DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	RECORD. DIST.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		1	85
				JOB NO.	030355			
				②	LA LINE - DODDRIDGE (MAJOR STRS.) (F)			

"A FULLY CONTROLLED ACCESS FACILITY"

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

CONSTRUCTION PLANS

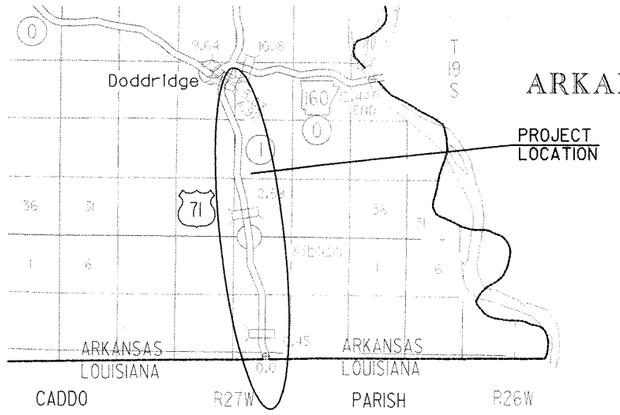
LA LINE - DODDRIDGE (MAJOR STRS.) (F)

MILLER COUNTY

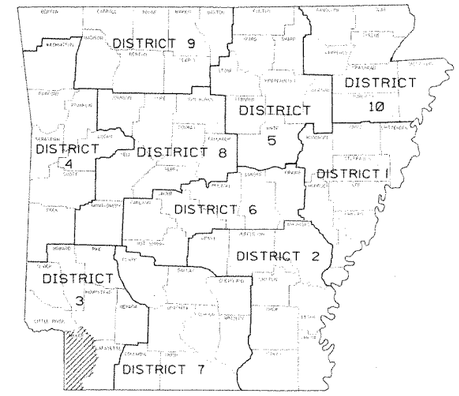
ROUTE 71 SECTION 1

F.A.P. NH-0046 (47)

JOB 030355



VICINITY MAP



ARK. HWY. DIST. NO. 5

BRIDGE STRUCTURES

① STA. 134+11.97 BRIDGE END
BRIDGE NO. 7121(A)
375'-0" CONTINUOUS PRESTRESSED
TYPE III CONCRETE BEAM
40' CLEAR ROADWAY WIDTH
35° LT. FORWARD SKEW
377' - 7¾" BRIDGE LENGTH
STA. 137+89.62 BRIDGE END

② STA. 133+55.95 BRIDGE END
BRIDGE NO. 7121(B)
375'-0" CONTINUOUS PRESTRESSED
TYPE III CONCRETE BEAM
40' CLEAR ROADWAY WIDTH
35° LT. FORWARD SKEW
377' - 7¾" BRIDGE LENGTH
STA. 137+33.59 BRIDGE END

③ STA. 327+48.41 BRIDGE END
BRIDGE NO. 7124(A)
283'-0" CONTINUOUS PRESTRESSED
BT-72 CONCRETE GIRDER
40' CLEAR ROADWAY WIDTH
27° LT. FORWARD SKEW
285' - 5⅛" BRIDGE LENGTH
STA. 330+33.85 BRIDGE END

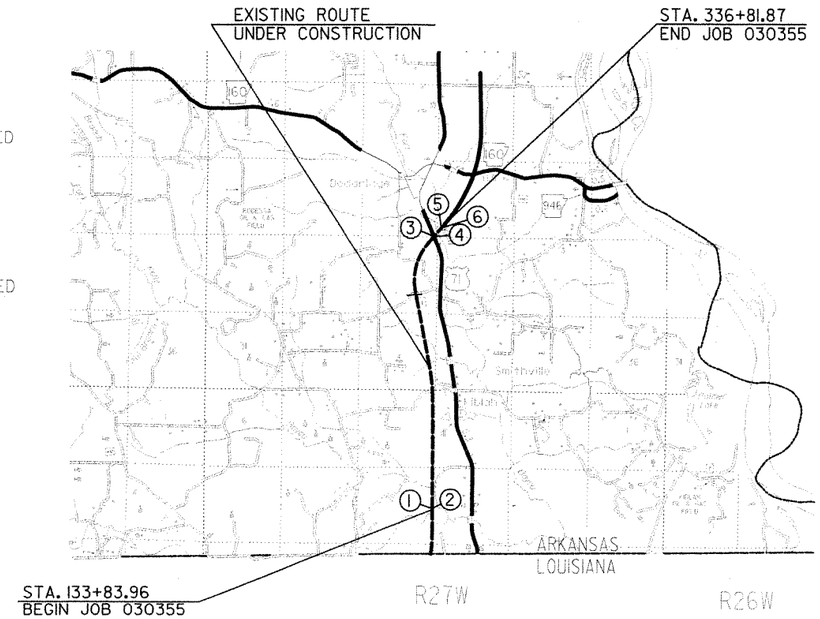
④ STA. 327+08.04 BRIDGE END
BRIDGE NO. 7124(B)
283'-0" CONTINUOUS PRESTRESSED
BT-72 CONCRETE GIRDER
40' CLEAR ROADWAY WIDTH
27° LT. FORWARD SKEW
285' - 5⅛" BRIDGE LENGTH
STA. 329+93.48 BRIDGE END

⑤ STA. 332+95.69 BRIDGE END
BRIDGE NO. 7125(A)
400'-0" CONTINUOUS PRESTRESSED
TYPE IV CONCRETE BEAM
40' CLEAR ROADWAY WIDTH
22° LT. FORWARD SKEW
402' - 4" BRIDGE LENGTH
STA. 336+98.03 BRIDGE END

⑥ STA. 332+63.37 BRIDGE END
BRIDGE NO. 7125(B)
400'-0" CONTINUOUS PRESTRESSED
TYPE IV CONCRETE BEAM
40' CLEAR ROADWAY WIDTH
22° LT. FORWARD SKEW
402' - 4" BRIDGE LENGTH
STA. 336+65.71 BRIDGE END

EXCEPTIONS TO JOB 030355

STA. 137+61.61 BEGIN EXCEPTION
STA. 327+28.23 END EXCEPTION
STA. 330+13.67 BEGIN EXCEPTION
STA. 332+79.53 END EXCEPTION



DESIGN TRAFFIC DATA

DESIGN YEAR	2030
2010 ADT	4,700
2030 ADT	14,200
2030 DHV	1,562
DIRECTIONAL DISTRIBUTION	60%
TRUCKS	31%
DESIGN SPEED	70 MPH

NO EQUATIONS

SCALE: 1" = 5000'

BEGIN JOB	MID-POINT OF PROJECT	END JOB
LAT. = 33°03' 22" N	LAT. = 33°03' 22" N	LAT. = 33°04' 56" N
LONG. = 93°59' 06" W	LONG. = 93°54' 06" W	LONG. = 93°53' 52" W

LENGTH COMPUTED ALONG ℄ MEDIAN

GROSS LENGTH OF PROJECT	20,297.91	FEET OR	3.844 MILES
NET LENGTH OF ROADWAY	0.00	FEET OR	0.000 MILES
NET LENGTH OF BRIDGES	1,065.43	FEET OR	0.202 MILES
NET LENGTH OF PROJECT	1,065.43	FEET OR	0.202 MILES

P.E. JOB R30079
NON-PARTICIPATING

9/25/11

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12097
JEFFREY SCOTT MULLINS

...\R030355_TITLE.dgn
mbreeland 9/25/2011

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS

..\030355_INDEX_7_30_10.dgn
2:01:4 PM 8/25/2011

INDEX OF SHEETS

SHEET NUMBER	TITLE	BRIDGE NUMBER	DRAWING NO.	DATE
1	Title Sheet			
2	Index of Sheets			
3	Governing Specifications and General Notes			
4	Maintenance of Traffic			
5	Quantities			
6	Schedule Of Bridge Quantities	A&B7121, A&B7124, A&B7125	49556	
7	Summary of Quantities and Revisions	A&B7121, A&B7124, A&B7125	49557	
8 - 13	Survey Control Details			
14 - 17	Plan and Profiles (For Information Only)			
18	Details of Channel Improvements for Bridge over West Fork Kelly Bayou (For Information Only)	A&B7121	49558	
19	Bridge A - Layout of Bridge over West Fork Kelly Bayou	A7121	49559	
20	Bridge B - Layout of Bridge over West Fork Kelly Bayou	B7121	49560	
21	General Notes - Bridge over West Fork Kelly Bayou	A&B7121	49561	
22	Details of End Bents - Sheet 1 of 3	A&B7121	49562	
23	Details of End Bents - Sheet 2 of 3	A&B7121	49563	
24	Details of End Bents - Sheet 3 of 3	A&B7121	49564	
25	Bridge A - Details of Intermediate Bents No. 2 - 5	A7121	49565	
26	Bridge B - Details of Intermediate Bents No. 2 - 5	B7121	49566	
27	Details of 24" Square Prestressed Concrete Pile	A&B7121	49567	
28	Details of 375' Continuous Prestressed Concrete Beam Unit - Sheet 1 of 5	A&B7121	49568	
29	Details of 375' Continuous Prestressed Concrete Beam Unit - Sheet 2 of 5	A&B7121	49569	
30	Details of 375' Continuous Prestressed Concrete Beam Unit - Sheet 3 of 5	A&B7121	49570	
31	Details of 375' Continuous Prestressed Concrete Beam Unit - Sheet 4 of 5	A&B7121	49571	
32	Details of 375' Continuous Prestressed Concrete Beam Unit - Sheet 5 of 5	A&B7121	49572	
33	Details of Armored Joint with Neoprene Strip Seal	A&B7121	49573	
34	Details of Elastomeric Bearings	A&B7121	49574	
35	Details of Type Special 1 Approach Gutter - Sheet 1 of 2 (For Information Only)	A&B7121	49575	
36	Details of Type Special 1 Approach Gutter - Sheet 2 of 2 (For Information Only)	A&B7121	49576	
37	Details of Type Special 1 Approach Slab (For Information Only)	A&B7121	49577	
38	Bridge A - Layout of Bridge over U.S. Route 71 Existing	A7124	49625	
39	Bridge B - Layout of Bridge over U.S. Route 71 Existing	B7124	49626	
40	Details of End Bents - Sheet 1 of 3	A&B7124	49627	
41	Details of End Bents - Sheet 2 of 3	A&B7124	49628	
42	Details of End Bents - Sheet 3 of 3	A&B7124	49629	
43	Bridge A - Details of Intermediate Bents No. 2 and 3	A7124	49630	
44	Bridge B - Details of Intermediate Bents No. 2 and 3	B7124	49631	
45	Details of Intermediate Bents	A&B7124	49632	
46	Details of 283' Continuous Prestressed Concrete Girder Unit - Sheet 1 of 6	A&B7124	49633	
47	Details of 283' Continuous Prestressed Concrete Girder Unit - Sheet 2 of 6	A&B7124	49634	
48	Details of 283' Continuous Prestressed Concrete Girder Unit - Sheet 3 of 6	A&B7124	49635	
49	Details of 283' Continuous Prestressed Concrete Girder Unit - Sheet 4 of 6	A&B7124	49636	
50	Details of 283' Continuous Prestressed Concrete Girder Unit - Sheet 5 of 6	A&B7124	49637	
51	Details of 283' Continuous Prestressed Concrete Girder Unit - Sheet 6 of 6	A&B7124	49638	
52	Girder Protective Assembly	A&B7124	49639	
53	Details of Armored Joint with Neoprene Strip Seal	A&B7124	49640	
54	Details of Elastomeric Bearings	A&B7124	49641	
55	Details of Type Special 4 Approach Gutter - Sheet 1 of 2 (For Information Only)	A&B7124	49642	
56	Details of Type Special 4 Approach Gutter - Sheet 2 of 2 (For Information Only)	A&B7124	49643	
57	Details of Type Special 2 Approach Slab (For Information Only)	A&B7124	49644	
58	Bridge A - Layout of Bridge over East Fork Kelly Bayou	A7125	49645	
59	Bridge B - Layout of Bridge over East Fork Kelly Bayou	B7125	49646	
60	General Notes - Bridge over East Fork Kelly Bayou	A&B7125	49647	
61	Details of End Bents - Sheet 1 of 3	A&B7125	49648	
62	Details of End Bents - Sheet 2 of 3	A&B7125	49649	
63	Details of End Bents - Sheet 3 of 3	A&B7125	49650	
64	Bridge A - Details of Intermediate Bents No. 2 - 4	A7125	49651	
65	Bridge B - Details of Intermediate Bents No. 2 - 4	B7125	49652	
66	Details of Intermediate Bents	A&B7125	49653	
67	Details of 400' Continuous Prestressed Concrete Beam Unit - Sheet 1 of 5	A&B7125	49654	
68	Details of 400' Continuous Prestressed Concrete Beam Unit - Sheet 2 of 5	A&B7125	49655	
69	Details of 400' Continuous Prestressed Concrete Beam Unit - Sheet 3 of 5	A&B7125	49656	
70	Details of 400' Continuous Prestressed Concrete Beam Unit - Sheet 4 of 5	A&B7125	49657	
71	Details of 400' Continuous Prestressed Concrete Beam Unit - Sheet 5 of 5	A&B7125	49658	
72	Details of Armored Joint with Neoprene Strip Seal	A&B7125	49659	
73	Details of Elastomeric Bearings	A&B7125	49660	
74	Details of Type Special 5 Approach Gutter - Sheet 1 of 2 (For Information Only)	A&B7125	49661	
75	Details of Type Special 5 Approach Gutter - Sheet 2 of 2 (For Information Only)	A&B7125	49662	
76	Details of Type Special 3 Approach Slab (For Information Only)	A&B7125	49662A	
77	Embankment Construction and Backfill at Bridge Ends		1888A	4/10/2003
78	Details for Dumped Riprap and Filter Blanket and Details for Computing Excavation for Structures		1891F	4/10/2003
79	Details of Standard Concrete Piles		2383	12/10/2009
80	Details of Standard Type D Bridge Name Plates		2387	9/8/2011
81	Details of Permissible Type Permanent Steel Bridge Deck Forms for Steel & Concrete Girder Spans		14991	4/10/2003
82	Details of Concrete Riprap and Misc. Details of Steel Piling		14995A	4/10/2003
83	Standard Traffic Controls for Highway Construction		TC-1	11/17/2010
84	Standard Traffic Controls for Highway Construction		TC-2	3/11/2010
85	Standard Traffic Controls for Highway Construction		TC-3	10/15/2009

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		2	85

JOB NO. 030355

INDEX OF SHEETS

INDEX OF SHEETS

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		3	85
				JOB NO.		030355		
				(2)	GOVERN. SPECS. AND GENERAL NOTES			

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION 2003, AND THE FOLLOWING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS:

NUMBER	TITLE
ERRATA_ _ _ _ _	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
FHWA - 1273_ _ _	FHWA-1273 REVISIONS
FHWA - 1273_ _ _	REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS
FHWA - 1273_ _ _	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
FHWA - 1273_ _ _	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
FHWA - 1273_ _ _	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
FHWA - 1273_ _ _	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
FHWA - 1273_ _ _	SUPPLEMENT - TRAINING PROGRAM - JOB 030355
FHWA - 1273_ _ _	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL - AID PROJECTS
FHWA - 1273_ _ _	SUPPLEMENT - WAGE RATE DETERMINATION
100 -2_ _ _ _ _	MANUAL FOR ASSESSING SAFETY HARDWARE (MASH)
103 -1_ _ _ _ _	DETERMINATION OF DBE PARTICIPATION
105 -1_ _ _ _ _	CONSTRUCTION CONTROL MARKINGS
105 -2_ _ _ _ _	EQUIPMENT AND MATERIAL STORAGE ON BRIDGE STRUCTURES
107 -1_ _ _ _ _	WORKER VISIBILITY
108 -1_ _ _ _ _	LIQUIDATED DAMAGES
603-1_ _ _ _ _	MAINTENANCE OF TRAFFIC
604-1_ _ _ _ _	RETROREFLECTIVE SHEETING FOR TRAFFIC CONTROL DEVICES IN CONSTRUCTION ZONES
JOB 030355_	ARMORED JOINT WITH NEOPRENE STRIP SEAL
JOB 030355_	BROADBAND INTERNET SERVICE FOR FIELD OFFICE
JOB 030355_	CONSTRUCTION IN SPECIAL FLOOD HAZARD AREAS
JOB 030355_	COORDINATION OF WORK
JOB 030355_	GOALS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION
JOB 030355_	INTERNET BIDDING
JOB 030355_	PARTNERING REQUIREMENTS
JOB 030355_	PRESTRESSED CONCRETE BULB-TEE GIRDERS
JOB 030355_	SECTION 404 INDIVIDUAL PERMIT REQUIREMENTS
JOB 030355_	SPECIAL SAFETY REQUIREMENTS FOR BRIDGES
JOB 030355_	UTILITY ADJUSTMENTS
JOB 030355_	VALUE ENGINEERING

GENERAL NOTES

1. GRADE LINE DENOTES FINISHED GRADE WHERE SHOWN ON PLANS.

2. ALL PIPE LINES, POWER, TELEPHONE AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH SUCH OWNERS.

3. ANY EQUIPMENT OR APPURTENANCE THAT INTERFERES WITH THE PROPOSED CONSTRUCTION AND WHICH MAY BE THE PROPERTY OF UTILITY SERVICE ORGANIZATIONS SHALL BE MOVED BY THE OWNER UNLESS OTHERWISE PROVIDED.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING U.S. MAILBOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT THE PUBLIC MAY RECEIVE CONTINUED MAIL SERVICE. PAYMENT WILL BE CONSIDERED INCLUDED IN THE PRICE BID FOR THE VARIOUS BID ITEMS.

5. ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.

6. ALL TREES THAT DO NOT DIRECTLY INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE SPARED AS DIRECTED BY THE ENGINEER. CARE AND DISCRETION SHALL BE USED TO INSURE THAT ALL TREES NOT TO BE REMOVED SHALL BE HARMED AS LITTLE AS POSSIBLE DURING THE CONSTRUCTION OPERATIONS.

8/29/2011

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12097
JEFFREY SCOTT MILLIKEN

GOVERNING SPECIFICATIONS AND GENERAL NOTES

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS

8/29/2011

N:\struct\Arkansas\Final_030355\030355_SP_GN.dgn
4:30:4 PM

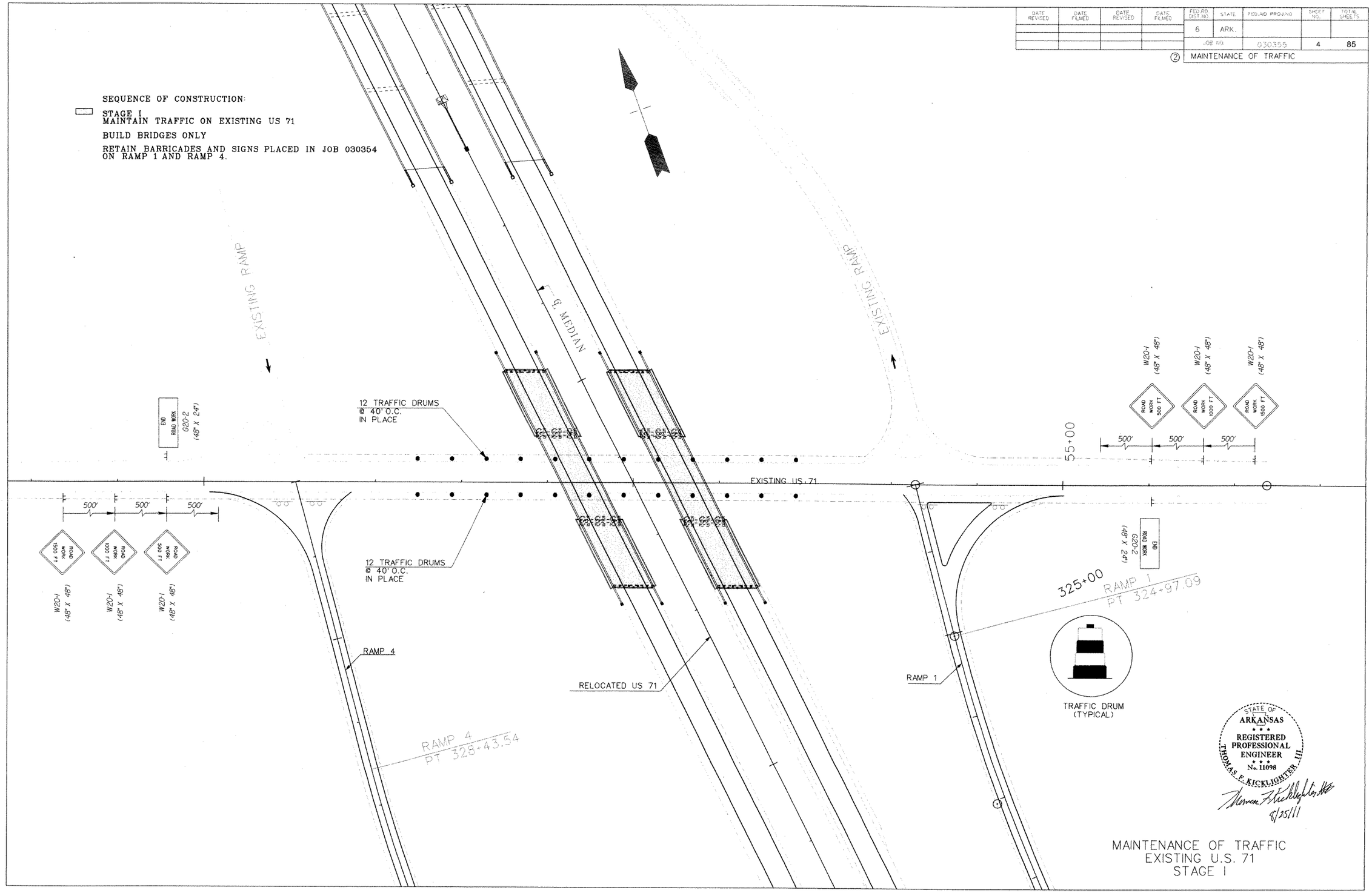
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED.RD. DIST. NO.	STATE	FED.AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	4	85
				②	MAINTENANCE OF TRAFFIC			

SEQUENCE OF CONSTRUCTION:

STAGE I
MAINTAIN TRAFFIC ON EXISTING US 71

BUILD BRIDGES ONLY

RETAIN BARRICADES AND SIGNS PLACED IN JOB 030354 ON RAMP 1 AND RAMP 4.



TRAFFIC DRUM
(TYPICAL)

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11098
THOMAS F. KICKLIGHTER, III
8/25/11

MAINTENANCE OF TRAFFIC
EXISTING U.S. 71
STAGE I

N:\struct\Arkansas\Final\030305\RDWY for SET\SHT15.dgn
mbreeland 25-AUG-2011 15:28

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.		030355	5	85

(2) QUANTITIES

TRAFFIC CONTROL SIGNS AND DEVICES

SIGN NUMBER	DESCRIPTION	SIGN SIZE	EXIST. 71 STAGE I	TOTAL QUANTITY REQUIRED	TOTAL SIGNS REQUIRED (SQ. FT.)
W20-1	ROAD WORK 500 FT	48"X48"	2	2	32
W20-1	ROAD WORK 1000 FT	48"X48"	2	2	32
W20-1	ROAD WORK 1500 FT	48"X48"	2	2	32
G20-2	END ROAD WORK	48"X24"	2	2	16
				TOTAL	112
					UNITS
	TRAFFIC DRUMS		24	24	EACH

N:\struct\Arkansas\Final_0303055\ROWY for SET\SHT22.dgn
mbreland 25-AUG-2011 16:28

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 11098
THOMAS F. KICKLIGHTER, III
8/25/11

QUANTITIES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
⚠1 9/28/2011			

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		6	85
JOB NO.		030355		

(2) A&B7121, A&B7124 & A&B7125 QUANTITIES 49556

SCHEDULE OF BRIDGE QUANTITIES

BRIDGE NO.	CODE NO.	NAME PLATE TITLE	UNIT OF STRUCTURE / ITEM NUMBER / ITEM	801 UNCLASSIFIED EXCAVATION FOR STRUCTURES-BRIDGE (CUBIC YARD)	802 CLASS S CONCRETE-BRIDGE (CUBIC YARD)	802 CLASS S (AE) CONCRETE - BRIDGE (CUBIC YARD)	802 PRESTRESSED CONCRETE BEAMS (TYPE III) (LINEAR FOOT)	802 PRESTRESSED CONCRETE BEAMS (TYPE IV) (LINEAR FOOT)	SP & 802 PRESTRESSED CONCRETE GIRDERS (TYPE BT-72) (1) (LINEAR FOOT)	803 CLASS 1 PROTECTIVE SURFACE TREATMENT (GALLON)	804 REINFORCING STEEL - BRIDGE (GRADE 60) (POUND)	804 EPOXY COATED REINFORCING STEEL (GRADE 60) (POUND)	805 CONCRETE PILING (16" SQUARE) (LINEAR FOOT)	805 TEST PILE (16" SQUARE) (LINEAR FOOT)	805 CONCRETE PILING (24" SQUARE) (2) (LINEAR FOOT)	805 TEST PILE (24" SQUARE) (2) (LINEAR FOOT)	805 PREBORING (LINEAR FOOT)	807 STRUCTURAL STEEL IN BEAM SPANS (M270, GR. 50W) (POUND)	808 ELASTOMERIC BEARINGS (CUBIC INCH)	SP JOB 030355 ARMORED JOINT WITH NEOPRENE STRIP SEAL (LINEAR FOOT)	812 BRIDGE NAME PLATE (TYPE D) (EACH)	816 CONCRETE RIPRAP (CUBIC YARD)	816 DUMPED RIPRAP (3) (CUBIC YARD)	816 FILTER BLANKET (3) (SQUARE YARD)
A7121	X081	West Fork Kelly Bayou	END BENT NO'S 1 AND 6	145	113.70					0.7	12,100		652	90					2,070			1			
			INTERMEDIATE BENT NO'S 2 THRU 5		130.90						13,540				1,176	188	960								
			375' CONT. PREST. CONCRETE BEAM UNIT			~~807.50~~ 597.50 ⚠1	1,848.90			40.6	20,230	135,450						3,950	18,260.0	102				
			TOTALS FOR BRIDGE NO. A7121	145	244.60	~~807.50~~ 597.50 ⚠1	1,848.90			41.3	45,870	135,450	652	90	1,176	188	960	6,020	18,260.0	102	1			
B7121	X081	West Fork Kelly Bayou	END BENT NO'S 1 AND 6	151	113.70					0.7	12,100		540	76				2,070			1			
			INTERMEDIATE BENT NO'S 2 THRU 5		130.90						13,540				1,176	188	960								
			375' CONT. PREST. CONCRETE BEAM UNIT			~~807.50~~ 597.50 ⚠1	1,848.90			40.6	20,230	135,450						3,950	18,260.0	102				
			TOTALS FOR BRIDGE NO. B7121	151	244.60	~~807.50~~ 597.50 ⚠1	1,848.90			41.3	45,870	135,450	540	76	1,176	188	960	6,020	18,260.0	102	1			
A7124	X281	U.S. RTE 71 EXISTING	END BENT NO'S 1 AND 4	182	129.90					0.9	14,790		970	75				1,920			1	155		
			INTERMEDIATE BENT NO'S 2 AND 3	480	198.30						27,240		988	48										
			283' CONT. PREST. CONCRETE GIRDER UNIT			~~692.70~~ 475.90 ⚠1			1,399.40	30.7	21,300	82,490						4,410	11,830.0	94				
			TOTALS FOR BRIDGE NO. A7124	662	328.20	~~692.70~~ 475.90 ⚠1			1,399.40	31.6	63,330	82,490	1,958	123				6,330	11,830.0	94	1	155		
B7124	X281	U.S. RTE 71 EXISTING	END BENT NO'S 1 AND 4	175	129.90					0.9	14,790		1,170	125				1,920			1	155		
			INTERMEDIATE BENT NO'S 2 AND 3	480	191.40						26,130		1,196	56										
			283' CONT. PREST. CONCRETE GIRDER UNIT			~~692.70~~ 475.90 ⚠1			1,399.40	30.7	21,300	82,490						4,410	11,830.0	94				
			TOTALS FOR BRIDGE NO. B7124	655	321.30	~~692.70~~ 475.90 ⚠1			1,399.40	31.6	62,220	82,490	2,366	181				6,330	11,830.0	94	1	155		
A7125	X081	East Fork Kelly Bayou	END BENT NO'S 1 AND 4	189	106.30					0.7	11,590		1,228	120				1,840			1		295	725
			INTERMEDIATE BENT NO'S 2 AND 3	495	305.90						38,550		1,794	84			810							
			400' CONT. PREST. CONCRETE BEAM UNIT			~~796.10~~ 602.60 ⚠1		2,376.00		43.4	18,870	133,030						3,570	19,440.0	91				
			TOTALS FOR BRIDGE NO. A7125	684	412.20	~~796.10~~ 602.60 ⚠1		2,376.00		44.1	69,010	133,030	3,022	204			810	5,410	19,440.0	91	1		295	725
B7125	X081	East Fork Kelly Bayou	END BENT NO'S 1 AND 4	189	106.30					0.7	11,590		1,248	122				1,840			1		295	725
			INTERMEDIATE BENT NO'S 2 AND 3	495	304.50						38,550		1,716	81			810							
			400' CONT. PREST. CONCRETE BEAM UNIT			~~796.10~~ 602.60 ⚠1		2,376.00		43.4	18,870	133,030						3,570	19,440.0	91				
			TOTALS FOR BRIDGE NO. B7125	684	410.80	~~796.10~~ 602.60 ⚠1		2,376.00		44.1	69,010	133,030	2,964	203			810	5,410	19,440.0	91	1		295	725
			TOTAL FOR JOB 030355	**2,981**	**1,961.70**	~~**4,592.60**~~ **3,352.00** ⚠1	**3,697.80**	**4,752.00**	**2,798.80**	**234.0**	**355,310**	**701,940**	**11,502**	**877**	**2,352**	**376**	**3,540**	**35,520**	**99,060.0**	**574**	**6**	**310**	**590**	**1,450**

(1) A girder protective assembly shall be installed on the traffic approach side of the concrete girders over traffic of Bridge Nos. A&B7124. See details on Dwg. No. 49639.

(2) 24" Sq. Piling shall have 800 psi minimum prestress, see Dwg. No. 49567.

(3) Quantities shown for Dumped Riprap and Filter Blanket are for End Bent 1 only, Bridges A&B 7125.

⚠1 Removed Approach Slabs and Approach Gutters Concrete Quantities — MWB 9/28/2011

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12097
JEFFREY SCOTT MULLINS
10/4/2011
BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES
LA LINE - DODDRIDGE (MAJOR STRS.) (F)
MILLER COUNTY

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MAD/MWB DATE: 1-08 FILENAME: N:\Struct\Arkansas\Final_0303055\B030355_qi.dgn
CHECKED BY: MWB DATE: 1-08 SCALE: NONE
DESIGNED BY: ---- DATE: ---

BRIDGE NO. A&B7121, A&B7124 & A&B7125 DRAWING NO. 49556

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP
N:\Struct\Arkansas\Final_0303055\B030355_qi.dgn
10/4/2011
2:40:42 PM

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED
⚠ 9/28/2011			

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.		7	85
JOB NO.		030355		

(2) SUMMARY OF QUANTITIES AND REVISIONS 49557

SUMMARY OF QUANTITIES

ITEM NUMBER	ITEM	QUANTITY	UNIT
601	MOBILIZATION	1.00	LUMP SUM
SP & 602	FURNISHING FIELD OFFICE	1	EACH
SS & 603	MAINTENANCE OF TRAFFIC	1.00	LUMP SUM
SS & 604	SIGNS	112	SQ. FT.
SS & 604	TRAFFIC DRUMS	24	EACH
	STRUCTURES OVER 20' SPAN		
636	BRIDGE CONSTRUCTION CONTROL	1.00	LUMP SUM
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES - BRIDGE	2981	CU. YD.
802	CLASS S CONCRETE - BRIDGE	1961.70	CU. YD.
802	CLASS S (AE) CONCRETE - BRIDGE ~~4,592.60~~	3352.00⚠	CU. YD.
802	PRESTRESSED CONCRETE BEAMS (TYPE III)	3697.80	LIN. FT.
802	PRESTRESSED CONCRETE BEAMS (TYPE IV)	4752.00	LIN. FT.
SP & 802	PRESTRESSED CONCRETE GIRDERS (TYPE BT-72)	2798.80	LIN. FT.
803	CLASS 1 PROTECTIVE SURFACE TREATMENT	234.0	GAL.
804	REINFORCING STEEL - BRIDGE (GRADE 60)	355310	LB.
804	EPOXY COATED REINFORCING STEEL (GRADE 60)	701940	LB.
805	CONCRETE PILING (16" SQUARE)	11502	LIN. FT.
805	TEST PILE (16" SQUARE)	877	LIN. FT.
805	CONCRETE PILING (24" SQUARE)	2352	LIN. FT.
805	TEST PILE (24" SQUARE)	376	LIN. FT.
805	PREBORING	3540	LIN. FT.
807	STRUCTURAL STEEL IN BEAM SPANS (M270-GR 50W)	35520	LB.
808	ELASTOMETRIC BEARINGS	99060.0	CU. IN.
SP	ARMORED JOINT WITH NEOPRENE STRIP SEAL	574	LIN. FT.
812	BRIDGE NAME PLATE (TYPE D)	6	EACH
816	CONCRETE RIPRAP	310	CU. YD.
816	FILTER BLANKET	1450	SQ. YD.
816	DUMPED RIPRAP	590	CU. YD.

REVISIONS

	DATE	DESCRIPTION	PAGE NO. (S)
⚠	9/28/2011	Revised Class S (AE) Concrete - Bridge - Removed App. Slab and App. Gutter Concrete Quantities	6 AND 7

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12097
JEFFREY SCOTT MULLINS
10/4/2011

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS

N:\Struct\Arkansas\Final_030305\030355_GR_4A.dgn 10/4/2011 2:35:24 PM

SUMMARY OF QUANTITIES AND REVISIONS

SURVEY CONTROL COORDINATES

Project Name: s030313s01
Date: 8/25/2011
Coordinate System: ARKANSAS STATE PLANE - NORTH ZONE BASED ON GPS CONTROL, PROJECTED TO GROUND.
Units: U.S. SURVEY FOOT

POINT NAME	NORTHING	EASTING	ELEVATION	FEATURE	POINT DESCRIPTION
17	1447660.5288	729674.2842	216.67	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
18	1447894.1673	729695.6129	215.62	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
19	1458676.2681	729673.2904	260.27	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
48	1457067.5818	730146.7026	249.15	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
49	1457630.5633	730055.3921	273.90	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
52	1458337.2996	729613.6743	273.03	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
53	1458512.9533	729692.3803	265.62	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
54	1458620.3857	729459.8281	251.61	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
63	1460614.6840	729146.4950	264.61	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
71	1462187.3491	728653.7691	269.60	CTL	8" SPIKE
72	1462386.5006	728726.6999	251.03	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
73	1462621.4159	728752.8234	239.16	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
74	1462775.1245	728684.8713	237.78	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
76	1463142.7428	728531.9494	232.42	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
77	1463683.2666	728493.7190	245.30	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
78	1463860.0157	728438.9261	254.64	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
79	1464125.8775	728428.0753	253.40	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
82	1464961.8154	728700.3652	218.82	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
83	1465232.0110	728839.9305	220.89	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
84	1465449.0198	728788.8146	229.08	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
85	1465717.6340	728880.7861	244.47	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
86	1465999.7639	728997.2684	246.16	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
87	1466200.9411	729129.1661	246.43	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
88	1466355.5610	729189.7983	247.21	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
89	1466530.2279	729170.0015	250.41	CTL	60d NAIL
90	1466936.2021	729508.2932	240.21	CTL	60d NAIL
92	1467740.7573	730240.1783	241.89	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
93	1468086.5892	730467.2349	224.26	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
94	1468771.4621	730781.3894	244.83	CTL	1/2" REBAR W/ 1 1/2" ALUM. CAP
100	1442084.9257	728272.0136	298.08	GPS	LA GPS 8
101	1442526.4348	727712.8592	308.82	GPS	LA GPS 9
102	1454460.4591	731647.4720	240.80	GPS	AHTD GPG 460029
103	1456142.8755	731449.2908	229.95	GPS	AHTD GPG 460029A
104	1472327.1050	732901.2180	281.79	GPS	AHTD GPG 460022
105	1472588.3811	734065.7526	310.85	GPS	AHTD GPG 460022A
106	1467478.3851	730478.6662	234.80	GPS	AHTD GPG 460023A
107	1482821.0589	731908.9971	N/A	GPS	AHTD GPG 460021
108	1481318.6405	731004.3435	N/A	GPS	AHTD GPG 460021A
109	1470573.9533	731858.0916	244.53	GPS	AHTD GPG 460038
110	1469069.1258	730951.8633	241.25	GPS	AHTD GPG 460038A
800	1468121.6631	730603.6821	234.52	CTL	5/8" REBAR W/ 2" ALUM. CAP
801	1467647.6897	730013.2495	243.50	CTL	5/8" REBAR W/ 2" ALUM. CAP
802	1467071.3373	729581.8550	245.09	CTL	5/8" REBAR W/ 2" ALUM. CAP
803	1466750.6397	729235.4688	251.53	CTL	5/8" REBAR W/ 2" ALUM. CAP
804	1466038.6133	728998.6311	246.42	CTL	5/8" REBAR W/ 2" ALUM. CAP
805	1465619.4968	728826.3761	239.58	CTL	5/8" REBAR W/ 2" ALUM. CAP
806	1465157.7017	728723.7082	217.92	CTL	5/8" REBAR W/ 2" ALUM. CAP
807	1464621.5938	728782.7671	235.61	CTL	5/8" REBAR W/ 2" ALUM. CAP
808	1464158.4686	728996.5481	250.57	CTL	5/8" REBAR W/ 2" ALUM. CAP
809	1463861.7133	728992.7858	238.04	CTL	5/8" REBAR W/ 2" ALUM. CAP
810	1463435.6148	728946.3926	220.65	CTL	5/8" REBAR W/ 2" ALUM. CAP
811	1462779.4261	729064.3439	219.90	CTL	5/8" REBAR W/ 2" ALUM. CAP
812	1462004.3683	729319.5599	267.55	CTL	5/8" REBAR W/ 2" ALUM. CAP
813	1461530.1686	729430.6741	256.03	CTL	5/8" REBAR W/ 2" ALUM. CAP
814	1460718.5511	729387.4991	250.28	CTL	5/8" REBAR W/ 2" ALUM. CAP
815	1460175.4246	729270.9496	276.83	CTL	5/8" REBAR W/ 2" ALUM. CAP
816	1459722.2562	729451.5344	266.80	CTL	5/8" REBAR W/ 2" ALUM. CAP
817	1459308.4507	729733.8751	219.15	CTL	5/8" REBAR W/ 2" ALUM. CAP
818	1459026.0243	729849.1877	226.98	CTL	5/8" REBAR W/ 2" ALUM. CAP
819	1458676.2910	729673.2735	260.30	CTL	5/8" REBAR W/ 2" ALUM. CAP
820	1458455.2658	729690.6259	268.76	CTL	5/8" REBAR W/ 2" ALUM. CAP
821	1458314.4063	729649.9406	268.64	CTL	5/8" REBAR W/ 2" ALUM. CAP
822	1457481.7294	729725.1366	275.61	CTL	5/8" REBAR W/ 2" ALUM. CAP
824	1456121.0622	729674.8308	271.53	CTL	5/8" REBAR W/ 2" ALUM. CAP
827	1454761.2399	729709.9525	270.34	CTL	5/8" REBAR W/ 2" ALUM. CAP
828	1453809.2652	729729.1016	257.80	CTL	5/8" REBAR W/ 2" ALUM. CAP
829	1446234.1113	729668.0247	256.57	CTL	5/8" REBAR W/ 2" ALUM. CAP
830	1445558.9501	729334.2368	270.10	CTL	5/8" REBAR W/ 2" ALUM. CAP
831	1444449.9637	728946.5866	296.91	CTL	5/8" REBAR W/ 2" ALUM. CAP
833	1463692.2817	728131.6684	261.37	CTL	5/8" REBAR W/ 2" ALUM. CAP
834	1463531.6327	727723.5315	274.69	CTL	5/8" REBAR W/ 2" ALUM. CAP
836	1457902.2378	730318.3753	272.38	CTL	5/8" REBAR W/ 2" ALUM. CAP
837	1457854.6097	731078.5355	235.69	CTL	5/8" REBAR W/ 2" ALUM. CAP
838	1457344.6903	729112.0613	289.85	CTL	5/8" REBAR W/ 2" ALUM. CAP
839	1457079.7280	728996.9498	293.39	CTL	5/8" REBAR W/ 2" ALUM. CAP
849	1466319.4442	729091.9110	249.48	TV	8" SPIKE
855	1456696.2890	730044.4682	239.03	CTL	5/8" REBAR W/ 2" ALUM. CAP
856	1455955.8431	730054.0419	270.18	CTL	5/8" REBAR W/ 2" ALUM. CAP
857	1455180.3270	729701.5089	264.61	CTL	5/8" REBAR W/ 2" ALUM. CAP
858	1454675.2745	730012.5450	269.74	CTL	5/8" REBAR W/ 2" ALUM. CAP
859	1454168.1800	729674.0293	263.13	CTL	5/8" REBAR W/ 2" ALUM. CAP
860	1453586.6010	729971.9525	253.94	CTL	5/8" REBAR W/ 2" ALUM. CAP
861	1452870.9548	729617.6068	223.73	CTL	5/8" REBAR W/ 2" ALUM. CAP
862	1452169.3895	729927.6399	232.45	CTL	5/8" REBAR W/ 2" ALUM. CAP
863	1451317.7980	729910.9017	231.39	CTL	5/8" REBAR W/ 2" ALUM. CAP
864	1450800.6311	729613.3439	217.11	CTL	5/8" REBAR W/ 2" ALUM. CAP
865	1449852.4854	729640.0080	200.39	CTL	5/8" REBAR W/ 2" ALUM. CAP
1000	1458500.8767	729702.2964	265.93	CTL	8" SPIKE
1001	1462066.1006	729099.3623	282.12	CTL	8" SPIKE
1002	1462531.2707	728932.1563	234.89	CTL	8" SPIKE
1101	1471601.7888	732113.3742	255.07	TV	8" NBC
1102	1469247.1163	731254.3175	241.45	TV	NBC
1103	1469447.7313	731210.3653	238.59	TV	CPS
1104	1467789.5362	730415.1083	235.17	TV	8" SPIKE
1105	1468531.6388	730125.0315	221.48	TV	8" SPIKE
5020	1469832.8210	731348.6754	219.55	IP	R/W
5021	1469531.8765	731126.4432	217.51	IP	R/W
5022	1469396.5888	730954.0625	215.93	IP	R/W
5023	1469034.4680	731242.7311	214.41	IP	R/W
5024	1469374.7067	731480.4079	231.78	IP	R/W
5025	1469864.9736	731824.5042	227.71	IP	R/W
5027	1470679.3140	731751.5412	247.27	IP	R/W
5028	1470715.5294	732121.8489	270.44	IP	R/W
5029	1470270.9569	731590.1775	247.75	IP	R/W

Note - points labeled 5/8" REBAR W/ 2" ALUM. CAP are stamped Arkansas Hwy. & Transportation Department, Job 030313, PN ##; points labeled 1/2" REBAR W/ 1 1/2" ALUM. CAP are stamped F&H ENGINEERS, AHTD 030313, PN ##; others as indicated in the point description of the individual point.

SURVEY CONTROL NOTES:
USE CAF = 1.0 FOR STAKEOUT FOR THIS PROJECT.
A PROJECT CAF OF 0.999938551 HAS BEEN USED TO COMPUTE THE ABOVE GROUND COORDINATES.
THIS CAF IS INTENDED FOR USE WITHIN THE PROJECT LIMITS.
ALL DISTANCES ARE GROUND.
GRID DISTANCE = GROUND DISTANCE X CAF.
GRID COORDINATES ARE STORED UNDER FILE NAME.s030313gi.CTL
HORIZONTAL DATUM: NAD 83 (1997)
VERTICAL DATUM: NAVD 88 POSITIONAL ACCURACY THIRD ORDER, UNLESS SPECIFIED OTHERWISE AT A SPECIFIC POINT.

BASIS FOR BEARINGS:
ARKANSAS STATE PLANE GRID BEARINGS - 0302 - SOUTH ZONE
DETERMINED FROM GPS CONTROL POINTS: AHTD 460029 & 460029A, NGS 259 & SPRING AZ.MK.
CONVERGENCE ANGLE: 1-03-36.6 LEFT AT PN:101
MID POINT LAT: 33-02-29, LONG: 093-54-05
GRID AZIMUTH = ASTRONOMICAL AZIMUTH - CONVERGENCE ANGLE.

CONSTRUCTION C.L.

	DESCRIPTION	POINT	STATION	NORTHING	EASTING
HORIZ. ALG. MAIN LANES					
	POB	8000	7+90.75	1437247.3848	726481.6019
	PC	8001	85+42.69	1444512.0759	729186.5578
	CC	8002	NA	1447959.9284	719926.6719
	PCC	8003	103+80.14	1446283.5681	729664.3816
	PCC	8004	103+80.14	1446283.5685	729664.3817
	CC	8005	NA	1448227.6806	718371.3447
	PT	8006	127+23.99	1448617.8979	729823.8548
	PC	8007	142+18.67	1450111.7108	729772.9566
	CC	8008	NA	1450501.9282	741225.4667
	PT	8009	148+00.08	1450693.0396	729767.9044
	PC	8010	210+54.65	1456946.7338	729872.2157
	CC	8011	NA	1457137.8453	718414.6534
	PT	8012	232+20.35	1459102.6689	729704.1054
	PC	8013	286+41.50	1464443.5341	728774.5777
	CC	8014	NA	1465098.4753	732537.7283
	PT	8015	320+91.71	1467648.4287	729693.7894
	POE	8016	339+38.78	1469023.6475	730926.8482
	POT	8054	218+92.54	1457784.2775	729855.5617
	POT	8055	283+57.14	1464163.3872	728823.3346
	POT	8056	328+66.04	1468224.9470	730210.7115
HORIZ. ALG. COUNTY ROAD 2					
	POB	8017	34+63.18	1456828.9940	728741.6810
	PC	8018	36+74.60	1456969.3518	728899.7841
	CC	8019	NA	1457292.7282	728612.7029
	PT	8020	38+26.58	1457087.9542	728993.5644
	PC	8021	42+01.57	1457418.2359	729171.1437
	CC	8022	NA	1457192.1312	729591.6783
	PT	8023	45+61.48	1457644.8012	729439.8149
	PC	8024	55+53.76	1457960.4068	730380.5631
	CC	8025	NA	1457534.3644	730523.4933
	PT	8026	57+85.73	1457975.4410	730609.4738
	POE	8027	59+90.23	1457936.3130	730810.1990
HORIZ. ALG. COUNTY ROAD 4					
	POB	8028	33+66.34	1463385.8150	727465.0760
	PC	8029	35+77.34	1463479.0062	727654.3863
	CC	8030	NA	1464050.1720	727373.2202
	PT	8031	38+94.18	1463682.5221	727892.9492
	PC	8032	41+45.36	1463887.5777	728038.0030
	CC	8033	NA	1463637.8532	728391.0265
	PT	8034	44+74.56	1464062.1763	728307.7333
	POE	8035	56+40.05	1464286.6740	729451.3980
HORIZ. ALG. RAMP 1					
	POB	8036	305+00.00	1466261.6590	728958.7870
	PC	8037	305+00.00	1466261.6617	728958.7879
	CC	8038	NA	1465671.3377	730775.1249
	PT	8039	312+91.88	1466943.3506	729350.5036
	PC	8040	320+94.09	1467541.7431	729884.7950
	CC	8041	NA	1466269.7302	731309.4163
	PT	8042	324+97.09	1467811.9133	730182.8135
	POE	8043	326+79.47	1467919.4980	730330.0840
HORIZ. ALG. RAMP 4					
	POB	8044	303+66.61	1466170.4600	728800.2040
	PC	8045	317+69.55	1467519.0231	729186.9940
	CC	8046	NA	1467067.6918	730760.5702
	PT	8047	328+43.54	1468385.2142	729788.9820
	POE	8048	331+89.90	1468590.7810	730067.7400
HORIZ. ALG. EXIST U.S. HWY. 71					
	POB	8049	38+10.24	1469333.0890	729777.6390
	PC	8050	57+37.69	1467537.8649	730479.2297
	CC	8051	NA	1464710.1021	723243.5752
	PT	8052	62+19.28	1467084.1683	730640.5170
	POE	8053	62+19.28	1467084.1590	730640.5200

NOTE: STATIONING IS ALONG CENTERLINE MEDIAN FOR U.S. HWY.71 RELOCATION.

BENCHMARK POINT LIST

POINT NAME	NORTHING	EASTING	ELEVATION	POINT DESCRIPTION
900	1471860.0000	737275.0000	337.511	SPRING 1950 AZIMUTH MARK
901	1442248.8320	728030.3509	301.13	RR SPIKE IN 12"PINE TRUNK
902	1444072.3490	728543.8073	306.57	RR SPIKE IN 30"OAK TRUNK
903	1445239.1566	729761.9376	294.04	RR SPIKE IN 8"ELM TRUNK
904	1447027.3937	729666.6184	212.68	RR SPIKE IN 12"OAK TRUNK
905	1448813.2591	729784.0658	206.00	RR SPIKE IN 30"TWIN OAK TRUNK
906	1450593.8690	729801.4773	202.54	RR SPIKE IN 10"PIN OAK TRUNK
907	1451971.2434	729870.0207	233.49	RR SPIKE IN 12"PINE TRUNK
908	1453576.3602	729886.1799	255.94	RR SPIKE IN 15"PINE TRUNK
909	1454863.5425	729941.4574	262.66	RR SPIKE IN 36"OAK TRUNK
910	1456159.5087	730023.7863	271.09	RR SPIKE IN 24"PINE TRUNK
911	1457644.2049	730020.6247	277.07	RR SPIKE IN 12"PINE TRUNK
912	1459166.2245	729474.3702	223.76	RR SPIKE IN 15"PINE TRUNK
913	1460218.1567	728598.6452	271.35	RR SPIKE IN 10"OAK TRUNK
914	1461582.7511	728639.9052	237.00	RR SPIKE IN 12"TWIN OAK TRUNK
915	1463071.3152	728557.5602	232.03	RR SPIKE IN 10"GUM TRUNK
916	1464276.2823	728398.5488	256.94	RR SPIKE IN 12"GUM TRUNK
917	1465477.8737	728777.9413	232.19	RR SPIKE IN 15"GUM TRUNK
918	1466571.1710	729091.0579	255.80	RR SPIKE IN 10"PINE TRUNK
919	1468259.1564	730679.7700	237.35	SAHD ALUMINUM DISK (COMPUTED ELEVATION)
920	1470327.8887	731794.3379	240.19	CHISELED SQUARE ON CATCH BASIN
921	1472476.3418	732077.6334	261.05	SAHD ALUMINUM DISK ON BRIDGE (COMPUTED ELEVATION)
922	1472208.0000	735497.0000	320.229	NGS "N 259 1977"

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9808
JAMES L. BARR
8/26/11

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.		030355	8	85

(2) SURVEY CONTROL DETAILS

SURVEY CONTROL DETAILS

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.		030355	9	85

(2) SURVEY CONTROL DETAILS

ALL BEARINGS ARE GRID
BASED ON GPS #104
ALL DISTANCES ARE GROUND

65+00 70+00 75+00 80+00 85+00 90+00 95+00 100+00 105+00 110+00 115+00 120+00

STATE LINE

ARKANSAS LOUISIANA

PN: 101

CONTROL TRAVERSE LINE

N 51°42'19" W
712.45'

N 32°40'32" E
2285.18'

PC85+42.69

PT103+80.14

N 5°12'58" E
234.61'

PN: 100

PN: 902

PN: 831

N 19°16'02" E
1174.79'

N 26°18'25" E
753.16'

N 0°15'05" E
1426.43'

CONTROL TRAVERSE LINE

PN: 904

PN: 17

PN: 18

PN: 830

U.S. HWY. 71 RELOCATION

PN: 829

PN: 903

P194+64.07

P1115+56.17

STATE LINE

CURVE NO.	LOCATION	P.I.	NORTHINGS	EASTINGS	Δ	D	R	T	L	E	P.C.	P.T.
1	MAIN LANES	94+64.07	1445375.5439	729508.0640	10°39'17" Lt.	0°34'47"	9880.95	921.38	1837.45	42.87	85+42.69	103+80.14
2	MAIN LANES	115+56.17	1447442.5500	729863.9020	11°43'09" Lt.	0°30'00"	11459.16	1176.03	2343.85	60.19	103+80.14	127+23.99

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9808
JAMES L. BARR
5/26/11

SURVEY CONTROL DETAILS

200 100 0 100 200 400

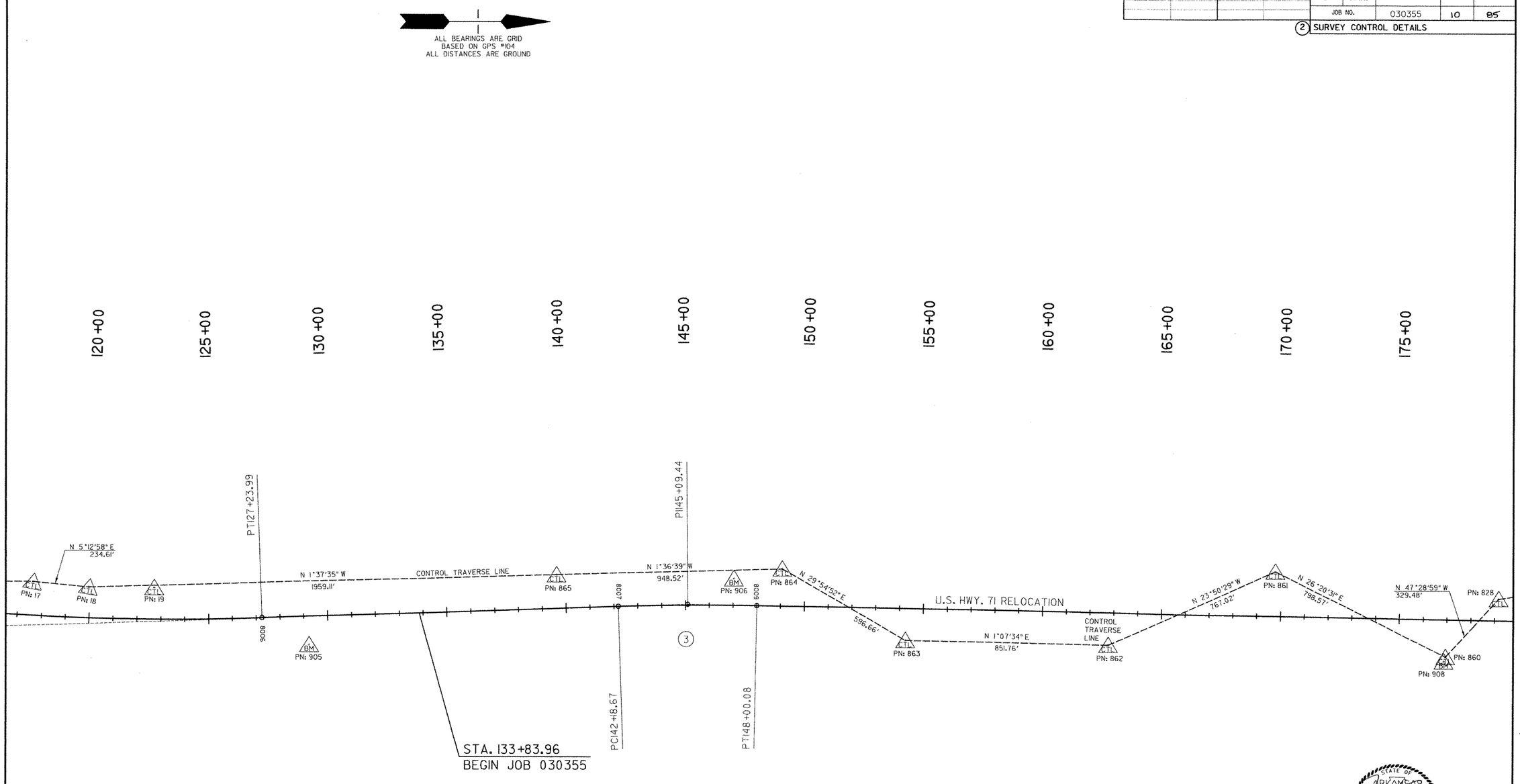
SCALE 1" = 400'

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.		030355	10	85

(2) SURVEY CONTROL DETAILS

ALL BEARINGS ARE GRID
BASED ON GPS #104
ALL DISTANCES ARE GROUND

120+00 125+00 130+00 135+00 140+00 145+00 150+00 155+00 160+00 165+00 170+00 175+00



CURVE NO.	LOCATION	P.I.	NORTHINGS	EASTINGS	Δ	D	R	T	L	E	P.C.	P.T.
3	MAIN LANES	145+09.44	1450402.3111	729763.0551	02°54'25" Rt.	0°30'00"	11459.16	290.77	581.41	3.69	142+18.67	148+00.08

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9808
JAMES L. BARR
8/24/11

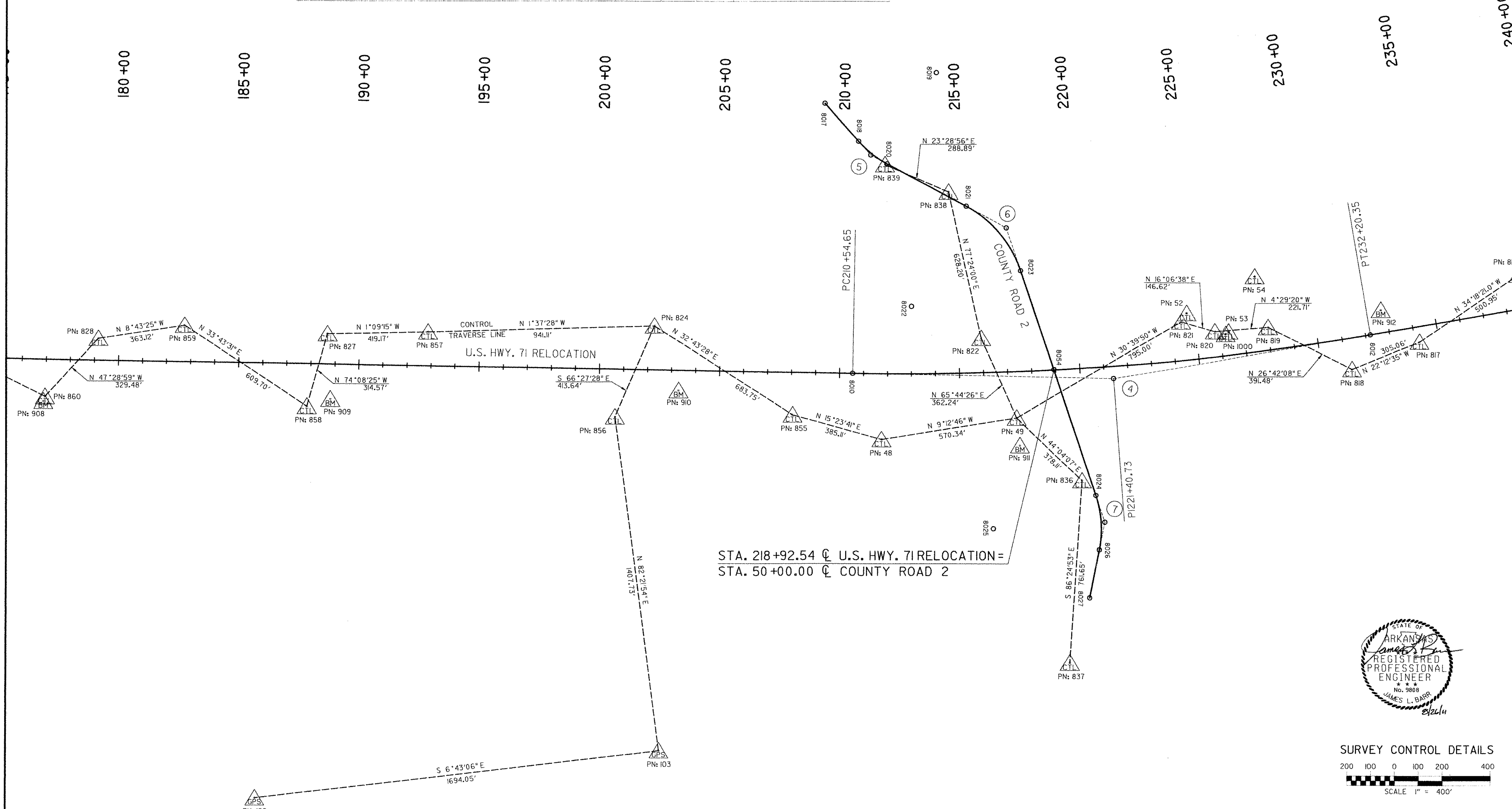
SURVEY CONTROL DETAILS

200 100 0 100 200 400
SCALE 1" = 400'

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.		030355	11	85

(2) SURVEY CONTROL DETAILS

CURVE NO.	LOCATION	P.I.	NORTHINGS	EASTINGS	Δ	D	R	T	L	E	P.C.	P.T.
4	MAIN LANES	221+40.73	1458032.6680	729890.3290	10°49'43" Lt.	0°30'00"	11459.16'	1086.09'	2165.70'	51.35'	210+54.65	232+20.35
5	COUNTY ROAD 2	37+51.38	1457020.3270	728957.2040	20°08'15" Lt.	13°15'00"	432.42'	76.78'	151.98'	6.76'	36+74.60	38+26.58
6	COUNTY ROAD 2	43+90.56	1457584.6910	729260.6400	43°11'21" Rt.	12°00'00"	477.46'	188.99'	359.91'	36.04	42+01.57	45+61.48
7	COUNTY ROAD 2	56+72.39	1457998.1390	730493.0340	29°34'35" Rt.	12°45'00"	449.38'	118.63'	231.97'	15.40'	55+53.76	57+85.73



SURVEY CONTROL DETAILS

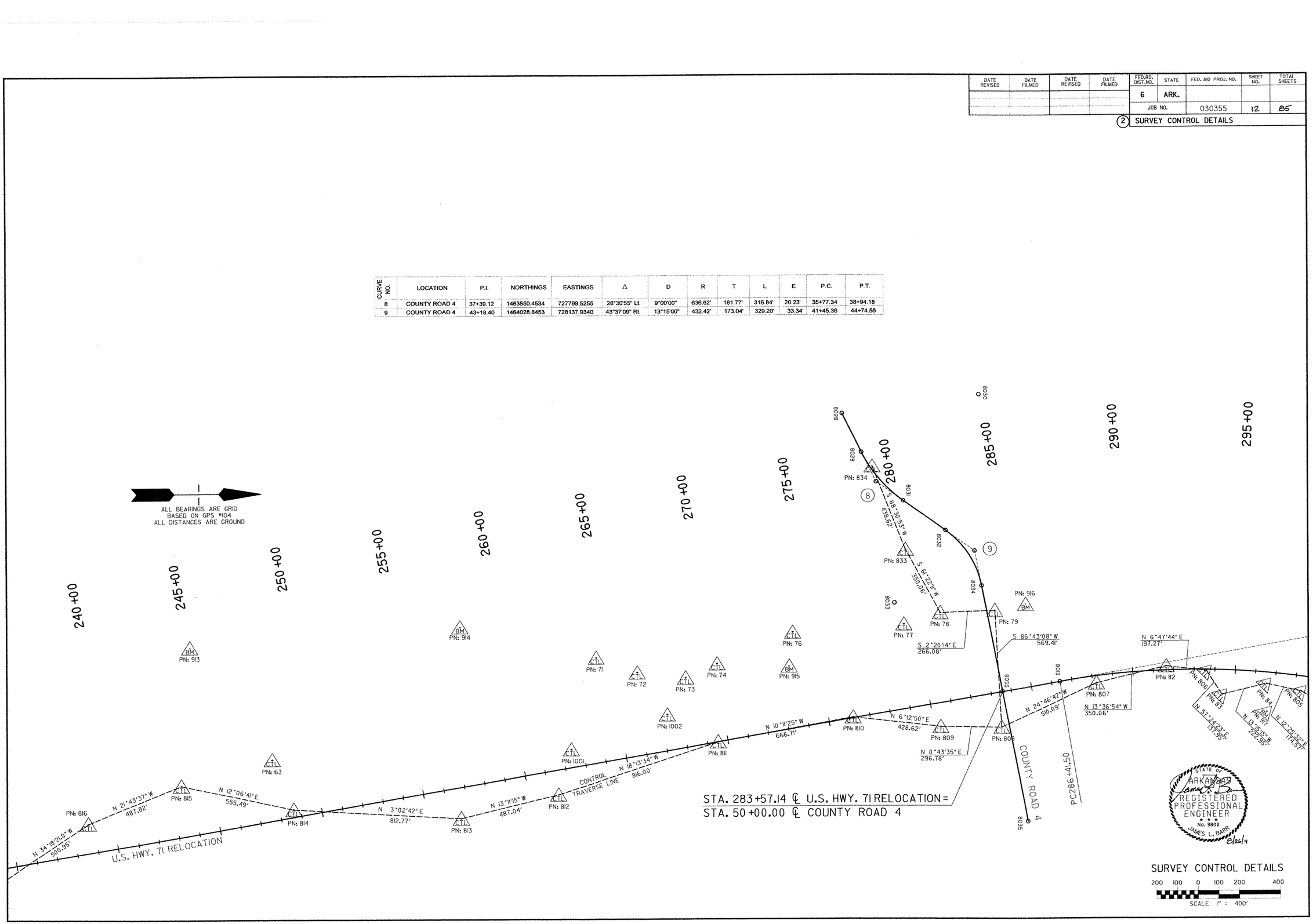
200 100 0 100 200 400

SCALE 1" = 400'

DATE REVISED	DATE F.I.MED	DATE REVISED	DATE FILMED	FED.RD. DIST.NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	12	85

(2) SURVEY CONTROL DETAILS

CURVE NO.	LOCATION	P.I.	NORTHINGS	EASTINGS	Δ	D	R	T	L	E	P.C.	P.T.
8	COUNTY ROAD 4	37+39.12	1463550.4534	727799.5255	28°30'55" Lt.	9°00'00"	636.62'	161.77'	316.84'	20.23'	35+77.34	38+94.18
9	COUNTY ROAD 4	43+18.40	1464028.8453	728137.9340	43°37'09" Rt.	13°15'00"	432.42'	173.04'	329.20'	33.34'	41+45.36	44+74.56



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.		030355	13	85

(2) SURVEY CONTROL DETAILS

ALL BEARINGS ARE GRID BASED ON GPS #104
ALL DISTANCES ARE GROUND

305+00 310+00 315+00 320+00 325+00 330+00 335+00

STA. 328+66.04 ℄ U.S. HWY. 71 RELOCATION =
STA. 50+00.00 ℄ EXISTY. HWY. 71

STA. 336+81.87
END JOB 030355

P.O.E. 339+38.78

P.T. 320+91.71

P.I. 304+94.33

RAMP 4

RAMP 1

U.S. HWY. 71 RELOCATION

CONTROL TRAVERSE LINE

EXIST. R/W

PN: 806 N 57°24'23" E 137.95'
PN: 83
PN: 84
PN: 805
PN: 85 N 29°00'19" E 112.21'
PN: 917 N 12°25'32" E 174.57'
N 13°15'15" W 222.95'
N 22°26'03" E 305.23'
PN: 86
PN: 87 N 2°00'32" E 38.87'
PN: 88 N 17°27'08" W 124.22'
N 69°44'52" E 104.34'
PN: 804 N 38°48'16" E 208.30'
PN: 849
PN: 89 N 6°27'59" W 175.79'
PN: 918
PN: 803 N 16°32'33" E 229.93'
N 55°46'42" E 329.95'
PN: 90
PN: 802 N 28°33'43" E 153.86'
PN: 801
N 36°48'52" E 719.92'
PN: 92 N 67°42'02" E 245.27'
N 74°25'08" E 181.60'
PN: 1104
S 11°32'41" E 317.58'
PN: 106
PN: 93 N 9°57'10" E 301.59'
PN: 800 N 75°35'03" E 140.88'
PN: 919 N 20°10'40" E 1009.41'
S 21°20'19" E 196.78'
PN: 1105
PN: 94
PN: 110
PN: 1102
PN: 1103
PN: 5022
PN: 5021
PN: 5020 EXIST. R/W N 31°03'25" E 1756.63'
PN: 5029
PN: 5027
PN: 109
PN: 920
PN: 5023
PN: 5024
PN: 5025

CURVE NO.	LOCATION	P.I.	NORTHINGS	EASTINGS	Δ	D	R	T	L	E	P.C.	P.T.
10	MAIN LANES	304+94.33	1466268.9220	728456.8860	51°45'11" Rt.	1°30'00"	3819.72'	1852.83'	3450.21'	425.66'	286+41.50	320+91.71
11	RAMP 4	323+26.67	1468054.5579	729340.5955	37°35'23" Rt.	3°30'00"	1637.02'	557.12'	1073.99'	92.21'	317+69.55	328+43.54
12	RAMP 1	309+01.71	1466643.7020	729082.9540	23°45'23" Rt.	3°00'00"	1909.86'	401.71'	791.88'	41.79'	305+00.00	312+91.88
13	RAMP 1	322+96.34	1467692.6080	730019.4990	12°05'24" Rt.	3°00'00"	1909.86'	202.25'	403.00'	10.68'	320+94.09	324+97.09
14	HWY. 71	59+78.56	1467313.5170	730566.9070	3°33'07" Rt.	0°44'15"	7768.59'	240.87'	481.59'	3.73'	57+37.69	62+19.28

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9808
JAMES L. BARR
8/26/11

SURVEY CONTROL DETAILS

200 100 0 100 200 400
SCALE 1" = 400'

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.		030355	14	85
				(2)	PLAN STA. 125+00 TO 140+00			

STA. 134+11.97 TO STA. 137+89.62 L.M.L
CONSTRUCT BRIDGE NO. 7121(A)
377'-7¾" X 40' CLEAR ROADWAY BRIDGE WIDTH
(375'-0" CONT. PRES. TYPE III CONC. GIRDER)

STA. 133+55.95 TO STA. 137+33.59 R.M.L
CONSTRUCT BRIDGE NO. 7121(B)
377'-7¾" X 40' CLEAR ROADWAY BRIDGE WIDTH
(375'-0" CONT. PRES. TYPE III CONC. GIRDER)

GUARDRAIL (FUTURE)

LOCATION	STA.	STA.	GUARDRAIL (TYPE A) LIN. FT.	GUARDRAIL TERMINAL (TYPE 2) EACH	THRIE BEAM GUARDRAIL TERMINAL EACH
LT. OF R.M.L.	129+73.61	133+42.36	300	1	1
RT. OF R.M.L.	129+95.60	133+14.35	250	1	1
RT. OF L.M.L.	138+03.21	141+71.96	300	1	1
LT. OF L.M.L.	138+31.22	141+49.97	250	1	1

FLOOD PLAIN ZONE A

125+00

130+00

135+00

140+00

STA. 125+00 - IN PLACE
60" X 232' R.C. PIPE CULV'T.
(CLASS IV)(TYPE 3 BEDDING)
WITH F.E.S. LT. & RT.
D.A.=71.0 AC. Q50=149 CFS
RETAIN

STA. 130+81.02 - IN PLACE
TYPE RM DROP INLET IN MEDIAN (4' X 3' X H = 4'-10")
WITH 24" X 120' RC PIPE OUTLET ON RT.
(CLASS IV) (TYPE 3) BEDDING WITH FES
RETAIN

STA. 137+61.61 - IN PLACE
TYPE RM DROP INLET IN MEDIAN (4' X 3' X H = 3'-3")
WITH 24" X 46' RC PIPE OUTLET IN MED.
(CLASS III) (TYPE 3) BEDDING WITH FES
RETAIN

WEST FORK KELLY BAYOU

WOODS

125·00 175'

127·23.99 150'

P.T.

EXIST. R.O.W., C.A., & FENCE

10' SHLD.

2@12' LANES

6' SHLD.

60" RCP

24" RCP

℄ MEDIAN

N1°57'05.3"W

16' GATE RETAIN

24" RCP

CHANNEL CHANGE

132·20 155'

131·10 155'

130·00.31 155'

131·55 200'

135·50 155'

135·25 190'

136·83.15 155'

138·30 245'

138·30 215'

139·70 245'

139·70 155.52'

P.D.E.

136·61.38 155'

131·10 305'

132·15 290'

131·90 345'

125·00 180'

FOR INFORMATION ONLY

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.		030355	15	85
				(2)	PROFILE STA. 125+00 TO 140+00			

STA. 104+00.00 MAX. SUPERELEVATION (0.025'/')
STA. 126+36.49 MAX. SUPERELEVATION (0.025'/')
STA. 129+86.49 END SUPERELEVATION

V.C. = 800.00'
G1 = -1.500%
G2 = 0.650%
E = 0.460'
K = 372.09

Elev. 218.20
PVC 125+22.89
Elev 217.86

(-)1.50%

STA. 125+00
60" R.C. PIPE
F.L. INLET = 200.00 (LT.)
F.L. OUTLET = 199.29 (RT.)

FINISHED GRADE

PVI 129+22.89
Elev 211.86
P.G. Elev 214.01

STA. 130+00
TOP DI 207.85

F.L. DI = 203.00
F.L. OUTLET = 200.84

EXISTING GROUND
@ GRADE POINT

PVT 133+22.89
Elev 214.46

STA. 134+11.97 L.M.L. BRIDGE (A)
STA. 133+55.95 R.M.L. BRIDGE (B)
BEGIN EXIST. BRIDGE

+72.78

EXISTING
CHANNEL

(+) 0.65%

STA. 137+89.62 L.M.L. BRIDGE (A)
STA. 137+33.59 R.M.L. BRIDGE (B)
END EXIST. BRIDGE

TOP DI 211.65
F.L. INLET = 208.40

Elev. 218.86

FOR INFORMATION ONLY

270 260 250 240 230 220 210 200 190 180

125+00 126+00 127+00 128+00 129+00 130+00 131+00 132+00 133+00 134+00 135+00 136+00 137+00 138+00 139+00 140+00

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.		030355	16	85

(2) PLAN AND PROFILE STA. 320+00 TO 335+00

GUARDRAIL (FUTURE)

STA.	STA.	LOCATION	GUARDRAIL (TYPE A) LIN. FT.	GUARDRAIL TERMINAL (TYPE2) EACH	THRIE BEAM GUARDRAIL TERMINAL EACH
323+68.68	326+67.43	RT. OF R.M.L.	250	1	1
323+19.06	326+87.81	LT. OF R.M.L.	300	1	1
329+99.45	332+30.09	RT. OF R.M.L.	193		2
330+19.83	332+46.25	LT. OF R.M.L.	189		2
330+54.08	332+73.73	RT. OF L.M.L.	182		2
330+74.46	332+89.89	LT. OF L.M.L.	178		2

320+00

325+00

330+00

335+00

HWY. 71- FUTURE
STA. 47+41.49 - IN PLACE
24" X 56' R.C. PIPE CULV'T.
WITH F.E.S. LT. & RT.
PLUG AND ABANDON

P.O.T. STA. 328+66.04
℄ RELOC. US 71=
P.O.T. STA. 50+00.00
℄ US 71
∡ 116°46'25"

U.S. 71

FUTURE
STA. 330+91.44 - CONSTRUCT
TYPE N-3 DROP INLET ALONG CURB
WITH 12"x12' ZINC COATED C.S. PIPE ON LT.
(TYPE 2 BEDDING)
WITH TYPE A SPILLWAY

12" ZINC COATED CSP

EXIST. U/G TELE.

10' SHLD.
2@12' LANES
6' SHLD.
4%
4%
6' SHLD.
2@12' LANES
10' SHLD.

N41°52'49.0"E

℄ MEDIAN

STA. 327+00 - IN PLACE
TYPE RM DROP INLET IN MEDIAN (4' X 3' X H = 3'-6")
WITH 24" X 100' RC PIPE OUTLET ON LT.
(CLASS III) (TYPE 3) BEDDING WITH FES
RETAIN

℄ MEDIAN
PT 320+91.71

RAMP 1
PT 322+96.34

4' SHLD.
15' LANE
6' SHLD.

N53°51'03.4"E

4' SHLD.

HWY. 71
STA. 52+30.00 - IN PLACE
30" X 76' R.C. PIPE CULV'T.
(CLASS V) (TYPE 3 BEDDING)
WITH F.E.S. LT. & RT.
D.A.=7.3 AC. Q50=14.3 CFS
RETAIN

8' SHLD.
2@12' LANES
8' SHLD.

50+00

12" ZINC COATED CSP

FUTURE
STA. 330+21.52 - CONSTRUCT
TYPE N-3 DROP INLET ALONG CURB
WITH 12"x114' ZINC COATED C.S. PIPE ON RT.
(TYPE 2 BEDDING)
WITH TYPE A SPILLWAY

STA. 332+10 - IN PLACE
TYPE RM DROP INLET IN MEDIAN (4' X 3' X H = 3'-6")
WITH 24" X 90' RC PIPE OUTLET ON RT.
(CLASS III) (TYPE 3) BEDDING WITH FES
RETAIN

EAST FORK KELLY BAYOU

RELOC. US 71
P.I. 304+94.33
N = 1466268.9220
E = 728456.8860
Δ = 51°45'11" RT.
D = 1°30'00"
T = 1852.83'
L = 3450.21'
E = 425.66'
e = 5.4%
Ls = 350'
P.C. 286+41.50
P.T. 320+91.71

STA. 283+79.00 BEG. SUPERELEVATION (-0.02'/')
STA. 287+29.00 MAX. SUPERELEVATION (0.054'/')
STA. 320+04.21 MAX. SUPERELEVATION (0.054'/')
STA. 323+54.21 END SUPERELEVATION (-0.02'/')

STA. 327+08.04 BRIDGE END
CONSTRUCT BRIDGE NO. 7124(B)
283'-0" CONTINUOUS PRESTRESSED
BT-72 CONCRETE GIRDER
40' CLEAR ROADWAY WIDTH
27° LT. FORWARD SKEW
285' - 5⅛" BRIDGE LENGTH
STA. 329+93.48 BRIDGE END

STA. 327+48.41 BRIDGE END
CONSTRUCT BRIDGE NO. 7124(A)
283'-0" CONTINUOUS PRESTRESSED
BT-72 CONCRETE GIRDER
40' CLEAR ROADWAY WIDTH
27° LT. FORWARD SKEW
285' - 5⅛" BRIDGE LENGTH
STA. 330+33.85 BRIDGE END

Elev. 261.70

FINISHED GRADE

EXISTING GROUND @ GRADE POINT

P.V.T. 323+30.00
Elev. 259.84

+00
TOP DI 250.45

STA. 327+08.04 R.M.L. (B)
STA. 327+48.41 L.M.L. (A)
BEGIN BRIDGE

F.L. DI = 246.95
F.L. OUTLET = 246.61

BENCH MARK 919
ALUMINUM DISK MARKED "STATE OF ARK
BENCH MARK HWY. DEPT."
SET IN THE SW CORNER OF RAMP 2 BRIDGE
OVER EAST KELLY BAYOU IN THE CONC
BARRIER RAIL
326.4' RIGHT STA. 333+06.8
NORTH = 1468259.2 +/-
EAST = 730679.8 +/-
ELEVATION = 237.35
(NOT SHOWN ON PLAN VIEW)

STA. 328+66.04 ℄ RELOCATED US 71=
STA. 50+00.00 ℄ US 71

STA. 329+93.48 R.M.L. (B)
STA. 330+33.85 L.M.L. (A)
END BRIDGE

(-)0.94%

EXISTING GROUND @ GRADE POINT

+50
TOP DI 245.98

F.L. DI = 242.48
F.L. OUTLET = 241.58

STA. 332+63.37 L.M.L. (B)
STA. 332+95.69 R.M.L. (A)
BEGIN BRIDGE

STA. 332+63.37 BRIDGE END
CONSTRUCT BRIDGE NO. 7125(B)
400'-0" CONTINUOUS PRESTRESSED
TYPE IV CONCRETE BEAM
40' CLEAR ROADWAY WIDTH
22° LT. FORWARD SKEW
402' - 4" BRIDGE LENGTH
STA. 336+65.71 BRIDGE END

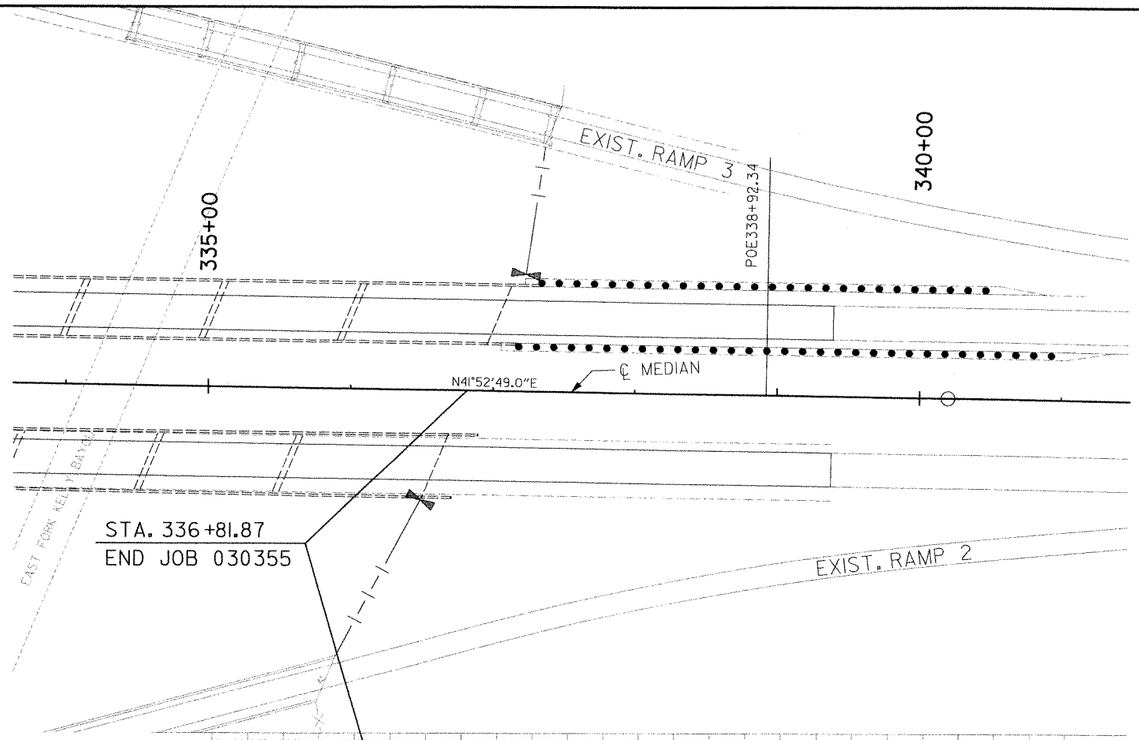
STA. 332+95.69 BRIDGE END
CONSTRUCT BRIDGE NO. 7125(A)
400'-0" CONTINUOUS PRESTRESSED
TYPE IV CONCRETE BEAM
40' CLEAR ROADWAY WIDTH
22° LT. FORWARD SKEW
402' - 4" BRIDGE LENGTH
STA. 336+98.03 BRIDGE END

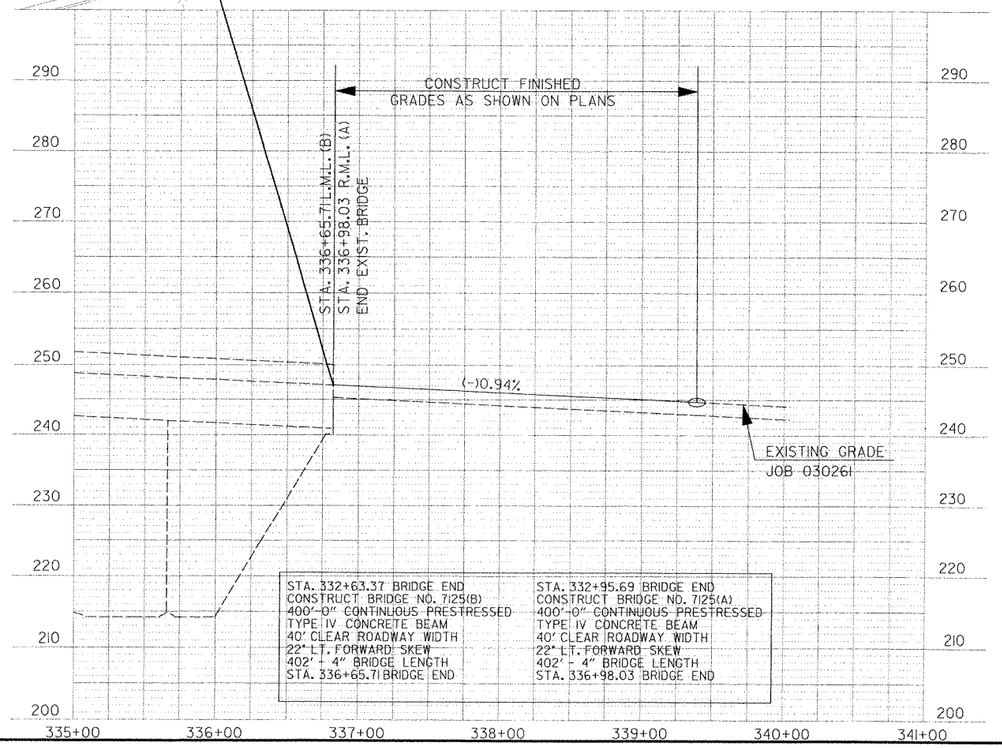
FOR INFORMATION ONLY

290 280 270 260 250 240 230 220 210 200

320+00 321+00 322+00 323+00 324+00 325+00 326+00 327+00 328+00 329+00 330+00 331+00 332+00 333+00 334+00 335+00

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.		030355	17	85
				(2)	PLAN AND PROFILE STA. 335+00 TO 339+38.78			





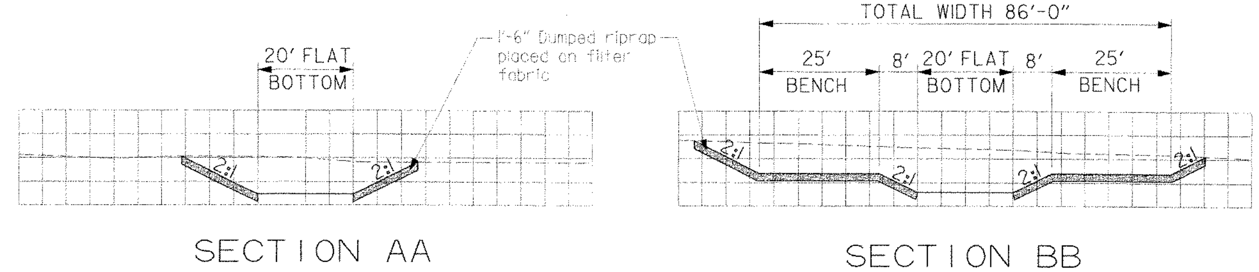
GUARDRAIL FUTURE

LOCATION	STA.	STA.	GUARDRAIL (TYPE A)	GUARDRAIL TERMINAL (TYPE 2)	THRIE BEAM GUARDRAIL TERMINAL
			LIN. FT.	EACH	EACH
RT. OF L.M.L.	337+15.15	340+83.90	300	1	1
LT. OF L.M.L.	337+31.31	340+50.06	250	1	1
					1
TOTAL			550	2	2

FOR INFORMATION ONLY

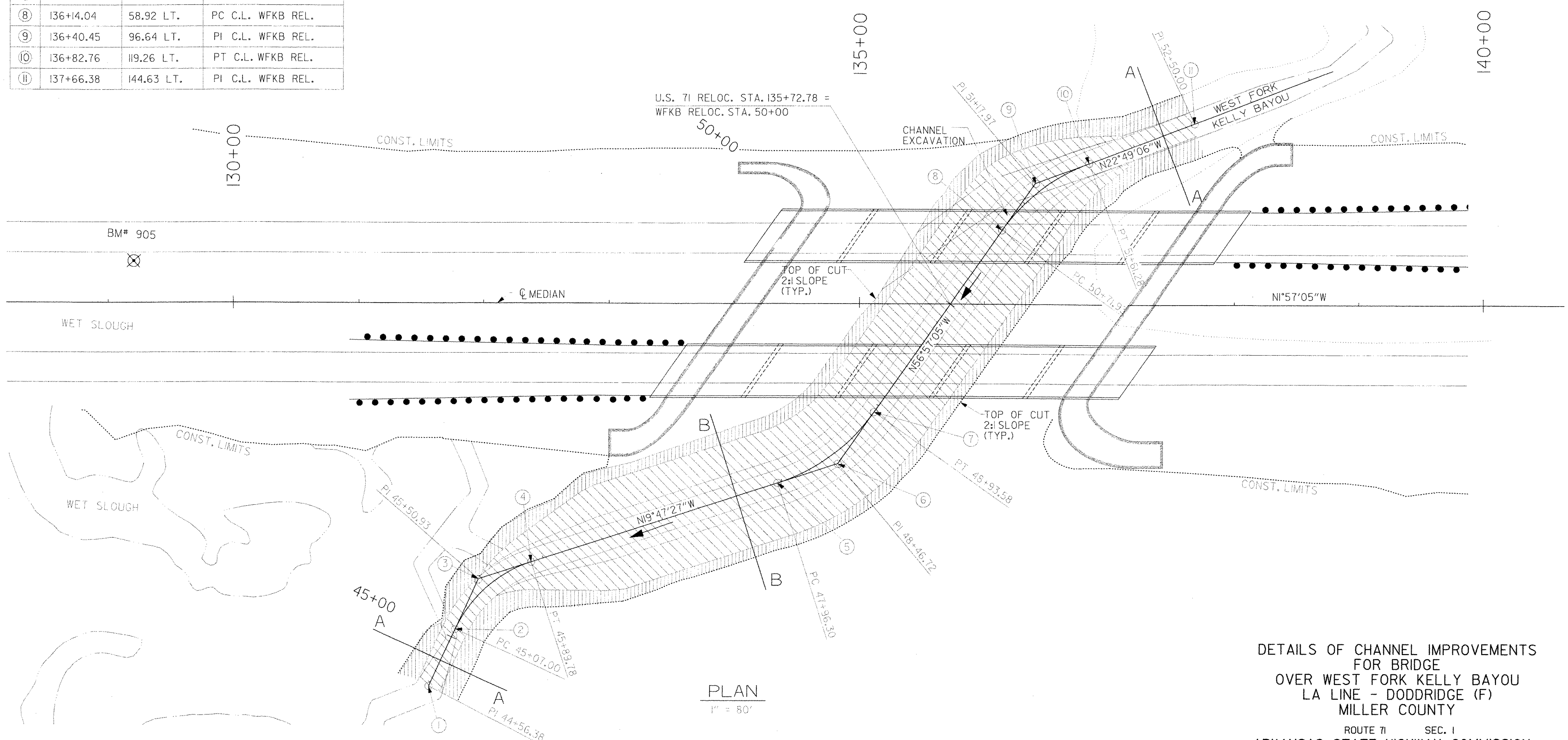
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	18	85
				A&B7121		CHANNEL IMPROVEMENTS		49558

POINT LOCATIONS			
PT.	C.L. MEDIAN STATION	C.L. MEDIAN OFFSET	DESCRIPTION
1	131+56.86	306.52 RT.	PI C.L. WFKB REL.
2	131+78.04	260.54 RT.	PC C.L. WFKB REL.
3	131+96.41	220.64 RT.	PI C.L. WFKB REL.
4	132+38.23	207.18 RT.	PT C.L. WFKB REL.
5	134+34.82	143.92 RT.	PC C.L. WFKB REL.
6	134+82.82	128.47 RT.	PI C.L. WFKB REL.
7	135+11.74	87.17 RT.	PT C.L. WFKB REL.
8	136+14.04	58.92 LT.	PC C.L. WFKB REL.
9	136+40.45	96.64 LT.	PI C.L. WFKB REL.
10	136+82.76	119.26 LT.	PT C.L. WFKB REL.
11	137+66.38	144.63 LT.	PI C.L. WFKB REL.



TYPICAL CHANNEL SECTIONS

A synthetic fiber geotextile fabric complying with the requirements of Section 816.02(e) shall be used beneath the dumped riprap on the relocated channel. The Contractor has the option of using either the aggregate filter blanket or the geotextile fabric on the embankment at the bridge ends.



PLAN
1" = 80'

FOR INFORMATION ONLY
CONSTRUCTED UNDER PREVIOUS ROADWAY CONTRACT 030353

DETAILS OF CHANNEL IMPROVEMENTS
FOR BRIDGE
OVER WEST FORK KELLY BAYOU
LA LINE - DODDRIDGE (F)
MILLER COUNTY

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: TAR DATE: 11-05 FILENAME: ..\B030355M1_LJ2.dgn
CHECKED BY: MAD DATE: 6-07 SCALE: AS SHOWN
DESIGNED BY: EMB/MKJ DATE: 11-05

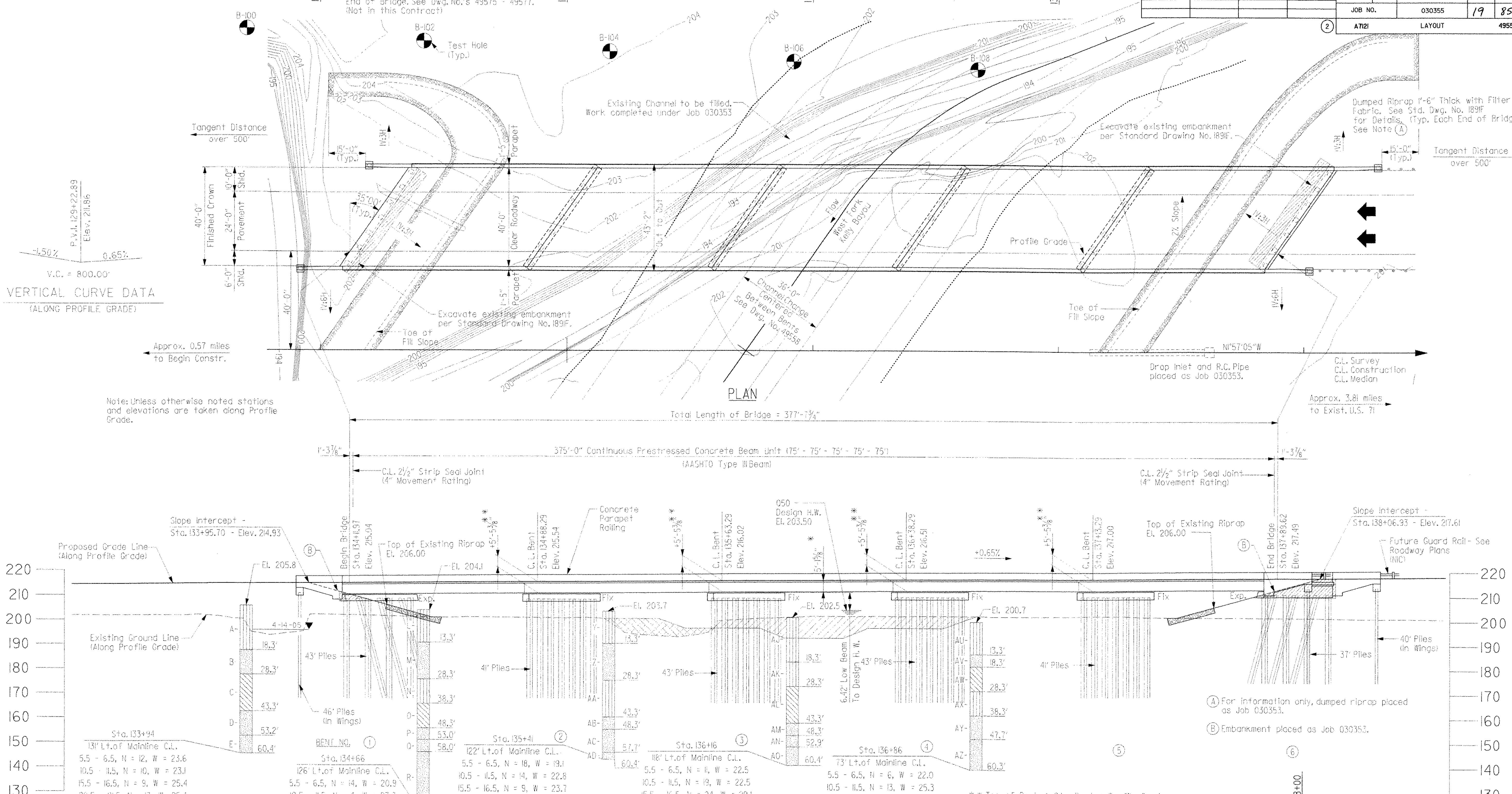
BRIDGE NO. A&B7121 DRAWING NO. 49558

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS

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.		030355	19	85
				A7121		LAYOUT		49559

For R/W & T.C.E. Data, See Roadway Plans

Note: Use Type Special Approach Gutters ("W" = 6'-0" and ("W" = 10'-0") with Type Special Approach Slabs. Typical at Each End of Bridge. See Dwg. No.'s 49575 - 49577. (Not in this Contract)



B-100
B-102
Test Hole (Typ.)
B-104
B-106
B-108
Existing Channel to be filled. Work completed under Job 030353
Excavate existing embankment per Standard Drawing No. 1891F.
Dumped Riprap 1'-6" Thick with Filter Fabric. See Std. Dwg. No. 1891F for Details. (Typ. Each End of Bridge) See Note (A)
Tangent Distance over 500'
15'-0" (Typ.)
Parapet
Clear Roadway
Out to Out
Finished Crown
Pavement
Shld.
Profile Grade
Flow
West Fork Kelly Bayou
36'-0" Channel Change Centered Between Bents See Dwg. No. 49558
Toe of Fill Slope
2:1 Slope
Approx. 0.57 miles to Begin Constr.
N1°57'05"W
Drop Inlet and R.C. Pipe placed as Job 030353.
C.L. Survey
C.L. Construction
C.L. Median
P.V.I. 129+22.89
Elev. 211.86
-1.50%
0.65%
V.C. = 800.00'
VERTICAL CURVE DATA
(ALONG PROFILE GRADE)
PLAN
Approx. 3.81 miles to Exist. U.S. 71
Total Length of Bridge = 377'-7 3/4"
375'-0" Continuous Prestressed Concrete Beam Unit (75' - 75' - 75' - 75' - 75')
(AASHTO Type III Beam)
C.L. 2 1/2" Strip Seal Joint (4" Movement Rating)
Slope Intercept - Sta. 133+95.70 - Elev. 214.93
Proposed Grade Line (Along Profile Grade)
Begin Bridge Sta. 134+18.97 Elev. 215.04
Top of Existing Riprap El. 206.00
C.L. Bent Sta. 134+88.29 Elev. 215.54
Concrete Parapet Railing
C.L. Bent Sta. 135+63.29 Elev. 216.02
Q50 - Design H.W. El. 203.50
C.L. Bent Sta. 136+38.29 Elev. 216.51
+0.65%
C.L. Bent Sta. 137+13.29 Elev. 217.00
Top of Existing Riprap El. 206.00
End Bridge Sta. 137+89.62 Elev. 217.49
Slope Intercept - Sta. 138+06.93 - Elev. 217.61
Future Guard Rail - See Roadway Plans (NIC)
Existing Ground Line (Along Profile Grade)
43' Piles
46' Piles (In Wings)
41' Piles
43' Piles
41' Piles
37' Piles
40' Piles (In Wings)
6.42' Low Beam To Design H.W.

Note: Unless otherwise noted stations and elevations are taken along Profile Grade.

Sta. 133+94
131' Lt. of Mainline C.L.
5.5 - 6.5, N = 12, W = 23.6
10.5 - 11.5, N = 10, W = 23.1
15.5 - 16.5, N = 9, W = 25.4
20.5 - 21.5, N = 13, W = 25.4
25.5 - 26.5, N = 20, W = 25.3
30.5 - 31.5, N = 21, W = 24.1
35.5 - 36.5, N = 18, W = 26.9
40.5 - 41.5, N = 19, W = 23.9
45.5 - 46.5, N = 9, W = 24.8
50.5 - 51.3, N = 100+, W = 26.2
55.0 - 55.6, N = 100+, W = 22.4
60.0 - 60.4, N = 100+, W = 24.1

BENT NO. (1)
Sta. 134+66
126' Lt. of Mainline C.L.
5.5 - 6.5, N = 14, W = 20.9
10.5 - 11.5, N = 4, W = 27.7
15.5 - 16.5, N = 15, W = 27.3
20.5 - 21.5, N = 11, W = 24.7
25.5 - 26.5, N = 15, W = 23.7
30.5 - 31.5, N = 21, W = 22.1
35.5 - 36.5, N = 32, W = 25.6
40.5 - 41.5, N = 30, W = 20.3
45.5 - 46.5, N = 14, W = 28.6
50.0 - 50.9, N = 100+, W = 29.2
55.0 - 55.9, N = 100+, W = 28.2
60.0 - 60.8, N = 100+, W = 24.4
65.0 - 65.8, N = 100+, W = 27.3
70.5 - 71.5, N = 100+, W = 34.1
75.5 - 76.4, N = 100+, W = 27.8
80.0 - 80.4, N = 100+, W = 29.1

Sta. 135+41 (2)
122' Lt. of Mainline C.L.
5.5 - 6.5, N = 18, W = 19.1
10.5 - 11.5, N = 14, W = 22.8
15.5 - 16.5, N = 5, W = 23.7
20.5 - 21.5, N = 3, W = 23.0
25.5 - 26.5, N = 14, W = 20.1
30.5 - 31.5, N = 33, W = 22.8
35.5 - 36.5, N = 55, W = 25.9
40.5 - 41.5, N = 50, W = 21.4
45.5 - 46.5, N = 100+, W = 26.6
50.0 - 50.7, N = 100+, W = 23.5
55.0 - 55.3, N = 100+, W = 25.5
60.0 - 60.4, N = 100+, W = 21.4

Sta. 136+16 (3)
118' Lt. of Mainline C.L.
5.5 - 6.5, N = 11, W = 22.5
10.5 - 11.5, N = 19, W = 22.5
15.5 - 16.5, N = 24, W = 29.1
20.5 - 21.5, N = 26, W = 24.3
25.5 - 26.5, N = 34, W = 21.1
30.5 - 31.5, N = 18, W = 21.6
35.5 - 36.5, N = 34, W = 25.4
40.5 - 41.5, N = 35, W = 18.5
45.5 - 46.5, N = 60, W = 23.2
50.0 - 50.8, N = 100+, W = 28.6
55.0 - 55.7, N = 100+, W = 24.5
60.0 - 60.4, N = 100+, W = 24.1

Sta. 136+86 (4)
73' Lt. of Mainline C.L.
5.5 - 6.5, N = 6, W = 22.0
10.5 - 11.5, N = 13, W = 25.3
15.5 - 16.5, N = 25, W = 26.3
20.5 - 21.5, N = 55, W = 22.6
25.5 - 26.5, N = 57, W = 19.3
30.5 - 31.5, N = 72, W = 27.1
35.5 - 36.5, N = 60, W = 25.4
40.5 - 41.5, N = 55, W = 22.8
45.0 - 45.4, N = 100+, W = 26.5
50.0 - 50.4, N = 100+, W = 23.5
55.0 - 55.4, N = 100+, W = 24.3
60.0 - 60.3, N = 100+, W = 27.3

ELEVATION

(A) For information only, dumped riprap placed as Job 030353.

(B) Embankment placed as Job 030353.

** Top of Deck @ C.L. Bent @ Profile Grade to low side Top of Cap

* Top of Deck @ Profile Grade to Low Beam

For Borings Legend See Dwg. No. 49561

For General Notes See Dwg. No. 49561

For Hydraulic Data See Dwg. No. 49561

REGISTERED PROFESSIONAL ENGINEER No. 12097 — JEFFERY SCOTT MULLINS — 8-15-2011

BRIDGE ENGINEER

BRIDGE A
LAYOUT OF BRIDGE
OVER WEST FORK KELLY BAYOU
LA LINE - DODDRIDGE (F)
MILLER COUNTY

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: TAR/MAD	DATE: 11-05/6-07	FILENAME: \B030355A1_L1I.dgn	
CHECKED BY: MAD	DATE: 6-07	SCALE: 1" = 20'	
DESIGNED BY: EMB/MKJ	DATE: 11-05		
BRIDGE NO. A7121		DRAWING NO. 49559	

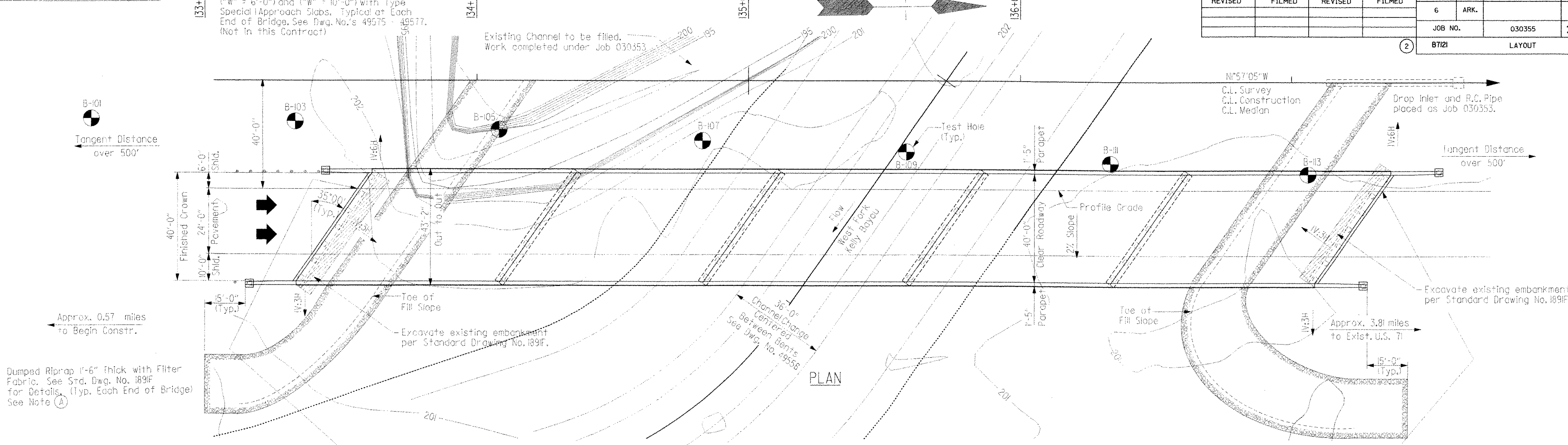
PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS

N:\struct\Arkansas\Final_030305\Site\A&B_West Fork\B030355A1_L1I.dgn 8/15/2011 3:51:11 PM

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.		030355	20	85
				B7121		LAYOUT		49560

For R/W & T.C.E. Data, See Roadway Plans

Note: Use Type Special I Approach Gutters ("W" = 6'-0") and ("W" = 10'-0") with Type Special I Approach Slabs. Typical at Each End of Bridge. See Dwg. No.'s 49575 - 49577. (Not in this Contract)

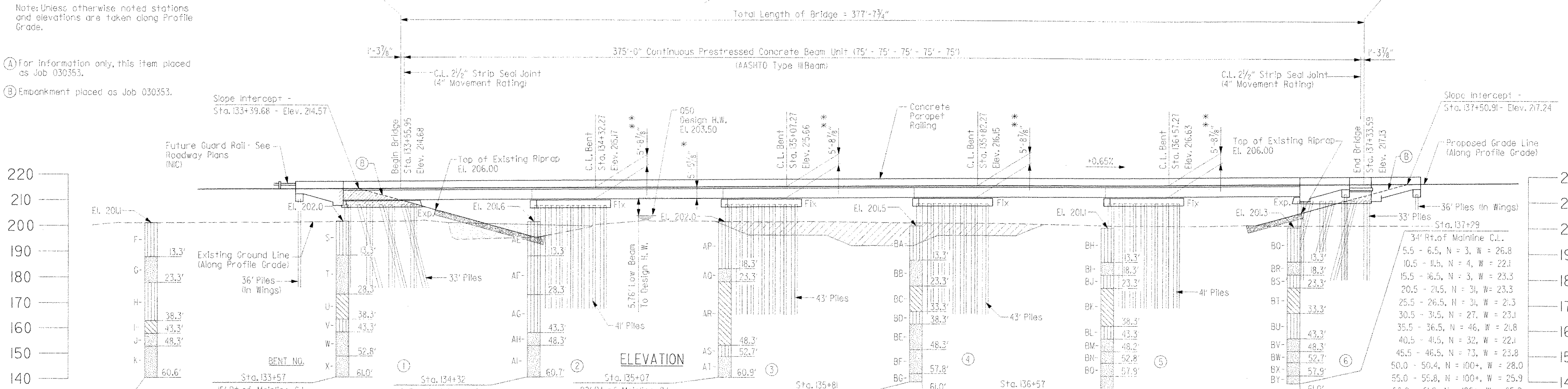


Existing Channel to be filled. Work completed under Job 030353.
B-101
B-103
B-105
B-107
B-109
B-111
B-113
Tangent Distance over 500'
Test Hole (Typ.)
N1°57'05"W
C.L. Survey
C.L. Construction
C.L. Median
Drop Inlet and R.C. Pipe placed as Job 030353.
Profile Grade
2% Slope
Flow
West Fork Kelly Bayou
36'-0" Channel Change Centered Between Bents See Dwg. No. 49556
Toe of Fill Slope
Excavate existing embankment per Standard Drawing No. 1891F.
Approx. 0.57 miles to Begin Constr.
Approx. 3.81 miles to Exist. U.S. 71
15'-0" (Typ.)
Dumped Riprap 1'-6" Thick with Filter Fabric. See Std. Dwg. No. 1891F for Details. (Typ. Each End of Bridge) See Note (A)
PLAN

Note: Unless otherwise noted stations and elevations are taken along Profile Grade.

(A) For information only, this item placed as Job 030353.

(B) Embankment placed as Job 030353.



Total Length of Bridge = 377'-7¾"
375'-0" Continuous Prestressed Concrete Beam Unit (75' - 75' - 75' - 75' - 75')
(AASHTO Type III Beam)
C.L. 2½" Strip Seal Joint (4" Movement Rating)
Slope Intercept - Sta. 133+39.68 - Elev. 214.57
Slope Intercept - Sta. 137+50.91 - Elev. 217.24
Future Guard Rail - See Roadway Plans (NIC)
Begin Bridge Sta. 133+55.95 Elev. 214.68
End Bridge Sta. 137+33.59 Elev. 217.13
Top of Existing Riprap El. 206.00
Q50 Design H.W. El. 203.50
Concrete Parapet Railing
+0.65%
Proposed Grade Line (Along Profile Grade)
Existing Ground Line (Along Profile Grade)
36' Piles (In Wings)
33' Piles
41' Piles
43' Piles
5.76' Low Beam To Design H.W.
ELEVATION

Sta. 132+82
14' Rt. of Mainline C.L.

5.5 - 6.5,	N = 5,	W = 18.6
10.5 - 11.5,	N = 5,	W = 23.8
15.5 - 16.5,	N = 5,	W = 25.1
20.5 - 21.5,	N = 3,	W = 28.5
25.5 - 26.5,	N = 26,	W = 19.5
30.5 - 31.5,	N = 26,	W = 29.8
35.5 - 36.5,	N = 32,	W = 24.3
40.5 - 41.5,	N = 26,	W = 25.0
45.5 - 46.5,	N = 60,	W = 26.7
50.0 - 50.4,	N = 100+,	W = 23.1
55.0 - 55.7,	N = 100+,	W = 24.5
60.0 - 60.6,	N = 100+,	W = 25.5

Sta. 133+57 (Bent No. 1)
15' Rt. of Mainline C.L.

5.5 - 6.5,	N = 4,	W = 25.1
10.5 - 11.5,	N = 9,	W = 19.7
15.5 - 16.5,	N = 2,	W = 23.3
20.5 - 21.5,	N = 6,	W = 23.9
25.5 - 26.5,	N = 30,	W = 19.8
30.5 - 31.5,	N = 18,	W = 28.4
35.5 - 36.5,	N = 29,	W = 25.6
40.5 - 41.5,	N = 23,	W = 20.1
45.5 - 46.5,	N = 18,	W = 27.7
50.0 - 50.5,	N = 100+,	W = 28.2
55.5 - 56.0,	N = 100+,	W = 26.2
60.5 - 61.0,	N = 100+,	W = 28.3

Sta. 134+32
18' Rt. of Mainline C.L.

5.5 - 6.5,	N = 6,	W = 20.4
10.5 - 11.5,	N = 4,	W = 21.5
15.5 - 16.5,	N = 4,	W = 24.2
20.5 - 21.5,	N = 28,	W = 23.4
25.5 - 26.5,	N = 30,	W = 22.1
30.5 - 31.5,	N = 28,	W = 21.9
35.5 - 36.5,	N = 31,	W = 24.8
40.5 - 41.5,	N = 29,	W = 19.6
45.5 - 46.5,	N = 30,	W = 23.7
50.0 - 50.8,	N = 100+,	W = 28.0
55.0 - 55.9,	N = 100+,	W = 28.5
60.0 - 60.7,	N = 100+,	W = 23.5

Sta. 135+07
22' Rt. of Mainline C.L.

5.5 - 6.5,	N = 8,	W = 27.3
10.5 - 11.5,	N = 15,	W = 22.6
15.5 - 16.5,	N = 20,	W = 26.4
20.5 - 21.5,	N = 14,	W = 25.1
25.5 - 26.5,	N = 41,	W = 22.9
30.5 - 31.5,	N = 39,	W = 22.6
35.5 - 36.5,	N = 63,	W = 23.6
40.5 - 41.5,	N = 37,	W = 21.1
45.5 - 46.5,	N = 44,	W = 22.1
50.5 - 51.5,	N = 100+,	W = 28.8
55.0 - 55.4,	N = 100+,	W = 23.2
60.0 - 60.9,	N = 100+,	W = 24.5

Sta. 135+81
26' Rt. of Mainline C.L.

5.5 - 6.5,	N = 3,	W = 27.9
10.5 - 11.5,	N = 9,	W = 19.2
15.5 - 16.5,	N = 5,	W = 24.7
20.5 - 21.5,	N = 40,	W = 25.6
25.5 - 26.5,	N = 47,	W = 25.2
30.5 - 31.5,	N = 29,	W = 23.5
35.5 - 36.3,	N = 100+,	W = 30.2
40.5 - 41.5,	N = 53,	W = 23.2
45.5 - 46.5,	N = 62,	W = 21.1
50.0 - 50.4,	N = 100+,	W = 29.0
55.0 - 55.5,	N = 100+,	W = 27.1
60.5 - 61.0,	N = 100+,	W = 26.5

Sta. 136+57
30' Rt. of Mainline C.L.

5.5 - 6.5,	N = 3,	W = 21.1
10.5 - 11.5,	N = 4,	W = 20.9
15.5 - 16.5,	N = 13,	W = 22.1
20.5 - 21.5,	N = 42,	W = 27.0
25.5 - 26.5,	N = 32,	W = 21.1
30.5 - 31.5,	N = 25,	W = 20.4
35.5 - 36.5,	N = 58,	W = 21.9
40.5 - 41.5,	N = 37,	W = 19.4
45.5 - 46.4,	N = 100+,	W = 22.3
50.0 - 50.6,	N = 100+,	W = 31.1
55.0 - 55.8,	N = 100+,	W = 24.9
60.0 - 60.5,	N = 100+,	W = 27.2
65.5 - 66.5,	N = 72,	W = 30.5
70.5 - 71.5,	N = 40,	W = 29.0
75.5 - 76.5,	N = 42,	W = 28.8
80.5 - 81.5,	N = 52,	W = 26.7

Sta. 137+29
34' Rt. of Mainline C.L.

5.5 - 6.5,	N = 3,	W = 26.8
10.5 - 11.5,	N = 4,	W = 22.1
15.5 - 16.5,	N = 3,	W = 23.3
20.5 - 21.5,	N = 31,	W = 23.3
25.5 - 26.5,	N = 31,	W = 21.3
30.5 - 31.5,	N = 27,	W = 23.1
35.5 - 36.5,	N = 46,	W = 21.8
40.5 - 41.5,	N = 32,	W = 22.1
45.5 - 46.5,	N = 73,	W = 23.8
50.0 - 50.4,	N = 100+,	W = 28.0
55.0 - 55.8,	N = 100+,	W = 25.9
60.0 - 61.0,	N = 100+,	W = 25.0

For Borings Legend See Dwg. No. 49561

** Top of Deck @ C.L. Bent @ Profile Grade to low side Top of Cap

* Top of Deck @ Profile Grade to Low Beam

For General Notes See Dwg. No. 49561

For Hydraulic Data See Dwg. No. 49561

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFERY SCOTT MULLIKEN

8-15-2011

BRIDGE ENGINEER

BRIDGE B
LAYOUT OF BRIDGE
OVER WEST FORK KELLY BAYOU
LA LINE - DODDRIDGE (F)
MILLER COUNTY

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: TAR/MAD DATE: 11-05/6-07 FILENAME: b030355B1_Ll.dgn
CHECKED BY: MAD DATE: 6-07 SCALE: 1" = 20'
DESIGNED BY: EMB/MKJ DATE: 11-05

BRIDGE NO. B7121 DRAWING NO. 49560

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS

N:\struct\Arkansas\Final_030355\Sheets\A&B_West Fork\b030355B1_Ll.dgn 8/15/2011 3:51:30 PM

$$$$date$$$$

A - Beige, Light Gray & Gray, Stiff Sandy Silt
B - Gray & Beige, Medium Dense Silty Sand
C - Dark Greenish Gray, Olive Gray & Dark Gray, Very Stiff Lean Clay
D - Dark Gray, Loose to Very Dense Silty Sand
E - Gray & Dark Gray, Very Dense Poorly Graded Sand with Silt
F - Gray, Beige & Brown, Medium Stiff Sandy Silt
G - Dark Gray, Very Loose to Loose Silty Sand
H - Dark Gray & Dark Greenish Gray, Very Stiff to Hard Silt with Sand
I - Dark Greenish Gray, Very Stiff Lean Clay
J - Dark Gray, Very Dense Silty Sand
K - Dark Gray & Dark Beige, Very Dense Poorly Graded Sand with Silt
L - Light Gray, Gray, Yellowish Orange, Beige & Brown, Soft to Stiff Sandy Silt
M - Beige, Dark Gray, Black & Dark Brown, Medium Dense Silty Sand
N - Dark Gray & Dark Beige, Very Stiff to Hard Silt with Sand
O - Dark Gray, Dark Greenish Gray & Olive Gray, Stiff to Very Stiff Lean Clay
P - Olive Gray, Very Dense Silty Sand
Q - Dark Brown & Dark Gray, Very Dense Poorly Graded Sand with Silt
R - Copper, Gray, Dark Yellowish Orange, Olive Gray & Dark Olive Gray, Very Dense Silty Sand
S - Gray, Brown & Dark Beige, Soft to Stiff Sandy Silt
T - Olive Gray & Dark Gray, Very Loose to Medium Dense Silty Sand
U - Olive Gray, Dark Gray & Dark Greenish Gray, Very Stiff Lean Clay
V - Dark Gray, Very Stiff Silt
W - Dark Gray, Olive Gray & Light Gray, Medium Dense to Very Dense Silty Sand
X - Dark Gray, Olive Gray & Gray, Very Dense Silty Sand
Y - Light Gray & Tan, Stiff to Very Stiff Sandy Silt
Z - Dark Gray, Very Loose to Medium Dense Silty Sand
AA - Dark Gray, Hard Silt
AB - Olive Gray, Very Dense Silty Sand
AC - Dark Gray & Dark Brown, Very Dense Well-Graded Sand with Silt
AD - Dark Gray & Gray, Very Dense Poorly Graded Sand with Silt
AE - Gray, Beige, Light Gray & Brown, Soft to Medium Stiff Sandy Silt
AF - Olive Gray, Dark Greenish Gray, Gray, Dark Gray & Light Beige, Soft to Very Stiff Silt with Sand
AG - Olive Gray & Black, Very Stiff to Hard Silt
AH - Olive Gray, Dense Silty Sand
AI - Dark Gray & Gray, Very Dense Well-Graded Sand with Silt
AJ - Light Gray, Beige, Tan & Dark Yellowish Orange, Stiff to Very Stiff Sandy Silt
AK - Olive Gray, Dark Beige & Dark Gray, Very Stiff to Hard Silt with Sand
AL - Olive Gray, Dark Greenish Gray & Dark Gray, Very Stiff to Hard Lean Clay
AM - Olive Gray, Very Dense Silty Sand
AN - Dark Gray & Dark Brown, Very Dense Well-Graded Sand with Silt
AO - Dark Gray, Gray & Copper, Very Dense Poorly Graded Sand with Silt
AP - Gray, Brown, Tan & Beige, Medium Stiff to Very Stiff Sandy Silt
AQ - Dark Gray & Dark Brown, Medium Dense Silty Sand
AR - Dark Greenish Gray, Olive Gray, Dark Gray & Gray, Hard to Very Hard Lean Clay
AS - Dark Gray, Very Hard Silt
AT - Dark Gray, Tan & Copper, Very Dense Poorly Graded Sand with Silt
AU - Beige, Light Gray & Tan, Medium Stiff to Stiff Sandy Silt
AV - Copper & Dark Reddish Brown, Medium Dense Silty Sand
AW - Olive Gray, Dark Greenish Gray & Dark Gray, Hard Lean Clay
AX - Dark Gray, Hard to Very Hard Silt
AY - Olive Gray, Very Dense Silty Sand
AZ - Dark Gray, Gray & Dark Brown, Very Dense Poorly Graded Sand with Silt
BA - Beige & Gray, Soft to Stiff Sandy Silt
BB - Dark Beige & Dark Brown, Loose to Dense Silty Sand
BC - Light Olive Gray & Dark Greenish Gray, Very Stiff to Hard Lean Clay
BD - Dark Gray & Brown, Very Hard Silt
BE - Dark Gray & Olive Gray, Very Dense Silty Sand
BF - Dark Gray & Gray, Very Dense Well-Graded Sand with Silt
BG - Dark Gray & Light Gray, Very Dense Poorly Graded Sand with Silt
BH - Gray & Brown, Soft Sandy Silt
BI - Tan, Medium Dense Silty Sand
BJ - Dark Gray & Dark Beige, Hard Silt with Sand
BK - Dark Gray, Olive Gray, Light Gray & Dark Greenish Gray, Very Stiff to Hard Lean Clay
BL - Dark Gray, Hard Silt
BM - Olive Gray, Very Dense Silty Sand
BN - Copper & Dark Gray, Very Dense Well-Graded Sand with Silt
BO - Dark Gray, Very Dense Poorly Graded Sand with Silt
BP - Gray, Dark Gray & Copper, Dense to Very Dense Well-Graded Sand with Silt
BQ - Gray, Black, Dark Beige & Brown, Soft Sandy Silt
BR - Dark Gray, Very Loose Silty Sand
BS - Olive Gray, Dark Brown & Greenish Gray, Hard Silt with Sand
BT - Olive Gray & Light Gray, Very Stiff to Hard Lean Clay
BU - Gray & Dark Gray, Hard Silt
BV - Dark Gray, Very Dense Silty Sand
BW - Dark Gray, Very Dense Well-Graded Sand with Silt
BX - Dark Gray, Very Dense Poorly Graded Sand with Silt
BY - Dark Gray, Very Dense Well-Graded Sand with Silt

W = Molsture Content

HYDRAULIC DATA

Drainage Area = 27.7 Square Miles

FLOOD	FREQUENCY	DISCHARGE (C.F.S.)	▲NATURAL WATER SURFACE ELEV.	WATER SURFACE ELEVATION W/BACKWATER
Description	Years	C.F.S.	Feet	Feet
Design Flood	50	5392	203.50	204.32
Basic Flood	100	6309	203.81	204.83
Extreme Flood	500	8801	204.49	205.96
Overtopping	>500	----	----	----

Low Bridge Member Elevation = 209.92 Bridge A
= 209.26 Bridge B

▲ Unconstricted Water Surface Without Structure Or Roadway Approaches.

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.		030355	21	85
				(2) A&B7121		GENERAL NOTES		49561

GENERAL NOTES

BENCH MARK: Railroad spike in base of 30" twin oak tree.
N = 1448813.3 plus/minus, E = 729784.1 plus/minus, Sta. 129+20.8, 47.5' right, Elev. = 206.00'

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 LOAD: HS20 & MILITARY LOADING METHOD OF DESIGN: Load Factor
SEISMIC PERFORMANCE CATEGORY: A

MATERIALS AND STRENGTHS:
Class S(AE) Concrete (Superstructure) f'c = 4,000 psi
Class S Concrete (Substructure) f'c = 3,500 psi
Class S Concrete (Prestressed Beams) f'c = 6,000 psi
Reinforcing Steel (AASHTO M31 or M53, Gr, 60) fy = 60,000 psi
Structural Steel (AASHTO M270, Gr. 50W) Fy = 50,000 psi
Structural Steel (AASHTO M270, Gr. 36) Fy = 36,000 psi

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

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

CLASS I 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.

CONCRETE PILING:

Drive one test pile in Bent 1A - 6A and 1B - 6B. Test piles shallbe 5 feet longer than the estimated pile lengths shown on the layout. Lengths of piles shown are for estimating quantities only. Actual lengths to be determined in the field.

Driving System: The driving system approval and the ultimate bearing capacity determination for piling shallbe based on the requirements of Subsection 805.09(b) "Method B - Wave Equation Analysis (WEAP)" of the Standard Specifications. It is estimated that the minimum required rated energy of the hammer to obtain the minimum ultimate bearing capacity will be 70,000 foot pounds per blow for the 24" piles and 40,000 foot pounds per blow for the 16" piles.

INTERIOR BENTS:

Piling shall be 24" square prestressed concrete and shall be driven with an approved air, steam, or dieselhammer to a minimum ultimate bearing capacity of 220 tons. Piling in Bents 3 and 4 shall be driven after channel improvement has been made. All piling shall have a minimum tip elevation of 168.0 or lower.

Pile Design Capacity: 24" square prestressed concrete piles = 80 tons.

END BENTS:

Piling shall be 16" square prestressed concrete and shall be driven with an approved air, steam, or dieselhammer to a minimum ultimate bearing capacity of 150 tons. Piling shall not be driven until embankment to bottom of cap is in place. All piling shall have a minimum penetration of 20' below the bottom of cap.

Pile Design Capacity: 16" square prestressed concrete piles = 55 tons.

PREBORING: Preboring is required for all piles and test piles in Bents 2-5 to achieve minimum penetration requirements. Lengths of preboring shown are assumed for estimating quantities only. Size and actual depths of preboring to be determined by the Engineer. The Contractor shall be responsible for keeping prebored holes free from debris prior to backfilling which may require the use of temporary casings or other methods. Temporary casings, if necessary, will not be paid for directly but will be considered subsidiary to the Item "Preboring".

DETAIL DRAWINGS:	DRAWING NO.
End Bents	49562 - 49564
Intermediate Bents	49565 - 49566
375'-0" Cont. Prestressed Concrete Beam	49568 - 49572
Neoprene Strip Seal	49573
Elastomeric Bearing	49574
Type Special Approach Gutters	49575 and 49576
Type Special Approach Slab	49577
Concrete Piling	2383 & 49567

8-15-2011
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12097
JEFFERY SCOTT MILLIKEN

BRIDGE ENGINEER

GENERAL NOTES
BRIDGE OVER
WEST FORK KELLY BAYOU
LA LINE - DODDRIDGE (F)
MILLER COUNTY

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: TAP DATE: 11-05 FILENAME: \B030355MLI.dgn
CHECKED BY: MAB DATE: 8-5-11 SCALE: N.T.S.
DESIGNED BY: EMB/MAJ DATE: 11-05

BRIDGE NO. A&B7121 DRAWING NO. 49561

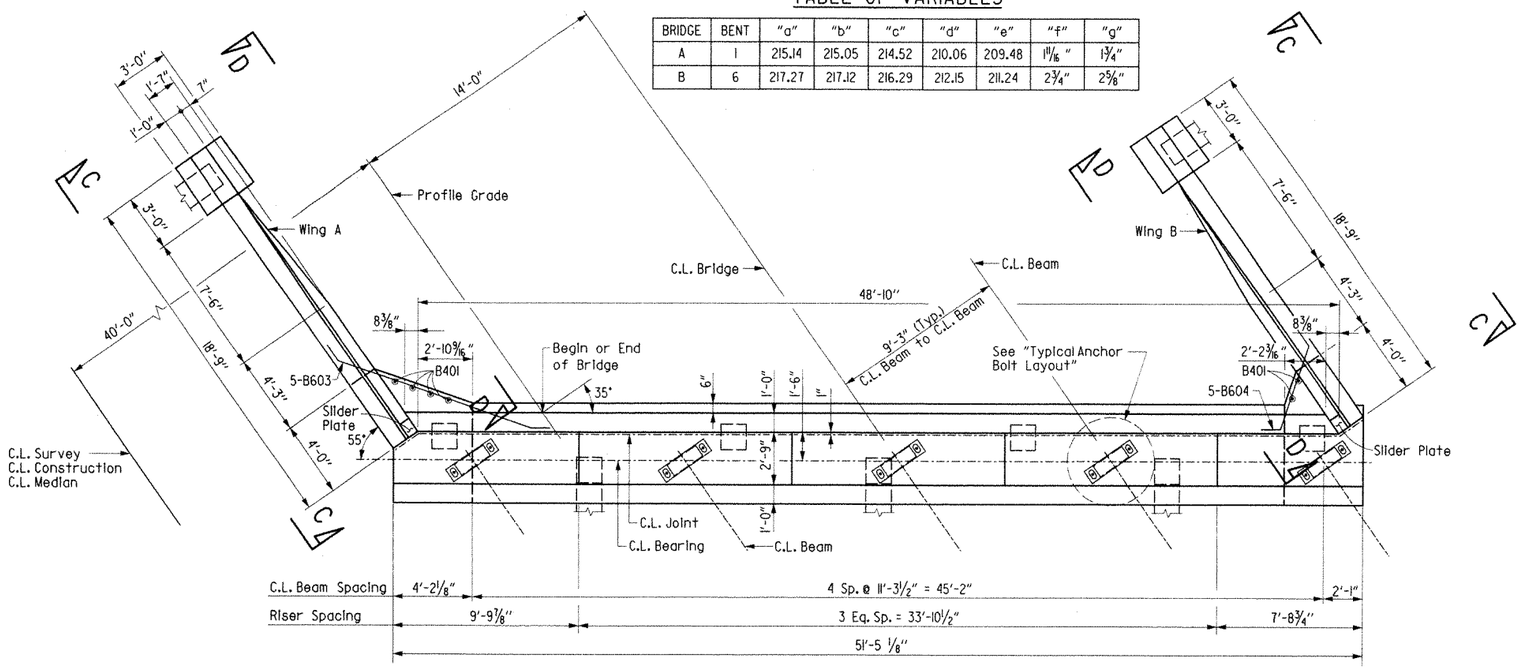
PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP

N:\Struct\Arkansas\Final_030305\Sht\A&B_West Fork\B030355MLI.dgn
8/15/2011 2:37:32 PM

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.		030355	22	85
				(2) A&B7121		END BENT DETAILS		49562

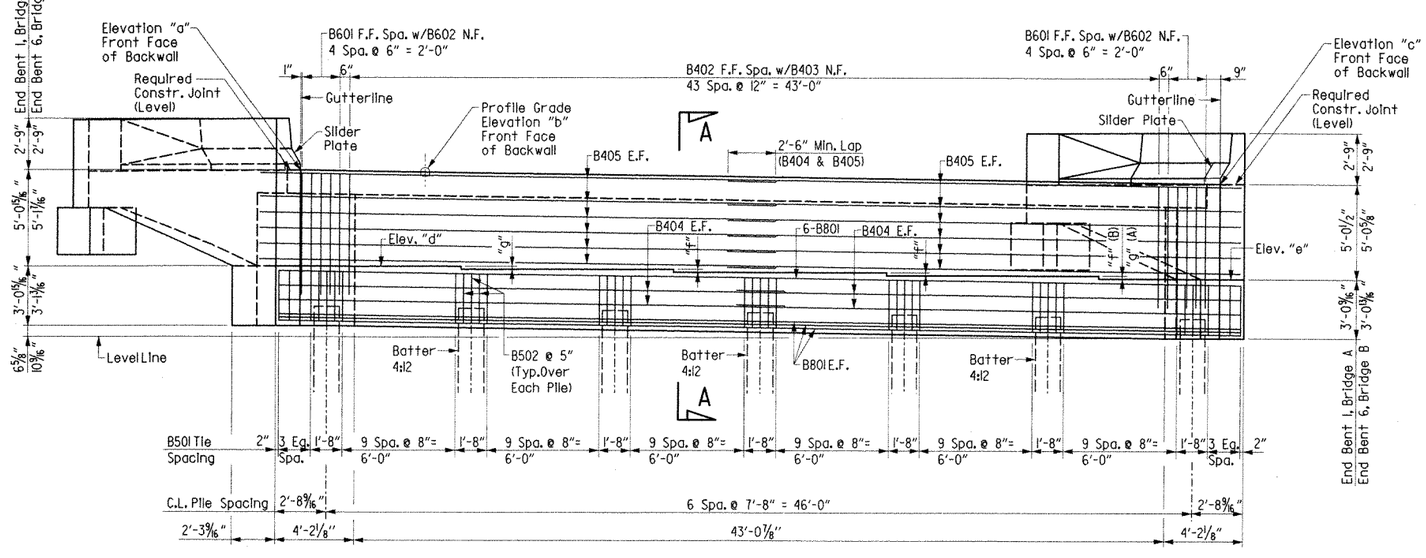
TABLE OF VARIABLES

BRIDGE	BENT	"a"	"b"	"c"	"d"	"e"	"f"	"g"
A	1	215.14	215.05	214.52	210.06	209.48	1 11/16"	1 3/4"
B	6	217.27	217.12	216.29	212.15	211.24	2 3/4"	2 5/8"



PLAN

Bridge A, End Bent 1 (Looking Back)
Bridge B, End Bent 6 (Looking Ahead)
1/4" = 1'-0"



ELEVATION

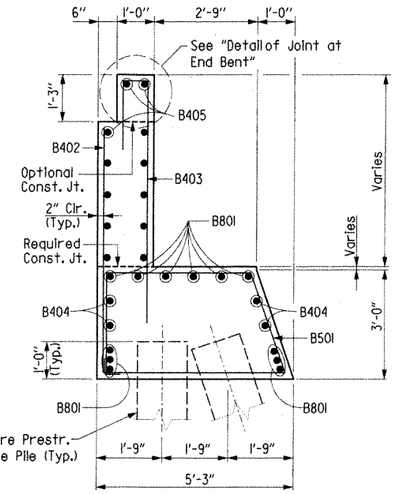
Bridge A, End Bent 1 (Looking Back)
Bridge B, End Bent 6 (Looking Ahead)
1/4" = 1'-0"

Note: For Details of Wing and Rail, and View C-C and D-D, See Dwg. No. 49564.

Note: For Bar List, See Dwg. No. 49564.

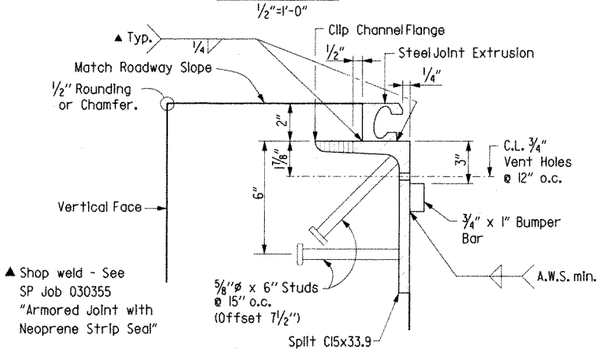
Note: For "Typical Anchor Bolt Layout", See Dwg. No. 49563.

Note: Class I Protective Surface Treatment shall be applied to the Roadway Face and Top of Transition Rail, and to the Top of the Backwall.



SECTION A-A

1/2"=1'-0"



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

For additional details, See Dwg. No. 49573.

DETAIL OF JOINT AT END BENT

No Scale

BRIDGE ENGINEER

SHEET 1 OF 3
DETAILS OF END BENTS
WEST FORK KELLY BAYOU

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

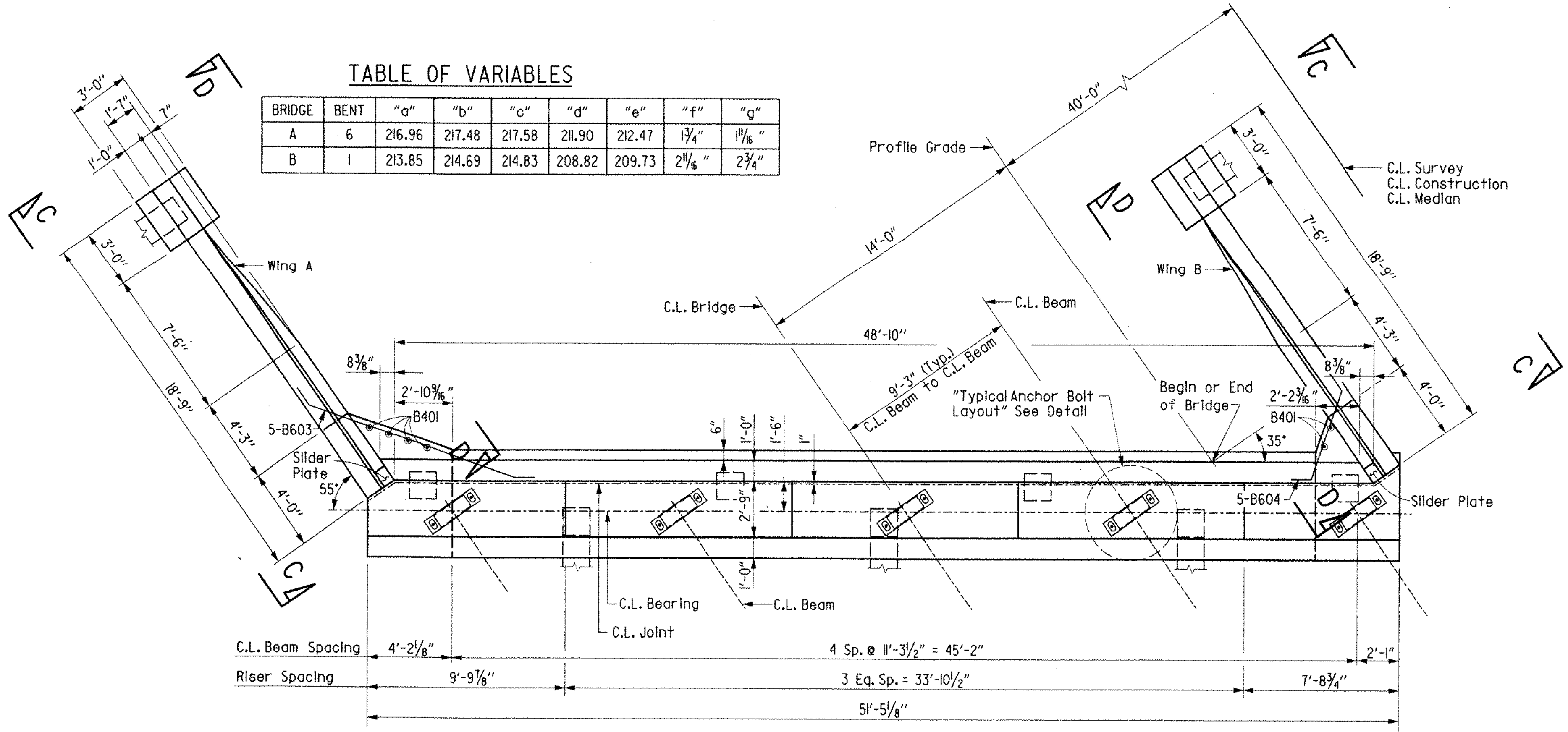
DRAWN BY: MAD/MWB DATE: 5-07
CHECKED BY: MWB DATE: 6-07
DESIGNED BY: AJP/SHR DATE: 4-07
FILENAME: \B030355x1.bldgn
SCALE: AS SHOWN

BRIDGE NO. A&B7121 DRAWING NO. 49562

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP
n:\Struct\arkansas\final_030355\sheets\b...west fork\B030355x1_bldgn
3.3.3.09 PM
8/15/2011

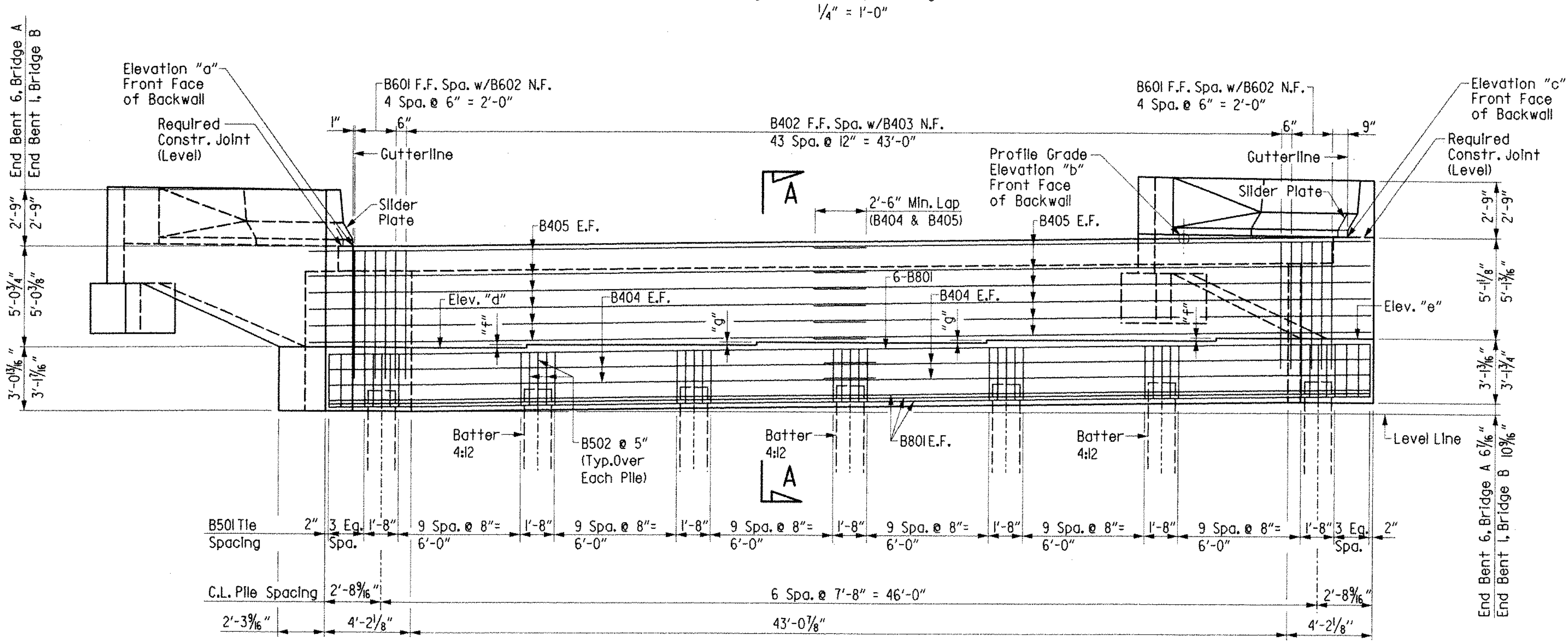
TABLE OF VARIABLES

BRIDGE	BENT	"a"	"b"	"c"	"d"	"e"	"f"	"g"
A	6	216.96	217.48	217.58	211.90	212.47	1¾"	1¹¹⁄₁₆"
B	1	213.85	214.69	214.83	208.82	209.73	2⁹⁄₁₆"	2¾"



PLAN

Bridge A, End Bent 6 (Looking Ahead)
Bridge B, End Bent 1 (Looking Back)
¼" = 1'-0"



ELEVATION

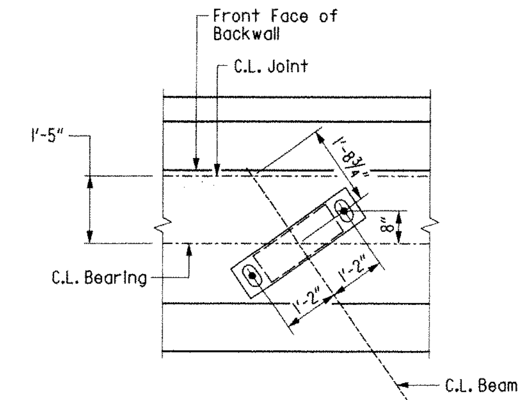
Bridge A, End Bent 6 (Looking Ahead)
Bridge B, End Bent 1 (Looking Back)
¼" = 1'-0"

Note: For Details of Wing and Rail, and View C-C and D-D, See Dwg. No. 49564.

Note: For Bar List, See Dwg. No. 49564.

Note: For Section A-A, See Dwg. No. 49562.

Note: Class 1 Protective Surface Treatment shall be applied to the Roadway Face and Top of Transition Rail, and to the Top of the Backwall.



TYPICAL ANCHOR BOLT LAYOUT

No Scale

SHEET 2 OF 3
DETAILS OF END BENTS
WEST FORK KELLY BAYOU

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MAD/MWB DATE: 5-07 FILENAME: ...\B030355xl_b2.dgn
CHECKED BY: MWB DATE: 6-07 SCALE: AS SHOWN
DESIGNED BY: AJP/SHR DATE: 4-07

BRIDGE NO. A&B7121 DRAWING NO. 49563

8-15-2011

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFREY SCOTT MULLIKEN

BRIDGE ENGINEER

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS

n:\struct\arkansas\final_0303055\sites\b_west fork\B030355xl_b2.dgn 8/15/2011 3:33:09 PM

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.		030355	24	85
			(1)	A&B7121		END BENT DETAILS		49564

GENERAL NOTES FOR SUBSTRUCTURE

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 ¾" unless otherwise noted.

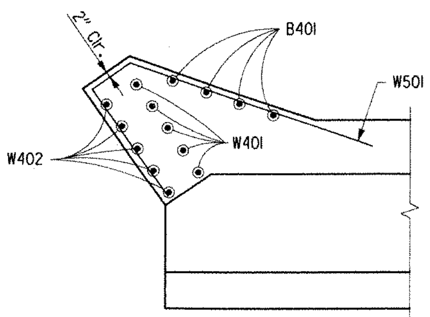
All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60 (yield strength = 60,000 psi).

Backwall above required construction joint shall not be poured before beams are in place. See Expansion Device Installation on Dwg. No. 49573 for additional details.

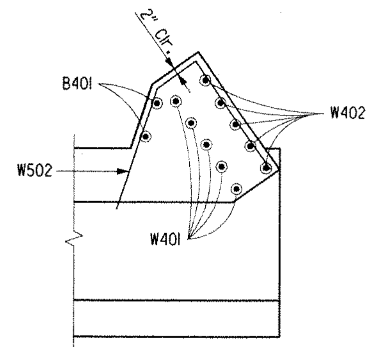
Structural steel in end bents shall be AASHTO M270, Grade 50W and shall be paid for as "STRUCTURAL STEEL IN BEAM SPANS (M270, Gr. 50W)". Gr. 50W steel shall not be painted unless noted otherwise. Cleaning and painting of the parapet slider plates shall be in accordance with Section 638 and will not be paid for directly but will be considered subsidiary to "STRUCTURAL STEEL IN BEAM SPANS (M270, GR. 50W)".

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

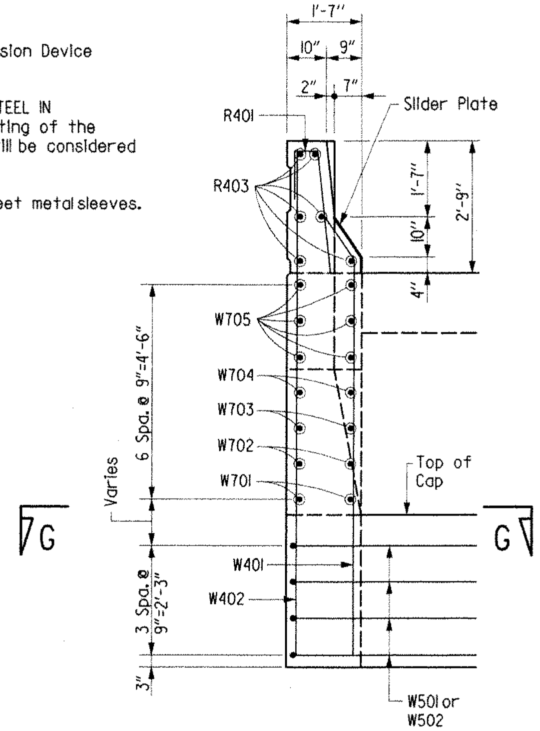
For additional information, see layout, Dwg. No.'s 49559 and 49560.



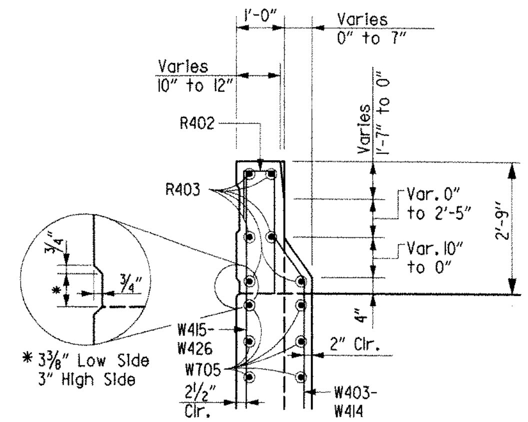
SECTION G-G (WING A)
3/8" = 1'-0"



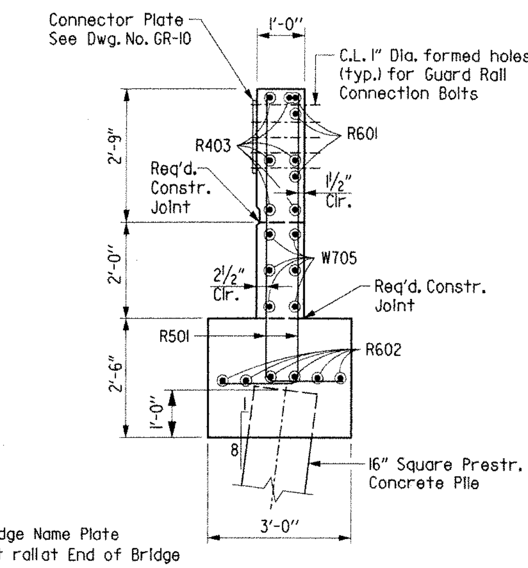
SECTION G-G (WING B)
3/8" = 1'-0"



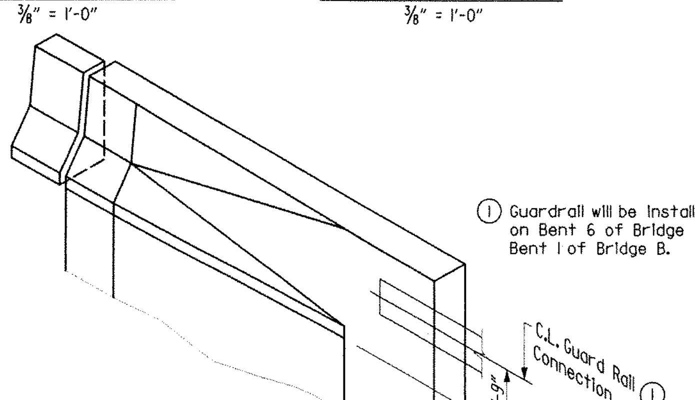
VIEW W-W
½" = 1'-0"



SECTION X-X
½" = 1'-0"

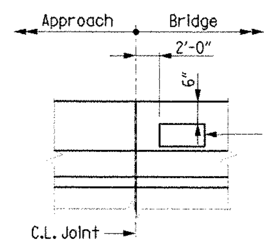


SECTION Y-Y
½" = 1'-0"



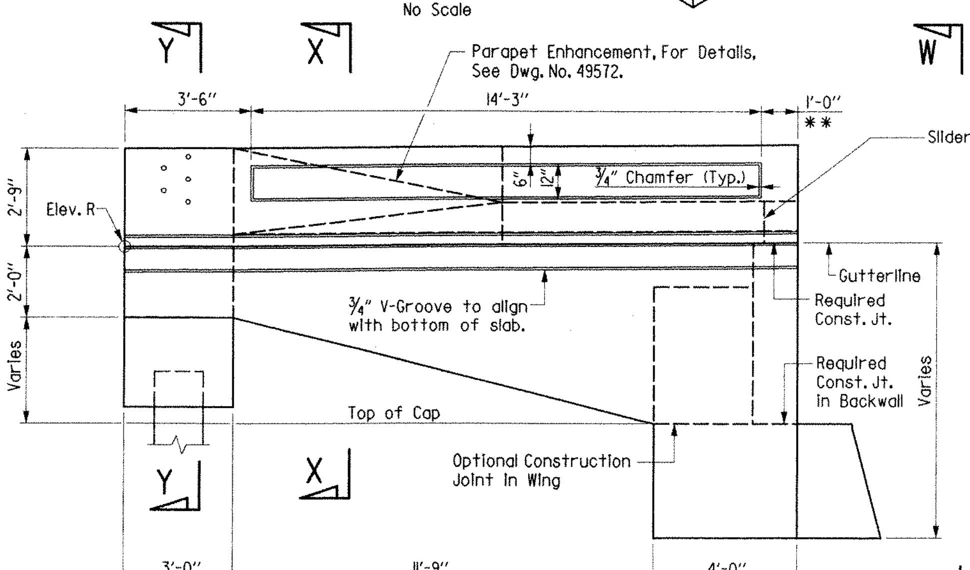
THREE DIMENSIONAL VIEW
WING RAIL AND PARAPET
No Scale

(1) Guardrail will be installed only on Bent 6 of Bridge A and on Bent 1 of Bridge B.



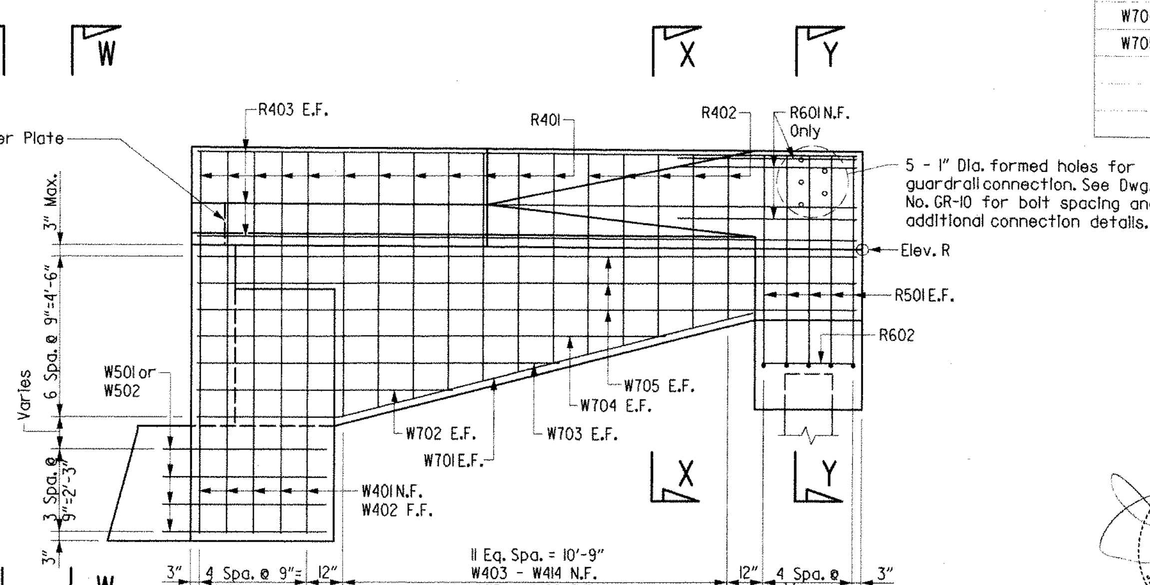
Place Type D Bridge Name Plate on right parapet rail at End of Bridge A and Beginning of Bridge B approx. 2'-0" from joint. (Right is defined when facing direction of travel.) See Std. Dwg. No. 2387.

NAME PLATE DETAIL
No Scale



VIEW C-C
3/8" = 1'-0"
Wing "A" shown
Wing "B" is opposite hand

** Parapet enhancement shall be made continuous if slip forms are used on bridge parapet rail.



VIEW D-D
3/8" = 1'-0"
Wing "A" shown
Wing "B" is opposite hand

BAR LIST-PER BENT

MARK	NO. REQ'D.	LENGTH	'A'	PIN DIA.
B401	6	6'-7"	--	Str.
B402	44	6'-7"	--	Str.
B403	44	8'-11"	--	2"
B404	8	26'-10"	--	Str.
B405	24	27'-5"	--	Str.
B501	68	14'-10"	--	2½"
B502	21	9'-3"	--	2½"
B601	10	6'-7"	--	Str.
B602	10	9'-4"	--	4½"
B603	5	12'-10"	--	4½"
B604	5	6'-8"	--	4½"
B801	12	51'-1"	--	Str.
R401	24	3'-11"	--	2"
R402	10	4'-0"	--	2"
R403	12	18'-5"	--	Str.
R501	20	7'-6"	--	3¾"
R601	6	5'-0"	--	Str.
R602	12	2'-8"	--	Str.
W401	10	9'-3"	--	3"
W402	10	10'-4"	--	Str.
W403 to W414	2 ea.	3'-5" to 6'-2"	2'-3" to 5'-0"	3"
W415 to W426	2 ea.	4'-7" to 7'-4"	--	Str.
W501	4	12'-0"	--	3¾"
W502	4	8'-6"	--	3¾"
W701	4	15'-11"	--	5¼"
W702	4	7'-2"	--	Str.
W703	4	10'-2"	--	Str.
W704	4	13'-1"	--	Str.
W705	12	18'-5"	--	Str.

BENDING DIAGRAMS
Dimensions are out to out of bars.

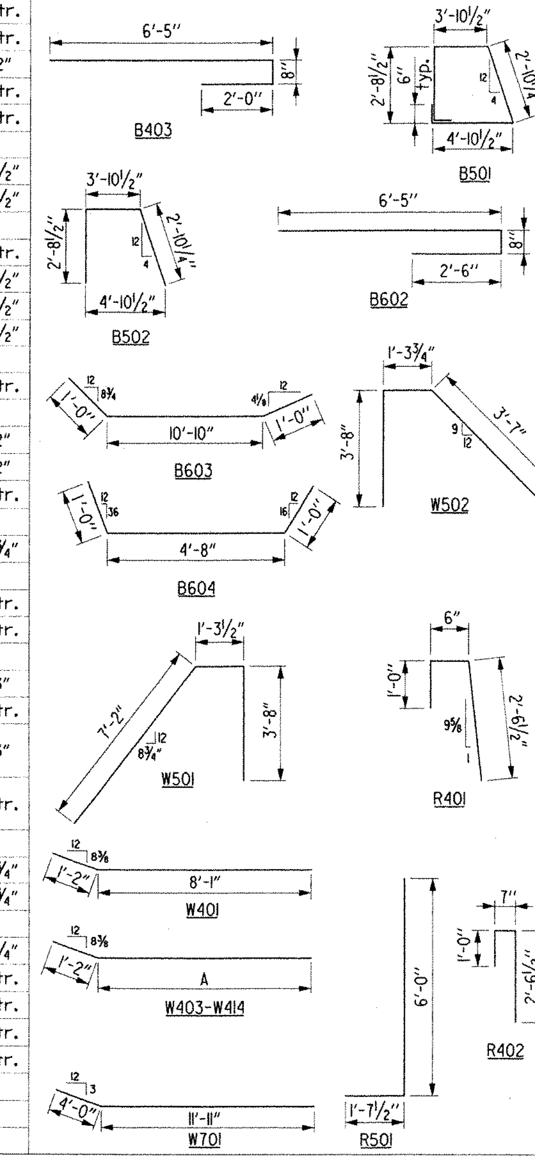


TABLE OF VARIABLES (ELEV. "R")

BRIDGE	BENT NO.	WING	ELEV.	BRIDGE	BENT NO.	WING	ELEV.
A	1	A	215.02	B	1	A	213.73
A	1	B	214.40	B	1	B	214.71
A	6	A	217.08	B	6	A	217.39
A	6	B	217.70	B	6	B	216.41

SHEET 3 OF 3
DETAILS OF END BENTS
WEST FORK KELLY BAYOU

8-15-2011
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFREY SCOTT MULLIKEN

BRIDGE ENGINEER

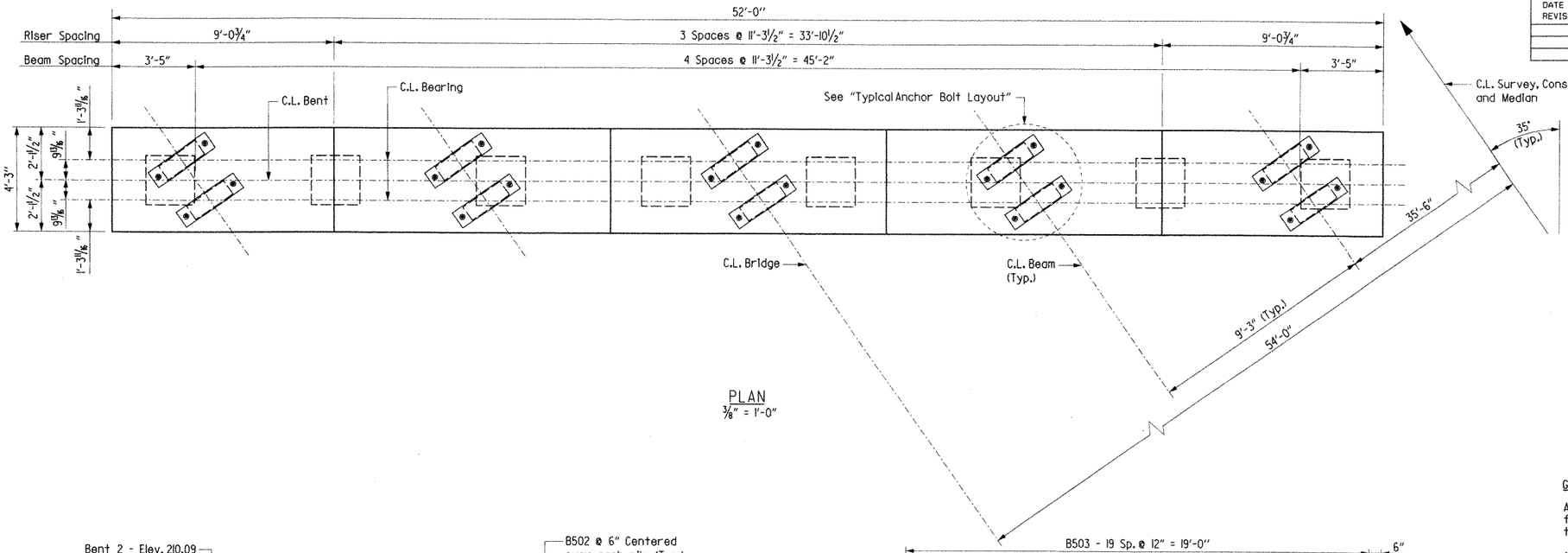
ROUTE 71 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MAD/MWB DATE: 5-07 FILENAME: \B030355xl_b3.dgn
CHECKED BY: MWB DATE: 6-07 SCALE: AS SHOWN
DESIGNED BY: AJP/SHR DATE: 4-07

BRIDGE NO. A&B7121 DRAWING NO. 49564

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS
n:\struct\arkansas\final_030355\sheets\b_west fork\B030355xl_b3.dgn 8/15/2011 3:33:09 PM

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.		030355	25	85
				(2) A7121		BENTS 2-5		49565

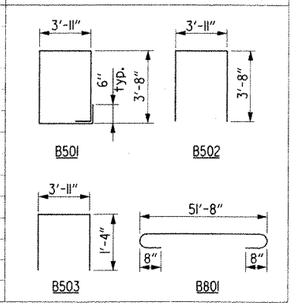


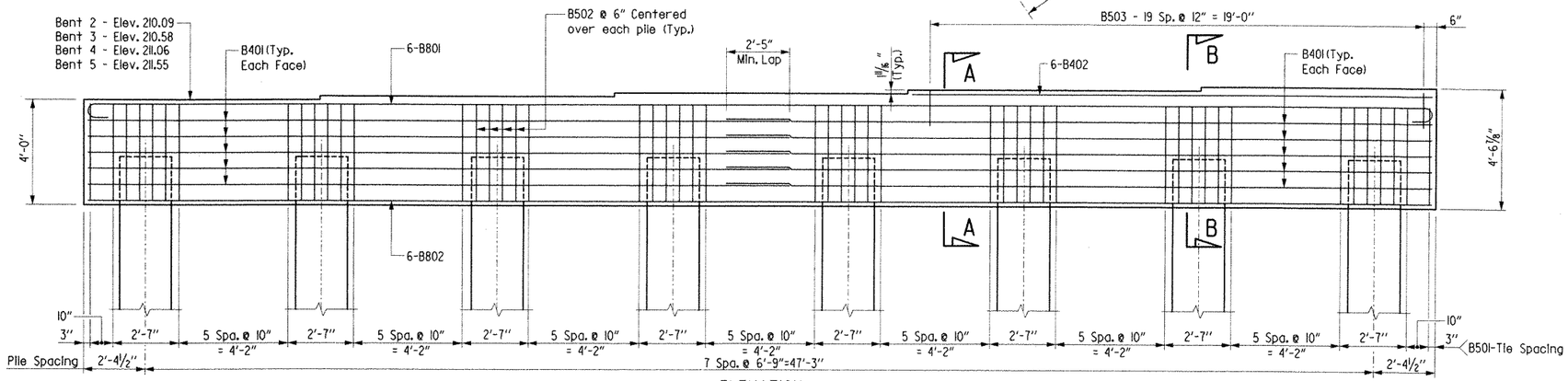
PLAN
⅜" = 1'-0"

BAR LIST-PER BENT

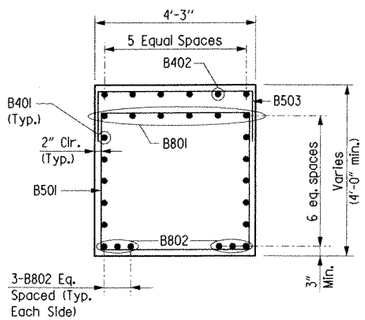
MARK	NO. REQ'D.	LENGTH	P.D.
B401	20	27'-1"	Str.
B402	6	20'-0"	Str.
B501	46	15'-8"	2½"
B502	32	11'-1"	2½"
B503	20	6'-5"	2½"
B801	6	53'-6"	6"
B802	6	51'-8"	Str.

BENDING DIAGRAMS
Dimensions are out to out of bars.

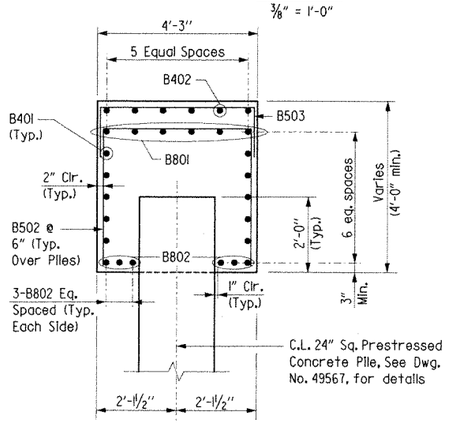




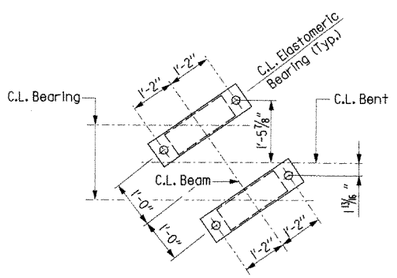
ELEVATION
⅜" = 1'-0"



SECTION A-A
½" = 1'-0"



SECTION B-B
½" = 1'-0"



TYPICAL ANCHOR BOLT LAYOUT
½" = 1'-0"

Note: For details of Elastomeric Bearings, See Dwg. No. 49574.

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 ¾" unless otherwise noted.

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

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see layout, Dwg. No's. 49559 and 49560.

For details of Elastomeric Bearings, See Dwg. No. 49574.

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12097
JEFFREY SCOTT MILLIKEN
9-15-2011

BRIDGE ENGINEER

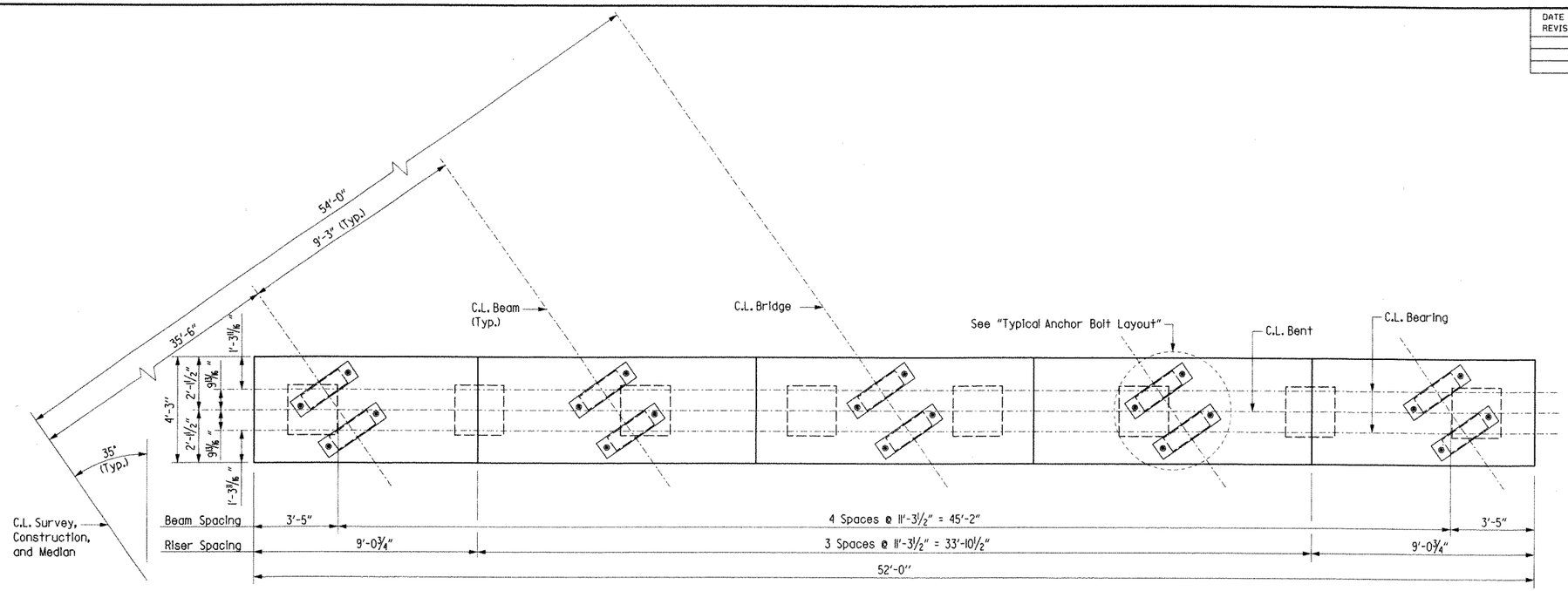
BRIDGE A
DETAILS OF INTERMEDIATE BENTS NO. 2-5
WEST FORK KELLY BAYOU

ROUTE 71 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

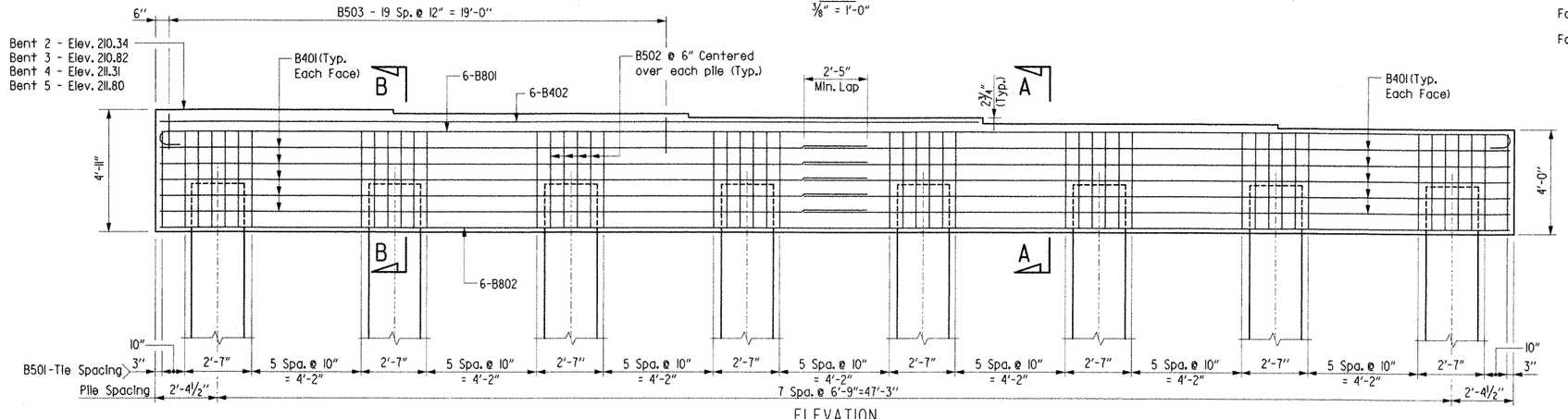
DRAWN BY: RPT DATE: 5-07 FILENAME: \030355sl.bl.dgn
CHECKED BY: MAD DATE: 5-07 SCALE: AS SHOWN
DESIGNED BY: AJP/SHR DATE: 4-07
BRIDGE NO. A7121 DRAWING NO. 49565

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP
n:\struct\arkansas\final_030355\sl\sl01a_west fork\030355sl_bl.dgn
8/15/2011
3:33:08 PM

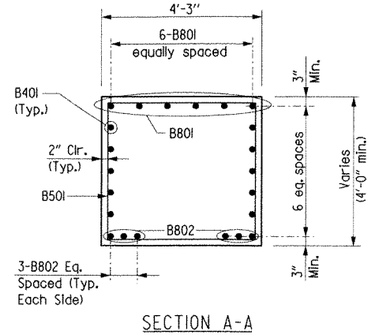
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	26	85
				(2) B7121		BENTS 2-5		49566



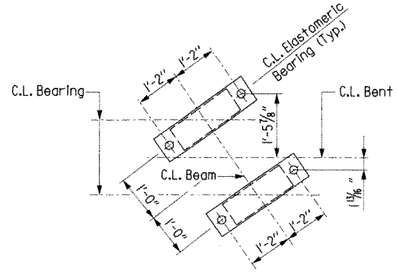
PLAN
3/8" = 1'-0"



ELEVATION
3/8" = 1'-0"

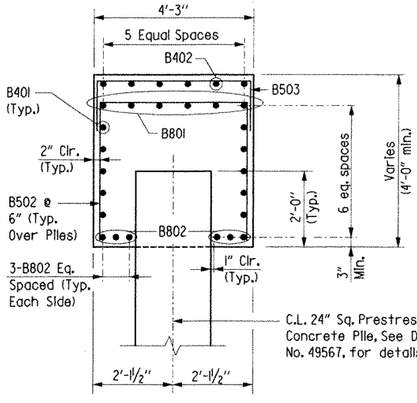


SECTION A-A
1/2" = 1'-0"



TYPICAL ANCHOR BOLT LAYOUT
1/2" = 1'-0"

Note: For details of Elastomeric Bearings, See Dwg. No. 49574.



SECTION B-B
1/2" = 1'-0"

BAR LIST-PER BENT

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS Dimensions are out to out of bars.
B401	20	27'-1"	Str.	
B402	6	20'-0"	Str.	
B501	46	15'-8"	2 1/2"	
B502	32	11'-1"	2 1/2"	
B503	20	6'-5"	2 1/2"	
B801	6	53'-6"	6"	
B802	6	51'-8"	Str.	

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).

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see layout.

For Details of Elastomeric Bearings, See Dwg. No. 49574.

8-15-2011

ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFREY SCOTT MILLIKEN

BRIDGE ENGINEER

BRIDGE B
DETAILS OF INTERMEDIATE BENTS NO. 2-5
WEST FORK KELLY BAYOU

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: RPT DATE: 5-07 FILENAME: n:\B030355b_bldgn

CHECKED BY: MAD DATE: 5-07 SCALE: AS SHOWN

DESIGNED BY: AJP/SHR DATE: 4-07

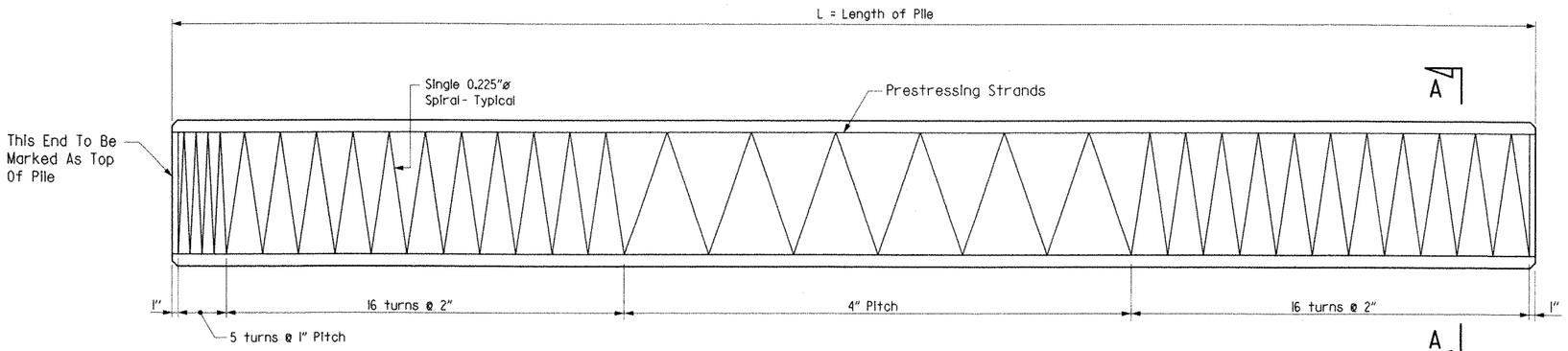
BRIDGE NO. B7121 DRAWING NO. 49566

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS

THE LPA GROUP

n:\structurkansas\final_030305\sfiles\b_west fork\b030355b_bldgn 8/15/2011 3:33:38 PM

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.		030355	27	85
				(2) A&B7121		CONCRETE PILES		49567

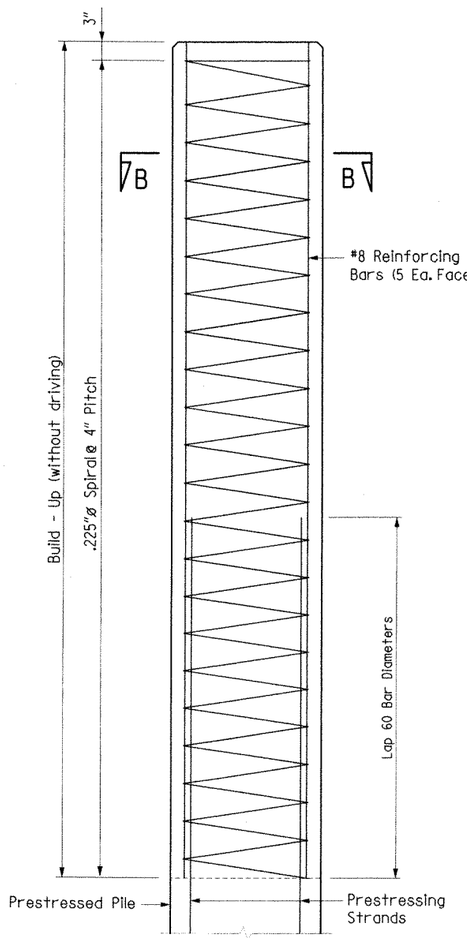


SPIRAL TIE SPACING

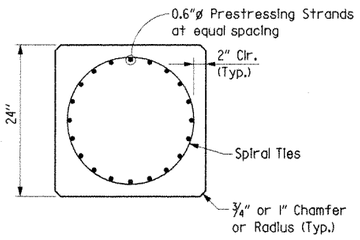
PRESTRESSED PILE PROPERTIES

	Grade	Strand Diameter	No. of Strands *	Minimum Ultimate Tensile Strength Per Strand (Lbs.)	Initial Prestressing Force Per Strand (Lbs.)
Low Relaxation	250	1/2"	20	36,000	27,000
	270	7/16"	24	31,000	23,300
		1/2"	18	41,300	31,000
		0.6	14	58,000	43,500

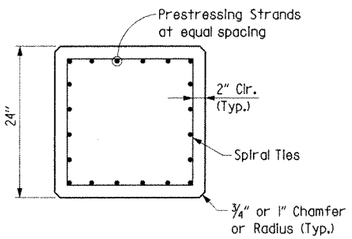
* Number based on initial prestress force of "B" x ultimate tensile Stress, prestress losses, and min. 800 psi unit prestress on concrete after losses. "B" - [0.75 Low Relaxation]



DETAILS OF BUILD-UP WITHOUT DRIVING



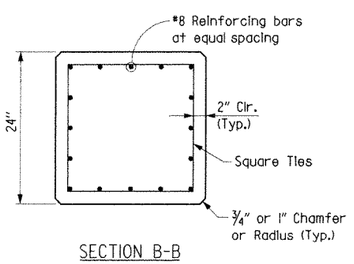
CIRCULAR ALTERNATE
(0.6"ø Strand Only)



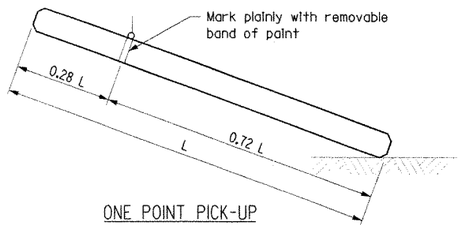
SQUARE ALTERNATE

SECTION A-A

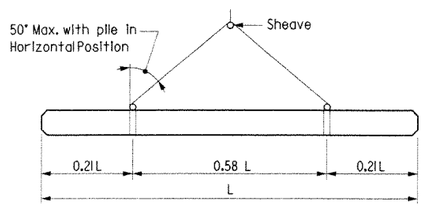
Note: Strand location shall be symmetrical about the axis of the pile.



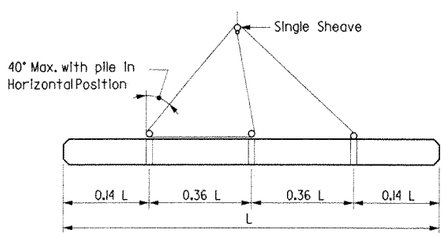
SECTION B-B



ONE POINT PICK-UP



TWO POINT PICK-UP



THREE POINT PICK-UP

MAXIMUM PICK-UP LENGTHS L

Type of Pick-Up	Prestressed 24" Square
One-Point	70'
Two-Point	95'
Three-Point	140'

GENERAL NOTES:

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.

SEISMIC PERFORMANCE CATEGORY: A

CONCRETE: Concrete in Precast Prestressed Piles shall be Class S (AE) and shall have a Minimum Compressive Strength (f'c) of 5,000 psi at 28 days. Compressive Strength at transfer of the Prestressing Force shall be not less than 4,000 psi. Concrete in Build-Ups shall have a minimum Compressive Strength of 4,000 psi.

REINFORCING STEEL: Reinforcing Steel for build-up shall be deformed bars and shall conform to AASHTO M31 or M53, Grade 60.

PRESTRESSING REINFORCING: Seven wire low relaxation strands shall conform to the general requirements of AASHTO M203. Broken wires within individual strands will be permitted up to 2% of the total number of wires in each pile, provided that there is not more than one broken wire per strand. Two or more broken wires per strand will be cause for replacement of the strand, even though the wires are within the 2% limitation.

SPIRAL REINFORCING: Spiral Reinforcing shall be steel wire meeting the requirements of AASHTO M32 or M225 or shall be plain round steel bars meeting the requirements of AASHTO M31 or M53, Grade 60.

MANUFACTURE, TRANSPORTATION AND STORAGE: See Section 802 "Concrete for Structures" of the Standard Specifications.

FORMS: For forming exterior of piles, the use of steel forms on concrete founded casting beds is required unless otherwise approved by the Engineer. Side forms may have a maximum drift on each side not exceeding 1/4" per foot.

TOLERANCES: Pile ends shall be plane surfaces and perpendicular to axis of pile with a maximum tolerance of 1/8" per foot transversely.

The maximum sweep (deviation from straightness measured along two perpendicular faces of the pile, while not subject to bending forces) shall not exceed 1/8" in 10 Ft.

Shipment of piles from the plant site or pile driving will not be permitted until the required minimum compressive strength is reached, and in no case less than 10 days after pouring the concrete. Prestressed piles may be removed from the casting bed to nearby storage any time after transfer of stress.

BUILD-UPS: To provide for Build-Ups of piles where authorized by the Engineer, concrete shall be cut back to expose the strands for a distance sufficient to provide a lap of 60 diameters of the reinforcing bars required for build-up. If build-up is required before the required bearing resistance is secured, the contractor shall submit details for Build-Up to the Engineer for approval.

INSTALLATION, MEASUREMENT AND PAYMENT: See Section 805 "Piling" of the Standard Specifications.

COARSE AGGREGATE: Maximum size of coarse aggregate shall be 3/4".

8-15-2011
ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12097
JEFFREY SCOTT MILLIGAN
BRIDGE ENGINEER

DETAILS OF 24" SQUARE PRESTRESSED CONCRETE PILE WEST FORK KELLY BAYOU

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

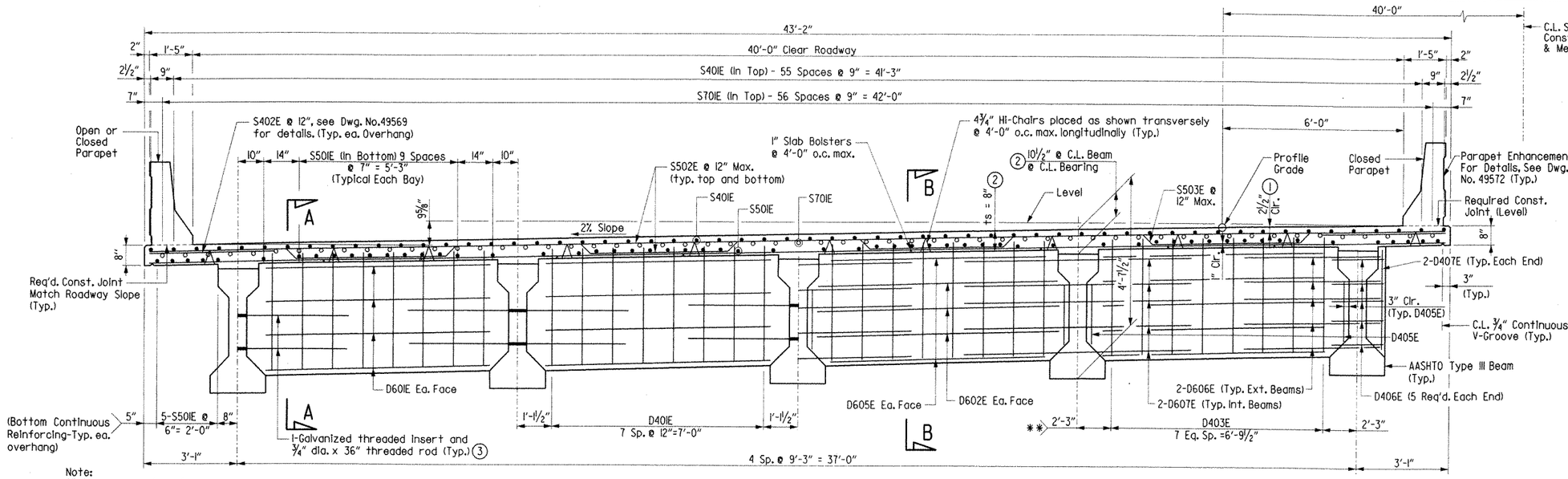
DRAWN BY: RPT DATE: 4-07 FILENAME: \B030355xl.mldgn
CHECKED BY: CGN/MAD DATE: 6-07 SCALE: AS SHOWN
DESIGNED BY: AJP DATE: 6-07

BRIDGE NO. A&B7121 DRAWING NO. 49567

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP
n:\structur\arkansas\final\030355\sfiele&b_west fork\B030355xl.mldgn
3:33:07 PM 8/15/2011

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.		030355	28	85
				(2) A&B7121		SPAN DETAILS		49568

Note: Superstructure details shown are for use when removable deck forms are used and are the basis for measurement of Class S(AE) concrete.

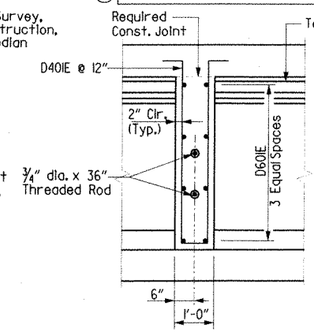


Note: All transverse dimensions are measured perpendicular to C.L. Median

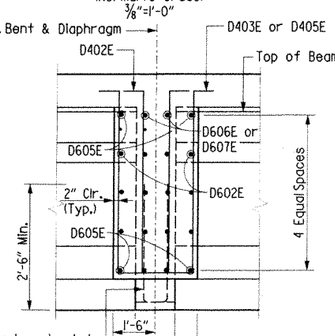
HALF-SECTION OF MIDSPAN DIAPHRAGMS

HALF-SECTION BETWEEN BEAMS AT INTERIOR BENTS

** Denotes: Measured along skew @ C.L. Diaphragm

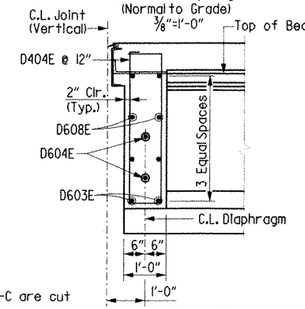


SECTION A-A
Midspan Diaphragm
(Normal to Grade)
⅜"=1'-0"



Prestressing Strands extended from Ends of Beams and Bent up into Diaphragm.

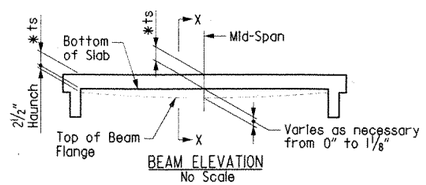
SECTION B-B
Interior Bent Diaphragm
(Normal to Diaphragm)
(Normal to Grade)



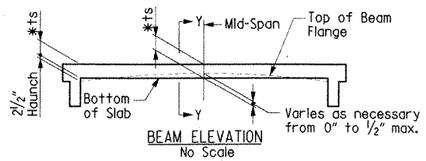
Sections A-A, B-B and C-C are cut normal to Diaphragm.

SECTION C-C
End of Unit Diaphragm
(Normal to Grade)
⅜"=1'-0"

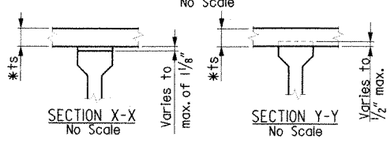
HALF-SECTIONS: DIAPHRAGMS AND BEAM ENDS
½" = 1'-0"
(Bridge A Looking Ahead)
(Bridge B Looking Back)



BEAM ELEVATION
No Scale



BEAM ELEVATION
No Scale



Note: ts = slab thickness as shown on superstructure details. See "Section of Intermediate Diaphragms".

* Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Dwg. No. 14991 for tolerances when permanent steel deck forms are used.

'Beam Elevation' sketches show the range of acceptability of the top of the Beam relative to bottom of slab after the placement of the slab. When the top of the Beam projects more than ½" into the slab, a raise in grade will be necessary. Beams shall be set in a sufficient number of spans so when adjustment is necessary the Profile Grade can be adjusted over suitable increments so the revised grade line will produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED

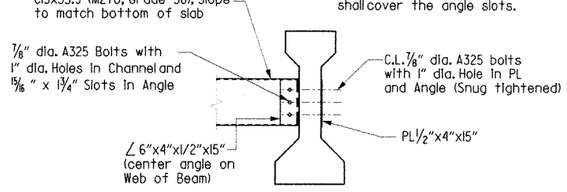
SLAB REINFORCING

Transverse:
S402E @ 12" centers (Top each side of Bridge)
S502E @ 12" centers (Top and Bottom)
S503E @ 12" centers (Bent up over Beams)

Longitudinal:
S40IE @ 9" centers (Top)
S70IE @ 9" centers (Top)
S50IE spaced as shown (Bottom)

EXPANSION DEVICE

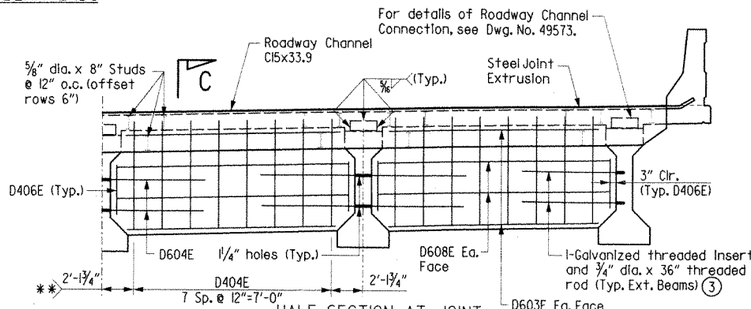
Neoprene Strip Seal with Steel Extrusion
Rdwy. Channel - C15x33.9
Conn. angle from MC18x42.7 (Cope one Flange)



Note: A standard washer shall be supplied for use under both the nut and the head of the ⅞" dia. bolt. An additional 2½" O.D. washer shall cover the angle slots.

DETAIL OF ALTERNATE MIDSPAN DIAPHRAGM
½"=1'-0"

Galvanized Steel Diaphragms may be used in place of Concrete at Midspan Diaphragms only. All components of the Alternate Steel Diaphragms (AASHTO M270, Grade 36) shall be galvanized. Galvanizing shall be in accordance with AASHTO M111. Payment will be based on Concrete Diaphragms.



HALF-SECTION AT JOINT
⅜" = 1'-0"
(Bridge A Looking Ahead)
(Bridge B Looking Back)

NOTES:

One Epoxy Coated #5 bar in the top and one Epoxy Coated #5 bar in the bottom may be substituted for each bar S503E. Payment will be based on the weight of bar S503E.

Class I Protective Surface Treatment shall be applied to the Roadway Surface and the Face and Top of Concrete Parapet Rail.

All bars designated with an E suffix are to be Epoxy coated.

All transverse dimensions are measured perpendicular to C.L. Bridge, unless noted otherwise.

TOLERANCE:
Minus ¼"
(1) Plus: Equal to amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

(3) Galvanized Threading Inserts: Dayton-Richmond F-42 Loop Ferrule Insert or approved equal. ¾" dia. Threaded Rods to be AASHTO M270, Grade 36 or AASHTO M31, Grade 60 or AASHTO M53, Grade 60. These are to be Non-Pay Items-subsidiary to the item "Prestressed Concrete Beams (Type III)". Galvanizing shall be in accordance with AASHTO M232 Class C or AASHTO M298 Class 50.

8-15-2011
ARKANSAS
JEFFREY SCOTT MULLINS
REGISTERED PROFESSIONAL ENGINEER
No. 12097
BRIDGE ENGINEER

SHEET 1 OF 5
DETAILS OF 375' CONTINUOUS PRESTRESSED CONCRETE BEAM UNIT
WEST FORK KELLY BAYOU

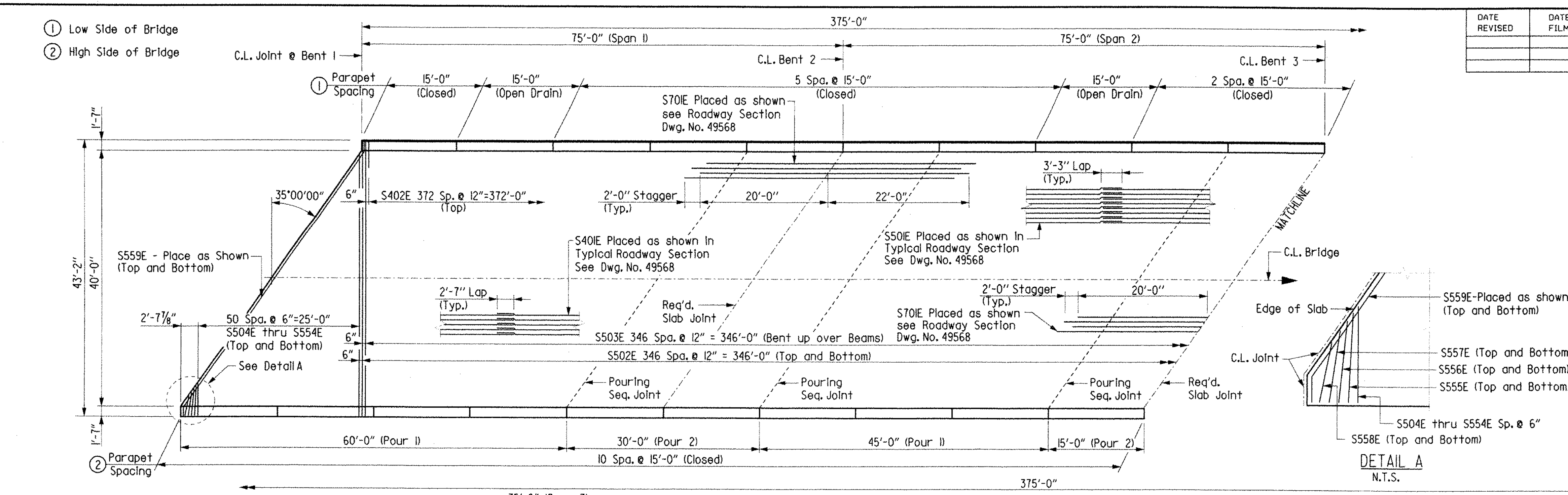
ROUTE 71 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: RPT	DATE: 5-07	FILENAME: \030355x1.sldgn	
CHECKED BY: MAD	DATE: 5-07	SCALE: AS SHOWN	
DESIGNED BY: SHR/CGN	DATE: 5-07		

BRIDGE NO. A&B7121 DRAWING NO. 49568

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS
THE LPA GROUP
N:\Structur\arkansas\final\030355\sfield&b_west fork\030355x1.sldgn 8/15/2011 3:33:26 PM

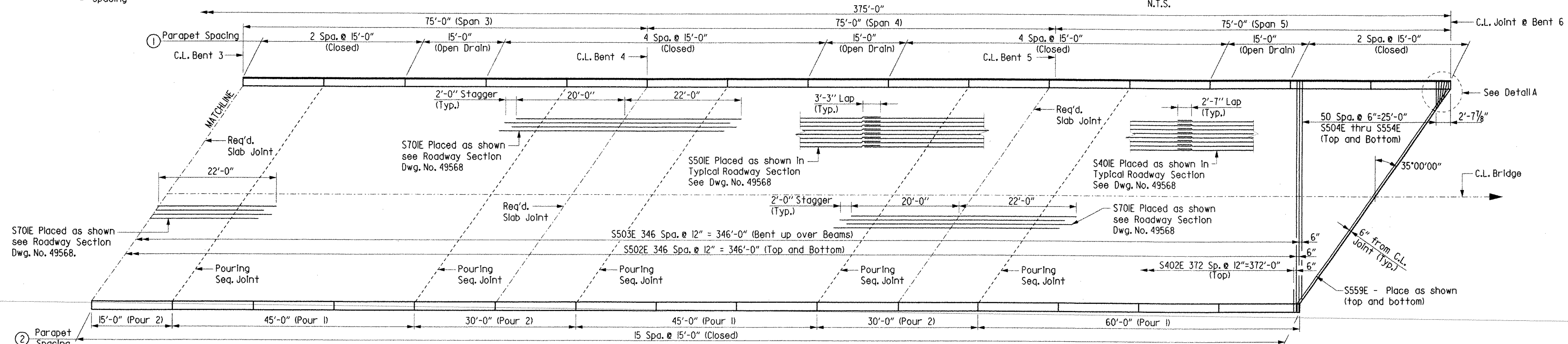
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	29	85
				A&B7121		SPAN DETAILS		49569



NOTES:
Required slab joints and pouring sequence joints shall align with the parapet open joint at the gutterline.

Pours must be made in order as numbered. Pour (1) may be placed simultaneously or separately. Both pours (1) must be placed before Pour (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of the adjacent pour. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. Concrete in bridge superstructure shall 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 Engineer for any deviations from the pouring sequence shown.



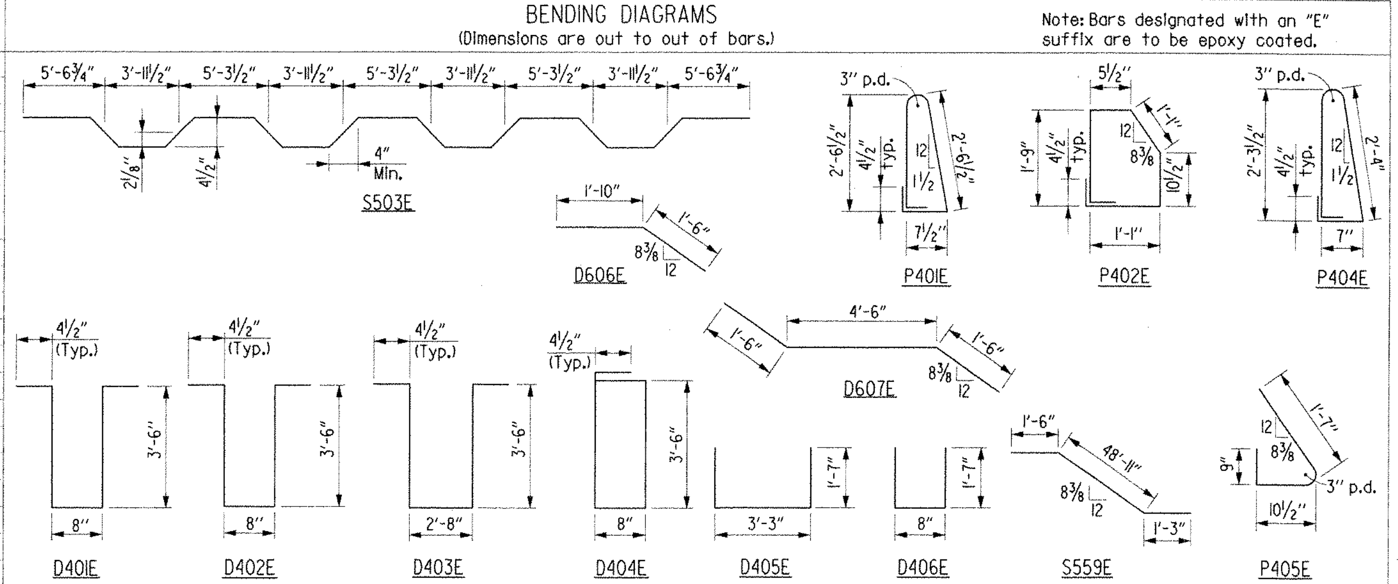
POURING SEQUENCE AND REINFORCING PLAN
1"=10'-0"

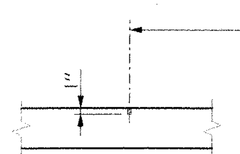
BAR LIST-PER BRIDGE

MARK	NO. REQ'D.	LENGTH	PIN DIA.	MARK	NO. REQ'D.	LENGTH	PIN DIA.
D401E	160	8'-1"	2"	S501E	522	44'-6"	Str.
D402E	84	8'-1"	2"	S502E	694	42'-10"	Str.
D403E	128	10'-1"	2"	S503E	347	43'-8"	3¾"
D404E	64	7'-9"	2"	S504E to S554E	4 each	5'-0" to 40'-8"	Str.
D405E	32	6'-3"	2"				
D406E	56	3'-8"	2"	S555E	4	4'-6"	Str.
D407	16	3'-6"	Str.	S556E	4	4'-1"	Str.
D601E	160	7'-4"	Str.	S557E	4	3'-7"	Str.
D602E	96	10'-2"	Str.	S558E	4	3'-0"	Str.
D603E	32	9'-0"	Str.	S559E	4	51'-8"	3¾"
D604E	12	6'-0"	Str.				
D605E	64	8'-8"	Str.	S701E	228	42'-0"	Str.
D606E	80	3'-4"	4½"				
D607E	120	7'-6"	4½"	P401E	775	6'-4"	2"
D608E	32	10'-2"	Str.	P402E	775	5'-6"	2"
				P403E	245	14'-8"	Str.
S401E	580	39'-10"	Str.	P404E	25	5'-10"	2"
S402E	746	4'-1"	Str.	P405E	25	3'-2"	2"
				P601E	25	14'-8"	Str.

BENDING DIAGRAMS
(Dimensions are out to out of bars.)

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





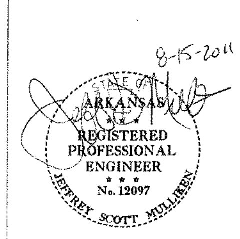
SLAB JOINT DETAIL
Nts

½"x 1" Type 3, 4, or 6 Joint Sealer. Backer rod is not required. See Subsection 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 up to allow the sawing of joint without damage to the slab. Slab joints shall be placed at all Pouring Sequence Construction Joints and Required Slab Joint Locations.

SHEET 2 OF 5
DETAILS OF 375' CONTINUOUS PRESTRESSED CONCRETE BEAM UNIT
WEST FORK KELLY BAYOU

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.



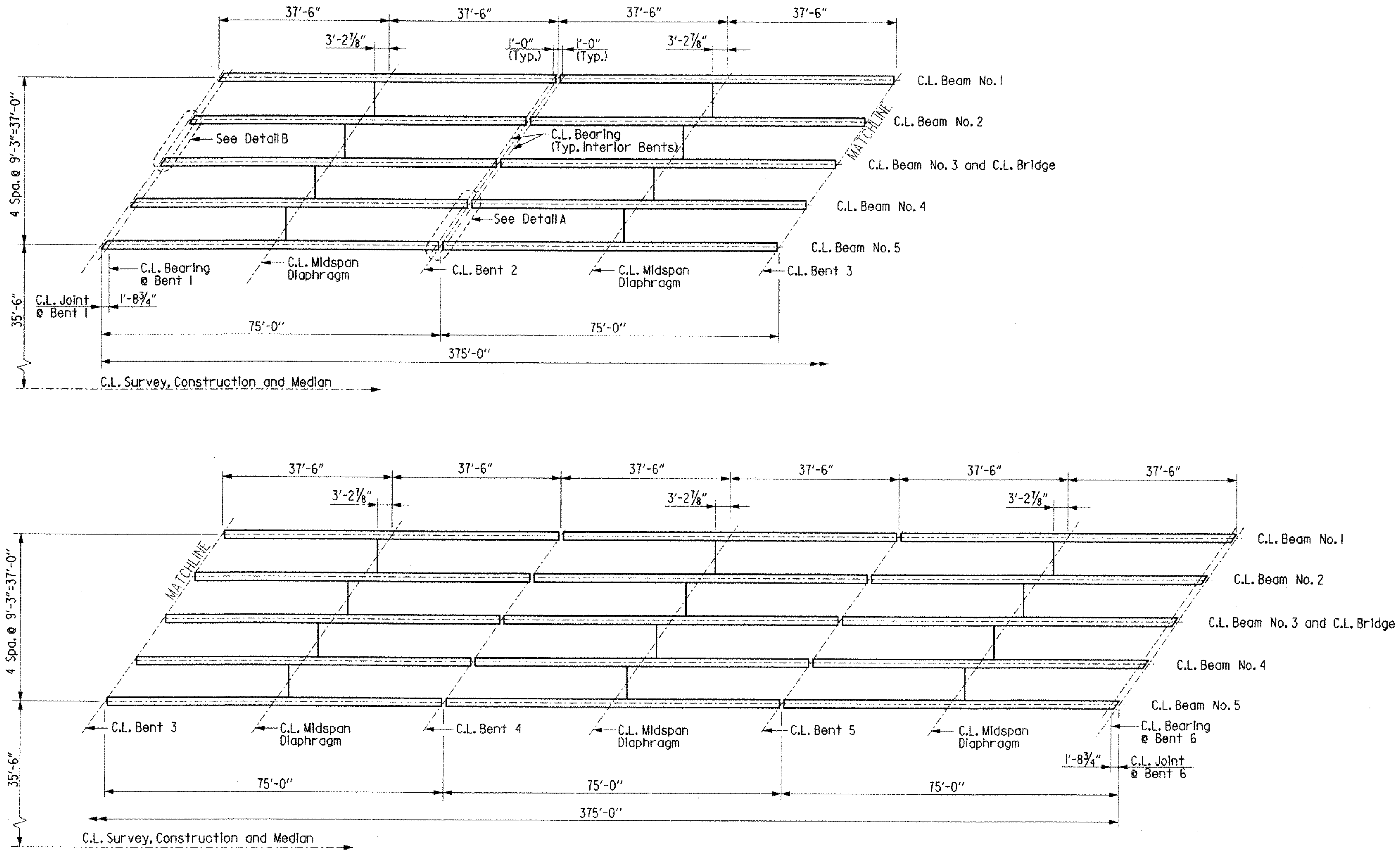
BRIDGE ENGINEER

DRAWN BY: RPT	DATE: 5-07	FILENAME: \B030355xl_s2.dgn	
CHECKED BY: MAD	DATE: 5-07	SCALE: AS SHOWN	
DESIGNED BY: SHR/CGN	DATE: 5-07		

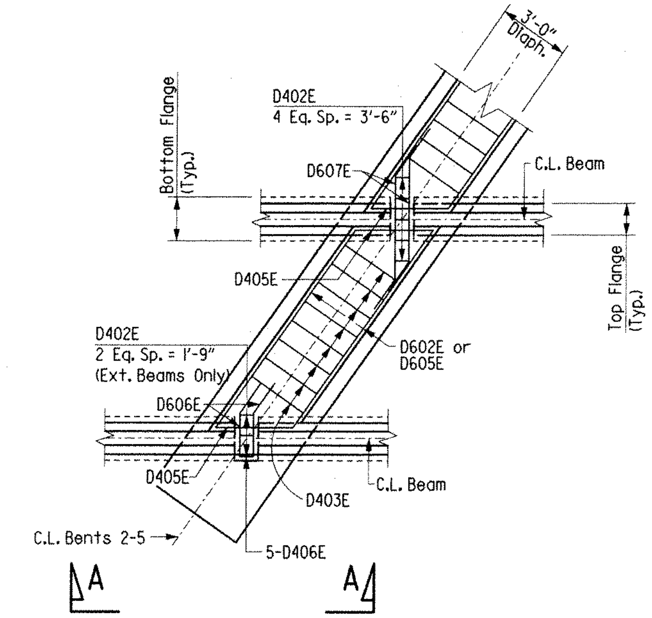
BRIDGE NO. A&B7121 DRAWING NO. 49569

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS
n:\struct\arkansas\final_0303055\sitela&b_west fork\B030355xl_s2.dgn 8/15/2011 3:33:06 PM

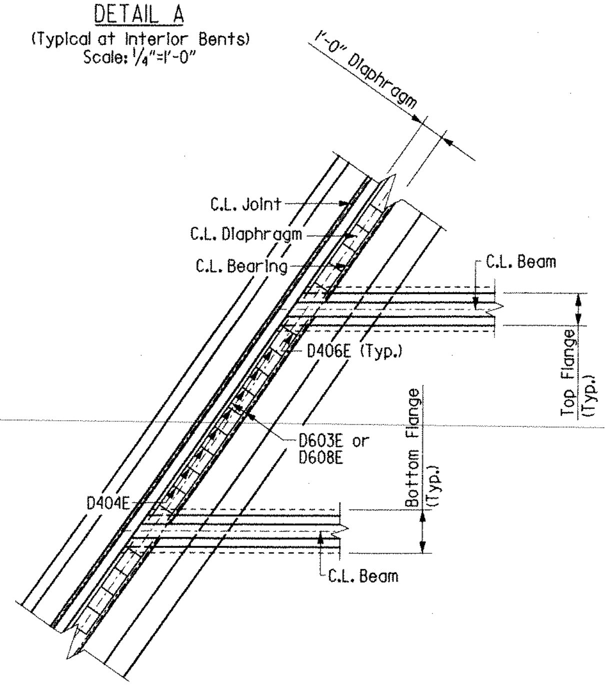
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	30	85
			(2)	A&B7121		SPAN DETAILS		49570



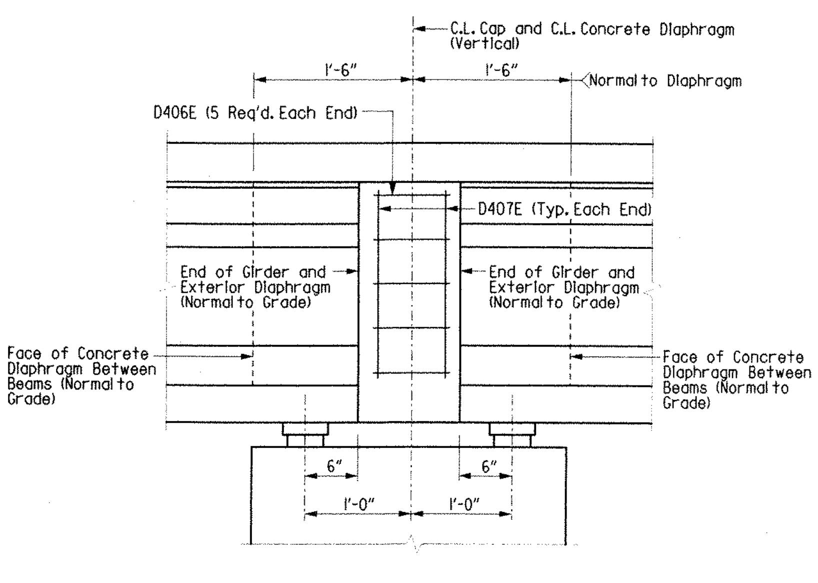
FRAMING PLAN
1/16"=1'-0"



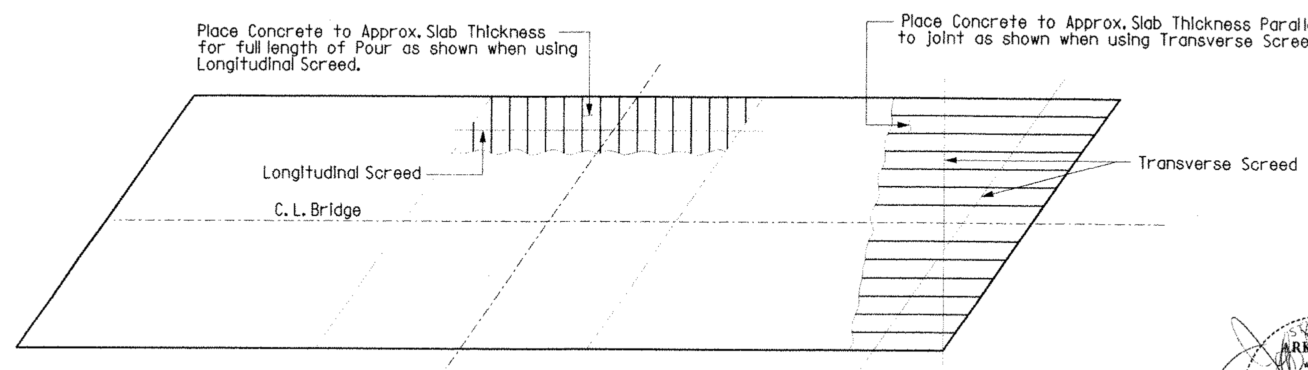
DETAIL A
(Typical at Interior Bents)
Scale: 1/4"=1'-0"



DETAIL B
(Typical at End Bents)
Scale: 1/4"=1'-0"



VIEW A-A
(Parallel to Girder)
No Scale



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

CONCRETE PLACEMENT PROCEDURE
No Scale

8-15-2011
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFREY SCOTT MULLIKEN

BRIDGE ENGINEER

SHEET 3 OF 5
DETAILS OF 375' CONTINUOUS PRESTRESSED CONCRETE BEAM UNIT
WEST FORK KELLY BAYOU

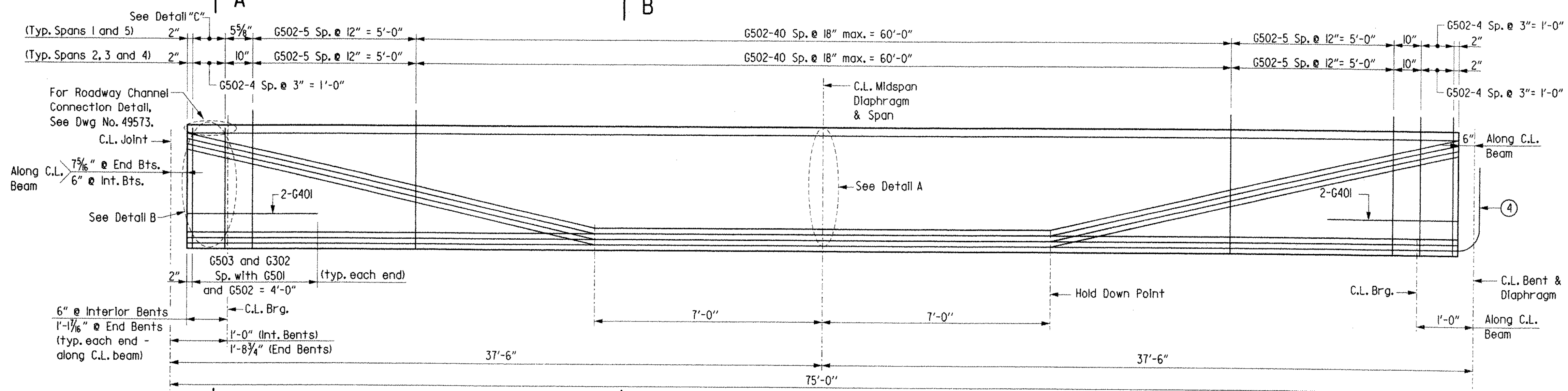
ROUTE 71 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: RPT DATE: 4-07 FILENAME: \B030355xl_s3.dgn
CHECKED BY: MAD DATE: 5-07 SCALE: AS SHOWN
DESIGNED BY: MWB DATE: 4-07
BRIDGE NO. A&B7121 DRAWING NO. 49570

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS

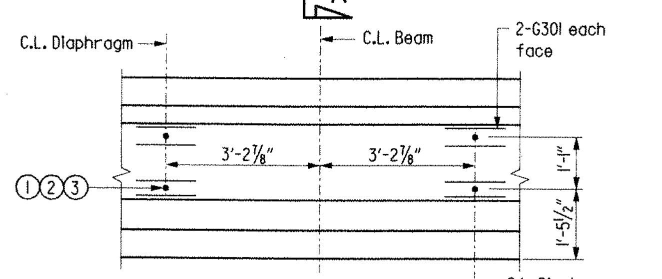
h:\struct\arkansas\final_030355\sitela\b_west fork\B030355xl_s3.dgn 8/15/2011 3:33:05 PM

④ Prestressing strands at End Bents 1 and 6 shall be flush with the end of the beam. Prestressing strands at Intermediate Bents 2 - 5 shall be bent up into diaphragms as shown in "ELEVATION OF BEAMS AT INTERMEDIATE BENTS".



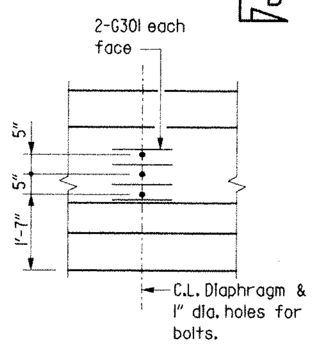
TYPICAL BEAM ELEVATION (TYPE III)

NTS



DETAIL A

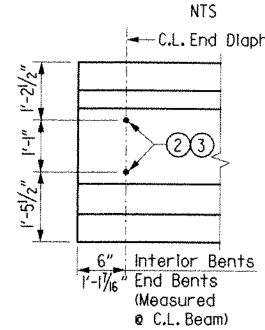
½"=1'-0"



DETAIL A

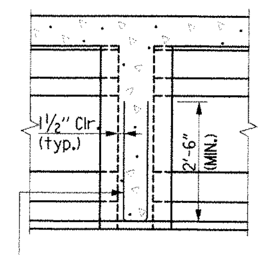
½"=1'-0"

Alternate for Steel Diaphragm.



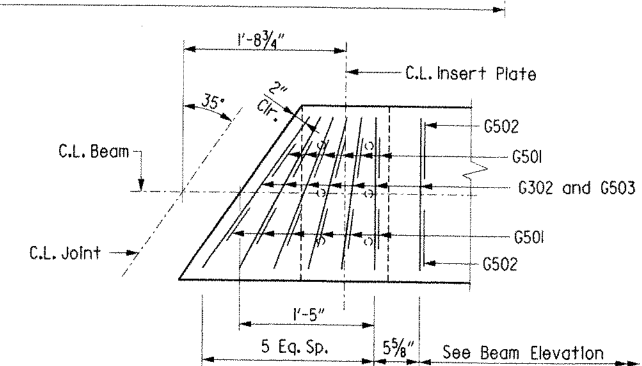
DETAIL B

½"=1'-0"



ELEVATION OF BEAMS AT INTERMEDIATE BENTS

Scale: ½" = 1'-0"



Note: Bars may be shifted slightly to clear insert plate studs.

DETAIL C

1" = 1'-0"

① Inserts and holes shown are for concrete Midspan Diaphragms. See Dwg. No. 49568 For Alternate Steel Diaphragms.

② Galvanized ¾" Dia. Dayton-Richmond F-42 Loop Ferrule Insert or an approved equal. (Omit in exterior face of exterior beams.) These are to be non-Pay Item-Subsidiary to the Item "Prestressed Concrete Beams (Type III)". For Alternate steel Diaphragms, See Dwg. No. 49568.

③ Inserts on inside of Exterior Beams and 1¼" dia. holes for interior Beams

GENERAL NOTES - PRESTRESSED BEAMS ONLY

Pretensioning steel shall be ½" dia. Low Relaxation strands with a minimum ultimate strength of 270 ksi and shall conform to AASHTO M203.

All Beams shall be AASHTO TYPE III I-Beams as shown on the details.
All Beams shall be cast in concrete floored pallets and in metal forms. All work and materials shall be as specified in Section 802.22 of the Standard Specifications.

Concrete shall be Class "S" and shall have a minimum 28 day compressive strength f'c = 6,000 psi.

Dimensions shown are to the center of strands.

The initial tensile force applied to each ½" dia. strand shall be 30,983 pounds. Transfer of this tensioning load to the beam shall not be done until the compressive strength of the concrete is 5,600 psi for all Spans.

The contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the beams.

The first 16" along the top of the beam at each end shall have a smooth finish. The remaining portion shall be rough floated at approximately the time of set then scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface for bonding slabs.

Beams lengths shown on the design plans are net lengths measured horizontally along beam centerlines. The beam manufacturer shall make the necessary allowances for grade and shortening due to elastic shortening, creep and shrinkage.

All exposed steel at ends of beams not extended into diaphragms at interior bents shall be protected against corrosion by a coating of tar or other waterproofing material.

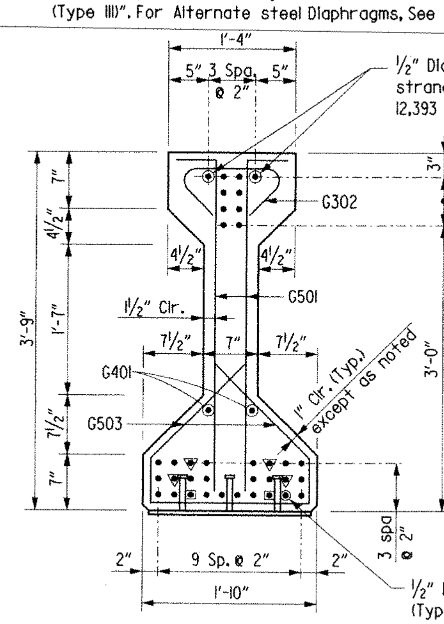
Beams must be maintained in an upright position at all times and must be picked up from points near the beam ends. Disregard of this requirement may lead to collapse of the beam. The contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

The Contractor may submit alternate strand patterns with design calculations for review and approval in accordance with Subsection 802.22 except that only ½" diameter strands shall be allowed.

Reinforcing Steel shall be AASHTO M31 or M53 Grade 60 (fy = 60,000 psi)

Distances from the forms and spacing of the Prestressing Steel shall be maintained by the stays, ties, hangers, spacers, or other approved supports which shall be shown on the Shop Drawings.

The point of support and direction of the reactions with respect to the member shall be approximately the same during transportation and storage as when member is in its final position.

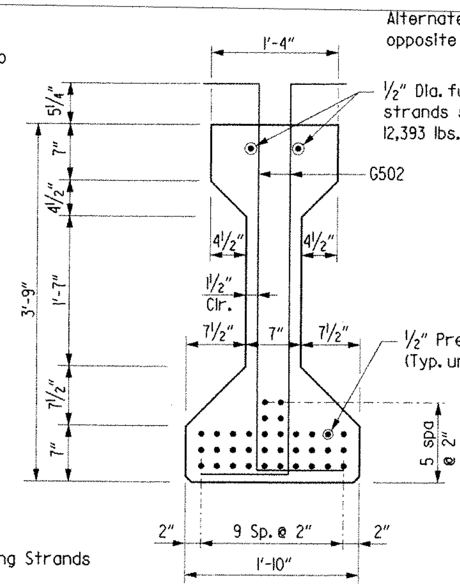


SECTION A-A

1"=1'-0"

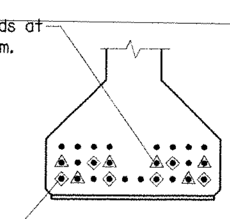
▽ Denotes: Break Bond 2'-0" from Beam End

□ Denotes: Break Bond 4'-0" from Beam End



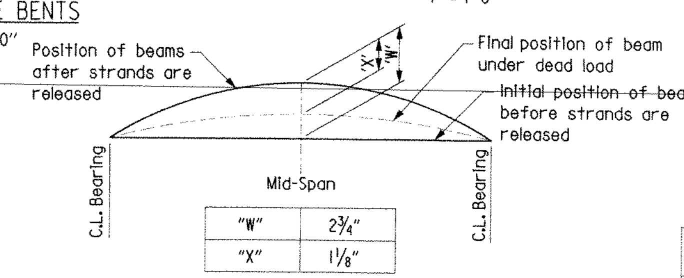
SECTION B-B

1"=1'-0"



STRAND DETAIL

1"=1'-0"



"W"	2¾"
"X"	1⅛"

"W" is expected Camber of Beam at 90 days after release (Prestress + Dead Load of Beam).

"X" is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load.

CAMBER & DEFLECTIONS (INCHES)

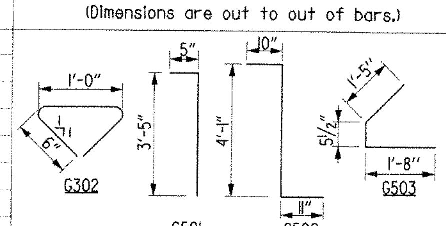
LOAD DISTRIBUTION TO BEAMS:

	Beams 1&5	Beams 2 - 4
Dead Loads: To Beam	800 PLF + Beam + Diaph.	954 PLF + Beam + Diaph.
Dead Loads: To Composite Beam	306 PLF, includes 153 PLF Future Wearing Surface	384 PLF, includes 231 PLF Future Wearing Surface
Live Loads: To Each Composite Beam	1.24 Wheels + Impact	1.68 Wheels + Impact

BAR LIST-PER BEAM

SPANS 1 AND 5				SPANS 2, 3 AND 4			
MARK	NO. REQ'D.	LENGTH	P.D.	MARK	NO. REQ'D.	LENGTH	P.D.
G301	8	1'-3"	Str.	G301	8	1'-3"	Str.
G302	17	2'-3"	2¼"	G302	16	2'-3"	2¼"
G401	4	4'-0"	Str.	G401	4	4'-0"	Str.
G501	12	3'-9"	3¾"				
G502	112	5'-8"	3¾"	G502	122	5'-8"	3¾"
G503	34	3'-6"	2½"	G503	32	3'-6"	2½"

BENDING DIAGRAMS
(Dimensions are out to out of bars.)



SHEET 4 OF 5
DETAILS OF 375' CONTINUOUS PRESTRESSED CONCRETE BEAM UNIT
WEST FORK KELLY BAYOU

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFREY SCOTT MULLIKEN

9-15-2011

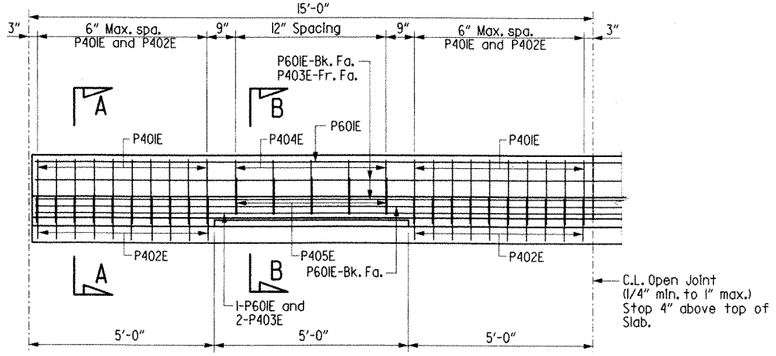
BRIDGE ENGINEER

DRAWN BY: RPT/MAD DATE: 5-07 FILENAME: 030355xl_s4.dgn
CHECKED BY: MAD DATE: 5-07 SCALE: AS SHOWN
DESIGNED BY: SHR/CGN DATE: 5-07

BRIDGE NO. A&B7121 DRAWING NO. 49571

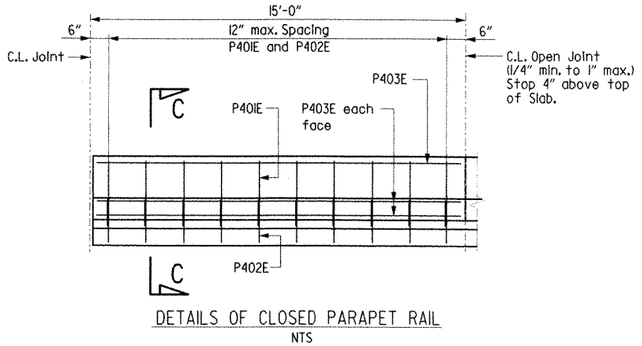
PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS

n:\struct\arkansas\final_030355\steel&b_west fork\B030355xl_s4.dgn
8/15/2011
3:33:05 PM



DETAILS OF OPEN PARAPET RAIL

NTS

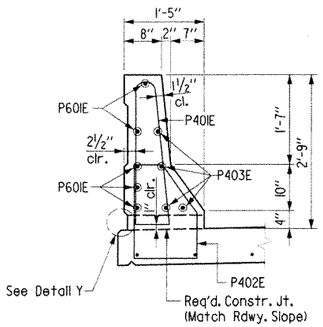


DETAILS OF CLOSED PARAPET RAIL

NTS

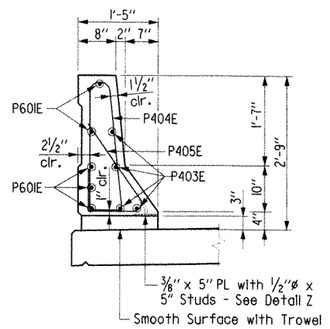
PARAPET ENHANCEMENT DETAILS

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



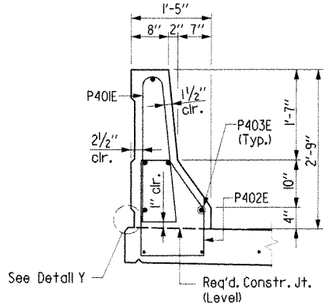
SECTION A-A

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



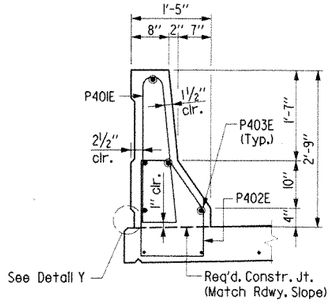
SECTION B-B

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



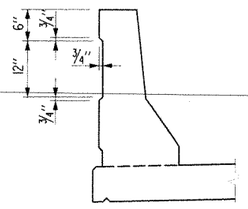
SECTION C-C

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



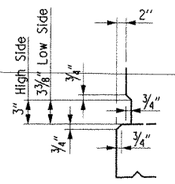
SECTION C-C

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



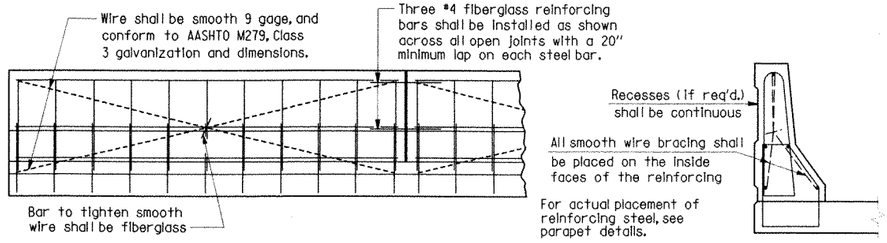
SECTION E-E

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



DETAIL Y

No Scale

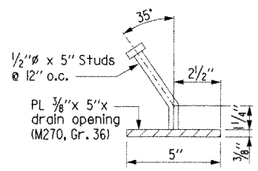


All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of 1/4". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL

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



DETAIL Z

No Scale

NOTE:
Parapet studs shall be 5" long, granular flux filled, solid fluxed, or equal and automatically end welded to the plate. Studs and plate shall meet the requirements of Section 807. Studs and plates shall be measured and paid for as "Structural Steel in Beam Spans".

The surfaces of the 3/8" plates which will not be in contact with concrete shall be painted in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "Structural Steel in Beam Spans".

BRIDGE ENGINEER

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	32	85
				(2) A&B7121		SPAN DETAILS		49572

SUPERSTRUCTURE GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 2003 Edition, with applicable special provisions.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges, 2002, with current interim specifications.

LIVE LOAD: HS20 + Military Loading METHOD OF DESIGN: Load Factor

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.

CONCRETE: All concrete in slab, parapets and diaphragms shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered 3/4" unless otherwise noted. All end of unit and midspan diaphragms shall be cast in place and poured a minimum of 48 hours before the slab is poured. Interior bent diaphragms shall be cast monolithically with the slab.

The slab and intermediate bent diaphragms shall not be poured until 90 days after release of strands in beams.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 14991 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

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

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

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

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).

STRUCTURAL STEEL: All structural steel shall be AASHTO M270, Gr. 50W unless otherwise noted and shall be paid for as Structural Steel in Beam Spans. (AASHTO M270 GR. 50W) GR. 50W steel shall not be painted. All exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). Structural steel completely embedded in concrete may be AASHTO M270, GR.36.

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

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

SHEET 5 OF 5
DETAILS OF 375' CONTINUOUS PRESTRESSED CONCRETE BEAM UNIT
WEST FORK KELLY BAYOU

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

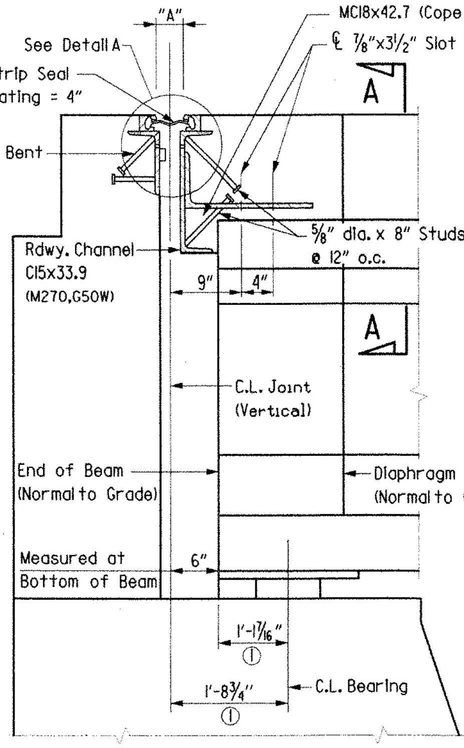
LITTLE ROCK, ARK.

DRAWN BY: RPT DATE: 4-07 FILENAME: ..\B030355x_s5.dgn
CHECKED BY: MAD DATE: 5-07 SCALE: AS SHOWN
DESIGNED BY: STANDARD DATE:

BRIDGE NO. A&B7121 DRAWING NO. 49572

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS

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.		030355	33	85
				(2) A&B7121		JOINT DETAILS		49573

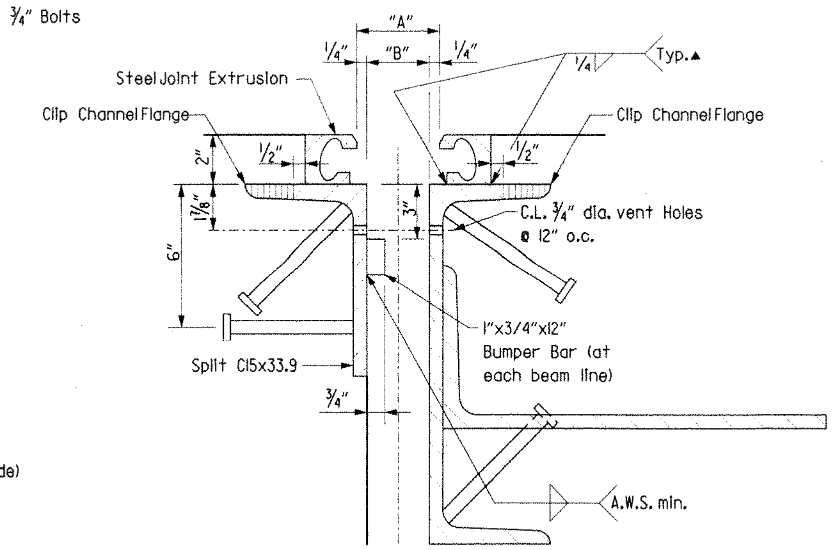


① Measured Along Beam

SECTION THRU JOINT AT END BENTS

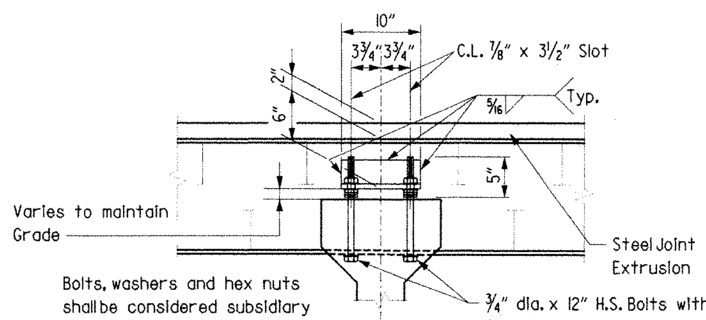
Note: Sections thru Joints are taken normal to C.L. Joints

▲ Shop weld - See SP Job 030355 "Armored Joint with Neoprene Strip Seal"



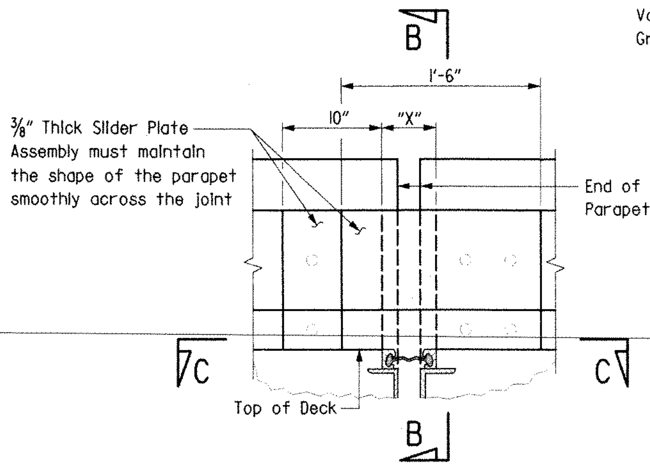
DETAIL A
3" = 1'-0"

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

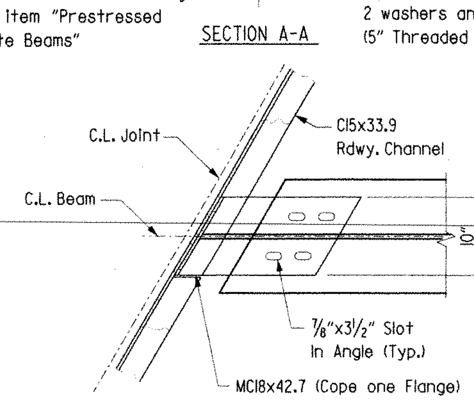


Bolts, washers and hex nuts shall be considered subsidiary to the item "Prestressed Concrete Beams"

SECTION A-A

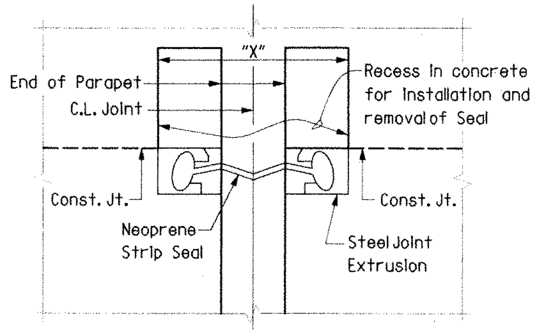


Note: Dimension "X" equals the width of opening in parapet at curb to allow for removal or repair of joint.

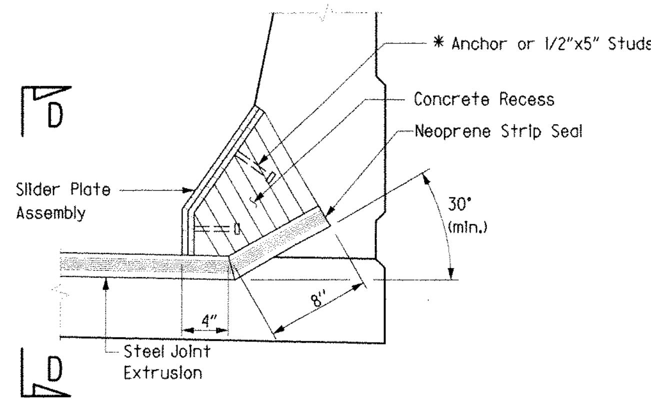


ROADWAY CHANNEL CONNECTION DETAIL
No Scale

DETAIL OF NEOPRENE SEAL AT GUTTERLINE
No Scale



SECTION D-D
No Scale



SECTION B-B
No Scale

GENERAL NOTES:

EXPANSION NEOPRENE STRIP SEAL: The Expansion device shall provide a movement of 4" as shown in the "STRIP SEAL JOINT DATA" table. The expansion joint shall be capable of sealing the deck surface and parapet area to prevent moisture and other contaminants from descending through the joint.

Details of proposed slider plate assembly shall be submitted to and approved by the Engineer prior to the fabrication of any structural steel at the expansion device.

All structural steel shall be AASHTO M270, Grade 50W unless otherwise noted. Cleaning and painting of the parapet slider plates shall be in accordance with Section 638 and will not be paid for directly but will be considerd subsidiary to STRUCTURAL STEEL IN BEAM SPANS (M270, GRADE 50W). Structural steel completely embedded in concrete need not be painted.

All structural steel, except for the steel extrusion and slider plate anchor system for the strip seal, shall be paid for as "STRUCTURAL STEEL IN BEAM SPANS (M270, GRADE 50W)". The steel extrusion, slider plate anchor system and neoprene strip seal shall be paid for in accordance with Special Provision Job 030355 "ARMORED JOINT WITH NEOPRENE STRIP SEAL".

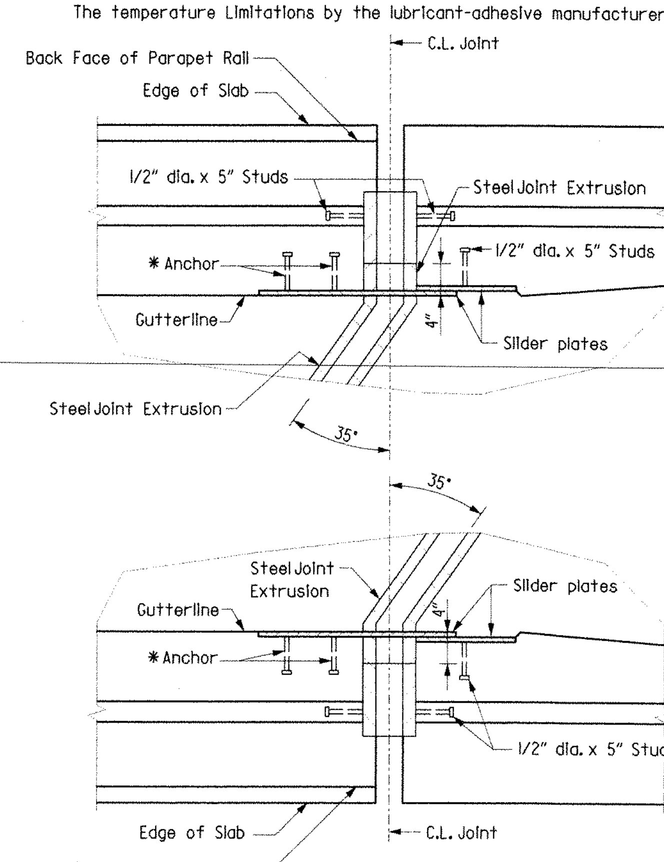
Note: Details of joint turn-up in parapet are general and show basic design controls only. See SP Job 030355 "Armored Joint with Neoprene Strip Seal". Method of installation and fabrication shall be determined by the manufacturer.

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 :		
		40°F	60°F	80°F	40°F	60°F	80°F
1 and 6	4"	2 3/4"	2 1/2"	2 1/4"	2 1/4"	2"	1 3/4"

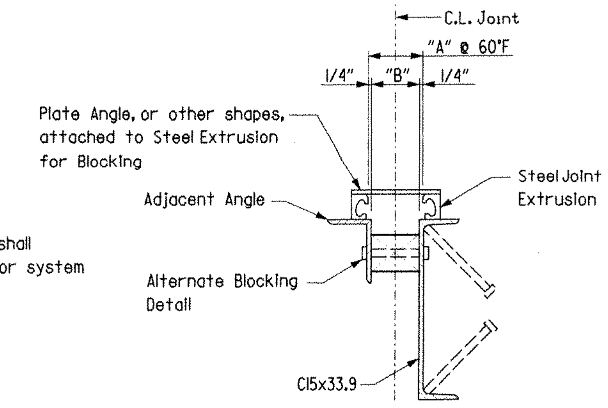
✱✱ The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.

Installation is limited to 40°F, min. and 80°F, max. Interpolation of the table may be necessary. The temperature Limitations by the lubricant-adhesive manufacturer shall be observed.



SECTION C-C AT END BENTS

✱ The method of attachment of the cover slider plate assembly or similar device must be such that it may be removed in order to provide for future replacement of the neoprene seal. Method of installation and fabrication shall be determined by the manufacturer.



DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

Note:
Each Expansion Joint Device shall be blocked in the shop by the Fabricator to the dimension shown for 60°F and the blocking details shall be shown on the Shop Drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

One of two different blocking systems is required depending on the type of span finishing used.

For Transverse Strike-Off:
Plate, Angle, or other shapes, attached to Channels (or angles) for Blocking.

For Longitudinal Strike-off:
Bolt & spacer attached to Channels for Blocking.

EXPANSION DEVICE INSTALLATION AT END BENTS

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

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams 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 the backwall constructed.

2) The backwall shall be poured to the optional construction joint after beams are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature.

DETAILS OF ARMORED JOINT WITH NEOPRENE STRIP SEAL WEST FORK KELLY BAYOU

8-15-2011

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFREY SCOTT MULLIKEN

BRIDGE ENGINEER

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

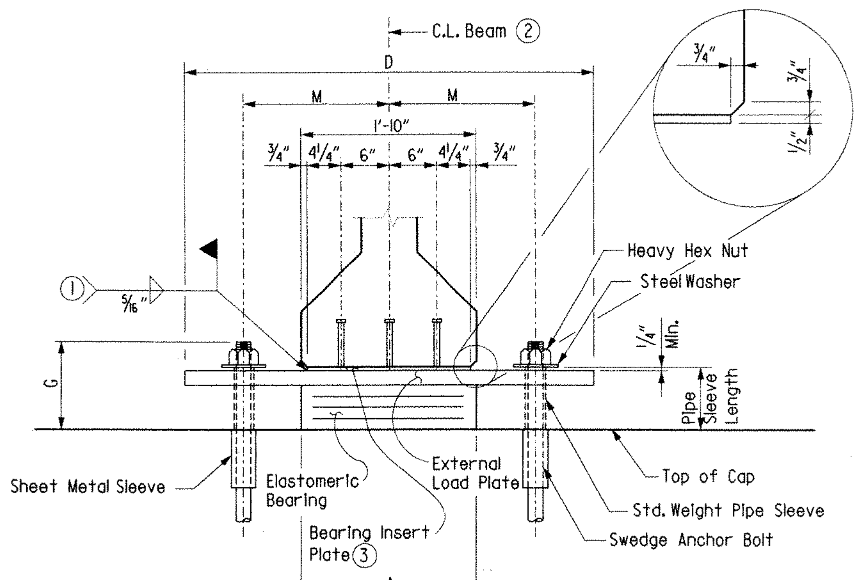
LITTLE ROCK, ARK.

DRAWN BY: RPT DATE: 4-07 FILENAME: ..\B030355xl_jt.dgn
CHECKED BY: MAD DATE: 5-07 SCALE: AS SHOWN
DESIGNED BY: STANDARD DATE: ——

BRIDGE NO. A&B7121 DRAWING NO. 49573

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS
n:\struct\arkansas\final_030355\sites\bb_west fork\B030355xl_jt.dgn 8/15/2011 3:33:04 PM

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.		030355	34	85
				A&B7121		ELASTOMERIC BEARINGS		49574

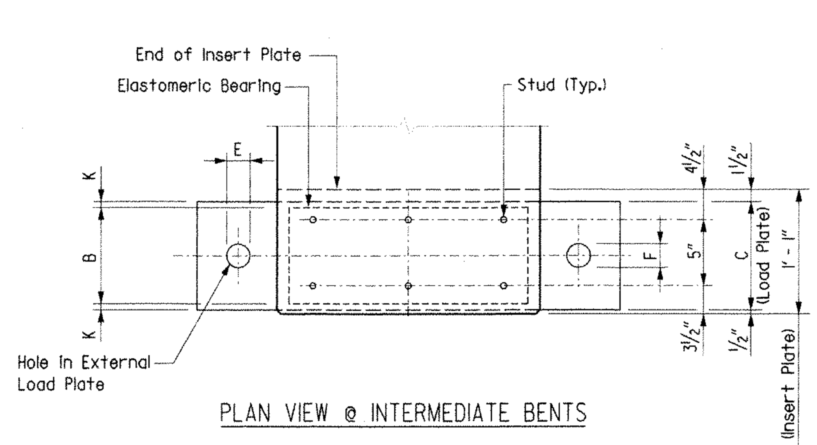


FRONT VIEW

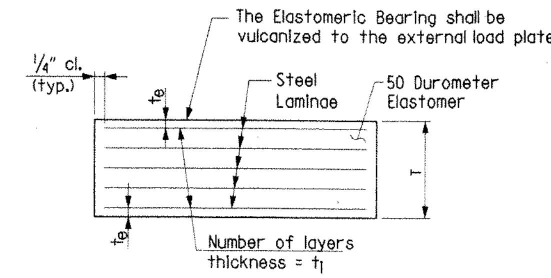
(1) Care shall be taken to ensure that the external load plate is in full and complete contact with the bearing insert plate before welding begins.

(2) C.L. Elastomeric Pad shall be aligned with C.L. Girder

(3) Bearing Insert Plate (M270, Gr. 50W) & Studs shall be considered subsidiary to the item "Prestressed Concrete Beams (Type III)"

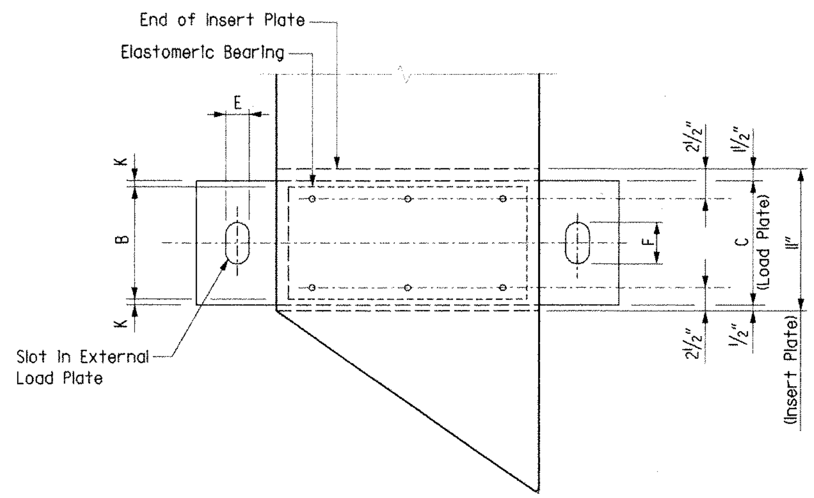


PLAN VIEW @ INTERMEDIATE BENTS

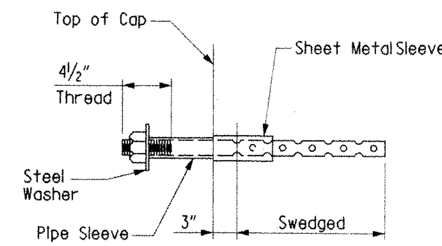


t_e = thickness of elastomer cover on top and bottom of pad
t_1 = thickness of elastomer between steel laminae
N = number of elastomer layers of thickness t_1

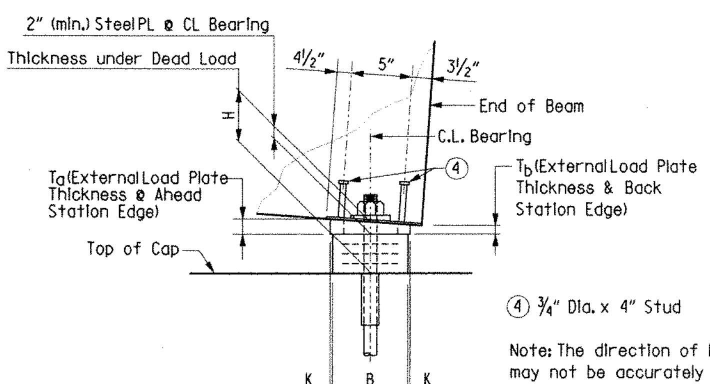
ELASTOMERIC BEARING



PLAN VIEW @ END BENTS



ANCHOR BOLT DETAIL



(4) 3/4" Dia. x 4" Stud

Note: The direction of bevel of the external load plate may not be accurately depicted with respect to the Ta and Tb values shown in the Table of Fabricator Variables.

SIDE VIEW

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 Beams, 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.50W)."

GENERAL NOTES

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

External load plates shall conform to AASHTO M270, Grade 50W. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or AASHTO M298, Class 50.

External load plates shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the Elastomeric bearing. The surface 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(e) for weathering steel.

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

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Beam Spans" (M270, Gr.50W)."

Unless otherwise approved by the engineer, welding of the external load plate at expansion bearings to the bearing insert plate 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.

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

TABLE OF FABRICATOR VARIABLES

LOCATION			BEARING TYPE	NO. of BEARINGS EACH BENT	* MAXIMUM DESIGN LOAD (KIPS)	ELASTOMERIC PAD									EXTERNAL LOAD PLATE										ANCHOR BOLT				
BENT NO.	SPAN NO(S)	BEAM NO.				G	H	A	B	N	t_1	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	C	D	E	F	K	M	BRIDGE A T_a	BRIDGE A T_b	BRIDGE B T_a	BRIDGE B T_b	ANCHOR BOLT (Ø x L)	ANCHOR BOLT GRADE	PIPE SLEEVE SIZE (Ø x L)	SHEET METAL SLEEVE SIZE (Ø x L)	STEEL WASHER SIZE (O.D.)
1	1	All	Exp.	5	126.3	8 3/4"	5 1/4"	1'-10"	8"	4	9/16"	5/16"	5 @ 12 gauge	3 3/8"	9"	2'-11"	3 1/8"	5 7/8"	1/2"	1'-2"	2.03"	1.97"	2.03"	1.97"	2"Øx32 3/4"	55	2 1/2"Øx5 3/4"	4"Ø x 6"	3 3/4"
2	1 2	All	Fixed	10	132.2	7 1/2"	3 11/16 "Bk 3 13/16 "Ah	1'-10"	8"	1	5/8"	7/16"	2 @ 12 gauge	1 3/4"	11"	2'-11"	3 1/8"	3 1/8"	1 1/2"	1'-2"	2.04" 2.16"	1.96" 2.08"	2.04" 2.16"	1.96" 2.08"	2 1/4"Øx34 1/2"	55	2 1/2"Øx4"	4"Ø x 6"	4"
3	2 3	All	Fixed	10	132.2	7 1/2"	3 11/16 "Bk 3 13/16 "Ah	1'-10"	8"	1	5/8"	7/16"	2 @ 12 gauge	1 3/4"	11"	2'-11"	3 1/8"	3 1/8"	1 1/2"	1'-2"	2.04" 2.16"	1.96" 2.08"	2.04" 2.16"	1.96" 2.08"	2 1/4"Øx34 1/2"	55	2 1/2"Øx4"	4"Ø x 6"	4"
4	3 4	All	Fixed	10	132.2	7 1/2"	3 11/16 "Bk 3 13/16 "Ah	1'-10"	8"	1	5/8"	7/16"	2 @ 12 gauge	1 3/4"	11"	2'-11"	3 1/8"	3 1/8"	1 1/2"	1'-2"	2.04" 2.16"	1.96" 2.08"	2.04" 2.16"	1.96" 2.08"	2 1/4"Øx34 1/2"	55	2 1/2"Øx4"	4"Ø x 6"	4"
5	4 5	All	Fixed	10	132.2	7 1/2"	3 11/16 "Bk 3 13/16 "Ah	1'-10"	8"	1	5/8"	7/16"	2 @ 12 gauge	1 3/4"	11"	2'-11"	3 1/8"	3 1/8"	1 1/2"	1'-2"	2.04" 2.16"	1.96" 2.08"	2.04" 2.16"	1.96" 2.08"	2 1/4"Øx34 1/2"	55	2 1/2"Øx4"	4"Ø x 6"	4"
6	5	All	Exp.	5	126.3	8 3/4"	5 1/4"	1'-10"	8"	4	9/16"	5/16"	5 @ 12 gauge	3 3/8"	9"	2'-11"	3 1/8"	5 7/8"	1/2"	1'-2"	2.03"	1.97"	2.03"	1.97"	2"Øx32 3/4"	55	2 1/2"Øx5 3/4"	4"Ø x 6"	3 3/4"

* MAXIMUM DESIGN LOAD = SERVICE LOAD

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
n:\struct\arkansas\final_030355\stlel&b_west fork\B030355xl_el.dgn
3:33:03 PM 8/15/2011

DETAILS OF ELASTOMERIC BEARINGS
WEST FORK KELLY BAYOU

ROUTE 71 SEC. 1

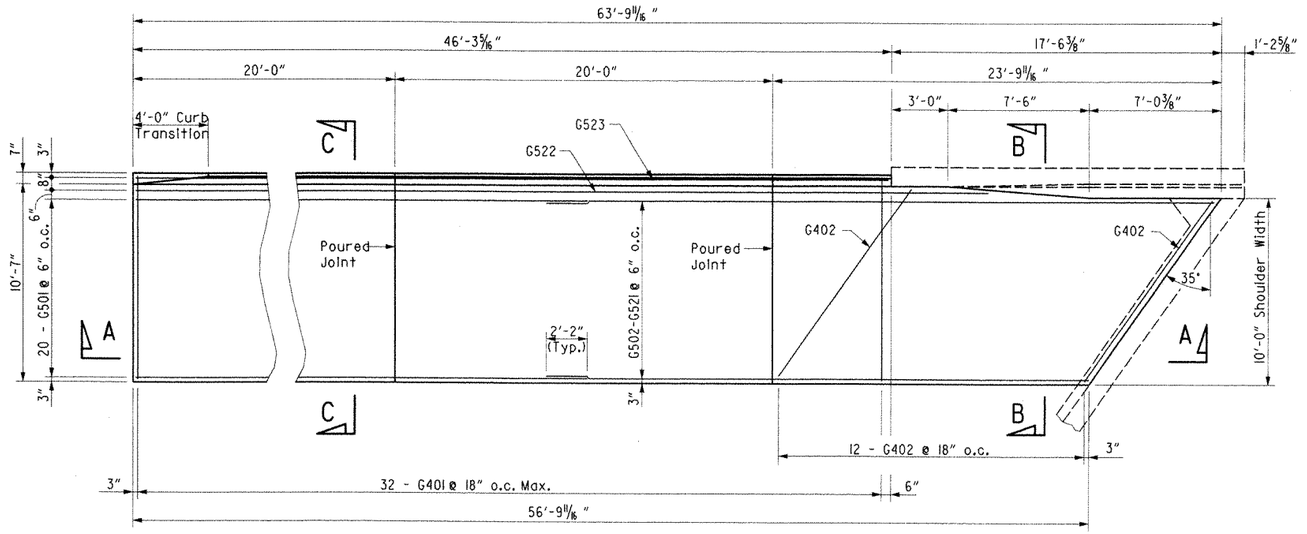
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

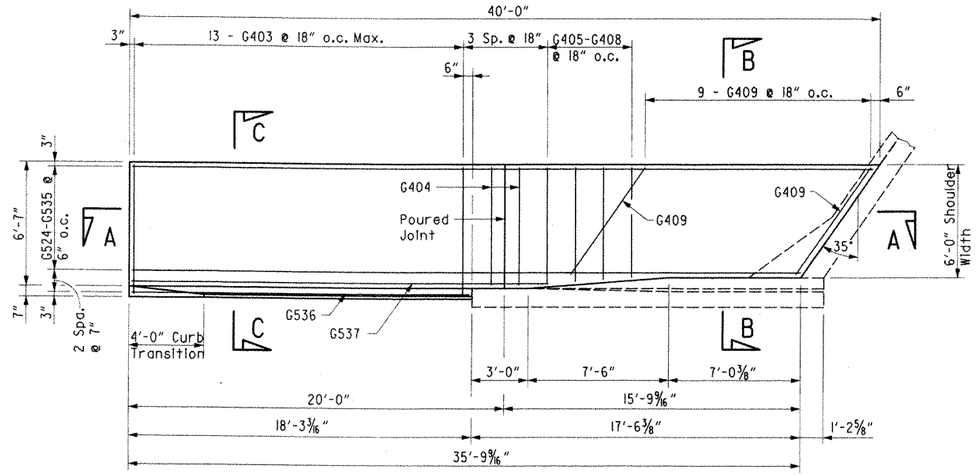
DRAWN BY: RPT DATE: 4-07 FILENAME: ..\B030355xl_el.dgn
CHECKED BY: MAD DATE: 5-07 SCALE: AS SHOWN
DESIGNED BY: SHR/CGN DATE: 4-07

BRIDGE NO. A&B7121 DRAWING NO. 49574

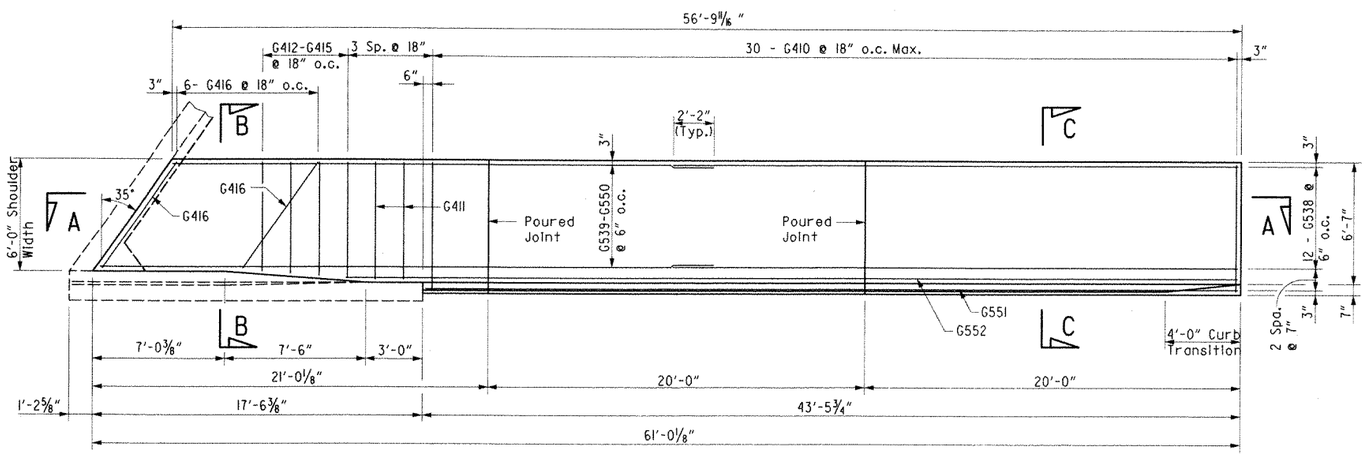
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	35	85
				(2) A&B7121		APPROACH GUTTERS		49575



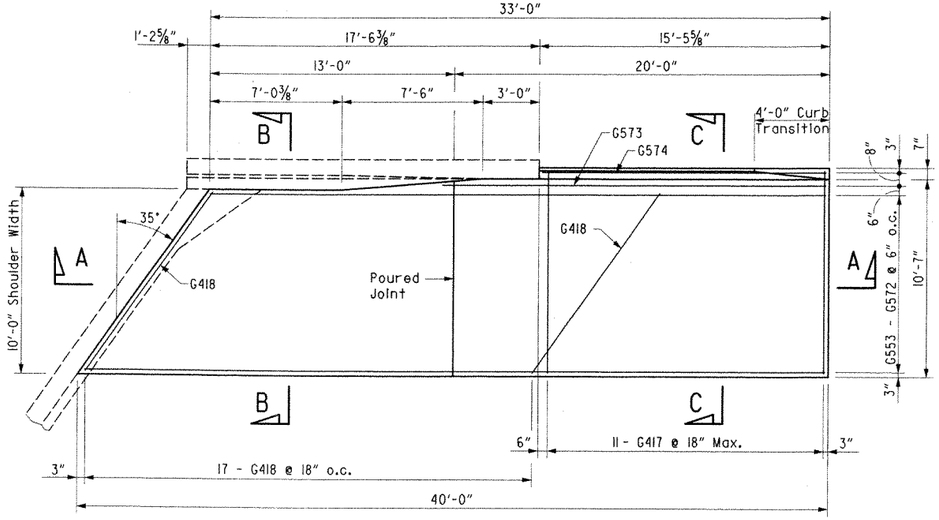
PLAN - 10' GUTTER
(BEGIN BRIDGE)



PLAN - 6' GUTTER
(BEGIN BRIDGE)



PLAN - 6' GUTTER
(END BRIDGE)



PLAN - 10' GUTTER
(END BRIDGE)

GENERAL NOTES:

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

Reinforcement 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.

FOR INFORMATION ONLY

SHEET 1 OF 2
DETAILS OF TYPE SPECIAL 1
APPROACH GUTTER
WEST FORK KELLY BAYOU

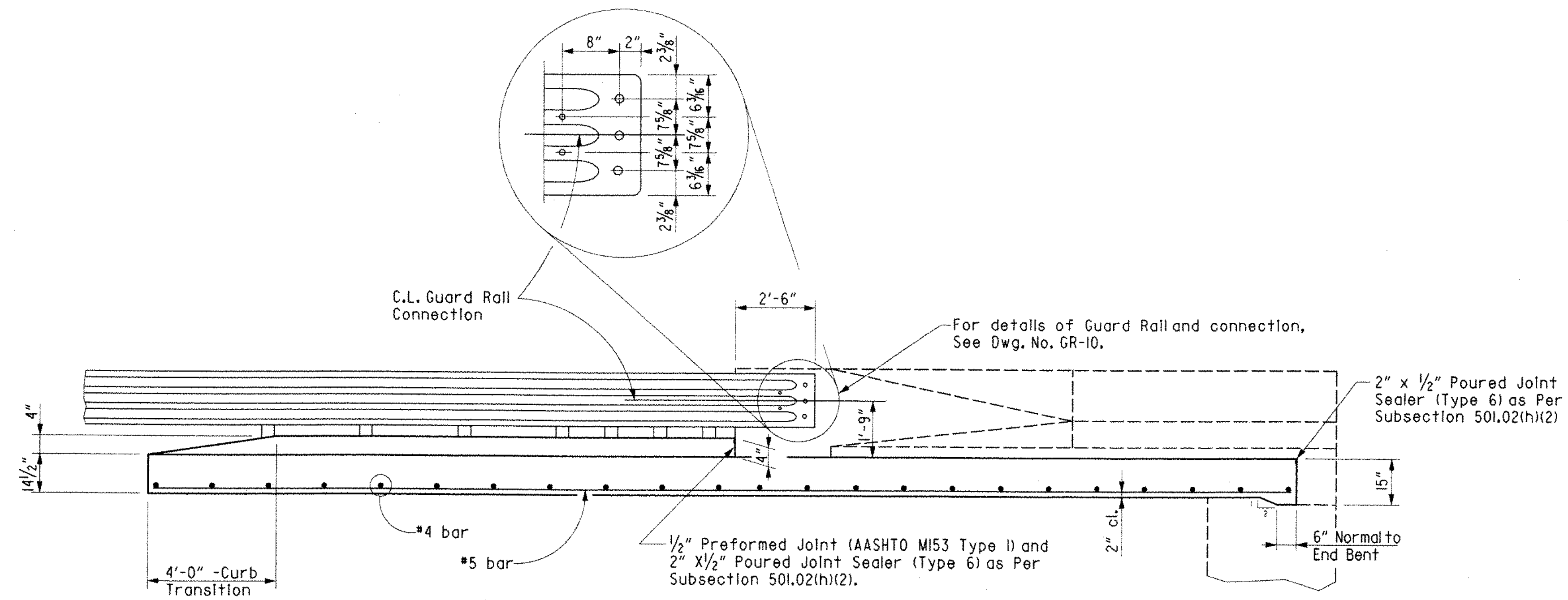
ROUTE 71 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MAD DATE: 3-23-07 FILENAME: \8030355\1.gldgn
CHECKED BY: MWB DATE: 6-07 SCALE: 1/4" = 1'-0"
DESIGNED BY: STANDARD DATE:

BRIDGE NO. A&B7121 DRAWING NO. 49575

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP
n:\structure\arkansas\final\8030355\sheet&b...west fork\8030355x1.gldgn
8/15/2011
3:33:03 PM

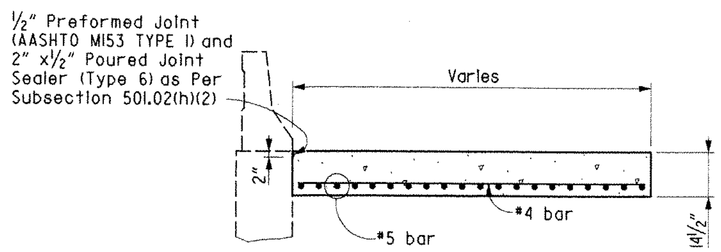
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	36	85
			(2)	A&B7121		APPROACH GUTTERS		49576



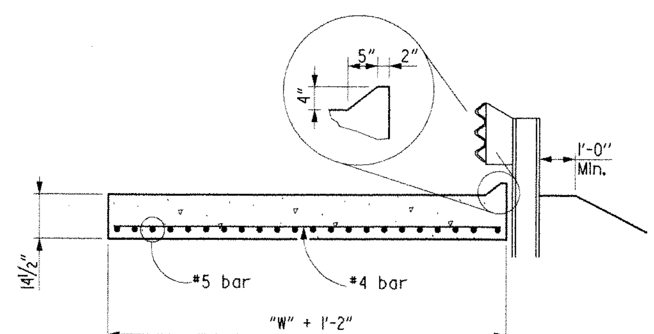
SECTION A - A
NTS

BAR LIST

MARK	NO. REQ'D.	LENGTH
G401	32	10'-10"
G402	12	11'-10"
G403	13	6'-10"
G404	2	6'-3"
G405-G408	1 EACH	5'-10" to 6'-2"
G409	9	6'-11"
G410	30	6'-10"
G411	2	6'-3"
G412-G415	1 EACH	5'-10" to 6'-2"
G416	6	6'-11"
G417	11	10'-10"
G418	17	11'-10"
G501	20	30'-0"
G502-G521	1 EACH	28'-9" to 35'-5"
G522	1	51'-3"
G523	1	45'-11"
G524-G535	1 EACH	35'-7" to 39'-5"
G536	1	17'-11"
G537	1	22'-2"
G538	12	30'-0"
G539-G550	1 EACH	28'-9" to 32'-8"
G551	1	43'-2"
G552	1	47'-5"
G553-G572	1 EACH	32'-10" to 39'-6"
G573	1	20'-5"
G574	1	15'-2"



SECTION B - B
NTS

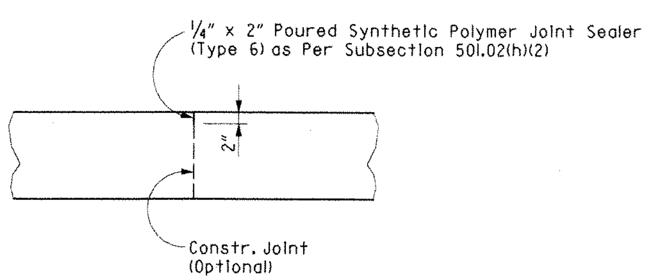


SECTION C - C
NTS

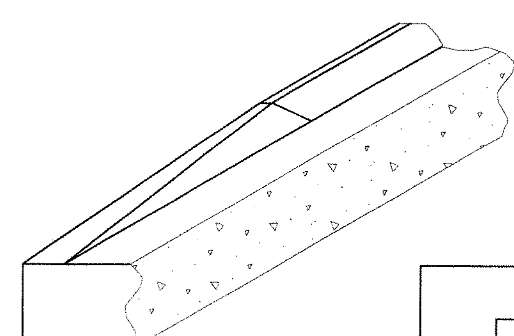
TABLE OF QUANTITIES FOR TYPE SPECIAL I APPROACH GUTTER

AT BEGIN BRIDGE		
"W" Width	Reinforcing Steel	Concrete (Cu. Yds.)
6'	636 lbs.	11.39
10'	1,723 lbs.	29.80

AT END BRIDGE		
"W" Width	Reinforcing Steel	Concrete (Cu. Yds.)
6'	1,074 lbs.	18.46
10'	1,194 lbs.	17.39



DETAILS OF POURED JOINT
NTS



CURB TRANSITION
NTS

FOR INFORMATION ONLY

SHEET 2 OF 2
DETAILS OF TYPE SPECIAL I
APPROACH GUTTER
WEST FORK KELLY BAYOU

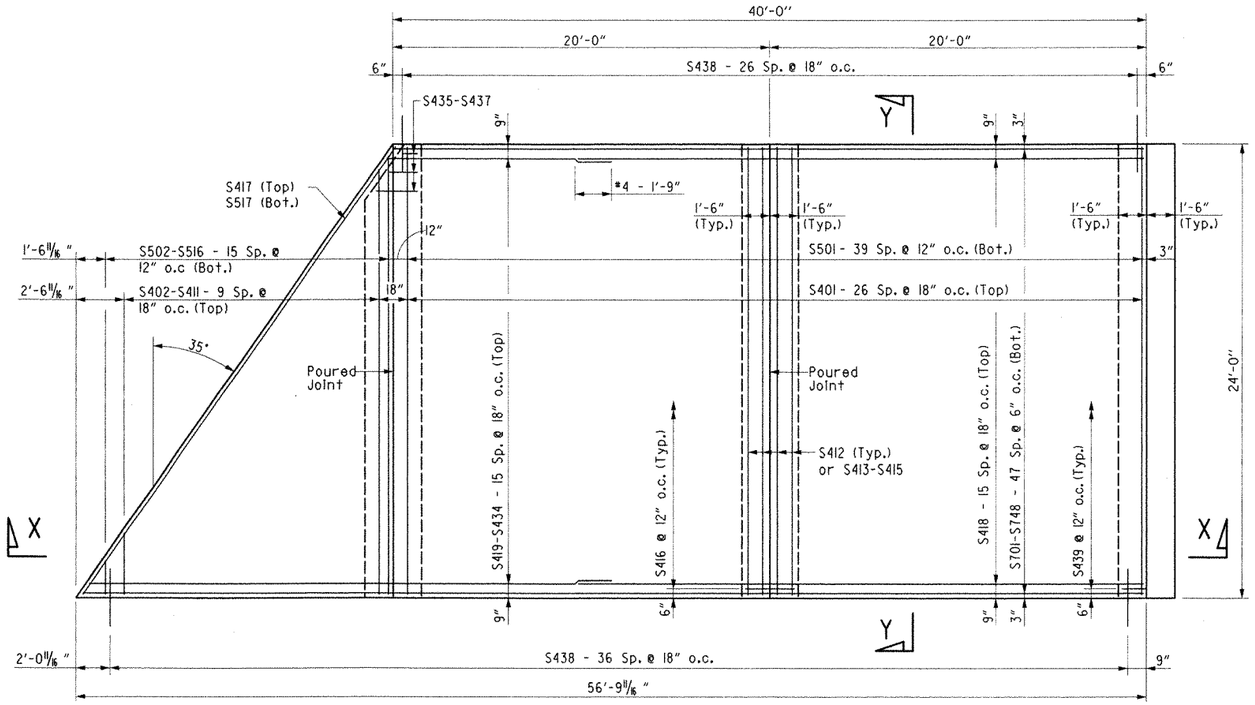
ROUTE 71 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MAD DATE: 3-28-07 FILENAME: v8030355xl_a2.dgn
CHECKED BY: MWB DATE: 6-07 SCALE:
DESIGNED BY: MD/MB DATE: 3-07
BRIDGE NO. A&B7121 DRAWING NO. 49576

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
n:\struct\arkansas\final_030355\sitelab_west fork\b030355xl_a2.dgn 8/15/2011
3:33:02 PM

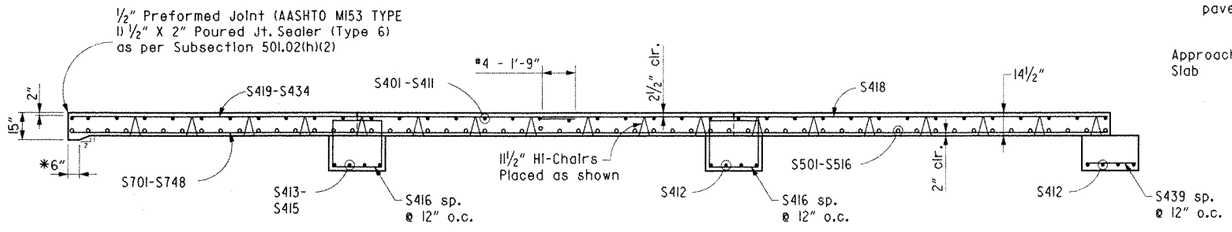
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
6	ARK.			
JOB NO.		030355	37	85
(2) A&B7121		APPROACH SLAB		49577



PLAN - APPROACH SLAB

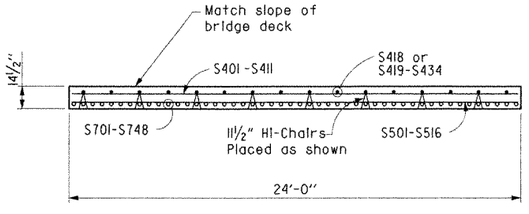
SCALE: 1/4"=1'-0"



* Normal to End Bent

SECTION X - X

SCALE: 1/4"=1'-0"



SECTION Y - Y

SCALE: 1/4"=1'-0"

TABLE OF QUANTITIES FOR ONE TYPE SPECIAL I APPROACH SLAB

Slab Width	Reinforcing Steel	Concrete (Cu. Yds.)
24'-0"	7,798 lbs.	66.48

GENERAL NOTES

Concrete shall be Class S (AE) (f'c = 4,000 psi).

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

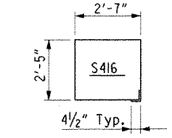
Approach Slabs will be measured and paid for in accordance with Section 504.

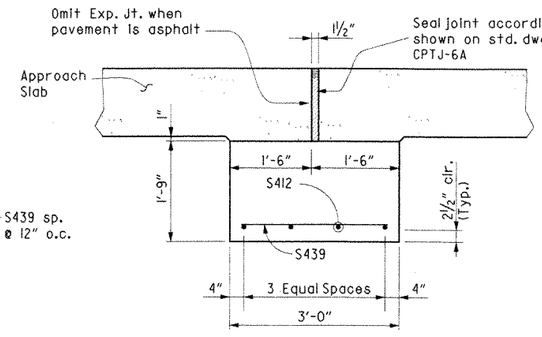
Joint sealer included in the pay item "Approach Slab".

Surface finish for approach slabs shall match that used on the bridge deck.

BAR LIST

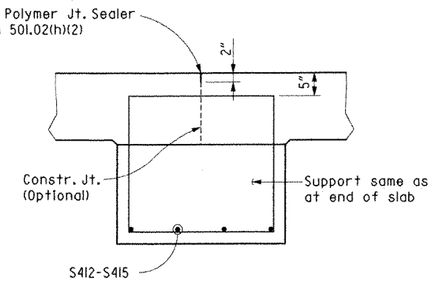
MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
S401	27	23'-8"		Dimensions are out to out of bars.
S402-S411	1 EACH	3'-3" to 22'-6"		
S412	8	23'-8"		
S413-S414	1 EACH	21'-9" to 23'-0"		
S415	2	23'-8"		
S416	45	10'-4"	2"	
S417	1	28'-11"		
S418	16	30'-0"		
S419-S434	1 EACH	11'-11" to 27'-8"		
S435-S437	1 EACH	0'-9" to 2'-2"		
S438	64	3'-0"		
S439	24	2'-7"		
S501	40	23'-8"		
S502-S516	1 EACH	1'-9" to 23'-2"		
S517	1	28'-11"		
S701-S748	1 EACH	39'-10" to 56'-3"		





DETAILS OF SUPPORT AT END OF SLAB

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



DETAILS OF SUPPORT AT MIDDLE OF SLAB

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

FOR INFORMATION ONLY

DETAILS OF TYPE SPECIAL I APPROACH SLAB WEST FORK KELLY BAYOU

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MAD DATE: 3-21-07 FILENAME: \B030355xl.dgn

CHECKED BY: MWB DATE: 6-07 SCALE: As Shown

DESIGNED BY: MAD DATE: 3-07

BRIDGE NO. A&B7121 DRAWING NO. 49577

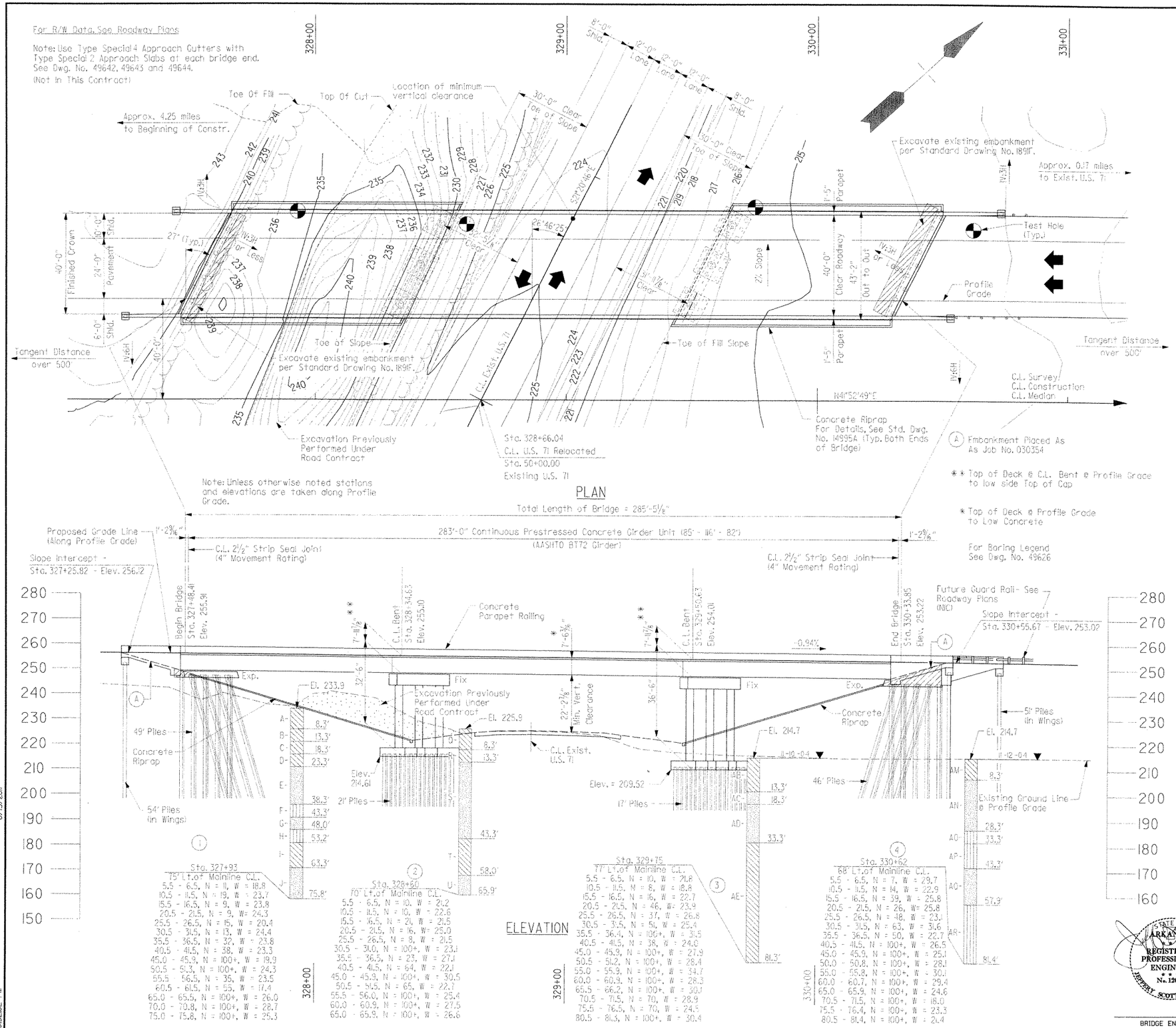
PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS

n:\structure\arkansas\final_030355\sheets\b_west fork\B030355xl.dgn 8/15/2011 3:33:02 PM

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.		030355	38	85
				(2) A7124		LAYOUT		49625

For R/W Data, See Roadway Plans

Note: Use Type Special 4 Approach Cutters with Type Special 2 Approach Slabs at each bridge end. See Dwg. No. 49642, 49643 and 49644. (Not In This Contract)



Note: Unless otherwise noted stations and elevations are taken along Profile Grade.

PLAN

Total Length of Bridge = 285'-5⅛"

ELEVATION

Sta. 327+93
75' Lt. of Mainline C.L.
5.5 - 6.5, N = 11, W = 18.8
10.5 - 11.5, N = 19, W = 23.7
15.5 - 16.5, N = 9, W = 23.8
20.5 - 21.5, N = 9, W= 24.3
25.5 - 26.5, N = 15, W = 20.4
30.5 - 31.5, N = 13, W = 24.4
35.5 - 36.5, N = 32, W = 23.8
40.5 - 41.5, N = 38, W = 23.3
45.0 - 45.9, N = 100+, W = 19.9
50.5 - 51.3, N = 100+, W = 24.3
55.5 - 56.5, N = 35, W = 23.5
60.5 - 61.5, N = 55, W = 17.4
65.0 - 65.5, N = 100+, W = 26.0
70.0 - 70.8, N = 100+, W = 28.7
75.0 - 75.8, N = 100+, W = 25.3
328+00

Sta. 328+60
70' Lt. of Mainline C.L.
5.5 - 6.5, N = 10, W = 24.2
10.5 - 11.5, N = 16, W = 22.6
15.5 - 16.5, N = 21, W = 21.5
20.5 - 21.5, N = 16, W= 25.0
25.5 - 26.5, N = 8, W = 21.5
30.5 - 31.0, N = 100+, W = 23.1
35.5 - 36.5, N = 23, W = 27.1
40.5 - 41.5, N = 64, W = 22.1
45.0 - 45.9, N = 100+, W = 30.5
50.5 - 55.5, N = 65, W = 22.7
55.5 - 56.0, N = 100+, W = 25.4
60.0 - 60.9, N = 100+, W = 27.5
65.0 - 65.9, N = 100+, W = 26.6

Sta. 329+75
77' Lt. of Mainline C.L.
5.5 - 6.5, N = 10, W = 21.8
10.5 - 11.5, N = 8, W = 18.8
15.5 - 16.5, N = 16, W = 22.7
20.5 - 21.5, N = 46, W= 23.9
25.5 - 26.5, N = 37, W = 26.8
30.5 - 31.5, N = 51, W = 25.4
35.5 - 36.4, N = 100+, W = 31.5
40.5 - 41.5, N = 38, W = 24.0
45.0 - 45.9, N = 100+, W = 27.9
50.5 - 51.2, N = 100+, W = 28.4
55.0 - 55.9, N = 100+, W = 34.7
60.0 - 60.9, N = 100+, W = 28.3
65.5 - 66.2, N = 100+, W = 30.1
70.5 - 71.5, N = 70, W = 28.9
75.5 - 76.5, N = 70, W = 24.5
80.5 - 81.3, N = 100+, W = 30.4
329+00

Sta. 330+62
68' Lt. of Mainline C.L.
5.5 - 6.5, N = 7, W = 29.7
10.5 - 11.5, N = 14, W = 22.9
15.5 - 16.5, N = 39, W = 25.8
20.5 - 21.5, N = 26, W= 25.8
25.5 - 26.5, N = 48, W = 23.1
30.5 - 31.5, N = 63, W = 31.6
35.5 - 36.5, N = 50, W = 22.7
40.5 - 41.5, N = 100+, W = 26.5
45.0 - 45.9, N = 100+, W = 25.1
50.0 - 50.8, N = 100+, W = 28.1
55.0 - 55.8, N = 100+, W = 30.1
60.0 - 60.7, N = 100+, W = 29.4
65.0 - 65.9, N = 100+, W = 24.6
70.5 - 71.5, N = 100+, W = 18.0
75.5 - 76.4, N = 100+, W = 23.3
80.5 - 81.4, N = 100+, W = 24.4
330+00

GENERAL NOTES

BENCH MARK: Aluminum Disk marked "State of Arkansas Benchmark Hwy. Dept." set in the S.W. corner of Ramp 2 Bridge over East Kelly Bayou in the concrete barrier rail, Sta. 333+06.8, 326.4' right, North 1468259.2 plus/minus, East 730679.8 plus/minus, Elev. = 237.35

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 LOAD: HS20 & MILITARY LOADING — METHOD OF DESIGN: Load Factor
SEISMIC PERFORMANCE CATEGORY: A

MATERIALS AND STRENGTHS:
Class S(AE) Concrete (Superstructure) f'c = 4,000 psi
Class S Concrete (Substructure) f'c = 3,500 psi
Class S Concrete (Prestressed Girders) f'c = 6,000 psi
Reinforcing Steel (AASHTO M31 or M53, Gr. 60) fy = 60,000 psi
Structural Steel (AASHTO M270, Gr. 50W) Fy = 50,000 psi
Structural Steel (AASHTO M270, Gr. 36) Fy = 36,000 psi

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

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

CLASS I 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.

FOOTINGS: Top of footings for Bents 2 & 3 shall be set a minimum of 2'-0" below finished ground. Foundations for footings shall be prepared in accordance with subsection 801.04. Excavations shall be backfilled and compacted to the level of the proposed ground in accordance with subsection 801.08.

CONCRETE PILING: All piling shall be 16" square prestressed concrete and shall be driven with an approved air, steam, or diesel hammer to a minimum ultimate bearing capacity of 150 tons. All piling shall have the following minimum penetration: Bent 1 - 20' below the bottom of cap, Bents 2 and 3 - 15' below the bottom of footing, Bent 4 - 40' below the bottom of cap.

DRIVING SYSTEM: The driving system approval and the ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b) "Method B - Wave Equation Analysis (WEAP)" of the Standard Specifications. It is estimated that the minimum required rated energy of the hammer to obtain the minimum ultimate bearing capacity will be 40,000 foot pounds per blow.

PILE DESIGN CAPACITY: 16" square prestressed concrete piles = 55 tons.

Drive one test pile in Bent 1A-4A and 1B-4B. Test piles shall be 5 feet longer than the estimated pile lengths shown on the layout. Lengths of piles shown are for estimating quantities only. Actual lengths to be determined in the field.

PREBORING: Preboring or other methods as approved by the Engineer may be required for piling in Bents 2 and 3 to achieve minimum penetration requirements. Any required preboring will be determined and directed by the Engineer after the first pile is driven in a bent and will be paid for under the item "Concrete Piling 16" Square".

Size and actual depths of preboring to be determined by the Engineer. The Contractor shall be responsible for keeping prebored holes free from debris prior to backfilling which may require the use of temporary casings or other methods. Temporary casings, if necessary, will not be paid for directly but will be considered subsidiary to the item "Concrete Piling 16" Square".

DETAIL DRAWINGS:	DRAWING NO.
End Bents	49627 - 49629
Intermediate Bents	49630 - 49632
283'-0" Cont. Prestressed Concrete Girder	49633 - 49638
Girder Protective Assembly	49639
Neoprene Strip Seal	49640
Elastomeric Bearings	49641
Type Special 4 Approach Cutter	49642 and 49643
Type Special 2 Approach Slab	49644
Concrete Piling	2383

MAINTENANCE OF TRAFFIC: See Sheet No. 3A.

8-15-2011
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12097
JEFFREY SCOTT MILLSAPS
BRIDGE ENGINEER

BRIDGE A
LAYOUT OF BRIDGE
OVER U.S. ROUTE 71 EXISTING
LA LINE - DODDRIDGE (F)
MILLER COUNTY

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

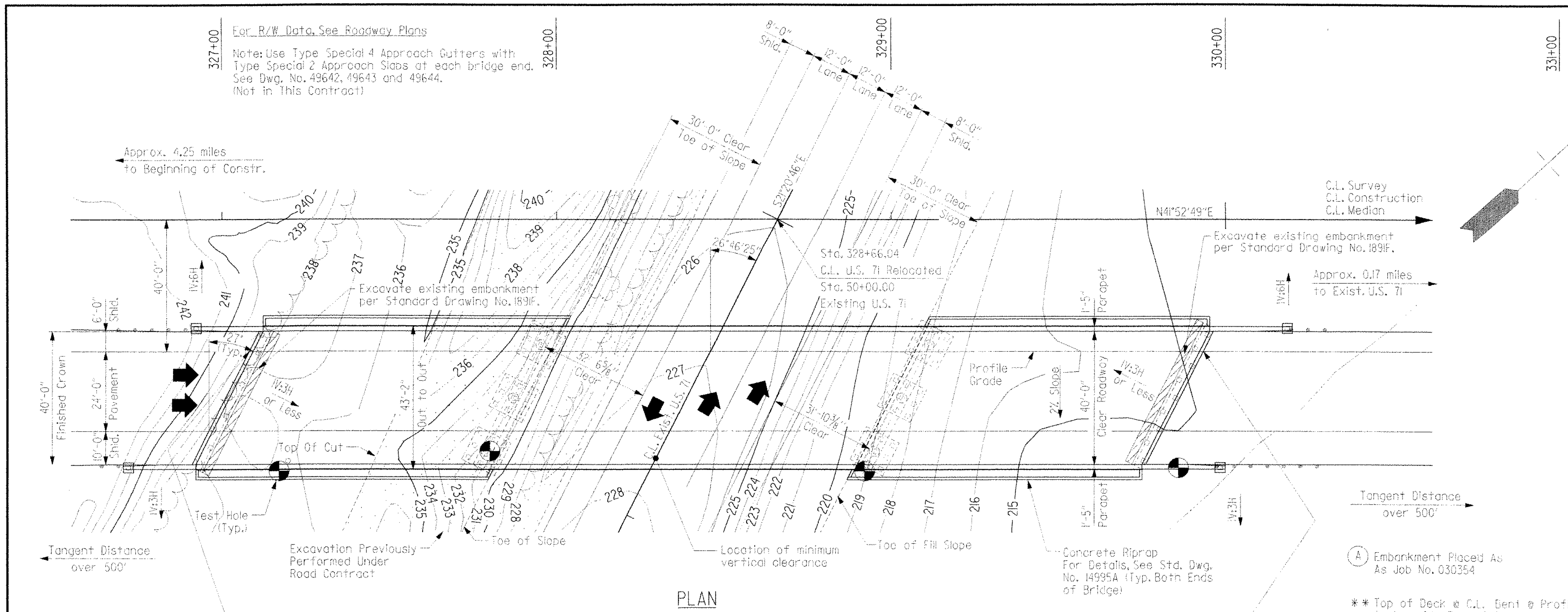
DRAWN BY: TAB DATE: 9-05 FILENAME: \030355A4_LI.DGN
CHECKED BY: MAD/MWB DATE: 9-07 SCALE: 1"= 20'
DESIGNED BY: FMB/MKJ DATE: 9-05

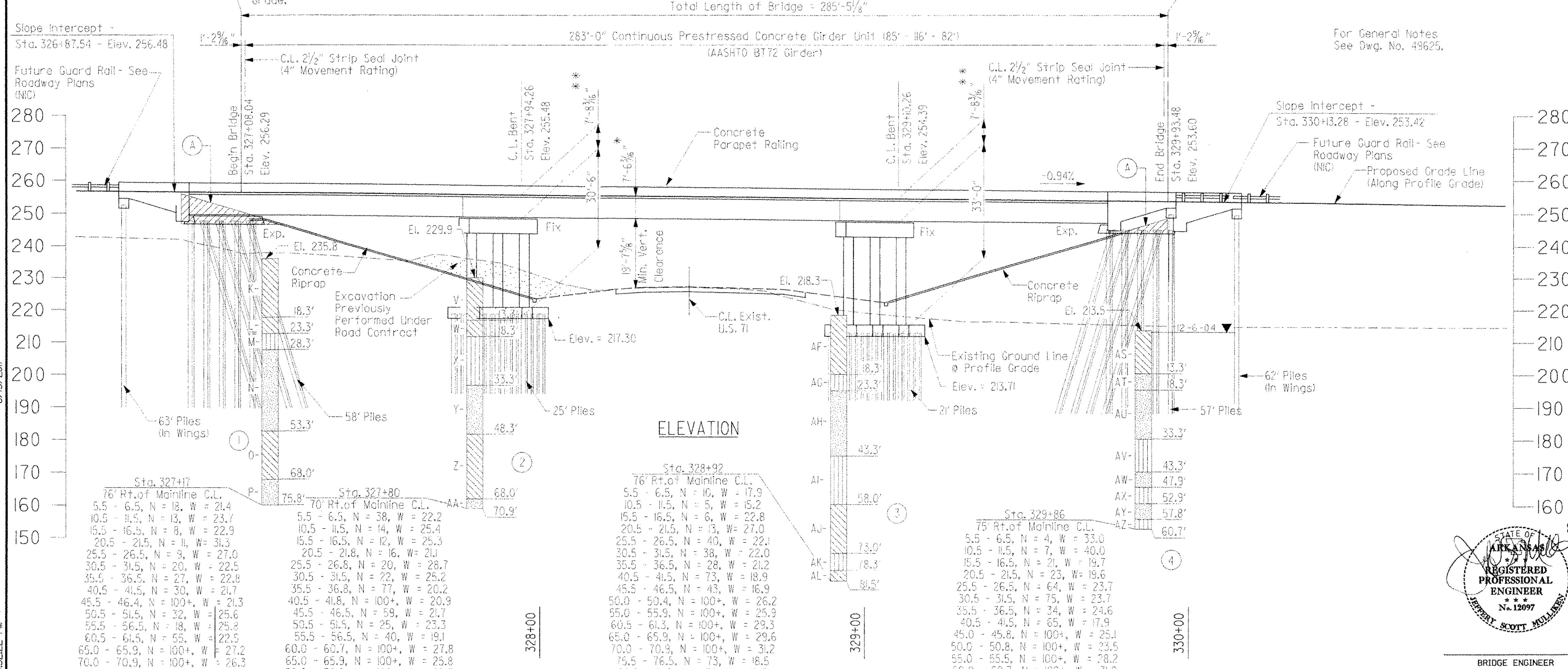
BRIDGE NO. A7124 DRAWING NO. 49625

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS

N:\Struct\Arkansas\Final_030305\Site4A&B_71.dgn Exist 71\030355A4_LI.DGN
8/15/2011
3:52:02 PM

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.		030355	39	85
				(2) B7124		LAYOUT		49626





(A) Embankment Placed As As Job No. 030354

** Top of Deck @ C.L. Bent @ Profile Grade to low side Top of Cap

* Top of Deck @ Profile Grade to Low Concrete

For General Notes See Dwg. No. 49625.

Boring Legend

- A - Gray & Tan, Stiff Lean Clay with Sand
- B - Yellowish Orange, Reddish Brown & Light Gray, Very Stiff Sandy Lean Clay
- C - Gray, Brown & Tan, Stiff Lean Clay with Sand
- D - Gray & Dark Gray, Stiff Lean Clay
- E - Yellowish Orange & Tan, Medium Dense to Dense Silty Sand
- F - Gray & Tan, Hard Sandy Silt
- G - Beige & Yellowish Orange, Very Dense Silty Sand
- H - Dark Gray & Dark Yellowish Orange, Very Hard Sandy Silt
- I - Black & Olive Gray, Hard Sandy Silty Clay
- J - Light Olive Gray, Olive Gray & Dark Gray, Very Dense Silty Sand
- K - Gray, Yellowish Orange, Tan & Reddish Brown, Medium Stiff to Very Stiff Lean Clay with Sand
- L - Dark Gray & Brown, Stiff Lean Clay
- M - Gray, Tan & Dark Gray, Stiff Sandy Silt
- N - Tan, Light Gray, Yellowish Orange, Dark Tan, Brown & Pinkish, Medium Dense to Very Dense Silty Sand
- O - Black, Dark Gray & Olive Gray, Very Stiff to Very Hard Sandy Silty Clay
- P - Olive Gray & Black, Very Dense Silty Sand
- Q - Tan & Brown, Stiff Sandy Lean Clay
- R - Gray, Stiff Lean Clay
- S - Beige, Dark Yellowish Orange, Brown, Copper, Light Gray, Yellowish Orange & Tan, Loose to Very Dense Silty Sand
- T - Dark Gray & Dark Brown, Very Hard Sandy Silty Clay
- U - Dark Gray, Very Dense Silty Sand
- V - Dark Tan, Light Gray, Yellowish Orange & Tan, Stiff to Hard Sandy Lean Clay
- W - Dark Gray & Tan, Stiff Lean Clay
- X - Gray & Yellowish Orange, Very Stiff Sandy Silt
- Y - Yellowish Orange, Brown & Tan, Very Dense Silty Sand
- Z - Dark Gray, Brown & Olive Gray, Very Stiff to Very Hard Sandy Silty Clay
- AA - Olive Gray, Very Dense Silty Sand
- AB - Gray, Tan, Light Gray & Yellowish Orange, Medium Stiff to Stiff Lean Clay with Sand
- AC - Light Gray & Tan, Medium Dense Poorly Graded Sand with Silt
- AD - Yellowish Orange & Tan, Dense to Very Dense Poorly Graded Sand with Silt
- AE - Olive Gray, Black, Dark Gray & Dark Greenish Gray, Hard to Very Hard Silty Clay
- AF - Light Gray, Tan, Dark Gray & Gray, Medium Stiff to Stiff Sandy Silty Clay
- AG - Tan, Stiff Sandy Silt
- AH - Dark Tan, Tan, Light Gray, Dark Yellowish Orange & Beige, Medium Dense to Very Dense Poorly Graded Sand with Silt
- AI - Olive Gray, Greenish Gray & Dark Gray, Hard to Very Hard Sandy Silt
- AJ - Dark Gray & Olive Gray, Very Hard Silty Clay
- AK - Dark Gray, Very Hard Sandy Silt
- AL - Olive Gray & Light Gray, Very Hard Silty Clay
- AM - Olive Gray & Beige, Medium Stiff Sandy Silty Clay
- AN - Tan, Yellowish Orange, Light Yellowish Orange & Beige, Medium Dense to Dense Poorly Graded Sand with Silt
- AO - Yellowish Orange, Light Gray & Tan, Very Hard Sandy Silt
- AP - Olive Gray, Greenish Gray & Dark Gray, Hard to Very Hard Silt with Sand
- AQ - Dark Gray, Olive Gray & Black, Very Dense Silty Sand
- AR - Gray, Yellowish Orange, Olive Gray & Dark Green, Very Hard Silt with Sand
- AS - Copper, Dark Brown, Olive Gray & Black, Soft to Medium Stiff Lean Clay
- AT - Gray & Yellowish Orange, Medium Dense Poorly Graded Sand with Silt
- AU - Tan, Brown, Light Gray & Yellowish Orange, Medium Dense to Very Dense Poorly Graded Sand with Silt
- AV - Olive Gray & Dark Gray, Hard to Very Hard Silt with Sand
- AW - Light Olive Gray, Very Dense Silty Sand
- AX - Light Olive Gray & Black, Very Hard Silt with Sand
- AY - Olive Gray, Very Dense Silty Sand
- AZ - Olive Gray, Very Hard Silt with Sand

W = Moisture Content

BRIDGE B
LAYOUT OF BRIDGE
OVER U.S. ROUTE 71 EXISTING
LA LINE - DODDRIDGE (F)
MILLER COUNTY

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

State of Arkansas Registered Professional Engineer No. 12097 — Jeffery Scott Mullen — 8-15-2011

BRIDGE ENGINEER

DRAWN BY: TAR DATE: 9-05 FILENAME: b030355B4_LL.DGN
CHECKED BY: MAD/MWB DATE: 9-07 SCALE: 1" = 20'
DESIGNED BY: EMB/MKJ DATE: 9-05
BRIDGE NO. B7124 DRAWING NO. 49626

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS

N:\struct\Arkansas\Final_030355\Site4A&B_71 over Exist 71\B030355B4_LL.DGN 8/15/2011

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.		030355	40	85
				A&B7124		END BENT DETAILS		49627

TABLE OF VARIABLES

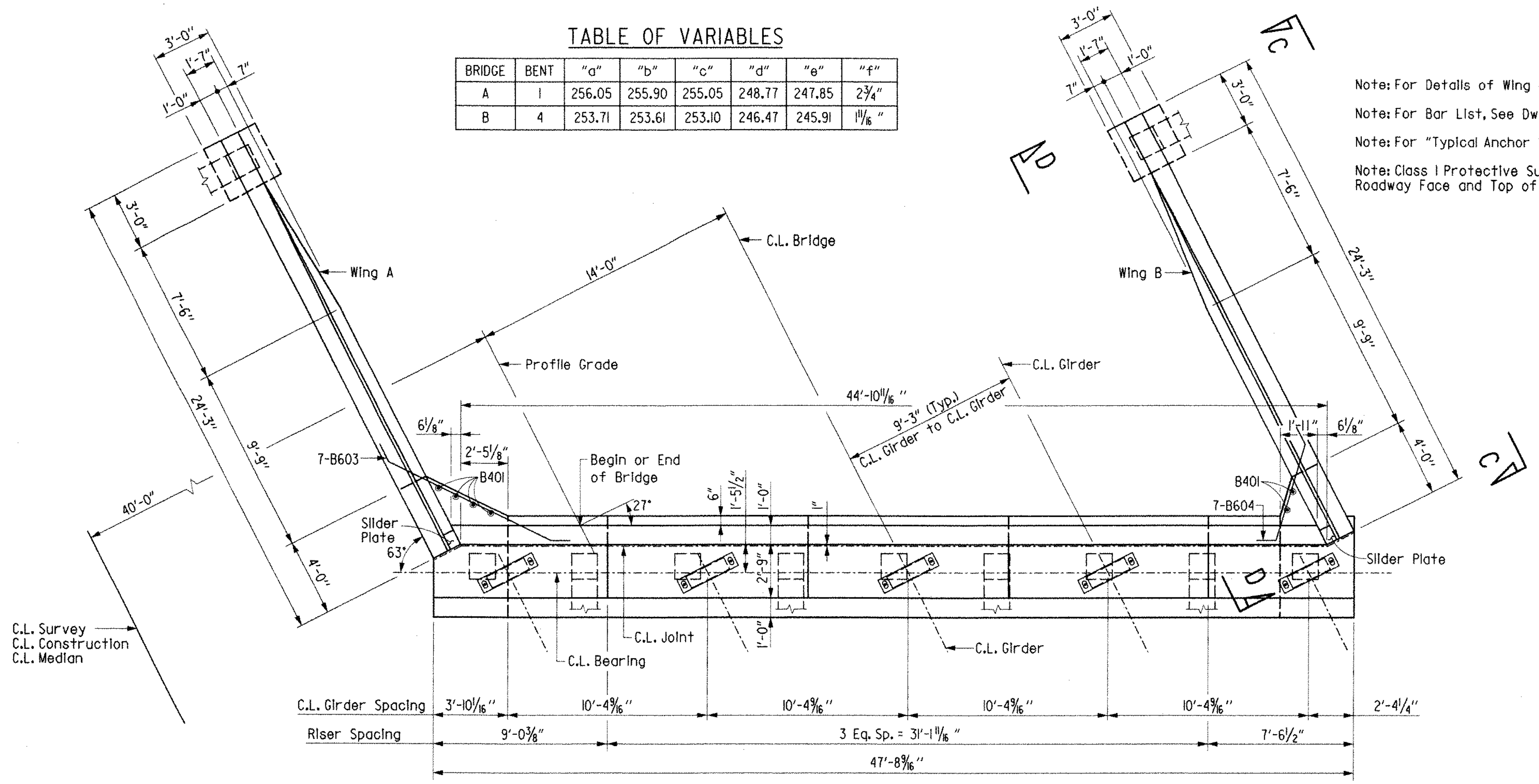
BRIDGE	BENT	"a"	"b"	"c"	"d"	"e"	"f"
A	1	256.05	255.90	255.05	248.77	247.85	2¾"
B	4	253.71	253.61	253.10	246.47	245.91	1 11/16"

Note: For Details of Wing and Rail, and View C-C and D-D, See Dwg. No. 49629.

Note: For Bar List, See Dwg. No. 49629.

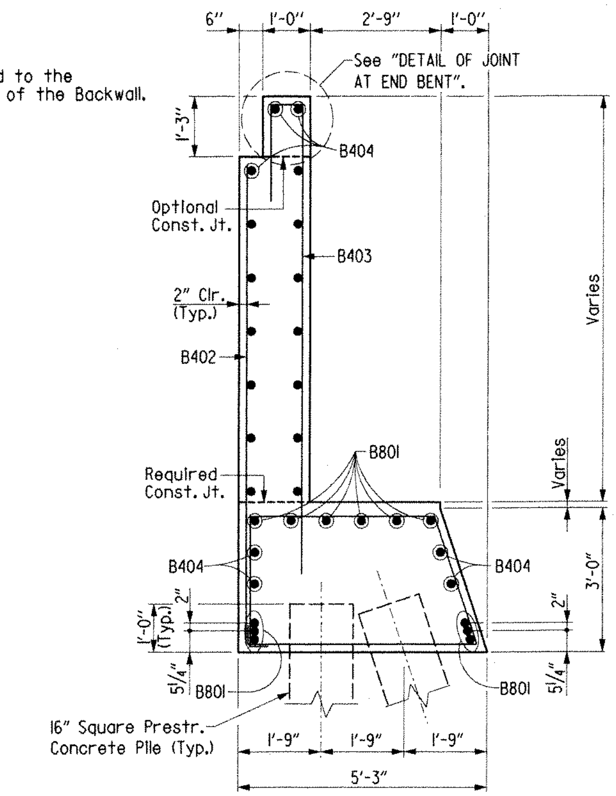
Note: For "Typical Anchor Bolt Layout", See Dwg. No. 49628.

Note: Class 1 Protective Surface Treatment shall be applied to the Roadway Face and Top of Transition Rail, and to the Top of the Backwall.



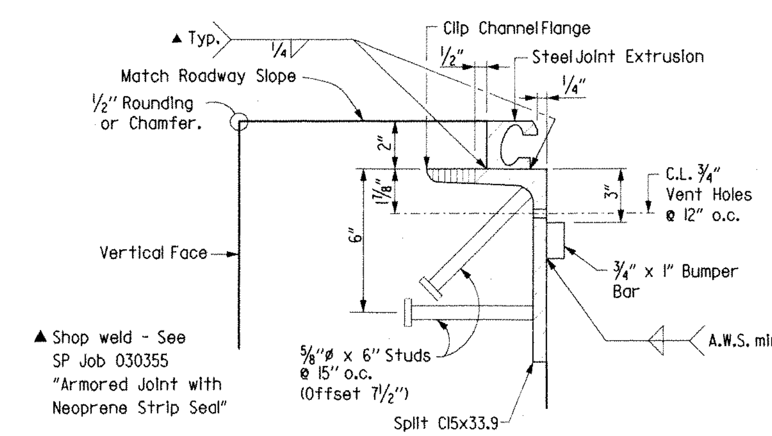
PLAN

Bridge A, End Bent 1 (Looking Back)
Bridge B, End Bent 4 (Looking Ahead)
¼" = 1'-0"



SECTION A-A

½"=1'-0"

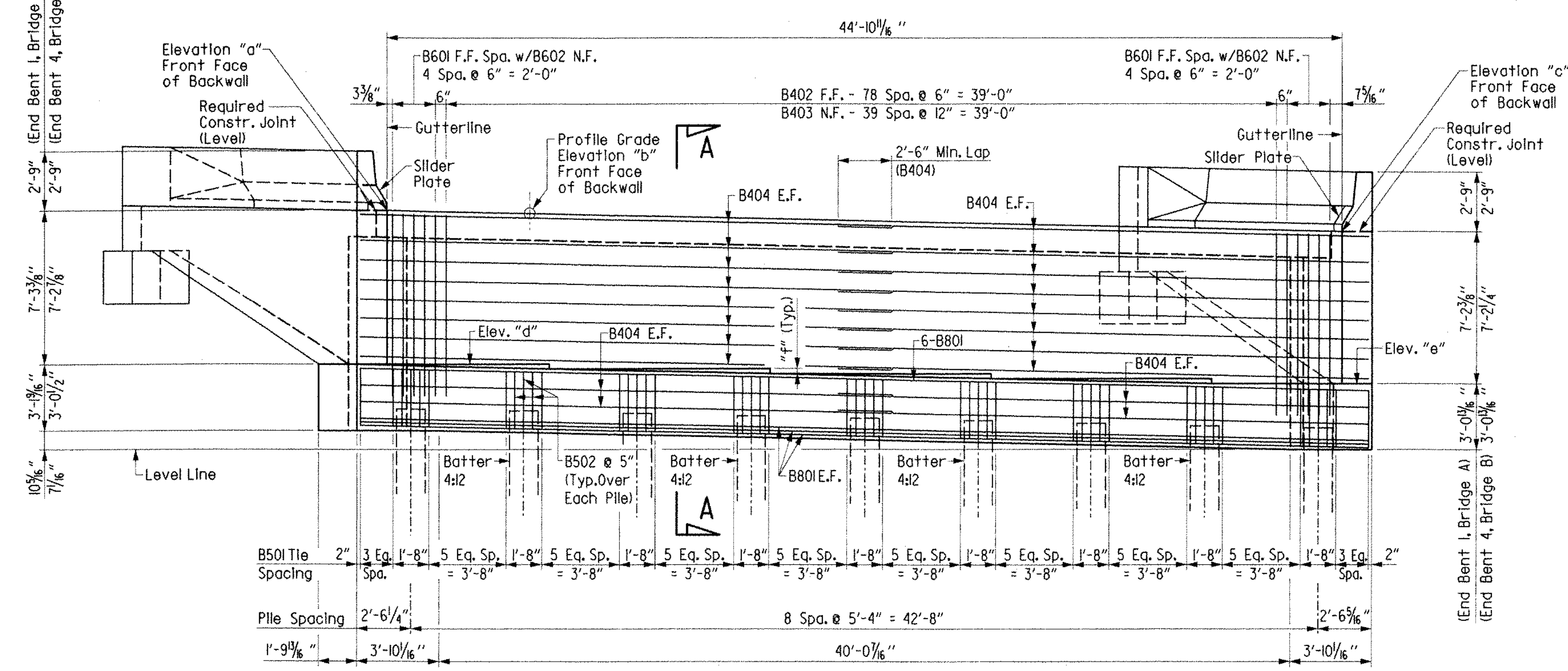


Note: Concrete to be hand packed under the joint armor in the backwall.

For additional details, See Dwg. No. 49640.

DETAIL OF JOINT AT END BENT

No Scale



ELEVATION

Bridge A, End Bent 1 (Looking Back)
Bridge B, End Bent 4 (Looking Ahead)
¼" = 1'-0"

SHEET 1 OF 3
DETAILS OF END BENTS
BRIDGE OVER U.S. ROUTE 71 EXISTING

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFREY SCOTT MULLIKEN 8-15-2011

BRIDGE ENGINEER

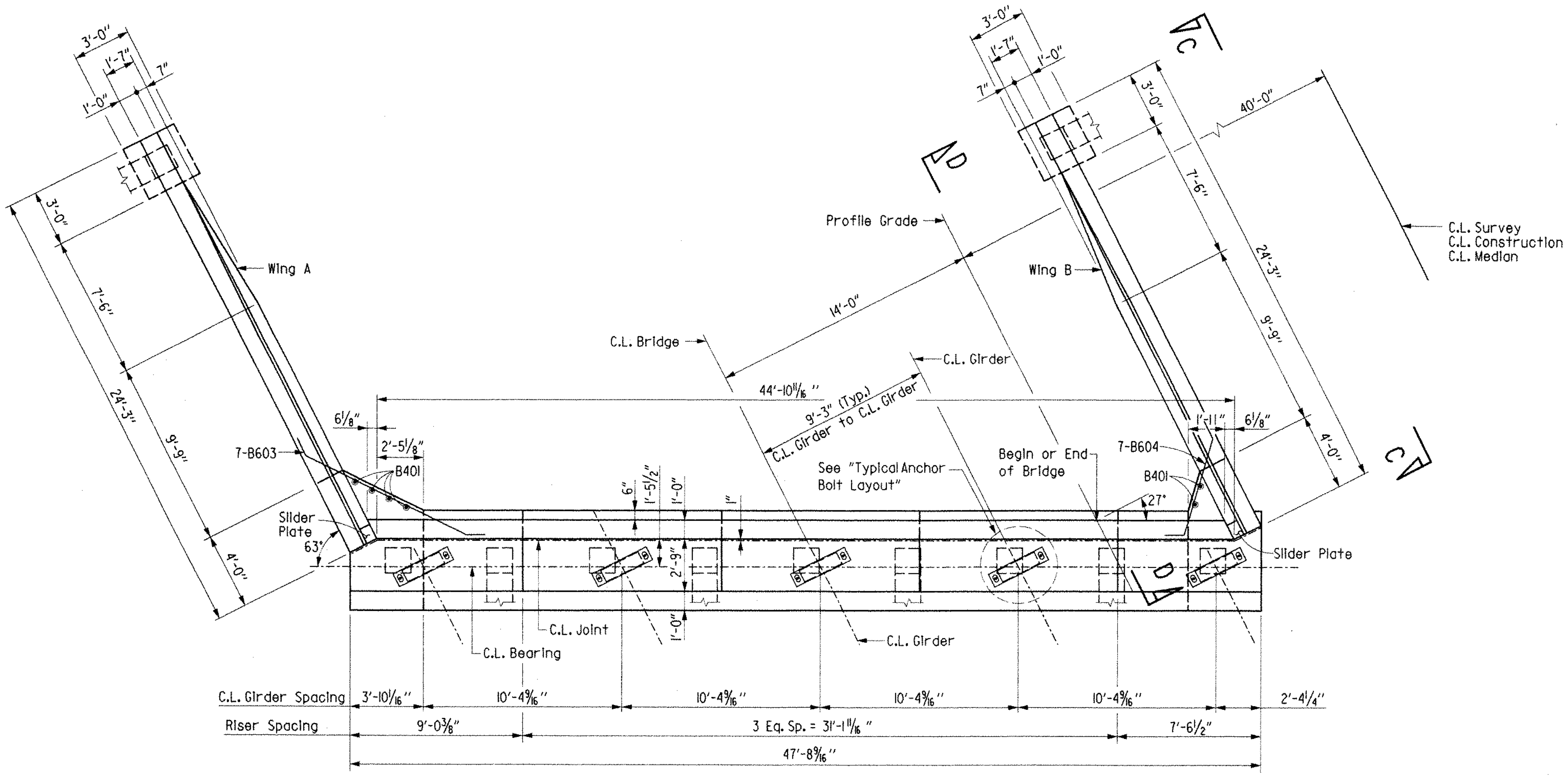
DRAWN BY: MAD DATE: 7-07 FILENAME: \B030355x4_bl.dgn
CHECKED BY: MWB DATE: 9-07 SCALE: AS SHOWN
DESIGNED BY: AJP/SHR DATE: 6-07

BRIDGE NO. A&B7124 DRAWING NO. 49627

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS

p:\struct\arkansas\final_030355\Site4A&B_71 over Exist 71\B030355x4_bl.dgn 8/15/2011 3:35:00 PM

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.		030355	41	85
				A&B7124		END BENT DETAILS		49628



PLAN

Bridge A, End Bent 4 (Looking Ahead)
Bridge B, End Bent 1 (Looking Back)
1/4" = 1'-0"

TABLE OF VARIABLES

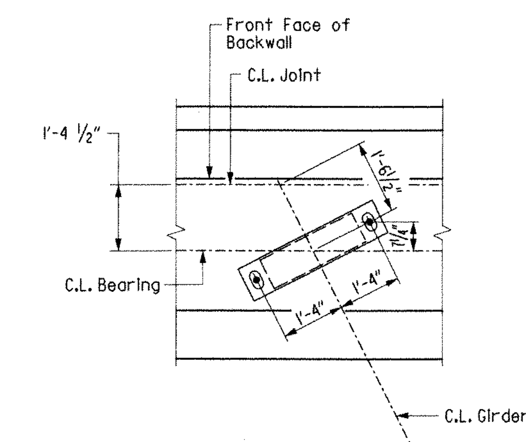
BRIDGE	BENT	"a"	"b"	"c"	"d"	"e"	"f"
A	4	252.39	253.23	253.38	245.22	246.14	2 3/4"
B	1	255.76	256.28	256.37	248.54	249.11	1 11/16"

Note: For Details of Wing and Rail, and View C-C and D-D, See Dwg. No. 49629.

Note: For Bar List, See Dwg. No. 49629.

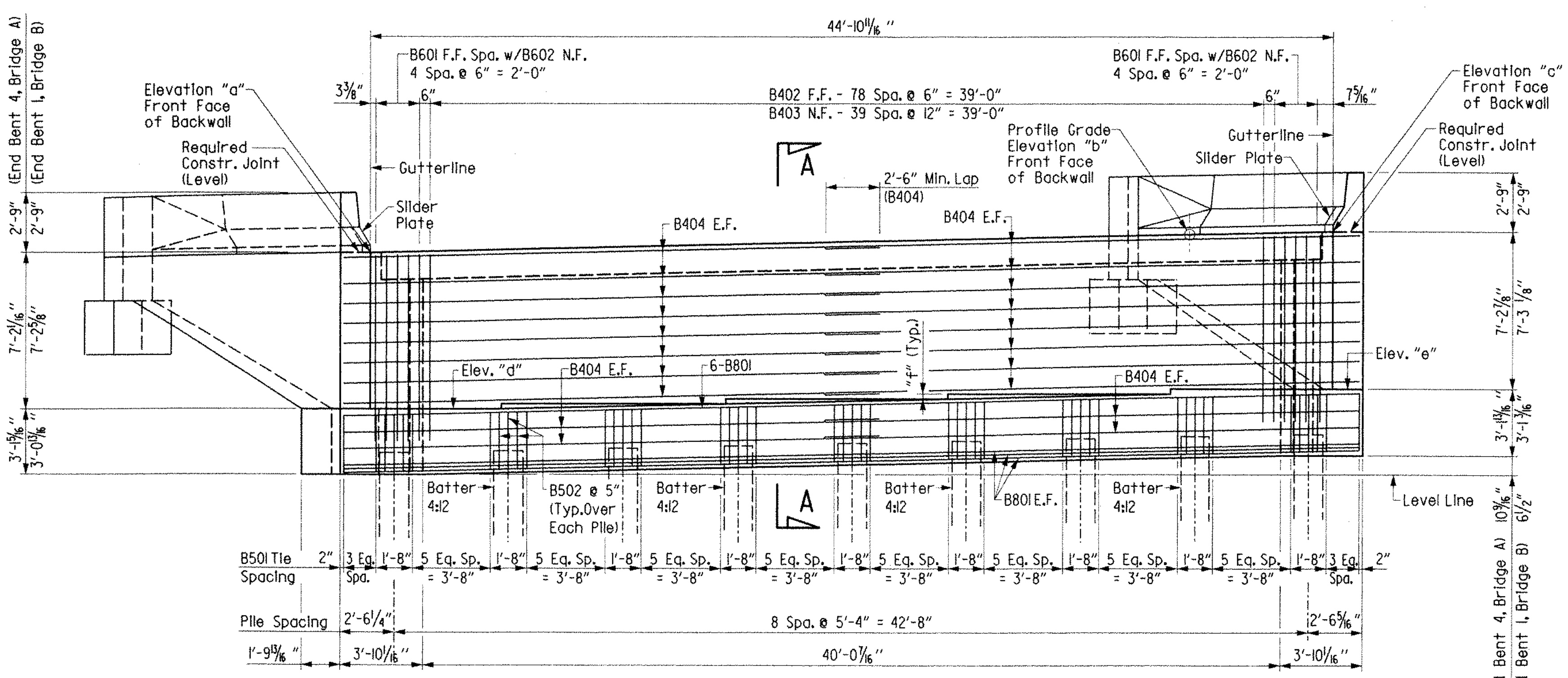
Note: For Section A-A, See Dwg. No. 49627.

Note: Class I Protective Surface Treatment shall be applied to the Roadway Face and Top of Transition Rail, and to the Top of the Backwall.



TYPICAL ANCHOR BOLT LAYOUT

No Scale



ELEVATION

Bridge A, End Bent 4 (Looking Ahead)
Bridge B, End Bent 1 (Looking Back)
1/4" = 1'-0"

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS

SHEET 2 OF 3
DETAILS OF END BENTS
BRIDGE OVER U.S. ROUTE 71 EXISTING

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MAD DATE: 7-07 FILENAME: \B030355x4_b2.dgn
CHECKED BY: MWB DATE: 9-07 SCALE: AS SHOWN
DESIGNED BY: AJP/SHR DATE: 6-07

BRIDGE NO. A&B7124 DRAWING NO. 49628

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFREY SCOTT MULLIKEN 8-15-2011

BRIDGE ENGINEER

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	42	85
				(2) A&B7124		END BENT DETAILS		49629

GENERAL NOTES FOR SUBSTRUCTURE

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 ¾" unless otherwise noted.

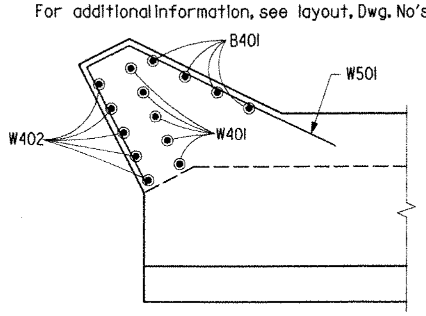
All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60 (yield strength = 60,000 psi).

Backwall above required construction joint shall not be poured before girders are in place. See Expansion Device Installation on Dwg. No. 49640 for additional details.

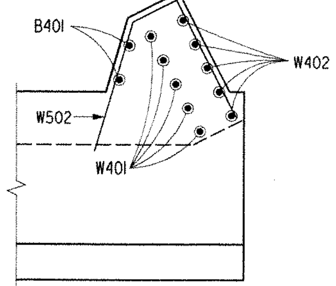
Structural steel in end bents shall be AASHTO M270, Grade 50W and shall be paid for as "STRUCTURAL STEEL IN BEAM SPANS". (M270, Gr. 50W)". Gr. 50W steel shall not be painted unless noted otherwise.
Cleaning and painting of the parapet slider plates shall be in accordance with Section 638 and will not be paid for directly but will be considered subsidiary to "STRUCTURAL STEEL IN BEAM SPANS". (M270, GR.50W)".

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

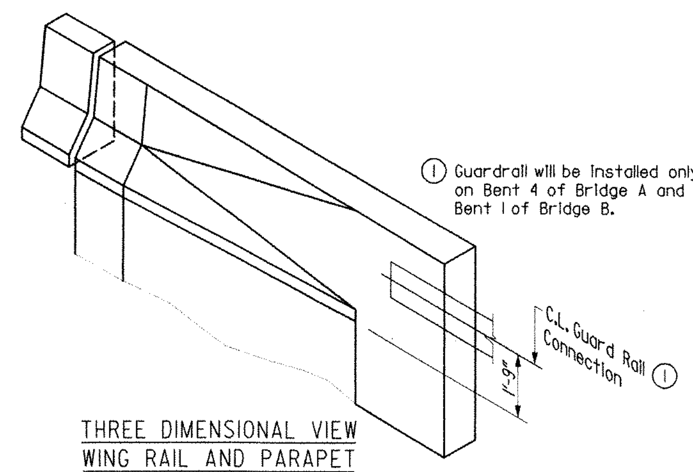
For additional information, see layout, Dwg. No's. 49625 and 49626.



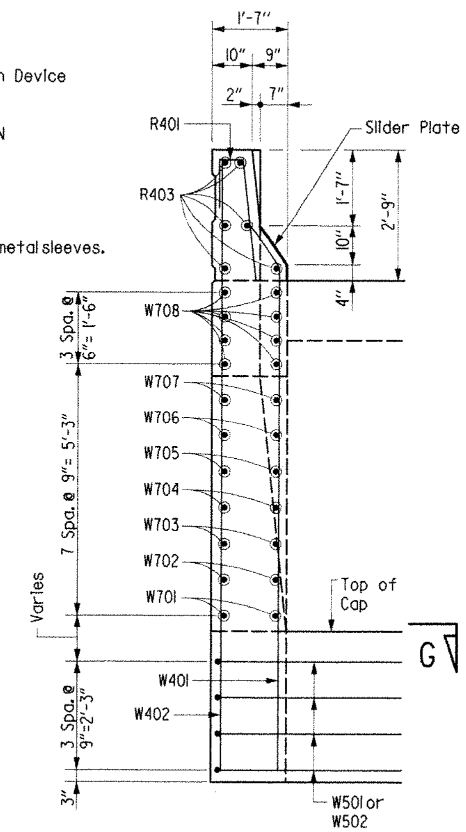
SECTION G-G (WING A)
⅜" = 1'-0"



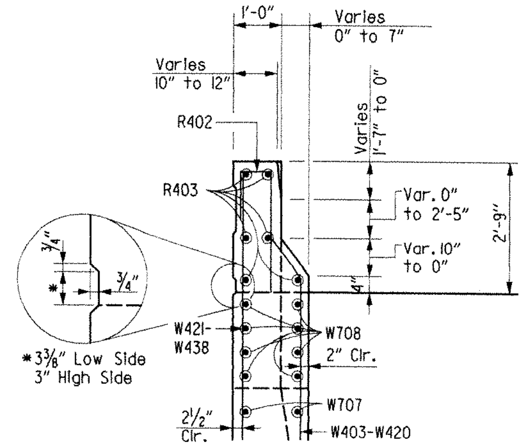
SECTION G-G (WING B)
⅜" = 1'-0"



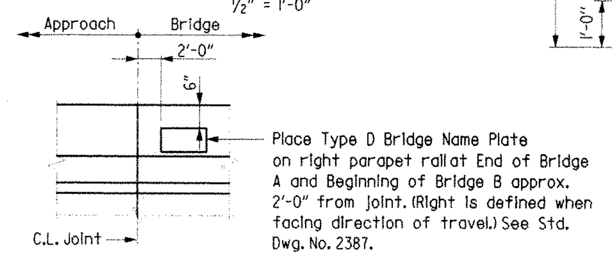
THREE DIMENSIONAL VIEW WING RAIL AND PARAPET
No Scale



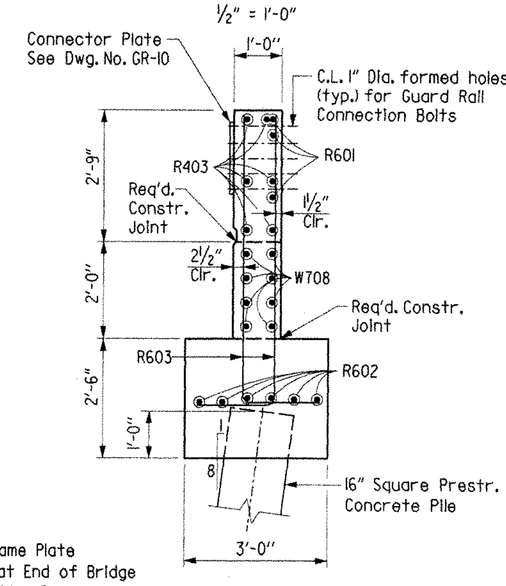
VIEW W-W
½" = 1'-0"



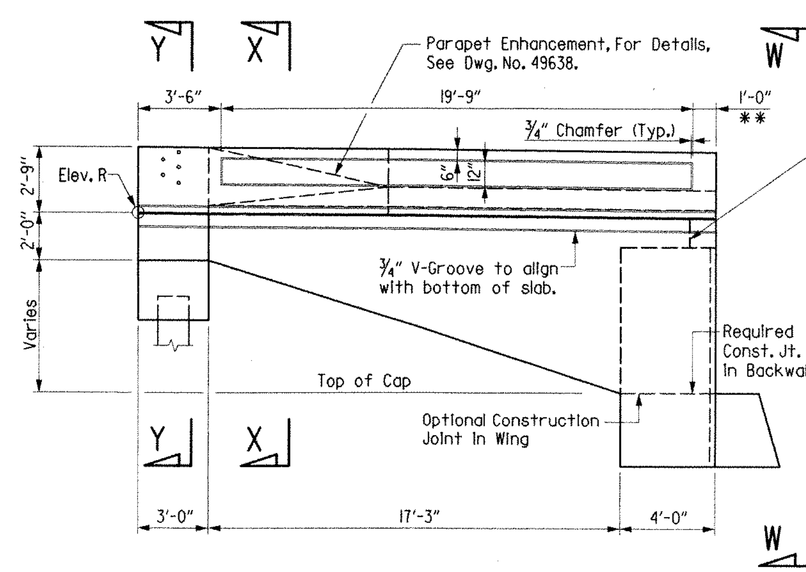
SECTION X-X
½" = 1'-0"



NAME PLATE DETAIL
No Scale

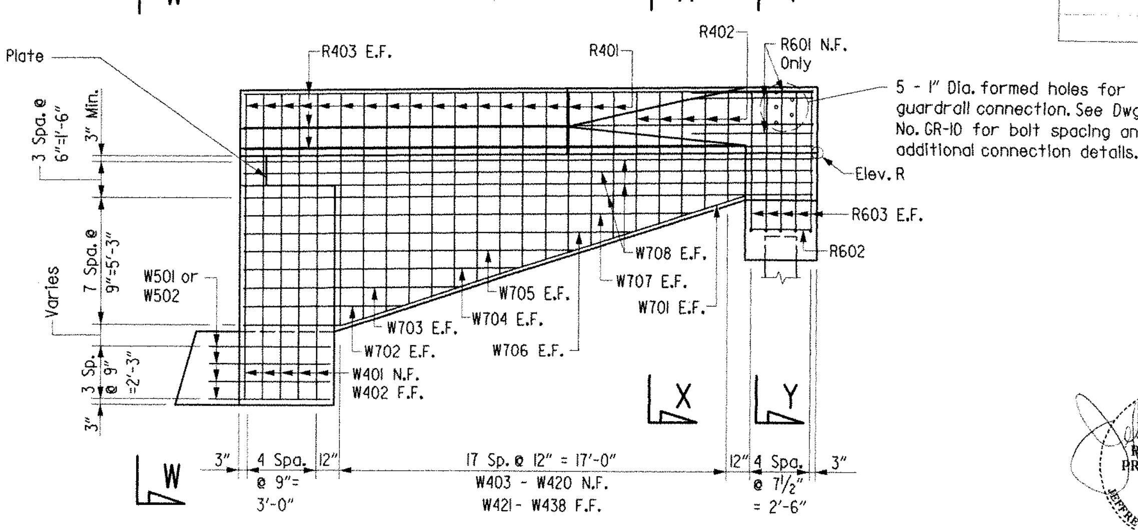


SECTION Y-Y
½" = 1'-0"



VIEW C-C
¼" = 1'-0"
Wing "A" shown, Wing "B" is opposite hand

** Parapet enhancement shall be made continuous if slip forms are used on bridge parapet rail.



VIEW D-D
¼" = 1'-0"
Wing "A" shown, Wing "B" is opposite hand

BAR LIST-PER BENT

MARK	NO. REQ'D.	LENGTH	'A'	PIN DIA.
B401	6	8'-9"	--	Str.
B402	79	8'-9"	--	Str.
B403	40	11'-2"	--	2"
B404	40	25'-0"	--	Str.
B501	56	14'-11"	--	2½"
B502	27	9'-4"	--	2½"
B601	10	8'-9"	--	Str.
B602	10	11'-6"	--	4½"
B603	7	11'-4"	--	4½"
B604	7	7'-4"	--	4½"
B801	12	47'-5"	--	Str.
R401	36	3'-11"	--	2"
R402	10	4'-0"	--	2"
R403	12	23'-11"	--	Str.
R601	6	5'-0"	--	Str.
R602	12	2'-8"	--	Str.
R603	20	7'-6"	--	4½"
W401	10	11'-6"	--	3"
W402	10	12'-8"	--	Str.
W403 to W420	2 ea.	3'-5" to 8'-6"	2'-3" to 7'-4"	3"
W421 to W438	2 ea.	4'-7" to 9'-8"	--	Str.
W501	4	11'-4"	--	3¾"
W502	4	8'-9"	--	3¾"
W701	4	21'-11"	--	5¼"
W702	4	6'-8"	--	Str.
W703	4	9'-2"	--	Str.
W704	4	11'-7"	--	Str.
W705	4	14'-0"	--	Str.
W706	4	16'-5"	--	Str.
W707	4	18'-10"	--	Str.
W708	16	23'-11"	--	Str.

BENDING DIAGRAMS
Dimensions are out to out of bars.

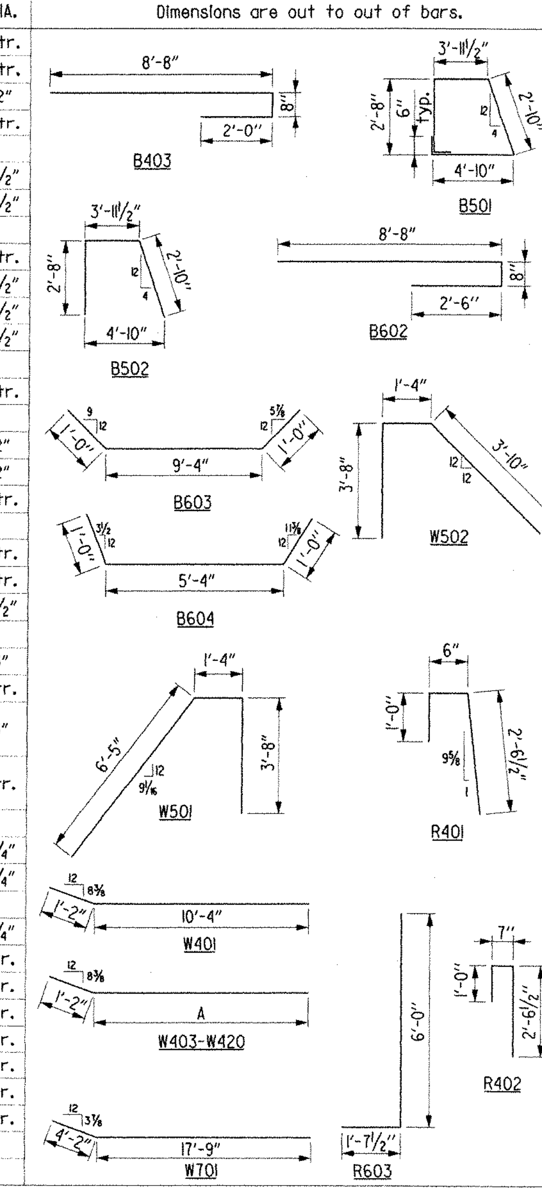


TABLE OF VARIABLES (ELEV. "R")

BRIDGE	BENT NO.	WING	ELEV.	BRIDGE	BENT NO.	WING	ELEV.
A	1	A	256.27	B	1	A	256.60
A	1	B	255.28	B	1	B	255.99
A	4	A	252.16	B	4	A	253.48
A	4	B	253.16	B	4	B	252.87

SHEET 3 OF 3
DETAILS OF END BENTS
BRIDGE OVER U.S. ROUTE 71 EXISTING

ROUTE 71 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

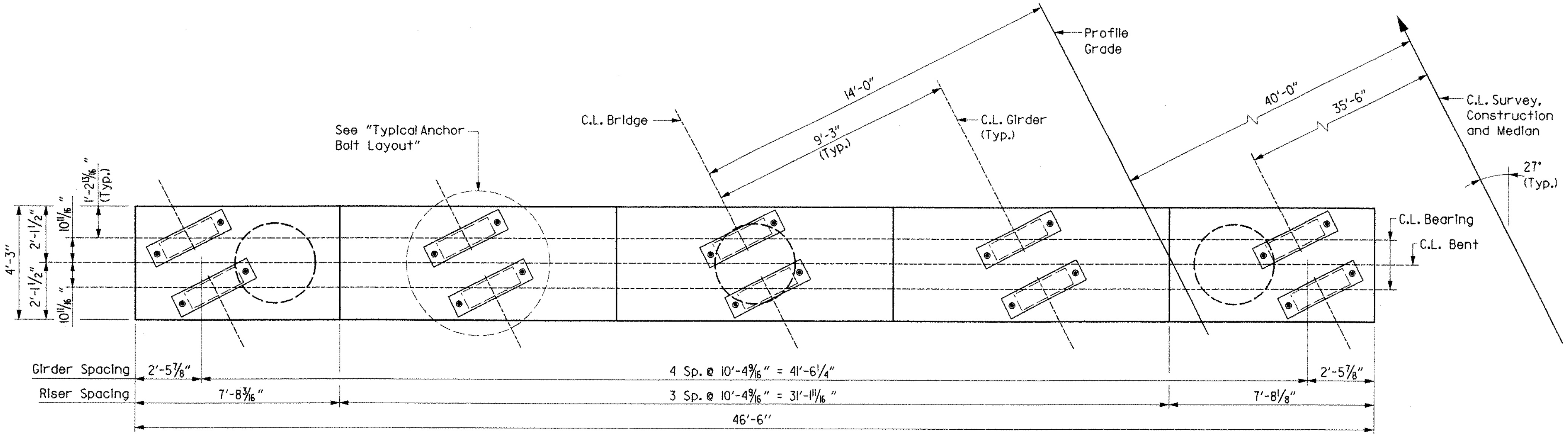
8-15-2011
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFREY SCOTT MULLIKEN

BRIDGE ENGINEER

DRAWN BY: MAD DATE: 7-07 FILENAME: \B030355x4_b3.dgn
CHECKED BY: MWB DATE: 9-07 SCALE: AS SHOWN
DESIGNED BY: AJP/SHR DATE: 6-07
BRIDGE NO. A&B7124 DRAWING NO. 49629

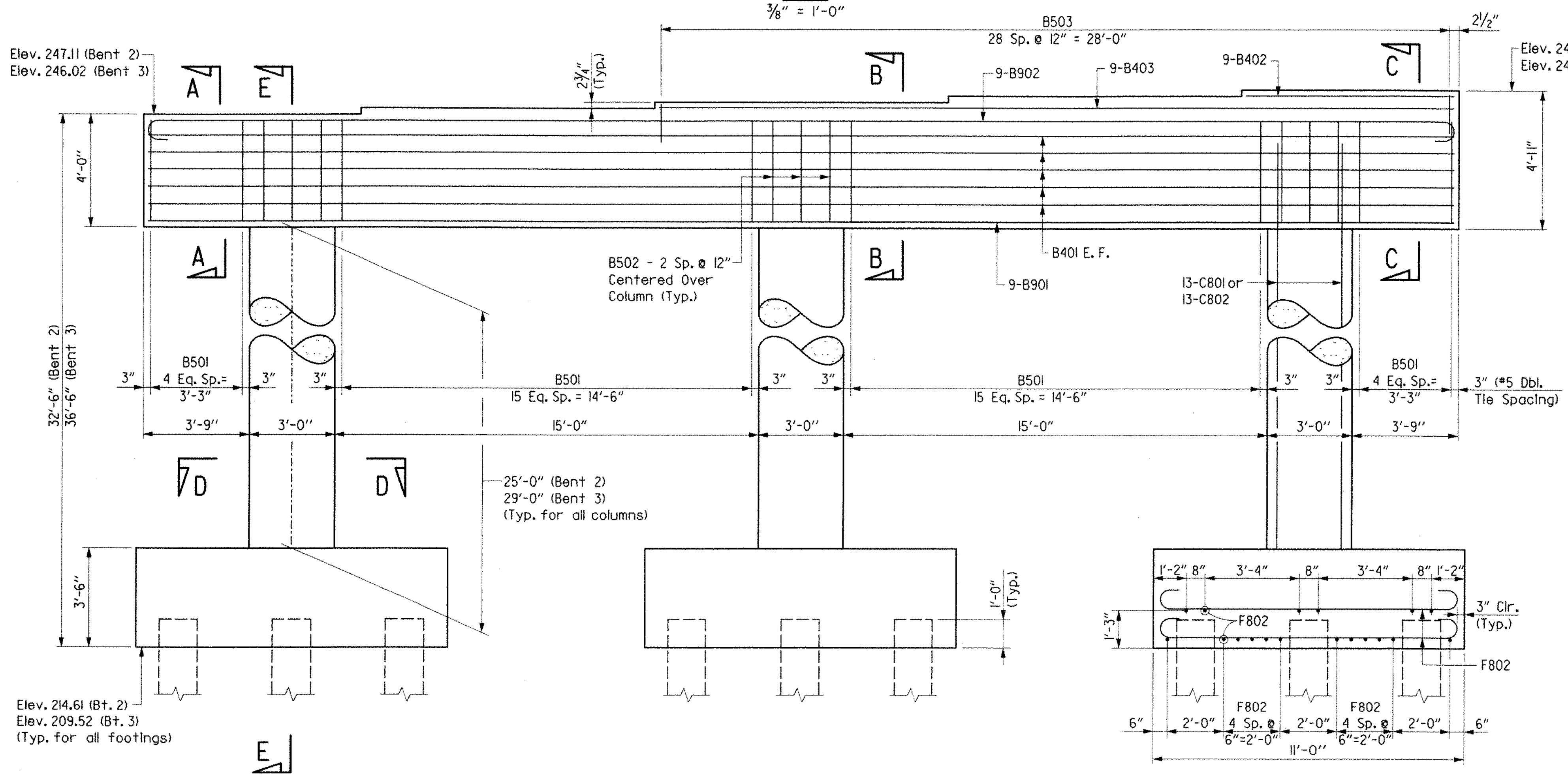
PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS
n:\structur\arkansas\final_030355\Site4A&B_71 over Exist 71\B030355x4_b3.dgn 8/15/2011 3:33:00 PM

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.		030355	43	85
				A7124		BENTS 2 AND 3		49630



PLAN

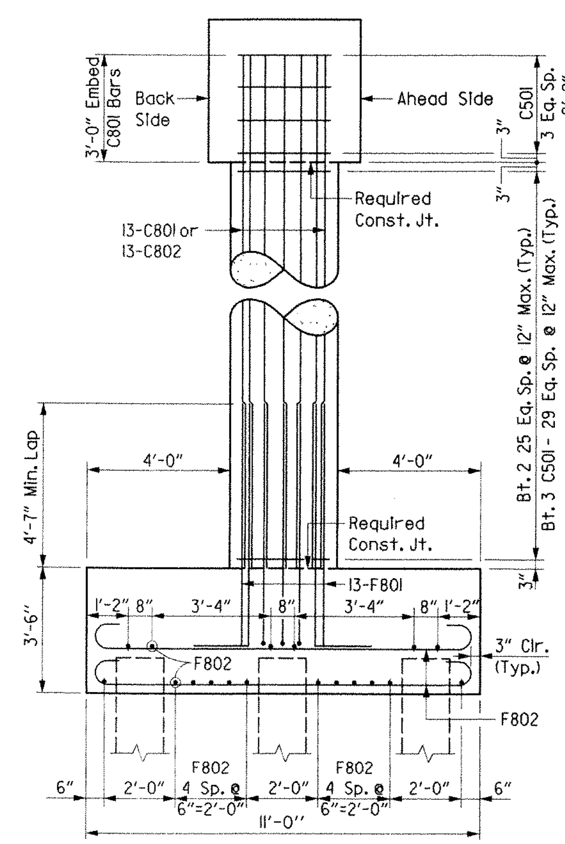
⅜" = 1'-0"



ELEVATION

⅜" = 1'-0"

(Looking Ahead)



SECTION E-E

⅜" = 1'-0"

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 ¾" unless otherwise noted.

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

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see layout, Dwg. No's. 49625 and 49626.

For Details of Elastomeric Bearings, See Dwg. No. 49641.

For Sections A-A THRU D-D, See Dwg. No. 49632.

For Anchor Bolt Layout, See Dwg. No. 49632.

BRIDGE A

DETAILS OF INTERMEDIATE BENTS NO. 2 AND 3

BRIDGE OVER U.S. ROUTE 71 EXISTING

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MAD DATE: 7-07 FILENAME: v8030355o4_bldgn

CHECKED BY: MWB DATE: 9-07 SCALE: AS SHOWN

DESIGNED BY: AJP/SHR DATE: 6-07

BRIDGE NO. A7124 DRAWING NO. 49630

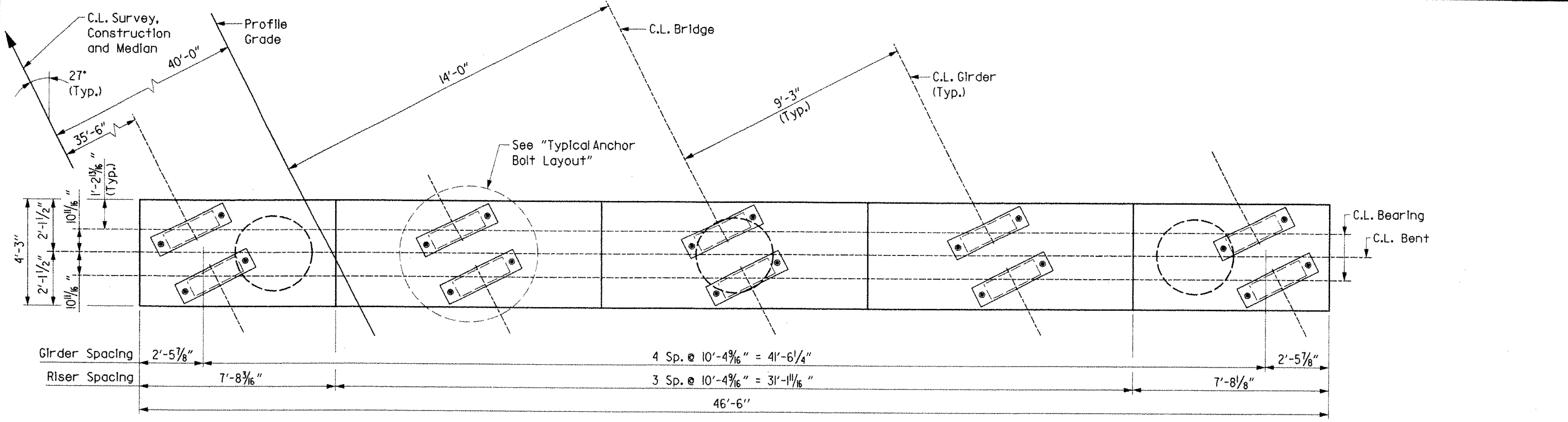
ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFREY SCOTT MULLIKEN 8-15-2011

BRIDGE ENGINEER

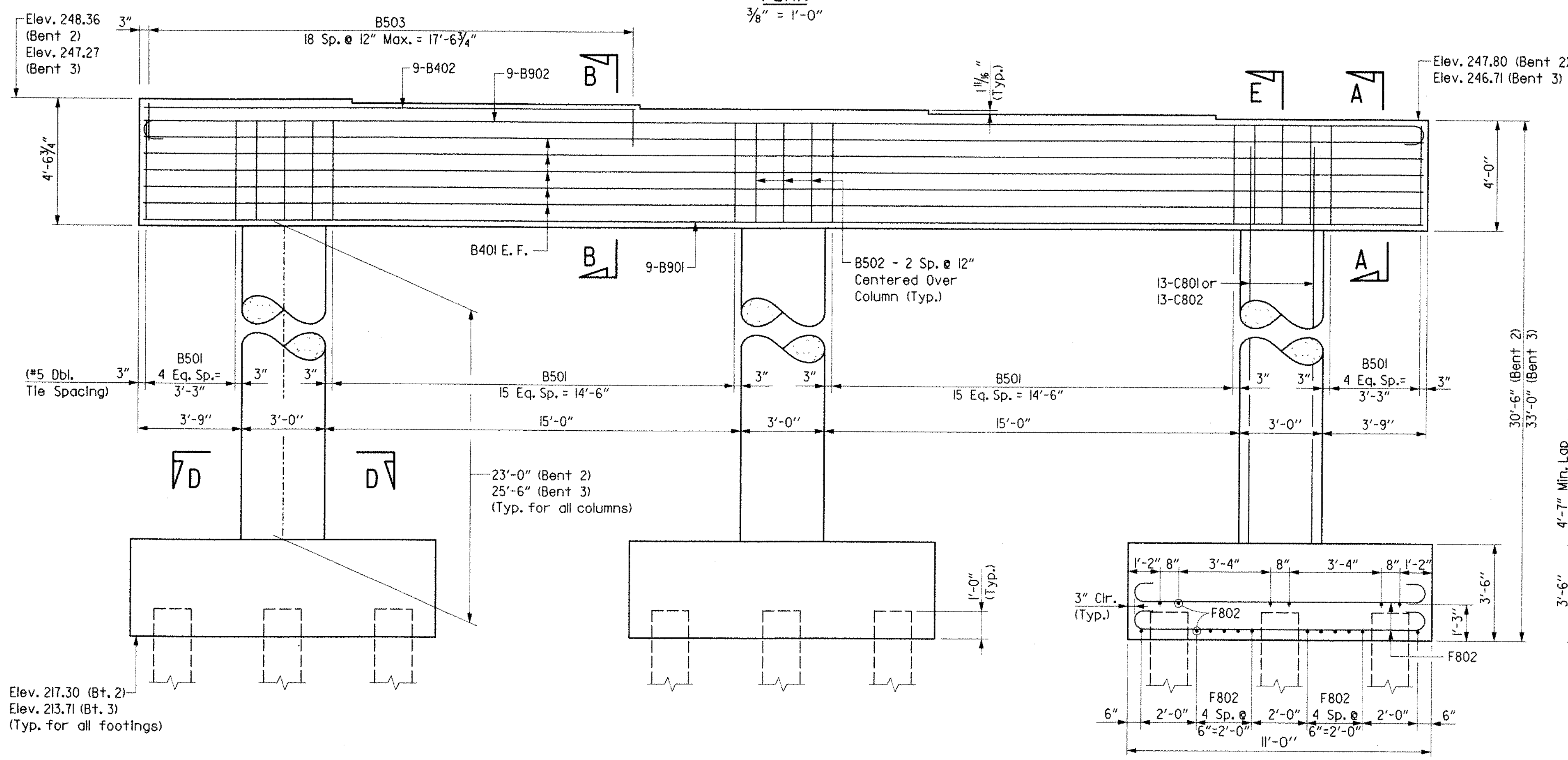
PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS

n:\struct\arkansas\final_030355\Site4&B_71 over Exist 71\B030355o4_bldgn 8/15/2011 3:32:59 PM

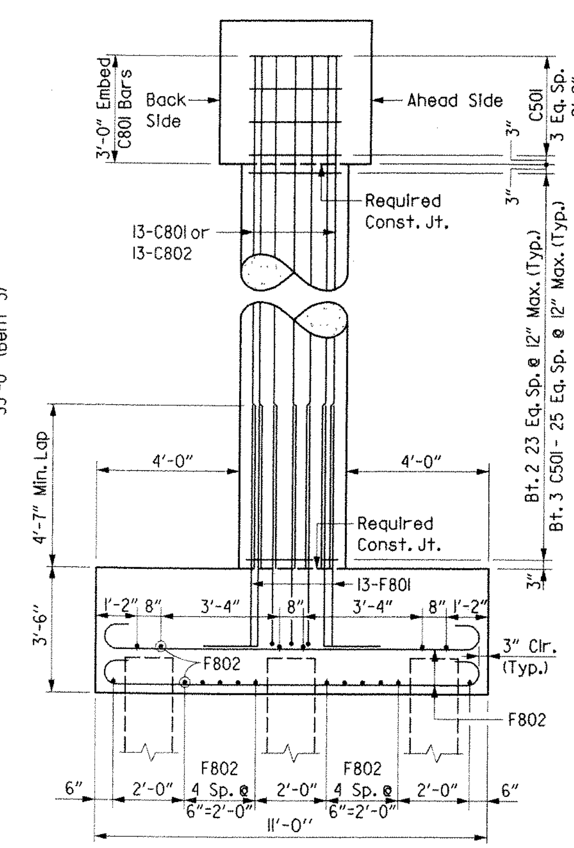
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	44	85
				B7124		BENTS 2 AND 3		49631



PLAN
⅜" = 1'-0"



ELEVATION
⅜" = 1'-0"
(Looking Ahead)



SECTION E-E
⅜" = 1'-0"

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 ¾" unless otherwise noted.

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

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see layout, Dwg. No's. 49625 and 49626.

For Details of Elastomeric Bearings, See Dwg. No. 49641.

For Sections A-A THRU D-D, See Dwg. No. 49632.

For Anchor Bolt Layout, See Dwg. No. 49632.

BRIDGE B
DETAILS OF INTERMEDIATE BENTS NO. 2 AND 3
BRIDGE OVER U.S. ROUTE 71 EXISTING

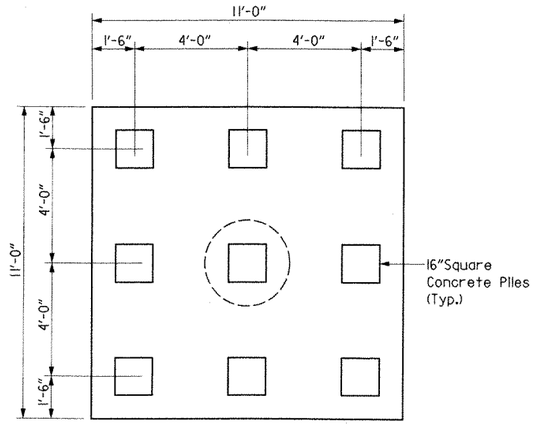
ROUTE 71 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFREY SCOTT MULLIKEN
9-15-2011
BRIDGE ENGINEER

DRAWN BY: MAD DATE: 7-07
CHECKED BY: MWB DATE: 9-07
DESIGNED BY: AJP/SHR DATE: 6-07
FILENAME: b030355b4_b2.dgn
SCALE: AS SHOWN
BRIDGE NO. B7124 DRAWING NO. 49631

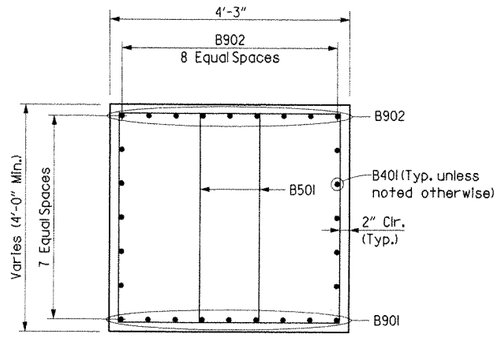
PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS
8/15/2011 3:32:59 PM

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.		030355	45	85
				(2) A&B7124		BENTS 2 AND 3		49632



FOOTING PLAN

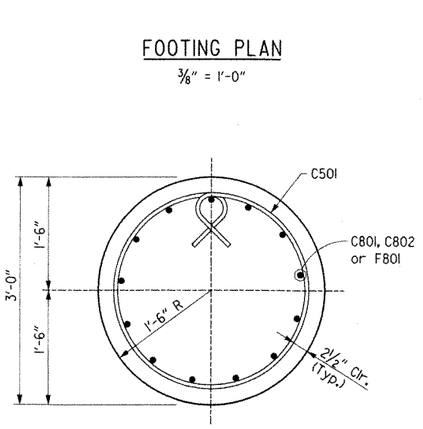
3/8" = 1'-0"



SECTION A-A

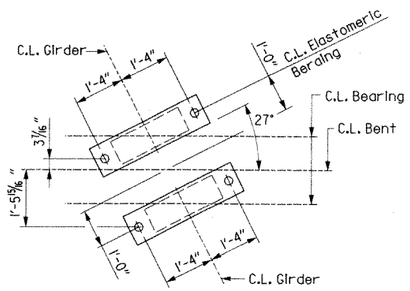
3/4" = 1'-0"

(Bridge A Shown, Bridge B Similar)



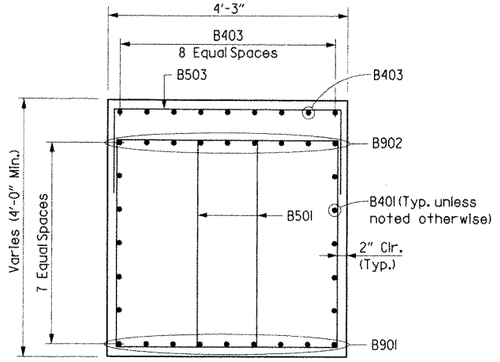
SECTION D-D

1" = 1'-0"



TYPICAL ANCHOR BOLT LAYOUT

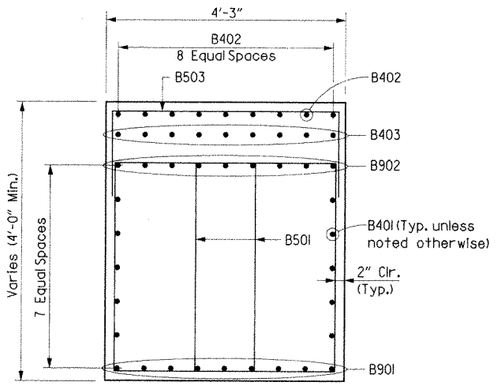
1/2" = 1'-0"



SECTION B-B

3/4" = 1'-0"

(Bridge A Shown, Bridge B Similar)



SECTION C-C

3/4" = 1'-0"

BAR LIST-PER BENT-BRIDGE A

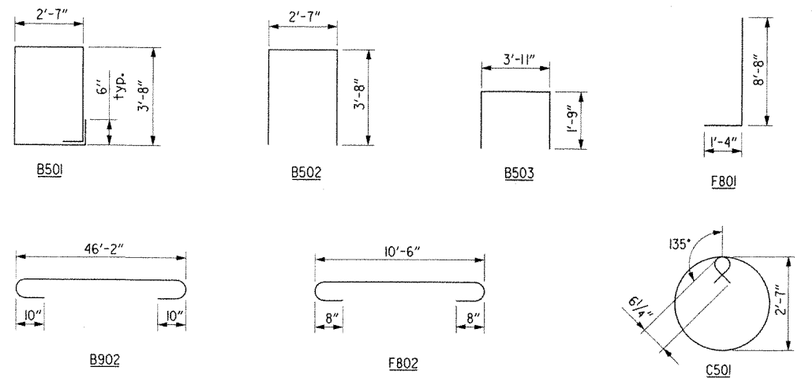
MARK	NO. REQ'D. Bent 2	NO. REQ'D. Bent 3	LENGTH	'A'	P.D.
B401	10	10	46'-2"	---	Str.
B402	9	9	7'-4"	---	Str.
B403	9	9	28'-1"	---	Str.
B501	84	84	13'-0"	---	2 1/2"
B502	18	18	9'-9"	---	2 1/2"
B503	29	29	7'-3"	---	2 1/2"
B901	9	9	46'-2"	---	Str.
B902	9	9	48'-8"	---	9"
C501	90	102	9'-6"	---	3 3/4"
C801	39	---	28'-0"	---	Str.
C802	---	39	32'-0"	---	Str.
F801	39	39	9'-10"	---	6"
F802	108	108	12'-4"	---	6"

BAR LIST-PER BENT-BRIDGE B

MARK	NO. REQ'D. Bent 2	NO. REQ'D. Bent 3	LENGTH	'A'	P.D.
B401	10	10	46'-2"	---	Str.
B402	9	9	17'-9"	---	Str.
B501	84	84	13'-0"	---	2 1/2"
B502	18	18	9'-9"	---	2 1/2"
B503	19	19	7'-3"	---	2 1/2"
B901	9	9	46'-2"	---	Str.
B902	9	9	48'-8"	---	9"
C501	84	90	9'-6"	---	3 3/4"
C801	39	---	26'-0"	---	Str.
C802	---	39	28'-6"	---	Str.
F801	39	39	9'-10"	---	6"
F802	108	108	12'-4"	---	6"

BENDING DIAGRAMS

(Dimensions are out to out of bars)



8-15-2011

ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFREY SCOTT MULLINS

BRIDGE ENGINEER

DETAILS OF INTERMEDIATE BENTS BRIDGE OVER U.S. ROUTE 71 EXISTING

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MAD DATE: 7-07 FILENAME: \6030355a04_b3.dgn

CHECKED BY: MWB DATE: 9-07 SCALE: AS SHOWN

DESIGNED BY: AJP/SHR DATE: 6-07

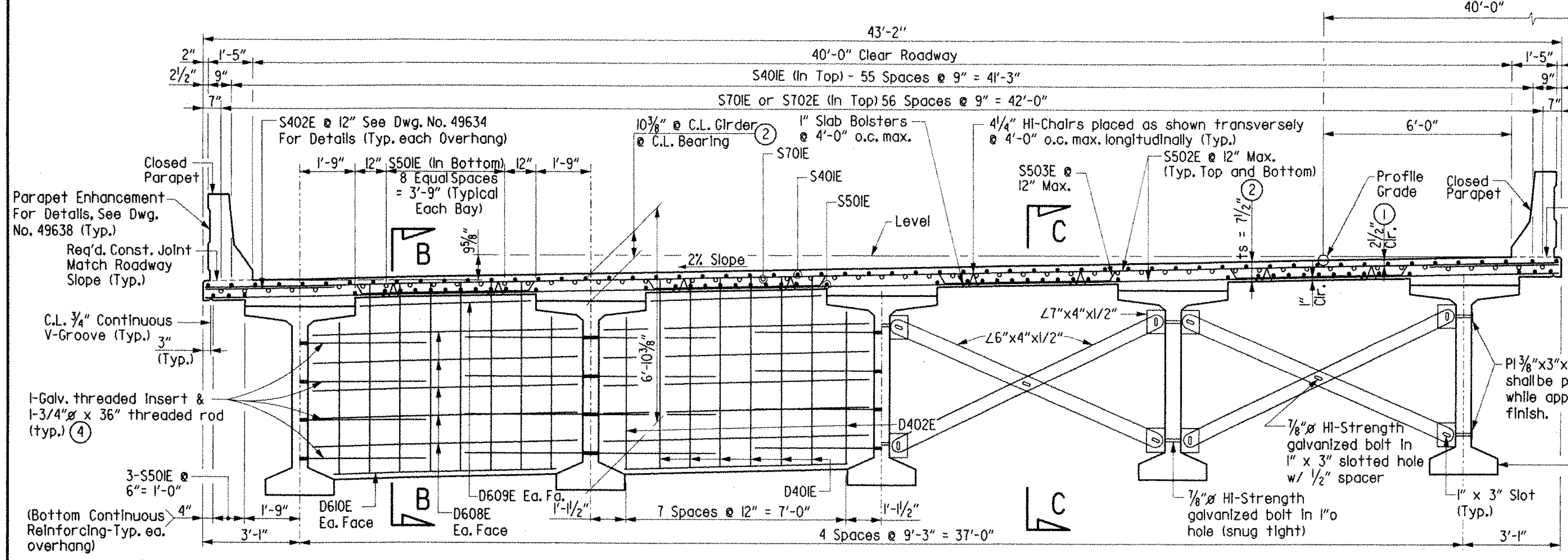
BRIDGE NO. A&B7124 DRAWING NO. 49632

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS

THE LPA GROUP

n:\structs\arkansas\final_030305\Site4A&B_71 over Exist 71\b030355a04_b3.dgn 8/15/2011 3:32:58 PM

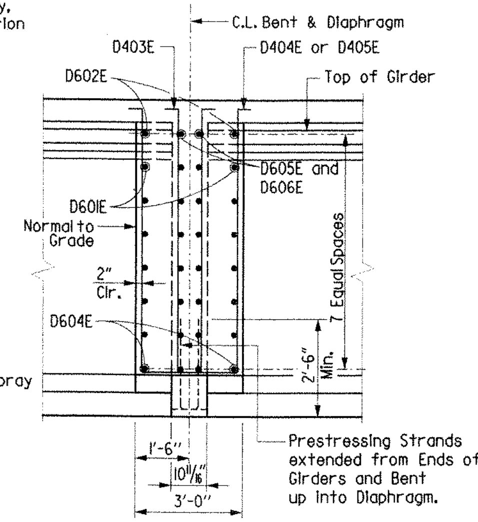
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	46	85
				(2)	A&B7124	SPAN DETAILS		49633



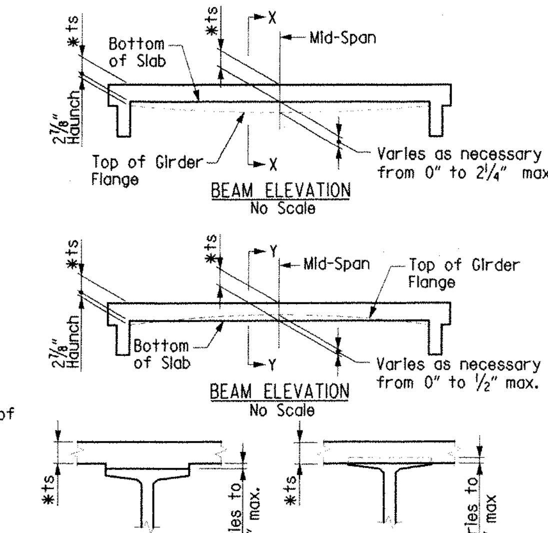
HALF-SECTION OF MIDSPAN CONCRETE DIAPHRAGMS HALF-SECTION OF ALTERNATE STRUCTURAL STEEL DIAPHRAGMS (3)

TYPICAL SECTIONS AT INTERMEDIATE DIAPHRAGMS

⅜" = 1'-0"
(Bridge A Looking Ahead)
(Bridge B Looking Back)



SECTION A-A
Interior Bent Diaphragm (Normal to Diaphragm)
½" = 1'-0"

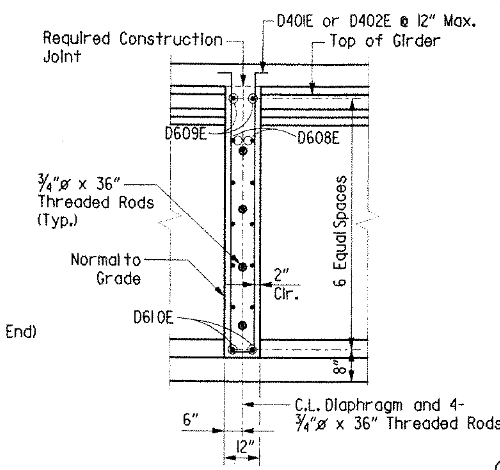


BEAM ELEVATION
No Scale

BEAM ELEVATION
No Scale

SECTION X-X
No Scale

SECTION Y-Y
No Scale



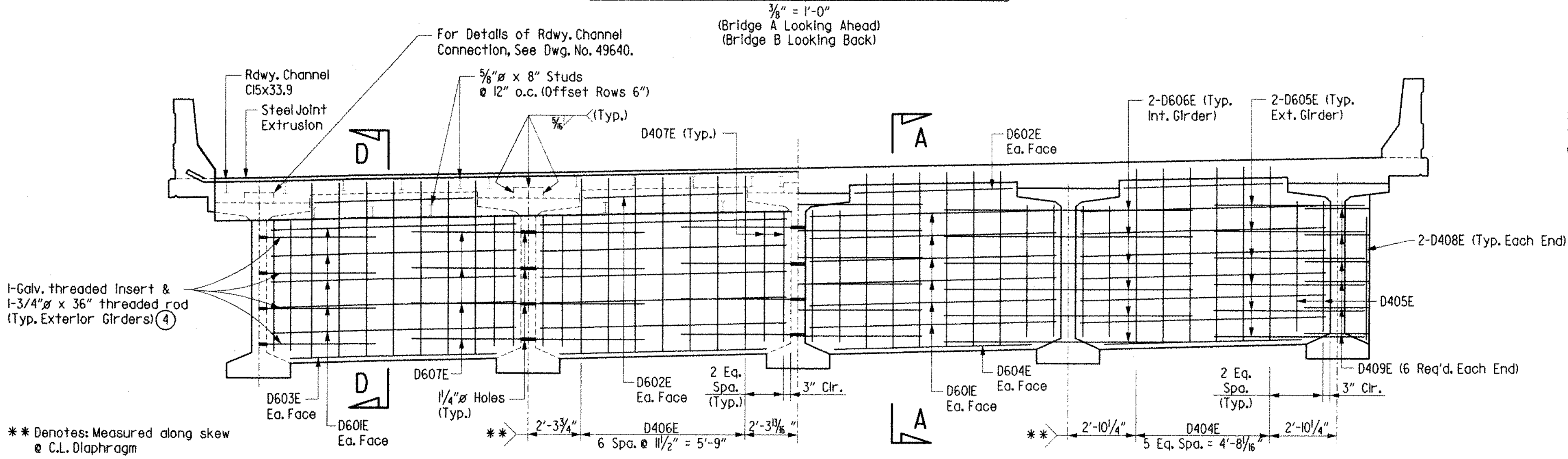
SECTION B-B
Midspan Diaphragm
½" = 1'-0"

Note: ts = slab thickness as shown on superstructure details. See "Section of Intermediate Diaphragms".

* Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Dwg. No. 14991 for tolerances when permanent steel deck forms are used.

'Girder Elevation' sketches show the range of acceptability of the top of the Girder relative to bottom of slab after the placement of the slab. When the top of the Girder projects more than ½" into the slab, a raise in grade will be necessary. Girders shall be set in a sufficient number of spans so when adjustment is necessary the Profile Grade can be adjusted over suitable increments so the revised grade line will produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED



** Denotes: Measured along skew @ C.L. Diaphragm

HALF-SECTION AT STRIP SEAL JOINT HALF-SECTION BETWEEN GIRDERS AT INTERIOR BENTS

TYPICAL SECTIONS AT GIRDER ENDS

⅜" = 1'-0"
(Bridge A Looking Ahead)
(Bridge B Looking Back)

NOTES:

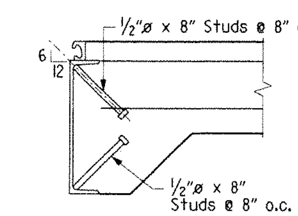
One Epoxy Coated #5 bar in the top and one Epoxy Coated #5 bar in the bottom may be substituted for each bar S503E. Payment will be based on the weight of bar S503E.

Class 1 Protective Surface Treatment shall be applied to the Roadway Surface and the Face and Top of Concrete Parapet Rail. Class 3

All bars designated with an E suffix are to be Epoxy coated.

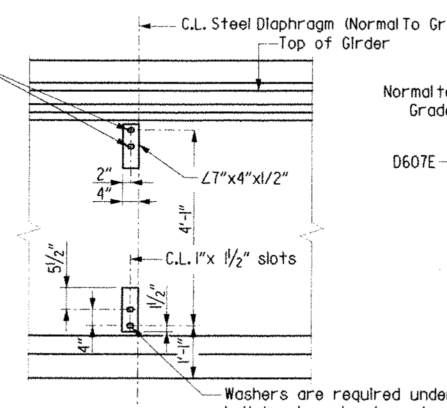
All transverse dimensions are measured perpendicular to C.L. Bridge, unless noted otherwise.

Superstructure details shown are for use when removable deck forms are used and are the basis for measurement of Class S(AE) concrete.



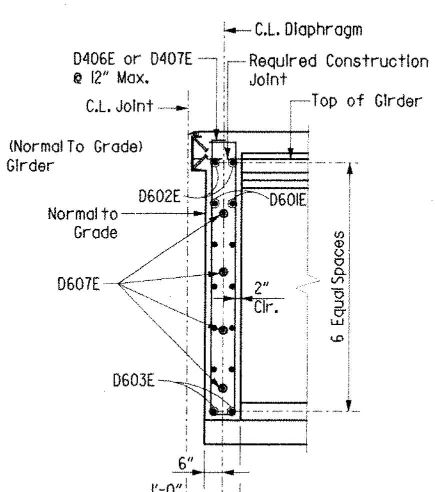
Note: As an alternate to ⅝"ø studs, ½"ø x 8" studs spaced as shown may be used. Use weight of ⅝"ø stud as basis of measurement of structural steel in anchors.

DETAIL OF ALTERNATE ANCHORS
NTS



Washers are required under bolt heads and nuts and additional oversized washers to cover slots.

SECTION C-C
½" = 1'-0"



SECTION D-D
End of Unit Diaphragm
½" = 1'-0"

SLAB REINFORCING

Transverse:
S402E @ 12" centers (Top each side of Bridge)
S502E @ 12" centers (Top and Bottom)
S503E @ 12" centers (Bent up over Girders)
Longitudinal:
S401E @ 9" centers (Top)
S501E spaced as shown (Bottom)
S701E @ 9" centers (Top)
S702E @ 9" centers (Top)

EXPANSION DEVICE

Neoprene Strip Seal with Steel Extrusion
Rdwy. Channel - C15x33.9
Conn. angle from MC18x42.7 (Cope one Flange).

NOTES:

(1) TOLERANCE:
Minus ¼"

Plus: Equal to amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

(3) Galvanized Steel Diaphragms may be used in place of Concrete at Intermediate Diaphragms only. All components of the Alternate Steel Diaphragms (AASHTO M270, Grade 36) shall be galvanized. Payment will be based on concrete diaphragms.

(4) Galvanized Threaded Inserts: Dayton-Richmond F-42 Loop Ferrule Insert or an approved equal. ¾"ø Threaded Rods to be AASHTO M270, Grade 36 or AASHTO M31 or M53, Gr. 60. These are to be Non-Pay items-subsidiary to the item "Pretressed Concrete Girders (BT-72)". Galvanizing shall be in accordance with AASHTO M232 Class C or AASHTO M298 Class 50.

SHEET 1 OF 6
DETAILS OF 283' CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT BRIDGE OVER U.S. ROUTE 71 EXISTING

ROUTE 71 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

8-15-2011
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFREY SCOTT MULLIKEN
BRIDGE ENGINEER

DRAWN BY: RPT	DATE: 6-07	FILENAME: ...\b030355x4.sldgn	
CHECKED BY: MAD	DATE: 10-07	SCALE: AS SHOWN	
DESIGNED BY: AJP/SHR	DATE: 6-07		
BRIDGE NO. A&B7124		DRAWING NO. 49633	

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS
r:\struc\arkansas\finol_0303055\Site4A&B_71over Exist 71\b030355x4.sldgn
3:32:58 PM 8/15/2011

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.		030355	47	85
A&B7124		SPAN DETAILS		49634

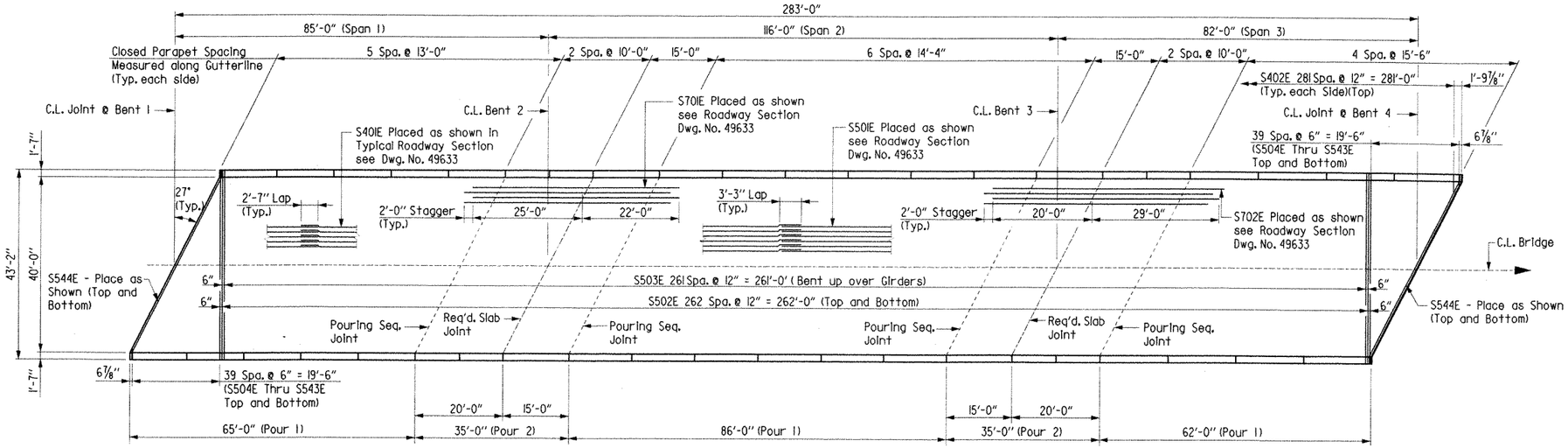
(2)

NOTES:

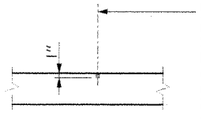
Required slab joints and pouring sequence joints shall align with the parapet open joint at the gutterline.

Pours must be made in order as numbered. Pour (1) may be placed simultaneously or separately. Both pours (1) must be placed before Pour (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of the adjacent pour. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. Concrete in bridge superstructure shall 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 Engineer for any deviations from the pouring sequence shown.



POURING SEQUENCE AND REINFORCING PLAN
1"=15'-0"



SLAB JOINT DETAIL
Nts

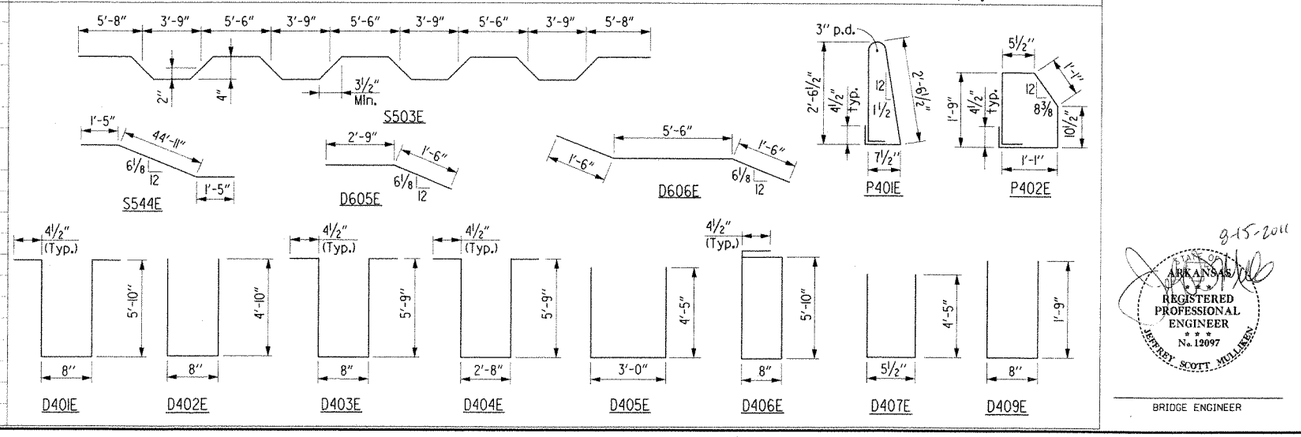
½"x 1" Type 3, 4 or 6 Joint Sealer. Backer rod is not required. See subsection 501.02 (h) and 501.05(J). Joint Sealer shall be measured and paid for as Class S(AE) Concrete Bridge. Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set up to allow the sawing of joint without damage to the slab. Slab joints shall be placed at all Pouring Sequence Construction Joints and Required Slab Joint Locations.

BAR LIST-PER BRIDGE

MARK	NO. REQ'D.	LENGTH	PIN DIA.	MARK	NO. REQ'D.	LENGTH	PIN DIA.
D401E	72	12'-9"	2"	S402E	564	4'-1"	Str.
D402E	24	10'-2"	2"				
D403E	42	12'-7"	2"	S501E	300	49'-10"	Str.
D404E	48	14'-7"	2"	S502E	263	42'-10"	Str.
D405E	32	11'-8"	2"	S503E	262	43'-8"	3"
D406E	56	12'-9"	2"				
D407E	32	9'-2"	2"	S504E to S543E	4 Each	2'-3" to 40'-6"	Str.
D408E	8	5'-9"	Str.	S544E	4	47'-9"	3¼"
D409E	24	4'-0"	2"				
D601E	136	9'-6"	Str.				
D602E	32	6'-7"	Str.	S701E	57	47'-0"	Str.
D603E	16	7'-9"	Str.	S702E	57	49'-0"	Str.
D604E	16	7'-7"	Str.				
D605E	48	4'-3"	4½"	P401E	578	6'-4"	2"
D606E	72	8'-6"	4½"	P402E	578	5'-6"	2"
D607E	24	6'-0"	Str.	P403E	40	9'-8"	Str.
D608E	120	8'-5"	Str.	P404E	50	12'-8"	Str.
D609E	24	5'-5"	Str.	P405E	60	14'-0"	Str.
D610E	24	7'-3"	Str.	P406E	20	14'-8"	Str.
S401E	464	37'-7"	Str.	P407E	40	15'-2"	Str.

BENDING DIAGRAMS
(Dimensions are out to out of bars.)

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



PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP
n:\structur\arkansas\final_030355\Sht448B_71 over Exist 71\B030355x4_s2.dgn
8/15/2011
3:32:57 PM

8-15-2011
ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12097
JEFFREY SCOTT MILLIKEN
BRIDGE ENGINEER

SHEET 2 OF 6
DETAILS OF 283' CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT BRIDGE OVER U.S. ROUTE 71 EXISTING

ROUTE 71 SEC. 1

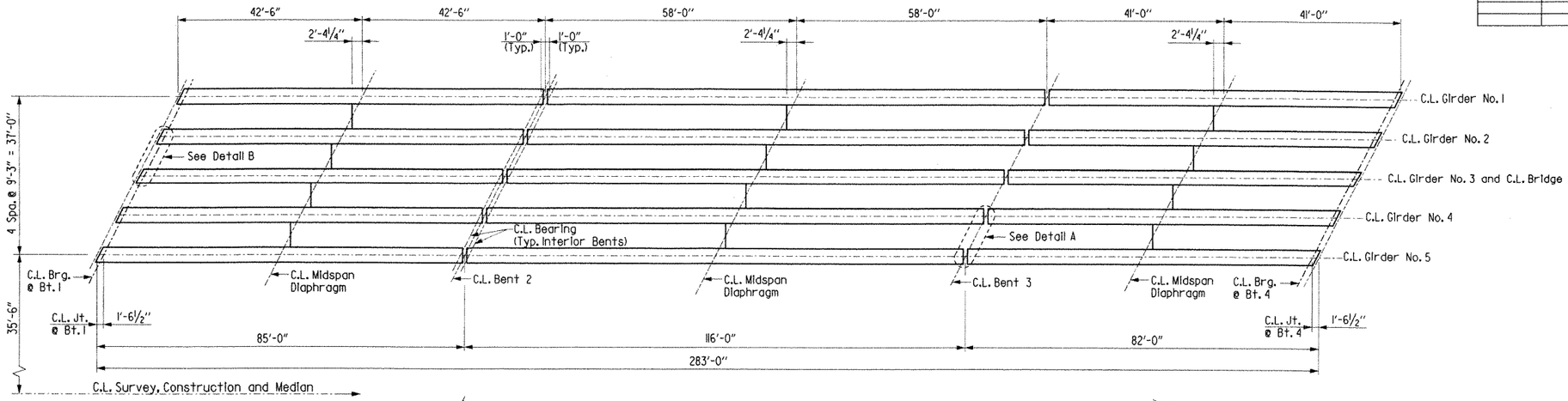
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: RPT DATE: 6-07 FILENAME: \B030355x4_s2.dgn
CHECKED BY: MAD DATE: 8-07 SCALE: AS SHOWN
DESIGNED BY: SHR/CGN DATE: 6-07

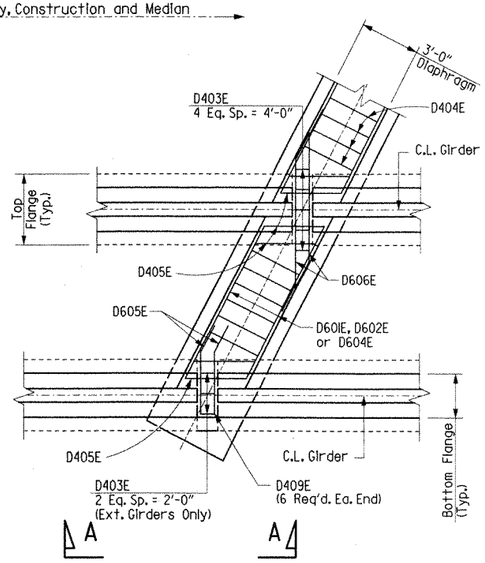
BRIDGE NO. A&B7124 DRAWING NO. 49634

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.		030355	48	85
				A&B7124		SPAN DETAILS		49635

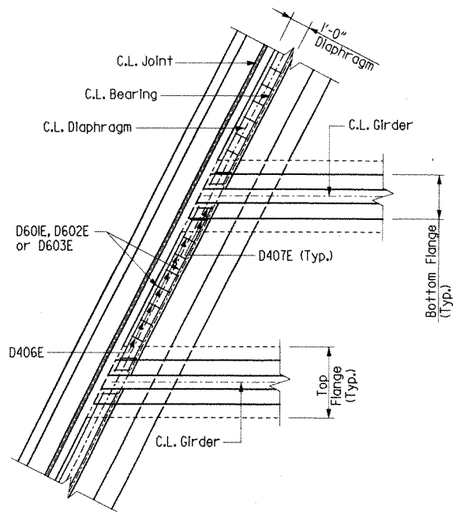
(2)



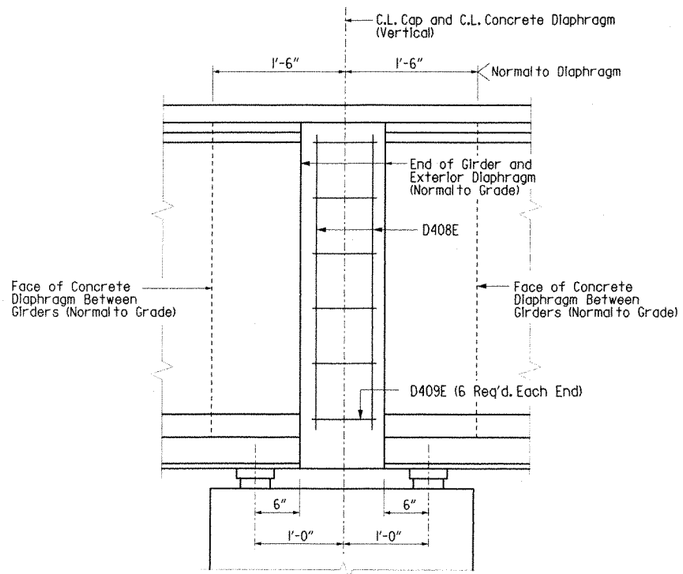
FRAMING PLAN
1"=15'-0"



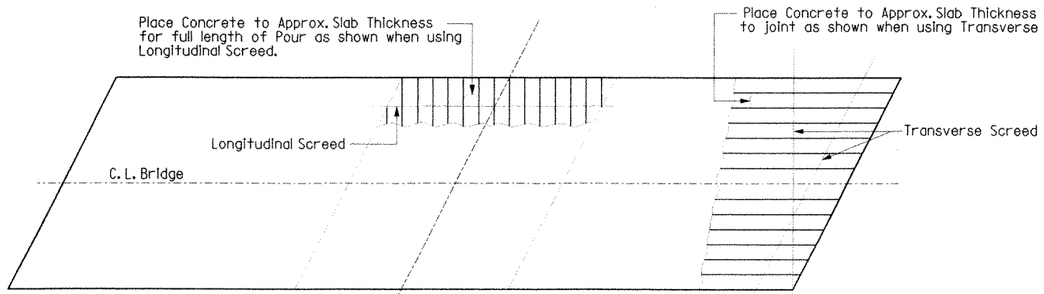
DETAIL A
(Typical at Interior Bents)
¼"=1'-0"



DETAIL B
(Typical at End Bents)
¼"=1'-0"



VIEW A-A
(Parallel to Girder)
No Scale



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

CONCRETE PLACEMENT PROCEDURE
No Scale

8-15-2011
ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12097
JEFFREY SCOTT MULLINS

BRIDGE ENGINEER

SHEET 3 OF 6
DETAILS OF 283' CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT BRIDGE OVER U.S. ROUTE 71 EXISTING

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: RPT DATE: 6-07 FILENAME: a&b030355x4_s3.dgn
CHECKED BY: MAD DATE: 8-07 SCALE: AS SHOWN
DESIGNED BY: SHR/CGN DATE: 6-07

BRIDGE NO. A&B7124 DRAWING NO. 49635

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP

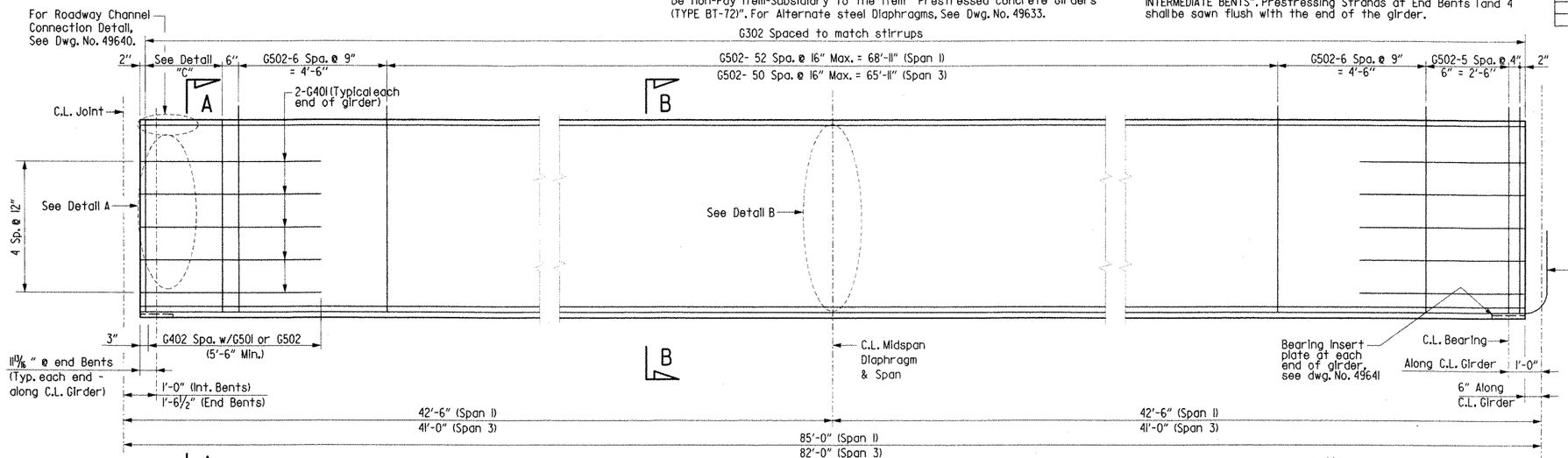
n:\sf\ar\arkansas\1final_030305\Site4\A&B_71 over Exist 71\A&B030355x4_s3.dgn
8/15/2011
3:32:57 PM

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.		030355	49	85
				(2) A&B7124		SPAN DETAILS		49636

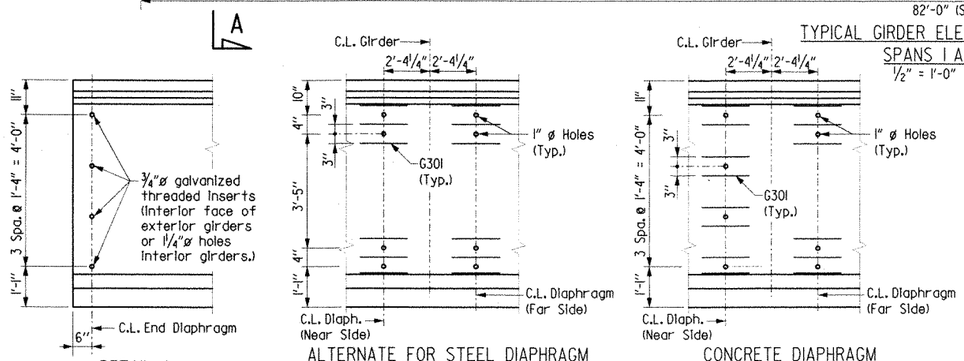
(1) Inserts shown are for Midspan Diaphragms, See Dwg. No. 49633. For Alternate Steel Diaphragms.

(2) Galvanized ¾" Dia. Dayton-Richmond F-42 Loop Ferrule Insert or an approved equal. (Omit in exterior face of exterior girders.) These are to be non-Pay Item-Subsidiary to the Item "Prestressed Concrete Girders (TYPE BT-72)". For Alternate steel Diaphragms, See Dwg. No. 49633.

(3) Prestressing Strands at intermediate bents 2 and 3 shall be bent up into diaphragms as shown. See "ELEVATION OF GIRDERS AT INTERMEDIATE BENTS". Prestressing Strands at End Bents 1 and 4 shall be sawn flush with the end of the girder.



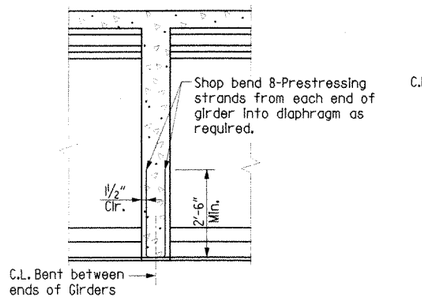
TYPICAL GIRDER ELEVATION (BT-72)
SPANS 1 AND 3
½" = 1'-0"



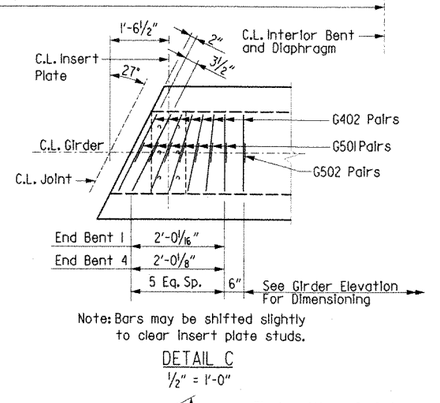
DETAIL A
½" = 1'-0"

ALTERNATE FOR STEEL DIAPHRAGM
DETAIL B
½" = 1'-0"

CONCRETE DIAPHRAGM
DETAIL B
½" = 1'-0"

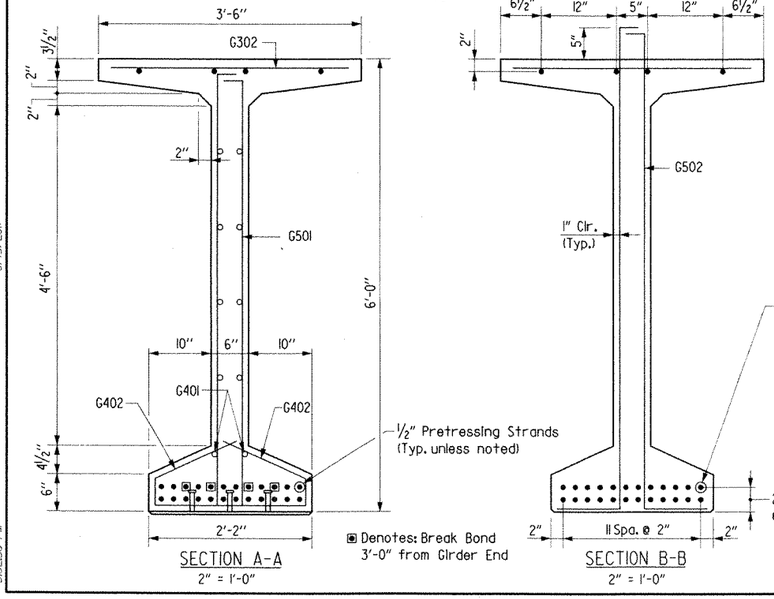


ELEVATION OF GIRDERS AT INTERMEDIATE BENTS
½" = 1'-0"



Note: Bars may be shifted slightly to clear insert plate studs.

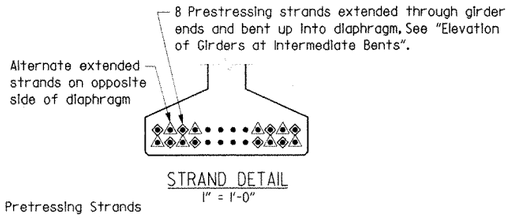
DETAIL C
½" = 1'-0"



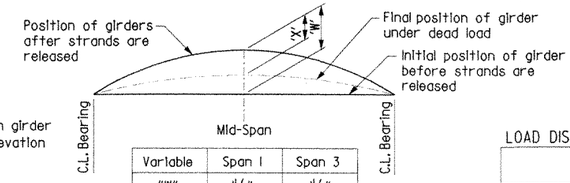
SECTION A-A
2" = 1'-0"

Denotes: Break Bond 3'-0" from Girder End

SECTION B-B
2" = 1'-0"



STRAND DETAIL
1" = 1'-0"



Variable	Span 1	Span 3
"W"	1¼"	1¼"
"X"	7/16"	⅜"

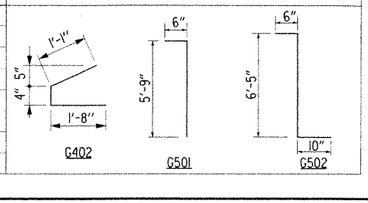
"W" is expected Camber of Girder at 90 days after release (Prestress + Dead Load of Girder).

"X" is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load.

CAMBER & DEFLECTIONS (INCHES)

BAR LIST-PER GIRDER

SPAN 1 MARK	NO. REQ'D.	LENGTH	P.D.	SPAN 3 MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS (Dimensions are out to out of bars.)
G301	16	1'-3"	Str.	G301	16	1'-3"	Str.	
G302	78	3'-2"	Str.	G302	75	3'-2"	Str.	
G401	20	6'-0"	Str.	G401	20	6'-0"	Str.	
G402	26	3'-0"	2"	G402	26	3'-0"	2"	
G501	14	6'-2"	2½"	G501	14	6'-2"	2½"	
G502	140	7'-7"	2½"	G502	138	7'-7"	2½"	



GENERAL NOTES - PRESTRESSED GIRDERS ONLY

Prestensioning steel shall be ½" dia. Low Relaxation strands with a minimum ultimate strength of 270 ksi and shall conform to AASHTO M203.

All Girders shall be AASHTO BT-72 as shown on the details. All Girders shall be cast in concrete floored pallets and in metal forms. All work and materials shall be as specified in Section 802.22 of the Standard Specifications and SP Job 030355 Prestressed Concrete Bulb-Tee Girders".

Concrete shall be Class "S" and shall have a minimum 28 day compressive strength f'c = 6,000 psi.

Dimensions shown are to the center of strands.

The initial tensile force applied to each ½" dia. strand shall be 30,983 pounds. Transfer of this tensioning load to the girder shall not be done until the compressive strength of the concrete is 4,500 psi for Spans 1 and 3 and 5,600 psi for Span 2.

The contractor shall submit the method and sequence for release of strands to the Engineer for approval prior to casting of the girders.

The first 16" along the top of the girder at each end shall have a smooth finish. The remaining portion shall be rough floated at approximately the time of set then scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface for bonding slabs.

Girder lengths shown on the design plans are net lengths measured horizontally along girder centerlines. The girder manufacturer shall make the necessary allowances for grade and shortening due to elastic shortening, creep and shrinkage.

All exposed steel at ends of girders not extended into diaphragms at interior bents shall be protected against corrosion by a coating of tar or other waterproofing material.

Girders must be maintained in an upright position at all times and must be picked up from points near the girder ends. Disregard of this requirement may lead to collapse of the girder. The contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

The Contractor may submit alternate strand patterns with design calculations for review and approval in accordance with Subsection 802.22 except that only ½" diameter strands shall be allowed.

Reinforcing Steel shall be AASHTO M31 or M53 Grade 60 (fy = 60,000 psi).

Distances from the forms and spacing of the Prestressing Steel shall be maintained by the stays, ties, hangers, spacers, or other approved supports which shall be shown on the Shop Drawings.

A Girder Protective Assembly shall be installed on the exterior girder of 116'-0" spans on the side of approaching traffic. See Drawing No. 49639 for details.

The point of support and direction of the reactions with respect to the member shall be approximately the same during transportation and storage as when member is in its final position.

Drawings show general features of design only. Shop drawings shall be submitted to the Engineer and approval secured before fabrication is begun.

LOAD DISTRIBUTION TO GIRDERS:

	Girders 1 & 5	Girders 2 - 4
Dead Loads: To Girder	807 PLF + Girder + Diaph.	952 PLF + Girder + Diaph.
Dead Loads: To Composite Girder	305 PLF, Includes 153 PLF Future Wearing Surface	383 PLF, Includes 231 PLF Future Wearing Surface
Live Loads: To Each Composite Girder	1.24 Wheels + Impact	1.68 Wheels + Impact

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12097
JEFFREY SCOTT MULLINS
6-15-2011
BRIDGE ENGINEER

SHEET 4 OF 6
DETAILS OF 283' CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT BRIDGE OVER U.S. ROUTE 71 EXISTING

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

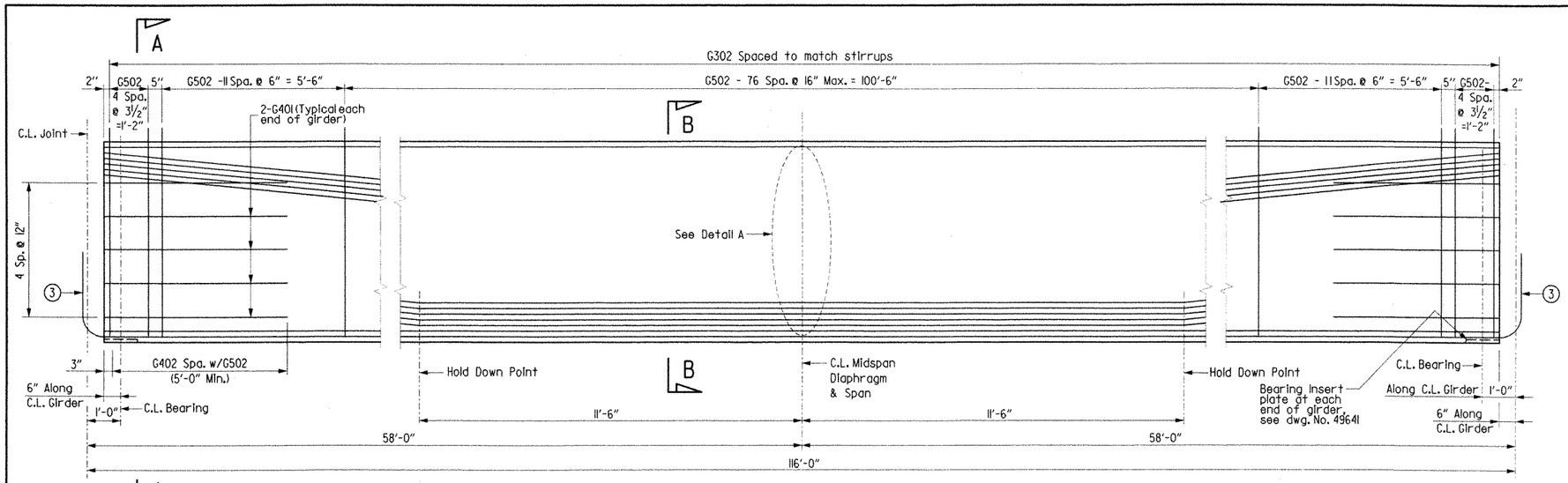
LITTLE ROCK, ARK.

DRAWN BY: RPT DATE: 6-07
CHECKED BY: MAD/MWB DATE: 8-07
DESIGNED BY: AJP/SHR DATE: 5-07
FILENAME: s:\B030355x4.s4.dgn
SCALE: AS SHOWN

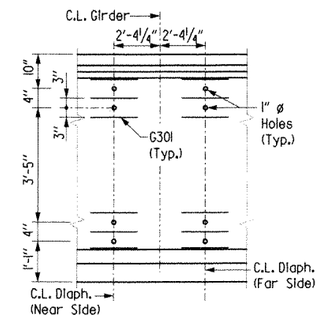
BRIDGE NO. A&B7124 DRAWING NO. 49636

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS
THE LPA GROUP
n:\str\arkansas\Final_030305\Sht#A&B_71over Exist 71\B030355x4_s4.dgn 8/15/2011 3:32:56 PM

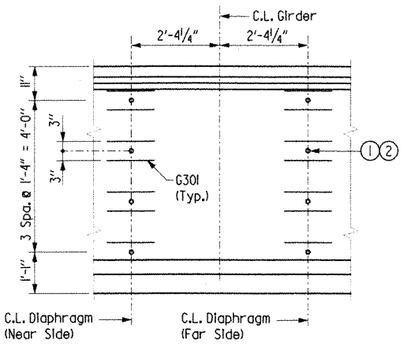
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	50	85
				(2) A&B7124		SPAN DETAILS		49637



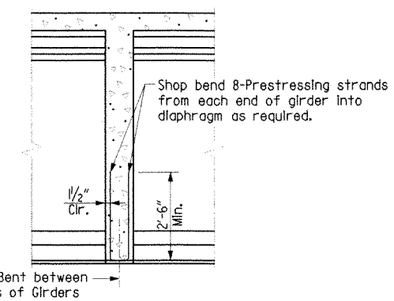
TYPICAL GIRDER ELEVATION (BT-72)
SPAN 2
½" = 1'-0"



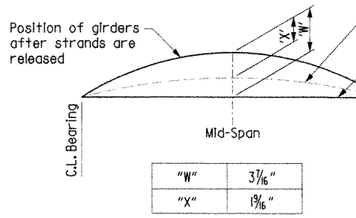
ALTERNATE FOR STEEL DIAPHRAGM
DETAIL A
½" = 1'-0"



CONCRETE DIAPHRAGM DETAIL A
½" = 1'-0"



ELEVATION OF GIRDERS
AT INTERMEDIATE BENTS
½" = 1'-0"

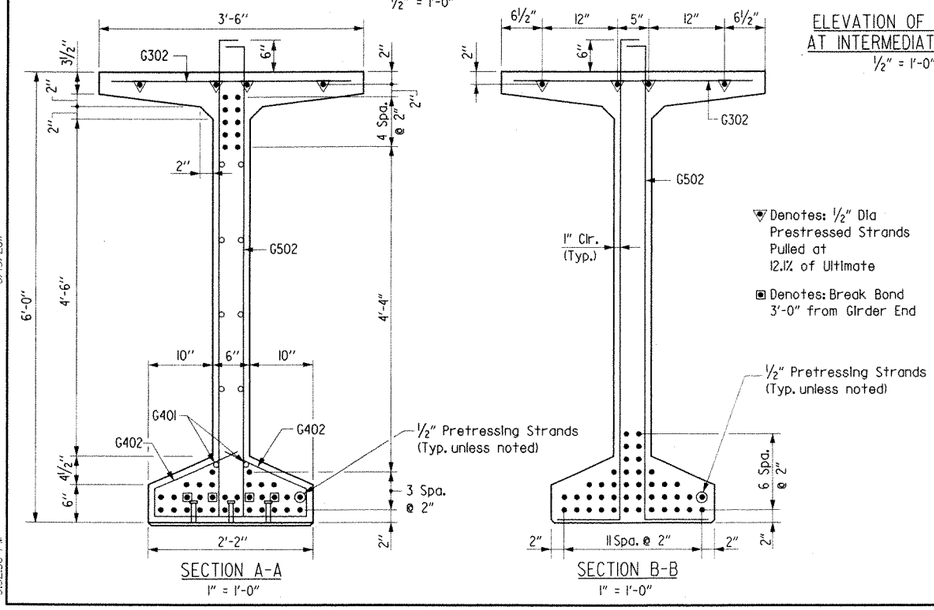


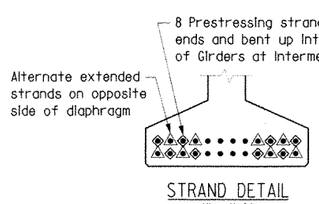
"W"	3 3/16"
"X"	1 9/16"

"W" Is expected Camber of Girder at 90 days after release (Prestress + Dead Load of Girder).

"X" Is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load.

CAMBER & DEFLECTIONS (INCHES)





STRAND DETAIL
1" = 1'-0"

BAR LIST-PER GIRDER

MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS (Dimensions are out to out of bars.)
G301	16	1'-3"	Str.	
G302	111	3'-2"	Str.	
G401	20	5'-0"	Str.	
G402	26	3'-0"	2"	1'-1", 4" 5", 1'-8"
G502	218	7'-7"	2½"	6", 6'-5", 10"

G402 G502

(1) Inserts shown are for Midspan Diaphragms, See Dwg. No. 49633. For Alternate Steel Diaphragms.

(2) Galvanized ¾" Dia. Dayton-Richmond F-42 Loop Ferrule Insert or an approved equal. (Omit in exterior face of exterior girders.) These are to be non-Pay Item-Subsidiary to the item "Prestressed Concrete Girders (TYPE BT-72)". For Alternate steel Diaphragms, See Dwg. No. 49633.

(3) Prestressing Strands at Intermediate Bents 2 and 3 shall be bent up into diaphragms as shown. See "ELEVATION OF GIRDERS AT INTERMEDIATE BENTS". Prestressing Strands at End Bents 1 and 4 shall be sawn flush with the end of the girder.

LOAD DISTRIBUTION TO GIRDERS:

	Girders 1 & 5	Girders 2 - 4
Dead Loads: To Girder	807 PLF + Girder + Diaph.	952 PLF + Girder + Diaph.
Dead Loads: To Composite Girder	305 PLF, Includes 153 PLF Future Wearing Surface	383 PLF, Includes 231 PLF Future Wearing Surface
Live Loads: To Each Composite Girder	1.24 Wheels + Impact	1.68 Wheels + Impact

8-15-2011
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12097
JEFFREY SCOTT MULLINEX
BRIDGE ENGINEER

SHEET 5 OF 6
DETAILS OF 283' CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT BRIDGE OVER U.S. ROUTE 71 EXISTING

ROUTE 71 SEC. 1

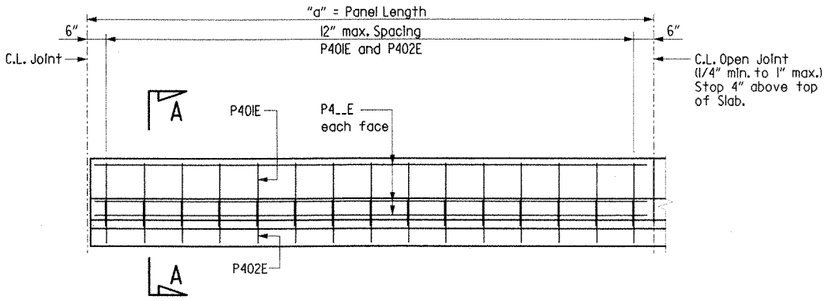
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: RPT DATE: 6-07 FILENAME: \B030355x4_s5.dgn
CHECKED BY: MAD/MWB DATE: 8-07 SCALE: AS SHOWN
DESIGNED BY: AJP/SHR DATE: 5-07

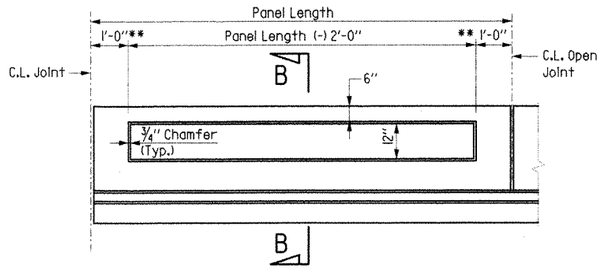
BRIDGE NO. A&B7124 DRAWING NO. 49637

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP
N:\structure\arkansas\final_030355\Sht4A&B_71 over Exist 71\B030355x4_s5.dgn
8/15/2011
3:32:56 PM

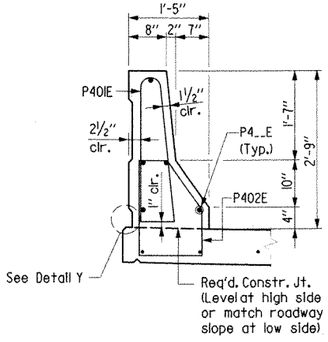


DETAILS OF CLOSED PARAPET RAIL
NTS

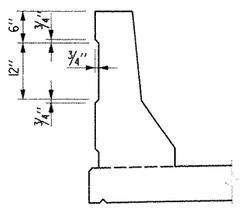
**Panel Inset may be made continuous if slip forms are used.



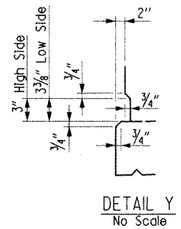
PARAPET ENHANCEMENT DETAILS
Scale: 1/2" = 1'-0"



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



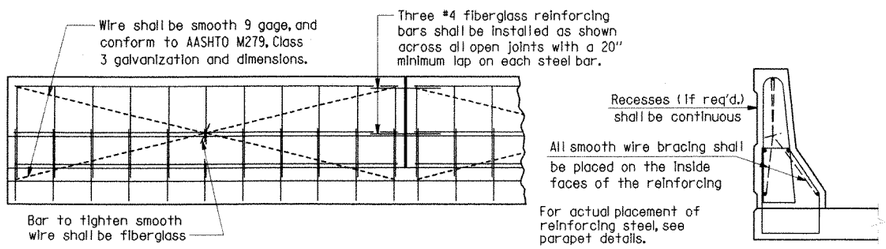
SECTION B-B
Scale: 3/4" = 1'-0"



DETAIL Y
No Scale

PARAPET RAIL VARIABLES

Parapet Type	"a"	"b"	"c"	Longitudinal Reinforcing
Closed	10'-0"	---	---	P403E
Closed	13'-0"	---	---	P404E
Closed	14'-4"	---	---	P405E
Closed	15'-0"	---	---	P406E
Closed	15'-6"	---	---	P407E



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 1/4". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL
Scale: 1/2" = 1'-0"

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	51	85
				(2) A&B7124		SPAN DETAILS		49638

SUPERSTRUCTURE GENERAL NOTES

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

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges, 2002, with current interim specifications.

LIVE LOAD: HS20 + Military Loading METHOD OF DESIGN: Load Factor

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.

CONCRETE: All concrete in slab, parapets and diaphragms shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered 3/4" unless otherwise noted. All end of unit and midspan diaphragms shall be cast in place and poured a minimum of 48 hours before the slab is poured. Interior bent diaphragms shall be cast monolithically with the slab.

The slab and intermediate bent diaphragms shall not be poured until 90 days after release of strands in beams.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 14991 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

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

The concrete deck shall be given a tine 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 girder. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for future dead load deflection due to the railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

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

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-BRIDGE (Grade 60).

STRUCTURAL STEEL: All structural steel shall be AASHTO M270, Gr. 50W unless otherwise noted and shall be paid for as Structural Steel in Beam Spans. (AASHTO M270 GR. 50W) GR. 50W steel shall not be painted. All exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). Structural steel completely embedded in concrete may be AASHTO M270. GR.36.

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

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

8-15-2011
ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12097
JEFFREY SCOTT MELLIERS
BRIDGE ENGINEER

SHEET 6 OF 6
DETAILS OF 283' CONTINUOUS PRESTRESSED CONCRETE GIRDER UNIT BRIDGE OVER U.S. ROUTE 71 EXISTING

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: RPT DATE: 6-07 FILENAME: \&B030355x5_s6.dgn
CHECKED BY: MAD/MWB DATE: 8-07 SCALE: AS SHOWN
DESIGNED BY: AJP/SHR DATE: 5-07

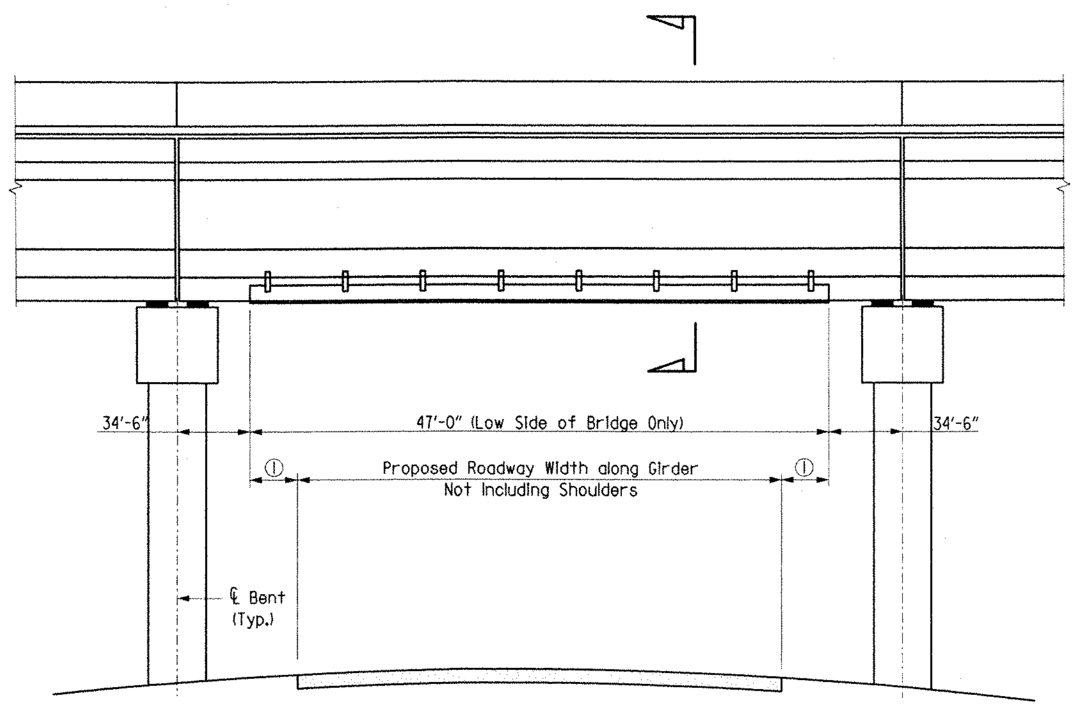
BRIDGE NO. A&B7124 DRAWING NO. 49638

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP

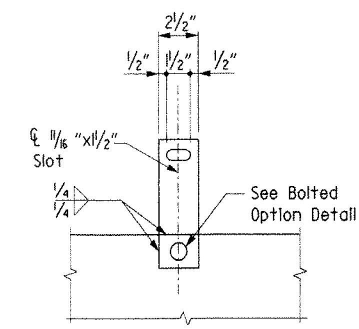
n:\structur\arkansas\final_030305\Site4A&B_71 over Exist 71\B030355x5_s6.dgn
8/15/2011
3:32:55 PM

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.		030355	52	85

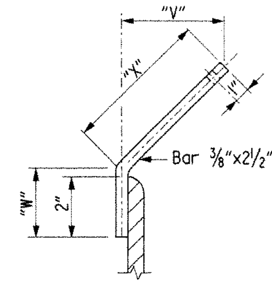
(2) A&B7124 GIRDER PROTECTIVE ASSEMBLY 49639



TYPICAL BRIDGE ELEVATON
(Exterior Girder Only)
No Scale

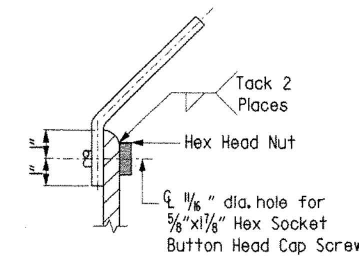


ELEVATION



END VIEW

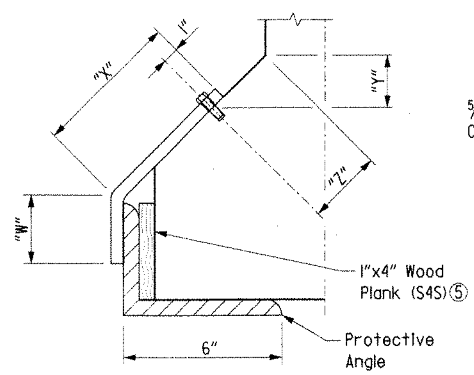
SUPPORT BRACKET DETAILS



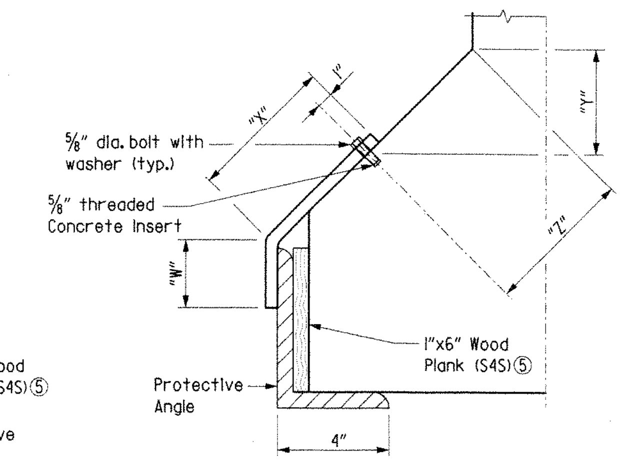
BOLTED OPTION DETAIL (2)

TABLE OF VARIABLE DIMENSIONS

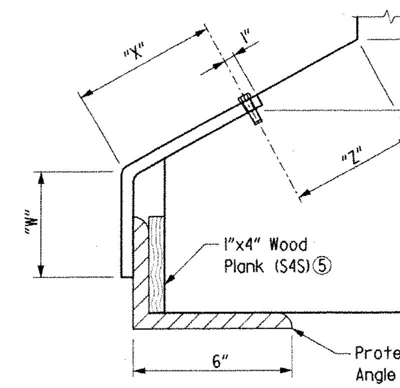
GIRDER	"V"	"W"	"X"	"Y"	"Z"
TYPE I	4⅜"	2 7/16"	6 5/16"	2 3/16"	3⅝"
TYPE II	5½"	3 3/16"	7 13/16"	2¼"	3 3/16"
TYPE III	7 5/16"	2 3/16"	10 5/16"	2¼"	3 3/16"
TYPE IV	4 13/16"	3 3/16"	6 13/16"	6¼"	8 13/16"
BT-54, 63, 72	5 7/16"	4 3/16"	6"	3 3/16"	7 11/16"



TYPE I & II



TYPE III & IV



BT-54, 63, 72

SECTIONS THRU GIRDER PROTECTION ASSEMBLY

(1) 1'-0" Min., 3'-0" Max.

(2) When "BOLTED OPTION" is used, notch Wood Plank to accommodate bolt and nut.

(3) Type I I-Beams - ∠ 6x4x1/2 (LLH)
Type II I-Beams - ∠ 6x4x1/2 (LLH)
Type III I-Beams - ∠ 6x4x1/2 (LLV) (4)
Type IV I-Beams - ∠ 6x4x1/2 (LLV) (4)
BT-54,63,72 Girders - ∠ 6x4x1/2 (LLH)

(4) At Contractor's option, ∠ 6x6x1/2 may be substituted without additional compensation.

(5) Attach Wood Plank to protective angle with an approved construction adhesive.

(LLH) = Long Leg Horizontal
(LLV) = Long Leg Vertical

Contractor shall ensure that the Girder Protective Assembly extends over the travelled way within the tolerances shown.

If drilled-in threaded inserts are used, care shall be taken to avoid damage to strand or rebar in the beam. Drilled hole depth shall not exceed 5 3/8". If rebar is encountered during drilling, the hole shall be filled with an approved grout and the Assembly repositioned as needed to complete installation of the inserts.

GENERAL NOTES: Protective angles and support brackets shall be structural steel conforming to AASHTO M270 Grade 36 and may be shipped in convenient lengths (11'-0" min.)

Protective angles and support brackets shall be galvanized in accordance with AASHTO M111, thickness Grade 100.

Bolts shall be ASTM A307 or AASHTO M164. Threaded inserts shall be Dayton-Richmond F-42 Loop Ferrule Insert or approved equal. Bolts, washers, cap screws, and threaded inserts shall be galvanized in accordance with AASHTO M232 Class C or AASHTO M298 Class 50.

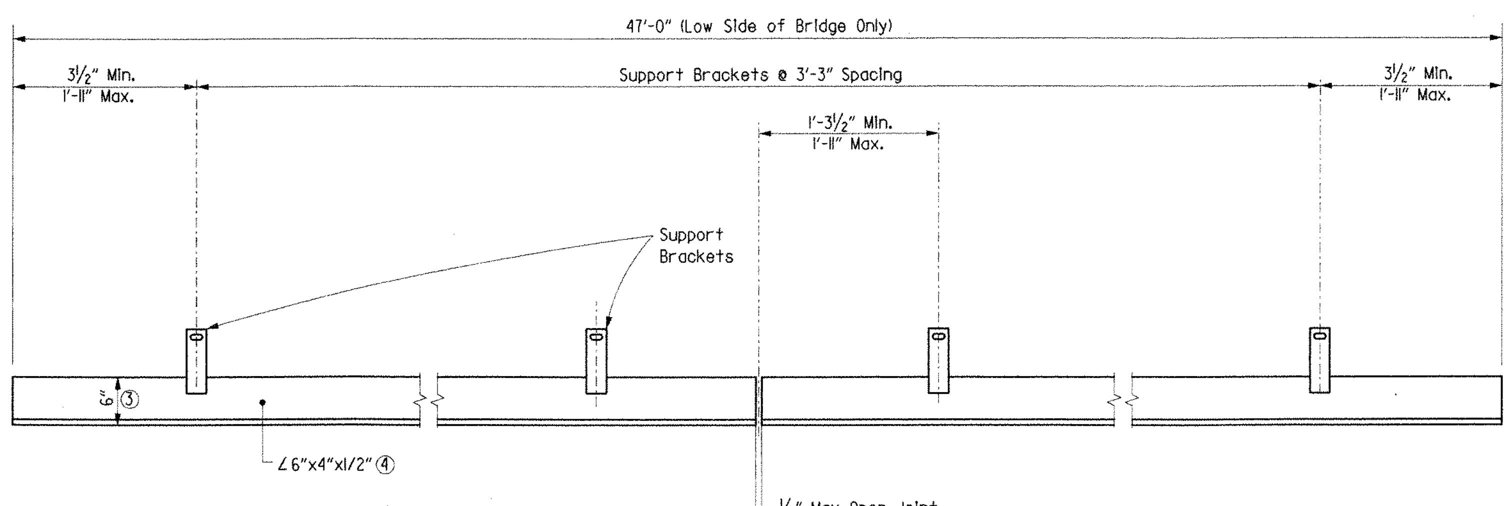
Approximate weight per linear foot: 6x4x1/2 = 17.6 plf   6x6x1/2 = 21.0 plf

Joints in plank shall not coincide with joints in angle.

All wood planks shall be treated per Section 817.04

GIRDER PROTECTIVE ASSEMBLY, which includes angles, brackets, bolts, and washers, wood planks and treated inserts will not be paid for directly, but will be considered subsidiary to the item "Prestressed Concrete Girders (Type BT-72)".

Girder Protective Assembly shall be protected from overspray while applying textured coating finish.



ELEVATION OF GIRDER PROTECTIVE ASSEMBLY
1"=1'-0"

8-15-2011

ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFREY SCOTT MULLIKEN

BRIDGE ENGINEER

GIRDER PROTECTIVE ASSEMBLY
BRIDGE OVER U.S. ROUTE 71 EXISTING

ROUTE 71   SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

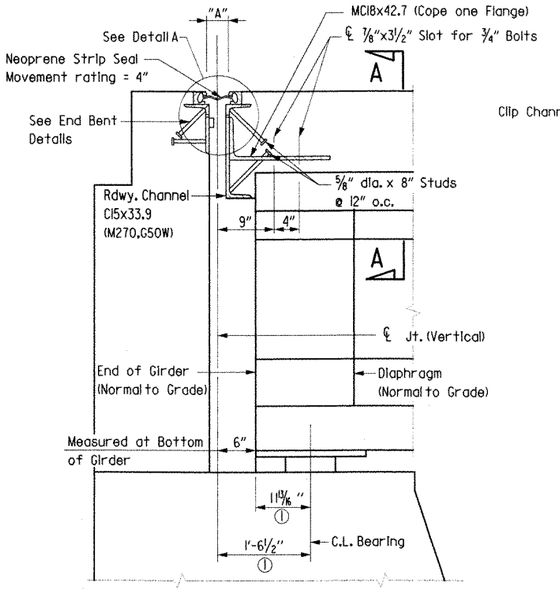
LITTLE ROCK, ARK.

DRAWN BY: RPT   DATE: 4-07   FILENAME: \B030355x4_ml.dgn
CHECKED BY: MAD   DATE: 8-07   SCALE:
DESIGNED BY: STANDARD   DATE: 4-07

BRIDGE NO. A&B7124   DRAWING NO. 49639

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS
n:\struct\arkansas\final_030355\Site4A&B_71 over Exist 71\B030355x4_ml.dgn
3:32:55 PM 8/15/2011

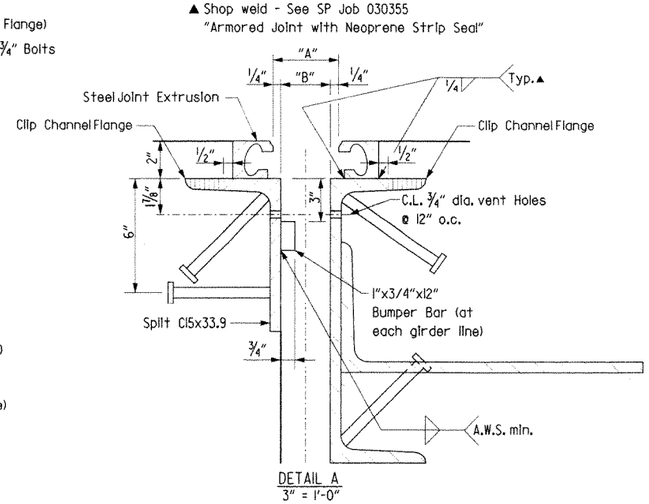
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	53	85
				(2) A&B7124		JOINT DETAILS		49640



① Measured Along Girder

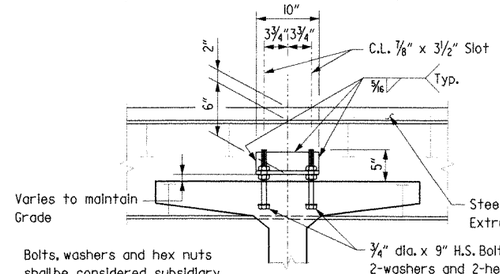
SECTION THRU JOINT AT END BENTS

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



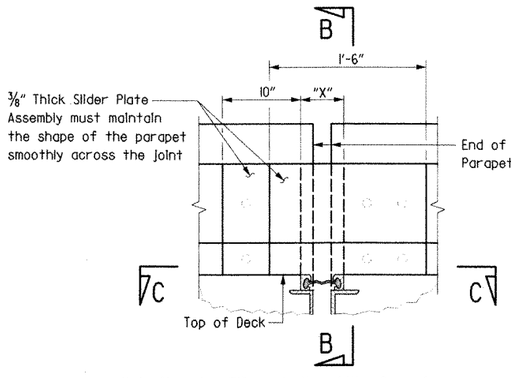
DETAIL A
3" = 1'-0"

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

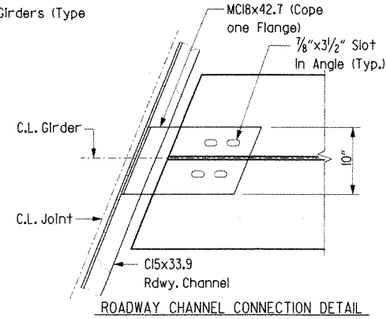


SECTION A-A

Bolts, washers and hex nuts shall be considered subsidiary to the item "Prestressed Concrete Girders (Type BT-72)"

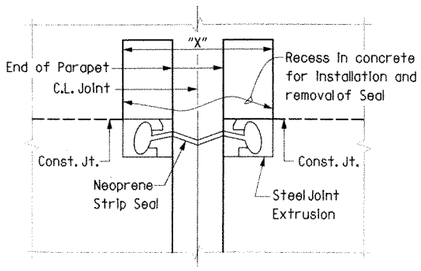


Note: Dimension "X" equals the width of opening in parapet at curb to allow for removal or repair of joint.

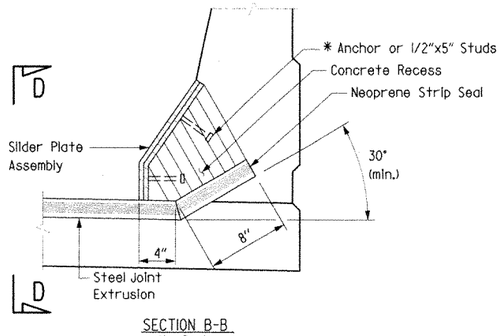


ROADWAY CHANNEL CONNECTION DETAIL
No Scale

DETAIL OF NEOPRENE SEAL AT GUTTERLINE
No Scale



SECTION D-D
No Scale



SECTION B-B
No Scale

GENERAL NOTES:

EXPANSION NEOPRENE STRIP SEAL: The Expansion device shall provide a movement of 4" as shown in the "STRIP SEAL JOINT DATA" table. The expansion joint shall be capable of sealing the deck surface and parapet area to prevent moisture and other contaminants from descending through the joint.

Details of proposed slider plate assembly shall be submitted to and approved by the Engineer prior to the fabrication of any structural steel at the expansion device.

All structural steel shall be AASHTO M270, Grade 50W unless otherwise noted. Cleaning and painting of the parapet slider plates shall be in accordance with Section 638 and will not be paid for directly but will be considered subsidiary to STRUCTURAL STEEL IN BEAM SPANS (M270, GRADE 50W). Structural steel completely embedded in concrete need not be painted.

All structural steel, except for the steel extrusion and slider plate anchor system for the strip seal, shall be paid for as "STRUCTURAL STEEL IN BEAM SPANS". The steel extrusion, slider plate anchor system and neoprene strip seal shall be paid for in accordance with Special Provision Job 030355 "ARMORED JOINT WITH NEOPRENE STRIP SEAL".

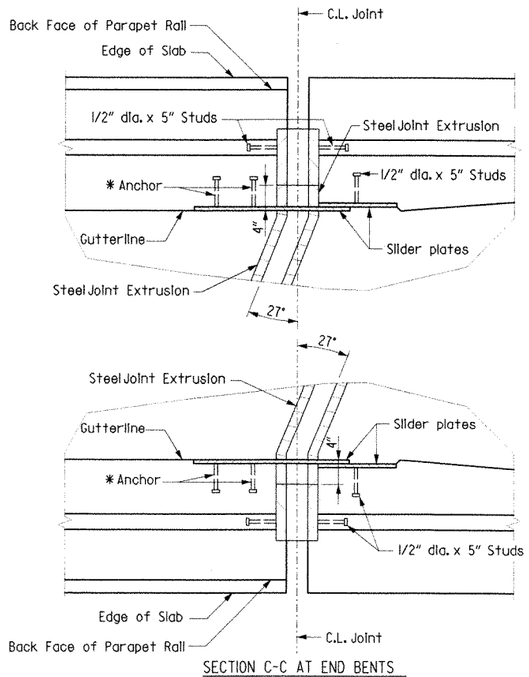
Note: Details of joint turn-up in parapet are general and show basic design controls only. See SP Job 030355 "Armored Joint with Neoprene Strip Seal". Method of installation and fabrication shall be determined by the manufacturer.

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 :		
		40°F	60°F	80°F	40°F	60°F	80°F
1 and 4	4"	2 11/16"	2 1/2"	2 5/16"	2 3/16"	2"	1 13/16"

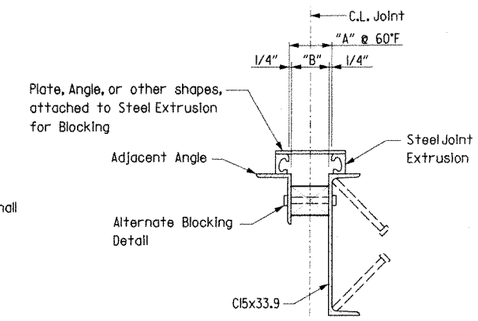
** The temperature used to set the joint opening shall be the approximate average air temperature during the 24 hour period immediately before the bolts are tightened. The Engineer shall establish the temperature.

Installation is limited to 40°F, min. and 80°F, max. Interpolation of the table may be necessary. The temperature limitations by the lubricant-adhesive manufacturer shall be observed.



SECTION C-C AT END BENTS

* The method of attachment of the cover slider plate assembly or similar device must be such that it may be removed in order to provide for future replacement of the neoprene seal. Method of installation and fabrication shall be determined by the manufacturer.



DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

Note:
Each Expansion Joint Device shall be blocked in the shop by the Fabricator to the dimension shown for 60°F and the blocking details shall be shown on the Shop Drawings. Blocking shall be placed within 2 Feet of each end of the device and with a maximum spacing of 8 Feet.

One of two different blocking systems is required depending on the type of span finishing used.

For Transverse Strike-Off:
Plate, Angle, or other shapes, attached to Channels (or angles) for Blocking.

For Longitudinal Strike-off:
Bolt & spacer attached to Channels for Blocking.

EXPANSION DEVICE INSTALLATION AT END BENTS

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

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the girders 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 the backwall constructed.

2) The backwall shall be poured to the optional construction joint after girders are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature.

8-15-2011

ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFREY SCOTT MULLINS

BRIDGE ENGINEER

DETAILS OF ARMORED JOINT WITH NEOPRENE STRIP SEAL BRIDGE OVER U.S. ROUTE 71 EXISTING

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

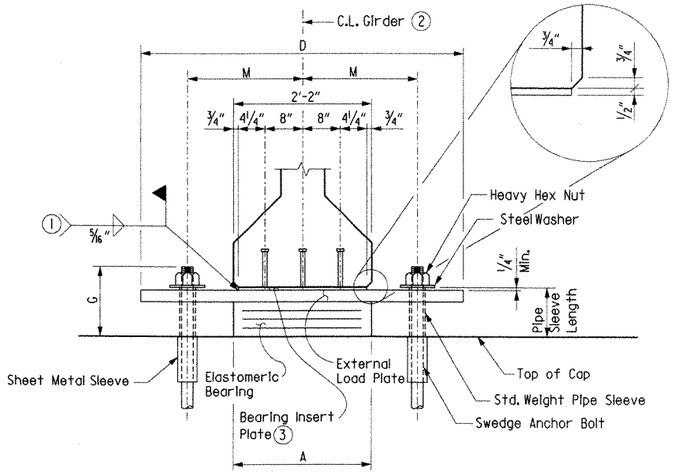
DRAWN BY: RPT DATE: 6-07 FILENAME: \B030355x4_1.dgn
CHECKED BY: MAD DATE: 8-07 SCALE: AS SHOWN
DESIGNED BY: STANDARD DATE: ——

BRIDGE NO. A&B7124 DRAWING NO. 49640

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS

n:\structur\arkansas\final_030305\Site4A&B_71 over Exist 71\B030355x4_1.dgn
8/15/2011
3:32:54 PM

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.		030355	54	85
				(2) A&B7124		ELASTOMERIC BEARINGS		49641

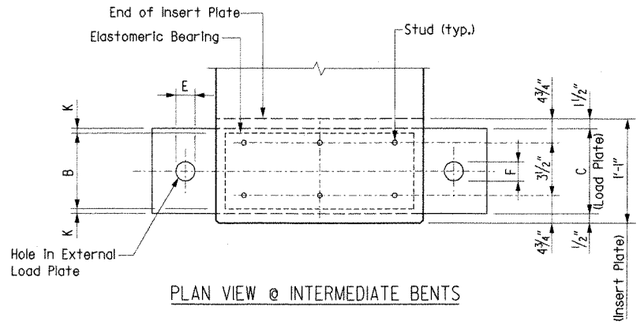


FRONT VIEW

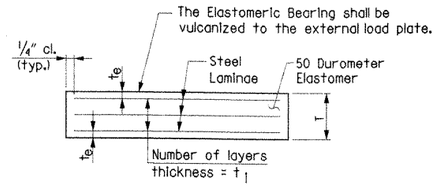
(1) Care shall be taken to ensure that the external load plate is in full and complete contact with the bearing insert plate before welding begins.

(2) C.L. Elastomeric Pad shall be aligned with C.L. Girder

(3) Bearing Insert Plate (M270, Gr. 50W) & Studs shall be considered subsidiary to the item "Prestressed Concrete Girders (BT-72)"



PLAN VIEW @ INTERMEDIATE BENTS

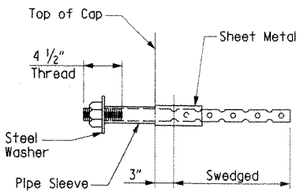


t_e = thickness of elastomer cover on top and bottom of pad

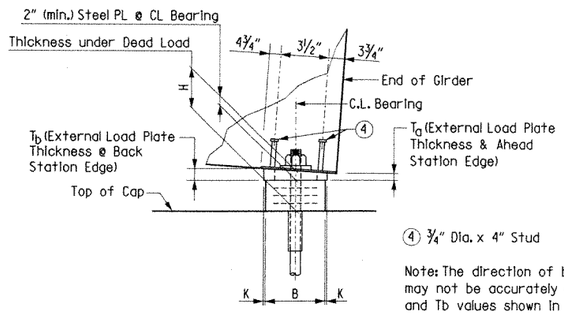
t_1 = thickness of elastomer between steel laminae

N = number of elastomer layers of thickness t_1

ELASTOMERIC BEARING



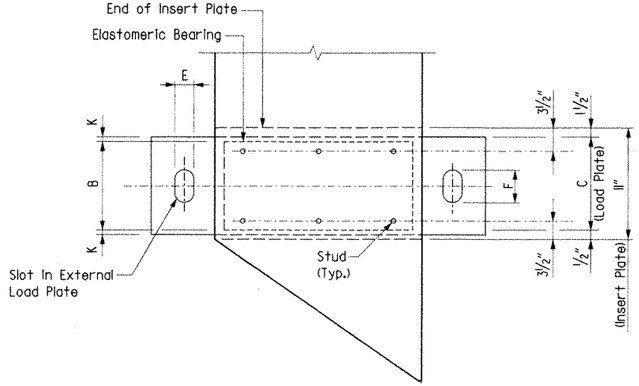
ANCHOR BOLT DETAIL



(4) ¾" Dia. x 4" Stud

Note: The direction of bevel of the external load plate may not be accurately depicted with respect to the Ta and Tb values shown in the Table of Fabricator Variables.

SIDE VIEW



PLAN VIEW @ END BENTS

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 Girders, 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. 50W)."

GENERAL NOTES

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

External load plates shall conform to AASHTO M270, Grade 50W. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or AASHTO M298, Class 50.

External load plates shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the Elastomeric bearing. The surface 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(e) for weathering steel.

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

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Beam Spans (M270, Gr. 50W)".

Unless otherwise approved by the engineer, welding of the external load plate at expansion bearings to the bearing insert plate 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.

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

TABLE OF FABRICATOR VARIABLES

LOCATION			BEARING TYPE	NO. of BEARINGS EACH BENT	✳MAXIMUM DESIGN LOAD (KIPS)	ELASTOMERIC PAD								EXTERNAL LOAD PLATE										ANCHOR BOLT				
																				BRIDGE A		BRIDGE B						
BENT NO.	SPAN NO(S)	GIRDER NO.				G	H	A	B	N	t_1	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	C	D	E	F	K	M	T_a	T_b	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.)
1	1	All	Exp.	5	146.8	7¼"	4⅜"	2'-2"	8"	2	⅝"	⅜"	3 @ 12 gauge	2⅝"	9"	3'-2"	2⅝"	4¾"	½"	1'-4"	1.96"	2.04"	1.96"	2.04"	1¾"Ø x 28¼"	55	2"Ø x 4½"	4"Ø x 6"	3⅜"
2	1 2	All	Fixed	10	181.9	7½"	3⅝"	2'-2"	8"	1	⅝"	1/16"	2 @ 12 gauge	1¹¹/₁₆"	11"	3'-2"	3⅛"	3⅛"	1½"	1'-4"	2.20" 1.95"	2.30" 2.05"	2.20" 1.95"	2.30" 2.05"	2¼"Ø x 34½"	55	2½"Ø x 4"	4"Ø x 6"	4"
3	2 3	All	Fixed	10	181.9	7½"	3⅝"	2'-2"	8"	1	⅝"	1/16"	2 @ 12 gauge	1¹¹/₁₆"	11"	3'-2"	3⅛"	3⅛"	1½"	1'-4"	2.20" 1.95"	2.30" 2.05"	2.20" 1.95"	2.30" 2.05"	2¼"Ø x 34½"	55	2½"Ø x 4"	4"Ø x 6"	4"
4	3	All	Exp.	5	146.8	7¼"	4⅜"	2'-2"	8"	2	⅝"	⅜"	3 @ 12 gauge	2⅝"	9"	3'-2"	2⅝"	4¾"	½"	1'-4"	1.96"	2.04"	1.96"	2.04"	1¾"Ø x 28¼"	55	2"Ø x 4½"	4"Ø x 6"	3⅜"

✳ MAXIMUM DESIGN LOAD = SERVICE LOAD

9-15-2011
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
JEFFREY SCOTT MULLINAX
No. 12097
BRIDGE ENGINEER

DETAILS OF ELASTOMERIC BEARINGS BRIDGE OVER U.S. ROUTE 71 EXISTING

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

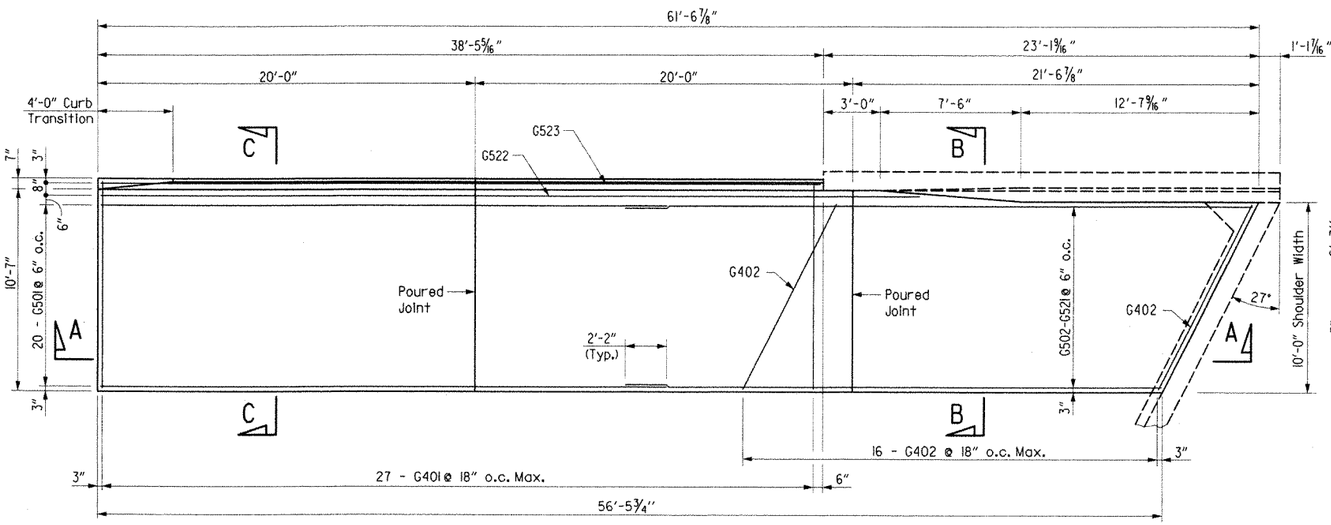
LITTLE ROCK, ARK.

DRAWN BY: RPT DATE: 6-07 FILENAME: \A&B030355x4.dgn
CHECKED BY: MAD/MWB DATE: 9-07 SCALE: AS SHOWN
DESIGNED BY: SHR/CGN DATE: 6-07

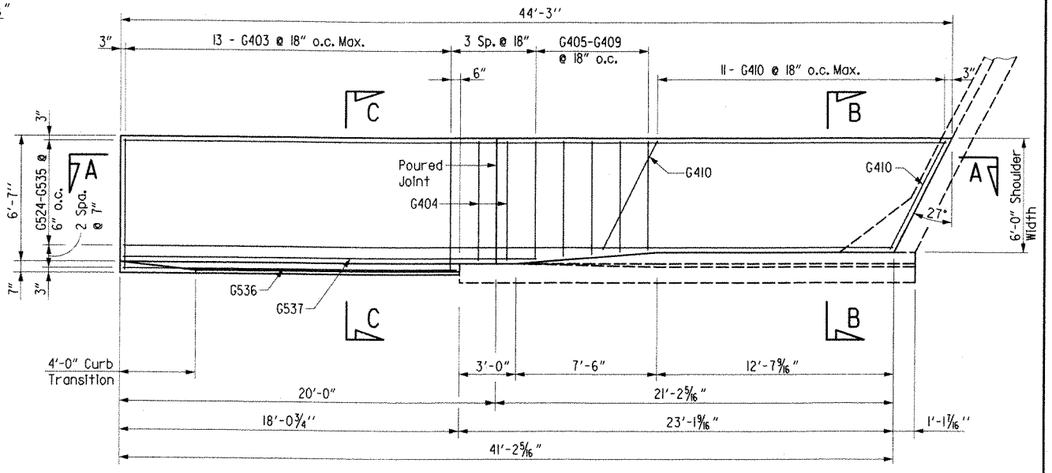
BRIDGE NO. A&B7124 DRAWING NO. 49641

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP
m:\structarkansas\final_030305\Sht4A&B_71over_Exist 71\B030355x4.dgn
8/15/2011
3:32:54 PM

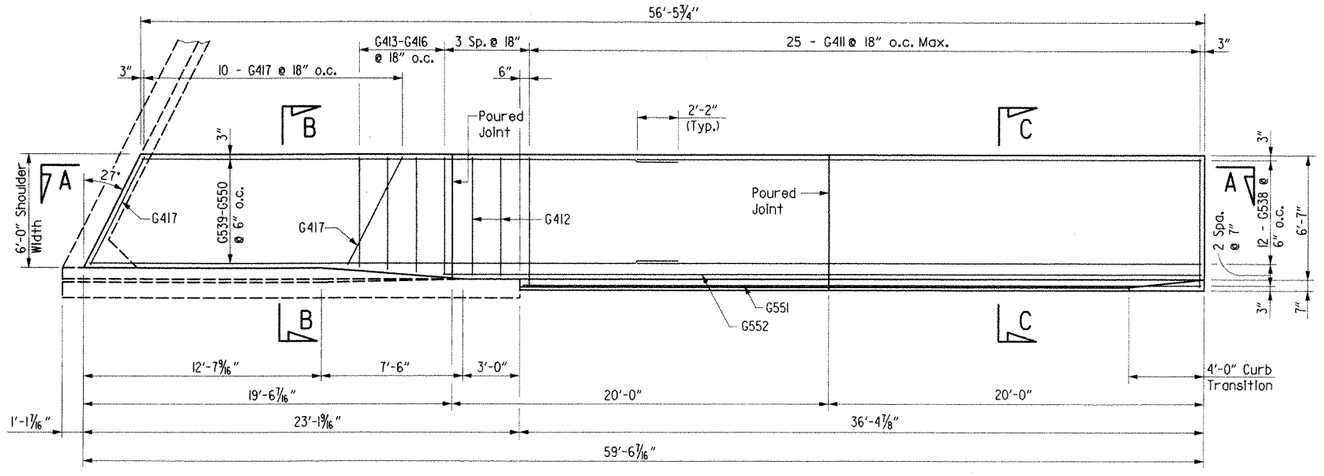
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	55	85
				(2) A&B7124		APPROACH GUTTERS		49642



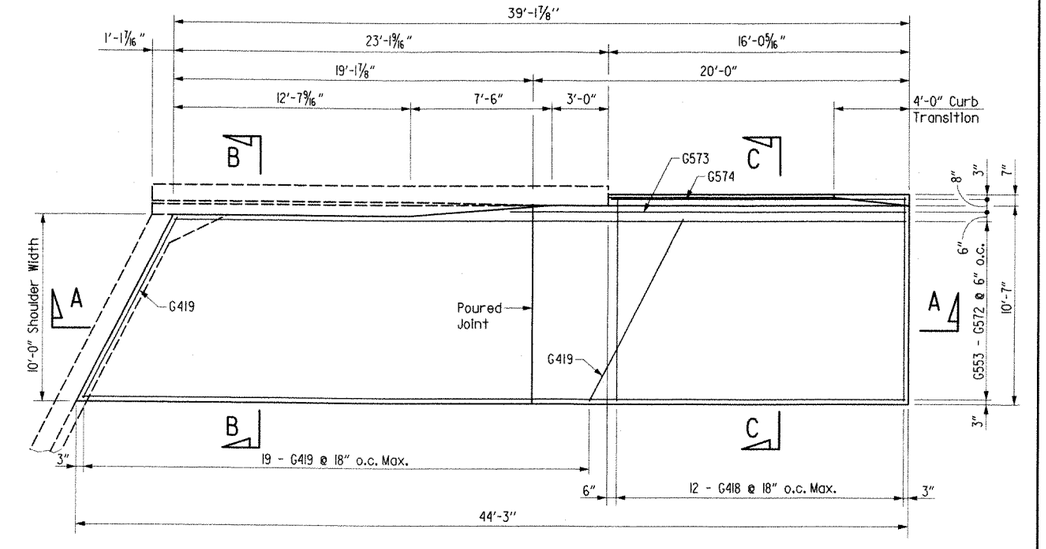
PLAN - 10' GUTTER
(BEGIN BRIDGE)



PLAN - 6' GUTTER
(BEGIN BRIDGE)



PLAN - 6' GUTTER
(END BRIDGE)



PLAN - 10' GUTTER
(END BRIDGE)

GENERAL NOTES:

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

Reinforcement 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.

FOR INFORMATION ONLY

SHEET 1 OF 2
DETAILS OF
TYPE SPECIAL 4 APPROACH GUTTER
BRIDGE OVER U.S. ROUTE 71 EXISTING

ROUTE 71 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

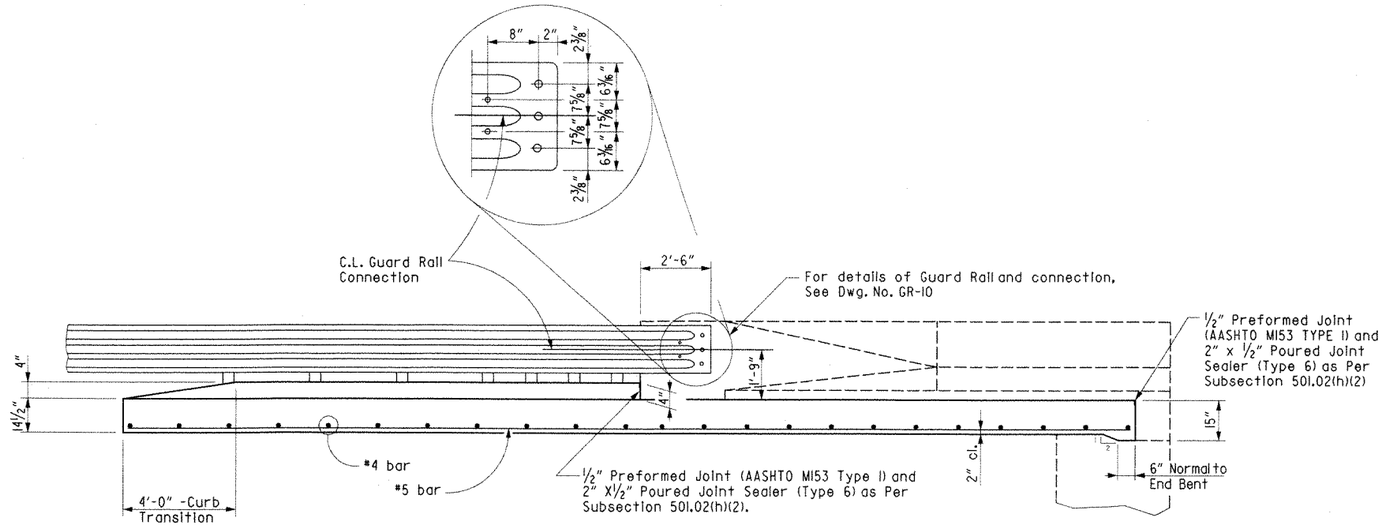
DRAWN BY: RPT DATE: 6-07 FILENAME: a8030355x4.gldgn
CHECKED BY: MAD DATE: 8-07 SCALE: 1/4" = 1'-0"
DESIGNED BY: MWB DATE: 6-07

BRIDGE NO. A&B7124 DRAWING NO. 49642

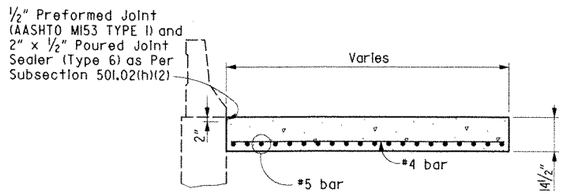
PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP

n:\struct\arkansas\final\030355\Site4A&B_71over E.I.s\ 71\A8030355x4.gldgn
8/15/2011
3:32:54 PM

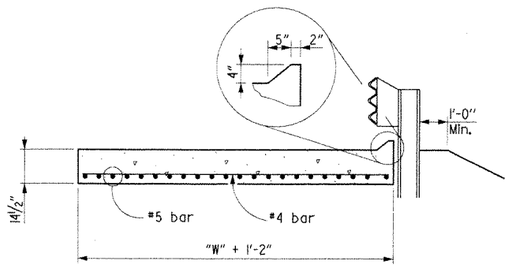
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	56	85
				(2) A&B7124		APPROACH GUTTERS		49643



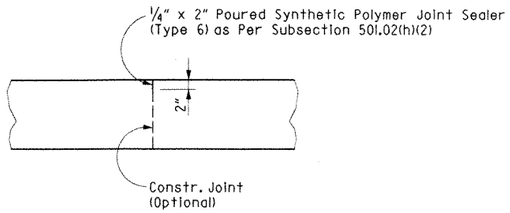
SECTION A - A
NTS



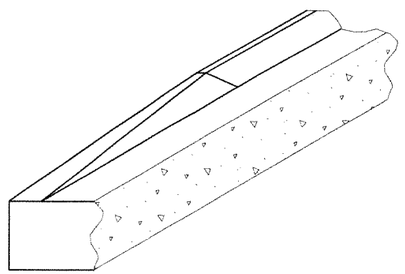
SECTION B - B
NTS



SECTION C - C
NTS



DETAILS OF POURED JOINT
NTS



CURB TRANSITION
NTS

BAR LIST

MARK	NO. REQ'D.	LENGTH
G401	27	10'-10"
G402	16	10'-11"
G403	13	6'-10"
G404	2	6'-3"
G405-G409	1 EACH	5'-9" to 6'-2"
G410	11	6'-5"
G411	25	6'-10"
G412	2	6'-3"
G413-G416	1 EACH	5'-10" to 6'-2"
G417	10	6'-5"
G418	12	10'-10"
G419	19	10'-11"
G501	20	30'-0"
G502-G521	1 EACH	28'-6" to 33'-6"
G522	1	43'-5"
G523	1	38'-1"
G524-G535	1 EACH	41'-0" to 43'-10"
G536	1	17'-9"
G537	1	22'-0"
G538	12	30'-0"
G539-G550	1 EACH	28'-6" to 31'-3"
G551	1	36'-1"
G552	1	40'-4"
G553-G572	1 EACH	38'-11" to 43'-9"
G573	1	21'-0"
G574	1	15'-9"

TABLE OF QUANTITIES FOR TYPE SPECIAL 4 APPROACH GUTTER

AT BEGIN BRIDGE		
"W" Width	Reinforcing Steel	Concrete (Cu. Yds.)
6'	707 lbs.	12.67
10'	1,670 lbs.	28.78

AT END BRIDGE		
"W" Width	Reinforcing Steel	Concrete (Cu. Yds.)
6'	1,010 lbs.	17.82
10'	1,126 lbs.	19.75

FOR INFORMATION ONLY

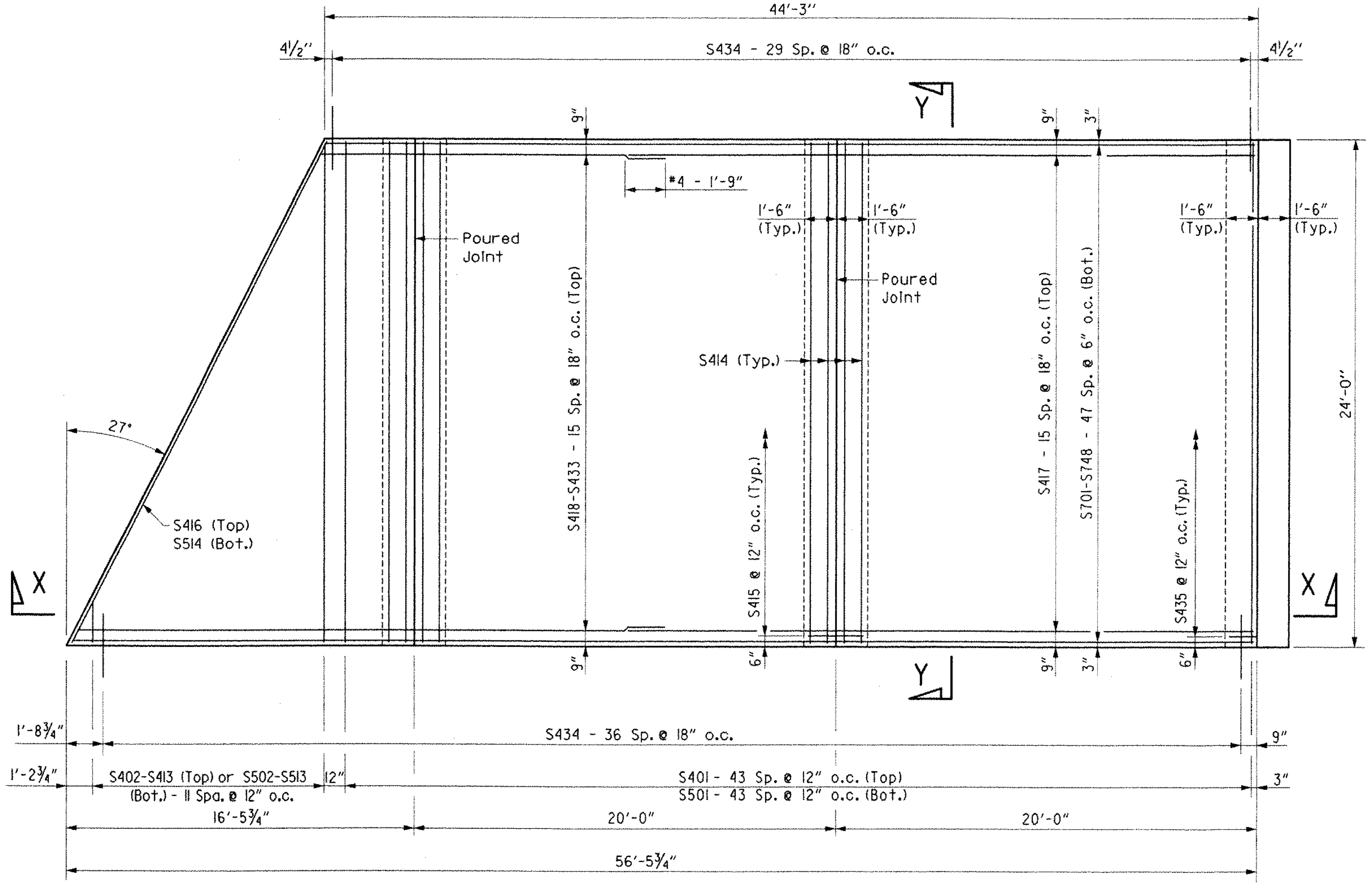
SHEET 2 OF 2
DETAILS OF
TYPE SPECIAL 4 APPROACH GUTTER
BRIDGE OVER U.S. ROUTE 71 EXISTING

ROUTE 71 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MAD/RPT DATE: 6-07 FILENAME: \B030355x4.g2.dgn
CHECKED BY: MWB DATE: 9-07 SCALE: AS SHOWN
DESIGNED BY: STANDARD DATE: 6-07
BRIDGE NO. A&B7124 DRAWING NO. 49643

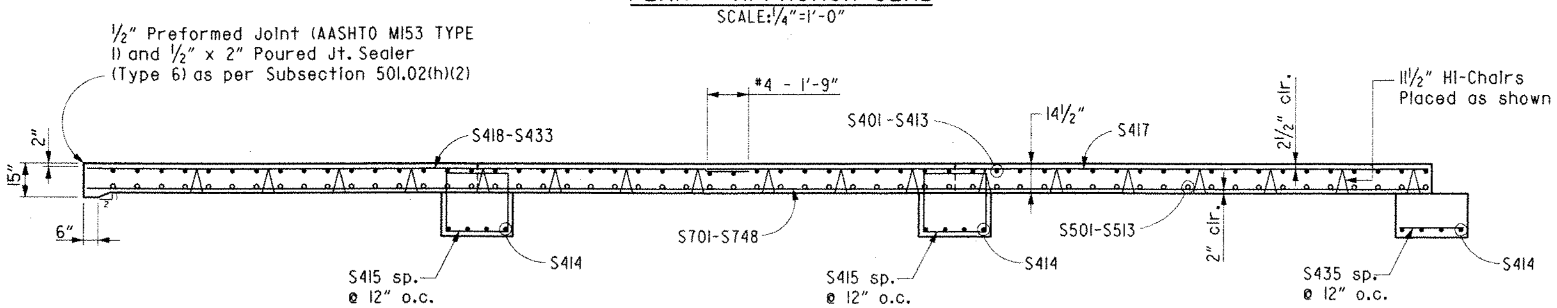
PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS

n:\structurkansas\final_030305\Site4A&B_71 over Exist 71\B030355x4_g2.dgn
8/15/2011
3:32:53 PM



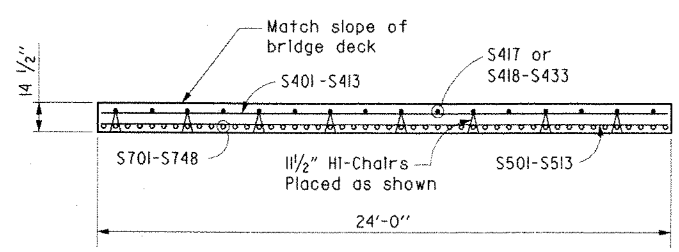
PLAN - APPROACH SLAB

SCALE: ¼"=1'-0"



SECTION X - X

SCALE: ¼"=1'-0"



SECTION Y - Y

SCALE: ¼"=1'-0"

TABLE OF QUANTITIES FOR ONE TYPE SPECIAL 2 APPROACH SLAB

Slab Width	Reinforcing Steel	Concrete (Cu. Yds.)
24'-0"	8,389	68.9

GENERAL NOTES

Concrete shall be Class S (AE) (f'c = 4,000 psi).

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

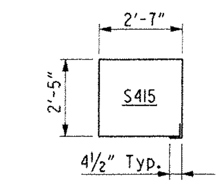
Approach Slabs will be measured and paid for in accordance with Section 504.

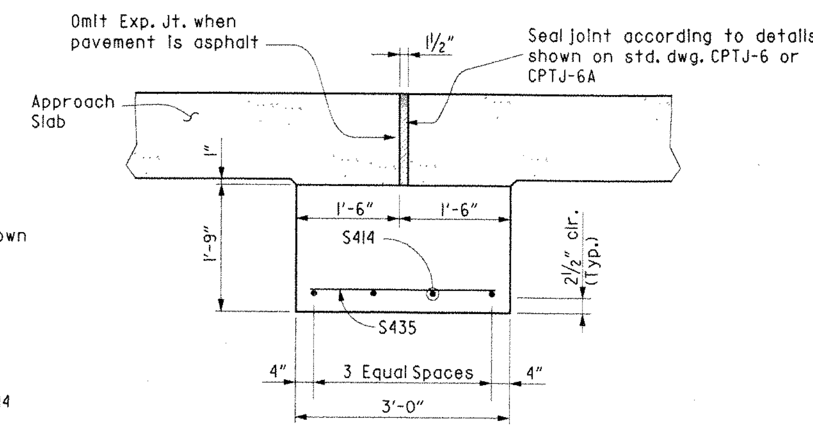
Joint sealer included in the pay item "Approach Slab".

Surface finish for approach slabs shall match that used on the bridge deck.

BAR LIST

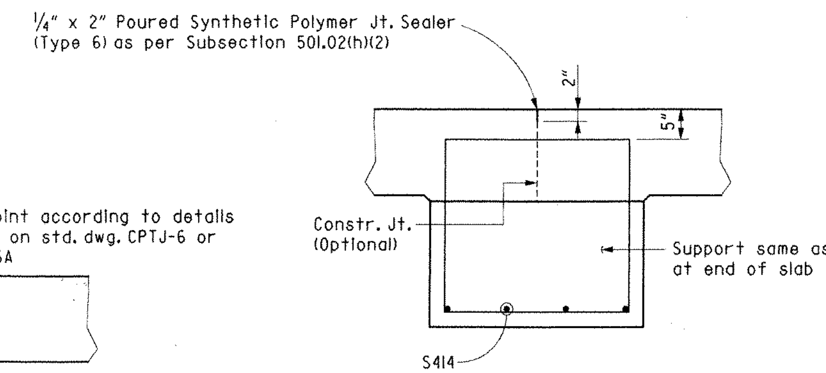
MARK	NO. REQ'D.	LENGTH	P.D.	BENDING DIAGRAMS
S401	44	23'-8"		Dimensions are out to out of bars.
S402-S413	1 EACH	1'-11" to 23'-6"		
S414	12	23'-8"		
S415	48	10'-9"	2"	
S416	1	26'-7"		
S417	16	30'-0"		
S418-S433	1 EACH	16'-0" to 27'-6"		
S434	67	3'-0"		
S435	24	2'-7"		
S501	44	23'-8"		
S502-S513	1 EACH	1'-11" to 23'-6"		
S514	1	26'-7"		
S701-S748	1 EACH	44-0" to 56'-0"		





DETAILS OF SUPPORT AT END OF SLAB

SCALE: ¾"=1'-0"



DETAILS OF SUPPORT AT MIDDLE OF SLAB

SCALE: ¾"=1'-0"

FOR INFORMATION ONLY

DETAILS OF TYPE SPECIAL 2 APPROACH SLAB BRIDGE OVER U.S. ROUTE 71 EXISTING

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: RPT DATE: 6-07 FILENAME: ...\B030355s4_asl.dgn

CHECKED BY: MAD/MWB DATE: 8-07 SCALE: AS SHOWN

DESIGNED BY: MWB DATE: 6-07

BRIDGE NO. A&B7124 DRAWING NO. 49644

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS

...\030355\S1te4A&B_71over Exist 71\B030355s4_asl.dgn 8/15/2011 3:33:53 PM

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.		030355	58	85
				A7125		LAYOUT		49645

Note: Use Type Special 5 Approach Gutters with Type Special 3 Approach Slabs. Typical at each end of Bridge. See Dwg. No. 49661, 49662 and 49662A. (Not in this Contract)

The Contractor shall exercise care such that his operations result in minimal disturbance of the existing riprap in the channel. If disturbed, the riprap shall be restored to its existing condition to the satisfaction of the Engineer and at the Contractor's expense.

The Contractor shall exercise care such that his operations result in minimal disturbance of the existing riprap at Bent 4. If disturbed, the riprap shall be restored to its existing condition to the satisfaction of the Engineer and at the Contractor's expense.

HYDRAULIC DATA

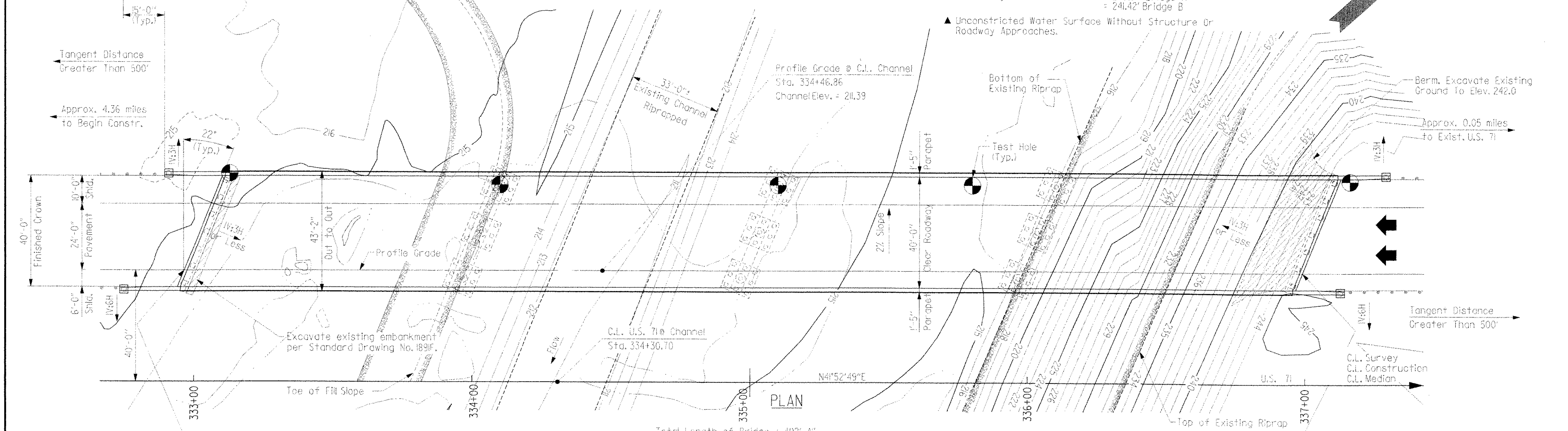
Drainage Area = 19.0 Square Miles

FLOOD	FREQUENCY	DISCHARGE (C.F.S.)	▲ NATURAL WATER SURFACE ELEV.	WATER SURFACE ELEVATION W/BACKWATER
Description	Years	C.F.S.	Feet	Feet
Design Flood	50	4942	218.42	219.24
Basic Flood	100	5880	218.90	219.82
Extreme Flood	500	8292	220.00	221.14
Overtopping	>500	NA	----	NA

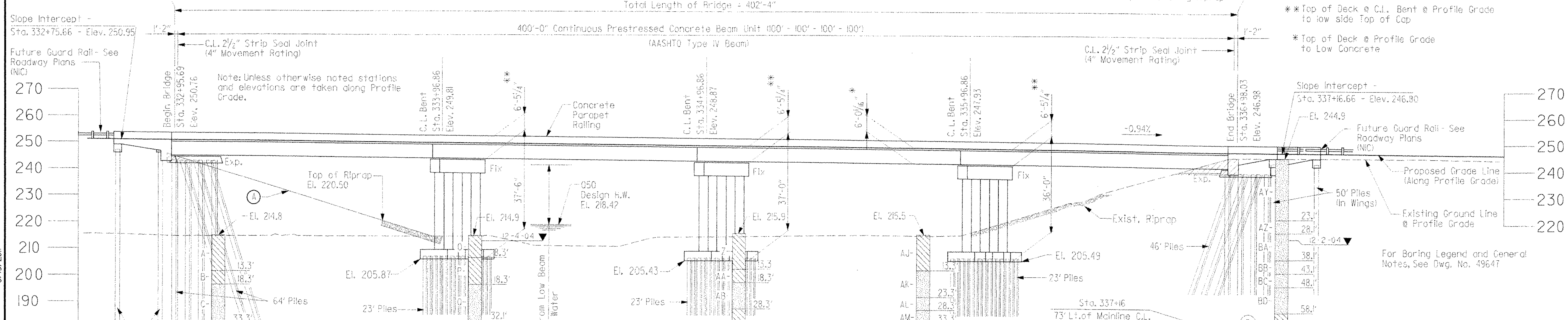
Low Bridge Member Elevation = 240.87' Bridge A
= 241.42' Bridge B

▲ Unconstricted Water Surface Without Structure Or Roadway Approaches.

(A) Embankment Placed as Job No. 030354.



Place Dumped Riprap 1'-6" Thick with Filter Fabric. See Std. Dwg. No. 1891F for Details.
For R/W Data, See Roadway Plans
Tangent Distance Greater Than 500'
Approx. 4.36 miles to Begin Constr.
Profile Grade @ C.L. Channel
Sta. 334+46.86
Channel Elev. = 211.39
Bottom of Existing Riprap
Test Hole (Typ.)
Berm. Excavate Existing Ground To Elev. 242.0
Approx. 0.05 miles to Exist. U.S. 71
Finished Crown
Pavement
Shld.
Out to Out
Clear Roadway
Parapet
Profile Grade
2% Slope
Excavate existing embankment per Standard Drawing No. 1891F.
C.L. U.S. 71a Channel
Sta. 334+30.70
Toe of Fill Slope
N41°52'49"E
PLAN
Top of Existing Riprap
U.S. 71
Tangent Distance Greater Than 500'
C.L. Survey
C.L. Construction
C.L. Median
333+00
334+00
335+00
336+00
337+00



Total Length of Bridge = 402'-4"
400'-0" Continuous Prestressed Concrete Beam Unit (100' - 100' - 100' - 100')
(AASHTO Type IV Beam)
Slope Intercept - Sta. 332+75.66 - Elev. 250.95
C.L. 2½" Strip Seal Joint (4" Movement Rating)
Future Guard Rail - See Roadway Plans (NIC)
Note: Unless otherwise noted stations and elevations are taken along Profile Grade.
Begin Bridge Sta. 332+95.69 Elev. 250.76
C.L. Bent Sta. 333+96.86 Elev. 249.81
C.L. Bent Sta. 334+96.86 Elev. 248.87
C.L. Bent Sta. 335+96.86 Elev. 247.93
End Bridge Sta. 336+98.03 Elev. 246.98
Concrete Parapet Railing
-0.94%
Top of Riprap El. 220.50
050 Design H.W. El. 218.42
Exist. Riprap
Slope Intercept - Sta. 337+16.66 - Elev. 246.80
Proposed Grade Line (Along Profile Grade)
Existing Ground Line @ Profile Grade
50' Piles (In Wings)
46' Piles
64' Piles
69' Piles (In Wings)
23' Piles
El. 205.87
El. 205.43
El. 205.49
22.45' From Low Beam To High Water
For Boring Legend and General Notes, See Dwg. No. 49647

** Top of Deck @ C.L. Bent @ Profile Grade to low side Top of Cap

* Top of Deck @ Profile Grade to Low Concrete

Sta. 333+13
75' Lt. of Mainline C.L.
5.5 - 6.5, N = 5, W = 23.5
10.5 - 11.5, N = 20, W = 21.6
15.5 - 16.5, N = 26, W = 22.8
20.5 - 21.5, N = 13, W= 14.7
25.5 - 26.5, N = 12, W = 33.7
30.5 - 31.5, N = 19, W = 20.8
35.5 - 36.5, N = 39, W = 23.4
40.5 - 41.5, N = 36, W = 24.8
45.5 - 46.4, N = 100+, W = 22.6
50.0 - 50.5, N = 100+, W = 26.5
55.0 - 55.9, N = 100+, W = 27.8

BENT NO. (1)

Sta. 334+10
71' Lt. of Mainline C.L.
5.5 - 6.5, N = 3, W = 27.5
10.5 - 11.5, N = 8, W = 23.2
15.5 - 16.5, N = 18, W = 20.0
20.5 - 21.5, N = 0, W= 27.4
24.8 - 25.8, N = 11, W = 25.4
29.3 - 29.8, N = 100+, W = 24.0
34.3 - 34.7, N = 100+, W = 26.7
39.8 - 40.8, N = 53, W = 20.4
44.3 - 45.1, N = 100+, W = 21.5
49.3 - 50.1, N = 100+, W = 24.3
54.3 - 55.0, N = 100+, W = 26.8
59.3 - 60.1, N = 100+, W = 25.8

(2)

Sta. 335+10
71' Lt. of Mainline C.L.
5.5 - 6.5, N = 6, W = 23.3
10.5 - 11.5, N = 6, W = 24.5
15.5 - 16.5, N = 16, W = 22.2
20.5 - 21.5, N = 34, W= 20.2
25.5 - 26.5, N = 17, W = 20.3
30.5 - 31.5, N = 55, W = 21.7
35.5 - 36.5, N = 58, W = 21.3
40.5 - 41.5, N = 56, W = 21.3
45.0 - 45.9, N = 100+
50.0 - 50.4, N = 100+, W = 27.1
55.0 - 55.8, N = 100+, W = 25.7
60.0 - 60.4, N = 100+, W = 25.6

(3)

Sta. 335+80
71' Lt. of Mainline C.L.
5.5 - 6.5, N = 5, W = 18.9
10.5 - 11.5, N = 6, W = 19.2
15.5 - 16.5, N = 14, W = 22.3
20.5 - 21.5, N = 31, W= 18.2
25.5 - 26.5, N = 17, W = 18.7
30.5 - 31.5, N = 38, W = 24.9
35.5 - 36.5, N = 37, W = 23.3
40.5 - 41.5, N = 59, W = 15.0
45.0 - 45.9, N = 100+, W = 23.0
50.0 - 50.4, N = 100+, W = 27.3
55.0 - 55.9, N = 100+, W = 25.3
60.0 - 60.8, N = 100+, W = 28.8

(4)

Sta. 337+16
73' Lt. of Mainline C.L.
5.3 - 6.3, N = 33, W = 8.0
10.3 - 11.3, N = 48, W = 8.7
15.3 - 16.1, N = 100+, W = 5.9
20.3 - 21.3, N = 59, W= 7.5
25.3 - 26.3, N = 59, W = 18.5
30.3 - 31.3, N = 7, W = 24.6
35.3 - 36.3, N = 10, W = 21.1
40.3 - 41.3, N = 5, W = 19.6
45.3 - 46.3, N = 7, W = 21.2
50.3 - 50.8, N = 100+, W = 19.4
55.3 - 56.3, N = 20, W = 26.9
59.8 - 60.7, N = 100+, W = 24.7
65.3 - 66.2, N = 100+, W = 23.3
70.3 - 71.1, N = 100+, W = 26.2

(5)

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS

N:\struct\Arkansas\Final_0303055\Site5A&B_East Fork\B0303055.dgn 8/15/2011 3:52:38 PM

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFERY SCOTT MULLIKIN

8-15-2011

BRIDGE ENGINEER

BRIDGE A
LAYOUT OF BRIDGE
OVER EAST FORK KELLY BAYOU
LA LINE - DODDRIDGE (F)
MILLER COUNTY

ROUTE 71 SEC. 1

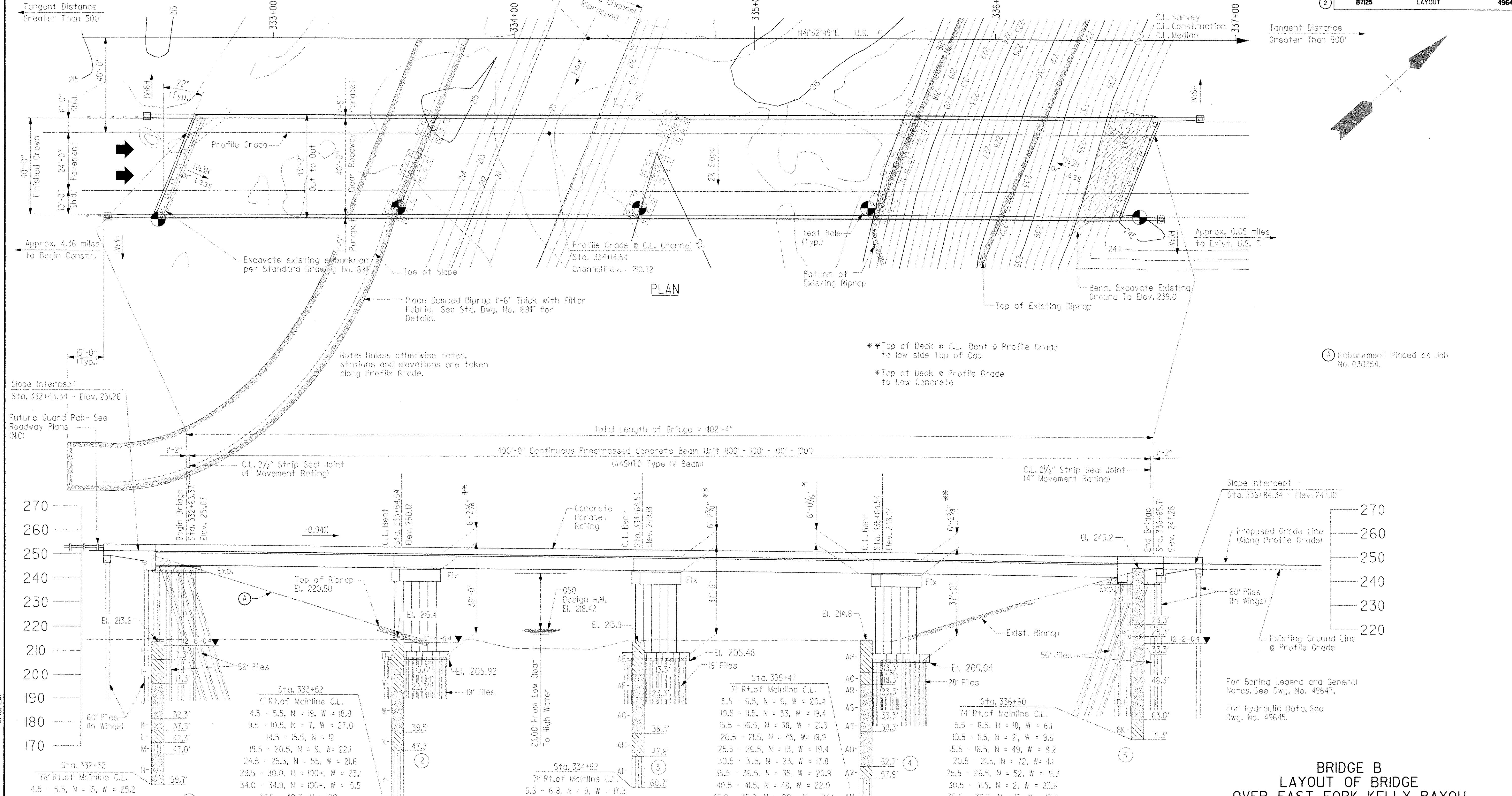
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: TAR DATE: 9-05
CHECKED BY: MAD/MWB DATE: 7-07
DESIGNED BY: EMB/MKJ DATE: 9-05
FILENAME: b0303055a.dgn
SCALE: 1" = 20'

BRIDGE NO. A7125 DRAWING NO. 49645

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.		030355	59	85
				B7125		LAYOUT		49646



For R/W Data, See Roadway Plans
Note: Use Type Special 5 Approach Gutters with Type Special 3 Approach Slabs. Typical at each end of Bridge. See Dwg. No. 49661, 49662 and 49662A. (Not in This Contract)
Tangent Distance Greater Than 500'
C.L. U.S. 71 @ Channel Sta. 334+30.70
33'-0" ± Existing Channel Riprapped
N41°52'49"E U.S. 71
C.L. Survey
C.L. Construction
C.L. Median
Profile Grade
Approx. 4.36 miles to Begin Constr.
Excavate existing embankment per Standard Drawing No. 1891F
Toe of Slope
Profile Grade @ C.L. Channel Sta. 334+14.54 Channel Elev. - 210.72
PLAN
Test Hole (Typ.)
Bottom of Existing Riprap
Berm. Excavate Existing Ground To Elev. 239.0
Top of Existing Riprap
Approx. 0.05 miles to Exist. U.S. 71
Place Dumped Riprap 1'-6" Thick with Filter Fabric. See Std. Dwg. No. 1891F for Details.
Note: Unless otherwise noted, stations and elevations are taken along Profile Grade.
** Top of Deck @ C.L. Bent @ Profile Grade to low side Top of Cap
* Top of Deck @ Profile Grade to Low Concrete
(A) Embankment Placed as Job No. 030354.
Slope Intercept - Sta. 332+43.34 - Elev. 251.26
Future Guard Rail - See Roadway Plans (NIC)
Total Length of Bridge = 402'-4"
400'-0" Continuous Prestressed Concrete Beam Unit (100' - 100' - 100' - 100') (AASHTO Type IV Beam)
C.L. 2½" Strip Seal Joint (4" Movement Rating)
Slope Intercept - Sta. 336+84.34 - Elev. 247.10
Begin Bridge Sta. 332+63.37 Elev. 251.07
C.L. Bent Sta. 333+64.54 Elev. 250.12
C.L. Bent Sta. 334+64.54 Elev. 249.18
C.L. Bent Sta. 335+64.54 Elev. 248.24
End Bridge Sta. 336+65.71 Elev. 247.28
Concrete Parapet Railing
-0.94%
Top of Riprap El. 220.50
050 Design H.W. El. 218.42
23.00' From Low Beam To High Water
Proposed Grade Line (Along Profile Grade)
Existing Ground Line @ Profile Grade
Exist. Riprap
56' Piles
60' Piles (In Wings)
19' Piles
28' Piles
El. 205.92
El. 205.48
El. 205.04
For Boring Legend and General Notes, See Dwg. No. 49647.
For Hydraulic Data, See Dwg. No. 49645.

Sta. 332+52
76' Rt. of Mainline C.L.
4.5 - 5.5, N = 15, W = 25.2
9.5 - 10.0, N = 11, W = 27.7
14.5 - 15.5, N = 17, W = 18.6
19.5 - 20.5, N = 19, W = 22.5
24.5 - 25.5, N = 63, W = 27.0
29.5 - 30.5, N = 49, W = 23.4
34.5 - 35.5, N = 19, W = 25.6
39.5 - 40.5, N = 43, W = 22.1
44.0 - 44.9, N = 100+, W = 25.4
49.0 - 49.8, N = 100+, W = 30.5
54.0 - 54.8, N = 100+, W = 30.7
59.0 - 59.7, N = 100+

BENT NO. (1)

Sta. 333+52
71' Rt. of Mainline C.L.
4.5 - 5.5, N = 19, W = 18.9
9.5 - 10.5, N = 7, W = 27.0
14.5 - 15.5, N = 12
19.5 - 20.5, N = 9, W = 22.1
24.5 - 25.5, N = 55, W = 21.6
29.5 - 30.0, N = 100+, W = 23.1
34.0 - 34.9, N = 100+, W = 15.5
39.5 - 40.3, N = 100+
44.5 - 45.5, N = 54, W = 17.7
49.0 - 49.8, N = 100+, W = 23.6
54.0 - 54.5, N = 100+
59.0 - 59.8, N = 100+, W = 29.6
64.0 - 64.9, N = 100+, W = 28.8
69.0 - 69.7, N = 100+, W = 27.6
74.0 - 74.8, N = 100+, W = 28.8

Sta. 334+52
71' Rt. of Mainline C.L.
5.5 - 6.8, N = 9, W = 17.3
10.5 - 11.5, N = 25, W = 20.5
15.5 - 16.5, N = 16, W = 19.4
20.5 - 21.8, N = 29, W = 21.5
25.5 - 26.5, N = 63, W = 23.8
30.5 - 31.5, N = 26, W = 24.4
35.5 - 36.8, N = 28, W = 19.9
40.5 - 41.5, N = 57, W = 22.2
45.0 - 45.5, N = 100+, W = 25.1
50.0 - 50.4, N = 100+, W = 25.9
55.0 - 55.8, N = 100+, W = 26.7
60.0 - 60.7, N = 100+, W = 25.6

Sta. 335+47
71' Rt. of Mainline C.L.
5.5 - 6.5, N = 6, W = 20.4
10.5 - 11.5, N = 33, W = 19.4
15.5 - 16.5, N = 38, W = 21.3
20.5 - 21.5, N = 45, W = 19.9
25.5 - 26.5, N = 13, W = 19.4
30.5 - 31.5, N = 23, W = 17.8
35.5 - 36.5, N = 35, W = 20.9
40.5 - 41.5, N = 48, W = 22.0
45.0 - 45.9, N = 100+, W = 24.1
50.0 - 50.4, N = 100+, W = 27.3
55.0 - 55.8, N = 100+, W = 18.4
60.0 - 60.4, N = 100+, W = 27.4
65.0 - 65.4, N = 100+, W = 29.8
70.0 - 70.8, N = 100+, W = 23.9
75.5 - 76.4, N = 100+, W = 18.0
80.5 - 81.3, N = 100+, W = 17.3

Sta. 336+60
74' Rt. of Mainline C.L.
5.5 - 6.5, N = 18, W = 6.1
10.5 - 11.5, N = 21, W = 9.5
15.5 - 16.5, N = 49, W = 8.2
20.5 - 21.5, N = 72, W = 11.1
25.5 - 26.5, N = 52, W = 19.3
30.5 - 31.5, N = 2, W = 23.6
35.5 - 36.5, N = 13, W = 18.0
40.5 - 41.5, N = 8, W = 21.6
45.5 - 46.5, N = 7, W = 26.2
50.5 - 51.5, N = 10, W = 24.9
55.5 - 56.5, N = 17, W = 24.0
60.0 - 60.9, N = 100+, W = 24.2
65.5 - 66.4, N = 100+, W = 17.6
70.5 - 71.3, N = 100+, W = 17.4

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFERY SCOTT MULLIKIN
8-15-2011
BRIDGE ENGINEER

BRIDGE B
LAYOUT OF BRIDGE
OVER EAST FORK KELLY BAYOU
LA LINE - DODDRIDGE (F)
MILLER COUNTY

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: TAR DATE: 9-05
CHECKED BY: MAD/MWB DATE: 7-07
DESIGNED BY: EMB/MKJ DATE: 9-05
FILENAME: b030355_lil.dgn
SCALE: 1" = 20'
BRIDGE NO. B7125 DRAWING NO. 49646

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS

N:\struct\Arkansas\Final_0303055\Site5A&B_East Fork\B030355bse.dgn
3:52:55 PM 8/15/2011

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.		030355	60	85
				A&B7125		GENERAL NOTES		49647

Boring Legend

- A - Gray, Tan & Light Gray, Medium Stiff to Very Stiff Sandy Lean Clay
- B - Olive Gray, Very Stiff Sandy Lean Clay
- C - Dark Tan, Dark Brown, Light Gray, Tan, Brown, Beige & Yellowish Orange, Medium Dense Poorly Graded Sand with Silt and Gravel
- D - Beige, Dense Poorly Graded Sand with Silt
- E - Olive Gray, Hard Lean Clay with Sand
- F - Dark Gray, Very Hard Sandy Silt
- G - Dark Gray, Very Dense Silty Sand
- H - Dark Gray & Tan, Stiff Lean Clay with Sand
- I - Dark Gray & Yellowish Orange, Stiff to Very Stiff Sandy Lean Clay
- J - Beige, Tan & Yellowish Orange, Medium Dense to Very Dense Poorly Graded Sand with Silt
- K - Gray, Medium Dense Poorly Graded Sand with Silt
- L - Black, Olive Gray & White, Hard Lean Clay with Sand
- M - Olive Gray & Black, Very Hard Sandy Silt
- N - Gray & Olive Gray, Very Dense Silty Sand
- O - Dark Gray & Tan, Soft Lean Clay with Sand
- P - Dark Gray, Tan & Yellowish Orange, Medium Stiff to Very Stiff Sandy Lean Clay
- Q - Beige, Brown, Yellowish Orange & Tan, Very Loose to Very Dense Poorly Graded Sand with Silt
- R - Light Gray, Very Dense Poorly Graded Sand with Silt
- S - Olive Gray & Dark Greenish Gray, Hard to Very Hard Lean Clay with Sand
- T - Olive Gray, Greenish Gray, Dark Greenish Gray, Light Olive Gray & Black, Very Hard Sandy Silt
- U - Brown, Dark Gray & Green, Medium Stiff to Very Stiff Sandy Lean Clay
- V - Dark Gray, Stiff Sandy Lean Clay
- W - Yellowish Orange, Tan, Light Gray, Dark Brown & Beige, Very Dense Poorly Graded Sand with Silt
- X - Copper & Dark Gray, Hard to Very Hard Lean Clay with Sand
- Y - Olive Gray, Dark Gray & Black, Very Hard Sandy Silt
- Z - Brown, Medium Stiff Sandy Lean Clay
- AA - Olive Gray, Very Stiff Sandy Lean Clay
- AB - Yellowish Orange, Copper & Beige, Medium Dense to Dense Poorly Graded Sand with Silt
- AC - Dark Gray, Black, Copper, Olive Gray & Greenish Gray, Hard Lean Clay with Sand
- AD - Dark Gray, Olive Gray & Dark Greenish Gray, Very Hard Sandy Silt
- AE - Gray, Yellowish Orange & Dark Gray, Stiff to Very Stiff Sandy Lean Clay
- AF - Gray, Tan & Yellowish Orange, Medium Dense Silty Sand
- AG - Yellowish Orange, Light Gray, Gray, Tan & Beige, Medium Dense to Very Dense Poorly Graded Sand with Silt
- AH - Olive Gray, Dark Gray & Black, Hard to Very Hard Lean Clay with Sand
- AI - Dark Gray, Light Olive Gray & Olive Gray, Very Hard Sandy Silt
- AJ - Brown & Dark Brown, Medium Stiff Sandy Lean Clay
- AK - Gray, Black, Copper & Dark Brown, Medium Dense to Dense Poorly Graded Sand with Silt
- AL - Dark Brown, Medium Dense Poorly Graded Sand with Silt and Gravel
- AM - Light Copper & Black, Dense Poorly Graded Sand with Silt
- AN - Gray, Olive Gray, Dark Greenish Gray, Greenish Gray, Dark Gray & Black, Hard to Very Hard Lean Clay with Sand
- AO - Greenish Gray, Olive Gray & Dark Gray, Very Hard Sandy Silt
- AP - Brown, Light Gray & Gray, Medium Stiff to Hard Sandy Lean Clay
- AQ - Dark Beige & Black, Hard Sandy Lean Clay
- AR - Beige & Yellowish Orange, Dense Poorly Graded Sand with Silt
- AS - Dark Tan & Dark Brown, Medium Dense Poorly Graded Sand with Silt and Gravel
- AT - Brown, Tan & Beige, Dense Poorly Graded Sand with Silt
- AU - Olive Gray, Dark Gray, Gray & Black, Dense to Very Dense Silty Sand
- AV - Olive Gray, Very Hard Lean Clay with Sand
- AW - Dark Gray & Olive Gray, Very Hard Sandy Silt
- AX - Olive Gray, Very Hard Lean Clay with Sand
- AY - Brown, Dense to Very Dense Silty Sand
- AZ - Dark Brown, Very Dense Silty Sand
- BA - Dark Brown, Loose Silty Sand
- BB - Dark Gray & Brown, Loose Silty Sand
- BC - Dark Brown, Loose Silty Sand
- BD - Dark Gray & Brown, Medium Dense to Very Dense Silty Sand
- BE - Dark Gray, Copper & Olive Gray, Very Hard Lean Clay with Sand
- BF - Brown, Medium Dense to Very Dense Silty Sand
- BG - Dark Brown, Very Dense Silty Sand
- BH - Brown, Very Loose Silty Sand
- BI - Gray, Brown, Beige & Dark Gray, Loose to Medium Dense Silty Sand
- BJ - Dark Brown, Tan & Dark Gray, Loose to Very Dense Silty Sand
- BK - Black, Dark Gray, Copper & Gray, Very Hard Lean Clay

W = Moisture Content

GENERAL NOTES

(2)

BENCH MARK: Aluminum Disk marked "State of Arkansas Benchmark Hwy. Dept." set in the S.W. corner of Ramp 2 Bridge over East Kelly Bayou in the concrete barrier rail. Sta. 333+06.8, 326.4' right. North 1468259.2 plus/minus, East 730679.8 plus/minus, Elev. = 237.35

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 LOAD: HS20 & MILITARY LOADING METHOD OF DESIGN: Load Factor
SEISMIC PERFORMANCE CATEGORY: A

MATERIALS AND STRENGTHS:
Class S(AE) Concrete (Superstructure) f'c = 4,000 psi
Class S Concrete (Substructure) f'c = 3,500 psi
Class S Concrete (Prestressed Beams) f'c = 6,000 psi
Reinforcing Steel (AASHTO M31 or M53, Gr. 60) fy = 60,000 psi
Structural Steel (AASHTO M270, Gr. 50W) Fy = 50,000 psi
Structural Steel (AASHTO M270, Gr. 36) Fy = 36,000 psi

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

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

CLASS I 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.

FOOTINGS: Top of footings for Bents 2 - 4 shall be set a minimum of 5'-0" below the natural ground. Foundations for footings shall be prepared in accordance with Subsection 801.04. Excavations shall be backfilled and compacted to the level of the natural ground in accordance with Subsection 801.08.

CONCRETE PILING: All piling shall be 16" square prestressed concrete and shall be driven with an approved air, steam, or diesel hammer to a minimum ultimate bearing capacity of 150 tons. All piling in Bents 1 and 5 shall have a minimum penetration of 40' below the bottom of cap and all piling in Bents 2-4 shall have a minimum penetration of 15' below the bottom of footing.

DRIVING SYSTEM: The driving system approval and the ultimate bearing capacity determination for piling shall be based on the requirements of Subsection 805.09(b) "Method B - Wave Equation Analysis (WEAP)" of the Standard Specifications. It is estimated that the minimum required rated energy of the hammer to obtain the minimum ultimate bearing capacity will be 40,000 foot pounds per blow.

PILE DESIGN CAPACITY: 16" square prestressed concrete piles = 55 tons.

Drive one test pile in Bent 1A-5A and 1B-5B. Test piles shall be 5 feet longer than the estimated pile lengths shown on the layout. Lengths of piles shown are for estimating quantities only. Actual lengths to be determined in the field.

PREBORING: Preboring or other methods as approved by the Engineer is required for all piling and test piles in Bents 3 and 4 to achieve minimum penetration requirements. Lengths of preboring shown are assumed for estimating quantities only.

Preboring or other methods as approved by the Engineer may be required for piling in Bents 1, 2 & 5 to achieve minimum penetration requirements. Any required preboring will be determined and directed by the Engineer after the first pile is driven in a bent and will be paid for under the item "Concrete Piling (16" Square)".

Size and actual depths of preboring to be determined by the Engineer. The Contractor shall be responsible for keeping prebored holes free from debris prior to backfilling which may require the use of temporary casings or other methods. Temporary casings, if necessary, will not be paid for directly but will be considered subsidiary to the item "Preboring."

DETAIL DRAWINGS:	DRAWING NO.
End Bents	49648 - 49650
Intermediate Bents	49651 - 49653
400'-0" Cont. Prestressed Concrete Beam	49654 - 49658
Neoprene Strip Seal	49659
Elastomeric Bearings	49660
Type Special 5 Approach Gutters	49661 and 49662
Type Special 3 Approach Slab	49663
Concrete Piling	2383

GENERAL NOTES
BRIDGE OVER EAST FORK KELLY BAYOU
LA LINE - DODDRIDGE (F)
MILLER COUNTY

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

8-15-2011

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFERY SCOTT MULLIKEN

BRIDGE ENGINEER

DRAWN BY: TAR DATE: 9-05 FILENAME: \B030355M5_U1.dgn
CHECKED BY: MWB DATE: 9-07 SCALE: NONE
DESIGNED BY: EMS/MEJ DATE: 9-06

BRIDGE NO. A&B7125 DRAWING NO. 49647

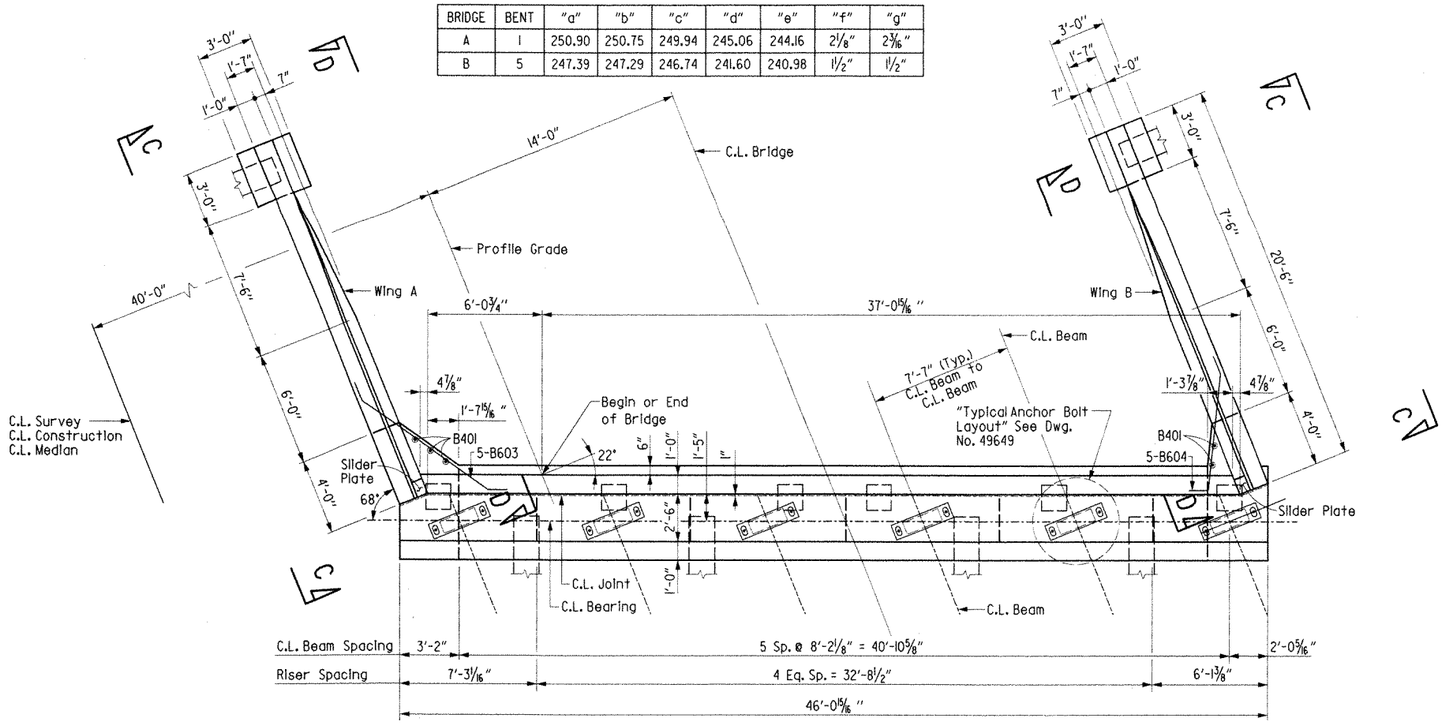
PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS

8/15/2011

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.		030355	61	85
				(2) A&B7125		END BENT DETAILS		49648

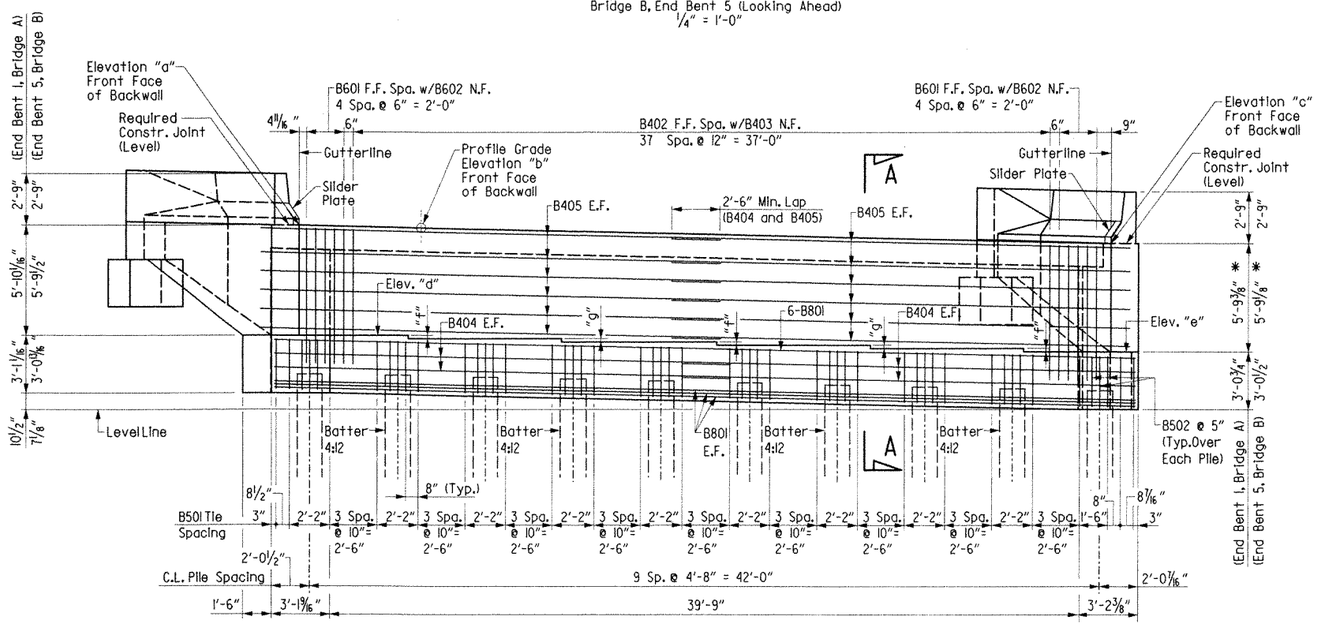
TABLE OF VARIABLES

BRIDGE	BENT	"a"	"b"	"c"	"d"	"e"	"f"	"g"
A	1	250.90	250.75	249.94	245.06	244.16	2 1/8"	2 3/16"
B	5	247.39	247.29	246.74	241.60	240.98	1 1/2"	1 1/2"



PLAN

Bridge A, End Bent 1 (Looking Back)
Bridge B, End Bent 5 (Looking Ahead)
1/4" = 1'-0"



ELEVATION

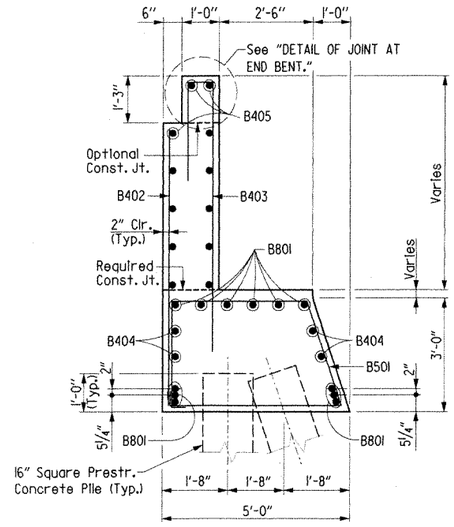
Bridge A, End Bent 1 (Looking Back)
Bridge B, End Bent 5 (Looking Ahead)
1/4" = 1'-0"

Note: For Details of Wing and Rail, and View C-C and D-D, See Dwg. No. 49650.

Note: For Bar List, See Dwg. No. 496450.

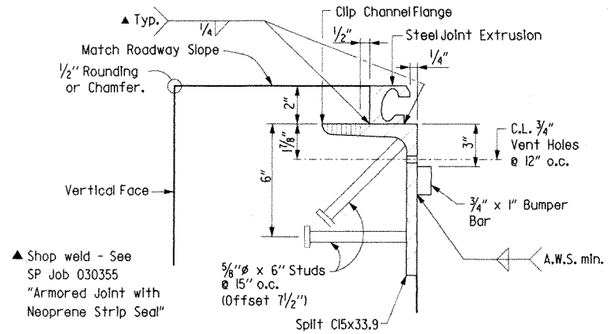
Note: For "Typical Anchor Bolt Layout" and Details B and C, See Dwg. No. 49649.

Note: Class I Protective Surface Treatment shall be applied to the Roadway Face and Top of Transition Rail, and to the Top of the Backwall.



SECTION A-A

1/2"=1'-0"



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

For additional details, See Dwg. No. 49659.

DETAIL OF JOINT AT END BENT

No Scale

SHEET 1 OF 3
DETAILS OF END BENTS
EAST FORK KELLY BAYOU

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MAD DATE: 6-07 FILENAME: \B030355x5.M.dgn
CHECKED BY: MWB DATE: 8-07 SCALE: AS SHOWN
DESIGNED BY: AJP/SHR DATE: 6-07

BRIDGE NO. A&B7125 DRAWING NO. 49648

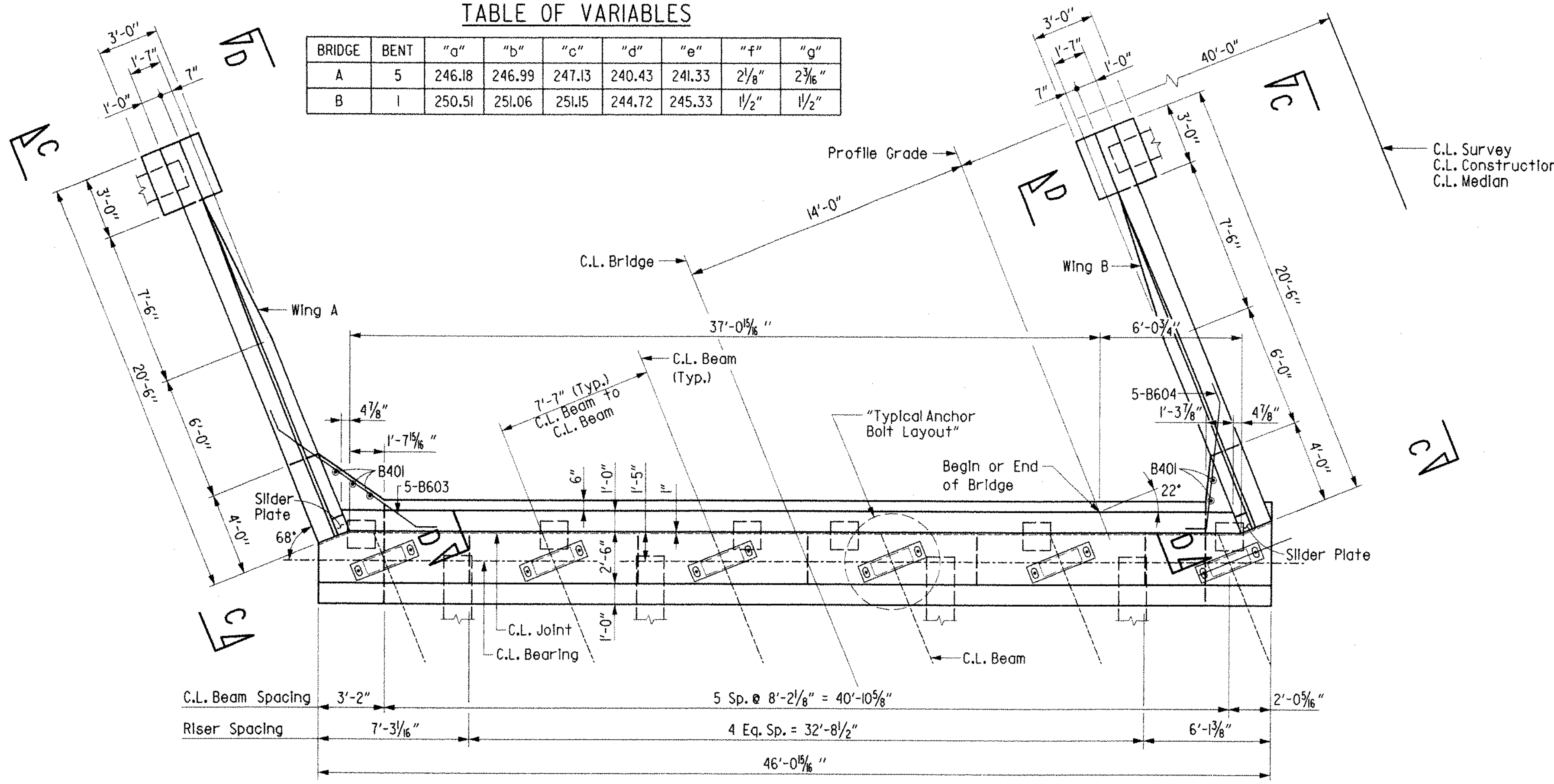
8-15-2011
ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
JEFFREY SCOTT MILLIKEN
No. 12097
BRIDGE ENGINEER

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP
n:\struct\arkansas\final_030305\Sht5A&B_East Fork\B030355x5_bt.dgn
3:32:51 PM
8/15/2011

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.		030355	62	85
			(2)	A&B7125		END BENT DETAILS		49649

TABLE OF VARIABLES

BRIDGE	BENT	"a"	"b"	"c"	"d"	"e"	"f"	"g"
A	5	246.18	246.99	247.13	240.43	241.33	2 1/8"	2 3/16"
B	1	250.51	251.06	251.15	244.72	245.33	1 1/2"	1 1/2"



PLAN

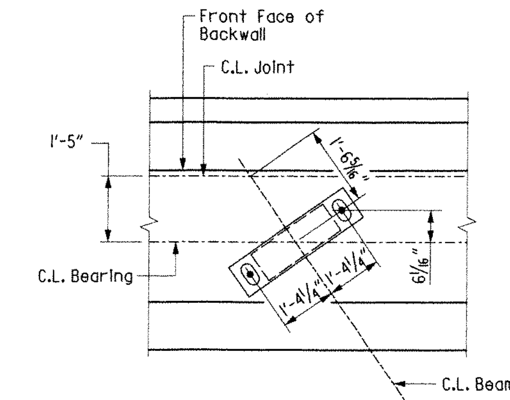
Bridge A, End Bent 5 (Looking Ahead)
Bridge B, End Bent 1 (Looking Back)
1/4" = 1'-0"

Note: For Details of Wing and Rail, and View C-C and D-D, See Dwg. No. 49650.

Note: For Bar List, See Dwg. No. 49650.

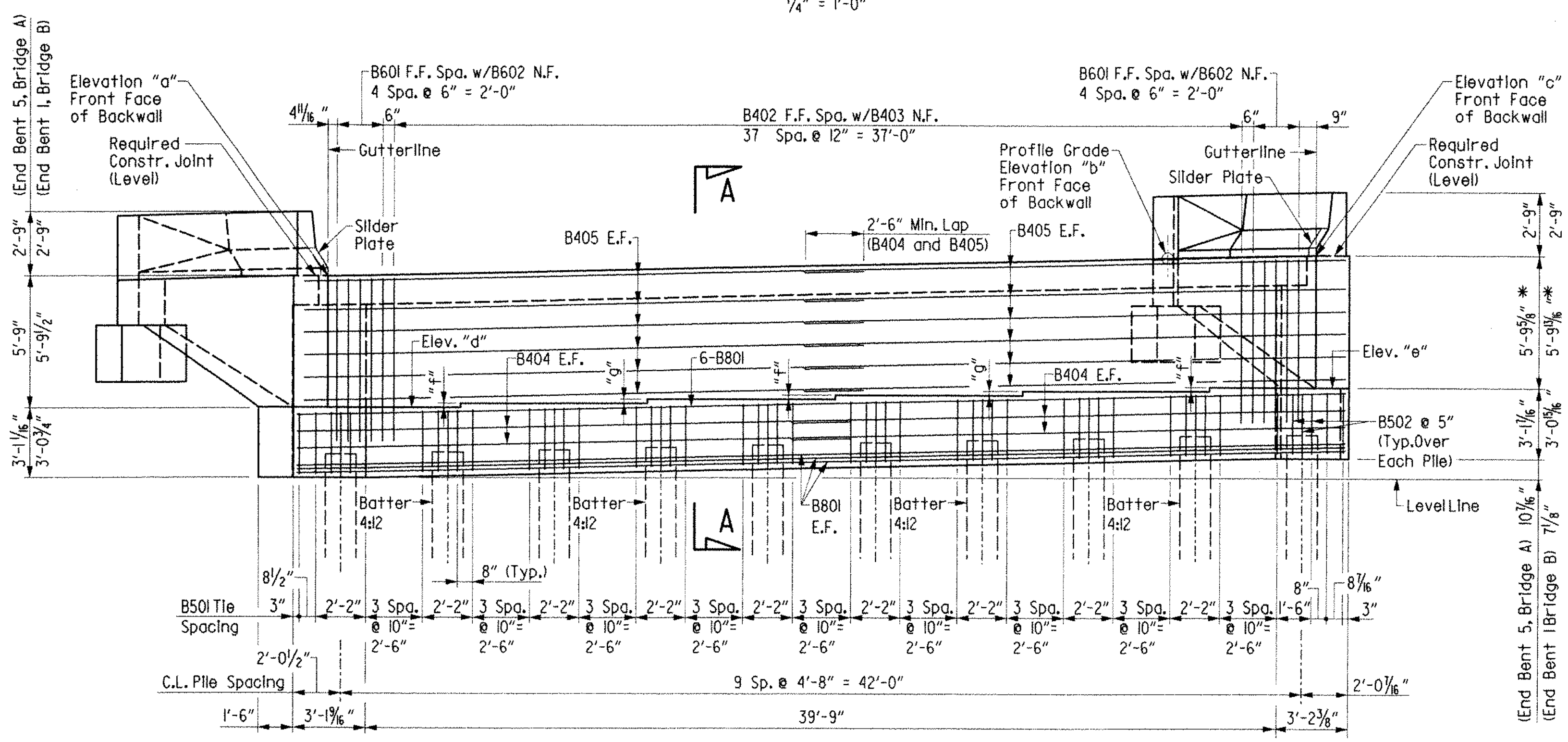
Note: For Section A-A, See Dwg. No. 49648.

Note: Class 1 Protective Surface Treatment shallbe applied to the Roadway Face and Top of Transition Rail, and to the Top of the Backwall.



TYPICAL ANCHOR BOLT LAYOUT

No Scale



ELEVATION

Bridge A, End Bent 5 (Looking Ahead)
Bridge B, End Bent 1 (Looking Back)
1/4" = 1'-0"

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
n:\struct\arkansas\final_0303055\Site5A&B_East Fork\B030355x5_b2.dgn
3:32:51 PM 8/15/2011

8-15-2011

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFREY SCOTT MULLIKEN

BRIDGE ENGINEER

SHEET 2 OF 3
DETAILS OF END BENTS
EAST FORK KELLY BAYOU

ROUTE 71 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MAD DATE: 6-07 FILENAME: ..\B030355x5_b2.dgn
CHECKED BY: MWB DATE: 8-07 SCALE: AS SHOWN
DESIGNED BY: AJP/SHR DATE: 6-07

BRIDGE NO. A&B7125 DRAWING NO. 49649

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.		030355	63	85
				(2) A&B7125		END BENT DETAILS		49650

GENERAL NOTES FOR SUBSTRUCTURE

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 ¾" unless otherwise noted.

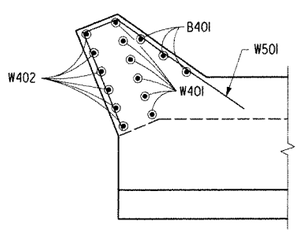
All reinforcing steel shall conform to AASHTO M31 or M53, Grade 60 (yield strength = 60,000 psi).

Backwall above required construction joint shall not be poured before beams are in place. See Expansion Device Installation on Dwg. No. 49659 for additional details.

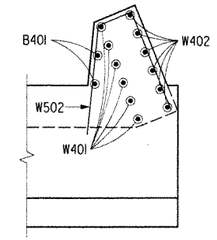
Structural steel in end bents shall be AASHTO M270, Grade 50W and shall be paid for as "STRUCTURAL STEEL IN BEAM SPANS (M270, Gr. 50W)". Gr. 50W steel shall not be painted unless noted otherwise.
Cleaning and painting of the parapet slider plates shall be in accordance with Section 638 and will not be paid for directly but will be considered subsidiary to "STRUCTURAL STEEL IN BEAM SPANS (M270, GR. 50W)".

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

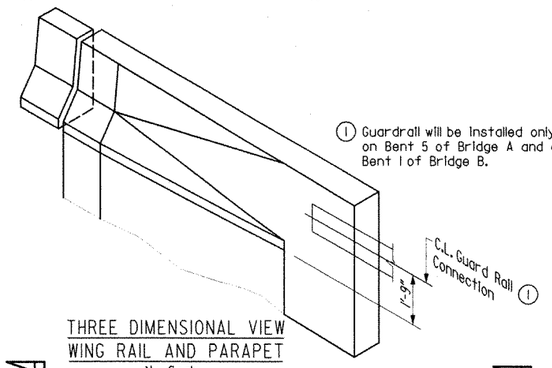
For additional information, see layout, Dwg. No's. 49645 and 49646.



SECTION G-G (WING A)
⅜" = 1'-0"

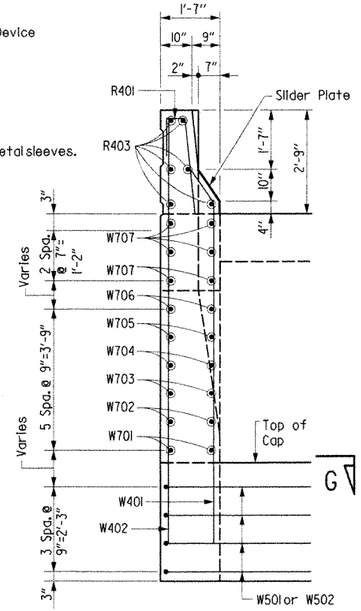


SECTION G-G (WING B)
⅜" = 1'-0"



① Guardrail will be installed only on Bent 5 of Bridge A and on Bent 1 of Bridge B.

THREE DIMENSIONAL VIEW
WING RAIL AND PARAPET
No Scale



VIEW W-W
½" = 1'-0"

SECTION X-X
½" = 1'-0"

SECTION Y-Y
½" = 1'-0"

NAME PLATE DETAIL
No Scale

Place Type D Bridge Name Plate on right parapet rail at End of Bridge A and Beginning of Bridge B approx. 2'-0" from joint. (Right is defined when facing direction of travel.) See Std. Dwg. No. 2387.

BAR LIST-PER BEND

MARK	NO. REQ'D.	LENGTH	'A'	PIN DIA.	BENDING DIAGRAMS Dimensions are out to out of bars.
B401	5	7'-2"	--	Str.	
B402	38	7'-2"	--	Str.	
B403	38	9'-8"	--	2"	
B404	8	24'-2"	--	Str.	
B405	24	24'-5"	--	Str.	
B501	40	14'-4"	--	2½"	
B502	30	9'-0"	--	2½"	
B601	10	7'-2"	--	Str.	
B602	10	10'-1"	--	4½"	
B603	5	10'-2"	--	4½"	
B604	5	8'-1"	--	4½"	
B801	12	45'-9"	--	Str.	
R401	28	3'-11"	--	2"	
R402	10	4'-0"	--	2"	
R403	12	20'-2"	--	Str.	
R501	20	7'-8"	--	3¾"	
R601	6	5'-0"	--	Str.	
R602	12	2'-8"	--	Str.	
W401	12	10'-3"	--	3"	
W402	12	11'-2"	--	Str.	
W403 to W415	2 ea.	3'-5" to 6'-11"	2'-3" to 5'-9"	3"	
W416 to W428	2 ea.	4'-7" to 8'-1"	--	Str.	
W501	4	10'-5"	--	3¾"	
W502	4	8'-9"	--	3¾"	
W701	4	17'-9"	--	5¼"	
W702	4	6'-7"	--	Str.	
W703	4	9'-1"	--	Str.	
W704	4	11'-7"	--	Str.	
W705	4	14'-1"	--	Str.	
W706	4	16'-8"	--	Str.	
W707	12	20'-2"	--	Str.	

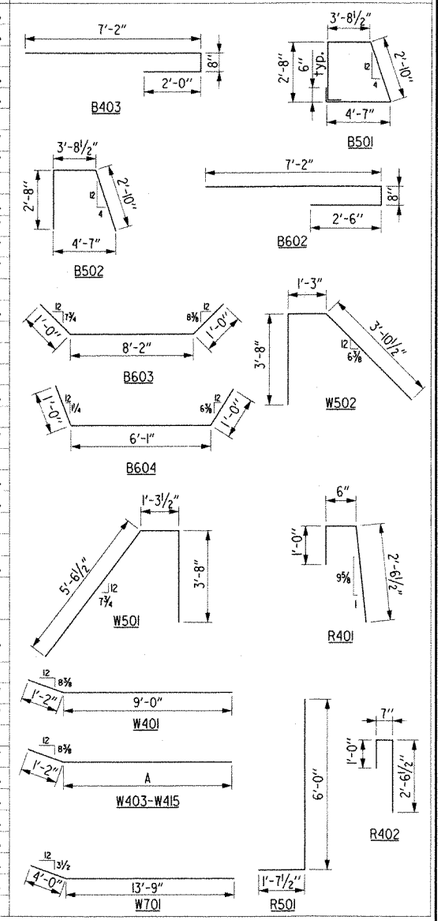
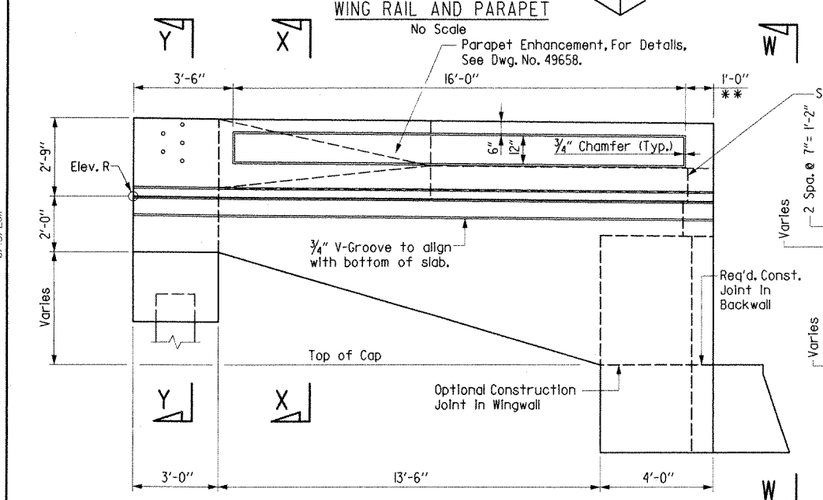
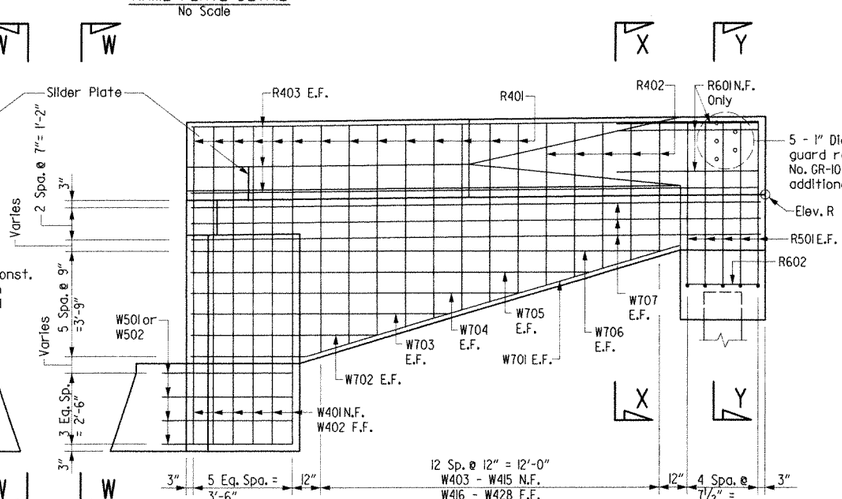


TABLE OF VARIABLES (ELEV. "R")

BRIDGE	BENT NO.	WING	ELEV.	BRIDGE	BENT NO.	WING	ELEV.
A	1	A	251.09	B	1	A	250.70
A	1	B	250.14	B	1	B	251.35
A	5	A	245.99	B	5	A	247.20
A	5	B	246.94	B	5	B	246.55



VIEW C-C
⅜" = 1'-0"
Wing "A" shown, Wing "B" is opposite hand



** Parapet enhancement shall be made continuous if slip forms are used on bridge parapet rail.

VIEW D-D
⅜" = 1'-0"
Wing "A" shown, Wing "B" is opposite hand

8-15-2011
ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12097
JEFFREY SCOTT MULLINS
BRIDGE ENGINEER

SHEET 3 OF 3
DETAILS OF END BENTS
EAST FORK KELLY BAYOU

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

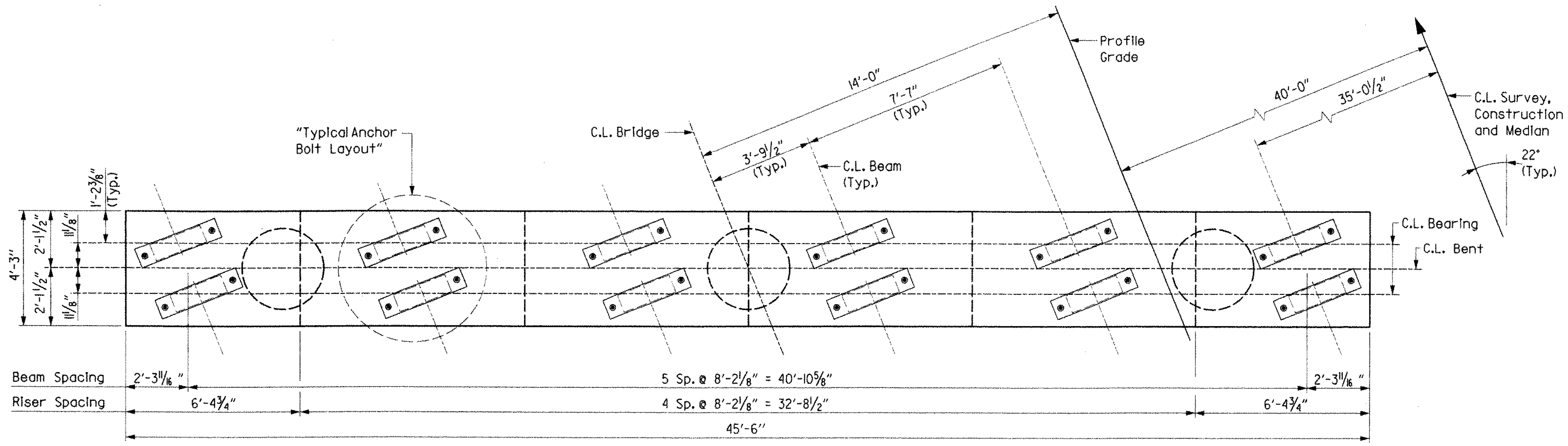
LITTLE ROCK, ARK.

DRAWN BY: MAD DATE: 6-07 FILENAME: n:\0303055x5.b3.dgn
CHECKED BY: MWB DATE: 6-07 SCALE: AS SHOWN
DESIGNED BY: AJP/SHR DATE: 6-07

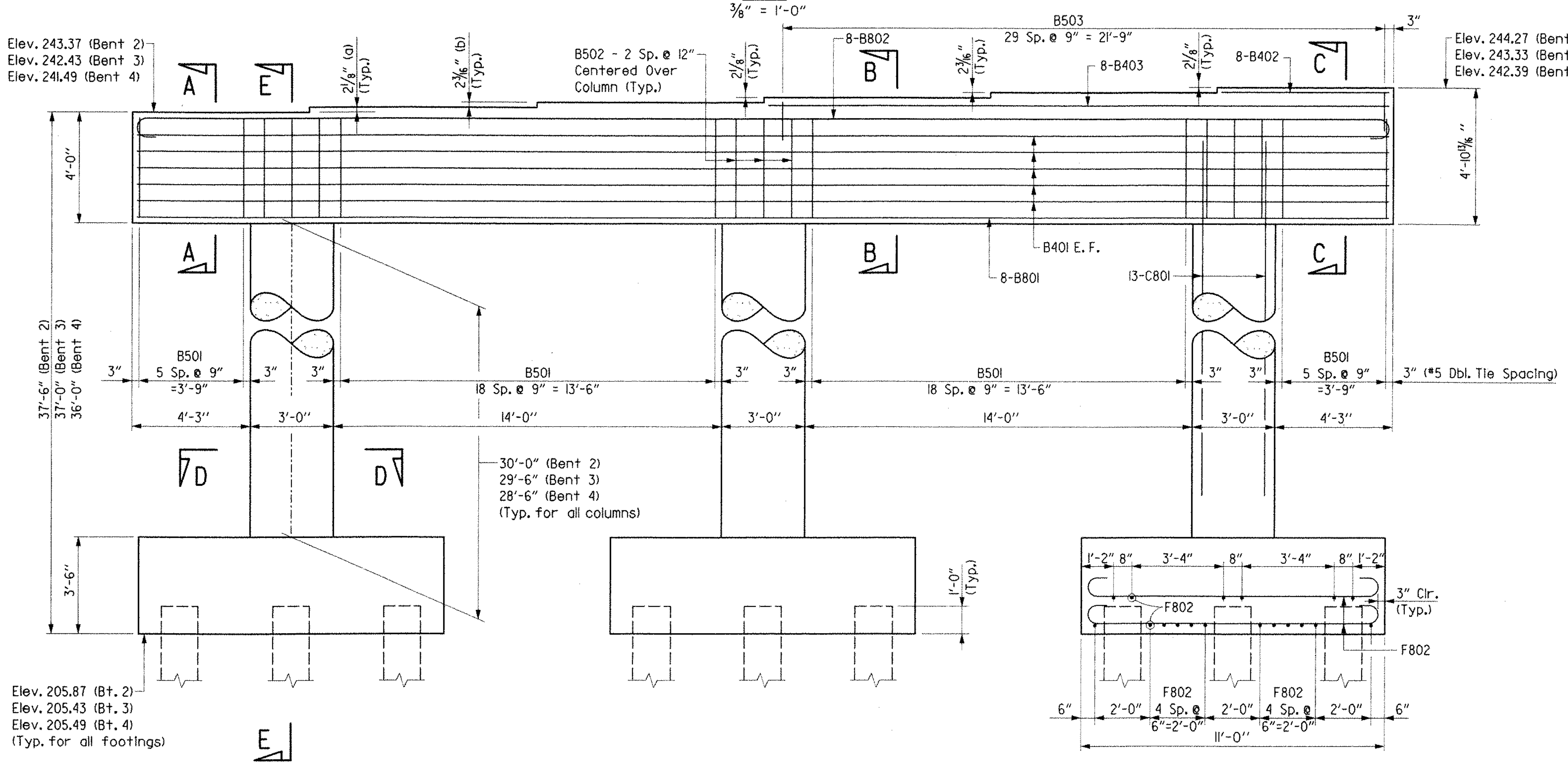
BRIDGE NO. A&B7125 DRAWING NO. 49650

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS
THE LPA GROUP
n:\str\ar\arkansas\final.0303055\Sht5A&B_East Fork\B0303555x5.b3.dgn 8/15/2011 3:32:50 PM

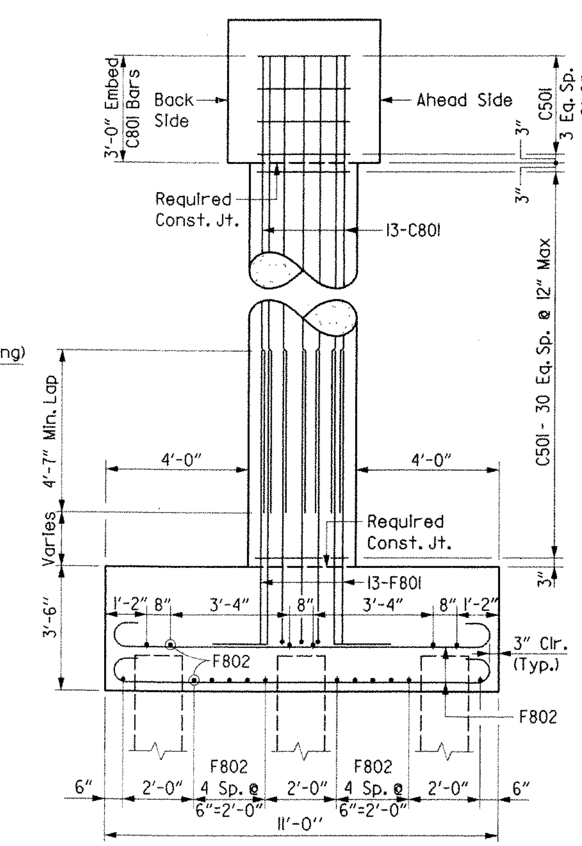
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	64	85
			②	A7125		BENTS 2 THRU 4		49651



PLAN
⅜" = 1'-0"



ELEVATION
⅜" = 1'-0"
(Looking Ahead)



SECTION E-E
⅜" = 1'-0"

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 ¾" unless otherwise noted.

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

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see layout, Dwg. No's. 49645 and 49646.

For Details of Elastomeric Bearings, See Dwg. No. 49660.

For Sections A-A Thru D-D, See Dwg. No. 49653.

For Anchor Bolt Layout, See Dwg. No. 49653.

BRIDGE A
DETAILS OF INTERMEDIATE BENTS NO. 2-4
EAST FORK KELLY BAYOU

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

8-15-2011

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFREY SCOTT MULLIKEN

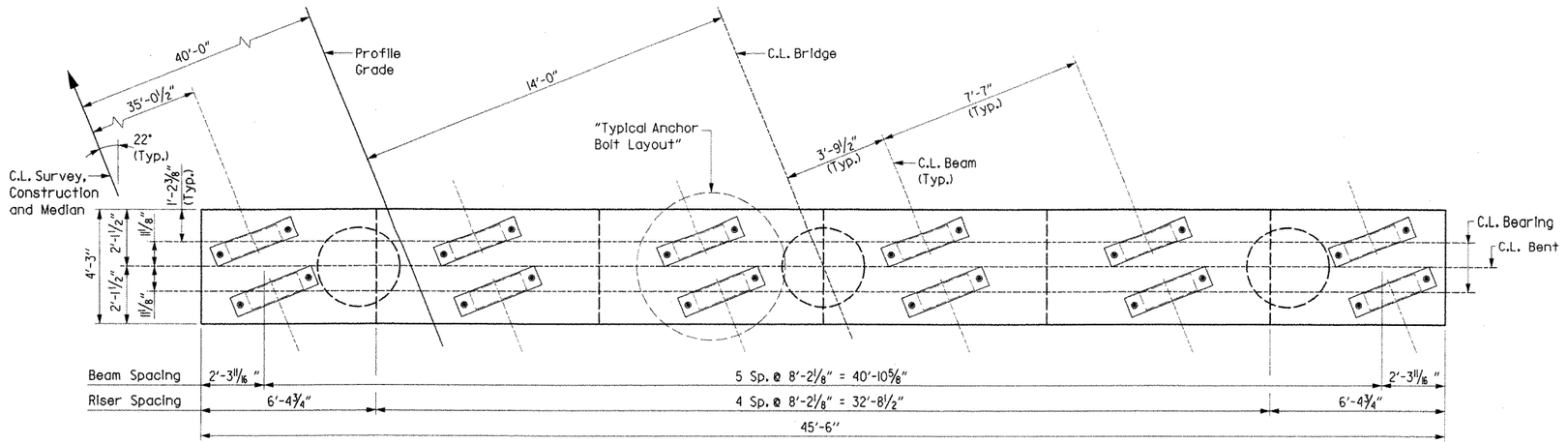
BRIDGE ENGINEER

DRAWN BY: MAD DATE: 6-07 FILENAME: ...b030355s5.dgn
CHECKED BY: MWB DATE: 9-07 SCALE: AS SHOWN
DESIGNED BY: AJP/SHR DATE: 6-07
BRIDGE NO. A7125 DRAWING NO. 49651

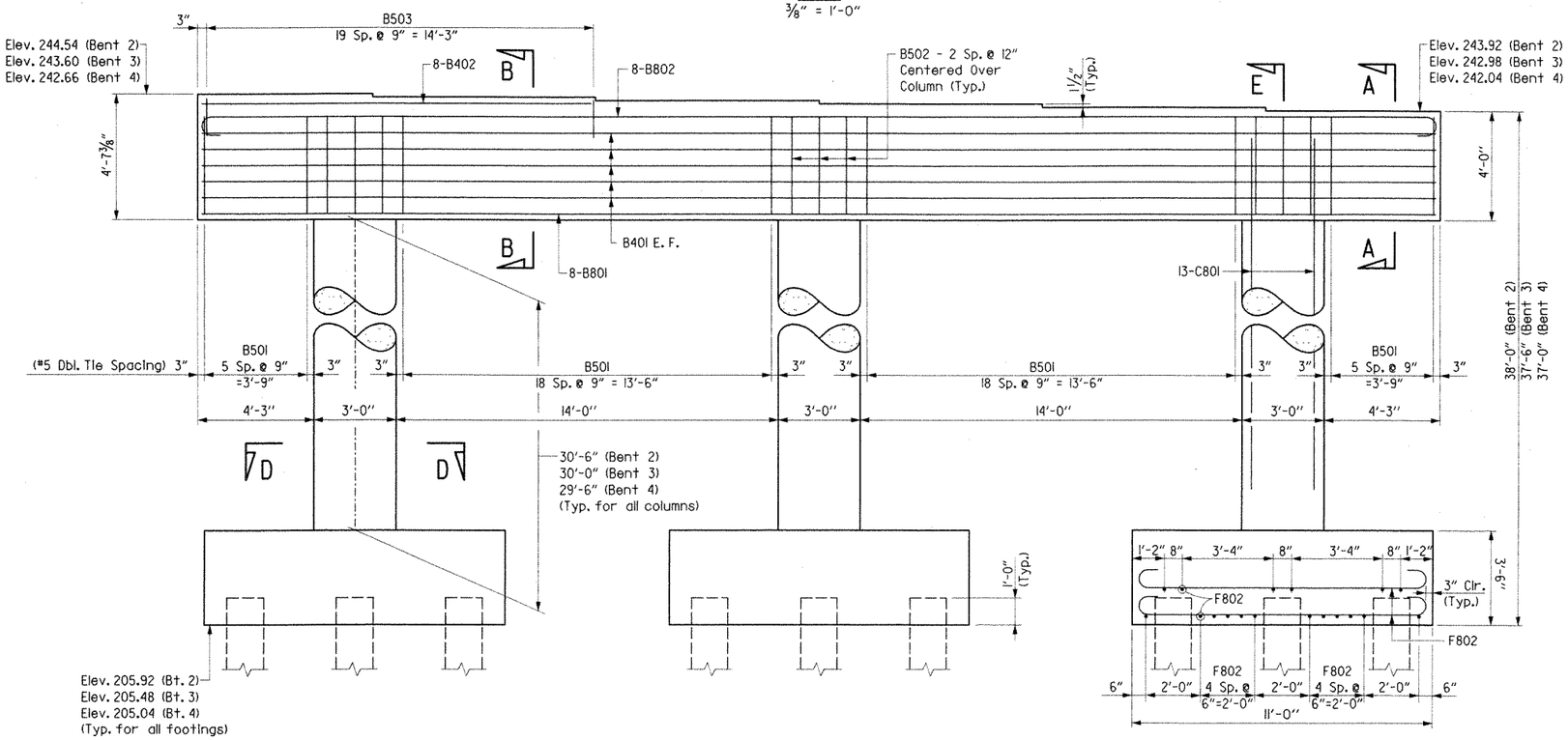
PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS

n:\struct\arkansas\1\nel_0303055\Sfte5A&B_East Fork\b030355s5.dgn 8/15/2011 3:32:50 PM

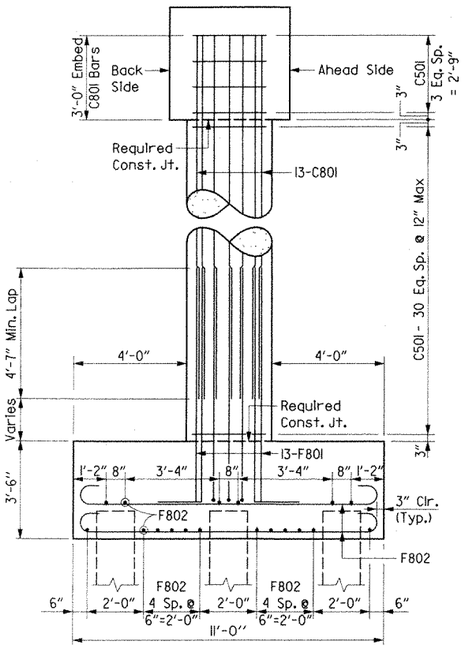
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	65	85
				(2) B7125		BENTS 2 THRU 4		49652



PLAN
⅜" = 1'-0"



ELEVATION
⅜" = 1'-0"
(Looking Ahead)



SECTION E-E
⅜" = 1'-0"

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 ¾" unless otherwise noted.

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

Reinforcing bars in top of cap shall be properly placed to avoid interference with anchor bolts or sheet metal sleeves.

For additional information, see layout.

For Details of Elastomeric Bearings, See Dwg. No. 49660.

For Sections A-A Thru D-D, See Dwg. No. 49653.

For Anchor Bolt Layout, See Dwg. No. 49653.

9-15-2011
ARKANSAS
JEFFREY SCOTT MILLIKEN
REGISTERED PROFESSIONAL ENGINEER
No. 12097
BRIDGE ENGINEER

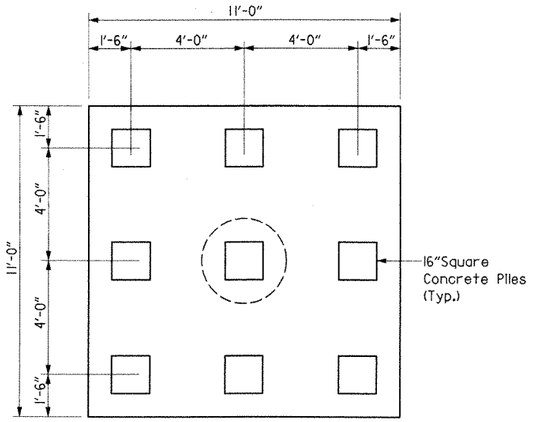
BRIDGE B
DETAILS OF INTERMEDIATE BENTS NO. 2-4
EAST FORK KELLY BAYOU

ROUTE 71 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MAD DATE: 6-07 FILENAME: \080305505_B2.dgn
CHECKED BY: MWB DATE: 9-07 SCALE: AS SHOWN
DESIGNED BY: AJP/SHR DATE: 6-07
BRIDGE NO. B7125 DRAWING NO. 49652

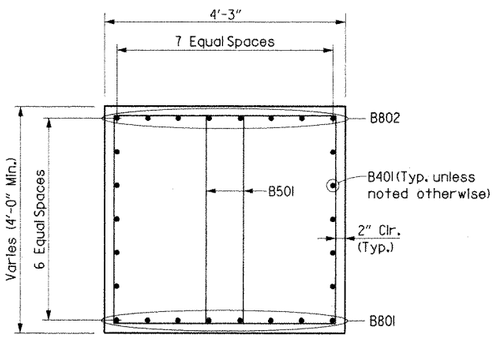
PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP
n:\true\arkansas\final_030305\Site5A&B_East Fork\080305505_B2.dgn
8/15/2011
3:32:50 PM

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.		030355	66	85
				(2) A&B7125		BENTS 2 THRU 4		49653



FOOTING PLAN

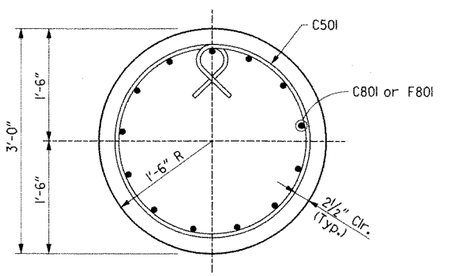
3/8" = 1'-0"



SECTION A-A

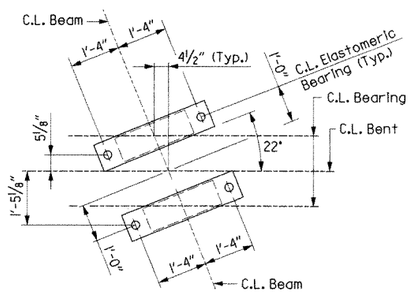
3/4" = 1'-0"

(Bridge A Shown, Bridge B Similar)



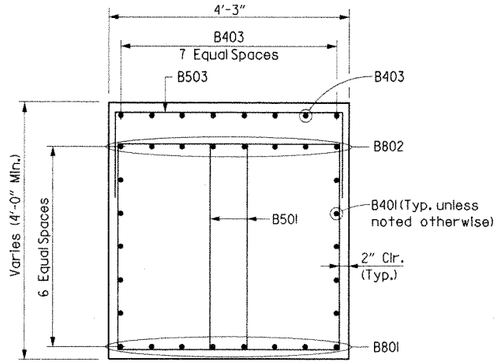
SECTION D-D

1" = 1'-0"



TYPICAL ANCHOR BOLT LAYOUT

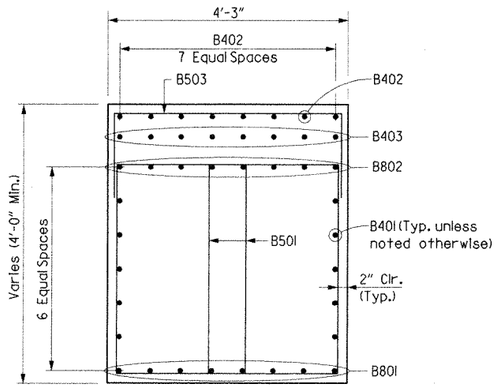
1/2" = 1'-0"



SECTION B-B

3/4" = 1'-0"

(Bridge A Shown, Bridge B Similar)



SECTION C-C

3/4" = 1'-0"

BAR LIST-PER BENT-BRIDGE A

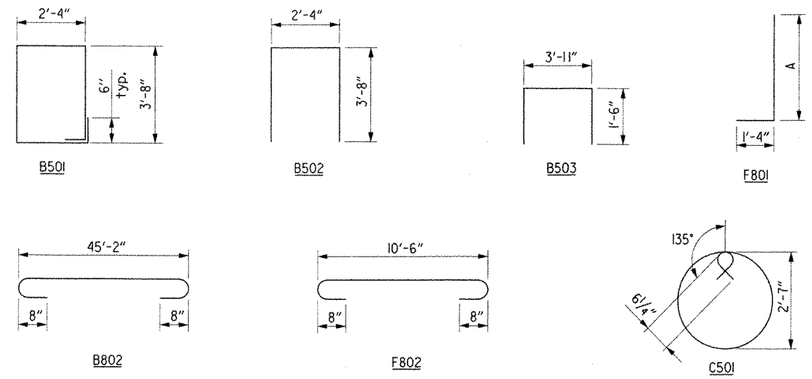
MARK	NO. REQ'D.	LENGTH	'A'	P.D.
B401	10	45'-2"	---	Str.
B402	8	6'-1"	---	Str.
B403	8	22'-5"	---	Str.
B501	100	12'-6"	---	2 1/2"
B502	18	9'-6"	---	2 1/2"
B503	30	6'-9"	---	2 1/2"
B801	8	45'-2"	---	Str.
B802	8	47'-0"	---	6"
C501	105	9'-6"	---	3 3/4"
C801	39	31'-6"	---	Str.
F801	39	9'-4"	8'-2"	6"
F802	108	12'-4"	---	6"

BAR LIST-PER BENT-BRIDGE B

MARK	NO. REQ'D.	LENGTH	'A'	P.D.
B401	10	45'-2"	---	Str.
B402	8	14'-3"	---	Str.
B501	100	12'-6"	---	2 1/2"
B502	18	9'-6"	---	2 1/2"
B503	20	6'-9"	---	2 1/2"
B801	8	45'-2"	---	Str.
B802	8	47'-0"	---	6"
C501	105	9'-6"	---	3 3/4"
C801	39	32'-6"	---	Str.
F801	39	8'-10"	7'-8"	6"
F802	108	12'-4"	---	6"

BENDING DIAGRAMS

(Dimensions are out to out of bars)



8-15-2011

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12097
JEFFREY SCOTT MILLIKEN

BRIDGE ENGINEER

DETAILS OF INTERMEDIATE BENTS EAST FORK KELLY BAYOU

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MAD DATE: 6-07 FILENAME: n:\B030355ab5_b3.dgn

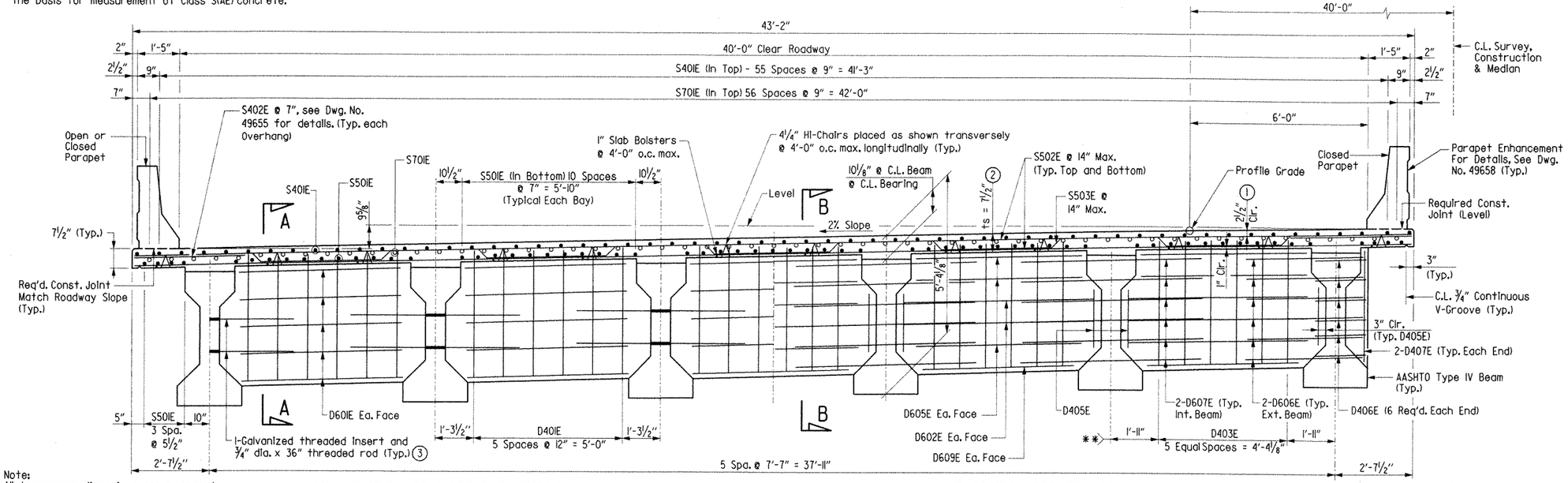
CHECKED BY: MWB DATE: 9-07 SCALE:

DESIGNED BY: AJP/SHR DATE: 5-07

BRIDGE NO. A&B7125 DRAWING NO. 49653

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.		030355	67	85
				(2) A&B7125		SPAN DETAILS		49654

Note: Superstructure details shown are for use when removable deck forms are used and are the basis for measurement of Class S(AE) concrete.



HALF-SECTION OF MIDSPAN DIAPHRAGMS

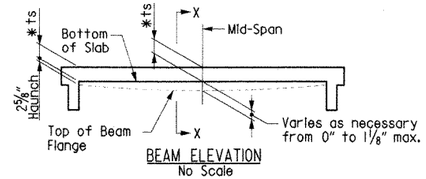
HALF-SECTION BETWEEN BEAMS AT INTERIOR BENTS

** Denotes: Measured along skew @ C.L. Diaphragm

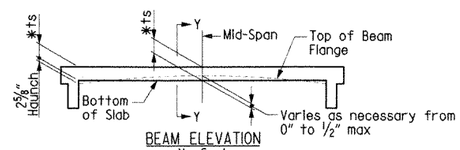
Note: All transverse dimensions are measured perpendicular to C.L. Median

HALF-SECTIONS: DIAPHRAGMS AND BEAM ENDS

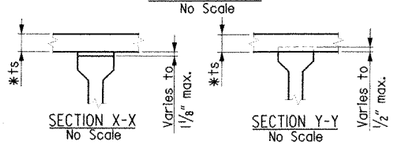
½" = 1'-0"
(Bridge A Looking Ahead)
(Bridge B Looking Back)



BEAM ELEVATION
No Scale



BEAM ELEVATION
No Scale



SECTION X-X
No Scale

SECTION Y-Y
No Scale

Note: ts = slab thickness as shown on superstructure details. See "Section of Intermediate Diaphragms".

* Tolerance when removable deck forming is used is +½", -¼". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance. See Dwg. No. 14991 for tolerances when permanent steel deck forms are used.

'Girder Elevation' sketches show the range of acceptability of the top of the Beam relative to bottom of slab after the placement of the slab. When the top of the Beam projects more than ½" into the slab, a raise in grade will be necessary. Beams shall be set in a sufficient number of spans so when adjustment is necessary the Profile Grade can be adjusted over suitable increments so the revised grade line will produce a smooth riding surface. Variation of haunch height will be at the Contractor's expense.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED

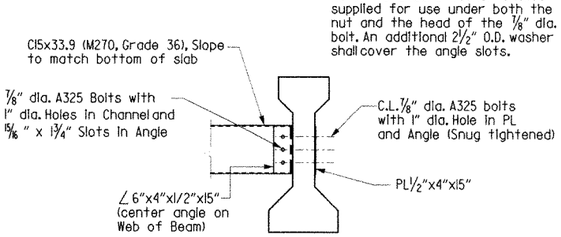
SLAB REINFORCING

Transverse:
S402E @ 7" centers (Top on each side of Bridge)
S502E @ 14" centers (Top and Bottom)
S503E @ 14" centers (Bent up over Beams)

Longitudinal:
S40IE @ 9" centers (Top)
S50IE @ 7" centers (Bottom)
S70IE @ 9" centers (Top)

EXPANSION DEVICE

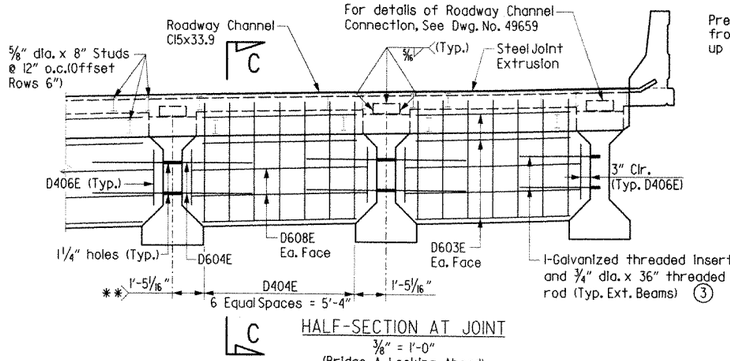
Neoprene Strip Seal with Steel Extrusion
Rdwy. Channel - C15x33.9
Conn. angle from MC18x42.7 (Cope one Flange)
Detail Device ⅛" high and provide ¼" shims using 1-1/8" plate and 2-1/16" plates



Note: A standard washer shall be supplied for use under both the nut and the head of the ⅞" dia. bolt. An additional 2½" O.D. washer shall cover the angle slots.

DETAIL OF ALTERNATE MIDSPAN DIAPHRAGM
½"=1'-0"

Galvanized Steel Diaphragms may be used in place of Concrete at Midspan Diaphragms only. All components of the Alternate Steel Diaphragms (AASHTO M270, Grade 36) shall be galvanized. Galvanizing shall be in accordance with AASHTO M111. Payment will be based on Concrete Diaphragms.



HALF-SECTION AT JOINT
⅜" = 1'-0"
(Bridge A Looking Ahead)
(Bridge B Looking Back)

NOTES:

One Epoxy Coated #5 bar in the top and one Epoxy Coated #5 bar in the bottom may be substituted for each bar S503E. Payment will be based on the weight of bar S503E.

Class I Protective Surface Treatment shall be applied to the Roadway Surface and the Face and Top of Concrete Parapet Rail. Class 3 Textured Coating Finish shall be applied to all areas specified in Special Provision Job 030355 "Textured Coating Finish".

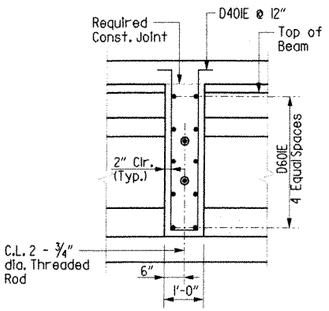
All bars designated with an E suffix are to be Epoxy coated.

All transverse dimensions are measured perpendicular to C.L. Bridge, unless noted otherwise.

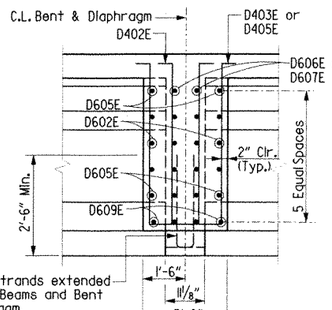
(1) TOLERANCE:
Minus ¼"
Plus: Equal to amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

(2) See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE WHEN REMOVABLE DECK FORMING IS USED".

(3) Galvanized Threading Inserts: Dayton-Richmond F-42 Loop Ferrule Insert or approved equal. ¾" dia. Threaded Rods to be AASHTO M270, Grade 36 or AASHTO M31, Grade 60 or AASHTO M53, Grade 60. These are to be Non-Pay Items-subsidiary to the item "Prestressed Concrete Beams (Type IV)". Galvanizing shall be in accordance with AASHTO M232 Class C or AASHTO M298 Class 50.

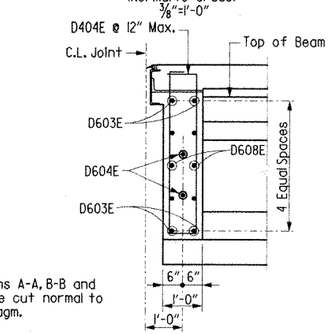


SECTION A-A
Midspan Diaphragm (Normal to Grade)
½"=1'-0"



Prestressing Strands extended from Ends of Beams and Bent up into Diaphragm.

SECTION B-B
Interior Bent Diaphragm (Normal to Diaphragm) (Normal to Grade)
⅜"=1'-0"



Sections A-A, B-B and C-C are cut normal to Diaphragm.

SECTION C-C
End of Unit Diaphragm (Normal to Grade)
½" = 1'-0"

PLANS PREPARED BY THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP
N:\structure\arkansas\final\030355\Site5\A&B_East Fork\B030355x5_Sldgn 8/15/2011 3:32:49 PM

9-15-2011
ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12097
JEFFREY SCOTT MULLINS
BRIDGE ENGINEER

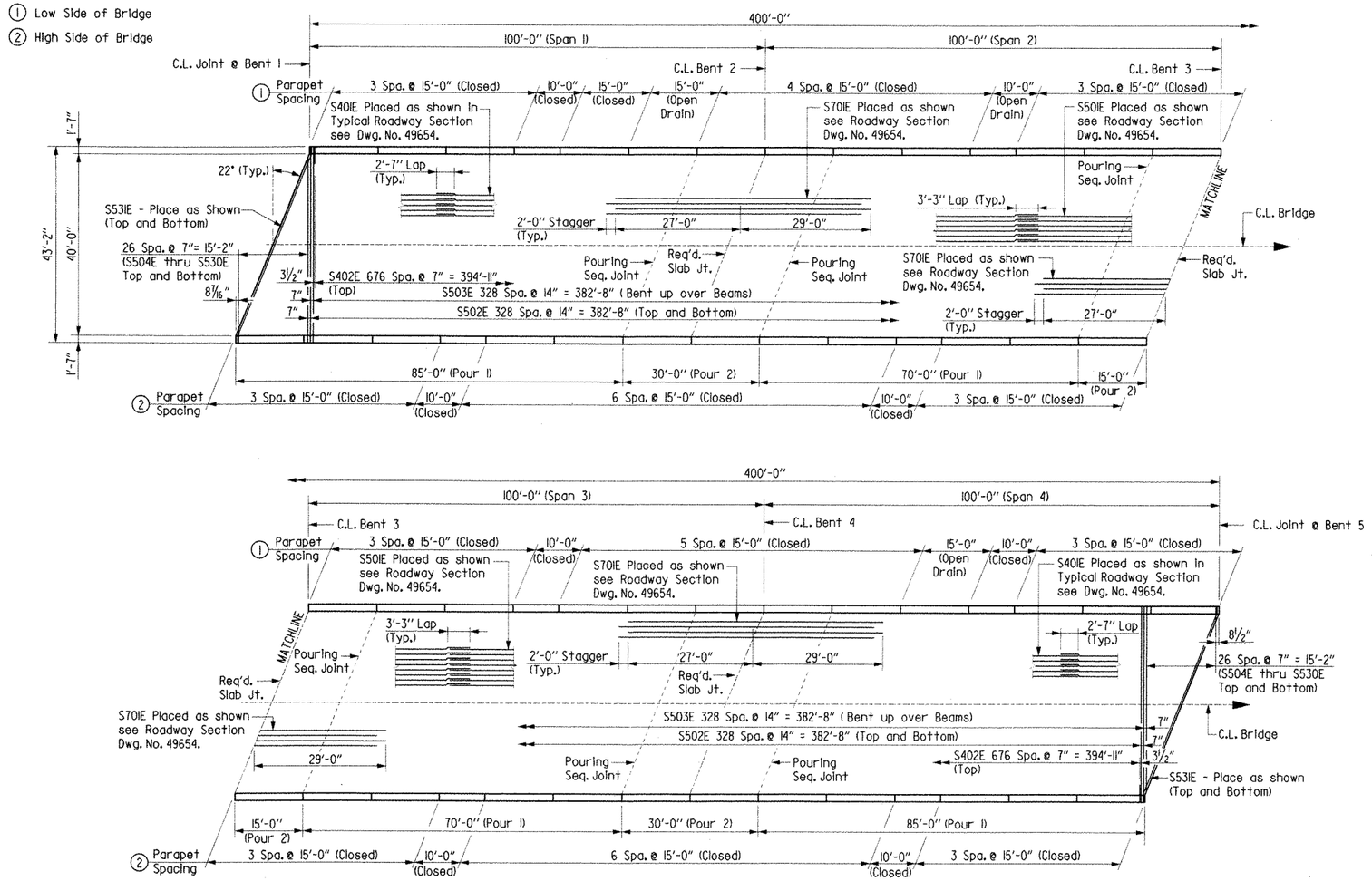
SHEET 1 OF 5
DETAILS OF 400' CONTINUOUS PRESTRESSED CONCRETE BEAM UNIT EAST FORK KELLY BAYOU

ROUTE 71 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY:	RPT	DATE:	4-07	FILENAME:	\B030355x5_Sldgn
CHECKED BY:	MAD	DATE:	6-07	SCALE:	AS SHOWN
DESIGNED BY:	AJP/SHR	DATE:	5-07		

BRIDGE NO. A&B7125 DRAWING NO. 49654

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.		030355	68	85
				(2) A&B7125		SPAN DETAILS		49655

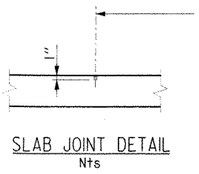


POURING SEQUENCE AND REINFORCING PLAN
1"=15'-0"

NOTES:
Required slab joints and pouring sequence joints shall align with the parapet open joint at the gutterline.

Pours must be made in order as numbered. Pour (1) may be placed simultaneously or separately. Both pours (1) must be placed before Pour (2) can be placed. 48 hours shall elapse between the end of a pour and the start of the next pour. 72 hours shall elapse between the end of a pour and the start of the adjacent pour. Any railing pours made before the entire slab unit has been placed must be approved by the Engineer. Concrete in bridge superstructure shall 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 Engineer for any deviations from the pouring sequence shown.



SLAB JOINT DETAIL
Nts

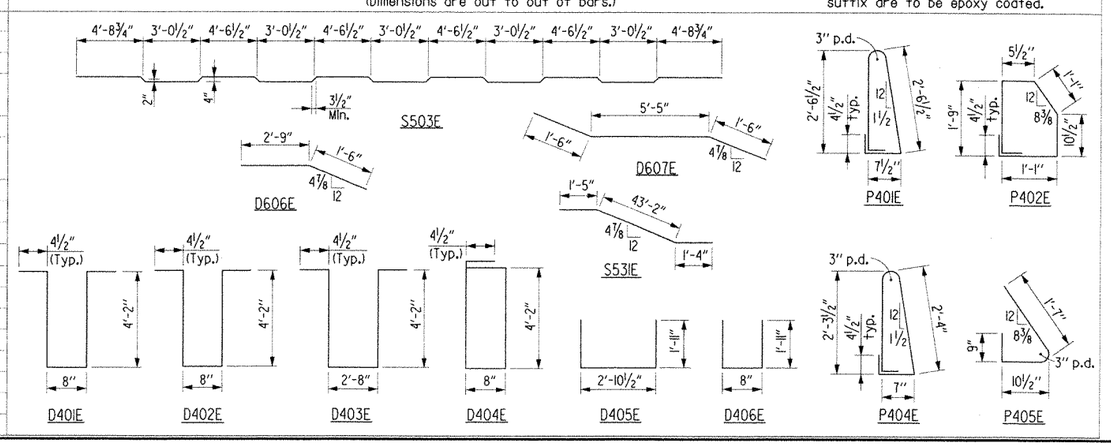
½"x 1" Type 3, 4, or 6 Joint Sealer. Backer rod is not required. See Subsection 501.02 (h)and 501.05 (j). Joint Sealer shall be measured and paid for as class S(AE) Concrete-Bridge. Slab joints shall extend to the outside edge of the deck slab. Slab joints shall be installed before the parapet railing is poured. If slab joints are to be sawed, they shall be sawed as soon as the concrete has sufficiently set up to allow the sawing of joint without damage to the slab. Slab joints shall be placed at all Pouring Sequence Construction Joints and Required Slab Joint Locations.

BAR LIST-PER BRIDGE

MARK	NO. REQ'D.	LENGTH	PIN DIA.	MARK	NO. REQ'D.	LENGTH	PIN DIA.
D401E	120	9'-7"	2"	S501E	567	47'-4"	Str.
D402E	84	9'-5"	2"	S502E	658	42'-10"	Str.
D403E	90	11'-5"	2"	S503E	329	43'-11"	3"
D404E	70	9'-9"	2"	S504E to S530E	4 Each	2'-9" to 40'-3"	Str.
D405E	30	6'-7"	2"	S531E	4	45'-11"	3¾"
D406E	56	4'-4"	2"				
D407E	12	4'-2"	Str.	S701E	171	56'-0"	Str.
D601E	200	5'-6"	Str.				
D602E	60	7'-1"	Str.	P401E	810	6'-4"	2"
D603E	60	6'-0"	Str.	P402E	810	5'-6"	2"
D604E	16	6'-0"	Str.	P403E	238	14'-8"	Str.
D605E	90	6'-0"	Str.	P404E	15	5'-10"	2"
D606E	72	4'-3"	4½"	P405E	15	3'-2"	2"
D607E	144	8'-5"	4½"	P406E	39	9'-8"	Str.
D608E	40	7'-1"	Str.				
D609E	30	5'-6"	Str.	P601E	10	14'-8"	Str.
				P602E	5	9'-8"	Str.
S401E	522	46'-8"	Str.				
S402E	1354	3'-8"	Str.				

BENDING DIAGRAMS
(Dimensions are out to out of bars.)

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



BRIDGE ENGINEER

6-15-2011
ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12097
JEFFREY SCOTT MILLIGAN

SHEET 2 OF 5
DETAILS OF 400' CONTINUOUS PRESTRESSED CONCRETE BEAM UNIT EAST FORK KELLY BAYOU

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

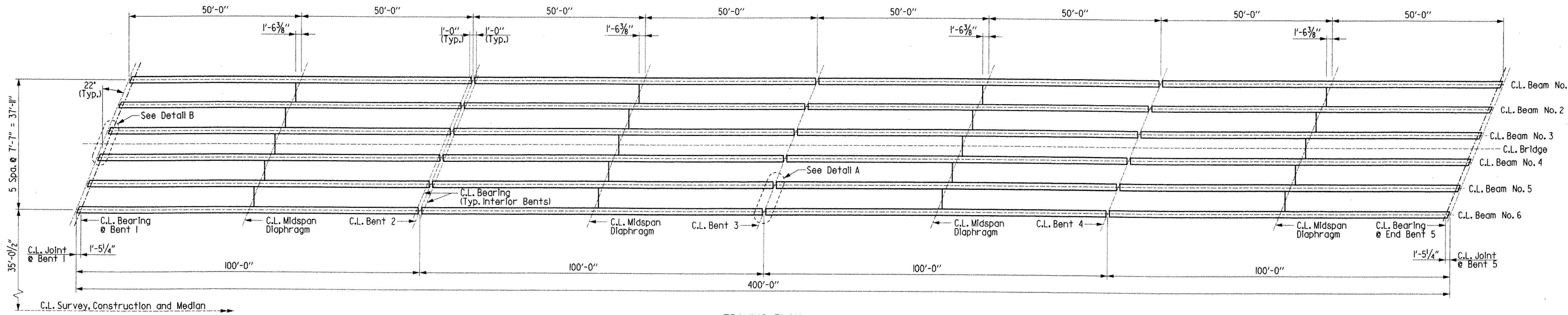
LITTLE ROCK, ARK.

DRAWN BY: RPT DATE: 5-07
CHECKED BY: MAD DATE: 6-07
DESIGNED BY: AJP/SHR DATE: 5-07
FILENAME: a&b030355x5_S2.dgn
SCALE: AS SHOWN

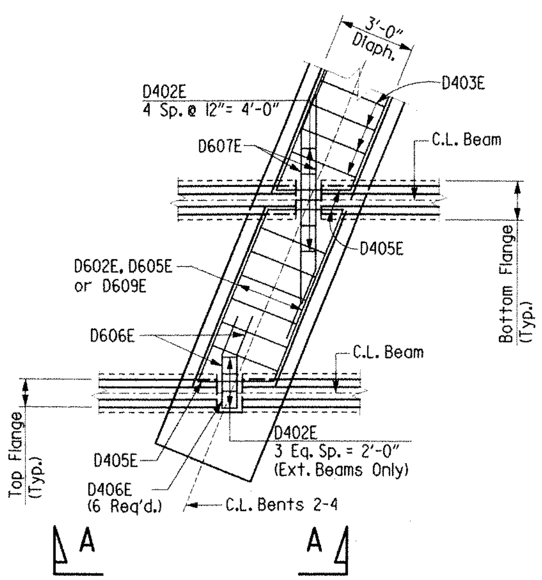
BRIDGE NO. A&B7125 DRAWING NO. 49655

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP
n:\structar\kansas\final_030305\5\the5A&B_East Fork\030355x5_S2.dgn
8/15/2011
3:32:48 PM

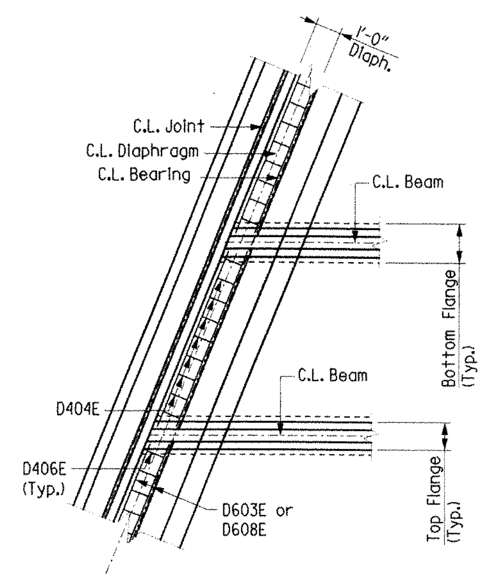
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	69	85
				A&B7125		SPAN DETAILS		49656



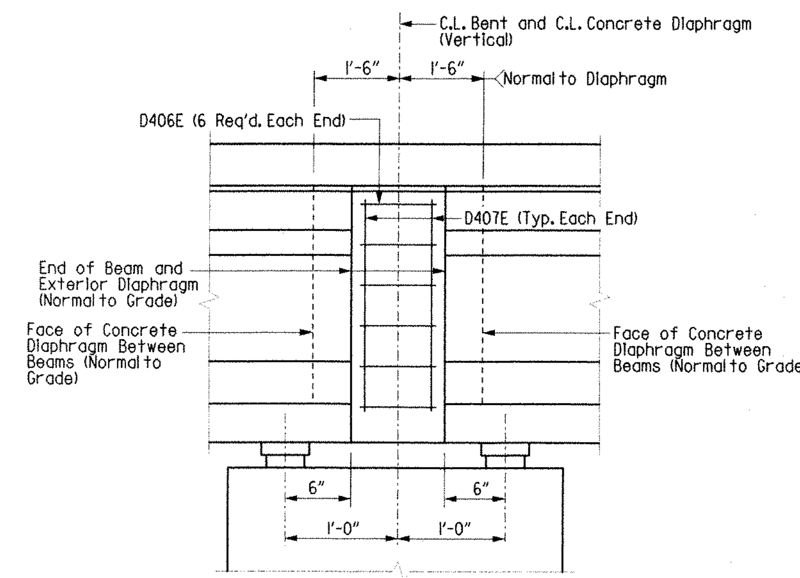
FRAMING PLAN
1"=15'-0"



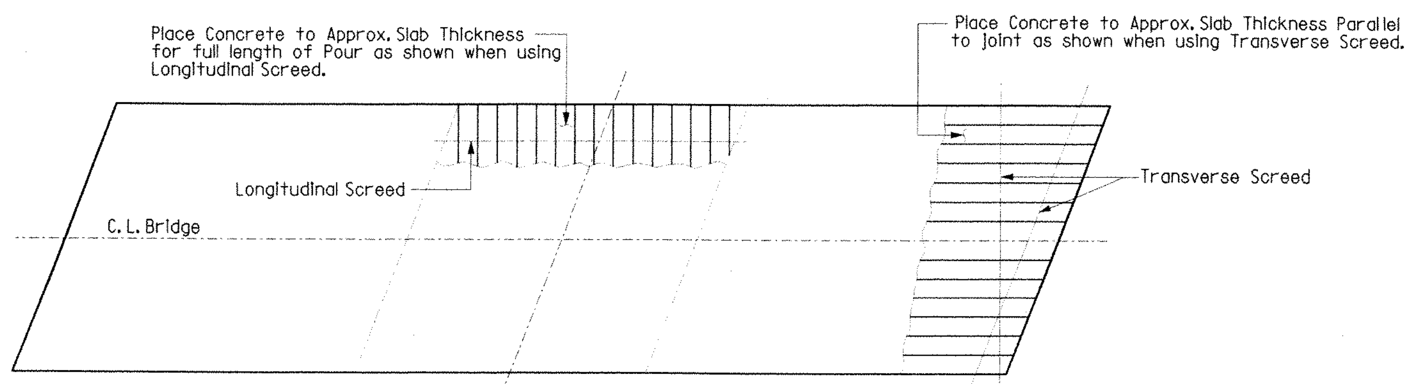
Detail A
(Typical at Interior Bents)
Scale: ¼"=1'-0"



Detail B
(Typical at End Bents)
Scale: ¼"=1'-0"



VIEW A-A
(Parallel to Girder)
No Scale



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

CONCRETE PLACEMENT PROCEDURE
No Scale

SHEET 3 OF 5
DETAILS OF 400' CONTINUOUS PRESTRESSED CONCRETE BEAM UNIT
EAST FORK KELLY BAYOU

ROUTE 71 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

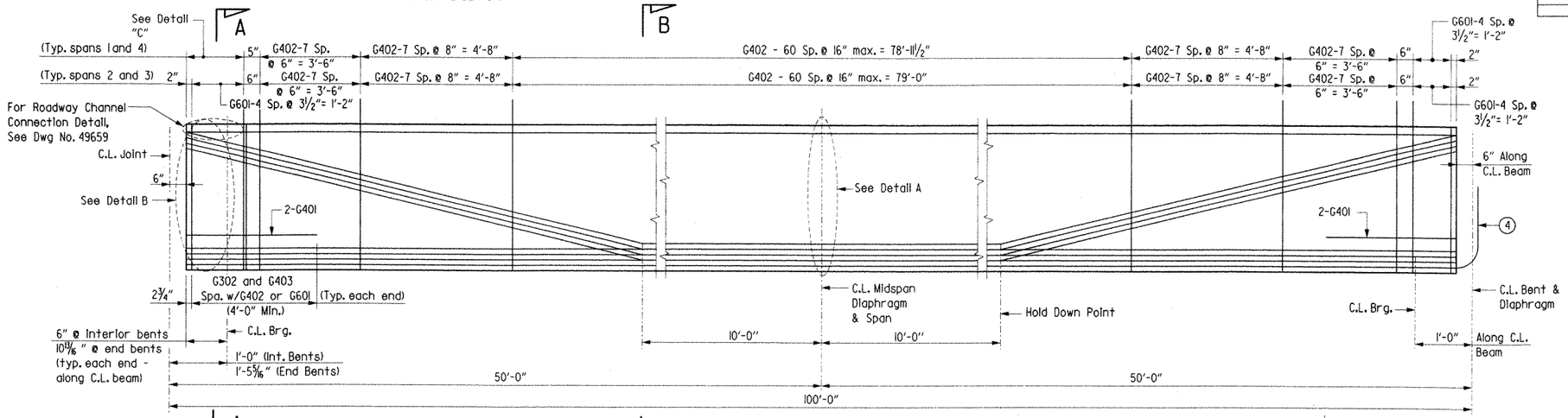
8-15-2011
ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFREY SCOTT MULLIKEN
BRIDGE ENGINEER

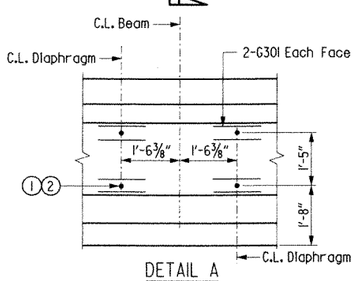
DRAWN BY: RPT DATE: 5-07
CHECKED BY: MAD DATE: 6-07
DESIGNED BY: AJP/SHR DATE: 5-07
FILENAME: b030355x5_S3.dgn
SCALE: AS SHOWN
BRIDGE NO. A&B7125 DRAWING NO. 49656

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS
r:\structor\arkansas\final_030355\Sites\A&B_East Fork\b030355x5_S3.dgn 8/15/2011 3:32:48 PM

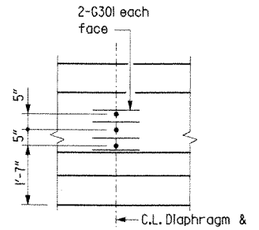
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	70	85
				(2) A&B7125		SPAN DETAILS		49657

(4) Prestressing strands at End Bents 1 and 5 shall be flush with the end of the beam. Prestressing strands at Intermediate Bents 2 thru 4 shall be bent up into diaphragms as shown in "ELEVATION OF BEAMS AT INTERMEDIATE BENTS".

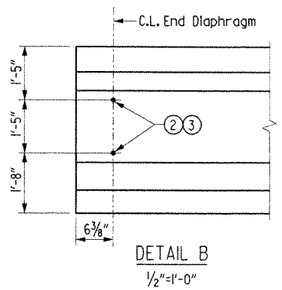




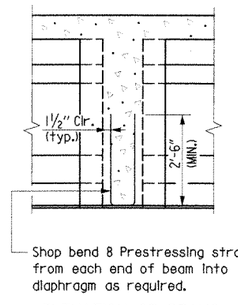
DETAIL A
½"=1'-0"



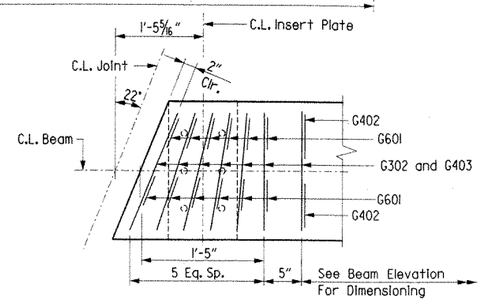
DETAIL A
Alternate for Steel Diaphragm.
½"=1'-0"



DETAIL B
½"=1'-0"



ELEVATION OF BEAMS AT INTERMEDIATE BENTS
Scale: ½" = 1'-0"



Note: Bars may be shifted slightly to clear Insert plate studs.

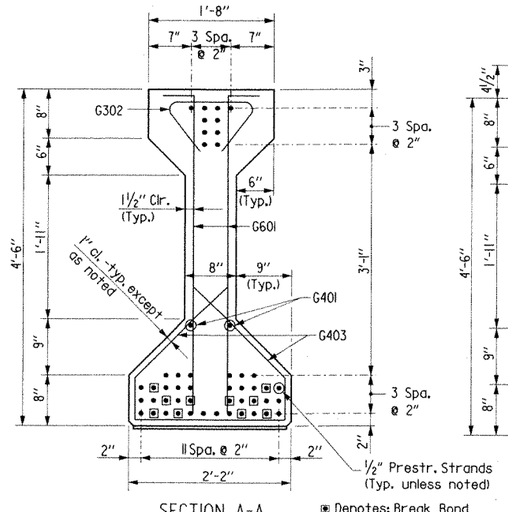
DETAIL C
1" = 1'-0"

TYPICAL BEAM ELEVATION (TYPE IV)
NTS

① Inserts shown are for concrete Midspan Diaphragms. See Dwg. No. 49654 For Alternate Steel Diaphragms.

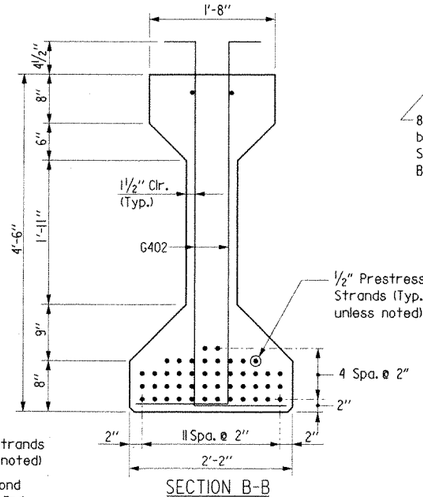
② Galvanized ¾" Dia. Dayton-Richmond F-42 Loop Ferrule Insert or an approved equal. (Omit in exterior face of exterior beams.) These are to be non-Pay Item-Subsidiary to the item "Prestressed Concrete Beams (Type IV)". For Alternate steel Diaphragms, See Dwg. No. 49654.

③ Inserts on Inside of Exterior Beams and 1¼" dia. holes for Interior Beams

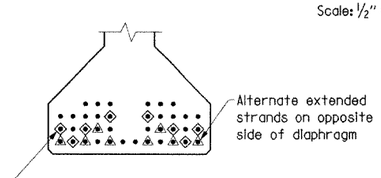


SECTION A-A
Scale : 1" = 1'-0"

◉ Denotes: Break Bond 3'-0" from Beam End

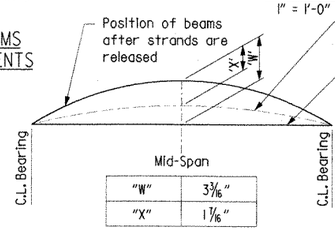


SECTION B-B
Scale : 1" = 1'-0"



8 Prestressing strands extend through beam ends and bent up into diaphragm. See "Elevation of Beams at Intermediate Bents".

STRAND DETAIL
1"=1'-0"



"W"	3¾₁₆"
"X"	1 1/16"

"W" is expected Camber of Beam at 90 days after release (Prestress + Dead Load of Beam).

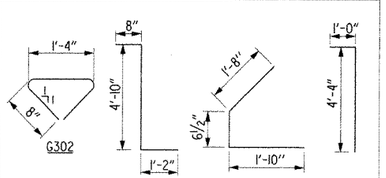
"X" is Dead Load Deflection of Slab + Diaphragms + Composite Dead Load.

CAMBER & DEFLECTIONS (INCHES)

SPANS 1 AND 4				SPANS 2 AND 3			
MARK	NO. REQ'D.	LENGTH	P.D.	MARK	NO. REQ'D.	LENGTH	P.D.
G301	8	1'-3"	Str.	G301	8	1'-3"	Str.
G302	22	4'-2"	2¼"	G302	20	4'-1"	1½"
G401	4	4'-0"	Str.	G401	4	4'-0"	Str.
G402	178	6'-6"	2"	G402	178	6'-6"	2"
G403	44	4'-0"	2"	G403	44	4'-0"	2"
G601	22	5'-3"	4½"	G601	20	5'-3"	4½"

BAR LIST-PER BEAM

BENDING DIAGRAMS (Dimensions are out to out of bars.)



GENERAL NOTES - PRESTRESSED BEAMS ONLY

Pretensioning steel shall be ½" dia. Low Relaxation strands with a minimum ultimate strength of 270 ksi and shall conform to AASHTO M203.

All Beams shall be AASHTO TYPE IV I-Beams as shown on the details. All Beams shall be cast in concrete floored pallets and in metal forms. All work and materials shall be as specified in Section 802.22 of the Standard Specifications.

Concrete shall be Class "S" and shall have a minimum 28 day compressive strength f'c = 6,000 psi.

Dimensions shown are to the center of strands.

The initial tensile force applied to each ½" dia. strand shall be 30,983 pounds. Transfer of this tensioning load to the beam shall not be done until the compressive strength of the concrete is 5,600 psi for all Spans.

The contractor shall submit the method and sequance for release of strands to the Engineer for approval prior to casting of the beams.

The first 16" along the top of the beam at each end shall have a smooth finish. The remaining portion shall be rough floated at approximately the time of set then scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface for bonding slabs.

Beams lengths shown on the design plans are net lengths measured horizontally along beam centerlines. The beam manufacturer shall make the necessary allowances for grade and shortening due to elastic shortening, creep and shrinkage.

All exposed steel at ends of beams not extended into diaphragms at interior bents shall be protected against corrosion by a coating of tar or other waterproofing material.

Beams must be maintained in an upright position at all times and must be picked up from points near the beam ends. Disregard of this requirement may lead to collapse of the beam. The contractor's proposed lifting details shall be submitted on shop drawings to the Engineer for approval. The use of holes for lifting purposes will not be permitted.

The Contractor may submit alternate strand patterns with design calculations for review and approval in accordance with subsection 802.22 except that only ½" diameter strands shall be allowed.

Reinforcing Steel shall be AASHTO M31 or M53 Grade 60 (fy = 60,000 psi)

Distances from the forms and spacing of the Prestressing Steel shall be maintained by the stays, ties, hangers, spacers, or other approved supports which shall be shown on the Shop Drawings.

The point of support and direction of the reactions with respect to the member shall be approximately the same during transportation and storage as when member is in its final position.

LOAD DISTRIBUTION TO BEAMS:

	Beams 1 & 6	Beams 2 - 5
Dead Loads: To Beam	639 PLF + Beam + Diaph.	749 PLF + Beam + Diaph.
Dead Loads: To Composite Beam	248 PLF, Includes 121 PLF Future Wearing Surface	317 PLF, Includes 190 PLF Future Wearing Surface
Live Loads: To Each Composite Beam	0.956 Wheels + Impact	1.38 Wheels + Impact

8-15-2011

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12097
JEFFREY SCOTT MILLSAPS

BRIDGE ENGINEER

SHEET 4 OF 5
DETAILS OF 400' CONTINUOUS PRESTRESSED CONCRETE BEAM UNIT EAST FORK KELLY BAYOU

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

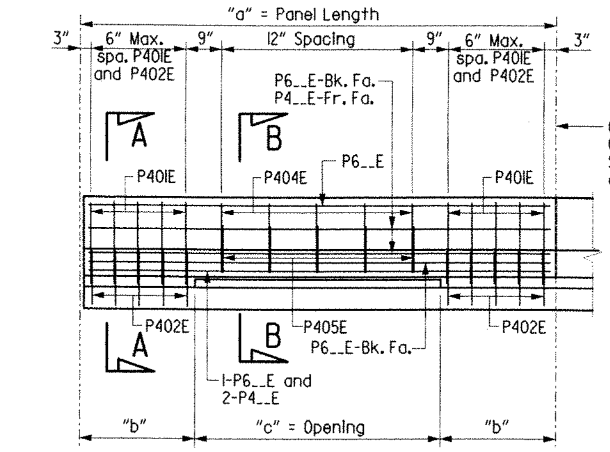
LITTLE ROCK, ARK.

DRAWN BY: RPT DATE: 4-07 FILENAME: \A&B030355x5_S4.dgn
CHECKED BY: MAD DATE: 6-07 SCALE: AS SHOWN
DESIGNED BY: AJP/SHR DATE: 5-07

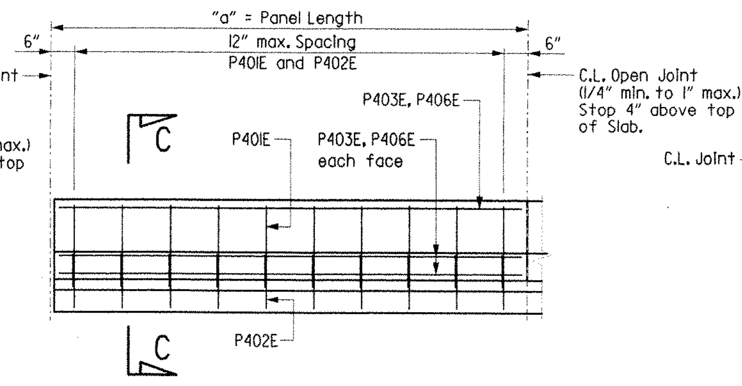
BRIDGE NO. A&B7125 DRAWING NO. 49657

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP
n:\structs\arkansas\final_030305\Site5A&B_East Fork\B030355x5_S4.dgn
8/15/2011
3:32:47 PM

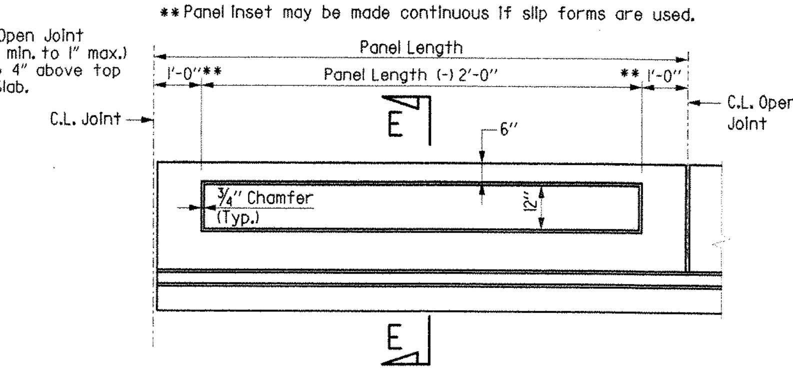
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	71	85
				A&B7125		SPAN DETAILS		49658



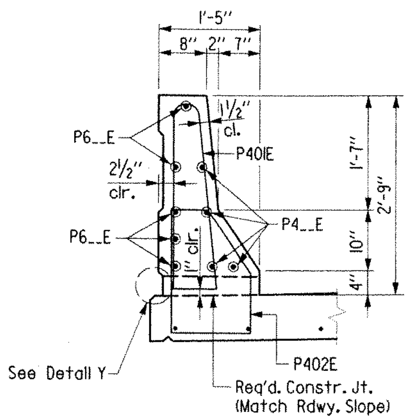
DETAILS OF OPEN PARAPET RAIL
NTS



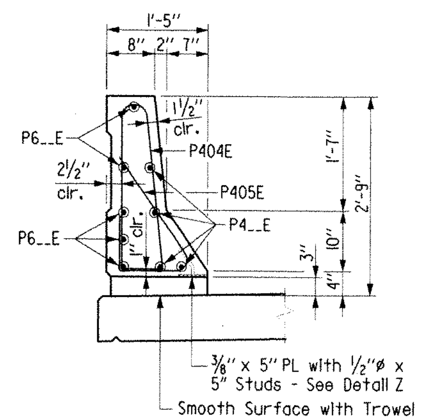
DETAILS OF CLOSED PARAPET RAIL
NTS



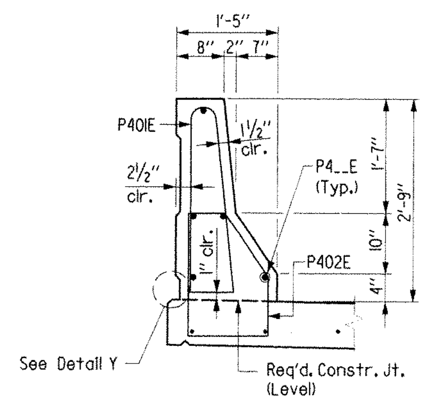
PARAPET ENHANCEMENT DETAILS
Scale: ½" = 1'-0"



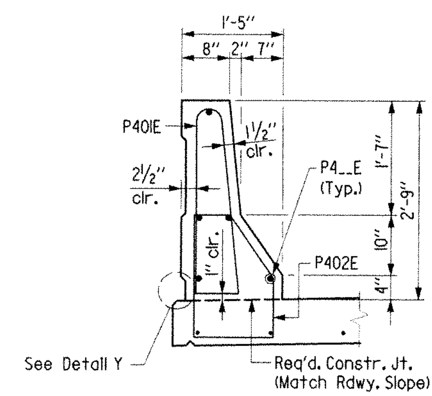
SECTION A-A
Scale: ¾" = 1'-0"



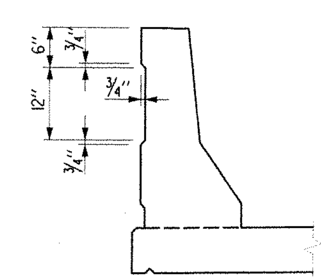
SECTION B-B
Scale: ¾" = 1'-0"



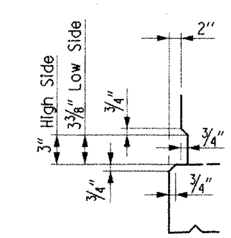
SECTION C-C
(High Side)
Scale: ¾" = 1'-0"



SECTION C-C
(Low Side)
Scale: ¾" = 1'-0"



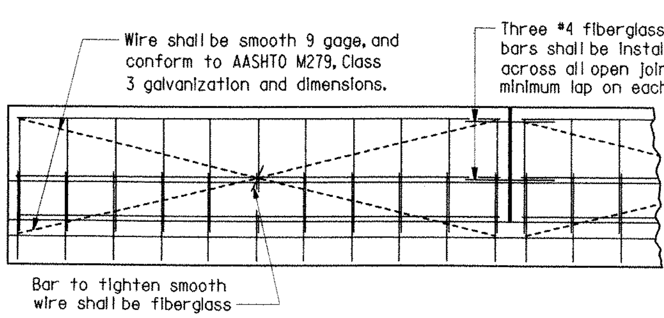
SECTION E-E
Scale: ¾" = 1'-0"

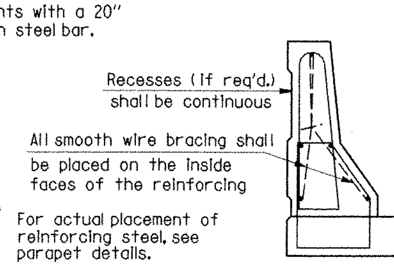


DETAIL Y
No Scale

PARAPET RAIL VARIABLES

Parapet Type	"a"	"b"	"c"	Longitudinal Reinforcing
Closed	10'-0"	---	---	P406E
Closed	15'-0"	---	---	P403E
Open	10'-0"	2'-6"	5'-0"	P406E, P602E
Open	15'-0"	5'-0"	5'-0"	P403E, P601E

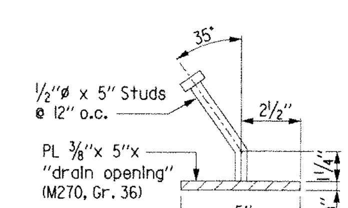




All panels shall be braced as shown to prevent racking. All open joints shall be sawed as soon as practical to a minimum width of ¼". To control cracking before sawing all joints must be grooved before the concrete is set. Sawing of the joints must be controlled so it will follow the grooved joint.

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

DETAILS OF OPTIONAL SLIPFORMING OF CONCRETE PARAPET RAIL
Scale: ½" = 1'-0"



DETAIL Z
No Scale

NOTE:
Parapet studs shall be 5" long, granular flux filled, solid fluxed, or equal and automatically end welded to the plate. Studs and plate shall meet the requirements of Section 807. Studs and plates shall be measured and paid for as "Structural Steel in Beam Spans".

The surfaces of the ⅜" plates which will not be in contact with concrete shall be painted in accordance with Section 638, or as approved by the Engineer. Only one coat is required and shall be applied in the fabricator's shop. Painting will not be paid for directly, but will be considered subsidiary to "Structural Steel in Beam Spans".

(2) SUPERSTRUCTURE GENERAL NOTES

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

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges, 2002, with current interim specifications.

LIVE LOAD: HS20 + Military Loading METHOD OF DESIGN: Load Factor

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.

CONCRETE:
All concrete in slab, parapets and diaphragms shall be Class S(AE) with a minimum 28 day compressive strength f'c = 4,000 psi. Concrete shall be poured in the dry and all exposed corners shall be chamfered ¾" unless otherwise noted. All end of unit and midspan diaphragms shall be cast in place and poured a minimum of 48 hours before the slab is poured. Interior bent diaphragms shall be cast monolithically with the slab.

The slab and intermediate bent diaphragms shall not be poured until 90 days after release of strands in beams.

The superstructure details shown are for use when removable deck forming is used and are the basis for measurement of Class S(AE) Concrete. See Standard Drawing No. 14991 for allowable modifications and for tolerances when Permanent Steel Bridge Deck Forms are used.

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

The concrete deck shall be given a tine 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 girder. If a longitudinal strike-off is used, a vertical camber adjustment must be made in the strike-off to account for future dead load deflection due to the railing. A minimum of 72 hours shall elapse between completion of the slab and the pouring of the parapet railing.

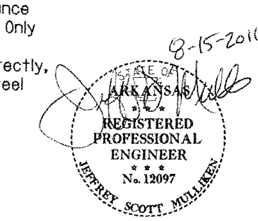
REINFORCING STEEL:
Reinforcing steel shall conform to AASHTO M31 or M53, Grade 60 (Yield Strength = 60,000 psi.)

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).

STRUCTURAL STEEL: All structural steel shall be AASHTO M270, Gr. 50W unless otherwise noted and shall be paid for as Structural Steel in Beam Spans. (AASHTO M270 GR. 50W) GR. 50W steel shall not be painted. All exposed surfaces shall be cleaned in accordance with Subsection 807.84(e). Structural steel completely embedded in concrete may be AASHTO M270, GR.36.

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

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



BRIDGE ENGINEER

SHEET 5 OF 5
DETAILS OF 400' CONTINUOUS PRESTRESSED CONCRETE BEAM UNIT EAST FORK KELLY BAYOU

ROUTE 71 SEC. 1

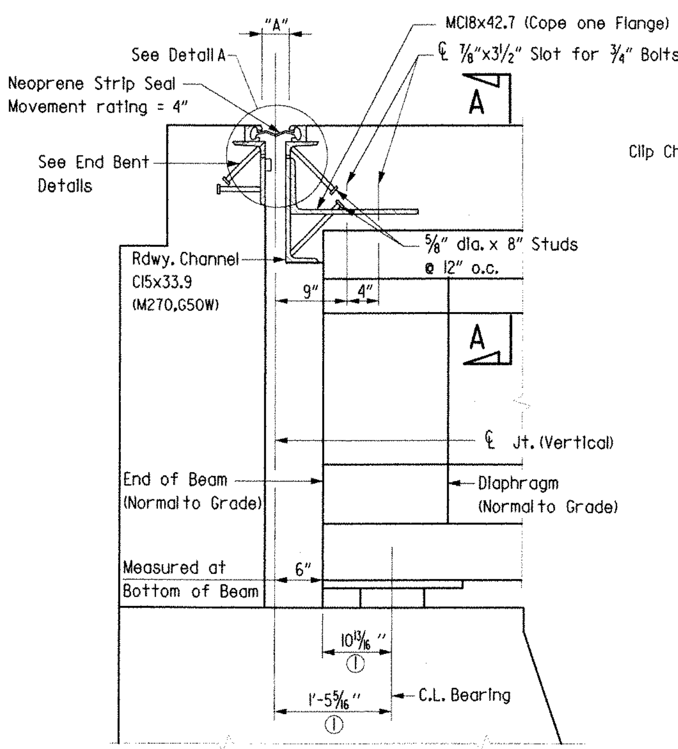
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: RPT DATE: 5-07 FILENAME: \B030355x5_55.dgn
CHECKED BY: MAD DATE: 6-07 SCALE: AS SHOWN
DESIGNED BY: AJP/SHR DATE: 5-07

BRIDGE NO. A&B7125 DRAWING NO. 49658

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS
n:\struct\arkansas\Tfnel_030305\Sl\e5A&B_East Fork\B030355x5_55.dgn 8/15/2011 3:38:47 PM

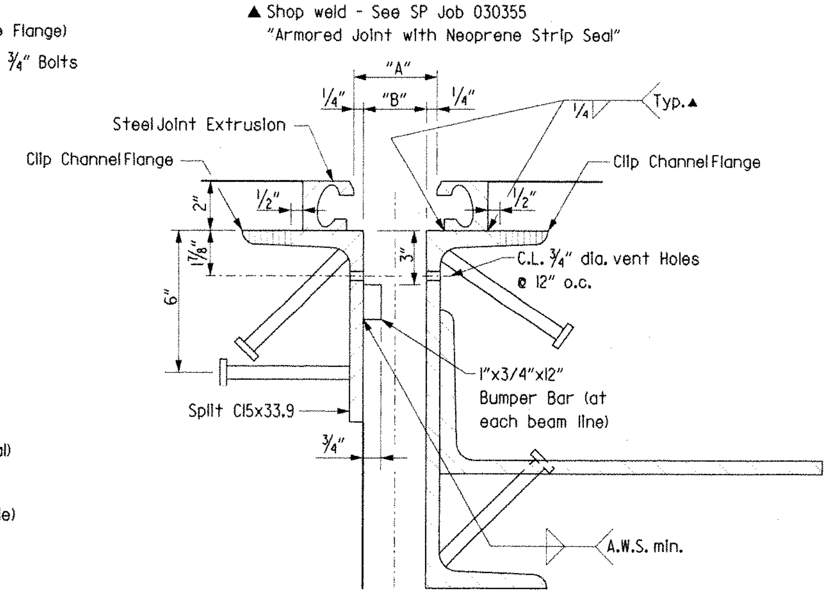


① Measured Along Beam

SECTION THRU JOINT AT END BENTS

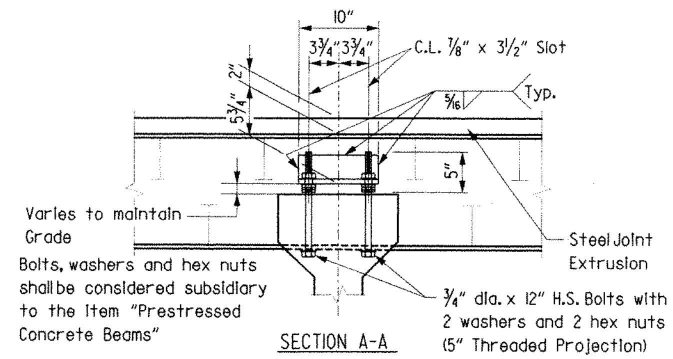
Note: Sections thru Joints are taken normal to C.L. Joints

▲ Shop weld - See SP Job 030355 "Armored Joint with Neoprene Strip Seal"

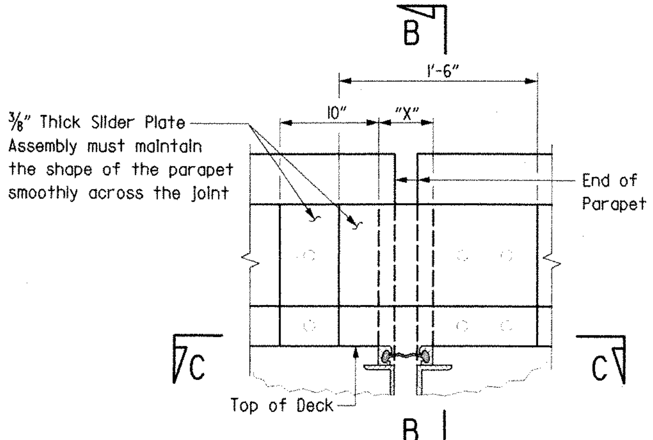


DETAIL A
3" = 1'-0"

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

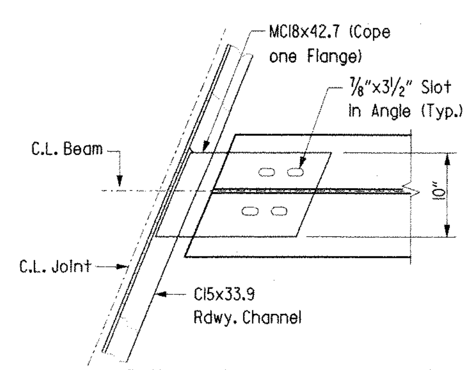


SECTION A-A

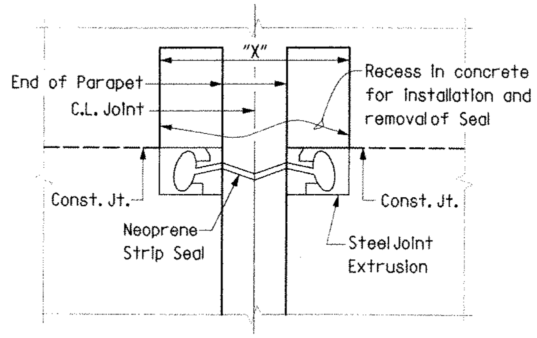


Note: Dimension "X" equals the width of opening in parapet at curb to allow for removal or repair of joint.

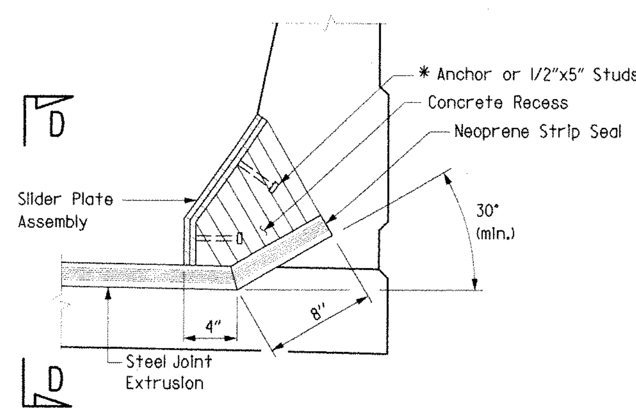
DETAIL OF NEOPRENE SEAL AT GUTTERLINE
No Scale



ROADWAY CHANNEL CONNECTION DETAIL
No Scale



SECTION D-D
No Scale



SECTION B-B
No Scale

GENERAL NOTES:

EXPANSION NEOPRENE STRIP SEAL: The Expansion device shall provide a movement of 4" as shown in the "STRIP SEAL JOINT DATA" table. The expansion joint shall be capable of sealing the deck surface and parapet area to prevent moisture and other contaminants from descending through the joint.

Details of proposed slider plate assembly shall be submitted to and approved by the Engineer prior to the fabrication of any structural steel at the expansion device.

All structural steel shall be AASHTO M270, Grade 50W unless otherwise noted. Cleaning and painting of the parapet slider plates shall be in accordance with Section 638 and will not be paid for directly but will be considered subsidiary to STRUCTURAL STEEL BEAM SPANS (M270, GRADE 50W). Structural steel completely embedded in concrete need not be painted.

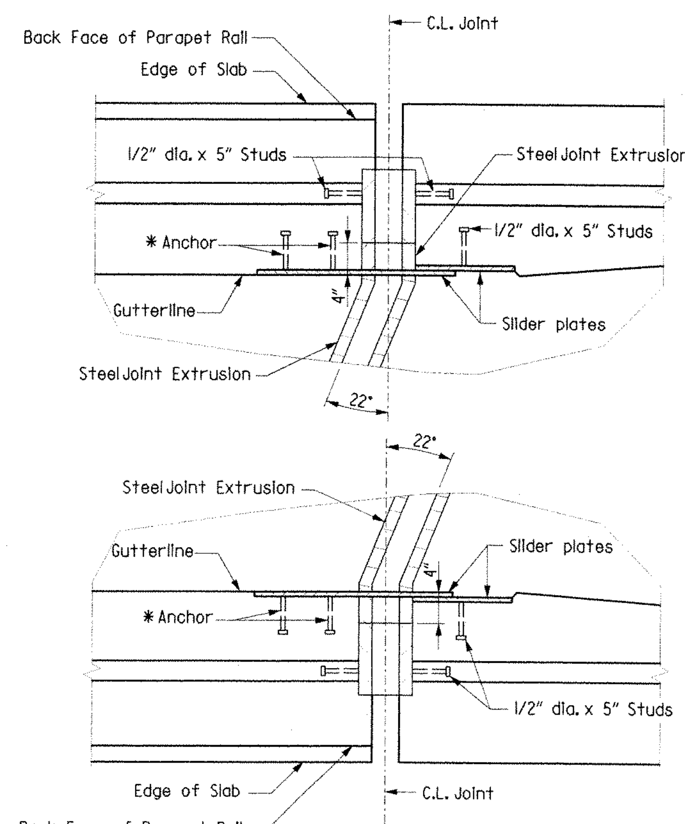
All structural steel, except for the steel extrusion and slider plate anchor system for the strip seal, shall be paid for as "STRUCTURAL STEEL IN BEAM SPANS (M270, GRADE 50W)." The steel extrusion, slider plate anchor system and neoprene strip seal shall be paid for in accordance with Special Provision Job 030355 "ARMORED JOINT WITH NEOPRENE STRIP SEAL".

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 :		
		40°F	60°F	80°F	40°F	60°F	80°F
1 and 5	4"	2¾"	2½"	2¼"	2¼"	2"	1¾"

** 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.

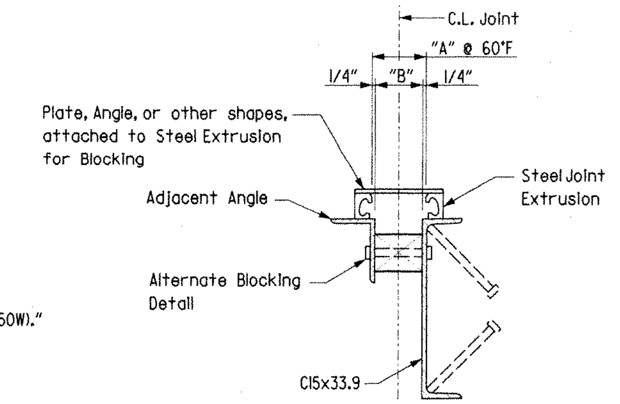
Installation is limited to 40°F, min. and 80°F, max. Interpolation of the table may be necessary. The temperature Limitations by the lubricant-adhesive manufacturer shall be observed.



SECTION C-C AT END BENTS

* The method of attachment of the cover slider plate assembly or similar device must be such that it may be removed in order to provide for future replacement of the neoprene seal. Method of installation and fabrication shall be determined by the manufacturer.

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.		030355	72	85
			②	A&B7125		JOINT DETAILS		49659



DETAILS FOR BLOCKING EXPANSION JOINT DEVICE

Note:
Each Expansion Joint Device shall be blocked in the shop by the Fabricator to the dimension shown for 60°F and the blocking details shall be shown on the Shop Drawings. Blocking shall be placed within 2 feet of each end of the device and with a maximum spacing of 8 feet.

One of two different blocking systems is required depending on the type of span finishing used.

For Transverse Strike-Off:
Plate, Angle, or other shapes, attached to Channels (or angles) for Blocking.

For Longitudinal Strike-off:
Bolt & spacer attached to Channels for Blocking.

EXPANSION DEVICE INSTALLATION AT END BENTS

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

1) The concrete span pour adjacent to joint shall be placed before the end bent backwall is placed. After the end bent backwall forms are in place and the beams 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 the backwall constructed.

2) The backwall shall be poured to the optional construction joint after beams are erected. The blocked expansion device shall be installed and adjusted for grade. All connection bolts shall be fully tightened prior to placing the deck concrete adjacent to the bent. Immediately prior to pouring the remainder of the backwall concrete, the blocking shall be removed and the opening adjusted for temperature.

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 12097 JEFFREY SCOTT MULLIKEN
8-15-2011

BRIDGE ENGINEER

DETAILS OF ARMORED JOINT WITH NEOPRENE STRIP SEAL EAST FORK KELLY BAYOU

ROUTE 71 SEC. 1

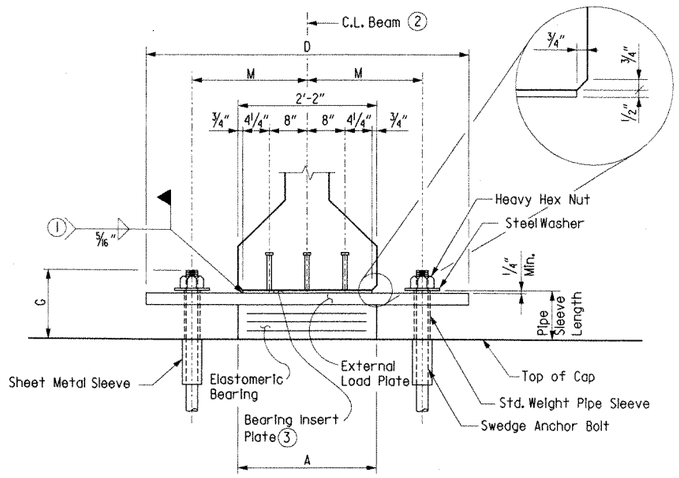
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: RPT DATE: 5-07 FILENAME: ...\B030355x5.Jtdgn
CHECKED BY: MAD DATE: 6-07 SCALE: AS SHOWN
DESIGNED BY: STANDARD DATE: ——
BRIDGE NO. A&B7125 DRAWING NO. 49659

PLANS PREPARED BY THE LPA GROUP INCORPORATED TRANSPORTATION CONSULTANTS
THE LPA GROUP
r:\structure\arkansas\final_030355\Site5A&B_East Fork\B030355x5_Jt.dgn 8/15/2011 3:32:46 PM

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.		030355	73	85
				(2) A&B7125		ELASTOMERIC BEARINGS		49660

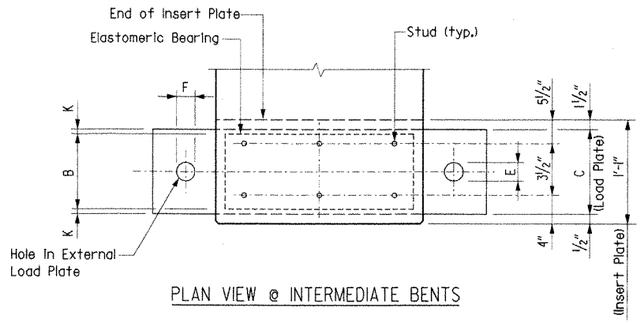


FRONT VIEW

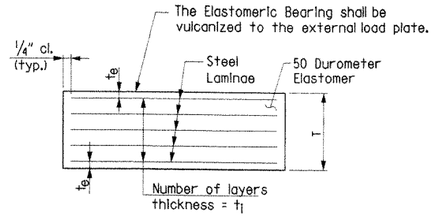
(1) Care shall be taken to ensure that the external load plate is in full and complete contact with the bearing insert plate before welding begins.

(2) C.L. Elastomeric Pad shall be aligned with C.L. Beam

(3) Bearing Insert Plate (M270, Gr. 50W) & Studs shall be considered subsidiary to the item "Prestressed Concrete Beams (Type IV)"

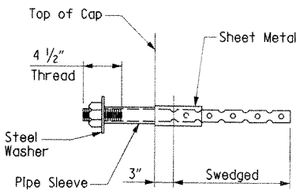


PLAN VIEW @ INTERMEDIATE BENTS

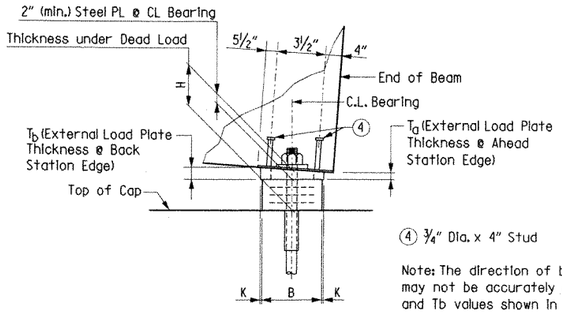


t_e = thickness of elastomer cover on top and bottom of pad
t_1 = thickness of elastomer between steel laminae
N = number of elastomer layers of thickness t_1

ELASTOMERIC BEARING



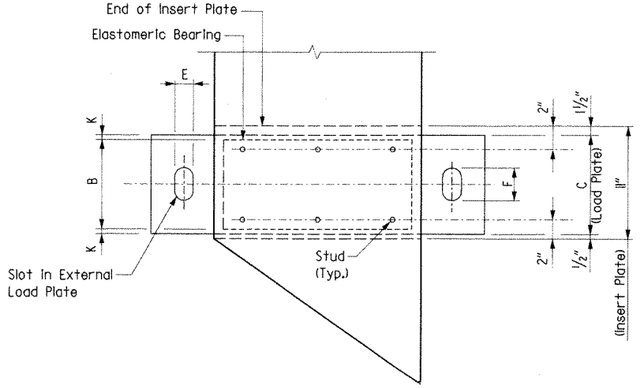
ANCHOR BOLT DETAIL



(4) ¾" Dia. x 4" Stud

Note: The direction of bevel of the external load plate may not be accurately depicted with respect to the Ta and Tb values shown in the Table of Fabricator Variables.

SIDE VIEW
(at intermediate bents)



PLAN VIEW @ END BENTS

TABLE OF FABRICATOR VARIABLES

LOCATION			BEARING TYPE	NO. of BEARINGS EACH BENT	✳ MAXIMUM DESIGN LOAD (KIPS)	G	ELASTOMERIC PAD							EXTERNAL LOAD PLATE										ANCHOR BOLT				
																				BRIDGE A		BRIDGE B						
BENT NO.	SPAN NO(S)	BEAM NO.					H	A	B	N	t_1	t_e	NO. & THICKNESS OF STEEL LAMINAE	T	C	D	E	F	K	M	T_a	T_b	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.)
1	1	All	Exp.	6	141.3	8⅞"	5¼"	2'-0"	8"	4	⅝"	⅝"	5 @ 12 gauge	3⅜"	10"	3'-3"	3⅛"	6"	1"	1'-4¼"	1.95"	2.05"	1.95"	2.05"	2¼"Øx35⅞"	55	2½"Øx5⅝"	4"Ø x 6"	4"
2	1 2	All	Fixed	12	145.3	7½"	3⅜" Bk 3⅝" Ah	2'-0"	8"	1	⅝"	1/16"	2 @ 12 gauge	11/16"	11"	3'-3"	3⅛"	3⅛"	1½"	1'-4"	2.20" 1.95"	2.30" 2.05"	2.20" 1.95"	2.30" 2.05"	2¼"Øx34½"	55	2½"Øx4"	4"Ø x 6"	4"
3	2 3	All	Fixed	12	145.3	7½"	3⅜" Bk 3⅝" Ah	2'-0"	8"	1	⅝"	1/16"	2 @ 12 gauge	11/16"	11"	3'-3"	3⅛"	3⅛"	1½"	1'-4"	2.20" 1.95"	2.30" 2.05"	2.20" 1.95"	2.30" 2.05"	2¼"Øx34½"	55	2½"Øx4"	4"Ø x 6"	4"
4	3 4	All	Fixed	12	145.3	7½"	3⅜" Bk 3⅝" Ah	2'-0"	8"	1	⅝"	1/16"	2 @ 12 gauge	11/16"	11"	3'-3"	3⅛"	3⅛"	1½"	1'-4"	2.20" 1.95"	2.30" 2.05"	2.20" 1.95"	2.30" 2.05"	2¼"Øx34½"	55	2½"Øx4"	4"Ø x 6"	4"
5	4	All	Exp.	6	141.3	8⅞"	5¼"	2'-0"	8"	4	⅝"	⅝"	5 @ 12 gauge	3⅜"	10"	3'-3"	3⅛"	6"	1"	1'-4¼"	1.95"	2.05"	1.95"	2.05"	2¼"Øx35⅞"	55	2½"Øx5⅝"	4"Ø x 6"	4"

✳ MAXIMUM DESIGN LOAD = SERVICE LOAD

8-15-2011
ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 12097
JEFFREY SCOTT MILLIGEN
BRIDGE ENGINEER

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 Beams, 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.50W)."

GENERAL NOTES

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

External load plates shall conform to AASHTO M270, Grade 50W. Pipe sleeves shall be ASTM A53, Grade B, and shall be galvanized to conform to AASHTO M232, Class C or AASHTO M298, Class 50.

External load plates shall be completely fabricated (including bevel and bolt holes) and shall be cleaned before vulcanizing to the Elastomeric bearing. The surface 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(e) for weathering steel.

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

Pipe Sleeves, Anchor Bolts, Washers and Nuts shall be paid for at the unit price bid for "Structural Steel in Beam Spans (M270, Gr.50W)".

Unless otherwise approved by the engineer, welding of the external load plate at expansion bearings to the bearing insert plate 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.

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

DETAILS OF ELASTOMERIC BEARINGS EAST FORK KELLY BAYOU

ROUTE 71 SEC. 1

ARKANSAS STATE HIGHWAY COMMISSION

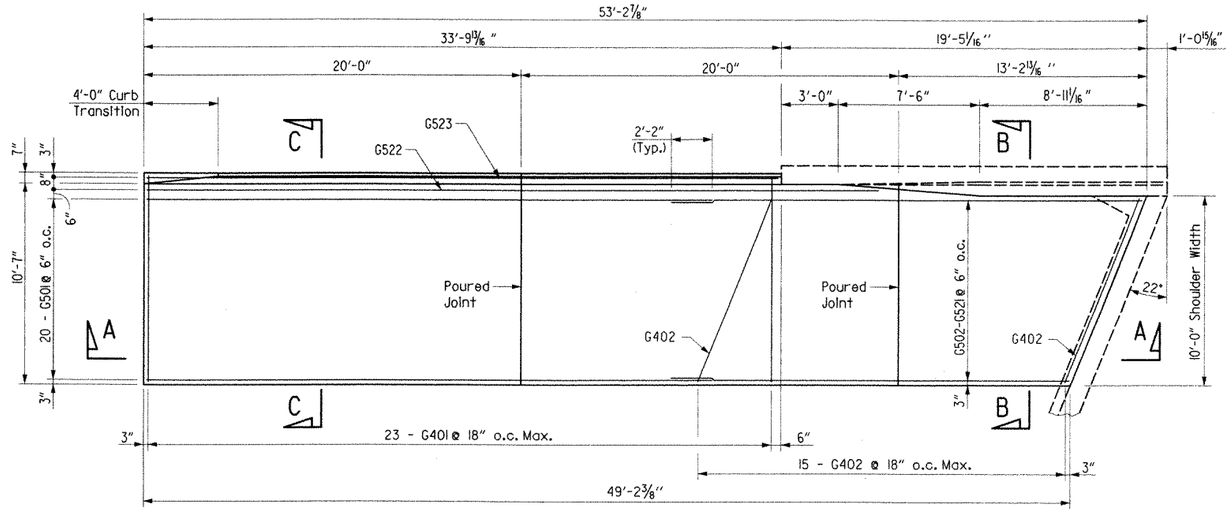
LITTLE ROCK, ARK.

DRAWN BY: RPT DATE: 5-07 FILENAME: \B030355x5.dgn
CHECKED BY: MAD DATE: 6-07
DESIGNED BY: SHR/CGN DATE: 4-07 SCALE: AS SHOWN

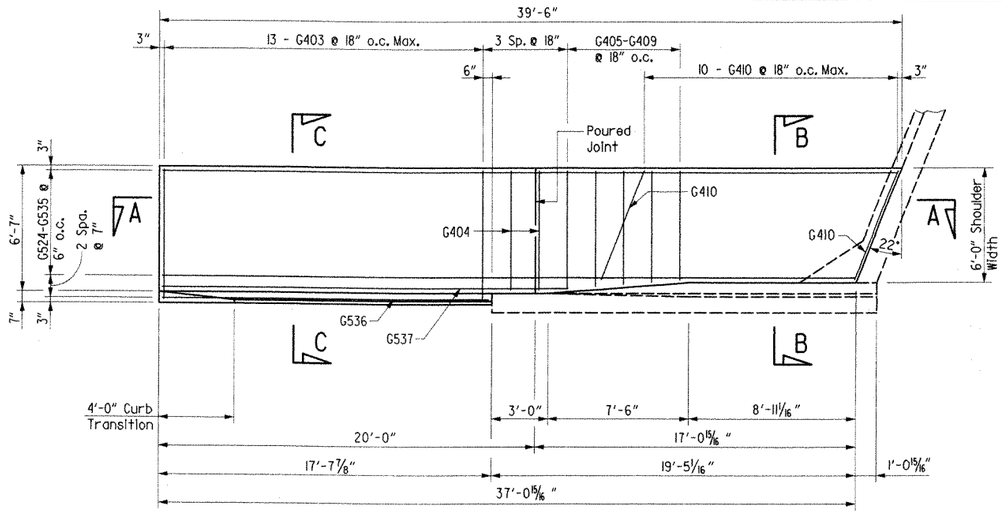
BRIDGE NO. A&B7125 DRAWING NO. 49660

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP

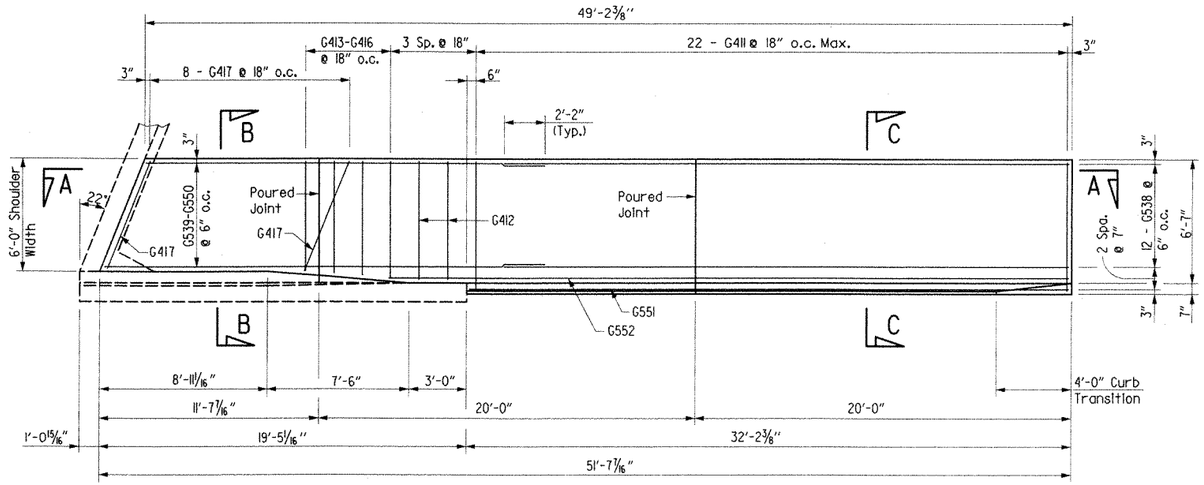
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	74	85
				(2) A&B7125		APPROACH GUTTERS		49661



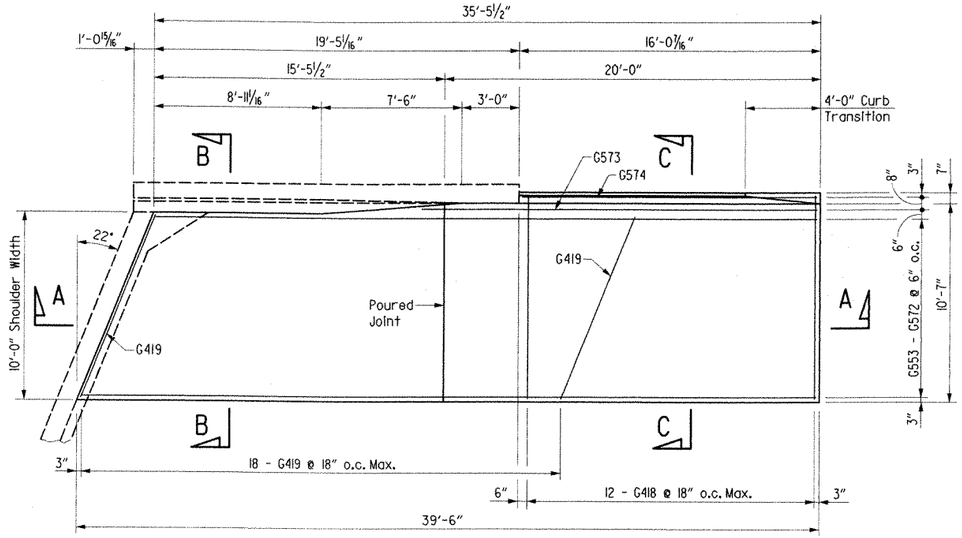
PLAN - 10' GUTTER
(BEGIN BRIDGE)



PLAN - 6' GUTTER
(BEGIN BRIDGE)



PLAN - 6' GUTTER
(END BRIDGE)



PLAN - 10' GUTTER
(END BRIDGE)

GENERAL NOTES:

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

Reinforcement 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.

FOR INFORMATION ONLY

SHEET 1 OF 2
DETAILS OF
TYPE SPECIAL 5 APPROACH GUTTER
EAST FORK KELLY BAYOU

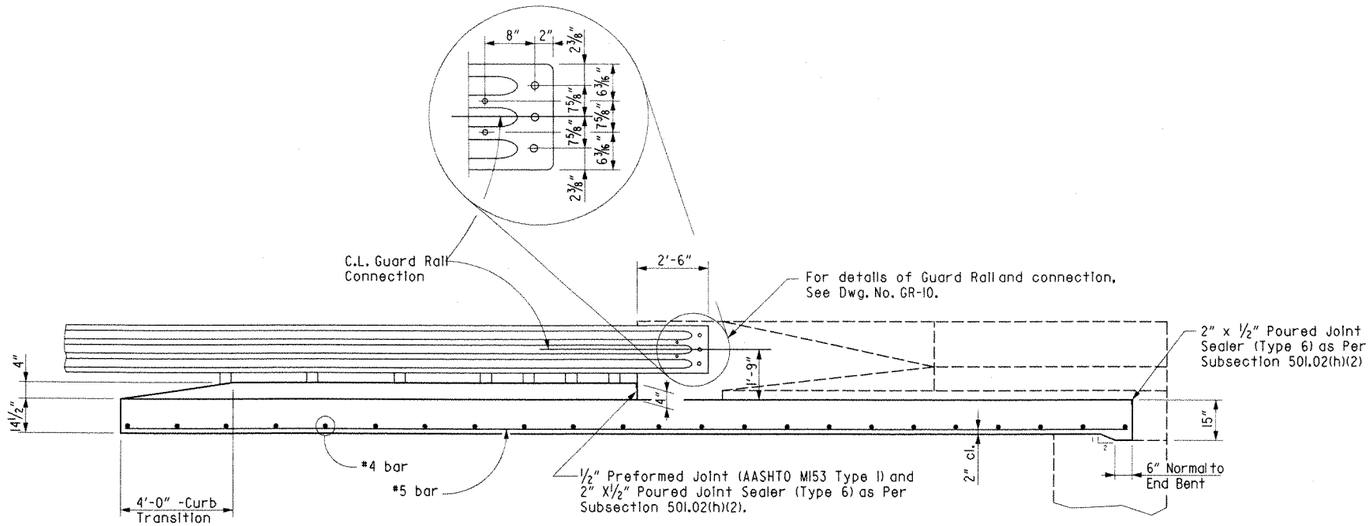
ROUTE 71 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: RPT DATE: 6-07 FILENAME: a030355x5.dgn
CHECKED BY: MWB DATE: 9-07 SCALE: 1/4" = 1'-0"
DESIGNED BY: STANDARD DATE: ——
BRIDGE NO. A&B7125 DRAWING NO. 49661

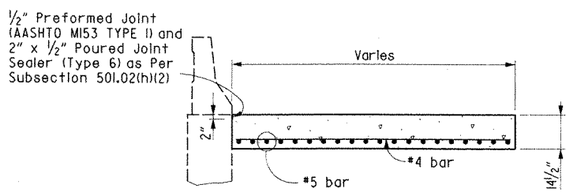
PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP

n:\structur\arkansas\final.030355\Site5&8_East Fork\B030355x5_gl.dgn
8/15/2011
3:32:45 PM

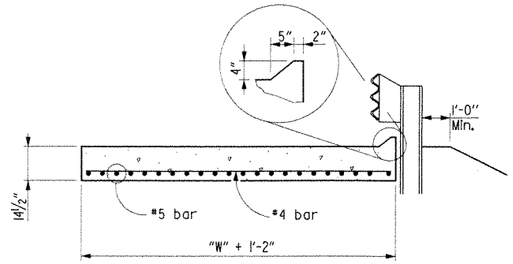
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		030355	75	85
				(2) A&B7125		APPROACH GUTTERS		49662



SECTION A - A
NTS



SECTION B - B
NTS



SECTION C - C
NTS

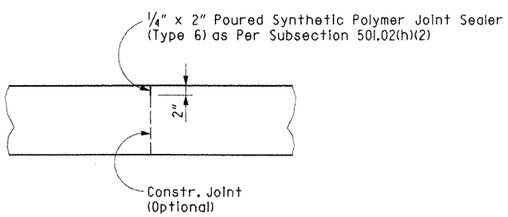
BAR LIST

MARK	NO. REQ'D.	LENGTH
G401	23	10'-10"
G402	15	10'-3"
G403	12	6'-10"
G404	2	6'-3"
G405-G409	1 EACH	5'-9" to 6'-2"
G410	10	6'-0"
G411	22	6'-10"
G412	2	6'-3"
G413-G416	1 EACH	5'-10" to 6'-2"
G417	8	6'-0"
G418	12	10'-10"
G419	18	10'-3"
G501	20	30'-0"
G502-G521	1 EACH	21'-3" to 24'-11"
G522	1	38'-9"
G523	1	33'-6"
G524-G535	1 EACH	36'-10" to 39'-1"
G536	1	17'-4"
G537	1	21'-7"
G538	12	30'-0"
G539-G550	1 EACH	21'-1" to 23'-4"
G551	1	31'-10"
G552	1	36'-1"
G553-G572	1 EACH	35'-3" to 39'-1"
G573	1	21'-0"
G574	1	15'-9"

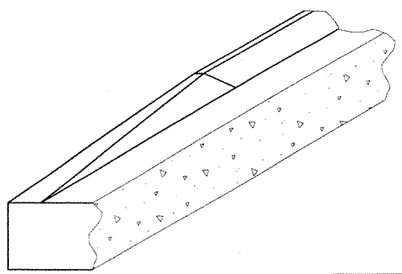
TABLE OF QUANTITIES FOR TYPE SPECIAL 5 APPROACH GUTTER

AT BEGIN BRIDGE		
"W" Width	Reinforcing Steel	Concrete (Cu. Yds.)
6'	639 lbs.	11.5
10'	1,452 lbs.	25.0

AT END BRIDGE		
"W" Width	Reinforcing Steel	Concrete (Cu. Yds.)
6'	880 lbs.	15.5
10'	1,023 lbs.	17.9



DETAILS OF POURED JOINT
NTS



CURB TRANSITION
NTS

FOR INFORMATION ONLY

SHEET 2 OF 2
DETAILS OF
TYPE SPECIAL 5 APPROACH GUTTER
EAST FORK KELLY BAYOU

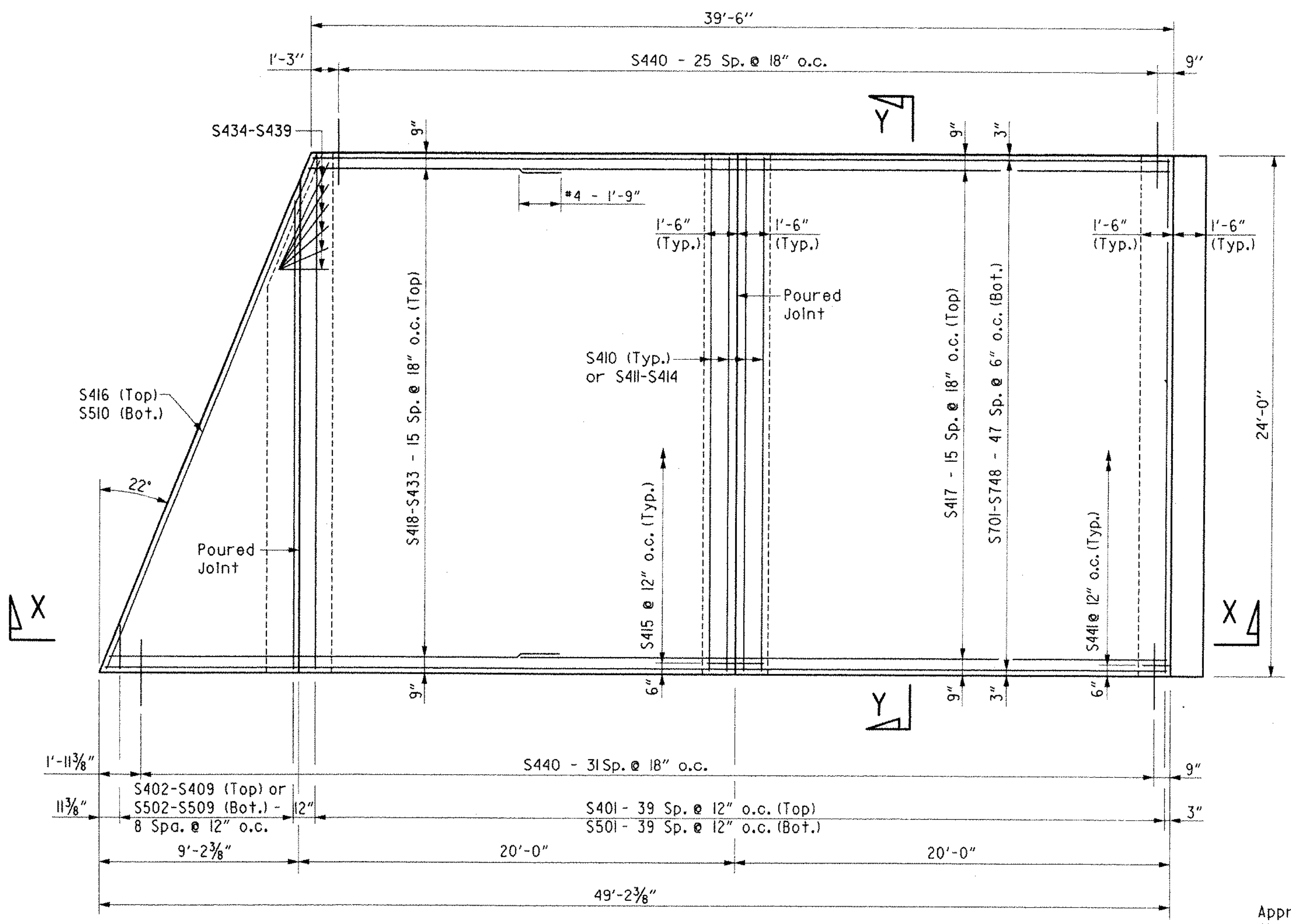
ROUTE 71 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MAD/RPT DATE: 6-07 FILENAME: J:\B030355x5_a2.dgn
CHECKED BY: MWB DATE: 6-07 SCALE: AS SHOWN
DESIGNED BY: STANDARD DATE: ——
BRIDGE NO. A&B7125 DRAWING NO. 49662

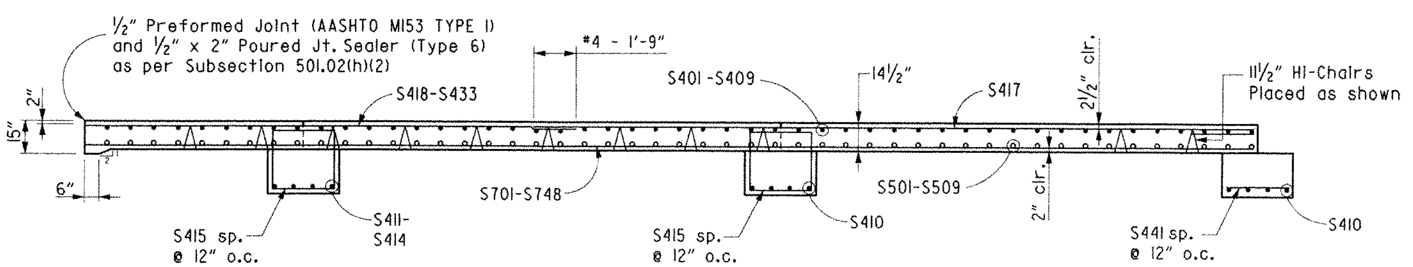
PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP
J:\Structure\arkansas\Final\J030355\Sht5A&B_East Fork\B030355x5_a2.dgn
8/15/2011
3:32:45 PM

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.		030355	76	85
				A&B7125		APPROACH SLAB		49662A

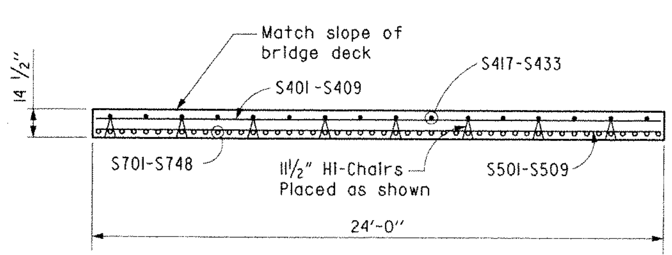
(2)



PLAN - APPROACH SLAB
SCALE: 1/4"=1'-0"



SECTION X - X
SCALE: 1/4"=1'-0"



SECTION Y - Y
SCALE: 1/4"=1'-0"

TABLE OF QUANTITIES FOR ONE TYPE SPECIAL 3 APPROACH SLAB

Slab Width	Reinforcing Steel	Concrete (Cu. Yds.)
24'-0"	7,438	61.8

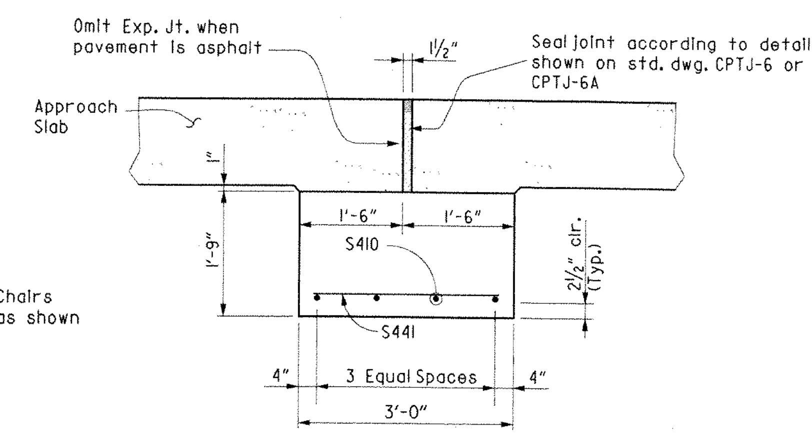
GENERAL NOTES

Concrete shall be Class S (AE) (f'c = 4,000 psi).

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

Approach Slabs will be measured and paid for in accordance with Section 504.

Joint sealer included in the pay item "Approach Slab".



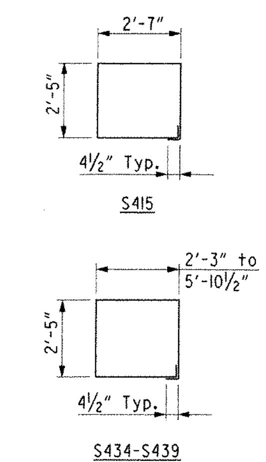
DETAILS OF SUPPORT AT END OF SLAB
SCALE: 3/4"=1'-0"

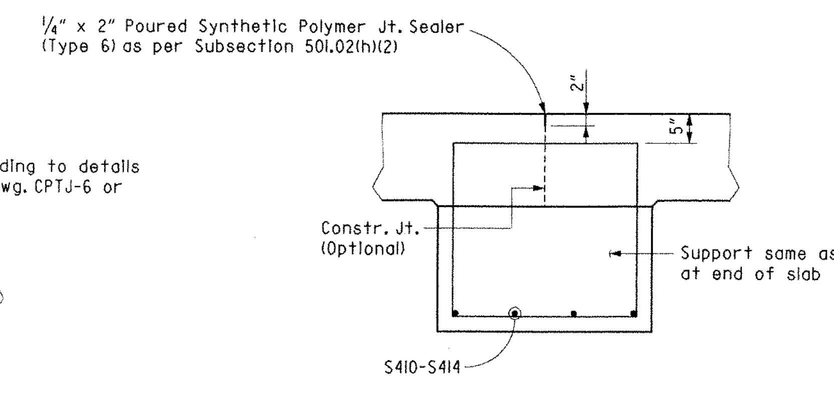
BAR LIST

MARK	NO. REQ'D.	LENGTH	P.D.
S401	40	23'-8"	Str.
S402-S409	1 EACH	1'-9" to 21'-6"	Str.
S410	8	23'-8"	Str.
S411-S414	1 EACH	18'-2" to 23'-8"	Str.
S415	42	10'-4"	2"
S416	1	25'-6"	Str.
S417	16	30'-0"	Str.
S418-S433	1 EACH	11-3" to 20'-4"	Str.
S434-S439	1 EACH	10-1" to 17'-4"	2"
S440	58	3'-0"	Str.
S441	24	2'-7"	Str.
S501	40	23'-8"	Str.
S502-S509	1 EACH	1'-9" to 21'-6"	Str.
S510	1	25'-6"	Str.
S701-S748	1 EACH	39'-3" to 48'-9"	Str.

BENDING DIAGRAMS

Dimensions are out to out of bars.





DETAILS OF SUPPORT AT MIDDLE OF SLAB
SCALE: 3/4"=1'-0"

FOR INFORMATION ONLY

DETAILS OF TYPE SPECIAL 3 APPROACH SLAB EAST FORK KELLY BAYOU

ROUTE 71 SEC. 1

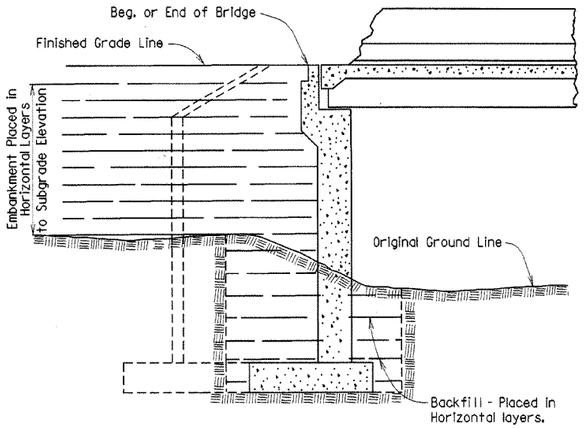
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

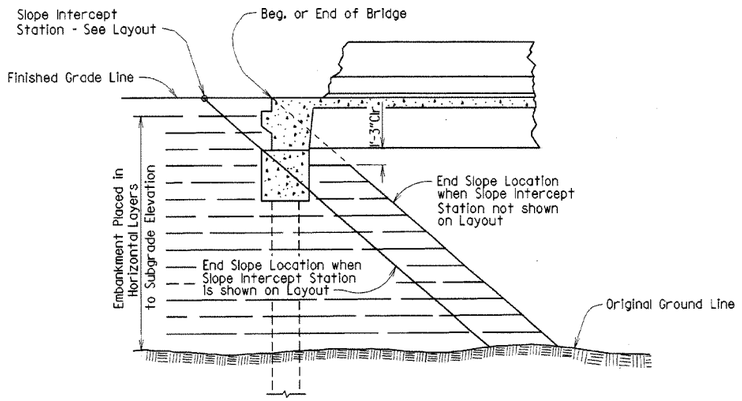
DRAWN BY: RPT DATE: 6-07 FILENAME: v8030355x5.asl.dgn
CHECKED BY: MWB DATE: 9-07 SCALE: AS SHOWN
DESIGNED BY: STANDARD DATE: ——
BRIDGE NO. A&B7125 DRAWING NO. 49662A

PLANS PREPARED BY
THE LPA GROUP INCORPORATED
TRANSPORTATION CONSULTANTS
THE LPA GROUP
r:\struct\arkansas\final_0303055\Site5A&B_East Fork\B030355x5.asl.dgn 8/15/2011 3:32:44 PM

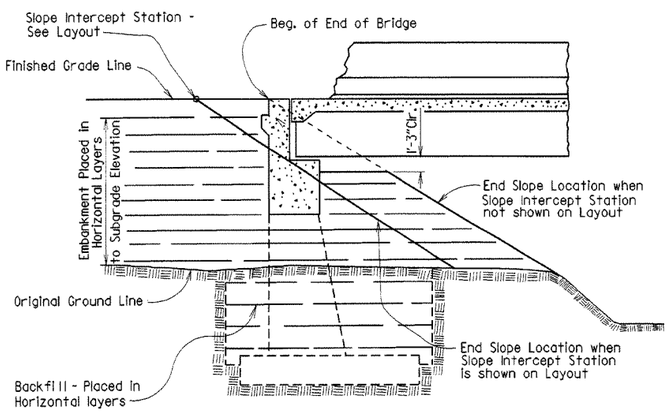
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003				6	ARK.		77	
				JOB NO.				
				①	EMBANKMENT & BACKFILL		1888A	



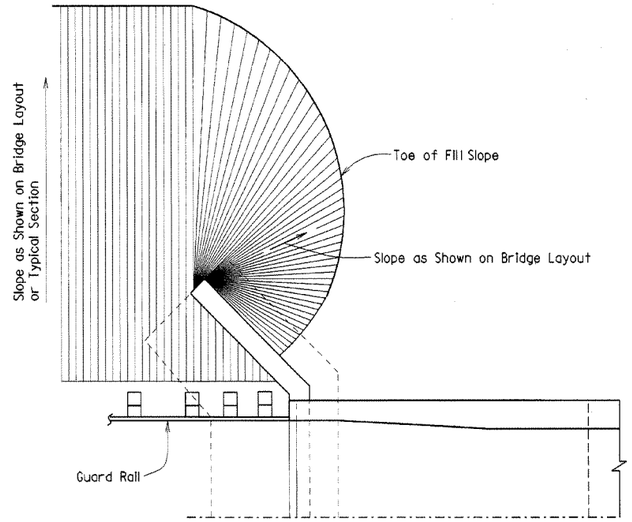
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT VERTICAL WALL ABUTMENTS



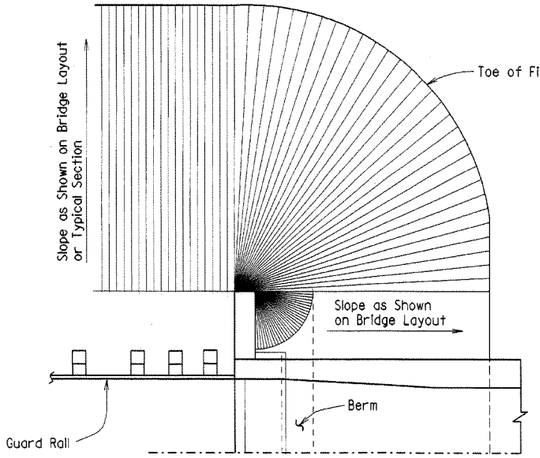
EMBANKMENT CONSTRUCTION AT SPILL-THROUGH PILE END BENTS



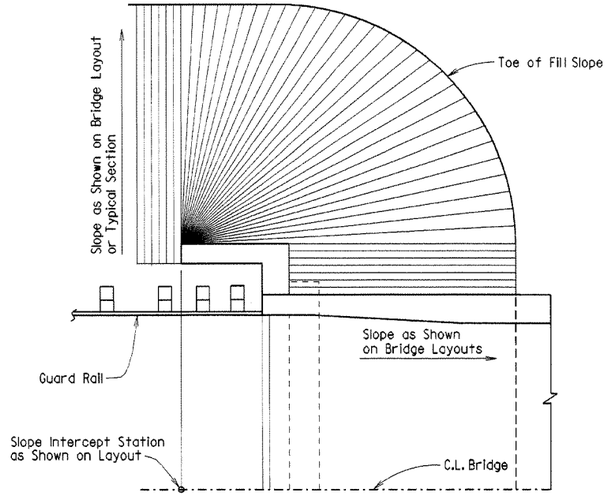
EMBANKMENT CONSTRUCTION AND FOOTING BACKFILL AT SPILL-THROUGH END BENTS



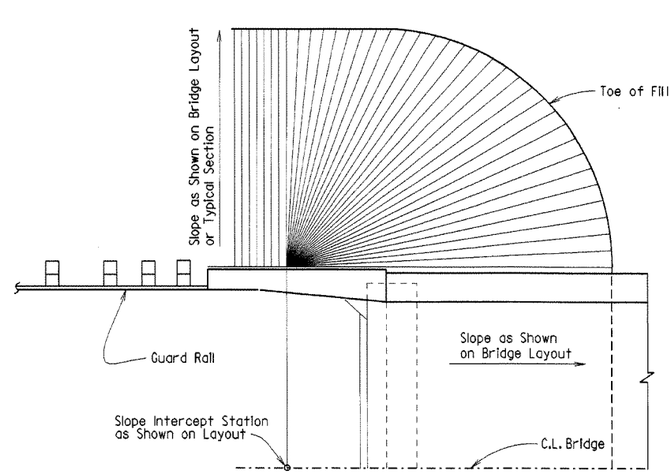
VERTICAL WALL ABUTMENTS



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.

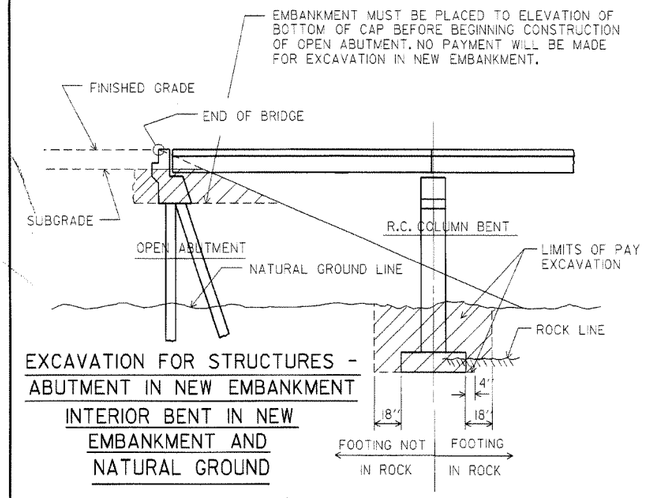
DRAWN BY: MJT DATE: 04-10-2003 FILENAME: BI888A.STD
CHECKED BY: CJF DATE: 04-10-2003 SCALE: NO SCALE
DESIGNED BY: STD. DATE: ——

BRIDGE NO. DRAWING NO. 1888A

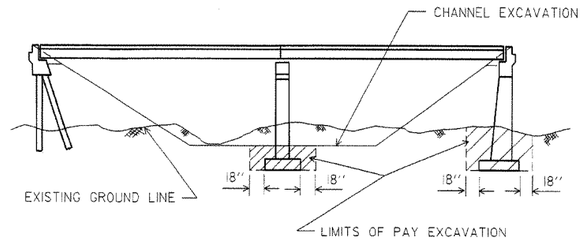
BI888A.STD

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.		78	
				JOB NO.				

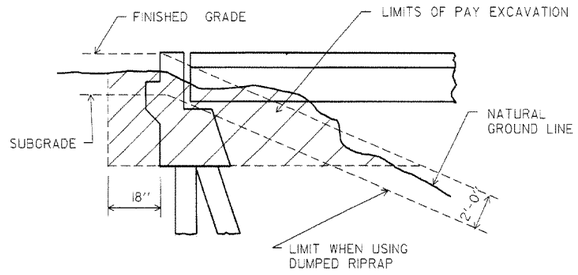
(1) RIP. & EXCAV. 1891F



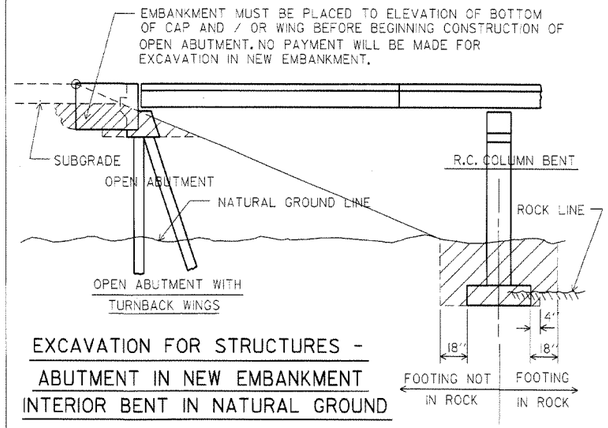
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NEW EMBANKMENT AND NATURAL GROUND



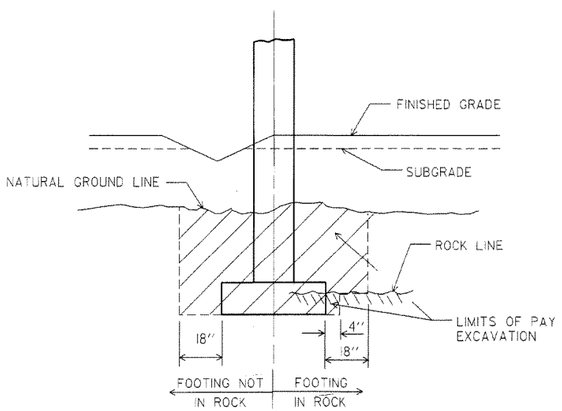
EXCAVATION FOR STRUCTURES - BRIDGE LOCATION WITH DESIGNATED CHANNEL CHANGE



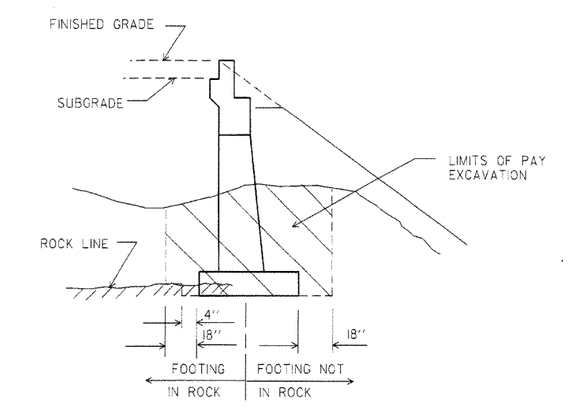
EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND



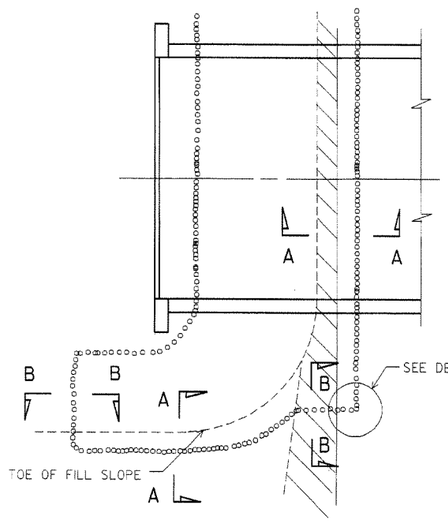
EXCAVATION FOR STRUCTURES - ABUTMENT IN NEW EMBANKMENT INTERIOR BENT IN NATURAL GROUND



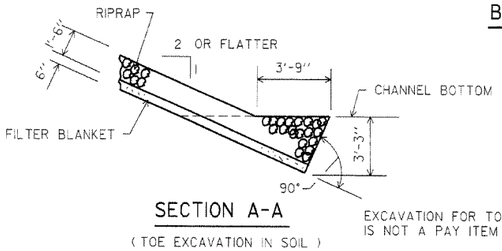
EXCAVATION FOR STRUCTURES - BENT IN ROADWAY FILL SECTION AND NATURAL GROUND



EXCAVATION FOR STRUCTURES - ABUTMENT IN NATURAL GROUND AND NEW EMBANKMENT



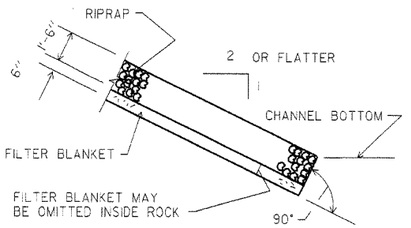
PLAN OF DUMPED RIPRAP



SECTION A-A

(TOE EXCAVATION IN SOIL)

EXCAVATION FOR TOES IS NOT A PAY ITEM



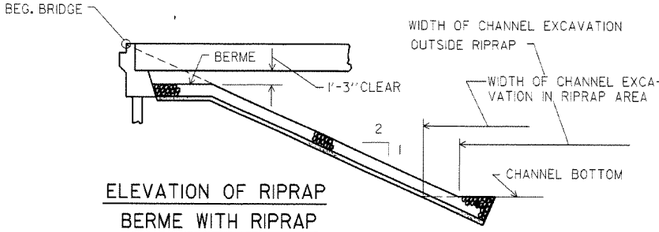
SECTION A-A

(TOE EXCAVATION IN ROCK)

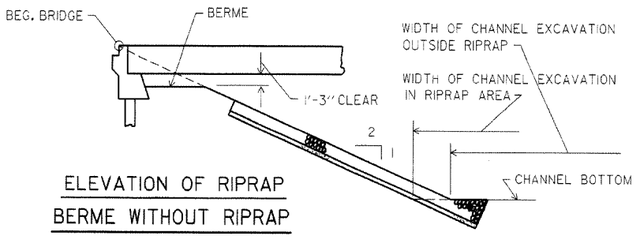
NOTE : USE THIS TYPE OF TOE WHEN ROCK IS ENCOUNTERED WHICH IS IN A STABLE CONDITION.

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.

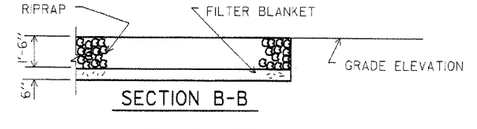
NOTE : DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES ARE INCLUDED FOR INFORMATION AS TO HOW PLAN QUANTITIES WERE CALCULATED AND FOR USE WHEN ADJUSTING QUANTITIES WHEN CHANGING FOOTING ELEVATION.



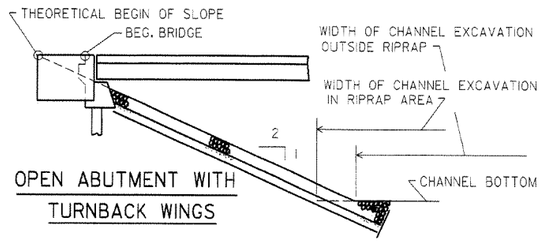
ELEVATION OF RIPRAP BERME WITH RIPRAP



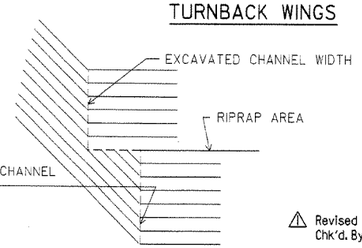
ELEVATION OF RIPRAP BERME WITHOUT RIPRAP



SECTION B-B



OPEN ABUTMENT WITH TURNBACK WINGS



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.

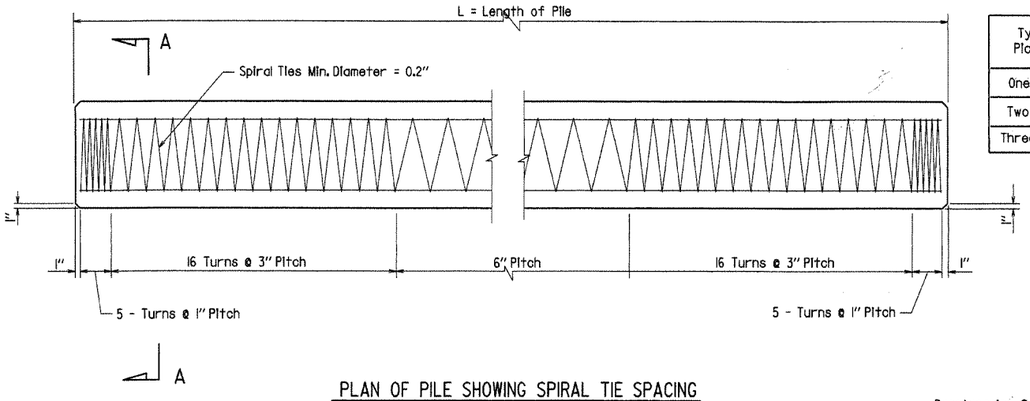
ARKANSAS STATE HIGHWAY COMMISSION

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

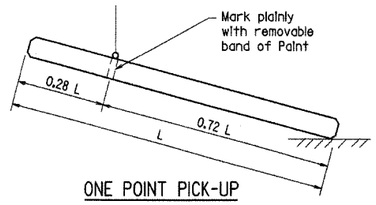
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
04-10-2003	4-10-2003			6	ARK.		79	
12-10-2009				JOB NO.				
				①		CONC. PILES		2383



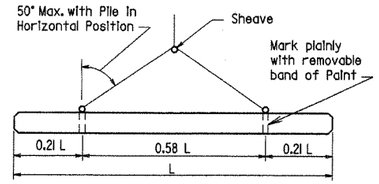
PLAN OF PILE SHOWING SPIRAL TIE SPACING

MAXIMUM PICKUP LENGTHS L

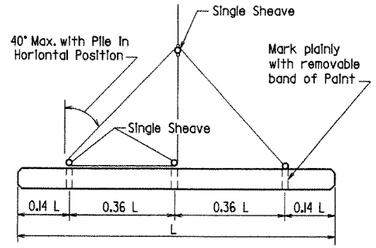
Type of Pick - Up	Prestressed		Precast	Prestressed			Precast		
	16" Oct.	18" Oct.	16" or 18" Oct.	14" Sq.	16" Sq.	18" Sq.	14" Sq.	16" Sq.	18" Sq.
One - Point	52'	55'	46'	55'	59'	63'	52'	51'	55'
Two - Point	75'	80'	67'	79'	84'	90'	75'	74'	79'
Three - Point	105'	112'	93'	110'	117'	126'	104'	103'	111'



ONE POINT PICK-UP

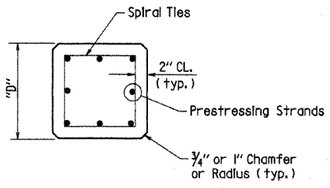


TWO POINT PICK-UP

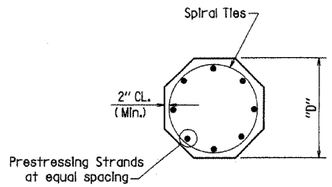


THREE POINT PICK-UP

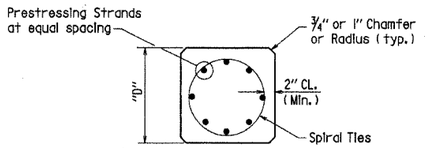
Note : Strand location shall be symmetrical about the axis of the pile with no more than one strand difference between any two adjacent sides. Circular spiral ties are required for odd number of strands.



SECTION A-A
SQUARE PILE



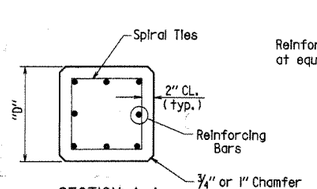
SECTION A-A
OCTAGONAL PILE



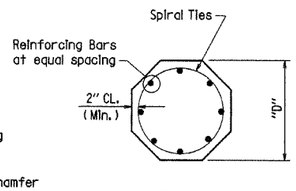
SECTION A-A
SQUARE PILE

PRECAST PILE REINFORCING

Pile Size	No. Req'd.	Bar Size
16" Oct.	8	# 7
18" Oct.	8	# 7
14" Sq.	8	# 7
16" Sq.	8	# 7
18" Sq.	8	# 8



SECTION A-A
SQUARE PILE



SECTION A-A
OCTAGONAL PILE

PRESTRESSED CONCRETE PILES

PRESTRESSED PILE PROPERTIES

	Grade	Strand Diameter	• Number of Strands per Size "D"					Minimum Ultimate Tensile Strength Per Strand (Lbs.)	Intial Prestressing Force Per Strand (Lbs.)
			16" Oct.	18" Oct.	14" Sq.	16" Sq.	18" Sq.		
Stress Relieved	250	7/16"	11	13	10	12	16	27,000	18,900
		½"	8	10	8	10	12	36,000	25,200
	270	7/16"	9	11	8	12	14	31,000	21,700
		½"	7	9	6	8	10	41,300	28,900
Low Relaxation	250	7/16"	9	11	8	11	13	27,000	20,200
		½"	7	8	6	8	10	36,000	27,000
	270	7/16"	8	10	7	9	11	31,000	23,300
		½"	6	7	5	7	9	41,300	31,000

• Number based on initial prestress force of "B" x Ultimate Tensile Stress, Prestress Losses, and min. 700 psi Unit Prestress on concrete after Losses.

"B" — 0.75 Low Relaxation
0.70 Stress - Relieved

GENERAL NOTES

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, references to Section and subsection numbers in the plans refer to the Construction Specifications.

Design Specification : AASHTO Standard Specifications for Highway Construction (2002 Edition), with current Interim Specifications.

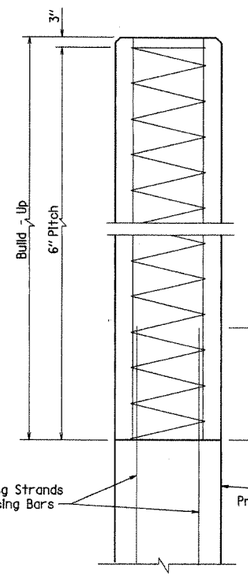
Concrete : Concrete in the Precast Prestressed Piles shall be Class S (AE) and shall have a Minimum Compressive Strength (f'c) of 5000 psi at 28 days. Compressive Strength at transfer of the Prestressing Force shall be not less than 4000 psi. Concrete in Build - Ups shall have a minimum Compressive Strength (f'c) of 4000 psi.

Prestressing Reinforcement : Seven wire stress relieved or low relaxation strands shall conform to the general requirements of AASHTO M203. Broken wires within individual strands will be permitted up to 2 % of the total number of wires in each pile, providing that there is not more than one broken wire per strand. Two or more broken wires per strand will be cause for replacement of the strand, even though the two broken wires are within the 2 % limitation.

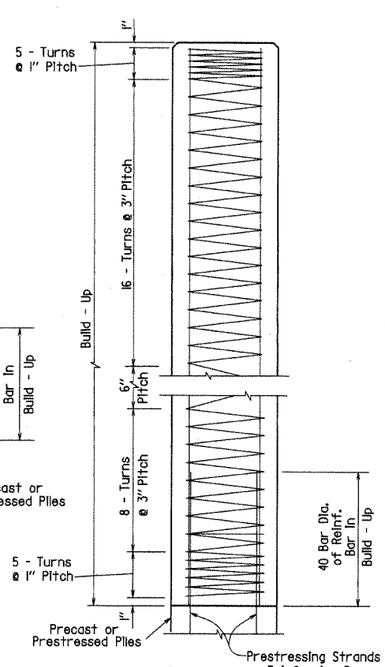
Build-Ups : To provide for Build-Ups of Piles where authorized by the Engineer, concrete shall be cut back to expose the strands for a distance sufficient to provide a lap of 40 diameters of the reinforcing bars required for Build-Up. Reinforcing of Build-Ups shall have a minimum area equal to 1½% of the gross section of pile. Placement of bars shall be in a symmetrical pattern of not less than four bars. See Section 805.11(b).

Forms : For forming exterior of piles, the use of steel forms on concrete founded casting beds is required, unless otherwise approved by the Engineer. Side forms may have a maximum drift on each side not exceeding ¼" per foot.

Tolerances : Pile ends shall be plane surfaces and perpendicular to axis of pile with a maximum tolerance of ⅛" per foot transversely.



BUILD - UP
WITHOUT DRIVING



BUILD - UP
WITH DRIVING

PRECAST CONCRETE PILES

GENERAL NOTES

The maximum sweep (deviation from straightness measured along two perpendicular faces of the pile, while not subject to bending forces) shall not exceed ⅛" in 10 ft. of its length.

General: Shipment of piles from the plant site or pile driving will not be permitted until the required minimum compressive strength is reached, and in no case less than 10 days after pouring the concrete. Piles may be removed from casting bed to a nearby storage any time after transfer of stress.

Spiral Reinforcing : Spiral reinforcing shall be steel wire meeting the requirements of AASHTO M32 with a minimum diameter of 0.2" or shall be plain round steel bars meeting the requirements of AASHTO M31 or M53, GR. 60 with a minimum diameter of 0.25".

Manufacture, Transportation and Storage : See Section 802 "Concrete for Structures".

2 Unless otherwise approved by the Engineer, all protruding or exposed pile lifting or transporting devices above the finished ground shall be removed after pile driving is complete. Removal shall be a minimum of 1" below the surface of the pile and the cavity shall be filled with a non-shrink grout listed on the Department's QPL.

Installation, Measurement and Payment : See Section 805 "Piling". Precast Prestressed Concrete Piling will be paid for at the contract unit price per Linear Foot bid for "Concrete Piling".

The Contractor may elect to use a Precast Concrete Pile in lieu of the Prestressed Concrete Pile. The following notes apply to Precast Concrete Piles:

All concrete shall be Class S (AE) and shall have a minimum compressive strength (f'c) of 4000 psi at 28 days.

All longitudinal reinforcing bars shall be deformed bars of AASHTO M31 or M53, Gr. 60.

All spiral reinforcing shall be the same as that shown for prestressed concrete.

2 Added paragraph to General Notes KDH 12-10-2009
Checked by: CJF Date: 12-10-2009

1 Revised and redrawn MJT 04-10-03
Chkd. By: CJF 04-10-03

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

BRIDGE ENGINEER

DETAILS OF STANDARD CONCRETE PILES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 04-10-2003 FILENAME: B2383.STD
CHECKED BY: CJF DATE: 04-10-2003 SCALE: 1" = 1'-0"
DESIGNED BY: STD. DATE: —

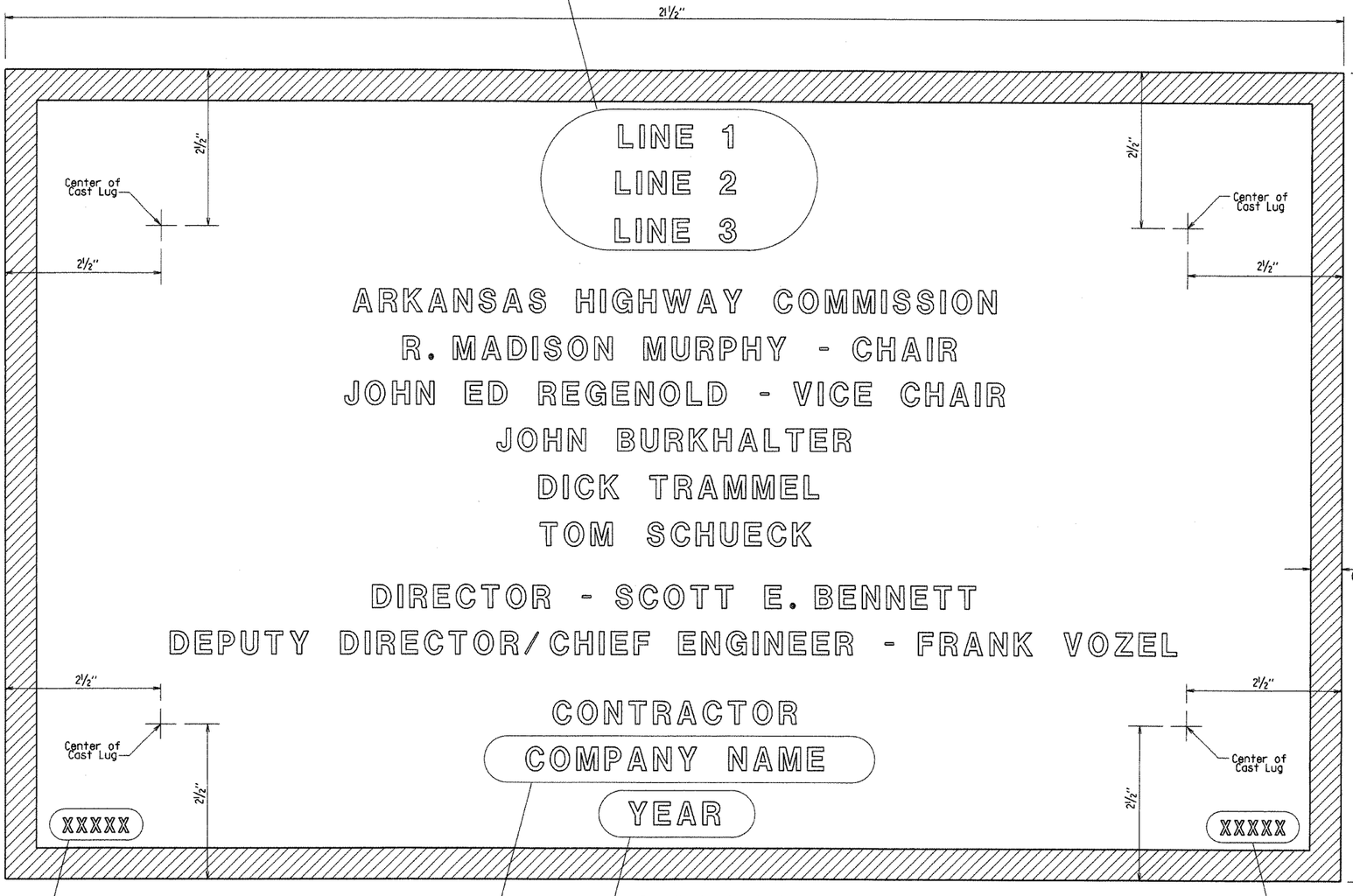
BRIDGE NO.

DRAWING NO. 2383

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
9-8-11				6	ARK.		80	
				JOB NO.				
				NAME PLATE			2387	

The name of the bridge as shown on the plans shall be placed on Lines 1 - 3 using 1/8" raised letters and numerals 3/8" high.

	Example 1	Example 2	Example 3	Example 4
Line 1	Red River	Southern	Saline	
Line 2	Relief	Railroad	River	Highway 5
Line 3		Overpass	Relief	



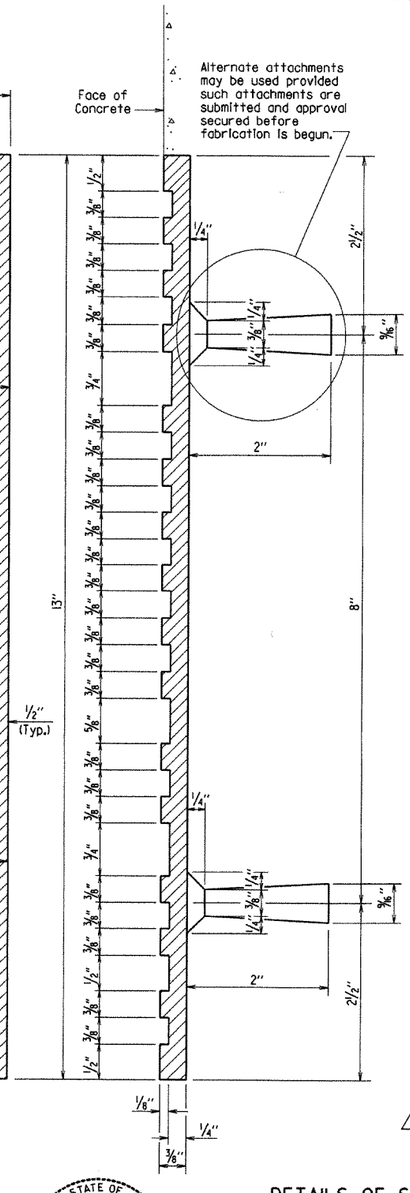
Place the design live loading here using 1/8" raised letters and numerals 1/4" high. Examples : HS 20
HL-93

Place the Year in which Contract was awarded here using 1/8" raised numerals 3/8" high. Example : 2001

Place the name of the company awarded the construction contract here using 1/8" raised letters and numerals 3/8" high. Example : ABCD CONSTRUCTION, INC.

Place the Bridge number here using 1/8" raised letters and numerals 1/4" high. Examples : A1234
05432

TYPICAL BRIDGE NAME PLATE



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 1/4" thick and shall include four tapering cone lugs 3/8" to 9/16"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.

1 Revised and Redrawn 9-8-11 KDH Checked By: CRE

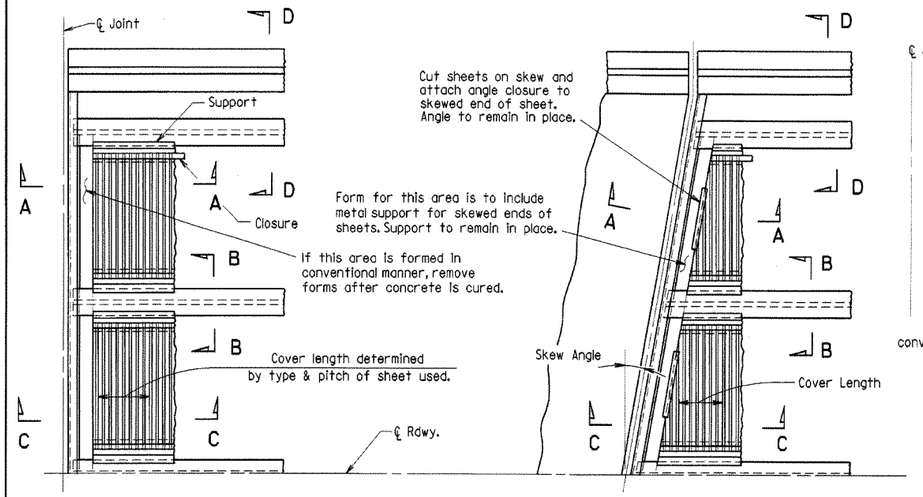
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 7610
CARL J. PUSELLER
BRIDGE ENGINEER

DETAILS OF STANDARD TYPE D
BRIDGE NAME PLATE
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KDH DATE: 9-8-11
CHECKED BY: CRE DATE: 9-8-11
DESIGNED BY: STD. DATE: —
FILENAME: B2387.STD
SCALE: 1'-0" = 1'-0" OR AS NOTED
BRIDGE NO.
DRAWING NO. 2387

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
11-27-96						6	ARK.		81	
04-10-2003						JOB NO.				

① BR. DECK FORMS 14991

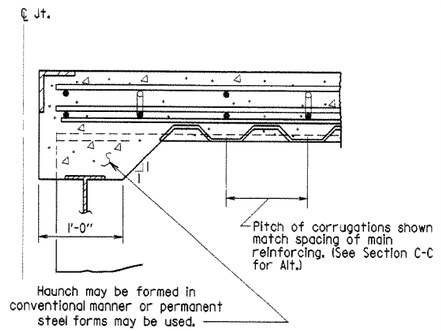


PART PLAN - SQUARE SPAN

3/8" = 1'-0"

PART PLAN - SKEWED SPAN

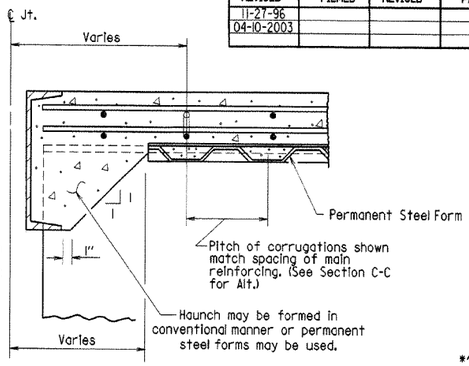
3/8" = 1'-0"



SECTION A-A

N.T.S.

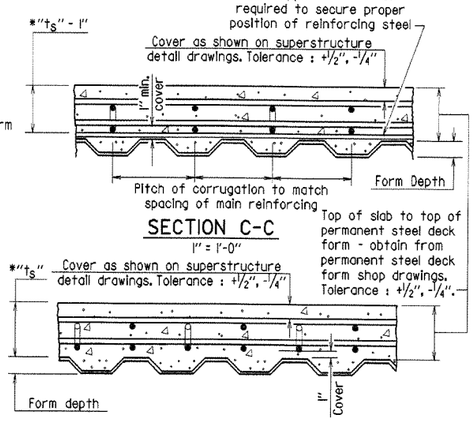
(Angle at end of span)



SECTION A-A

N.T.S.

(Channel at end of span)



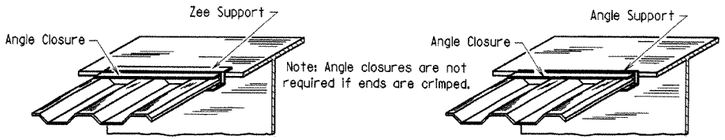
SECTION C-C

1" = 1'-0"

SECTION C-C - ALTERNATE

1" = 1'-0"

(Applicable when corrugations do not match spacing of main reinforcement)



SKETCH OF PERMISSIBLE SUPPORTS

N.T.S.

*t_s = slab thickness as shown on superstructure detail drawings.

GENERAL NOTES

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

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

Welding of form supports to the tension flange of steel girders will be permitted only in areas where shear connectors are used. When welding is not allowed, the method of fastening Z or ∠ supports to the flange must be approved by the Bridge Engineer.

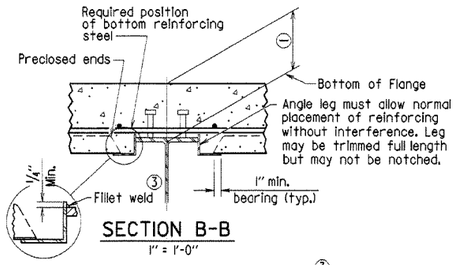
Form sheets shall be fastened to supporting members and to each other with galvanized metal screws sufficient in size and number to provide a secure attachment. Alternate methods of attachment must be approved by the Bridge Engineer.

When the pitch of form corrugations match the reinforcing spacing, transversely align form sheets across the bridge to maintain the correct orientation of continuous reinforcing bars in the corrugations.

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

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

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

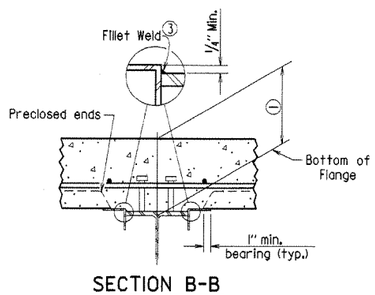


SECTION B-B

1" = 1'-0"

(Showing permissible support for tension flange where shear connectors are used, and for all compression flanges)

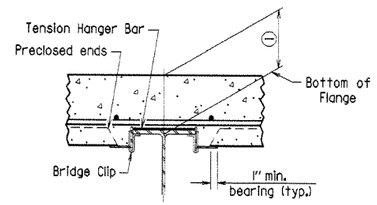
③ Minimum weld: 1/8" x 1" @ 18". More weld may be required; maximum length per weld = 1 1/2" (typ.)



SECTION B-B

1" = 1'-0"

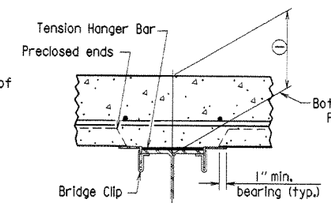
(Showing permissible support for tension flange where shear connectors are used and for all compression flanges)



SECTION B-B

1" = 1'-0"

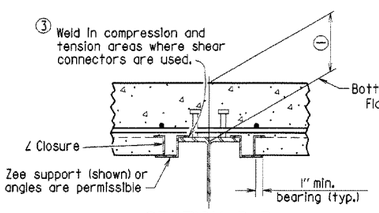
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

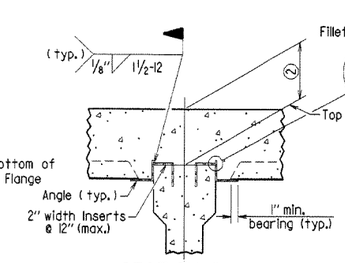
(Showing permissible support for tension flange where shear connectors are not used)



SECTION B-B

1" = 1'-0"

(Showing ∠ Closure)

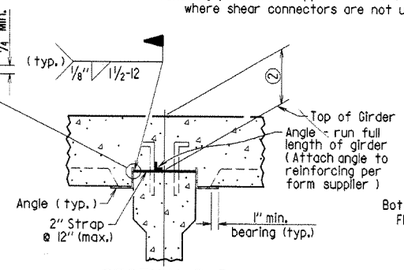


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by Insert cast in girder)

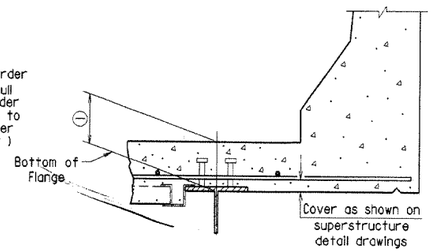


SECTION B-B

(FOR CONCRETE GIRDERS)

1" = 1'-0"

(Showing support by Strap)



SECTION D-D

1" = 1'-0"

Note: Only Bottom Reinforcing is shown.

① Distance from top of slab to bottom of top flange as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top flange or the support angle leg contacts the bottom reinforcing steel; Maximum = t_s + 1 3/4" + flange thickness. See Section C-C for slab thickness tolerance between adjacent girder flanges.

② Distance from top of slab to top of girder as measured at centerline girder and as shown on superstructure detail drawings. This dimension may vary within the following limits to maintain the grade and slab thickness tolerances : Minimum - occurs when either the top of girder or the support angle leg contacts the bottom reinforcing steel; Maximum - value shown on the superstructure detail drawings when removable forms are used. See Section C-C for slab thickness tolerance between adjacent girder flanges.

⚠1 Redrawn and revised 11/27/96; MJT

⚠2 Revised for 2003 AHTD Construction Specifications and CPB Seal. 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 OF PERMISSIBLE TYPE PERMANENT STEEL BRIDGE DECK FORMS FOR STEEL & CONCRETE GIRDER SPANS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 10-17-96

CHECKED BY: CPB DATE: 10-17-96

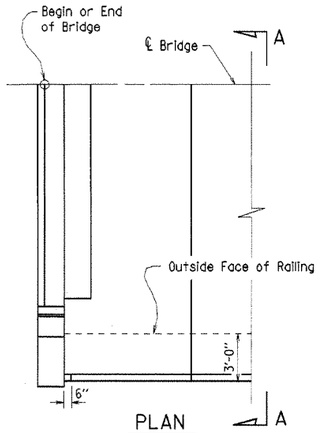
DESIGNED BY: STD. DATE: —

SCALE: as noted

BRIDGE NO. DRAWING NO. 14991

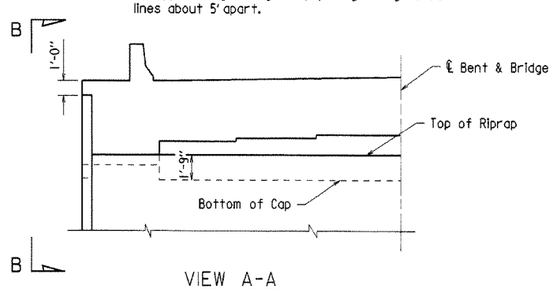
BI4991.STD

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.		82	
				JOB NO.				
				1	RIPRAP & PILE - 14995A			

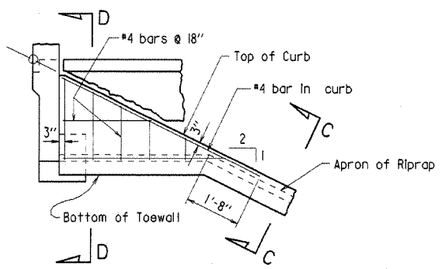


PLAN

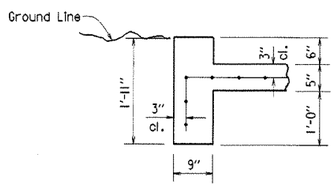
Note:
Sloped surfaces of concrete riprap to be marked off into blocks (construction joints optional) with an approved grooving tool, spacing the grooved lines about 5' apart.



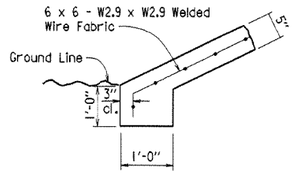
VIEW A-A



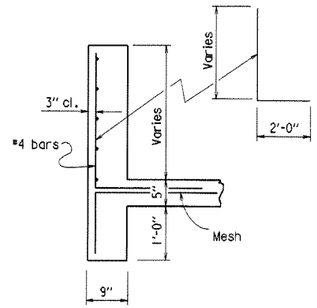
VIEW B-B



SECTION C-C

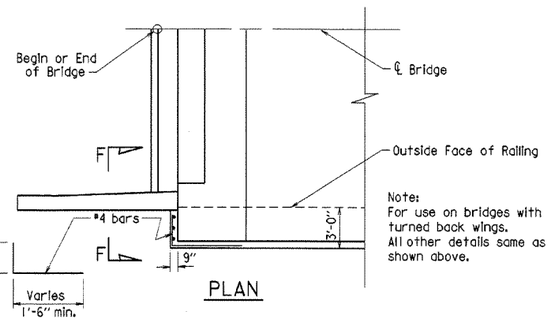


TOE WALL



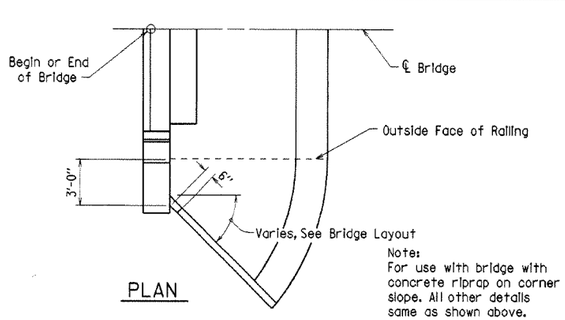
SECTION D-D

DETAILS OF CONCRETE RIPRAP



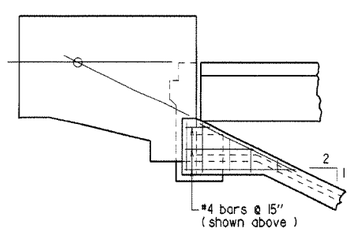
PLAN

Note:
For use on bridges with turned back wings. All other details same as shown above.

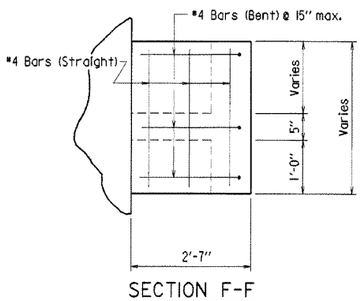


PLAN

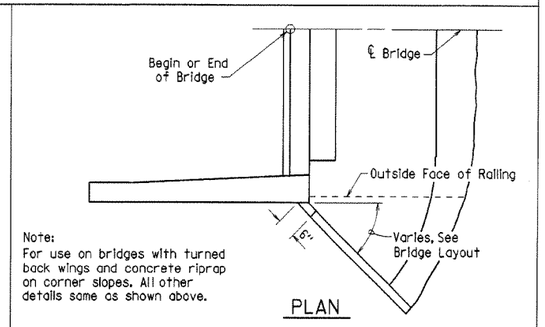
Note:
For use with bridge with concrete riprap on corner slope. All other details same as shown above.



ELEVATION

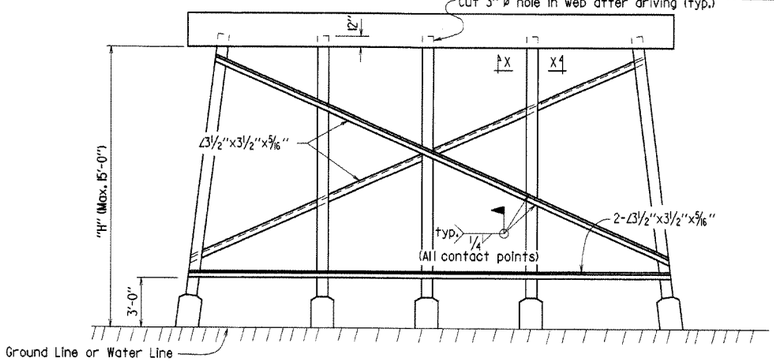


SECTION F-F



PLAN

Note:
For use on bridges with turned back wings and concrete riprap on corner slopes. All other details same as shown above.



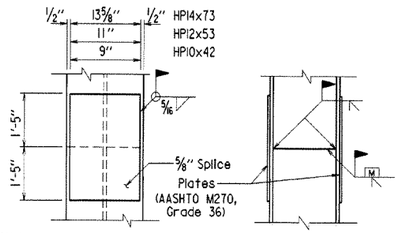
Note:
All bracing shall be cut and welded in the field. Each brace shall be furnished in one piece. Payment shall be made under item 807.

Omit bottom bracing where "H" is less than 10 ft. Omit all bracing where "H" is less than 5 ft.

Note:
Where required by the bridge layout sheet, pile encasements shall be constructed.

Omit bracing (and V-groove in cap) where pile encasement is extended to bottom of bent cap.

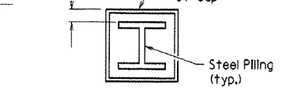
TYPICAL BRACING FOR INT. STEEL PILE BENTS



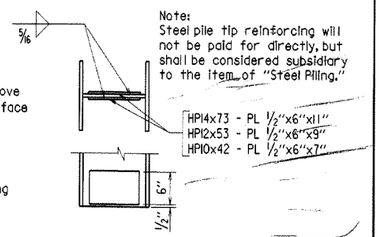
Note:
The contractor may for his own convenience and at this own expense provide as many as three splices per pile for steel bearing piling. Minimum spacing between splices shall be 5 ft.

PILE SPLICE DETAIL

Scale : 1" = 1'-0"

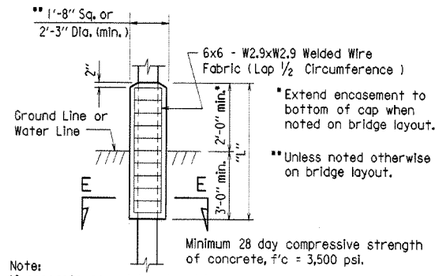


VIEW X-X



REINFORCING DETAIL FOR STEEL PILE TIP

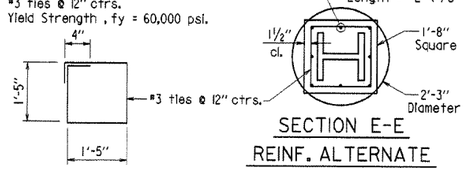
Scale : 1" = 1'-0"



Note:
If concrete cannot be placed in the dry, seal concrete may be deposited under water. Concrete & welded wire fabric or reinforcing in encasements shall be paid for at the contract unit price per linear foot bid for "Pile Encasement."

PILE ENCASEMENT DETAIL

Reinforcing Alternate
#3 Vertical - 8 per encasement
#3 ties @ 12" ctrs.
Yield Strength, fy = 60,000 psi.



SECTION E-E

REINF. ALTERNATE

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

BRIDGE ENGINEER

⚠1 Revised and redrawn MJT 04-10-2003
Chk'd. By: CJF 04-10-2003

DETAILS OF CONCRETE RIPRAP AND MISC. DETAILS OF STEEL PILING

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 04-10-2003 FILENAME: BI4995A.STD
CHECKED BY: CJF DATE: 04-10-2003 SCALE: No Scale or As Noted
DESIGNED BY: STD. DATE: —

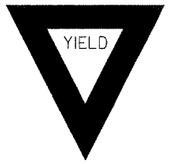
BRIDGE NO.

DRAWING NO. 14995A

R1-1

STANDARD 30"X30"
EXPRESSWAY 36"X36"
SPECIAL 48"X48"

R1-2



STD. 36"X36"X36"
EXPWY. 48"X48"X48"
FWY. 60"X60"X60"

R2-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R2-5A

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R2-5C

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-1

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

R4-2

STD. 24"X30"
EXPWY. 36"X48"
FWY. 48"X60"

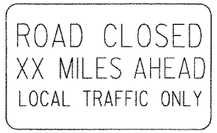
R5-1

STD. 30"X30"
EXPWY. 36"X36"
SPECIAL 48"X48"

RII-2

48"X30"

RII-3A



60"X30"

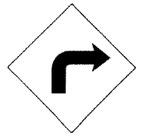
RII-4

60"X30"

RSP-1

48"X30"

WI-1



STD. 36"X36"
FWY. 48"X48"

WI-2

STD. 36"X36"
FWY. 48"X48"

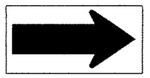
WI-3

STD. 48"X48"

WI-4

STD. 48"X48"

WI-6

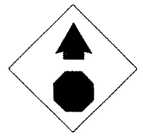


STD. 48"X24"
SPECIAL 60"X30"

WI-8

STD. 18"X24"
SPECIAL 24"X30"
EXPWY. 30"X36"
FWY. 36"X48"

W3-1

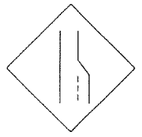


STD. 36"X36"
SPECIAL 48"X48"

W3-2

STD. 36"X36"
SPECIAL 48"X48"

W4-2



STD. 36"X36"
FWY. 48"X48"

W5-1

STD. 36"X36"
SPECIAL 48"X48"

W6-3

EXPWY. 36"X36"
SPECIAL 48"X48"

W8-7

EXPWY. 36"X36"
FWY. 48"X48"

W9-2

STD. 36"X36"
FWY. 48"X48"

WI3-1

STD. 24"X24"

W20-1

STD. 48"X48"

W20-2

STD. 48"X48"

W20-3

STD. 48"X48"

W20-4

STD. 48"X48"

W20-5

STD. 48"X48"

W20-7a

STD. 36"X36"
FWY. 48"X48"

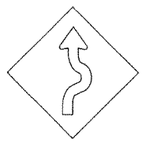
W21-2

STD. 30"X30"
SPECIAL 36"X36"

W21-5

STD. 30"X30"
SPECIAL 36"X36"

W24-1



STD. 36"X36"

WI-4b

STD. 48"X48"

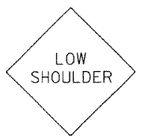
R56-1

STD. 18"X18"

W8-11

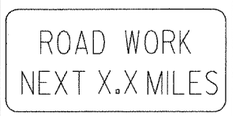
STD. 36"X36"
FWY. 48"X48"

W8-9



STD. 36"X36"
FWY. 48"X48"

G20-1



60"X24"

G20-2

48"X24"

OM-3L OM-3R

12"X36"

M4-9

STD. 30"X24"
SPECIAL 48"X36"
SPECIAL 60"X48"

M4-10

48"X18"

R55-1

FINES DOUBLE
IN WORK ZONES *
WHEN WORKERS
ARE PRESENT **

36"X60"

* USE 6" C LETTERS
** USE 4" D LETTERS

ADVANCE DISTANCES
(XXXX)

500 FT	½ MILE
1000 FT	¾ MILE
1500 FT	1 MILE
	AHEAD

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND TO THE STANDARD HIGHWAY SIGNS, LATEST EDITION, OR AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION.

2. TRAFFIC CONTROL DEVICES SHALL BE SET UP JUST BEFORE THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND REMOVED THEREAFTER.

3. EXISTING SIGNS AND CONSTRUCTION SIGNS SHALL BE KEPT IN PROPER POSITION, AND BE CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. SIGNS THAT ARE DAMAGED, DEFACED, OR THAT ACCUMULATE DIRT DURING CONSTRUCTION SHALL BE CLEANED, REPAIRED, OR REPLACED.

• 4. SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 SQ. FT. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III BARRICADE.

• 5. SIGN POSTS DIRECT BURIED IN SOIL SHALL BE 2 LB. MINIMUM CHANNEL POST OR 4"x4" WOOD POSTS. CHANNEL POSTS SHALL BE PAINTED GREEN. WOOD POSTS SHALL BE PAINTED WHITE. ALL POSTS SHALL BE NEATLY CONSTRUCTED, AND SHALL BE REPLUMBED, CLEANED, OR REPAIRED AS NEEDED FOR THE DURATION OF THE JOB. THERE SHALL NOT BE MORE THAN 2 POSTS IN A 7' PATH FOR WOOD OR CHANNEL POSTS. ANY CHANNEL POST SPLICE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING TC-3.

6. POST MOUNTED SIGNS IN RURAL AREAS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. SIGNS IN URBAN AREAS AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.

7. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN URBAN AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE. ALL POST AND BARRICADE MOUNTED SIGNS MOUNTED IN RURAL AREAS SHALL BE MOUNTED A MINIMUM DISTANCE OF 7' FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 6' SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR INTERMEDIATE TERM STATIONARY WORK CONDITIONS. THE SIGNS MINIMUM MOUNTING HEIGHT SHALL BE 5'. RETROREFLECTIVE DEVICES SHALL BE USED. TEMPORARY SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS FOR SHORT-TERM, SHORT DURATION, AND MOBILE CONDITIONS. THEY SHALL BE NO LESS THAN ONE (1) FOOT ABOVE THE TRAVELED WAY. LONG-TERM STATIONARY SIGNS SHALL BE DIRECT BURIED IN SOIL, UNLESS CONDITIONS NECESSITATE THE USE OF PORTABLE SIGNS, OR AS APPROVED BY THE ENGINEER. CONCRETE PADS, CONCRETE OR ROCK BALLAST, OR OTHER SOLID MATERIALS SHALL NOT BE UTILIZED WITH PORTABLE SIGN SUPPORTS.

8. FLAGGERS SHALL USE REFLECTORIZED STOP-SLOW PADDLES. FLAGS MAY BE USED ONLY FOR EMERGENCY SITUATIONS.

9. MOST OF THE SIGNS SHOWN ARE ORIENTED TO THE RIGHT. HOWEVER, THIS DOES NOT PRECLUDE THE USE OF MIRROR IMAGES OF THESE SIGNS WHERE THE REVERSE ORIENTATION MIGHT BETTER CONVEY TO MOTORISTS THE PROPER DIRECTION OF MOVEMENT.

10. R55-1 SIGNS SHALL BE PLACED AT LEAST 1500' BUT NOT MORE THAN 1 MILE IN ADVANCE OF THE WORK ZONE. IF A SPEED LIMIT REDUCTION IS IN EFFECT, THE SIGN SHALL BE PLACED A MINIMUM OF 500' IN ADVANCE OF THE "REDUCED SPEED AHEAD" SIGN.

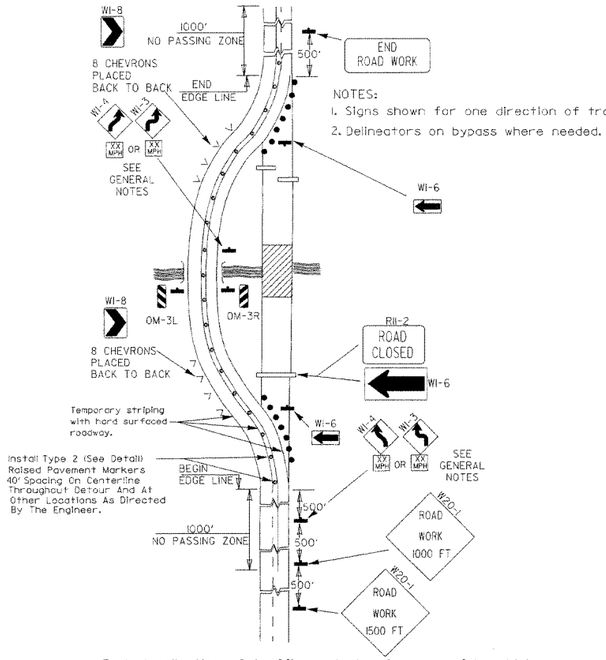
* NOTE: SUPPORTS FOR SIGNS, BARRICADES, AND VERTICAL PANELS THAT ARE DIFFERENT FROM THE REQUIREMENTS SHOWN IN NOTES 4 & 5, BUT MEET THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH), WILL BE ACCEPTED. COMPLIANCE WITH THE REQUIREMENTS OF NCHRP-350 OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) IS REQUIRED FOR ALL PROJECTS.

DATE	REVISION	FILMED
11-17-10	DELETED W8-9a & ADDED W8-9	
10-15-09	ADDED REFERENCE TO MASH & ADDED SIGN W24-1	
4-17-08	REVISED SIGN DESIGNATIONS	
11-18-04	REVISED NOTES	
10-9-03	REVISED NOTE 1	
11-16-01	REVISED NOTE 7	
9-28-00	REVISED NOTE	
11-18-98	ADDED NOTE	
6-26-97	REVISED NOTE 5	
4-03-97	REVISED NOTE 5	
10-18-96	ADDED CONTROLLED ACCESS HWY. SIGN & TO NOTE 7	
10-12-95	ADDED R55-1	
6-8-95	REVISED TO CORRECT SIGN ILLUSTRATIONS	6-8-95
2-2-95	REVISED PER PART VI, MUTCD SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

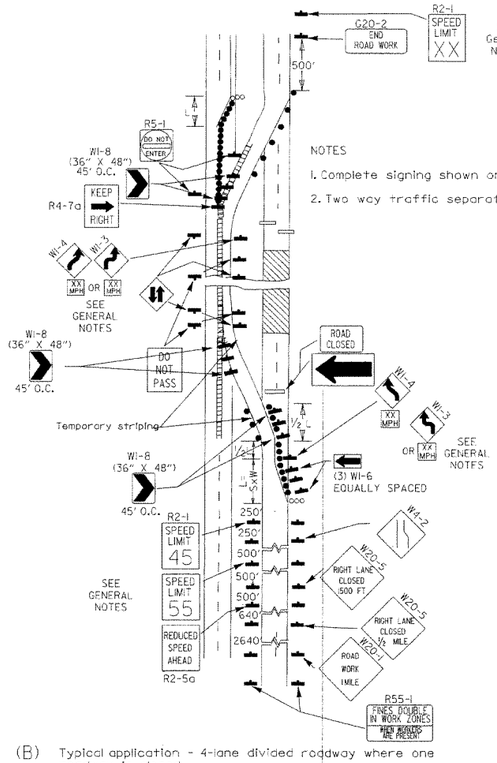
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

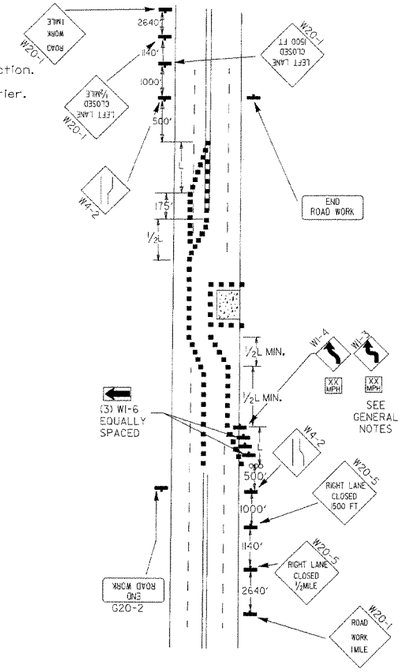
STANDARD DRAWING TC-1



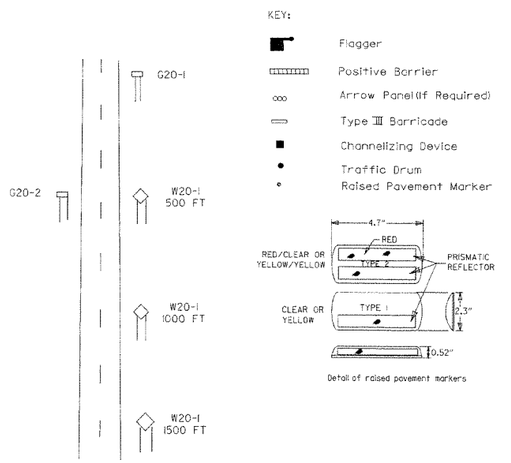
(A) Typical application of traffic control devices on a 2-lane highway where the entire roadway is closed and a bypass detour is provided.



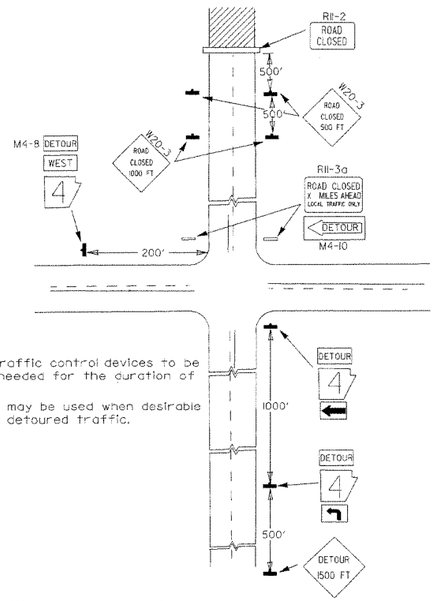
(B) Typical application - 4-lane divided roadway where one roadway is closed.



(C) Typical application - 4-lane undivided roadway where half of the roadway is closed.

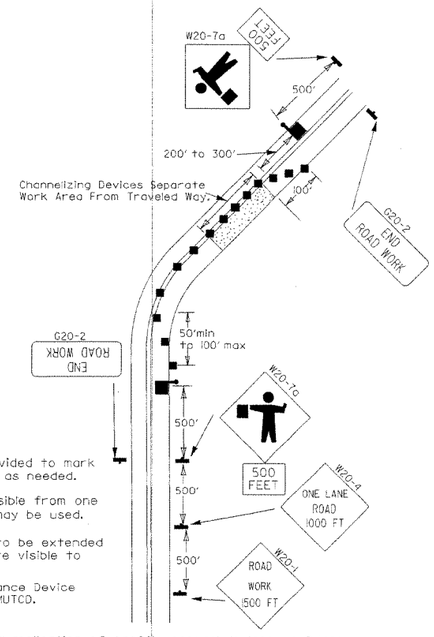


Typical advance warning sign placement



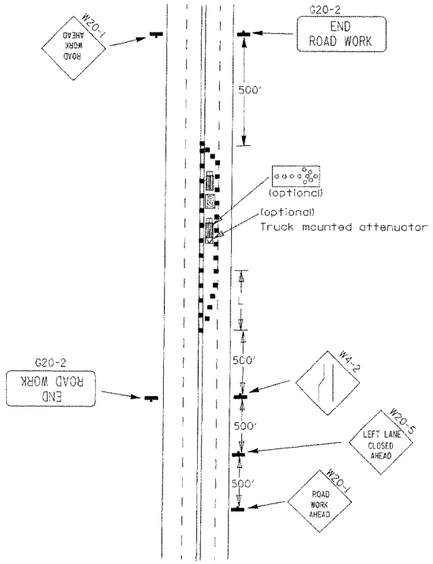
(D) Typical application - roadway closed beyond detour point.

NOTES:
1. Regulatory traffic control devices to be modified as needed for the duration of the detour.
2. Street names may be used when desirable for directing detoured traffic.



(E) Typical application of traffic control devices on 2-lane highway where one lane is closed and flagging is provided.

NOTES:
1. Flood lights should be provided to mark flagger stations at night as needed.
2. If entire work area is visible from one station, a single flagger may be used.
3. Channelizing devices are to be extended to a point where they are visible to approaching traffic.
4. Automated Flagger Assistance Device (AFAD) optional. Refer to MUTCD.



(F) Typical application - 4-lane undivided roadway with inside lane closed.

Taper formulae:

L=SxW for speeds of 45mph or more.

$L = \frac{WS^2}{60}$ for speeds of 40mph or less.

Where:
L= Minimum length of taper.
S= Numerical value of posted speed limit prior to work or 85th percentile speed.
W= Width of offset.

GENERAL NOTES:

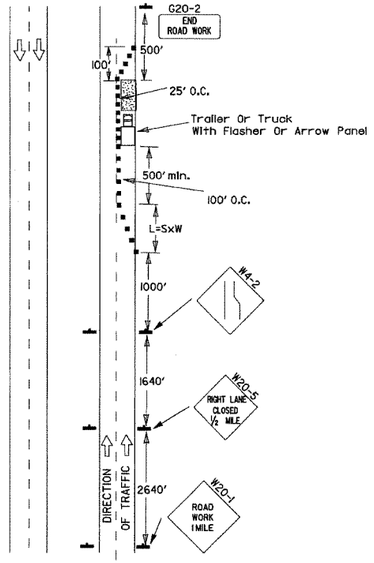
1. Advisory speed posted on W1-3 or W1-4 curve warning signs to be determined at site. Use W1-4 when speed is greater than 30mph and W1-3 when 30mph or less.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(xx) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1 mile intervals. At the end of the work area a R2-1(xx) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit, or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

DATE	REVISION	FILMED
3-11-10	ADDED (AFAD)	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED GENERAL NOTE	
10-18-96	ADDED R55-1	
4-26-96	CORRECTED (a) BEHIND G20-2	
6-8-95	CORRECTED SIGN IDENT. ON W1-4A	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

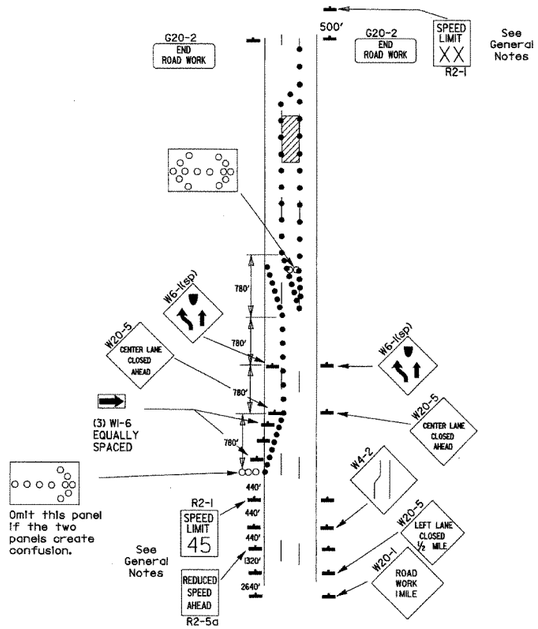
ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

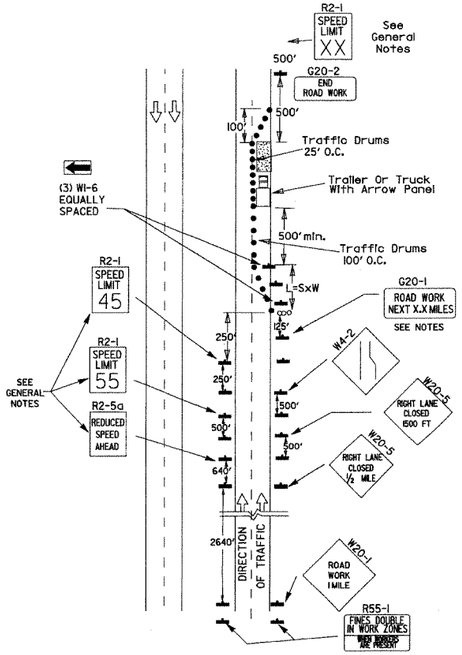
STANDARD DRAWING TC 2



(A) Typical application - daytime maintenance operations of short duration on a 4-lane divided roadway where half of the roadway is closed.



(B) Typical application - 3-lane oneway roadway where center lane is closed.



(C) Typical application - construction operations of intermediate to long term duration on a 4-lane divided roadway where half of the roadway is closed.

KEY:

○○○ Arrow Panel (If Required)

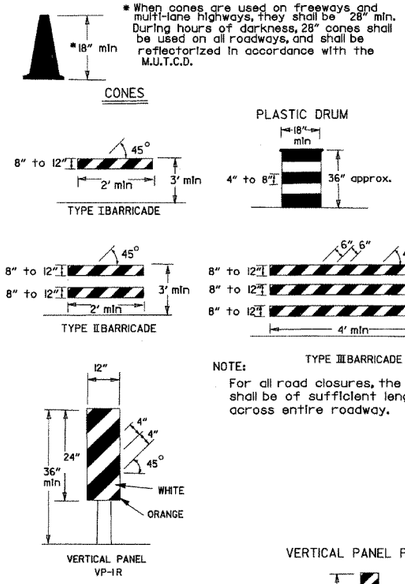
■ Channelizing Device

● Traffic drum

GENERAL NOTES:

1. A speed limit reduction may be implemented ONLY when designated in the plan or when recommended by the Roadway Design Division.
2. When the existing speed limit is 55mph and the plans require a speed limit of 45mph, the R2-1(55) shall be omitted and the R2-5A shall be installed at that location. Additional R2-1 45mph speed limit signs shall be installed at a maximum of 1mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
3. When the existing speed limit is 65mph and the plans require a speed limit of 55mph, the R2-1(45) shall be omitted. Additional R2-1 55mph speed limit signs shall be installed at a maximum of 1mile intervals. At the end of the work area a R2-1(XX) shall be installed to match original speed limit.
4. The maximum spacing between channelizing devices in a taper should be approximately equal in feet to the speed limit. Beyond the taper, maximum spacing shall be two times the speed limit or as directed by the Engineer.
5. Warning lights and/or flags may be mounted to signs or channelizing devices at night as needed.
6. Pavement markings no longer applicable which might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as practicable.
7. The G20-1 sign will be required on jobs of over two miles in length. When the lane closure is not at the beginning of the project, the G20-1 sign shall be erected 125' in advance of the job limit. Additional W20-1 (1 MILE) signs are not required in advance of lane closures that begin inside the project limits.
8. Flaggers shall use STOP/SLOW paddles for controlling traffic through work zones. Flags may be used only for emergency situations.
9. All plastic drums and cones shall meet the requirements of NCHRP-350 or Manual For Assessing Safety Hardware (MASH).
10. Trailer mounted devices such as arrow panels and portable changeable message signs shall be delineated by affixing conspicuity material in a continuous line on the face of the trailer. When placed on or adjacent to the shoulder and not behind a positive barrier, these devices shall be delineated by placing five (5) traffic drums, equally spaced along the traffic side of the device.

Channelizing devices



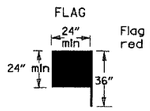
NOTE:
For all road closures, the Type III barricades shall be of sufficient length to extend across entire roadway.

TRAFFIC CONTROL DEVICES
FOR
VERTICAL PAVEMENT DIFFERENTIALS

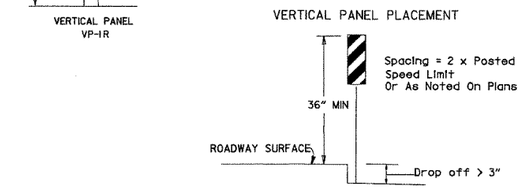
VERTICAL DIFFERENTIAL	LOCATIONS	TRAFFIC CONTROL
1" to 3"	Centerline, lane lines	W8-11
1" to 3"	Edge of shoulder	W8-9
Greater than 3"	Lane lines	Standard lane closure required
Greater than 3"	Edge of traveled lane	*RSP-1 and vertical panels, drums or concrete barrier
Greater than 3"	Edge of shoulder	*Vertical panels, drums or concrete barrier

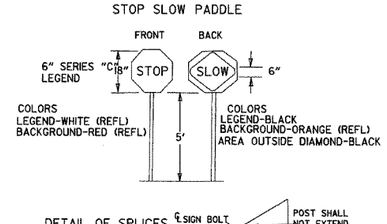
* When shown on the plans concrete barrier will be used.

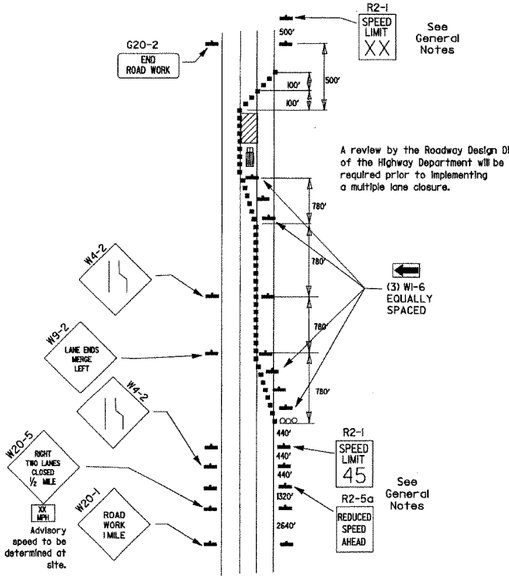
When the shoulder area is used as part of the traveled lane and there is insufficient width to place drums on the remaining shoulder width, then vertical panels shall be used.



Flag shall be of good grade red material

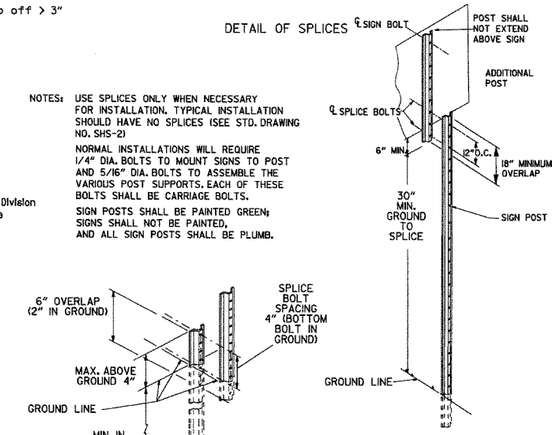






(D) Typical application - closing multiple lanes of a multilane highway.

DETAIL OF SPLICES



NOTES: USE SPLICES ONLY WHEN NECESSARY FOR INSTALLATION. TYPICAL INSTALLATION SHOULD HAVE NO SPLICES (SEE STD. DRAWING NO. SHS-2)

NORMAL INSTALLATIONS WILL REQUIRE 1/4" DIA. BOLTS TO MOUNT SIGNS TO POST AND 5/16" DIA. BOLTS TO ASSEMBLE THE VARIOUS POST SUPPORTS. EACH OF THESE BOLTS SHALL BE CARRIAGE BOLTS.

SIGN POSTS SHALL BE PAINTED GREEN; SIGNS SHALL NOT BE PAINTED, AND ALL SIGN POSTS SHALL BE PLUMB.

DATE	REVISION	FILMED
10-15-09	ADDED REFERENCE TO MASH	
11-20-08	REVISED SIGN DESIGNATIONS	
11-18-04	ADDED NOTE	
10-1-98	ADDED NOTE	
4-03-97	ADDED (SP) TO W6-1 & REVISED TRAFFIC CONTROL DEVICES NOTE	
10-18-96	ADDED R55-1	
10-12-95	MOVED UPPER SPLICE	
6-8-95	REVISED SPLICE DETAIL, TEXT	6-8-95
2-2-95	REVISED PER PART VI, MUTCD, SEPT. 3, 1993	
8-15-91	DRAWN AND PLACED IN USE	

ARKANSAS STATE HIGHWAY COMMISSION

STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION

STANDARD DRAWING TC-3