DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	STPR-0011(35)		
				JOB NO.		FA1106	1	52

(4) SOUTH FORK BIG CREEK STR. & APPRS. (S)

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONSTRUCTION PLANS FOR PROPOSED COUNTY ROAD

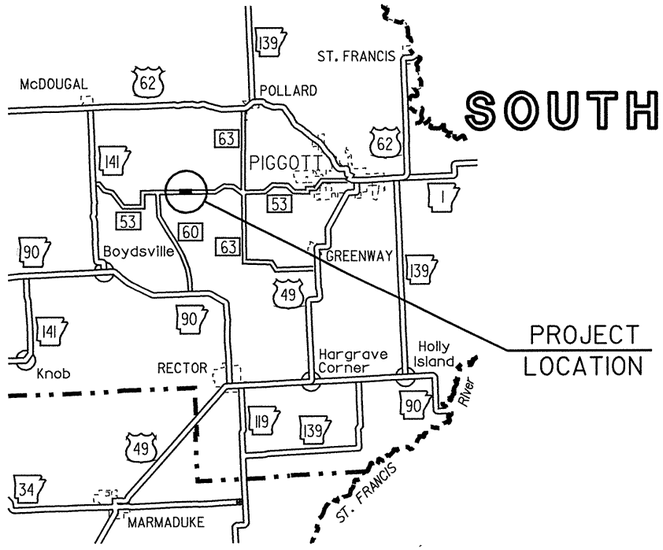
SOUTH FORK BIG CREEK STR. & APPRS. (S)

COUNTY ROAD 53

CLAY COUNTY

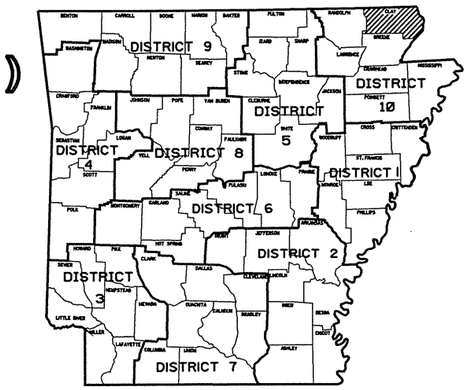
JOB FA1106

F.A.P. STPR-0011(35)



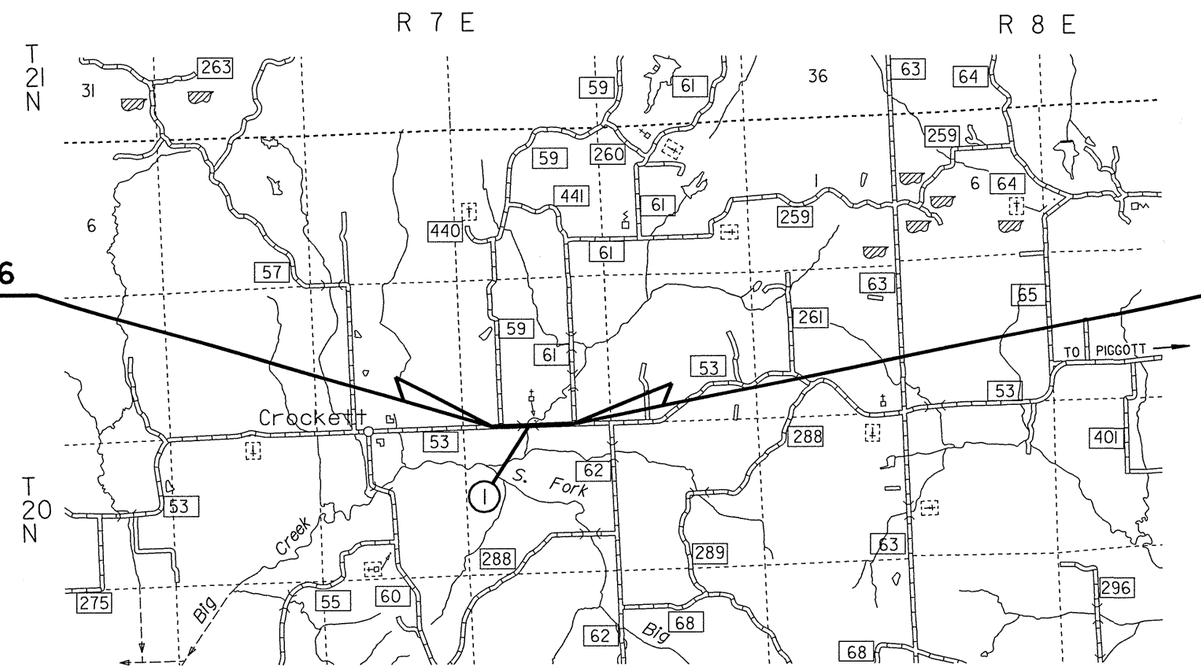
VICINITY MAP

N



ARK. HWY. DISTRICT NO. 10

LAYOUT SCALE : 1" = 1 MILE



STA. 100+00.00 BEGIN JOB FA1106

FED. AID PROJ. STPR-0011(35)

STA. 128+00.00 END JOB FA1106

FED. AID PROJ. STPR-0011(35)

DESIGN TRAFFIC DATA

DESIGN YEAR	2029
2009 ADT	100
2029 ADT	130
2029 DHV	20
DIRECTIONAL DISTRIBUTION	0.60
TRUCKS	5%
DESIGN SPEED	40 MPH

STRUCTURES OVER 20' - 0"

(1) STA. 111+15.00 BRIDGE END
Bridge No. 04907
(3) 31' - 0" Precast Conc. Spans
28' - 0" Clear Roadway
Bridge Length = 93' -0"
STA. 112+08.00 BRIDGE END

APPROVED

STATE OF ARKANSAS ★★★ REGISTERED PROFESSIONAL ENGINEER ★★★ No. 3917 FRANK VOZEL

1/19/09

DEPUTY DIRECTOR AND CHIEF ENGINEER

PROJECT COORDINATES:

	BEGIN	MID-POINT	END
LAT.	N 34° 22' 31.5"	N 36° 22' 31"	N 36° 22' 31.0"
LONG.	W 90° 18' 54.0"	W 90° 18' 37"	W 90° 18' 19.4"

GROSS LENGTH OF	PROJECT	2800.00	FEET OR	0.530	MILES
NET " "	ROADWAY	2707.00	" "	0.513	"
NET " "	BRIDGES	93.00	" "	0.017	"
NET " "	PROJECTS	2800.00	" "	0.530	"

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.		FA1106	10	52

4 SUMMARY OF QUANTITIES & REVISIONS

SUMMARY OF QUANTITIES

ITEM NO.	ITEM		QUANTITY	UNIT
201	CLEARING		28	STATION
201	GRUBBING		28	STATION
202	REMOVAL AND DISPOSAL OF FENCE		103	LIN. FT.
202	REMOVAL AND DISPOSAL OF GATES		1	EACH
202	REMOVAL AND DISPOSAL OF PIPE CULVERTS		1	EACH
210	UNCLASSIFIED EXCAVATION		9459	CU. YD.
210	COMPACTED EMBANKMENT		5500	CU. YD.
SS&303	AGGREGATE BASE COURSE (CLASS 7)		4704	TON.
504	APPROACH GUTTERS (TYPE D)		10.00	CU. YD.
601	MOBILIZATION		1.00	LUMP SUM
602	FURNISHING FIELD OFFICE		1	EACH
603	MAINTENANCE OF TRAFFIC		1.00	LUMP SUM
SS&604	SIGNS		154	SQ. FT.
SS&604	BARRICADES		40	LIN. FT.
SS&604	TRAFFIC DRUMS		24	EACH
* 606	36" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	(ALTERNATE NO. 1)	36	LIN. FT.
* 606	36" ASPHALT COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE)	(ALTERNATE NO. 2)	40	LIN. FT.
* 606	36" ALUMINUM COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE)	(ALTERNATE NO. 3)	40	LIN. FT.
* 606	36" POLYMER PRECOATED METALLIC COATED CORRUGATED STEEL PIPE CULVERTS (14 GAUGE)	(ALTERNATE NO. 4)	40	LIN. FT.
* 606	36" FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERTS	(ALTERNATE NO. 1)	2	EACH
* 606	36" FLARED END SECTIONS FOR CORRUGATED STEEL PIPE CULVERTS	(ALTERNATE NO. 2)	2	EACH
SS&606	18" SIDE DRAIN		27	LIN. FT.
SS&606	36" SIDE DRAIN		27	LIN. FT.
606	SELECTED PIPE BEDDING		4	CU. YD.
606	SELECTED PIPE BACKFILL		8	CU. YD.
611	4" PIPE UNDERDRAINS		300	LIN. FT.
617	GUARDRAIL (TYPE A)		200	LIN. FT.
617	TERMINAL ANCHOR POSTS (TYPE 1)		4	EACH
617	THRIE BEAM GUARDRAIL TERMINAL		4	EACH
619	WIRE FENCE (TYPE D-1)		103	LIN. FT.
620	LIME		7	TON
620	SEEDING		3.66	ACRE
620	MULCH COVER		7.32	ACRE
SS&620	WATER		448.4	M. GAL
621	TEMPORARY SEEDING		3.66	ACRE
621	BALED STRAW DITCH CHECKS		60	BALE
621	SILT FENCE		600	LIN. FT.
621	SAND BAG DITCH CHECKS		460	BAG
621	SEDIMENT REMOVAL AND DISPOSAL		66	CU. YD.
624	SOLID SODDING		34	SQ. YD.
635	ROADWAY CONSTRUCTION CONTROL		1.00	LUMP SUM
637	MAILBOXES		1	EACH
637	MAILBOX SUPPORTS (SINGLE)		1	EACH
SS&726	STANDARD SIGN		24.50	SQ. FT.
729	CHANNEL POST SIGN SUPPORT (TYPE A)		2	EACH
729	CHANNEL POST SIGN SUPPORT (TYPE C)		4	EACH
804	REINFORCING STEEL-ROADWAY (GRADE 60)		824	POUND
	STRUCTURES OVER 20' SPANS			
205	REMOVAL OF EXISTING BRIDGE STRUCTURE (SITE NO. 1)		1.00	LUMP SUM
636	BRIDGE CONSTRUCTION CONTROL		1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES - BRIDGE		16	CU. YD.
802	CLASS S CONCRETE - BRIDGE		40.00	CU. YD.
802	31' PRECAST CONCRETE CURB UNITS		6	EACH
802	31' PRECAST CONCRETE INTERIOR UNITS		18	EACH
802	31' PRECAST PARAPET RAIL UNITS		6	EACH
803	CLASS I PROTECTIVE SURFACE TREATMENT		9.9	GAL.
804	REINFORCING STEEL - BRIDGE (GRADE 60)		4140	POUND
SP&805	STEEL SHELL PILING (18" DIAMETER)		1098	LIN. FT.
805	PILE ENCASEMENT		31	LIN. FT.
812	BRIDGE NAME PLATE (TYPE C)		1	EACH
816	FILTER BLANKET		304	SQ. YD.
816	DUMPED RIPRAP		168	CU. YD.

* ALTERNATE BID ITEM

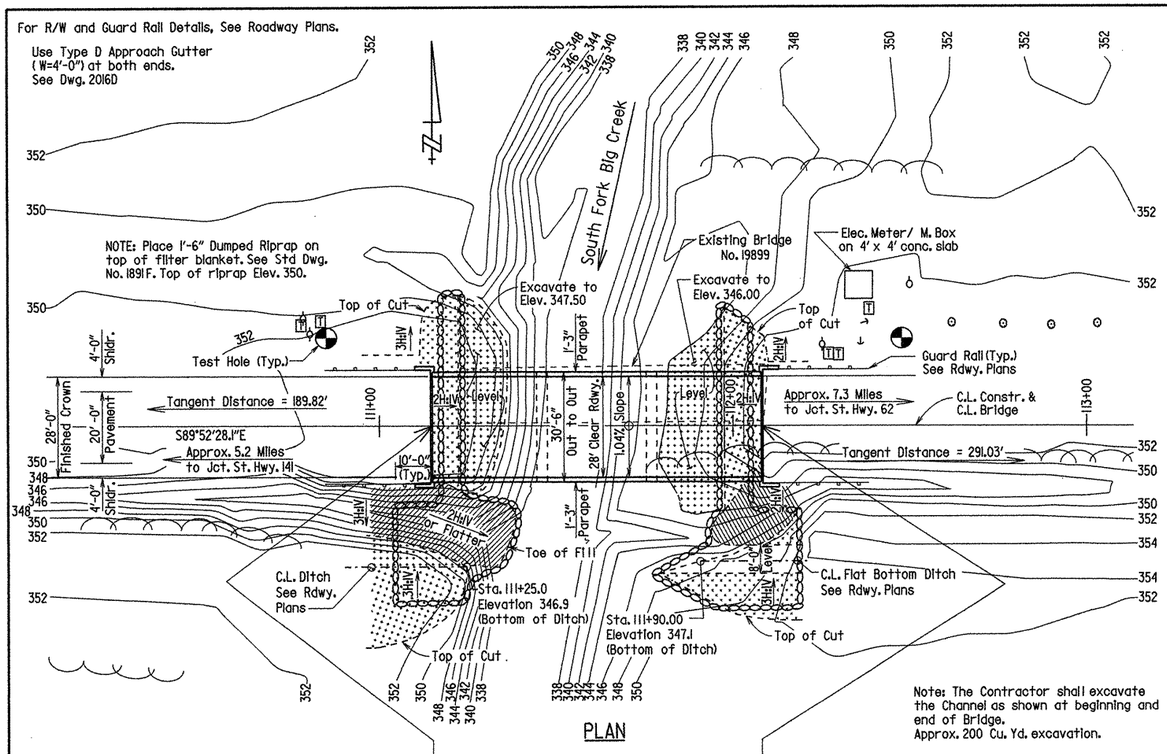
REVISIONS

DATE	REVISIONS	SHEET NUMBER

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 5368 DAVID R. MAYO, JR.

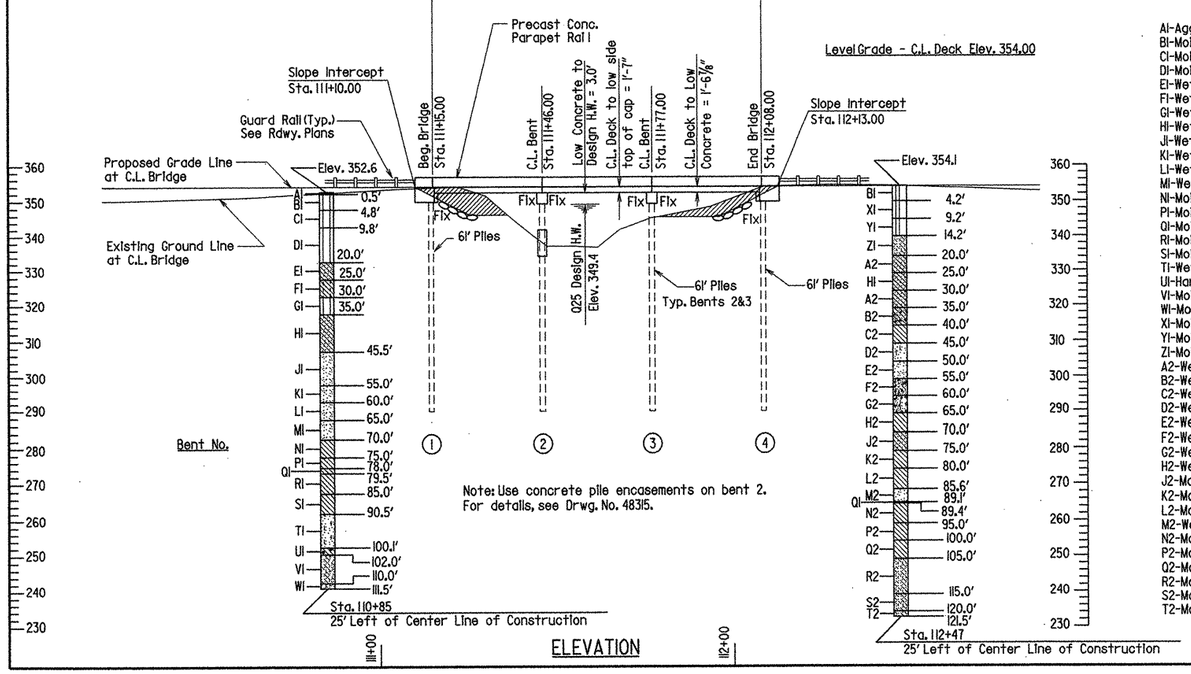
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FAI106	14	52
				(1)	04907 - LAYOUT - 48311			

For R/W and Guard Rail Details, See Roadway Plans.



PLAN

Total Length Of Bridge = 93'-0"
3 - 31'-0" Precast Concrete Spans



ELEVATION

"N" VALUES

Sta. 110+85 - 25' Lt. C.L. Const.	Sta. 112+47 - 25' Lt. C.L. Const.
5.3- 6.3,N=22	4.7- 5.7,N=4
10.3- 11.3,N=18	9.7- 10.7,N=4
15.5- 16.5,N=18	14.7- 15.7,N=7
20.5- 21.5,N=3	20.5- 21.5,N=4
25.5- 26.5,N=2	25.5- 26.5,N=9
30.5- 31.5,N=4	30.5- 31.5,N=4
35.5- 36.5,N=10	35.5- 36.5,N=9
45.5- 46.5,N=14	40.5- 41.5,N=6
50.5- 51.5,N=18	45.5- 46.5,N=10
55.5- 56.5,N=17	50.5- 51.5,N=25
60.5- 61.5,N=43	55.5- 56.5,N=25
65.5- 66.5,N=71	60.5- 61.5,N=40
70.5- 71.5,N=6	65.5- 66.5,N=2
75.5- 76.5,N=15	70.5- 71.5,N=11
80.5- 81.5,N=20	75.5- 76.5,N=14
85.5- 86.5,N=23	80.5- 81.5,N=9
90.5- 91.5,N=74	85.5- 86.5,N=58
95.5- 96.5,N=61	90.5- 91.5,N=30
100.5- 101.5,N=41	95.5- 96.5,N=19
105.5- 105.6,N=60(1)	100.5- 101.5,N=28
110.5- 111.5,N=38	105.5- 106.5,N=30
	110.5- 111.5,N=28
	115.5- 116.5,N=35
	120.5- 121.5,N=34

BORING LEGEND

A1-Aggregate Roadway (6")
B1-Moist, Loose, Brown Silt with some Gravel
C1-Moist, Medium Dense, Gray Silt
D1-Moist, Medium Dense, Brown and Gray Silt
E1-Wet, Soft, Brown and Gray Sandy Clay
F1-Wet, Soft, Brown and Gray Silty Clay
G1-Wet, Very Loose, Brown Silt
H1-Wet, Stiff, Brown Sandy Clay
J1-Wet, Medium Dense, Gray Sand
K1-Wet, Medium Dense, Brown Sand with Silt
L1-Wet, Dense, Brown Sand
M1-Wet, Very Dense, Brown Sand
N1-Moist, Medium Stiff, Light Gray Clay
P1-Moist, Stiff, Gray Clay
Q1-Moist, Very Hard, Gray Clay
R1-Moist, Very Stiff, Gray Clay
S1-Moist, Very Stiff, Gray Clay with Traces of Organic Matter
T1-Wet, Very Dense, Gray Silty Sand
U1-Hard, Black Lignite with Clay Seams
V1-Moist, Very Dense, Gray Clayey Sand
W1-Moist, Dense, Brown and Gray Clayey Sand
X1-Moist, Very Loose, Brown Silt
Y1-Moist, Very Loose, Brown and Gray Silt with some Organic Matter
Z1-Moist, Loose, Brown and Gray Clayey Sand
A2-Wet, Soft, Brown Sandy Clay
B2-Wet, Stiff, Brown Sandy Clay with Gravel
C2-Wet, Medium Stiff, Brown and Gray Clay with Traces of Gravel
D2-Wet, Loose, Gray Silty Sand
E2-Wet, Medium Dense, Gray Sand with Traces of Gravel
F2-Wet, Medium Dense, Gray Sand with Clay and Gravel
G2-Wet, Dense, Gray Silty Gravel with Sand
H2-Wet, Soft, Gray Sandy Clay
J2-Moist, Stiff, Gray Clay with Sand
K2-Moist, Stiff, Gray Clay with some Sand
L2-Moist, Stiff, Light Gray Clay
M2-Wet, Very Dense, Gray Sand
N2-Moist, Very Stiff, Dark Brown Clay
P2-Moist, Very Stiff, Gray Clay with Traces of Lignite
Q2-Moist, Very Stiff, Gray Clay with some Lignite
R2-Moist, Medium Dense, Gray Clayey Sand
S2-Moist, Dense, Gray Clayey Sand
T2-Moist, Dense, Gray Clayey Sand with Clay Seam

GENERAL NOTES

BENCH MARK: BM914, Chiseled Sq. In Bottom Step of Church , 68.64' Lt. of C.L. Construction Sta. 113+93.00, Elev. 353.86

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

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications, 4th Edition (2007) with 2008 interim.

LIVE LOADING: HL-93 METHOD OF DESIGN: LRFD

SEISMIC ZONE: 4

MATERIALS AND STRENGTHS:
Class S(AE) Concrete (superstructure) f'c = 4,000 psi
Class S Concrete (substructure) f'c = 3,500 psi
Reinforcing Steel (AASHTO M31 or M53, GR. 60) fy = 60,000 psi

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

STEEL SHELL PILING: All piling shall be 18" diameter concrete filled steel shell piles and shall be driven to a minimum safe bearing capacity of 60 tons per pile with an approved air, steam, or diesel hammer. All piling shall be driven to a minimum tip elevation of 295.00 or lower. Piling in end bents shall be driven after embankment to bottom of the cap is in place.

Water jetting or other methods as approved by the Engineer may be required to achieve the minimum tip elevation. Any cost for these methods shall be included in the item "Steel Shell Piling". The depth of water jetting shall be as approved by the Engineer.

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

PROTECTIVE SURFACE TREATMENT: Class I Protective Surface Treatment shall be applied to the roadway surface and to the face and top of the concrete parapet rail.

DETAIL DRAWINGS:	DRAWING NO.
End Bents	48312
Int. Bents	48312
Concrete Filled Steel Shell Piles	48315
31' Precast Concrete Unit	48313
Precast Parapet Railing	48313 - 48314
Type D Approach Gutters	2016D

EXISTING BRIDGE: Existing Bridge No. 19899 (log mile 5.36) is 14.7' wide and 89' long and consists of steel girders with timber decking, supported by timber pile bents with timber caps.

REMOVAL AND SALVAGE: Existing Bridge No. 19899 shall be removed in accordance with Section 205. All timber decking and beams shall remain the property of Clay County. All other material from the existing bridge shall become the property of the contractor. The contractor shall coordinate with the county.

MAINTENANCE OF TRAFFIC: The road will be closed during the construction of this project.

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY	DISCHARGE	*NATURAL WATER SURFACE ELEVATION	WATER SURFACE ELEV. WITH BACKWATER
	YEARS	CFS	FEET	FEET
Design	25	2400	349.4	350.5
Base	100	3800	350.8	351.6
Extreme	500	4500	351.3	352.1
Overtopping	>500	-	-	-

*Unconstricted water surface without structure or roadway approaches.

Drainage area = 3.9 square miles.
Historical H.W. Elev. = 351.7 ft.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 4337 CHARLES P. BRAND 11/5/08

BRIDGE ENGINEER

LAYOUT OF BRIDGE OVER SOUTH FORK BIG CREEK SOUTH FORK BIG CREEK STR. & APPRS. (S) CLAY COUNTY

County Road No. 53

ARKANSAS STATE HIGHWAY COMMISSION

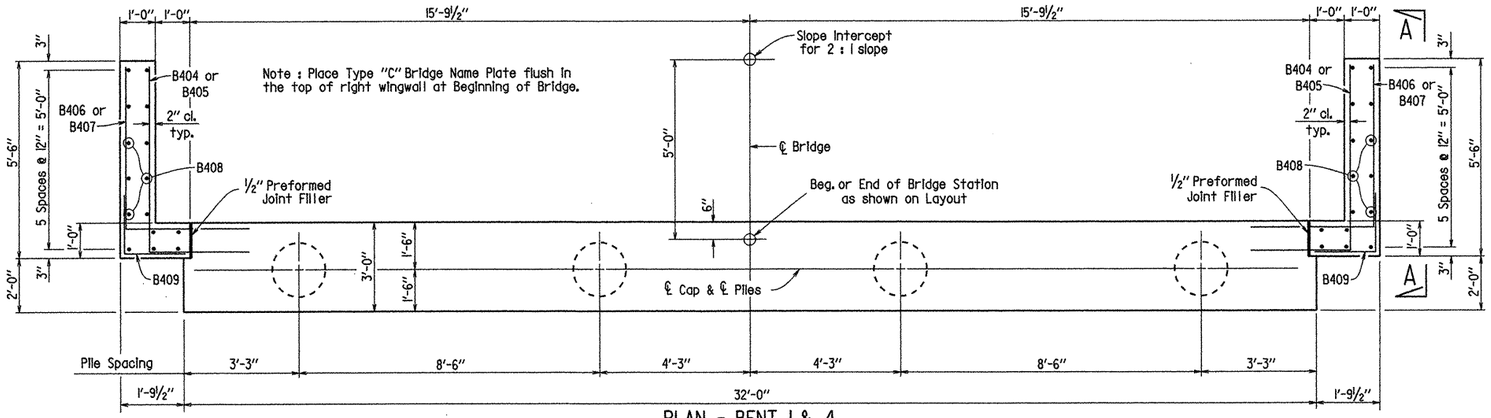
LITTLE ROCK, ARK.

DRAWN BY: JBC DATE: 6/30/2008 FILENAME: bfall06_ll.dgn
CHECKED BY: DHP DATE: 11/4/08 SCALE: 1" = 20'
DESIGNED BY: CSL DATE: May 2007

BRIDGE NO. 04907 DRAWING NO. 48311

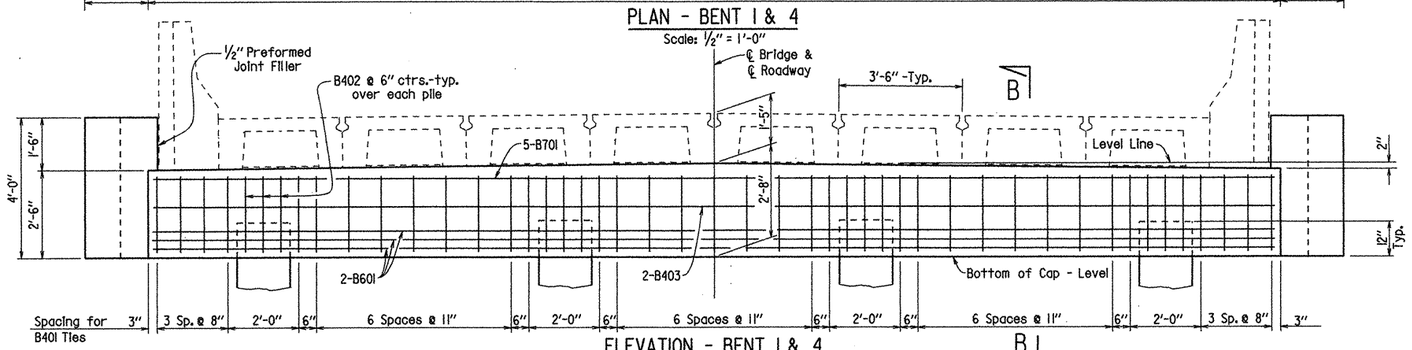
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FAI106	15	52

(1) 04907 - PRECAST BENTS - 48312



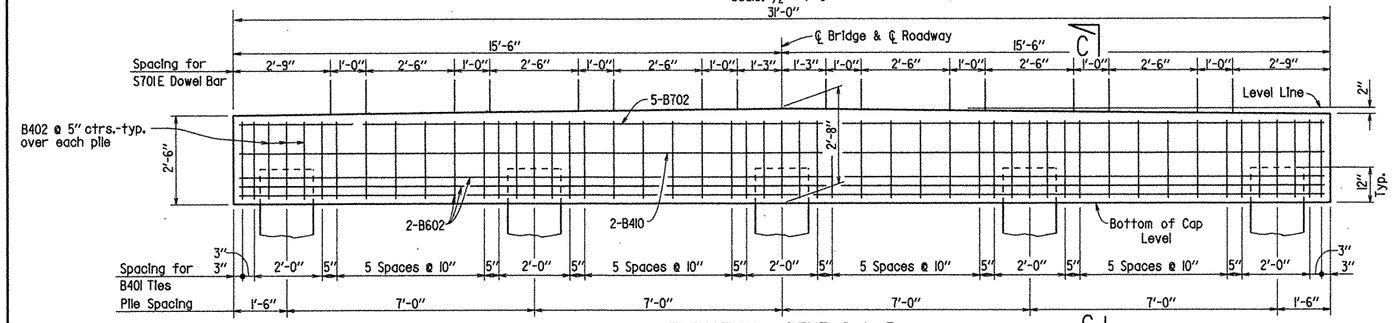
PLAN - BENT 1 & 4

Scale: ½" = 1'-0"



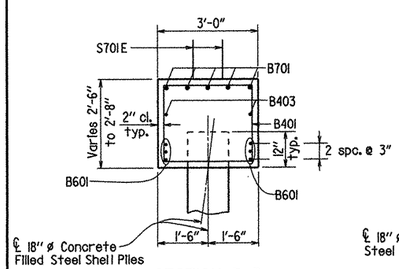
ELEVATION - BENT 1 & 4

Scale: ½" = 1'-0"



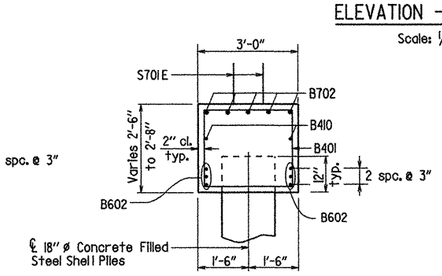
ELEVATION - BENT 2 & 3

Scale: ½" = 1'-0"



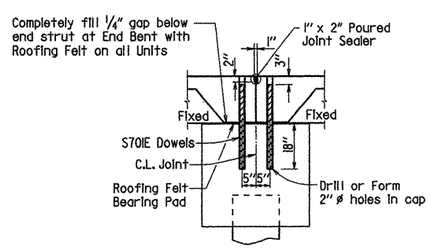
SECTION B-B

No Scale



SECTION C-C

No Scale



SECTION AT FIXED BENT

No Scale

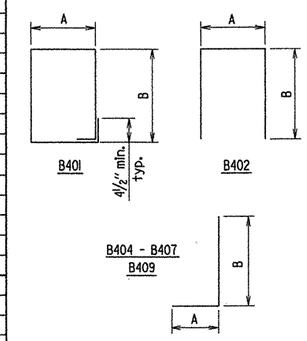
BAR LIST - PER BENT

Note: Bars designated with an "E" are to be epoxy coated.

MARK	NO. REQ'D. END BT.	NO. REQ'D. INT. BT.	LENGTH	'A'	'B'	P.D.
B401	35	36	10'-0"	2'-8"	2'-2"	2"
B402	12	15	6'-10"	2'-8"	2'-2"	2"
B403	2	-	31'-8"	-	-	Str.
B404	4	-	6'-1"	5'-2"	1'-0"	2"
B405	6	-	7'-11"	5'-2"	2'-10"	2"
B406	4	-	6'-1"	4'-6"	1'-8"	2"
B407	6	-	7'-11"	4'-6"	3'-6"	2"
B408	30	-	3'-8"	-	-	Str.
B409	10	-	3'-3"	1'-8"	1'-8"	2"
B410	-	2	30'-8"	-	-	Str.
B601	6	-	31'-8"	-	-	Str.
B602	-	6	30'-8"	-	-	Str.
B701	5	-	31'-8"	-	-	Str.
B702	-	5	30'-8"	-	-	Str.
*S701E (See Precast Concrete Span Unit Bar List for number required)						

BENDING DIAGRAMS

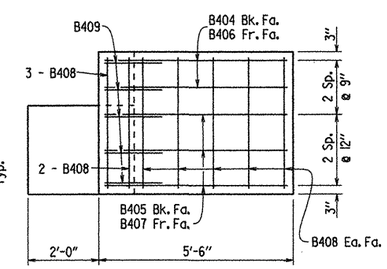
Dimensions are out to out of bars.



*Payment for this bar is included in the pay items for the Precast Concrete Units.

QUANTITIES

Bent Type	Class "S" Concrete-Bridge	Reinforcing Steel (Gr. 60)-Bridge
Int.	8.9 Cu.Yds.	940 Lbs.
End	11.1 Cu.Yds.	1130 Lbs.



VIEW A-A

Scale: ½" = 1'-0"

General Notes

Design Specifications : AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 Interim.

Live Load : HL93

Seismic Zone : 4

Concrete : All concrete shall be Class "S" and have a minimum 28 day compressive strength f'c = 3500 psi. All exposed corners shall be chamfered ¾" unless otherwise noted.

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

Roofing Felt shall meet or exceed the requirements of ASTM D224 Type I. See Section 802.18 (d). The roofing felt shall be in one piece for the full length of the cap and three layers shall be used. Roofing Felt shall not be paid for directly, but shall be considered subsidiary to the pay items for Precast Concrete Units. Preformed Joint Filler shall conform to AASHTO M153, Type I and shall not be paid for directly but shall be considered subsidiary to the pay items for Precast Concrete Units.

Preformed Joint Filler shall conform to AASHTO M153, Type I and shall not be paid for directly but shall be considered subsidary to the pay item for Precast Concrete Units.

Reinforcing bars in top of cap shall be properly placed to avoid interference with S701E dowels.

For Details of concrete filled Steel Shell Piles, see Dwg. No. 48315.
For Details of 31'-0" Precast Concrete Spans, See Dwg. No. 48313.

Note: After each unit is in its final position, S701E Dowels shall be grouted in place using an approved non-shrink grout, from the QPL, that completely fills the holes.

Poured Joint Sealer shall meet subsection 501.02(h) (2), Type 3, 4, 5 or 6.

STATE OF ARKANSAS
No. 4337
REGISTERED PROFESSIONAL ENGINEER
11/12/08
CHARLES P. BRAND

BRIDGE ENGINEER

DETAILS OF PILE BENTS FOR 31'-0" PRECAST CONCRETE SPANS - 28'-0" RDWY.

County Road No. 53

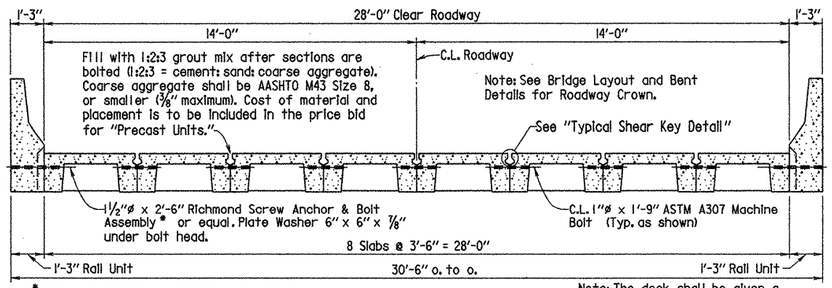
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: JBC	DATE: 9-24-08	FILENAME: bfall06_bl.dgn			
CHECKED BY: DHP	DATE: 11/4/08	SCALE: AS NOTED			
DESIGNED BY: DHP	DATE: 9/24/08				

BRIDGE NO. 04907 DRAWING NO. 48312

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.		FAI106	16	52
				04907 -		PRECAST SPANS - 48313		

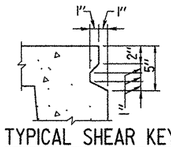


*Designated "Richmond SCAB" on the Plans.

CROSS-SECTION OF 28'-0" CLR. RDWY. (SHOWING ASSEMBLY)

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

Note: The deck shall be given a tine finish as specified for Class 5 Roadway Surface Finish in subsection 802.19 of the Standard Specifications.



TYPICAL SHEAR KEY DETAIL

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

Note: All corners exposed after erection shall have a 1/2" minimum chamfer. All other corners shall have sufficient chamfer or rounding to prevent breakage during form removal, handling and erection.

BAR LIST FOR PRECAST BRIDGE COMPONENTS

PRECAST SLAB UNIT

Note: Bar designations ending with "E" indicate epoxy coated bars.

MARK	NUMBER REQUIRED		LENGTH	P.D.
	CURB UNIT	INT. UNIT		
S301	122	122	3'-3 1/2"	1 1/2"
S302	4	4	2'-9"	1 1/2"
S401	10	8	3'-2"	Str.
S501	26 (A)	-	4'-6"	2 1/2"
S701E	(B)	(B)	2'-8"	Str.
S1001	4	4	30'-8"	Str.
S1101	2	2	30'-8"	Str.

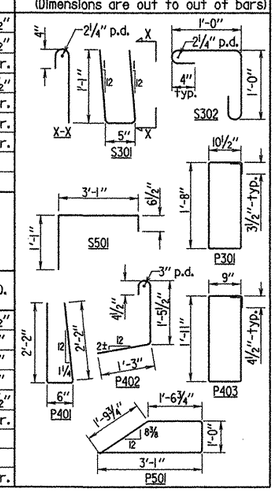
(A) Plus 7 additional for each Drain Slot eliminated

(B) 2 Per Fixed end of each Unit

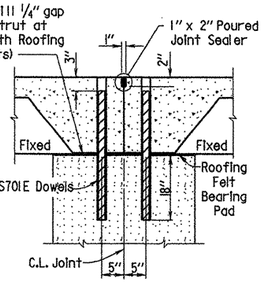
PRECAST PARAPET RAIL UNIT

MARK	NUMBER REQUIRED		LENGTH	P.D.
	END SPAN	INT. SPAN		
P301	See Std. Drwg. No. 48314	8	5'-4"	1 1/2"
P401		54	4'-8"	2"
P402		36	3'-1 1/2"	2"
P403		36	5'-8"	2"
P501		18	7'-2"	2 1/2"
P502		9	30'-8"	Str.
P1001		2	30'-8"	Str.

BENDING DIAGRAMS (Dimensions are out to out of bars)



Completely fill 1/4" gap below end strut at End Bent with Roofing Felt (All Units)



Note: After each unit is in its final position, S701E Dowels shall be grouted in place using a QPL approved non-shrink grout that completely fills the holes.

Poured Joint Sealer shall meet subsection 501.02(h) (2), Type 3, 4, 5 or 6.

Note: For details and bar list for Precast Parapet Rail at End Span, see std. drwg. no. 48314.

GENERAL NOTES

All Reinforcing steel shall be AASHTO M31 or M53, Grade 60. Wire fabric shall be AASHTO M55 or M221. Reinforcing steel and wire fabric shall be accurately located in the forms and securely held in place by steel wire supports.

Concrete for precast units shall be Class S(AE) except that the coarse aggregate size shall meet AASHTO M43, Size 67 (3/4" Max.).

Standard washers shall be provided under head and nut of all bolts in connection with concrete. Bolts shall be A307. All bolts, washers and nuts shall be galvanized to meet AASHTO M232, Class C or M298, Class 50.

Screw Anchor and Bolt Assembly (SCAB) shall be 1 1/2"ø Richmond Screw Anchor or equal, and have a minimum ultimate strength of 65,000 psi in tension. Assembly shall be galvanized to meet AASHTO M232, Class C or M298, Class 50. Plate Washers for SCAB shall be AASHTO M270, Grade 36 and shall be galvanized to meet AASHTO M 111.

Camber required for dead load deflection is 3/8". Deviation of more than 1/4" in dimension of grade or line will be cause for rejection.

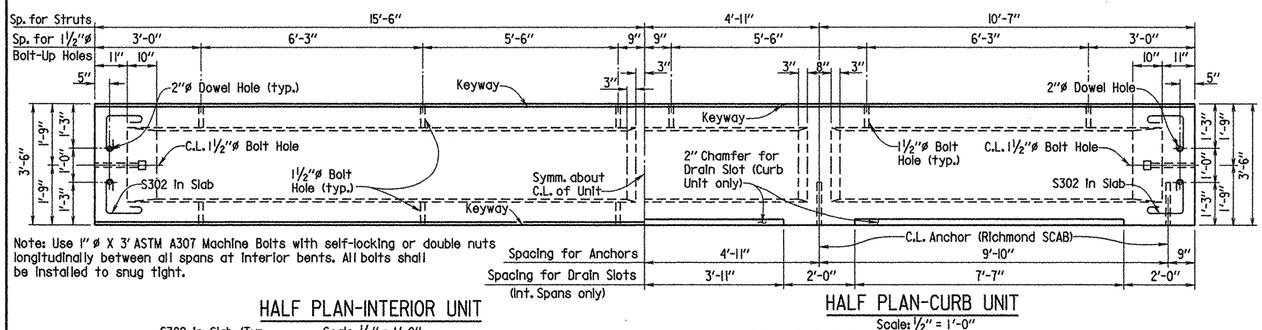
Concrete, reinforcing, wire mesh, bar supports, bolts, nuts, washers, threaded anchors, grout, roofing felt bearing pad and expansion joint fillers are considered subsidiary to the pay items for Precast Concrete Units. Roofing felt shall meet or exceed the requirements of ASTM D224 Type I. See Section 802.18(d). The roofing felt shall be in one piece for the full length of the cap and three layers shall be used.

Ends of adjacent units shall be coated (1/16" ±) with asphaltic paint. The coating shall adhere and set firm and its softening point shall not be less than 140°F.

Bid items shall be as follows:
"31' Precast Concrete Curb Units"
"31' Precast Concrete Interior Units"
"31' Precast Parapet Rail Units"

Design Specifications: AASHTO LRFD Bridge Design Specifications 4th Edition (2007) with 2008 Interim.

Live Loading: HL93, 0.29 Lanes per Unit
Materials: 28 Day compressive strength of Concrete = 4,000 psi
Yield strength of Grade 60 Steel = 60,000 psi
Yield strength of Wire Fabric = 70,000 psi



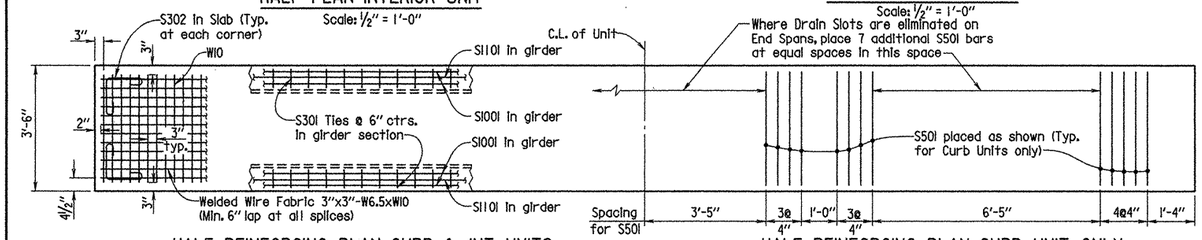
Note: Use 1" ø X 3' ASTM A307 Machine Bolts with self-locking or double nuts longitudinally between all spans at interior bents. All bolts shall be installed to snug tight.

HALF PLAN-INTERIOR UNIT

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

HALF PLAN-CURB UNIT

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

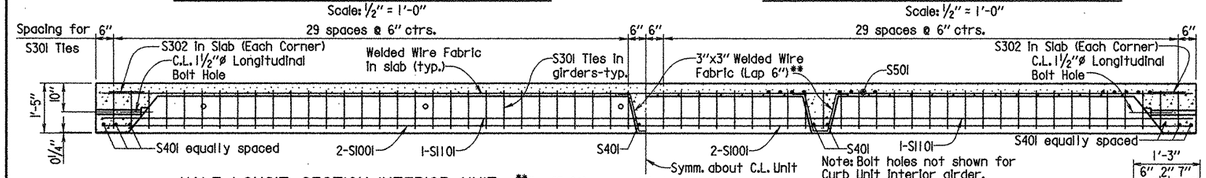


HALF REINFORCING PLAN-CURB & INT. UNITS

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

HALF REINFORCING PLAN-CURB UNIT ONLY

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



Note: Bolt holes not shown for Curb Unit interior girder.

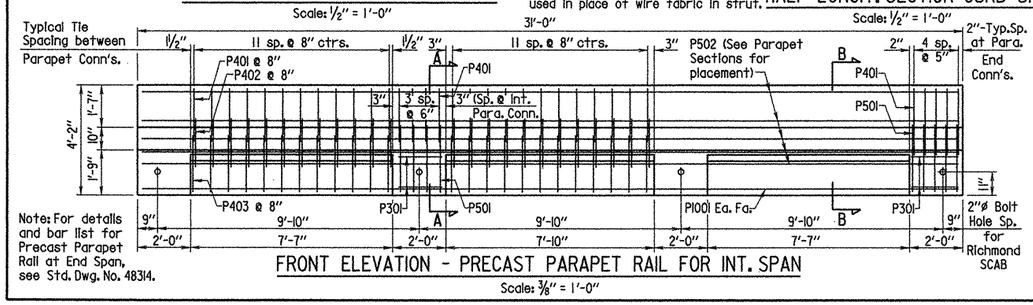
**5 - #3 Stirrups @ 6" ctrs. may be used in place of wire fabric in strut.

HALF LONGIT. SECTION-INTERIOR UNIT

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

HALF LONGIT. SECTION-CURB UNIT

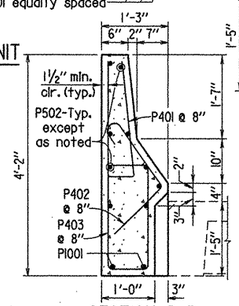
Scale: 1/2" = 1'-0"



Note: For details and bar list for Precast Parapet Rail at End Span, see Std. Dwg. No. 48314.

FRONT ELEVATION - PRECAST PARAPET RAIL FOR INT. SPAN

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

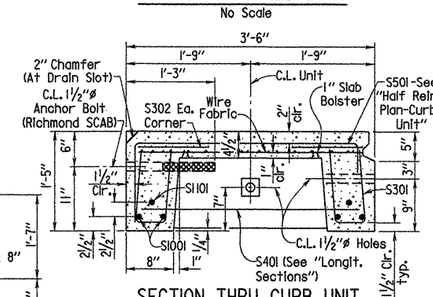


SECTION B-B

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

SECTION AT FIXED BENT

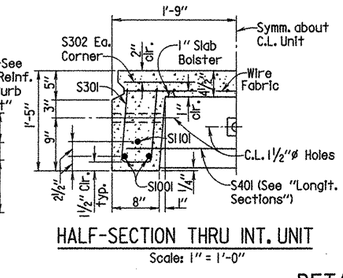
No Scale



SECTION THRU CURB UNIT

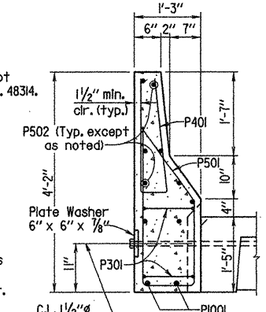
Scale: 1" = 1'-0"

Note: 1 1/2" x 2'-6" Richmond SCAB typical for all connections except as shown in Section A-A, Drwg. No. 48314.



HALF-SECTION THRU INT. UNIT

Scale: 1" = 1'-0"



SECTION A-A

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

STATE OF ARKANSAS
CHARLES P. BRAND
No. 4337
11/15/07
REGISTERED PROFESSIONAL ENGINEER

BRIDGE ENGINEER

DETAILS OF 31'-0" PRECAST CONCRETE SPANS 28'-0" CLEAR ROADWAY

County Road No. 53

ARKANSAS STATE HIGHWAY COMMISSION

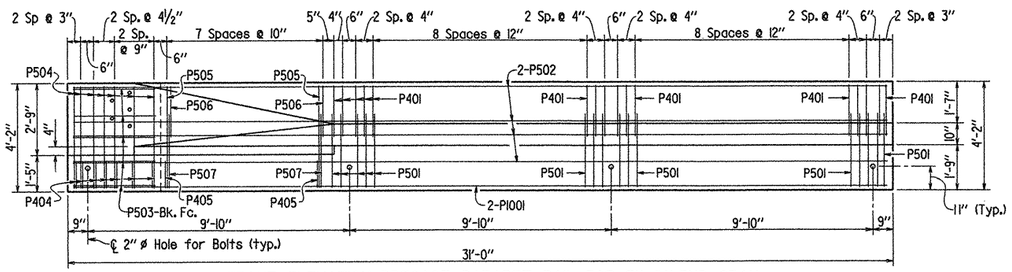
LITTLE ROCK, ARK.

DRAWN BY: JBC	DATE: 10-16-2008	FILENAME: bfall06_sl.dgn	
CHECKED BY: DHP	DATE: 11/4/08	SCALE: AS SHOWN	
DESIGNED BY: STD	DATE:		

BRIDGE NO. 04907 DRAWING NO. 48313

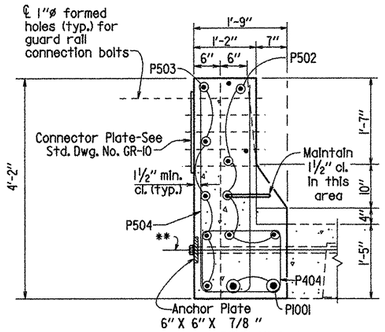
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		FAI 106	17	52

(1) 04907 - PRECAST RAIL - 48314



FRONT ELEVATION-PRECAST PARAPET RAIL FOR 31'-0" END SPAN

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



SECTION A-A

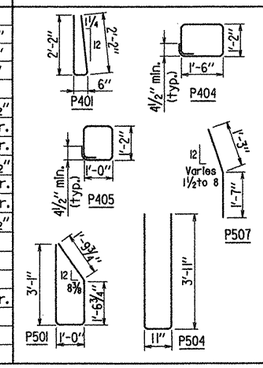
Scale: 3/4" = 1'-0"

** 1½" ø X 3'-0" Richmond S.C.A.B. or equal required at End Post Connections only.

BAR LIST FOR PARAPET RAIL UNITS

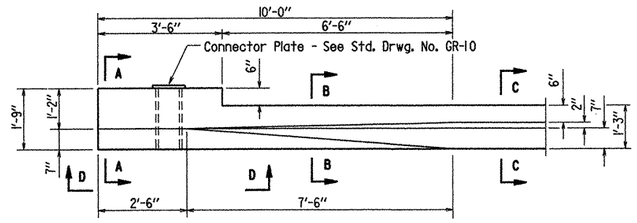
MARK	NUMBER REQUIRED PER RAIL	LENGTH	PIN DIA.
P401	30	4'-8"	2"
P404	7	5'-8"	2"
P405	8	4'-8"	2"
P501	30	7'-3"	2½"
P502	8	30'-8"	Str.
P503	5	3'-3"	Str.
P504	7	8'-6"	2½"
P505	8	3'-11"	Str.
P506	8	2'-2"	Str.
P507	8	2'-10"	2½"
P100I	2	30'-8"	Str.

BENDING DIAGRAMS
Dimensions are out to out of bars.



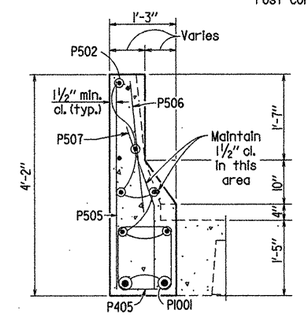
NOTE:

This drawing is to be used with Dwg. No. 48313 which contains details and general notes pertaining to this drawing.



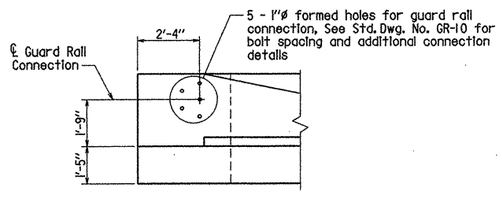
TYPICAL PLAN OF PRECAST PARAPET RAIL FOR END SPAN

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



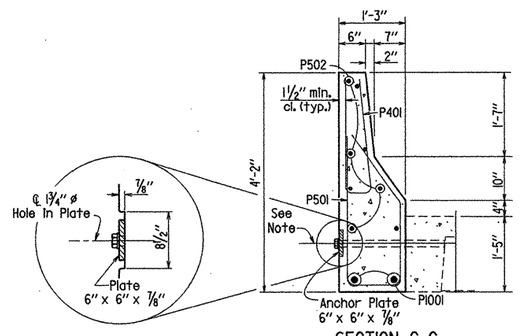
SECTION B-B

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



VIEW D-D

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



Note : 2" ø Hole for Bolt. 1½"ø x 2'-6" Richmond Screw Anchor & Bolt Assembly or equal is typical for all connections except as shown in SECTION A-A.

SECTION C-C

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

STATE OF ARKANSAS
CHARLES P. BRAND
REGISTERED PROFESSIONAL ENGINEER
No. 4337
11-4-08

BRIDGE ENGINEER

DETAILS OF PARAPET RAILS FOR 31'-0" PRECAST END SPANS

County Road No. 53

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

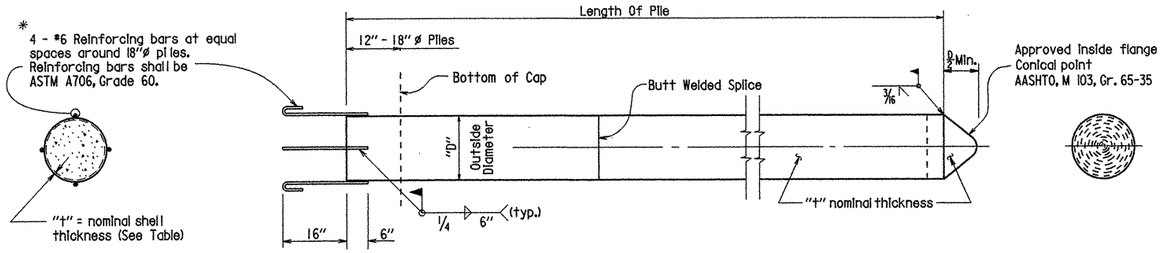
DRAWN BY: JBC DATE: 10-16-2008 FILENAME: bfall06_s2.dgn

CHECKED BY: CHP DATE: 11/4/08 SCALE: AS NOTED

DESIGNED BY: STD. DATE:

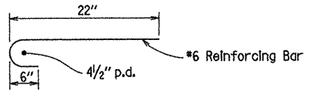
BRIDGE NO. 04907 DRAWING NO. 48314

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.		FAI106	18	52
				①	04907 - PILE DETAILS - 48315			

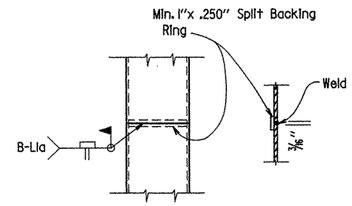


CONCRETE FILLED STEEL SHELL PILES

* Straps or reinforcing bars shall be placed to minimize interfence with anchor bolts and cap reinforcing



TYP. HOOKED BAR DETAIL



SPLICE DETAILS

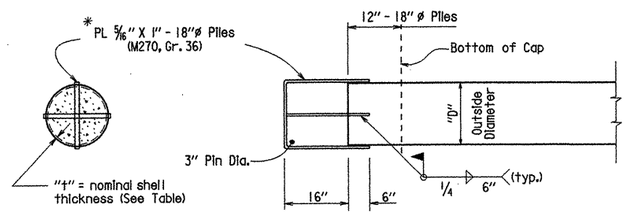
GENERAL NOTES FOR CONCRETE FILLED STEEL SHELL PILES

Steel shells shall conform ASTM A252, Grade 3, (Fy = 45,000 psi.).

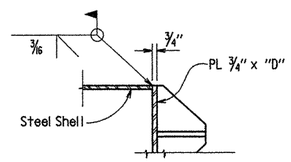
Concrete used for filling of steel shell shall be Class S with a minimum 28 day compressive strength, f'c = 3,500 psi. and shall be poured in the dry.

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

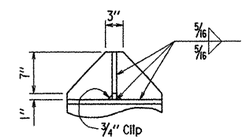
Concrete and structural steel or reinforcing steel, including welding, will not be paid for directly, but will be considered as part of the corresponding item "Steel Shell Piling (18" dia.)".



ALTERNATE CONNECTION DETAIL



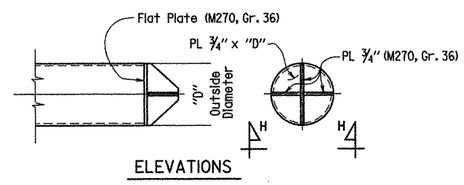
PART SECTION



SECTION H-H

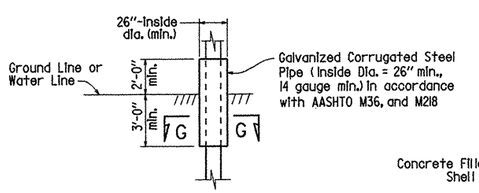
TABLE FOR SHELL PILES

OUTSIDE DIAMETER D	"t"-NOMINAL SHELL THICKNESS	
18"	0.50"	

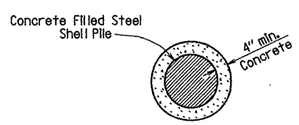


ELEVATIONS

ALTERNATE VANED TIP DETAIL



PILE ENCASEMENT DETAIL FOR STEEL SHELL PILES



SECTION G-G

GENERAL NOTES FOR PILE ENCASEMENTS

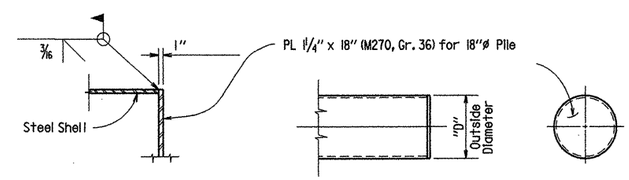
See bridge layouts for required location of encasements.

Steel Piling that extends above the ground shall be protected by Painting in accordance with subsection 805.02.

Concrete shall have a minimum 28 day compressive strength, f'c = 3,500 psi.

If concrete cannot be placed in the dry, seal concrete may be deposited under water.

Concrete and galvanized corrugated steel pipe will not be paid for directly, but will be considered as part of the item "Pile Encasement".



PART SECTION

ELEVATIONS

ALTERNATE FLAT TIP DETAIL

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4537
11/21/08
CHARLES P. BRAND

BRIDGE ENGINEER

DETAILS OF CONCRETE FILLED STEEL SHELL PILES

County Road No. 53

ARKANSAS STATE HIGHWAY COMMISSION

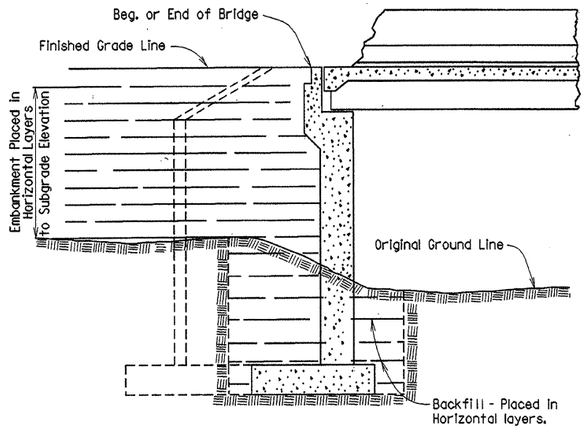
LITTLE ROCK, ARK.

DRAWN BY: JBC DATE: 10/16/2008 FILENAME: bfal106 ssp.dgn
CHECKED BY: DHP DATE: 11/4/08 SCALE: NONE
DESIGNED BY: STD. DATE:

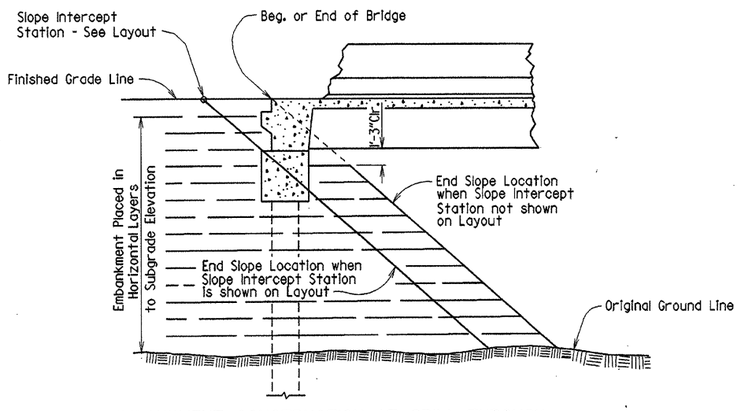
BRIDGE NO. 04907 DRAWING NO. 48315

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		19	
				JOB NO.				

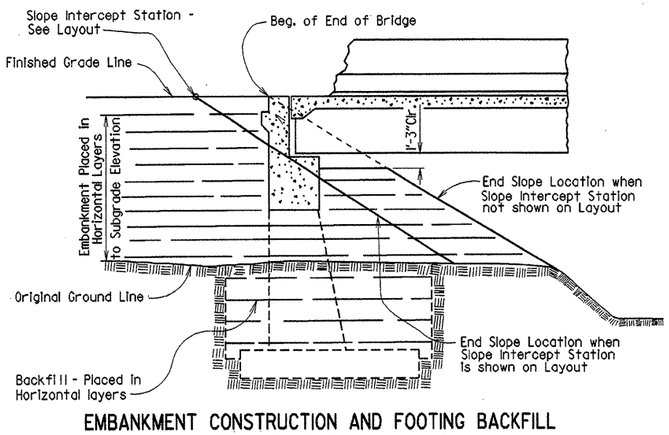
1 EMBANKMENT & BACKFILL 1888A



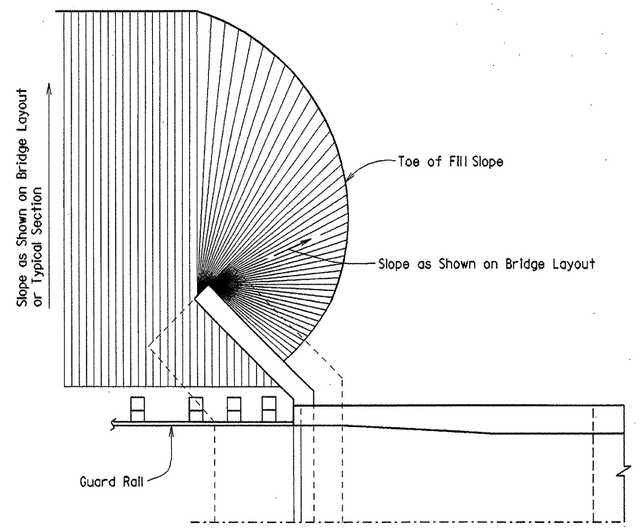
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



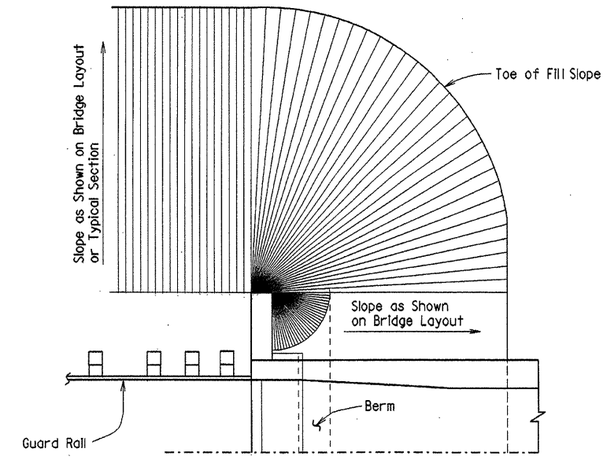
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



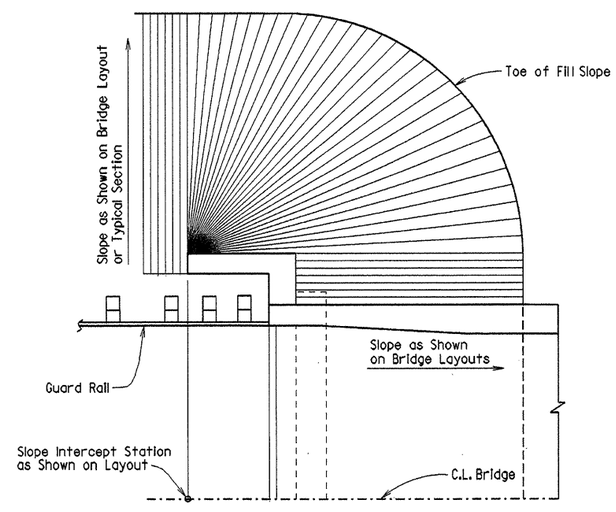
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



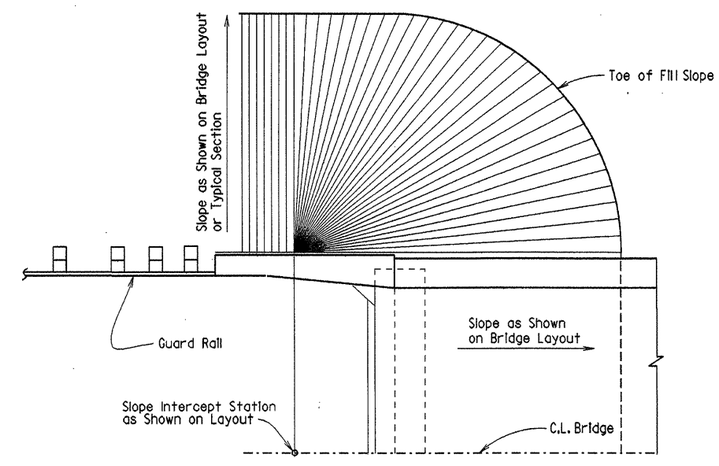
VERTICAL WALL ABUTMENTS



SPILL-THROUGH END BENTS WITH STUB WING



SPILL-THROUGH END BENTS WITH TURNBACK 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: CJF 04-10-2003

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND

BRIDGE ENGINEER

EMBANKMENT CONSTRUCTION AND BACKFILL AT BRIDGE ENDS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

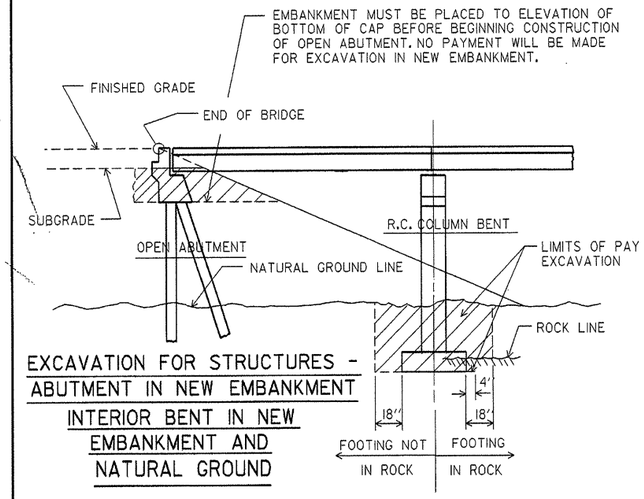
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 04-10-2003 FILENAME: BI888A.STD
CHECKED BY: CJF DATE: 04-10-2003 SCALE: NO SCALE
DESIGNED BY: STD. DATE: ——

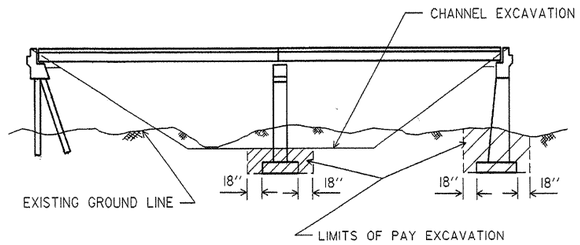
BRIDGE NO. DRAWING NO. 1888A

BI888A.STD

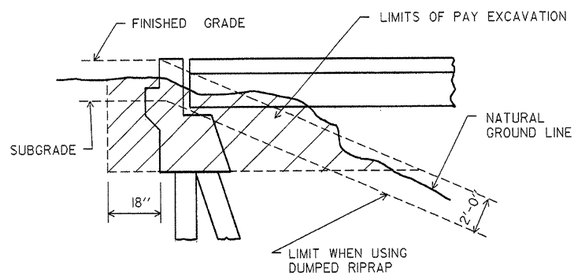
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		20	
				JOB NO.				
				1	RIP. & EXCAV.		1891F	



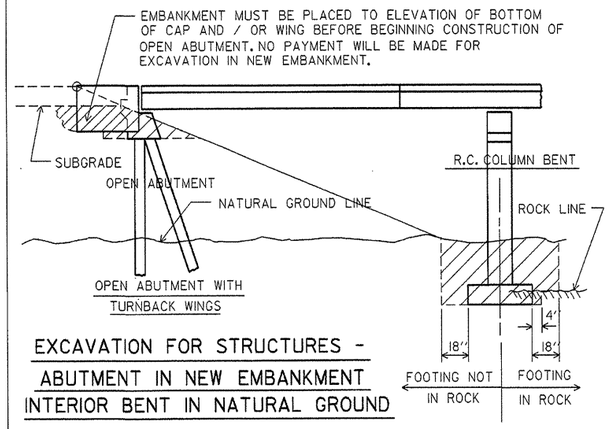
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



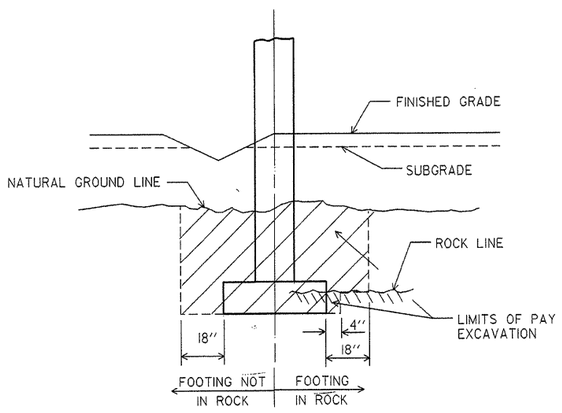
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



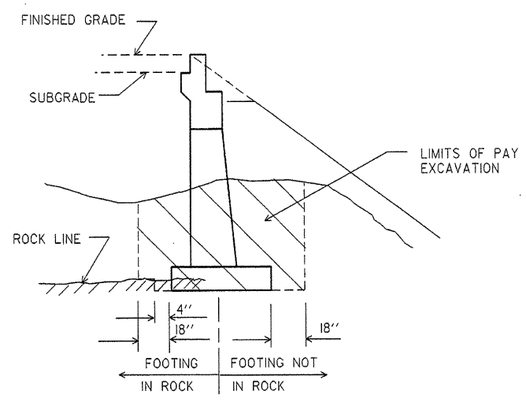
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



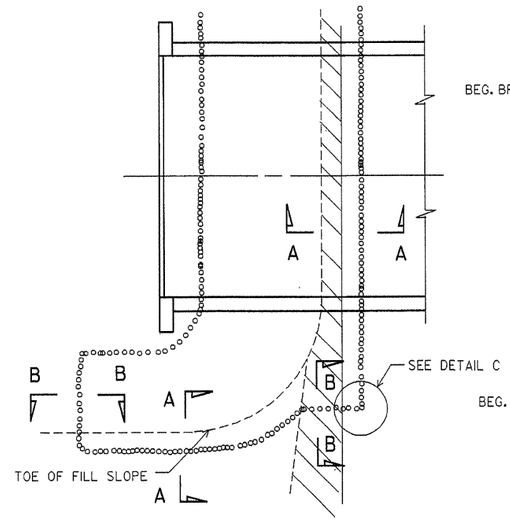
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



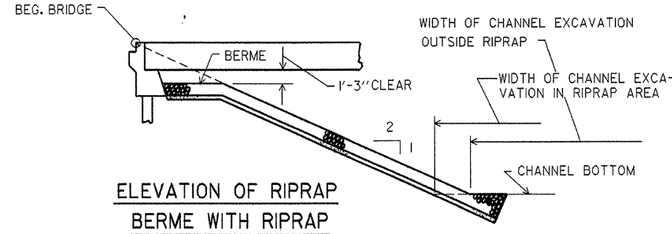
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



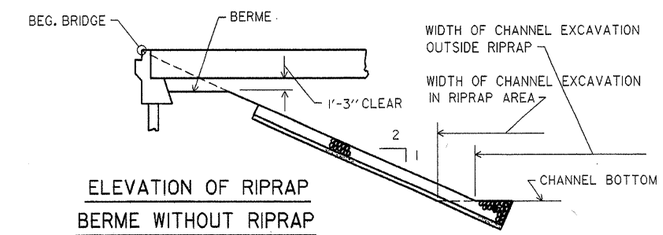
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT



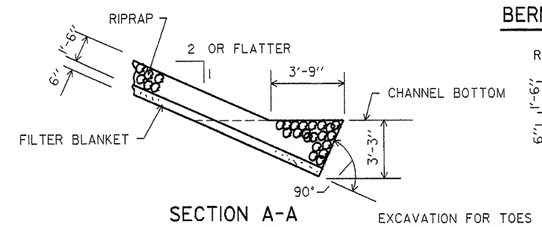
PLAN OF DUMPED RIPRAP



ELEVATION OF RIPRAP BERME WITH RIPRAP

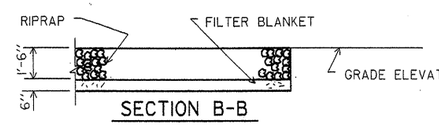


ELEVATION OF RIPRAP BERME WITHOUT RIPRAP

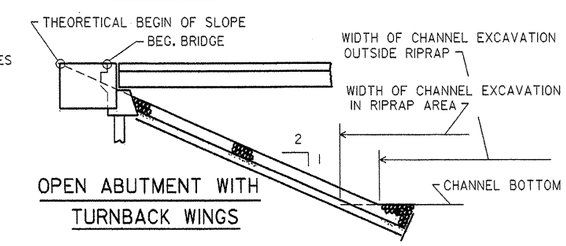


SECTION A-A

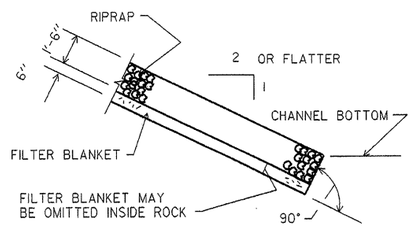
(TOE EXCAVATION IN SOIL)



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



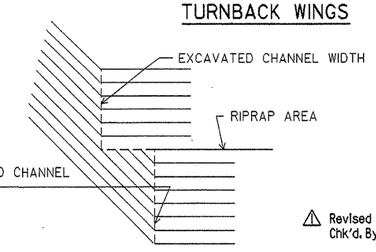
SECTION A-A

(TOE EXCAVATION IN ROCK)

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: CJF 04-10-2003

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND

BRIDGE ENGINEER

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

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

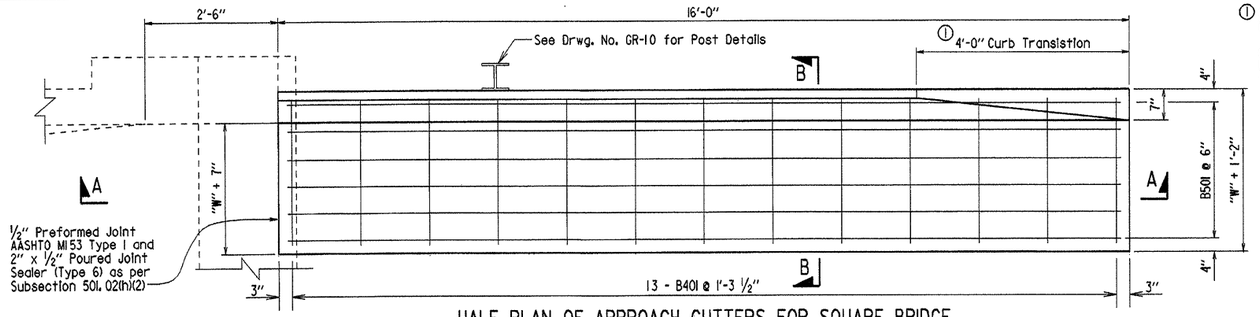
DRAWN BY:	MJT	DATE:	04-10-2003	FILENAME:	B1891F.STD
CHECKED BY:	CJF	DATE:	04-10-2003	SCALE:	NO SCALE
DESIGNED BY:	STD.	DATE:	—		

BRIDGE NO. DRAWING NO. 1891F

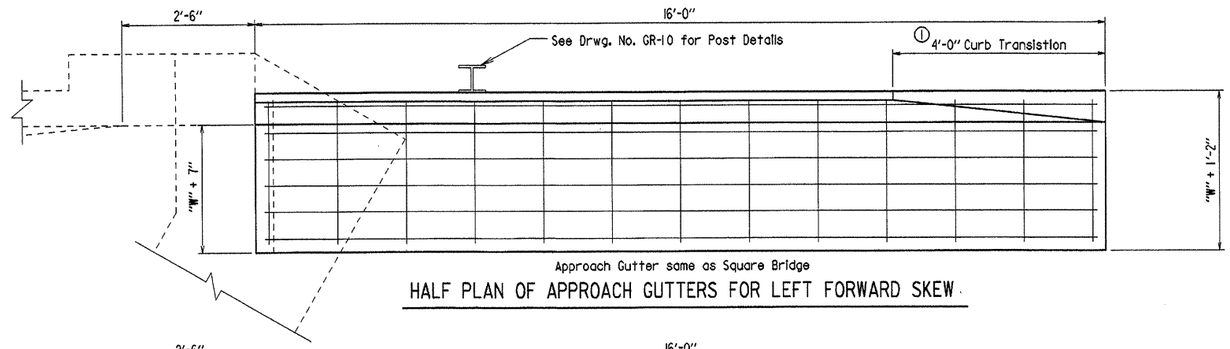
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
4-10-2003				8	ARK.		21	
				JOB NO.				
				①	TYPE D GUTTERS			2016D

① Construct gutter curb with height-transition as shown if drop inlet is not placed at end of gutter.

Construct gutter curb full height (no height-transition) if drop inlet is placed at end of gutter. Curb height transition placed on drop inlet. See drop inlet details.

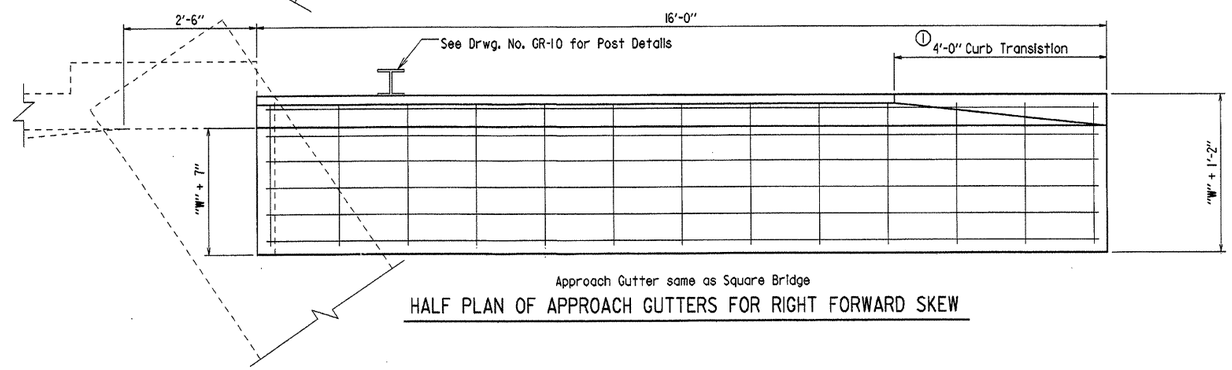


HALF PLAN OF APPROACH GUTTERS FOR SQUARE BRIDGE



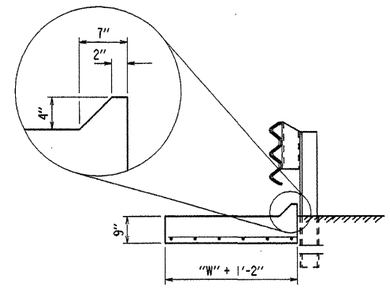
Approach Gutter same as Square Bridge

HALF PLAN OF APPROACH GUTTERS FOR LEFT FORWARD SKEW



Approach Gutter same as Square Bridge

HALF PLAN OF APPROACH GUTTERS FOR RIGHT FORWARD SKEW



SECTION B-B

N.T.S.

BAR LIST - ONE GUTTER

Mark	No. Required for Width "W"				Length
	3'-0"	4'-0"	6'-0"	8'-0"	
B401	13	13	13	13	"W" + 10"
B501	8	10	14	18	15'-8"

QUANTITIES FOR ONE SQUARE APPROACH GUTTER

"W" Width (ft.)	Reinforcing Steel (lbs.)	Concrete (cubic yards)
3	165	2.00
4	206	2.50
6	289	3.40
8	371	4.35

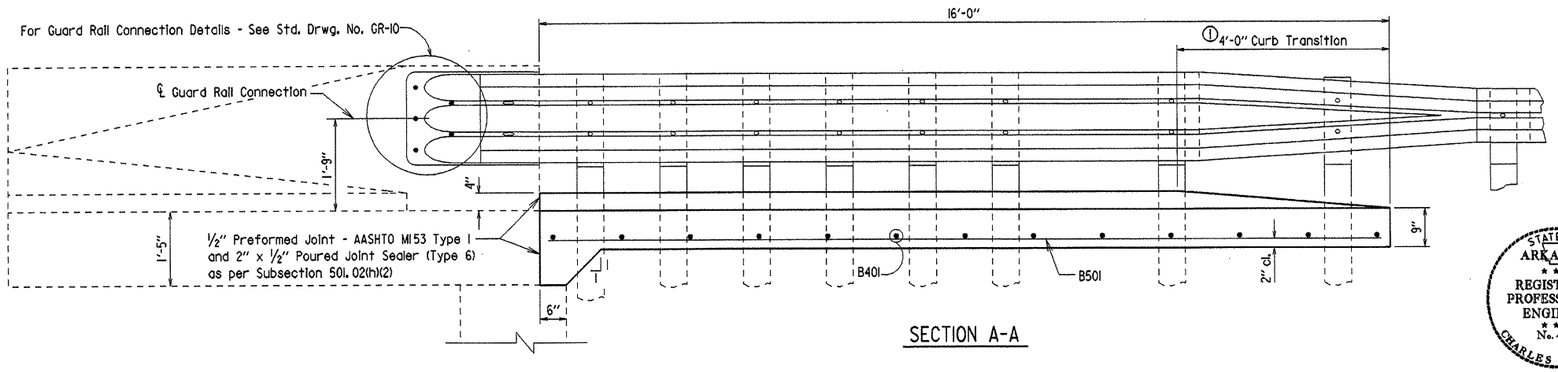
GENERAL NOTES

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

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

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

⚠ Revised and redrawn 4-10-2003. By KDH Ck. By: CJF



SECTION A-A

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND

BRIDGE ENGINEER

DETAILS OF STANDARD TYPE D APPROACH GUTTERS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

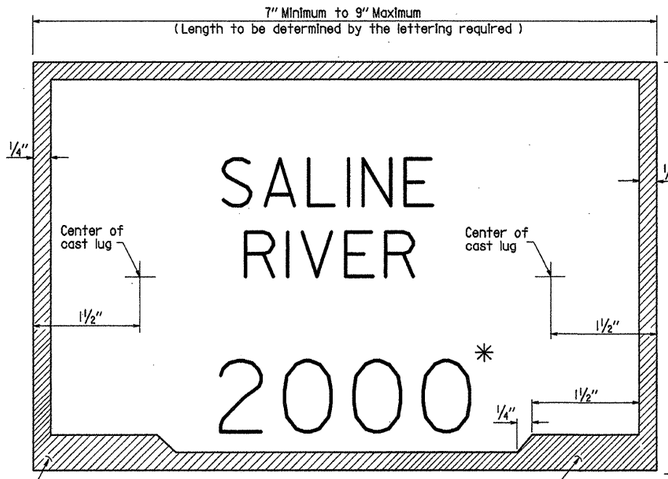
DRAWN BY: KDH DATE: 4-10-2003 FILENAME: B2016D.STD

CHECKED BY: CJF DATE: 4-10-2003 SCALE: 3/4" = 1'-0" or as noted

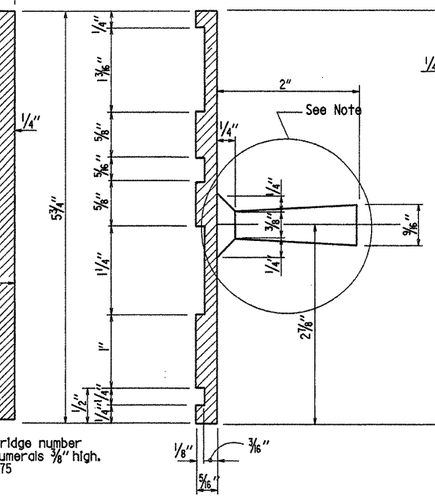
DESIGNED BY: STD. DATE:

BRIDGE NO. DRAWING NO. 2016D

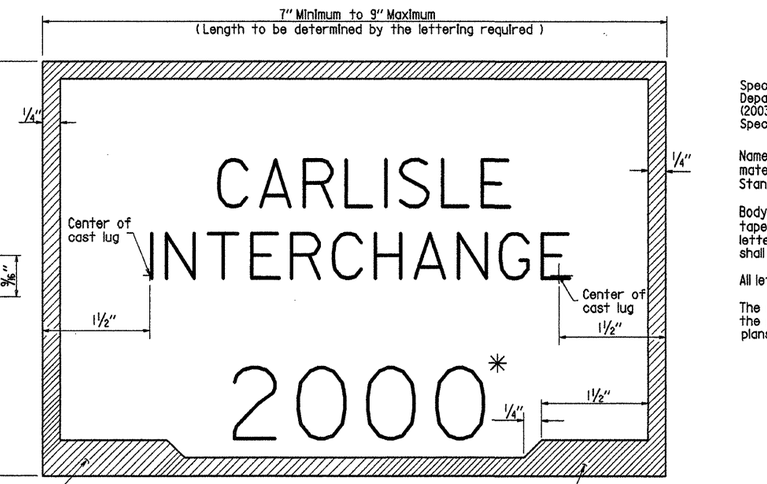
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
09-20-2007				6	ARK.		22	
				JOB NO.				
						NAME PLATES	2389A	



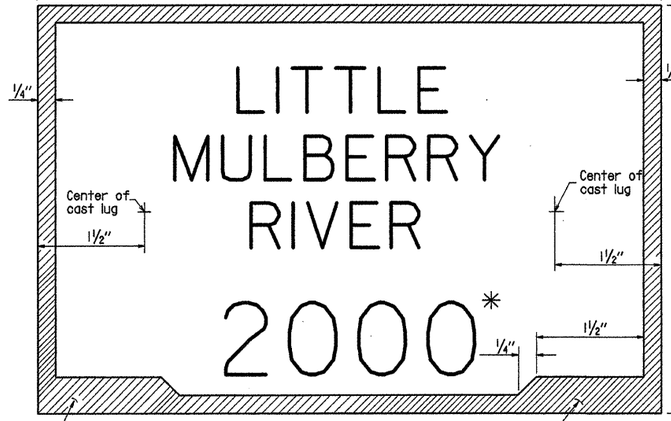
TYPICAL BRIDGE NAME PLATE-STYLE 1 - FULL SIZE
STREAM CROSSINGS



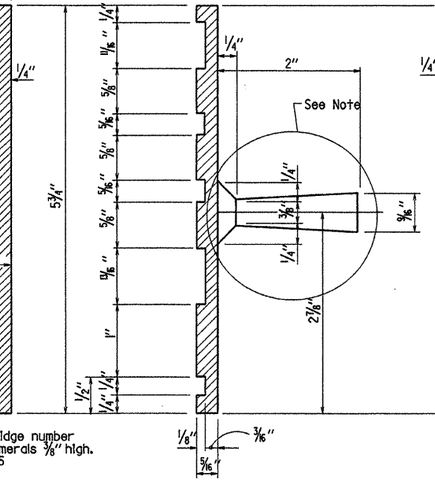
Note: Alternate attachments may be used provided such attachments are submitted and approval secured before fabrication is begun.

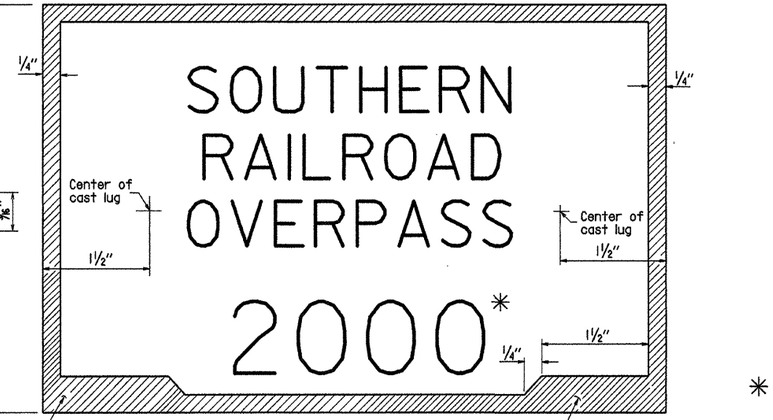


TYPICAL BRIDGE NAME PLATE-STYLE 3 - FULL SIZE
GRADE SEPARATION STRUCTURES



TYPICAL BRIDGE NAME PLATE-STYLE 2 - FULL SIZE
STREAM CROSSINGS





TYPICAL BRIDGE NAME PLATE-STYLE 4 - FULL SIZE
GRADE SEPARATION STRUCTURES

GENERAL NOTES

Specifications: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, (2003 Edition) with applicable Supplemental Specifications and Special Provisions.

Name plates shall be cast bronze and shall meet the material requirements as specified in Section 812 of the Standard Specifications.

Body of plate shall be 3/16" thick and shall include two tapering cone lugs 3/8" to 5/16" x 2" long. The border and all lettering shall be raised 1/8" above the face of plate and shall be polished.

All lettering shall be plain gothic, square cut and not tapered.

The number of plates required and the location and name on the plate for each bridge shall be as designated on the plans.

* Year in which contract is awarded.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 4337
CHARLES P. BRAND
BRIDGE ENGINEER

⚠ Revised and redrawn MJT 09-20-2007
Chk'd. By: CJF 09-20-2007

DETAILS OF STANDARD
TYPE C BRIDGE NAME PLATES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 09-20-2007 FILENAME: B2389A.STD
CHECKED BY: CJF DATE: 09-20-2007 SCALE: NOT TO SCALE
DESIGNED BY: STD. DATE: —

BRIDGE NO. DRAWING NO. 2389A