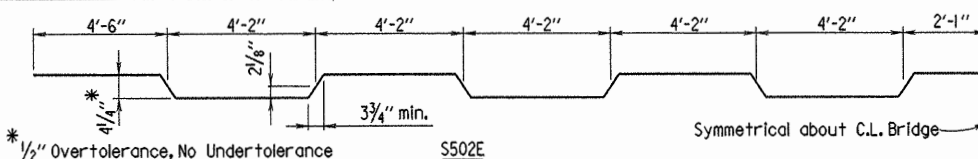
BAR LIST (UNIT TOTAL)

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
S401E	1056	40'-4"	Str.	
S501E	260	54'-10"	Str.	
S502E	259	56'-1"	3"	
S601E	260	54'-10"	Str.	
S602E	528	4'-8"	Str.	
S603E	2	4'-9"	4 1/2"	
S604E	128	40'-6"	Str.	
S605E	64	41'-0"	Str.	
S606E	4 of	Var. 5'-4 1/2" to 48'-9"	Str.	
S615E	each			
S616E	4	55'-3"	6 1/2"	
P401E	636	6'-4"	2"	
P402E	636	5'-6"	2"	
P403E	96	7'-5"	Str.	
P404E	120	9'-8"	Str.	
P405E	168	10'-2"	Str.	

Dimensions are out to out of bars.

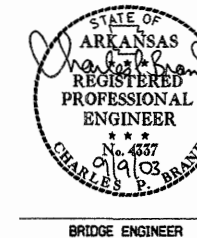


Note: All bars designated with an "E" suffix are to be epoxy coated.



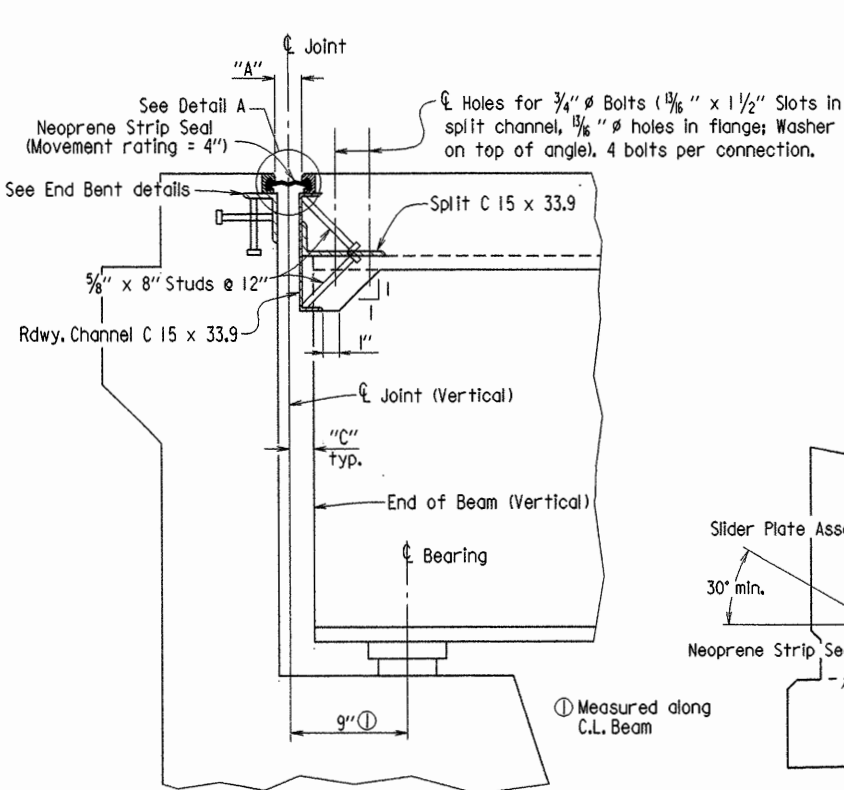
HALF-REINFORCING PLAN

No Scale



SHEET 5 OF 5
DETAILS OF 309'-0" CONTINUOUS
COMPOSITE W-BEAM UNIT
BRIDGE OVER I-30
HOT SPRING COUNTY
ROUTE 270 SEC. 7
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: KMG DATE: 03 JUN 03 FILENAME: b060900x2.s15
CHECKED BY: JAC DATE: 8-25-03 SCALE: As Shown
DESIGNED BY: JAC DATE: 05/03
BRIDGE NO. 06982 DRAWING NO. 46190

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.		060900	141	38D
				06982		SPAN DETAILS		46191



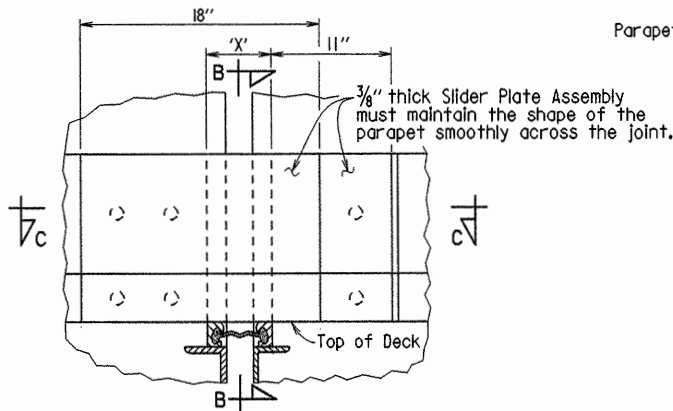
SECTION THRU JOINT AT END BENTS

Note: Sections thru Joints are taken normal to C.L. Joint.

STRIP SEAL JOINT DATA

Bent No(s).	Movement Rating (inch)	"A" Width Perpendicular to Joint at 24 Hour Average Temperature ** of :			"B" Width Perpendicular to Joint at 24 Hour Average Temperature ** of :			"C" Perpendicular to Joint at 24 Hour Average Temperature of 60° F
		40° F	60° F	80° F	40° F	60° F	80° F	
1 And 5	4"	2 5/8"	2 1/2"	2 3/8"	2 1/8"	2"	1 7/8"	2 1/4"

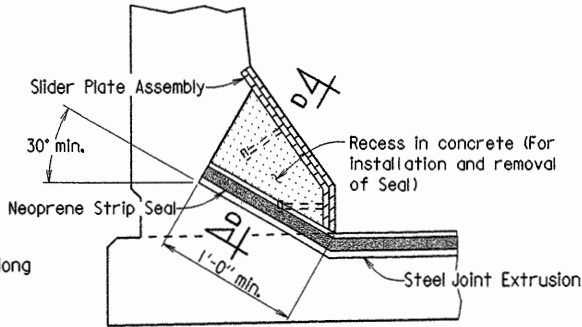
**The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.



Note: Dimension 'X' equals the width of opening in parapet at curb to allow for removal or repair of joint.

DETAIL OF NEOPRENE STRIP SEAL AT CURB

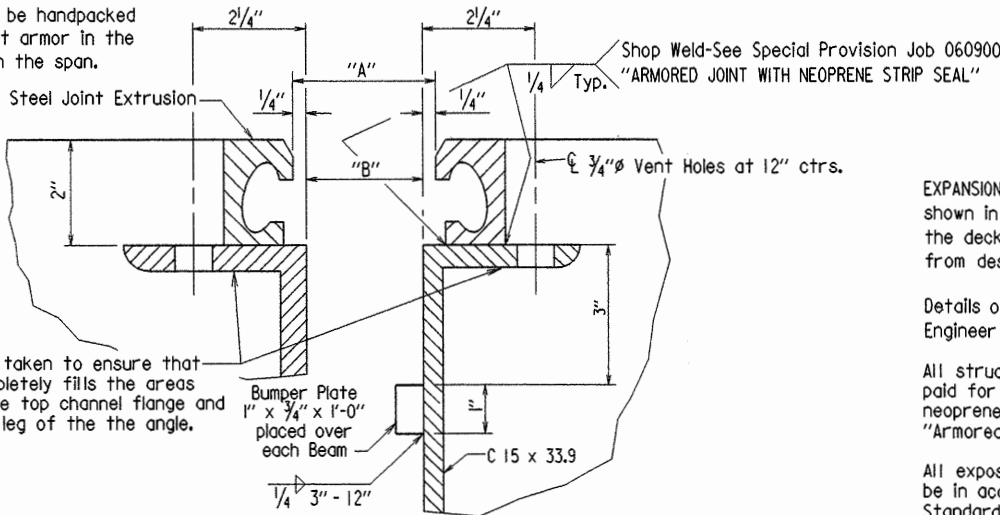
No Scale



SECTION B-B

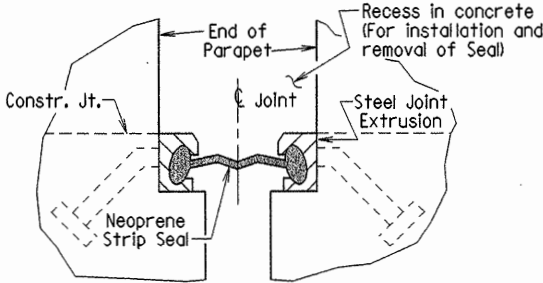
Scale: 1 1/2" = 1'-0"

Note: Concrete shall be handpacked under the joint armor in the backwall and in the span.

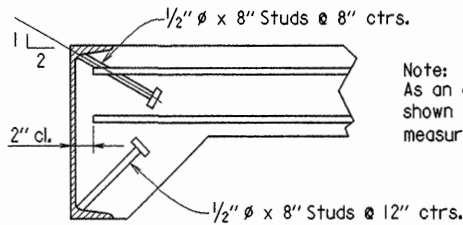


DETAIL A

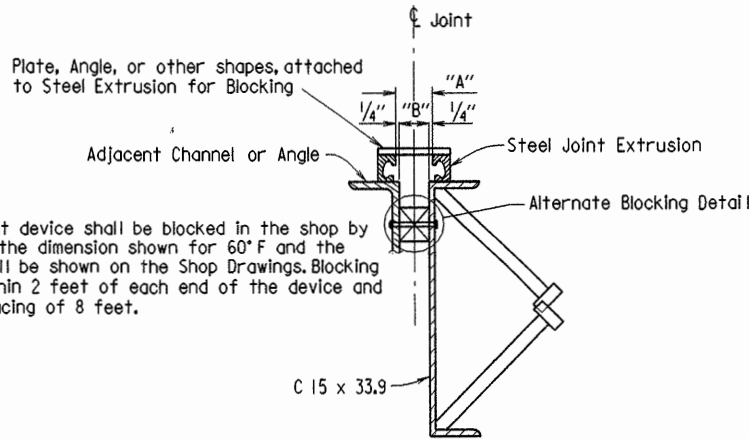
Care shall be taken to ensure that concrete completely fills the areas below both the top channel flange and the horizontal leg of the the angle.



SECTION D-D



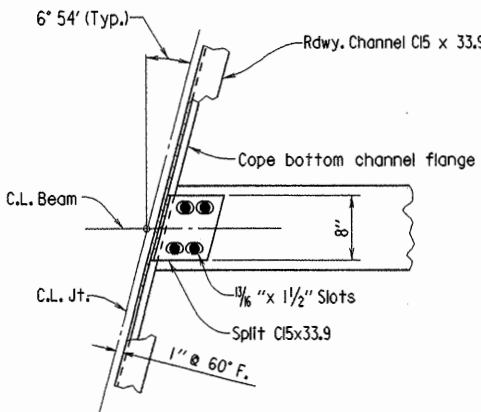
DETAILS OF ALTERNATE ANCHORS



DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

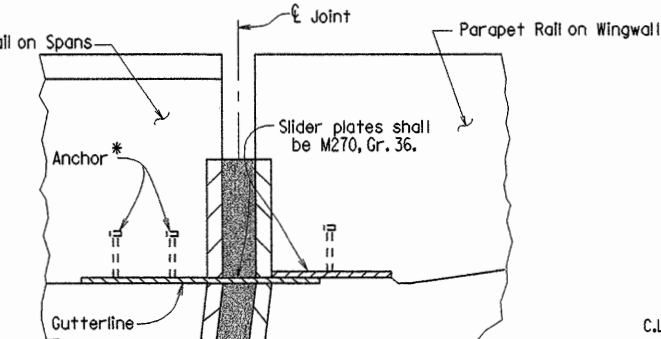
EXPANSION DEVICE INSTALLATION AT END BENTS:

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



TYP. CHANNEL CONNECTION

No Scale



Note: Details of Joint turn-up in curb and parapet are general and show basic design controls only. See SP Job 060900, 'Armored Joint with Neoprene Strip Seal'.

*The method of attachment of the slider plate assembly must be such that it may be removed in order to provide for future replacement of the neoprene seal. Anchors will not be paid for directly but will be considered subsidiary to "STRUCTURAL STEEL IN BEAM SPANS (M 270, Gr. 50)".

SECTION C-C

No Scale



BRIDGE ENGINEER

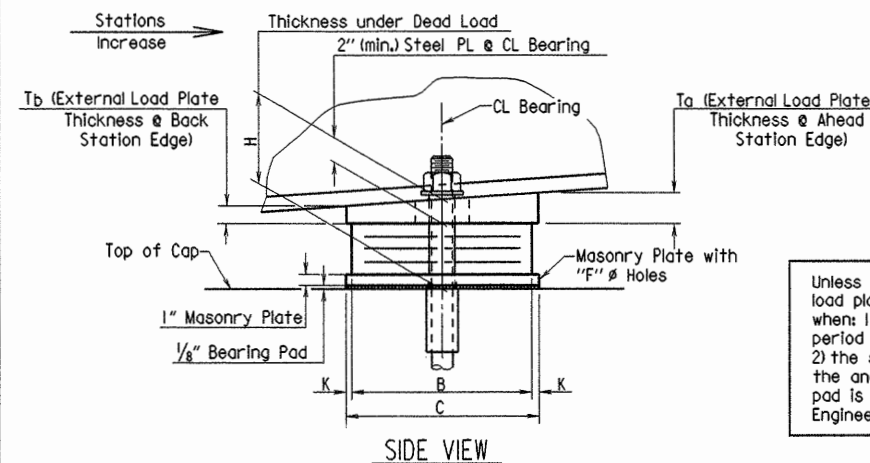
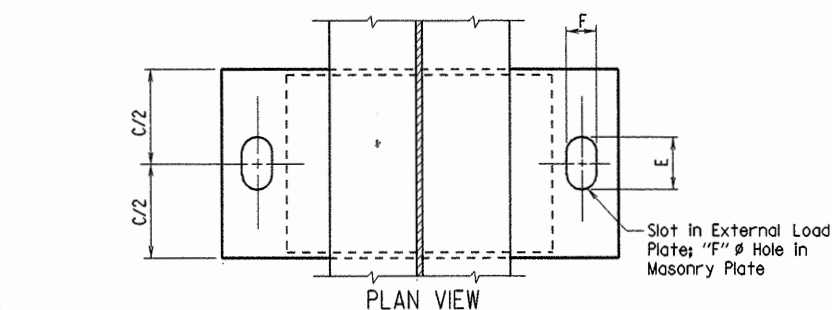
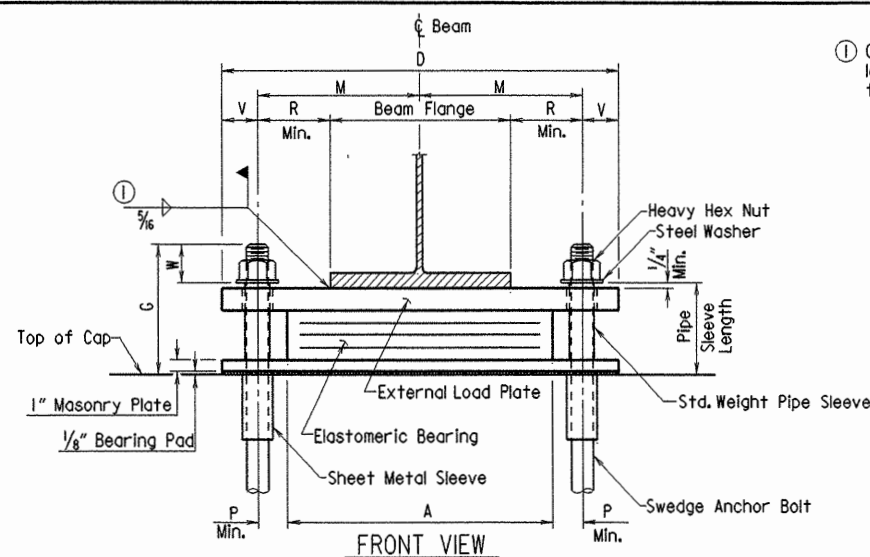
DETAILS OF STRIP SEAL JOINT BRIDGE OVER I-30

ROUTE 270 SEC. 7
ARKANSAS STATE HIGHWAY COMMISSION

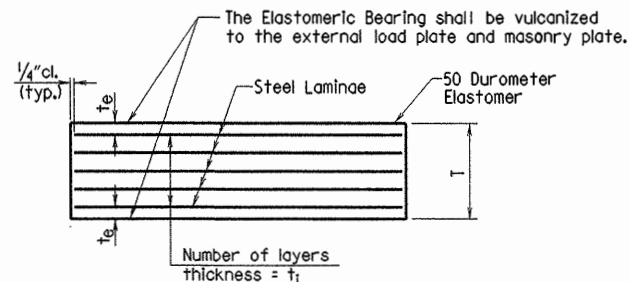
LITTLE ROCK, ARK.

DRAWN BY: KMG DATE: 30 MAY 03 FILENAME: b060900x2.1.tl
CHECKED BY: JAC DATE: 08/03 SCALE: As Shown
DESIGNED BY: JBM DATE: 05/03
BRIDGE NO. 06982 DRAWING NO. 46191

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.		060900	148	380
				① 06982		ELASTO. BRGS.		46192



EXPANSION BEARINGS



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

ELASTOMERIC BEARING

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

TABLE OF FABRICATOR VARIABLES

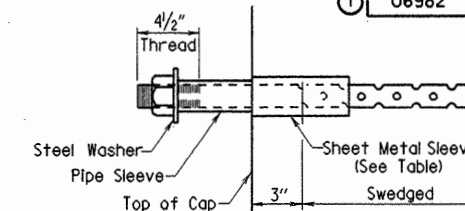
							ELASTOMERIC PAD							EXTERNAL LOAD PLATE								ANCHOR BOLT				
LOCATION	BEAM OR GIRDER NO.	BEARING TYPE	NO. of BEARINGS EACH BENT	* MAXIMUM DESIGN LOAD (KIPS)	G	H	A	B	N	t _i	t _e	NO. & THICKNESS OF STEEL LAMINAE	T	C	D	E **	F	K	M	T _d	T _b	ANCHOR BOLT		PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
																						(ø x L)	GRADE			
Bt. No.1	ALL	Expansion	7	83	9½"	6⅞"	14"	10½"	5	½"	¼"	6 @ 12 Ga.	3⅝"	11½"	24"	4⅝"	2¼"	½"	9¼"	2.06"	1.94"	1½"ø x 28"	55	1½"ø x 7"	3"ø x 12"	3"ø
Bt. No.5	ALL	Expansion	7	83	9½"	6⅞"	14"	10½"	5	½"	¼"	6 @ 12 Ga.	3⅝"	11½"	24"	4⅝"	2¼"	½"	9¼"	1.97"	2.03"	1½"ø x 28"	55	1½"ø x 7"	3"ø x 12"	3"ø

* Maximum Design Load = Service Load

** The dimension "E" does not apply to masonry plates - see Side View, "Expansion Bearings."

TABLE OF DESIGN VARIABLES

ANCHOR BOLT DIAMETER	PIPE SLEEVE NOMINAL DIAMETER	SHEET METAL SLEEVE DIA.	STANDARD WASHER SIZE (O.D.)	MINIMUM EMBEDMENT LENGTH	SLOT WIDTH "F"	P Min.	R Min.	V	W
1 1/2"	1 1/2"	3"	3"	15"	2 1/4" Ø	2 1/4"	2 1/2"	2 3/4"	2 1/2"



ANCHOR BOLT DETAIL

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

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

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 and SP Job 060900 "Elastomeric Bearings" and shall be paid for at the unit price bid for "Elastomeric Bearings". Long-duration testing of random lot samples specified in Subsection 808.05 is not required.

External load plates and masonry plates shall conform to AASHTO M 270, Grade 36. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or AASHTO M 298, Class 50.

External load plates and masonry plates shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the elastomeric bearing. The 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 in accordance with 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 Beam Spans (M270, Gr. 50)."

External load plates, masonry plates, and bearing pads will not be paid for separately but will be included in the unit price bid for "Elastomeric Bearings."

Bearings with masonry plates and 1/8" bearing pads shall be firmly seated in accordance with Subsection 807.66. This work will not be paid for directly but shall be considered subsidiary to the item "Elastomeric Bearings".

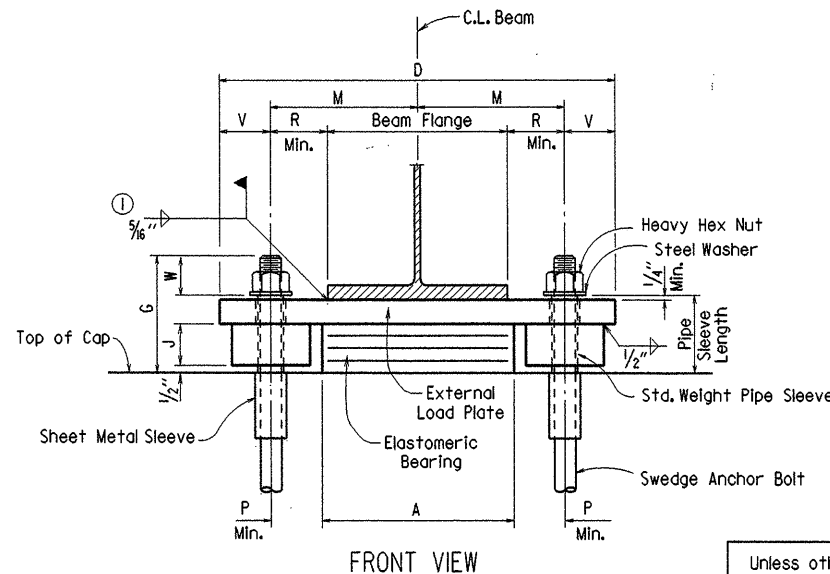
DETAILS OF ELASTOMERIC EXPANSION BEARINGS BRIDGE OVER I-30

ROUTE 270 SEC. 7
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.

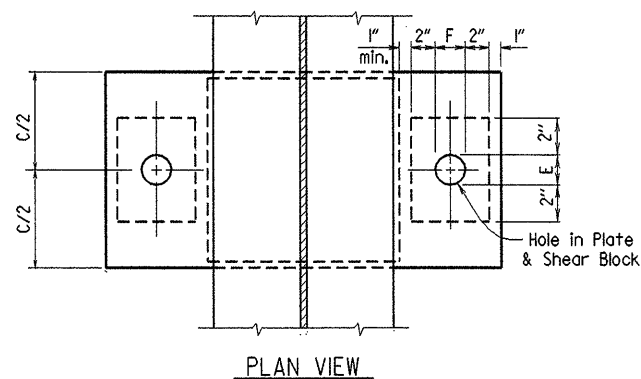
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 BRIDGE NO. 06982 DRAWING NO. 46192



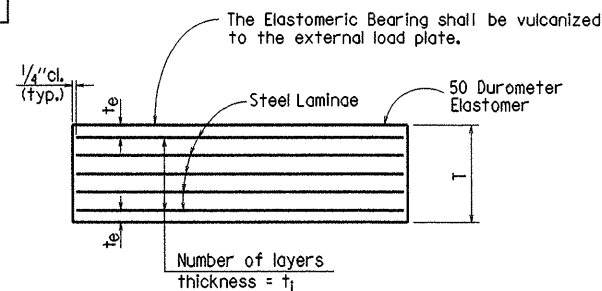
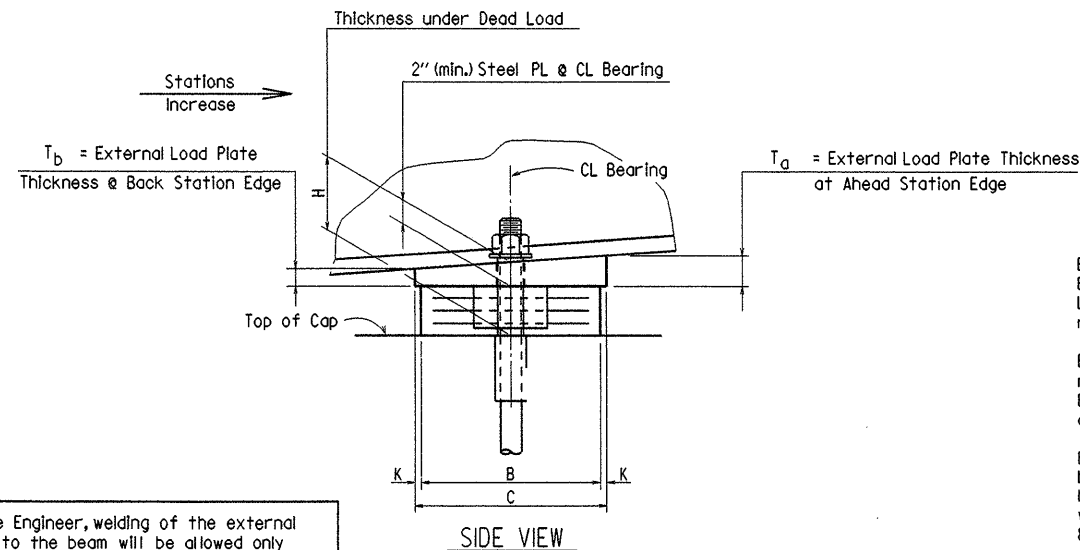
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				6	ARK.			
				JOB NO.		060900	149	380
				06982		ELAST. BRGS.		46193



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



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



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

GENERAL NOTES

Elastomeric Bearings shall conform to Section 808 and SP Job 060900 "Elastomeric Bearings," and shall be paid for at the unit price bid for "Elastomeric Bearings." Long-duration testing of random lot samples specified in Subsection 808.05 is not required.

External load plates and shear blocks shall conform to AASHTO M270, Grade 36 and will not be paid for separately, but will be included in the unit price bid for "Elastomeric Bearings." 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 with shear blocks shall be completely fabricated (including bevel, bolt holes and all shop welding) and shall be cleaned before vulcanizing to the elastomeric bearing. Surfaces in contact with the elastomeric bearing shall be cleaned in accordance with Subsection 808.03. Other surfaces shall be blast cleaned in accordance with Subsection 807.84(b) and painted in accordance with 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 Beam Spans (M270, Gr. 50)."

Bearings shall be firmly seated in accordance with Subsection 808.08. This work will not be paid for directly but will be considered included in the unit price bid for "Elastomeric Bearings."

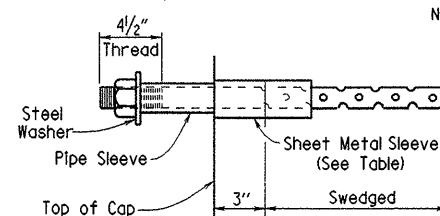
TABLE OF FABRICATOR VARIABLES

LOCATION		BEARING TYPE	NO. OF BEARINGS EACH BENT	*MAXIMUM DESIGN LOAD (KIPS)	G	H	ELASTOMERIC PAD							EXTERNAL LOAD PLATE										ANCHOR BOLT				
BENT NO(S).	BEAM OR GIRDER NO.						A	B	N	t ₁	t _e	NO. & THICKNESS OF STEEL LAMINAE	T	C	D	E	F	J	K	M	T _a	T _b	ANCHOR BOLT (ø x L)		GRADE	PIPE SLEEVE SIZE (ø x L)	SHEET METAL SLEEVE SIZE (ø x L)	STEEL WASHER SIZE (O.D.)
2	ALL	Fixed	7	184	10 1/8"	7 5/8"	16 1/2"	15"	8	1/2"	1/4"	9 @ 12 Ga.	5 7/8"	16"	33"	2 1/4"	2 1/4"	4 1/8"	1/2"	12 3/8"	2.06"	1.94"	1 1/2"ø x 29"	55	1 1/2"ø x 7 5/8"	3"ø x 12"	3"ø	
3	ALL	Fixed	7	197	10 3/4"	7 5/8"	16 1/2"	16"	9	1/2"	1/4"	10 @ 12 Ga.	6 1/8"	17"	33"	2 1/4"	2 1/4"	5 7/8"	1/2"	12 3/8"	2.03"	1.97"	1 1/2"ø x 29"	55	1 1/2"ø x 8 1/4"	3"ø x 12"	3"ø	
4	ALL	Fixed	7	184	10 1/8"	7 5/8"	16 1/2"	15"	8	1/2"	1/4"	9 @ 12 Ga.	5 7/8"	16"	33"	2 1/4"	2 1/4"	4 1/8"	1/2"	12 3/8"	1.97"	2.03"	1 1/2"ø x 29"	55	1 1/2"ø x 7 5/8"	3"ø x 12"	3"ø	

* Maximum Design Load = Service Load

TABLE OF DESIGN VARIABLES

ANCHOR BOLT DIAMETER	PIPE SLEEVE NOMINAL DIAMETER	SHEET METAL SLEEVE DIA.	STANDARD WASHER SIZE (O.D.)	MINIMUM EMBEDMENT LENGTH	SLOT WIDTH "F"	P Min.	R Min.	V	W
1"	1 1/4"	3"	2"	10"	1 1/2" ϕ	4"	2"	4"	2"
1 1/4"	1 1/4"	3"	2 1/2"	12"	2" ϕ	4"	2 1/4"	4"	2 1/4"
1 1/2"	1 1/2"	3"	3"	15"	2 1/4" ϕ	4 1/8"	2 1/2"	4 1/8"	2 1/2"
1 3/4"	2"	4"	3 3/8"	18"	2 5/8" ϕ	4 9/16"	2 3/4"	4 9/16"	2 3/4"
2"	2"	4"	3 3/4"	20"	3 1/8" ϕ	4 3/4"	3"	4 3/8"	3"
2 1/4"	2 1/2"	4"	4"	23"	3 1/8" ϕ	4 9/16"	3"	4 9/16"	3 1/4"
2 1/2"	3"	4"	4 1/2"	25"	3 3/4" ϕ	4 7/8"	3 1/4"	4 1/8"	3 1/2"



ANCHOR BOLT DETAILS

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 QPL approved epoxy or non-shrink grout that completely fills the holes. Galvanized Sheet Metal Sleeves will not be paid for directly, but will be considered subsidiary to the item "Structural Steel in Beam Spans, (M270, Gr. 50)."



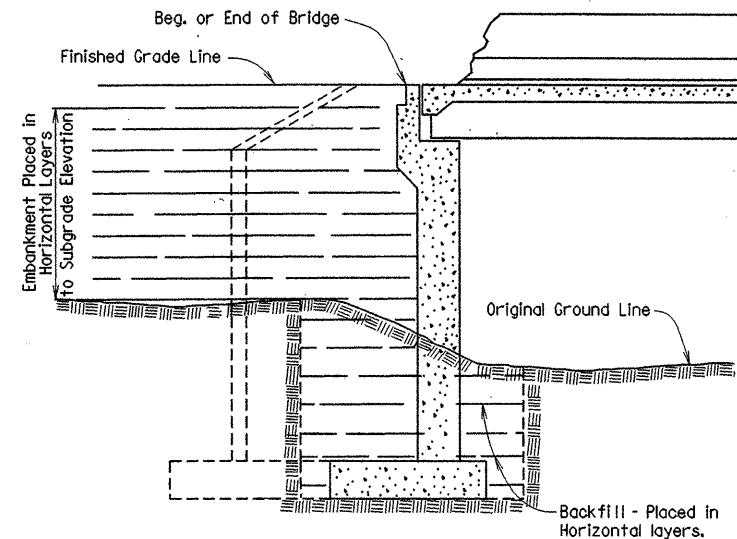
BRIDGE ENGINEER

DETAILS OF ELASTOMERIC FIXED BEARINGS BRIDGE OVER I-30

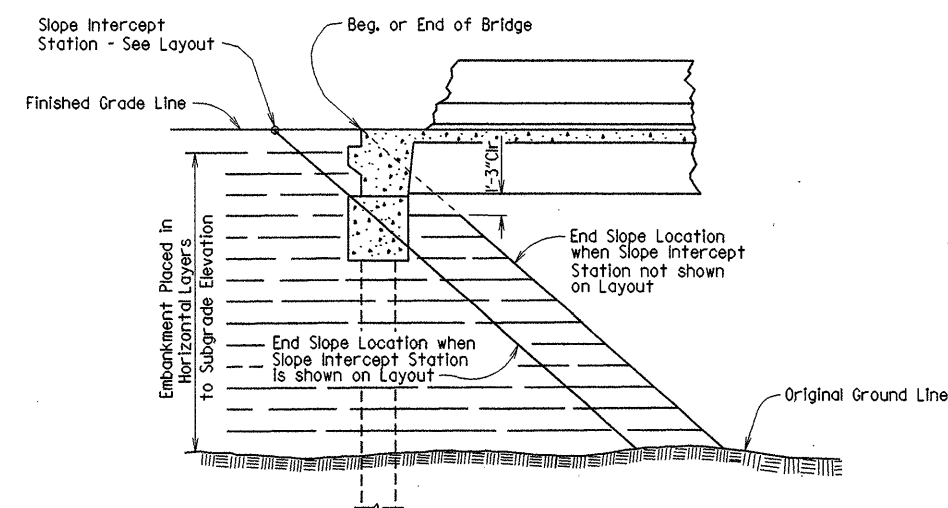
ROUTE 270 SEC. 7
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

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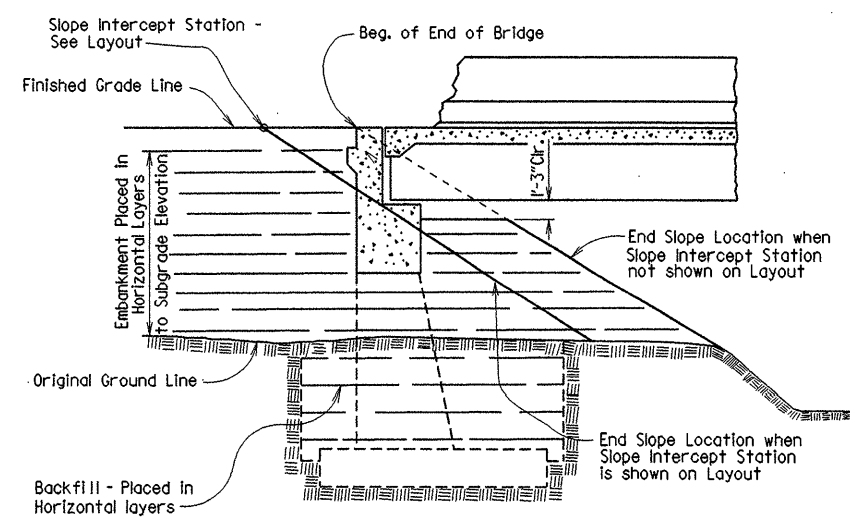
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				EMBANKMENT & BACKFILL			1888A	



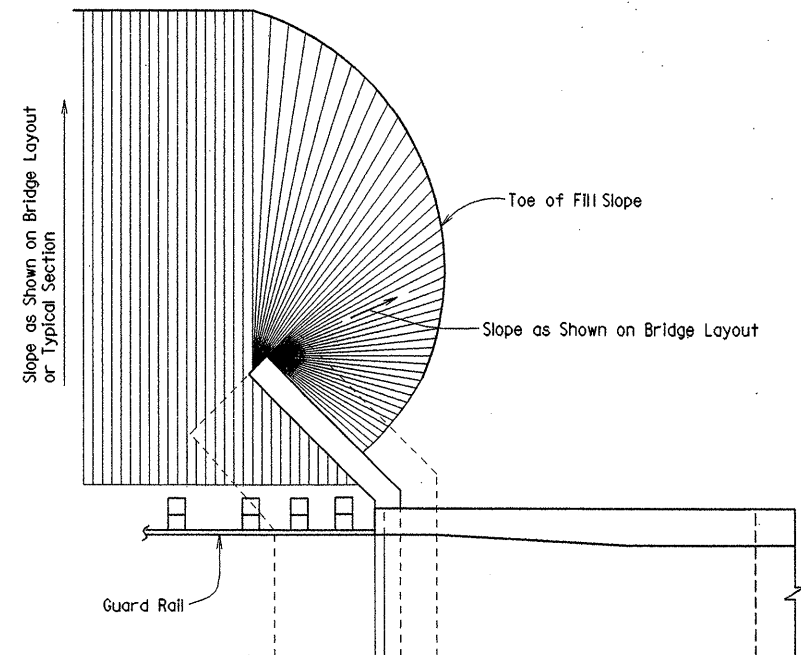
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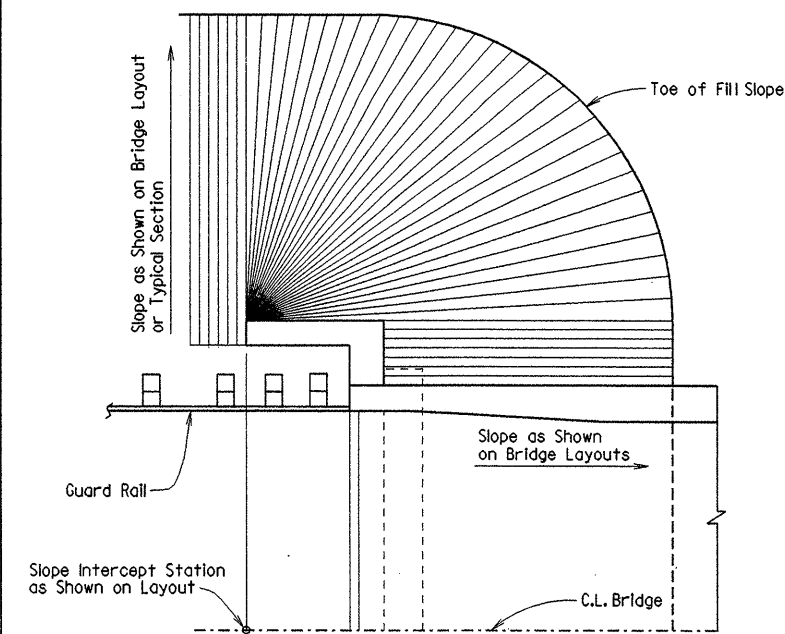
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



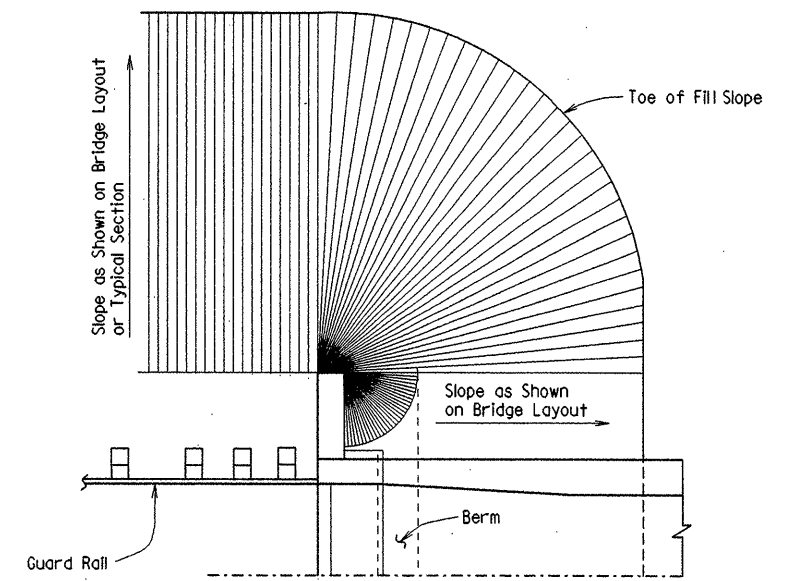
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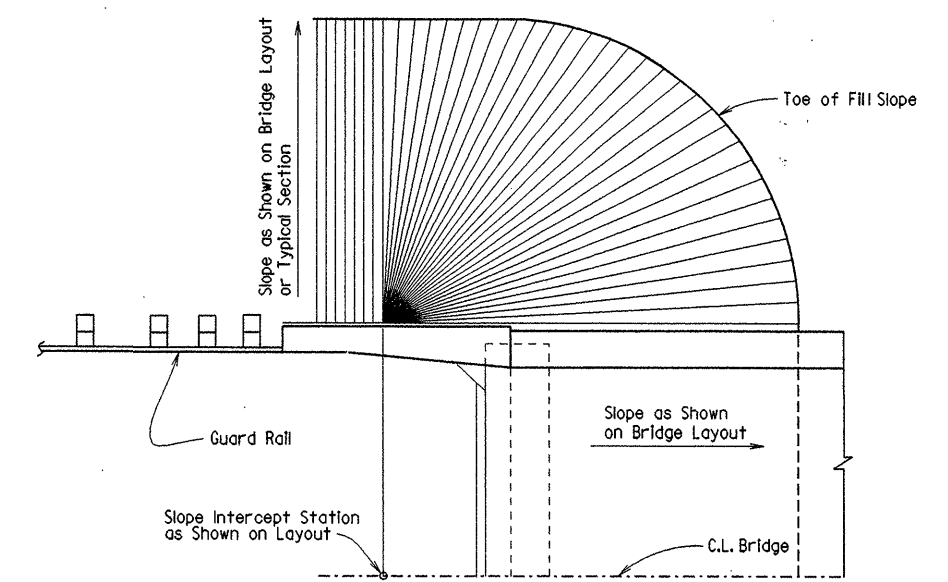
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH TURNBACK WING



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TRANSITION WING

METHOD OF DETERMINING FILL SLOPE LOCATION AT BRIDGE ENDS

GENERAL NOTES

The Bridge End Embankment shall be defined as a section of embankment, not less than 20 feet long adjacent to the bridge end, together with the side slopes and slopes under the bridge end including around the end of wingwalls. Embankment adjacent to structures shall be constructed in 4 inch horizontal layers (loose measure) and compacted by the use of mechanical equipment to the satisfaction of the Engineer. Refer to subsections 210.09, 210.10 and 801.08 of the Specifications for construction requirements.

Revised and redrawn MJT 04-10-2003
Chk'd. By: CJP 04-10-2003



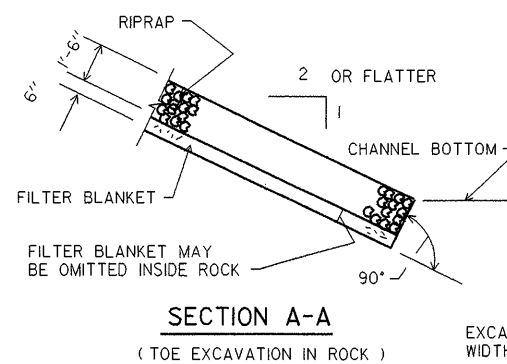
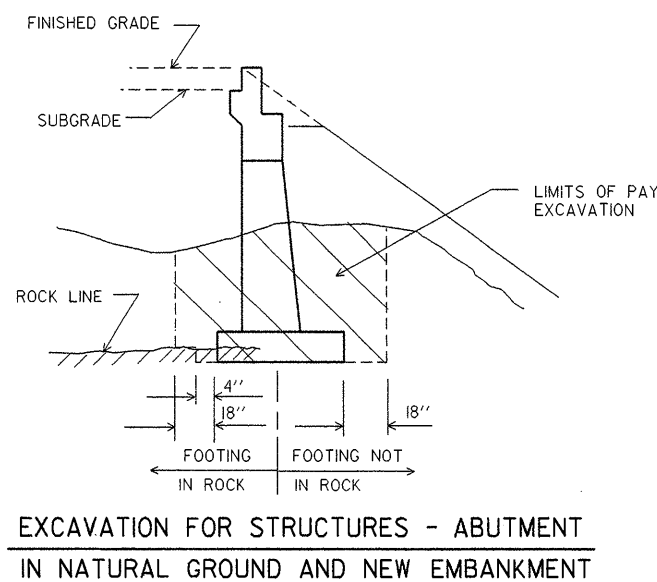
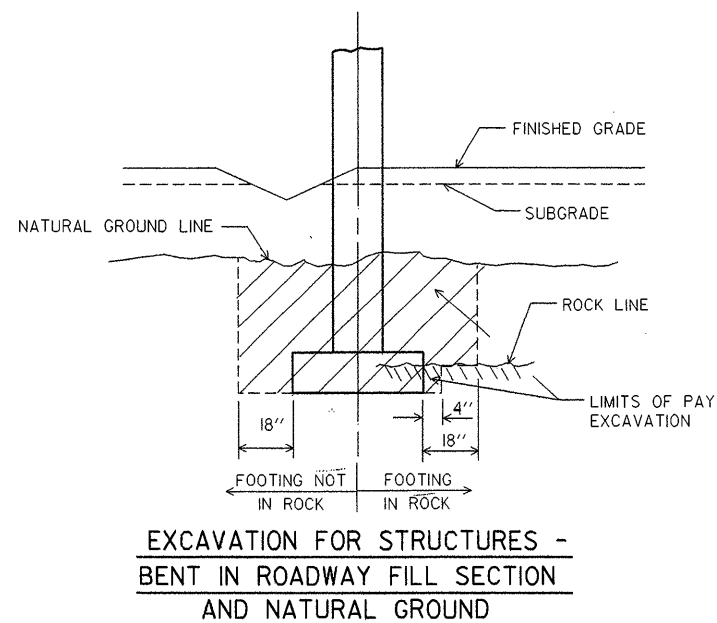
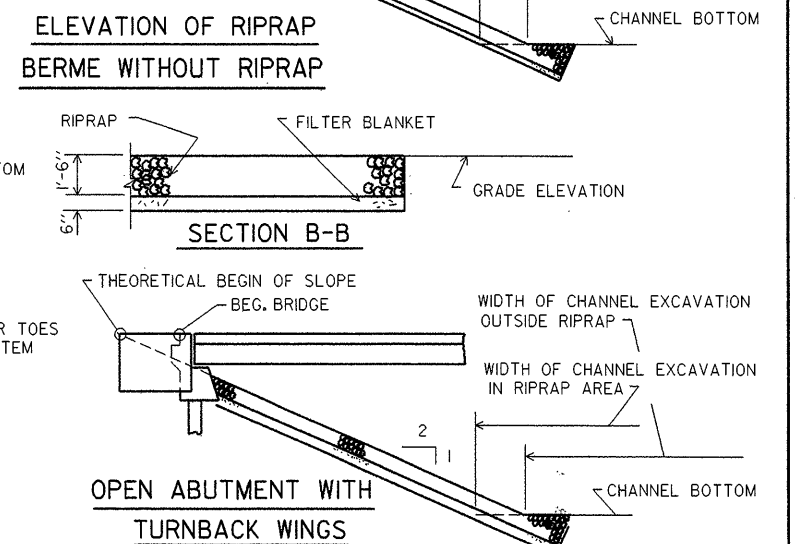
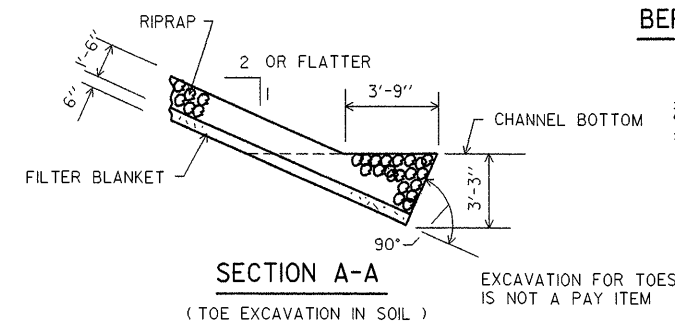
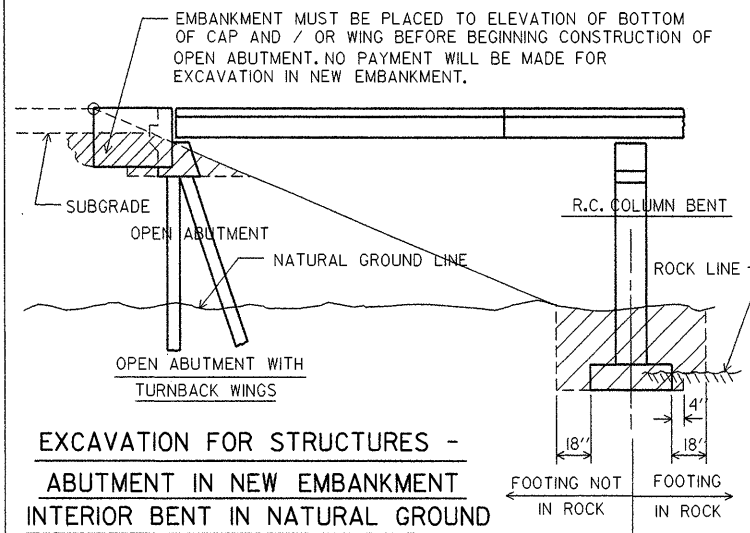
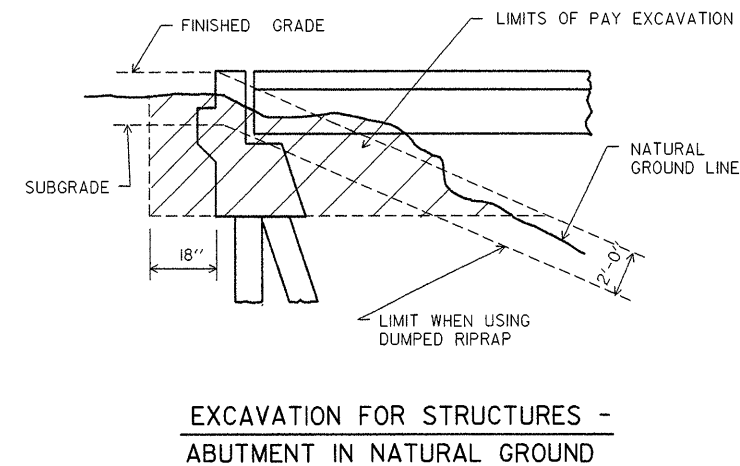
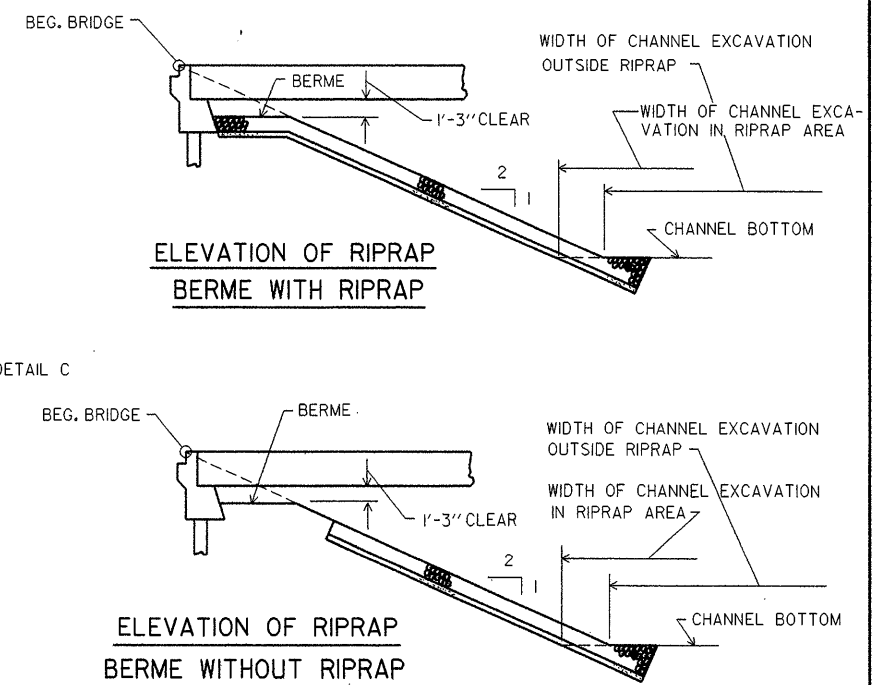
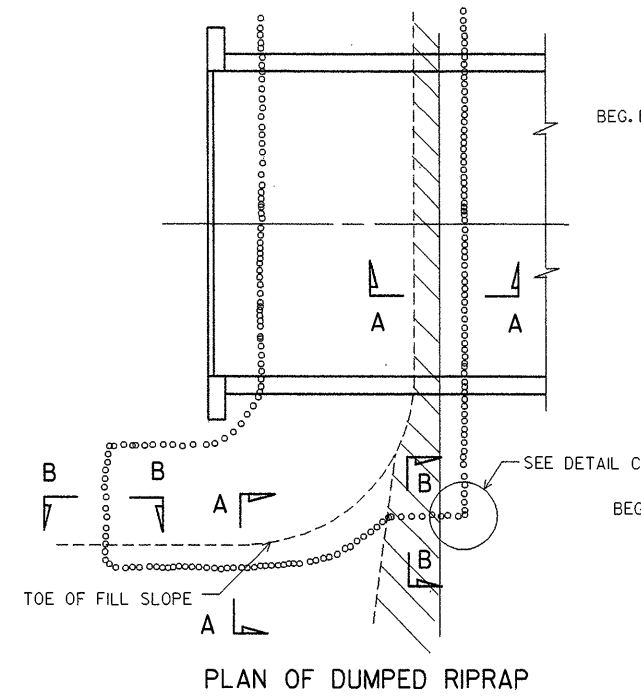
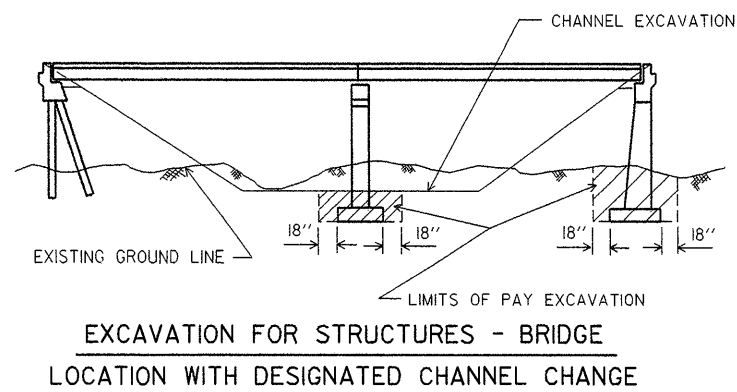
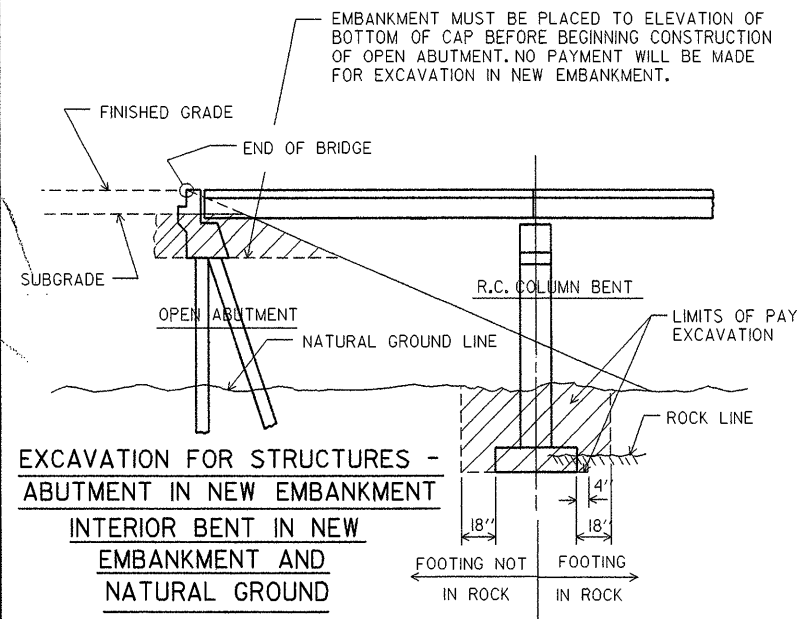
BRIDGE ENGINEER

EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

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

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CHECKED BY: CJP DATE: 04-10-2003 SCALE: NO SCALE
DESIGNED BY: STD DATE: DATE:
BRIDGE NO. DRAWING NO. 1888A

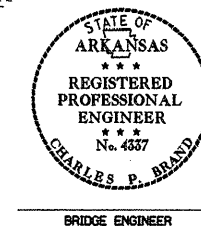
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04-10-2003				6	ARK.		151	
				JOB NO.			189IF	



NOTE: USE THIS TYPE OF TOE WHEN ROCK IS ENCOUNTERED WHICH IS IN A STABLE CONDITION.

NOTE: IN LIEU OF AN AGGREGATE FILTER BLANKET, A SYNTHETIC FIBER GEOTEXTILE FABRIC COMPLYING WITH THE REQUIREMENTS OF SUBSECTION 816.02(e) MAY BE USED.

NOTE: DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES ARE INCLUDED FOR INFORMATION AS TO HOW PLAN QUANTITIES WERE CALCULATED AND FOR USE WHEN ADJUSTING QUANTITIES WHEN CHANGING FOOTING ELEVATION.



DETAIL C

Revised and redrawn MJT 04-10-2003
Chk'd. By: C.J.F. 04-10-2003

DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES

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

DRAWN BY: MJT DATE: 04-10-2003 FILENAME: B189IF.STD
CHECKED BY: C.J.F. DATE: 04-10-2003 SCALE: NO SCALE
DESIGNED BY: STD. DATE: BRIDGE NO. DRAWING NO. 189IF